

INDUSTRY

Definition of terms

- Industry: - is an organized economic activity concerned with the processing and manufacturing of raw materials into useful products/production of goods and services for sale/consumption
- Industrialization: - process of establishing manufacturing industries

Reasons for industrialization

- Economic diversification thus reducing overreliance on agriculture as a source of income/revenue
- Self sufficiency reducing the need to import goods thus saving foreign exchange
- Creation of employment opportunities thus improving living standards
- Use/utilization of natural resources

Factors influencing location and development of industries

(i) Capital

- Establishing an industry requires a large capital outlay/base for the following purposes: -
 - ✓ Purchase of land/equipment/raw materials
 - ✓ Putting up buildings/infrastructure
 - ✓ Paying wages/salaries/taxes
- Countries with plenty of capital are therefore able to industrialise faster/with greater ease compared to developing countries that lack enough/adequate capital

(ii) Raw materials

- These include mineral ores/agricultural produce/forest products
- Most are always heavy/bulky thus industries are located near them – to minimise/reduce transport costs
- Some especially agricultural produce are very perishable hence need to be close to processing plants/industries

(iii) Labour

- Various industries require different types and amounts of labour
- Can be in terms of skilled and unskilled/semi skilled
- Supply of labour is certain in densely populated areas hence location of many industries in urban centres

(iv) Ready market

- All industries are commercially oriented hence their products must find outlets/market (must be sold to make operations viable economically)
- Large urban areas usually provide ready market for finished products because the people's purchasing power is very high – large industries are therefore located near them
- Examples of commodities whose manufacturing industries must be near markets include foodstuffs, fragile equipment e.g. glass, cigarettes etc

(v) Transport and communication

- All industries require good roads/transport network for their operations e.g. to transport raw materials to the industries and finished products to the markets
- Industries are established within/near urban centres with well developed transport systems
- Industries depend on communication networks to link with the market and suppliers of raw materials. These includes e-mail/internet, courier services, postal services, telephone/facsimile services etc
- Areas with well developed communication systems experience low transport costs

(vi) Electricity/power

- Power is very essential for the operations of any industry. The most common and affordable type of power is electricity
- Most industries are therefore located near reliable power/electricity source – urban centres where power is cheap to supply

(vii) Regular water supply

- Most processing industries use considerable amounts of water hence best located near permanent water sources e.g. rivers/lakes
- Examples of such industries include coffee pulping, sugar cane processing, paper mills, brewing/soft drink making
- Water may be used in cooling/cleaning and as a raw material in some of the processes

(viii) Government policy

- The government may discourage/encourage establishment of industries in one particular place for political and economical reasons
- In developing countries, the governments are decentralising industries away from the urban centres to develop the rural areas/reduce rural-urban migration

Industrial inertia

- Is a situation in which an industry continues to operate in an area even after the factors that attracted it to the area are no longer existing/present
- May be caused by the following factors: -
 - ✓ Presence of experienced/skilled workers
 - ✓ It may be expensive to move to a new site
 - ✓ Established industrialised area usually has well developed transport/infrastructural system

Types of industries in Kenya

- The main types of industries found in Kenya include: -

(a) Primary/processing

- Are also known as extractive industries
- Are involved in the first stage of changing raw materials from one form to another that is more useful/valuable
- Produce goods used to make final products
- Provide raw materials for secondary industries
- Examples in Kenya include
 - ✓ Mining of limestone at Bamburi and Athi River
 - ✓ Fishing in Lake Victoria and Indian Ocean
 - ✓ Extraction of forest products from various forests/lumbering

- ✓ Growing of agricultural crops e.g. sisal, cotton, sugar cane, tea, maize, tobacco, pyrethrum, fruits, vegetables
- ✓ Keeping of animals for milk, beef, skins

(b) Secondary/manufacturing

- Use raw materials derived from the primary industries
- Change the raw materials into semi processed or finished products
- Examples include

✓ Coffee factories	✓ Textiles
✓ Cotton ginneries	✓ Pharmaceuticals
✓ Steel rolling mills	✓ Paper and pulp
✓ Food processing	✓ Fertiliser making
✓ Cigarette making	✓ Cement making
✓ Glass making	✓ Insecticide making
✓ Oil refineries	
- Secondary industries are further classified into heavy and light industry
- Heavy industries manufacture heavy and bulky products
- Involve heavy capital investment
- Their production is large scale
- Examples include, ship building, car manufacturing and assembly, iron and steel rolling mills, paper and pulp among others
- Light industries manufacture/process finished products that are less bulky/heavy
- Use light raw materials e.g. textile, cosmetics, toiletries, food processing, printing, electronics

(c) Assembly industries

- Involves fixing together of different products made in different industries to make valuable articles/items
- Use imported raw materials to make articles that are not locally manufactured
- In Kenya, they assemble motor vehicles, electronics, bicycles
- Majorly located in urban areas

(d) Service/tertiary

- Distribute commodities that have been produced in primary and secondary industries to consumers
- Render supply services to finished products
- Found in both rural and urban areas
- Require little capital and space
- Require specialised skills/skilled labour
- Include medical, education, finance, trade, communication, banking, insurance, transport etc

(e) Cottage Industries

- Involves making products using hands and simple tools especially in the homes
- Items are made using locally available materials
- Done on a small scale
- Examples include pottery, wood carving, soapstone carving, weaving of baskets/mats, boat making and scrap metal fabrication
- In Kenya, Jua Kali is most common and popular cottage industry

Jua Kali industries

- Relies on locally available materials and tools
- Requires little capital
- Products target local market
- Are found in almost all urban centres
- Main activity involves reprocessing of old materials to produce useful items

Importance of the Jua Kali sector

- Creates employment opportunities
- Successfully uses materials that would otherwise be disposed
- Saves the country foreign revenue as they reduce the imports
- Earns the country foreign exchange as some are exported to COMESA countries
- Produces cheaper goods compared to those produced in formal industries

Distribution of industries in Kenya

(a) Agricultural Food processing industries

- Tea processing – Kericho, Kirinyaga, Embu, Kisii, Nyamira, Kiambu, Murang'a, Nandi, Meru
- Coffee hulleries – coffee growing areas, Nairobi, Sagana
- Milk Creameries – Naivasha, Nakuru, Nyahururu, Sotik, Nairobi, Eldoret, Kitale
- Sugar refinery – Mumias, Nzoia, Chemelil, Muhoroni, Awendo, Kabras, Busia
- Fruit canning – Thika, Nairobi
- Grains Milling – Eldoret, Nakuru, Nairobi, Kisumu, Mombasa
- Soft drinks making – Nairobi, Mombasa, Nakuru, Eldoret, Nyeri, Kisumu
- Brewing/Blending of alcoholic beverages: - Nairobi and Mombasa

(b) Agricultural non food processing industries

- Cotton ginneries – Kisumu, Homa Bay, Siaya, Busia, Meru, Baringo, Tana River, Kitui
- Sisal – Kilifi, Voi, Mogotio, Uasin Gishu
- Tobacco – Teso, Thika, Nairobi, Nakuru
- Pyrethrum – Nakuru
- Paper and pulp – Webuye, Eldoret, Thika, Nairobi

(c) Non agricultural manufacturing industries

- Cement production – Athi River and Bamburi
- Oil refining – Kilindini, Kipevu, Changamwe (all in Mombasa)
- Metal box – Thika
- Glass making – Mombasa and Nairobi
- Steel rolling – Nairobi and Mombasa

Significance of industrialization in Kenya

- Employment opportunities/source of income/improvement of living standards
- Development of infrastructure e.g. roads, power and water supplies for transport of raw materials to the industries and finished products from the industries to the markets
- Source of foreign revenue/exchange through exportation of finished products
- Improvement of balance of trade by increasing the value of exports
- Urbanisation: - creation of urban centres/settlements with improved provision of social amenities
- Utilisation of natural resources e.g. minerals/forest products thus reducing overdependence on imported raw materials

- International relations: - allows interaction between various nations as they trade in raw materials and finished industrial products thus fostering good relations among the trading partners
- Enhancement of agricultural production: - since most industries rely on agricultural produce as raw materials, this will ensure their continuous supply
- Trade unions and cooperatives: - establishment of industries has led to formation of trade unions/cooperatives to protect the workers' welfare/demand for better salaries/work conditions
- Presence of goods: - industrial development makes it possible to produce goods that are on demand in the country thus reducing importation/overdependence on imported goods
- Economic diversification reduces overdependence on agriculture as an economic activity/major source of income

Problems of industrialization and their possible solutions

1. Establishment of more industries requires more land to be set aside for industrial activities. This reduces the land for agriculture, human settlement
 ✓ Solution: - decentralization of industries
2. Production of industrial waste has led to the pollution of land, air and water as the industries release/dispose their wastes into the environment/air/water bodies/land dereliction
 ✓ Solution: - strict legislation/enacting laws against dumping industrial wastes through agencies such as NEMA
3. Rural-urban migration: - increase in number of industries encourages many youth to move to urban centres in search of employment opportunities. This leads to congestion of urban areas and a strain on available social amenities/increase in criminal activities, development of slum dwelling etc
 ✓ Solution: - establishing industries in rural areas/improving provision of social amenities in the rural areas
4. Concentration of infrastructure and services in the industrial centre has caused an imbalance in economic development.
 ✓ Solution: - Decentralization of industries
5. Depletion of natural resources: - as more industries are established the demand for raw materials also increases thus increasing the use of natural resources e.g. minerals, forests, water etc
 ✓ Solution: - encouraging sustainable use of natural resources
6. Neglect of agriculture: - industrialization attracts youth to move into urban areas in search of employment away from the rural areas. This affects food production as old people are left to work on the farms. People may also neglect food crop production at the expense of cash crops that fetch more
 ✓ Solution: - making agriculture more attractive through offering better prices for the agricultural produce
 ✓ Farmers encouraged to diversify their economies
7. Causes unemployment: - industrialization leads to new innovations/technologies leading to replacement of human power. Examples include computers, robots, electric trains, forklifts, conveyors have replaced physical manpower. This reduces employment opportunities
 ✓ Solution: - people are being encouraged to become self employed
 ✓ Industries are encouraged to stop staff lay offs
8. Displacement of people: - an industrial plant being established in a densely populated area may force the inhabitants of such an area to move and resettle elsewhere, this changes their social lifestyles
 ✓ Solution: - industries should be located in sparsely populated areas

9. Extradition of profits: - most industries established in Kenya are foreign owned and these send back profits to their origin countries leaving little money for local use
- ✓ Solution: - increasing local share holding in multinational industries
 - ✓ Locals should be encouraged to establish in the country

Problems facing industries in Kenya

1. Competition from cheap imports
 - Imported industrial products from other countries are less taxed by their parent countries making them cheaper compared to the same that are locally produced.
 - This makes the running of industries dealing in such products very expensive to run due to limited market and may force closure of some
 - Solution involves: - imposing very heavy duty on imported products that are also locally produced/improving quality of locally manufactured goods so that they can compete favourably with the imported ones
2. High cost of energy/electricity
 - Most developing countries lack deposits of fossil fuels/petroleum/natural gas leading to high costs of importing the same. This increases the production costs as they have to be imported
 - The costs of alternative and available energy sources e.g. electricity are very high and these limit/marginalises the profits received by the industries
 - Solution: - alternative sources of energy should be developed e.g. solar/wind/biogas etc
3. Inadequate/limited market
 - Some products have a limited market as they are not highly on demand/low purchasing power of the people. This slows down production of the concerned industries
 - Solution: - exploring external markets especially within COMESA region
4. Shortage of raw materials
 - Some industries relying on imported raw may interrupt their operations when there is a delay in the arrival of the raw materials
 - Industries that rely on agricultural raw materials are also affected due to prolonged drought
 - Solution: - local raw materials could be supplemented with imported raw materials/agricultural sector should be improved to increase production of raw materials
5. Inadequate/shortage of capital
 - Most developing countries are faced with shortage of capital forcing them to borrow from international financial institutions.
 - These charge very high interest rates and conditions e.g. retrenchment/some industries may close down if unable to get funding
 - Solutions: - governments to give loans to local investors/foreign investors should be encouraged to invest in the country
6. Industrial unrests
 - Often workers may go on strike demanding better working conditions from their employers. This disrupt the operations of the industries leading to low production of commodities
7. Mismanagement
8. Shortage of skilled labour
9. Poor infrastructure

10. Lack of adequate technical knowledge

CASE STUDIES

Cottage Industry in India

- A cottage industry involves people working from their homes using their own hands and simple tools/machinery
- Involves individual skill/talent
- Highly developed in India and virtually practised in every village

Activities of Cottage Industry in India

- Spinning and weaving
- Making clothes and carpets
- Silverware and brassware
- Pottery
- Making textiles
- Dyeing clothes
- Ornamental ivory
- Jewellery and trinkets
- Embroidery
- Handicrafts

Characteristics of Cottage Industry in India

- Small capital is invested
- Simple tools and machinery are used
- Uses locally available raw materials
- Most products are sold in the local market/few are exported
- Labour provided by family members
- Labour intensive

Factors that have contributed to the growth of Cottage Industry in India

- Presence of labour provided by the family members
- Urge of earning income to improve the living standards
- A long history/culture of weaving mainly done by women in homesteads.
- High demand for the products in the Asian countries.
- Highly skilled and talented workers i.e. weavers and ornamental ware makers.
- Presence of locally available raw materials such as cotton jute.
- It involves individual talent/skill passed through generations.

Benefits of Cottage Industry in India

- Created employment opportunities/source of income leading to improved living standards
- Provision of market for local products
- Foreign exchange earner through exports of brassware and ornaments/jewellery
- Diversification of economy from agriculture

Iron and Steel Industry in the Ruhr Region of Germany

- Ruhr region in Germany is one of the leading and largest industrial complex in Europe
- Derives its name from River Ruhr; a tributary of River Rhine
- The Ruhr industrial region is located between River Lippe to the north, Rhine to the west and Wupper to the south

Draw map on certificate geography book 4 page 131

- One of the leading industries in the Ruhr region is the iron and steel industry
- The basic raw materials for iron and steel industry in the Ruhr region are coal, iron ore and limestone
- These are mixed in a blast furnace to produce iron. Heated iron is strengthened by adding carbon and other metals to produce steel
- Steel is used in building, making tools and machinery
- Other industries within the Ruhr region include
 - ✓ Engineering.
 - ✓ Textile industries.
 - ✓ Oil refining.
 - ✓ Electronics.
 - ✓ Food processing.
 - ✓ Cutlery and surgical instruments.
 - ✓ Chemical/petro-chemical industries.

Factors for the development of iron and steel industry in the Ruhr region – Germany

- The region is centrally located in Europe. This offers easy access to all parts of Europe as it has direct access to all parts of Europe through water, railway, air and road.
- The region is served by navigable rivers and canals, which provide cheaper transport for raw materials and finished products.
- The region has abundant sources of energy/power such as coal, oil, H.E.P, which is a necessity in iron and steel industries.
- Availability of raw materials (iron ore, coal and limestone). It is economical to set up iron and steel industries near the source of raw materials because they are bulky.
- The dense and affluent population in central and Western Europe provides ready market for iron and steel.
- Government policy. The post war national desire to rebuild the country gave the industries an impetus to succeed.
- Presence of rich industries, which are ready to provide capital for industrial development.

Car and Electronics Industry in Japan

- Japan comprises of many islands and is majorly mountainous. It therefore doesn't favour agriculture. Japan has hence concentrated in the development of manufacturing industries
- The major industries in Japan include car and electronics manufacture. The others include:
 - ✓ Ship building
 - ✓ Iron and steel
 - ✓ Chemicals
 - ✓ Textiles
 - ✓ Machinery
- Examples of automobile industries in Japan include Toyota and Mitsubishi motor corporations. Electronic companies include Sony and Toshiba and they manufacture radios, televisions, computers and related accessories, cellular phones, fridges, microwaves etc

Factors for the development of car and electronics industry in Japan

1. Power: - Japan lacks petroleum/coal/natural gas but being mountainous with many rivers that has led to the development of HEP projects that provide energy for industrial use. Nuclear energy is also available
2. Advanced technology/automation/all plants are computerized has led to high/efficient and increased car/electronics production.
3. Geographical location: - Japan is accessible to all parts of the world via the sea which makes the importation of raw materials and exportation of cars/electronics possible.
4. Capital: - profits realised from other industries e.g. ship building, fishing and tourism are invested in the development of car/electronics industries through purchase/importation of raw materials
5. Abundant water supply: - Japan is surrounded by the Pacific Ocean and many rivers/lakes within the islands that provide water for use in the iron and steel industry whose products are in turn used in car and electronics manufacture
6. Rugged landscape: - in Japan does not favour development of agriculture and has therefore concentrated on the development of manufacturing industries to enable earn capital for importation of food
7. Skilled man power: - Japanese labour is skilled and highly dedicated to the development ventures leading to quantitative and qualitative production of automobiles and electronics
8. Affordable products: - most of the Japanese automobiles and electronics are relatively cheap and of better quality. They are sold cheaper compared to the same from Europe. They are also durable, cheaper to maintain and readily available. They are therefore on very high demand all over the world

Major car manufacturing zones in Japan

- Tokyo – Yokohama Industrial zone
- Osaka – Kobe Industrial zone
- Nagoya industrial zone