TRADE / ECONOMIC INTEGRATION

Trade refers to exchange of goods and services. Internal or domestic trade is done within a country, external or foreign trade is done between different countries.

Types of traders

Retail traders, wholesalers, importers, multinational companies, exporters, hawkers.

Importance of trade

Positive

- Source of foreign exchange used for importing and investments.
- Promotion of international relations and regional corporation through export and import trade like between LDCs and MDCs.
- Provision of employment opportunities leading to high standards of living.
- Resource exploitation and utilization like minerals, forests.
- Source of government revenue by taxing people and companies leading to capital accumulation and improving the national income.
- Improvement in transport and communication like the construction of roads, railway lines, modern ports, airports, water ports.
- Development of economic activities by providing market and capital like industrialisation, agriculture, mining, fishing.
- Growth and development of urban centres, towns and ports because of population increase around marketing areas.
- Production of basic needs or basic goods e.g. food supply, clothes, drugs, chemicals, fuel.
- Development of tourism industry by visiting markets, shopping centres and because of high incomes.
- Promotion of education and research by visiting markets, shopping centres for better skills and technology.
- Capital accumulation for other development projects from profits, salaries, taxes, wages.
- Alternative land use in areas with limited land. Other resources are not good for other activities like urban areas.
- Economic diversification by influencing other activities like fishing, forestry reducing on dependency burden.
- It leads to national unity because of people interacting in towns, shopping centres.

Negative

- Profit repatriation by foreign investors causing capital outflow and lowering the national income especially in LDCs.
- Urban problems because of population increase like development of slums, unemployment thus increased cost of living.

- Over exploitation of resources causing exhaustion e.g. forests, minerals, water resources
- Displacement of people and activities by gazetting areas for markets, shopping centres.
- Diversion of labour and capital affecting other sectors.
- Environmental degradation by constructing markets, shopping centres, destroying the landscape, plants and animals.
- Regional imbalance in economic development causing problems like wage differences, labour mobility.
- It encourages dumping affecting infant industries in LDCs.
- Pollution of air, water and land because of wastes from industries, markets, population increase, heavy traffic.

Problems facing trade in LDCs.

Low developed countries are found in Africa, S. America, Australia, parts of Asia, in the tropics, equatorial regions they have enough trade potentials but trade is under developed because of physical and human factors and these include;

- Limited capital because of low incomes leading to small scale businesses like the hawkers.
- Unfavourable government policies like high taxes, not given loans.
- Competition between different traders and on international market.
- Poor transport and high transport costs for the movement of goods, passengers and customers i.e air transport.
- Price fluctuations on the world market are affecting planning.
- Poor management causing conflicts and tensions leading to destruction of people and property like strikes, demonstrations.
- Political instabilities and insecurity scaring investors, workers diverting resources and causing destruction of people and property.
- Poor science and technology leading to limited skilled labour affecting exploitation of resources, infrastructure, social services and economic activities.
- Poor entrepreneurship skills leading to poor planning and management e.g. small scale local traders.
- Limited market because of low incomes, sparse population causing low production.
- Presence of physical obstacles like relief features, water bodies, drainage features, land forms like in the Congo basin, Amazon basin.
- Presence of other resources diverting labour and capital.
- Backward cultures, traditions, low levels of education, ignorance and backwardness scaring investors.
- Corruption and embezzlement causing mismanagement, poor services, low production e.g. use of bribes, diversion of public funds, unfair treatment.
- Poor economic integration affecting joint investment, bargaining power, causing competition like E.A.C, ECOWAS, PTA, OPEC, AU.

- Privatization and economic liberalization encouraging foreign goods, affecting infant industries.
- Economic dependence of LDCs on MDCs causing problems like BOP problems, poor terms of trade, foreign debts.
- Poor international relations affecting export and import trade like Sudan, Milan, Syria (trade embargos)
- Cultures and traditions of having high demand for foreign goods compared to local goods leading to more imports than exports.

Characteristics of trade in LDCs (case study Uganda)

Structure of Uganda's exports.

- Wood products like timber, plywood, wood pulp.
- Fish products like fish fillet, frozen fish, fresh fish.
- Agriculture products like coffee, vanilla, tea, coca, tobacco.
- Livestock products like hides, skins, goats, sheep.
- Industrial products like textile products, iron and steel, cement.
- Alcoholic drinks like Uganda Waragi, Bell ,Nile.
- Art and craft materials.
- Services through tourism, immigrants to other countries.

Characteristics of Uganda's exports

- Mainly from the primary sector
- Mainly Agricultural products
- Few and limited
- Poor quality and not processed
- They earn low income

Structure of Uganda's imports

- Textile products
- Amnition (guns, grenade, tear gas)
- Vehicles from Japan, Auto parts or spare parts, electronics (China), alcoholic drinks like spirits, wine
- Cosmetics (perfumes, lotions)
- Stationary and printing materials like books.
- Iron and steel
- Computers and their accessories
- Leather products (bags, shoes, belts)

Characteristics of Uganda's imports

- They are many i.e. more than exports.

- Mainly manufactured or processed
- From the secondary sector
- High value
- Take a lot of foreign exchange

Implications of trade (Uganda's trade)

- Balance of payment problems
- Poor terms of trade
- Unemployment because of few industries
- Foreign debts because imports are more than exports
- Economic dependence
- Imported inflation
- Dumping of foreign goods

Factors for development of trade

There are physical and human factors influencing the development of trade;

- Improved transport and communication like the construction of roads, railway lines, water ports, Airports, telephone services.
- Adequate capital provided by the government, private investors for financing trading activities.
- Good international relations, regional corporation leading to development of import and export trade e.g. the E. African community, African Union, PTA, COMESA.
- Positive and supportive government policies such as reduced taxes, attracting investors, giving loans, gazetting land.
- Political stability and security leading to a favourable investment climate and diverting resources to trading activities.
- High population density helping in providing cheap labour and market e.g. in urban areas.
- Good management helping in planning, organization for the development of trade.
- Wide market both internal and external because of people and high incomes i.e. employed people.
- Presence of natural resources leading to economic activities and providing items for trade like forest for timber, water bodies for fish, mineral, strategic location lie border towns, water ports, Airports.
- Comparative and absolute advantages leading to specialization at low costs.
- Presence of entrepreneurs helping in planning, providing capital, good management e.g. Mehta, Mukwano, Madhvan, Wavamunno, Katatumba
- It depends on personality helping in marketing and hospitality.
- Flat and gently slopes leading to easy construction, drainage and transport.
- Extensive land for the construction of markets, transport routes and shopping centres.

- Limited obstacles like thick vegetation, land forms, water bodies, relief features.
- Improved infrastructure and social services like banks, insurance companies, warehouses, power supply, health facilities.

ECONOMIC INTEGRATION / TRADE BLOCKS

This is the grouping of countries for economic, political and social development e.g. E.A>C, ECOWAS, COMESA, PTA, AU, OPEC, ACT, CHOGAM, IGADO, E.U.

A SKETCH MAP SHOWING AREAS WITH ECONOMIC INTEGRATION

Importance / effects of economic integration

- Development of trade by reducing tariffs and barriers.
- Economic strength because of joint investment and bargaining.
- Regional specialization leading to international trade because of absolute and comparative advantages.
- Improvement in social services like education, power, water, energy.
- Development of international trade through exports and imports leading to international relationship and regional cooperation.
- Promotion of research leading to improvement in science and technology.
- Growth of urban centres i.e. Arusha, New York city, Nairobi.
- Exploitation of resources like minerals, forests.
- Political stability because of joint defence and security.
- Environmental conservation by gazetting areas through proper waste management like IGAD, UNOs, UNEP, LYEMP.
- Improved transport and communication like the construction of roads, railway lines.

Disadvantages

- Regional imbalance and income inequality causing problems like wage difference, labour mobility.
- Conflicts and tension because of political interference.
- Urban problems because of population increase e.g. high crime rates, unemployment.
- Over exploitation of resources causing exhausts like forests.

- Unequal sharing of benefits, developed areas benefiting more than less developed.
- Sabotaged by MDCs and multinational companies.
- Promotion of superiority by super states
- Low industrial development because of foreign aids affecting local and infant industries.

Problems affecting the development of trade

- Marketing problems because of price fluctuations affecting planning.
- Political instability and insecurity diversion of resources to defense destroying property.
- Competition between different traders leading to low prices.
- Poor entrepreneur skills causing mismanagement, poor planning.
- Limited capital leading to small scale business enterprises like hawkers.
- Poor transport and communication in rural and remote areas.
- Poor government policies like high taxes, not giving loans.
- Poor economic integration affecting joint investment causing competition.
- Conflicts and tensions of traders because of mismanagement.
- Presence of physical obstacles / barriers like water bodies, drainage features, forests.
- Corruption and embezzlement leading to poor services, mismanagement and diversion of public fund.
- Poor storage facilities causing wastage like food crops, perishable products.
- Profit repatriation by foreign investors causing capital outflow.
- Limited resources leading to limited economic activities.
- Poor marketing and advertisement by using the local media.
- Low levels of education leading to limited skilled labour and causing poor planning and management.
- Dumping of foreign goods affecting local infant industries.
- Hostile tribes and backward cultures scaring investors.
- Limited market because of low incomes, sparse population.

Solution to problems of trade in low developed countries or steps / measure and policies.

- Acquisition of loans from financial institutions and development agencies for expanding businesses.
- Improvement in transport and communication like construction of roads, ports, telephone services.
- Political stability and surety in urban areas, promotion of economic integration like PTA, COMESA, AU.
- Training of traders using workshops, seminars, courses.
- Improvement in marketing and advertisement like using the internet, trade shows, magazines.
- Limitation of government agencies and organizations like UMA, URA, UA, UNCCI, KACITA.

- Gazetting areas for markets, shopping centres, privatisation and economic liberalization attracting foreign investors.
- Diversification of trading activities reducing on dependency burden.
- Opening more areas for more trade opportunities.
- Government support by giving loans attracting investors, gazetting areas, tax holiday.
- Fighting corruption using government agencies, procurement companies, commissions of inquiry.

Questions:
Assess the role played by economic integration in the economic development of either Africa or Europe.
Examine the problems faced by trade on any one less developed country.
What steps are being taken to solve the above problems.
Account for the development of trade in any one developed or less developed country.

POWER ENERGY RESOURCES AND RIVER DAM PROJECTS

Qn. Assess the importance of river dam projects in the economic development of Africa.

Approach:

- Define river dam projects
- Identify the existing river dam projects in Africa.
- Show the economic importance of the identified river projects being both positive and negative effects.
- Give a conclusion

Answer

River dam projects refer to the transformation of river water into social uses like power production, irrigation and flood control. Dams that perform more than one of the above are referred to as multi purpose in nature. They have aims and objectives like;

- To control floods, pests and diseases
- To help in land reclamation
- Provide employment opportunities leading to economic growth and development
- To help in economic diversification reducing on dependence burden
- To improve social services and infrastructure to improve on standards of living.

RIVER DAM PROJECTS IN AFRICA INCLUDE;

- Hainji dam on R. Niger in Nigeria
- Akasombo dam on R. Volta in Ghana
- Aswan high dam on R. Nile in Egypt
- Senar dam on Blue Nile in Sudan
- CKaborabosa dam on R. Zambezi in Mozambique
- Nalubale dam on R. Nile in Uganda
- Kiira dam on R. Nile in Uganda
- Seven forks dam on R. Tana in Kenya
- N'ziro dam on R. Congo in DRC
- Inga dam on R. Congo in DRC
- Kisangani dam on R. Kisangani in DRC
- Calueque dam on R. Gunene on the boundary of Angola and Namibia.
- Vaal dam on R. Vaal in S. Africa
- Tugera dam on R. Tugera in S. Africa
- Bloemfontain dam on R. Orange in S. Africa
- Kariba dam on R. Zambezi in Zambia
- Owen falls dam on R. Nile in Uganda
- Orange dam on R. Orange

- Volta dam on R. Volta in Ghana
- Richardtoll fam on R. Senegal in Senagal

A sketch map of Africa showing River Dam projects

Positive importance

- Provision of water for irrigation from man made lakes (reservoirs or dams). This has led to increased agriculture production e.g. the Draw dam in Ghana, wheat farms of about 400,000 ha of land in Egypt.
- Resource exploitation (mining), environmental conservation, alternative land use.
- H.E.P has been generated out of various dams.
- Control of floods especially in the agricultural fields e.g at Mpenda-Uncya scheme in Mozambique and on the Gezira schemes in Sudan.
- Increase of foreign earnings after exportation of agricultural products and electricity e.g. Mozambique exports power to south Africa, Uganda exports power to Kenya, Rwanda and DRC.
- Industrialization has been facilitated through cheap power supply e.g. the vala Aluminium smelter at Tema using 65% volts power, dates processing factories at Elkharga in Egypt using Asan high dam and the textile industry in Jinja using power from Nalubale dam.
- Provision of employment opportunities to both skilled and unskilled man power e.g. over 40,000 men and women are employed in dam related projects at the Aswan high dam in Egypt and Sudan.
- Increased incomes are earned leading to improved people's standards of living.
- Development of tourism industry based on the development of projects like irrigation, technology, power production and distribution.
- Increase revenue to government through taxation of the employees on the dam and related activities on multi-purpose projects.
- Development of fishing on reservoirs leading to increased supply of proteins e.g. in the volta dam, lake Nasser and Kariba dam.
- It has facilitated the exploitation of other resources like minerals e.g. bauxite mining in Ghana, copper mining using power from Nziro dam in DRC and copper mining in Zambia using power from Kariba dam.
- Transport has been provided by the dam e.g navigation upstream on Zambezi as far as Tete, North-South shipping route on Volta lake, navigation on L. Nasser linking up the central parts of Egypt to the Eastern part of Said.
- Urbanisation has been facilitated around the dam projects e.g. Jinja in Uganda, Elkharga in Egypt, Kisangani in DRC and Senar on the Blue Nile.

- Organised settlement around the river dam projects e.g. fifty two townships around the Volta dam in Ghana.
- Climate modification by existing water reservoirs through land and water breezes.
- Promotion of international relations and regional cooperation which promotes trade and political stability.
- Environmental protection by providing habitats for plants and animals and gazetting areas near dams.

Negative importance

- Resettlement of people displaced by the projects is expensive for the government and the affected people.
- Cultural ties and friendships are broken down in the process of resettling people hence a setback in cultures.
- Urban problems like prostitution, high crime rates and poor sanitation are consequent to dam development.
- The already established communication systems are destroyed hence a setback to the economy e.g. the East-west railways and road system bridges at Adami and Sagakope were destroyed in construction of the Volta dam separating the west from the east.
- Spread of diseases like bilharzias, malaria, river blindness since stagnant waters of the lake act as breeding places for disease vectors like snails, mosquitoes.
- Increased rates of evaporation due to exposed waters of the lake leading to saline waters, reduced water capacities in the reservoirs hence a decrease in power production.
- Increased pollution by the existing industries hence degradation of the environment.
- Reduced potential for fishing especially after dam since much of the fish is trapped behind the dam.
- Siltation of the dam leading to the decline of the agricultural potential in the flood plains.
- Profit repatriation by foreign owners e.g power production at Owen falls dam (Nalubale) in Jinja by UMEME from South Africa.
- Limited land for agriculture, settlement in industrialization that is widely occupied by dams and water reservoirs.
- Environmental degradation especially by land grading, deforestation and swamp reclamation.
- Diversion of labour force from other economic activities leading to labour deficiency hence a decline in production.

THE GROWTH AND DEVELOPMENT OF ASWAN HIGH DAM

Aswan High Sam is found in Egypt on R. Nile near L. Nasser near the boundary of Egypt and Sudan. It was developed by Egyptian government mainly to control floods, pests and diseases mainly on R. Nile, generate HEP, exploitation of resources, improve social services and to help in land reclamation.

A sketch map showing Aswan High Dam

FACTORS FOR THE GROWTH AND DEVELOPMENT OF ASWAN HIGH DAM

Physical factors / Natural resources

- Seasonal floods on R. Nile which caused accidents led to pests and diseases leading to the development of Aswan high dam.
- Presence of hard basement rocks composed of granite, guartz, murram soils providing a site for the construction of the dam.
- Presence of a narrow George covering which provided a good site for the damming of the river.
- Low and unreliable rainfall because of desert climate which encouraged the construction of L. Nasser to be used in the dry season.
- Presence of extensive land because of sparse population in southern Egypt giving enough area for the construction of L. Nasser which is 480km long.
- Construction of the dams, canals, acqueducts.
- Presence of R. Nile which provided water for domestic and industrial purposes and for irrigation.
- Relief which is steep and gentle leading to construction of the dam at the steep gradient and gentle slopes for water flow.
- Presence of natural resources like minerals, fertile soils, tourism potential which needed exploitation.
- Limited obstacles around Aswan high dam like relief features, drainage features, thick forests making development easy and cheap.
- Cheap labour supply both the skilled and unskilled.
- Availability of labour both the skilled and unskilled to construct the dam.
- High levels of technology e.g. use of machines leading to improved skilled labour.
- Presence of positive and supportive government policy e.g gazetting land, constructing roads, attracting foreign investors.
- Political stability and security attracting investors.

- Good international relations and regional cooperation e.g Sudan, Uganda which helps in marketing, getting loans.
- Presence of research stations for exploiting resources leading to sustainable development.
- Availability of wide market both internal and external like HEP.
- Improved transport and communication like R. Nile, constructing roads, railways helping in movement of workers.
- Nature of the population being hardworking, innovative, good planners, enterprising because of early utilization.

IMPORTANCE / CONTRIBUTION OF ASWAN HIGH DAM

Positive effects

- Control of floods on R. Nile, diseases by constructing the dam. L. Nasser, using canals.
- Production of HEP used for domestic and industrial purposes.
- Land reclamation promoting agriculture and settlement.
- Improvement in navigation like on R. Nile and L. Nasser.
- Providing food like proteins from L. Nasser
- Growth of urban centres because of population increase
- Water supply from R. Nile used for domestic, industrial purposes, irrigation and dumping wastes
- Employment opportunities in the power, agriculture, industrialization, social services, infrastructure.
- Development of tourism industry by visiting Aswan high dam promoting foreign exchange.
- Promotion of international relations and regional cooperation like Sudan and Britain.
- Improvement in social services and infrastructure like water supply.
- Development of industries like mineral processing, agro based industries because of power supply.
- Saving foreign exchange for importation of coal, oil.
- Exploitation of mineral resources like mining phosphates, oil near Aswan high dam.
- Climate modification like R. Nasser and R. Nile through evaporation and evapotranspiration.
- Environmental conservation by gazetting the area using HEP reducing deforestation.
- Alternative land use because of desert condition making the area good for irrigation contributing to economic development.

Negative effects

- Promotion of accidents destroying people because of power and L. Nasser.
- High expenses causing diversion of labour and capital and causing economic problems like dependence, loans.
- Environmental degradation – because of deforestation, destruction of the landscape because of construction work.

- Regional imbalance causing regional problems like around Aswan high dam.
- Occasional floods and submerges causing siltation, sedimentation and deposition.
- Soil exhaustion because of monoculture.
- Urban problems because of population increase like development of slums in the areas of Aswan, Idfa.
- Pollution because of industries, mining activities, transport causing destruction of plants, animals and ozone layer.
- Breeding grounds for disease vectors because of canals, L. Nasser and aqueducts.
- Profit repatriation by foreign investors causing capital outflow like the British and French who brought the idea.
- Over exploitation of minerals, forests causing exhaustion.

STEPS TAKEN TO SOLVE THE PROBLEMS CREATED BY ASWAN HIGH DAM

- Proper waste management using treatment, recycling and having dumping sites.
- Resettlement of displaced people with compensation like the cattle keepers who were the original occupants.
- Tree planting through reaforestation helping in environmental protection.
- Constant dredging by removing silt deposits from canals.
- Application of fertilizers both organic and inorganic improving soil fertility.
- Spraying to control pests and diseases

AKASOMBO RIVER DAM PROJECT IN GHANA

Akasombo river dam project is found in Ghana constructed on River Volta near L. Volta near Kaporgo dam. It was constructed between 1961 and 1965 by the government of Ghana funded by World Bank, USA and it was mainly to provide HEP, to control floods, to develop agriculture, to develop industries mainly in the Southern part of Ghana.

A sketch map showing the location of Akasombo Dam

FACTORS / CONDITIONS FOR THE DEVELOPMENT OF AKASOMBO DAM

There are physical and human factors.

- Presence of hard basement rocks composed of granite, quartz, murram soils giving a hard foundation for the construction of Akasombo dam.
- Presence of extensive land in a wide valley giving enough area for the construction of the dam, power lines because the area was sparsely populated.
- The occurrence of seasonal floods on R. Volta which caused accidents, pests and diseases and they needed to be controlled.

- Presence of narrow gorge at Akasombo on R. Volta which provided a suitable site for damming the river and producing HEP.
- Presence of water supply from L. Volta used for producing HEP.
- Presence of a steep gradient for constructing the dam and gentle slopes for the flow of water.
- Limited obstacles like highlands, mountains, thick forests, swampy areas, land forms making the development of the dam easy and cheap.
- Presence of resources like minerals, fertile soils, forests, tourism potential and fishing potential which needed exploitation by developing the dam.
- Strategic location of Akasombo dam near L. Volta, near coastal towns like Accra, Tema helping in marketing and development.
- Availability of adequate capital provided by the government, private investors and the capital is used for buying machinery, paying labour, construction of infrastructure, extending the power lines.
- Availability of wide market both internal and external e.g. HEP being used in industries in towns and exploiting to neighbouring countries.
- High levels of technology helping in the construction of the dam, land reclamation, power lines, drainage channels.
- Availability of labour supply both the skilled and unskilled helping in the construction of the dam.
- Political stability and security of Ghana at the time of Nkwame Nkurumah who was the board chairman of Volta river authority.
- Good international relations and regional cooperation with USA, Britain and neighboring counties which help in getting loans, skilled labour and marketing the power
- The availability of research stations which help in construction, environmental protection, marketing leading to sustainable development (like pilot study)
- The nature of the population like people of Ghana being hardworking, innovative, good planners, helping in exploiting resources, development of economic activities, infrastructure, social services leading to economic development.
- Presence of positive and supportive government policies e.g. gazetting land, attracting investors, building the dam, giving loans, maintaining security, training skilled labour.
- Improved transport and communication like in the construction of roads, railway lines leading to easy movement of workers.
- Good management by Volta river authority headed by Nkwame Nkrumah who helped in good management, better services, planning for the development of the project.

IMPORTANCE / EFFECTS / CONTRIBUTIONS OF AKASOMBO RIVER DAM

Positive effects / advantages / benefits

- Production of HEP by constructing the dam. The power is used for domestic, industrial purposes and for mining.

- Source of foreign exchange by exporting HEP to Togo and Benin. This helps in importation and investments.
- Control of floods on R. Volta by constructing canals, acqueducts, L. Volta attracting people for settlement and agriculture.
- Source of water from L. Volta which is a man made lake. The water is used for domestic, industrial purposes, dumping wastes and for irrigation.
- Development of tourism industry because of Akasombo dam, L. Volta earning foreign exchange to the country.
- Improvement in transport and communication like the construction of roads, railway lines.
- Growth of urban centres like towns and ports because of population increase, industrial activities. This promotes trade, social services and infrastructure like Akasombo, Kapon.
- Development of fishing on L. Volta for commercial and subsistence purposes. This provides food in form of proteins.
- Improvement in infrastructure and social services like water supply, power supply, health facilities leading to high standards of living.
- Climate modification because of planting trees, constructing L. Volta leading to high rainfall in the area promoting agriculture.
- Source of government revenue by taxing people, companies leading to capital accumulation and improving national income.
- Alternative land use through land reclamation contributing to economic growth and development.
- Environmental conservation by gazetting the areas, planting trees helping in environmental protection protecting plants and animals.
- Promotion of education and research like field work, experiments.
- Exploitation of resources like minerals, fertile soils, demonstrations leading to better skills and technology.
- Development of industries like Volta Aluminium company.

Negative effects / disadvantages / problems

- Displacement of people and activities like 80,000 people because it covers 3.6% of the total land and the dam is 134m high, 426m wide discouraging settlement and agriculture.
- Soil exhaustion because of monoculture, specialization and loss of fertile soils in form of silts, sediments, deposits.
- Over exploitation of resources causing exhaustion like minerals, forests, fish, fertile soils.
- Breeding grounds for disease vectors like mosquitoes, tsetse flies, snails spreading malaria, bilharzias because of L. Volta and construction of drainage channels.
- Urban problems because of population increase like slums, high crime rate, congestion.
- Pollution of air, water and land because of industries, mining activities leading to destruction of plants, animals and the ozone layer.

- Disruption of transport by constructing of Akasombo dam on R. Volta making navigation difficult.
- Environmental degradation because of deforestation, swamp reclamation, destruction of landscape by constructing dams.
- Promotion of accidents destroying people and property because of L. Volta and HEP.
- Profit repatriation by foreign companies managing the project leading to capital outflow lowering the national income.
- High expenses for maintaining the dam like for constant dredging, removing silts, deposits.
- Diversion of labour and capital into the power sector affecting other economic activities.
- Regional imbalance causing economic problems like income inequalities.
- Water loss by evapotation from L. Volta, canals, backwards affecting movement of workers, investors like in Congo basin.
- Political instabilities and insecurity leading to diversion of resources to defense, scaring workers and investors.
- Illegal connections and theft of power gadgets like wires, oil from transformers, switches, bulbs and vandalizing electric property.
- Unfavourable government policies like high taxes making power expensive like not giving loans making power expensive.
- Limited market like in rural areas, slums, few industries, low standards of living.
- Presence of water vegetation like the water hyacinth, papyrus affecting the work of turbines.
- Over exploitation causing exhaustion like firewood and charcoal in the densely populated areas.
- Profit repatriation by foreign investors causing capital outflow and lowering the national income.
- Power experts causing low production and load shedding e.g Uganda exporting to Kenya and Tanzania.
- Poor housing systems like scattered settlement and poor houses like in rural areas and slums discouraging power development.
- Hostile tribes, backward cultures and low levels of education like Karamajongs, Masai, Turkana.
- Poor economic integration affecting joint investment like E.C. COMESA.
- Accidents leading to destruction of lives and property making power risky, scaring workers, investors.
- Restrictions from environmentalists, gazetting areas with power potentials.
- High expenses for developing power like in dams
- Poor maintenance and rehabilitation of dams, power lines causing accidents and destruction.
- Old equipment like transformers, power lines.

Solutions / Steps / Measures / Steps for development

- Acquisition of loans from IMF, World Bank, Africa development bank for construction of dams, power lines.
- Training skilled labour by promoting sciences like engineers, mechanics, surveyors using vocational studies.
- Political stability and security because of good governance, defence and regional cooperation leading to condusive investment climate.
- Promotion of research on mineral exploitation, diversification like solar energy leading to sustainable development and helping in planning.
- Fighting corruption using the IGG.
- Improvement in transport and communication like in the construction of roads, railway lines for easy movement of workers and investors making areas accessible.
- Privatisation and economic liberalization leading to local and foreign investors with good management, better services, high production.
- Diversification of power by exploiting different potentials and using other alternatives leading to high production like solar energy.
- Increasing market for power by extending it to rural areas, building industries, exporting to other countries.
- Power and energy conservation by using energy saving bulbs, energy saving equipment.
- Mass education and mobilization using formal and informal education about conservation and control of accidents.
- Government support by providing loans, gazetting land, attracting investors, constructing roads, giving subsidies.
- Constant maintenance and rehabilitation of dams like power lines.
- Removing floating vegetation like water hyacinth and papyrus using biological, physical and mechanical methods using chemicals to ensure operation of turbines.
- Environmental conservation helping in protecting power potential areas like forests for firewood and charcoal and water catchment areas.
- International relations and regional cooperation leading to joint investment in dam construction.
- Load shedding leading to equitable supply of power and energy.
- Strengthening loans and fines reducing on illegal connections and power theft and using prepaid system like YAKA.

Qns:

1. Assess the role played by river dam projects in the economic development of either Ghana or Egypt.
2. Examine the factors for development of power and energy in Tennessee valley or Volta dam.
3. Examine the problems facing power and energy sector.
   Examine the steps taken to solve the above problems.

4. To what extent has power and energy influenced industrial development in either S. Africa or Germany.

Qn. "In Africa, it is not lack of physical resources which is primarily responsible for the low levels of power development". Discuss.

Approach:

- First agree that Africa has a high potential / power development.
- Identify various power potentials in Africa.
- Show limitations of power production in Africa.
- Give a conclusion.

Answer:

Africa has a tremendous potential for power development. The continent has a variety of physical resources which can be tapped for increased power development. Most of the potentials lie south of the Sahara with most rivers flowing over numerous falls e.g.

- Jongo falls Bungoma falls, and Kaliba falls in DRC.
- Calueque falls on R. Guene in Namibia
- Rippon falls, Owen falls, Bujagali falls on R. Nile in Uganda
- Kainsi falls on R. Niger in Nigeria
- Akasombo falls on R. Volta in Ghana
- Victoria falls on R. Zambezi in Zambia
- Cabolabosa falls on R. Zambezi in Mozambique
- Bloemfontain falls and Verwoerd falls in R. Orange in South Africa
- Vaal falls on R. Vaal in South Africa
- Tugera falls on R. Tugera in South Africa
- Tana falls on R. Tana in Kenya

- Besides Africa has abundant sunshine from where solar energy can be developed.
- The continent is endowed with volcanic features from which power can be generated and developed e.g. hot springs at Maji Moto in Kenya; Kitagata in Bushenyi and Sempaya in Bundibujo in Uganda.
- Geysers and farmaloes from which geothermal power can be generated in developed.
- The continent is endowed with mineral resources which can give power e.g. coal in Zimbabwe near Marowa, Nigeria at Latia, Northern Ghana at Kumasi, Southern T.z near Mbuya, in South Africa near Durban and Pretoria.
- Oil (petroleum) is pumped in Nigeria, Libya, Egypt and Sudan.
- The continent has a variety of forests from which charcoal and firewood can be secured for power production.

- The continent has a variety of animal excreta from which biogas and biomass can be generated as power sources.

NB: From these resources, power can be developed. However it is hindered by:-

- Limited research
- Inadequate capital for investment i.e. to buy necessary equipments and pay labour force, construct dams and power lines.
- Inadequate skilled labour force e.g. technicians, engineers, auditors and mechanics due to irrelevant training and education.
- Poor and underdeveloped technology i.e. necessary machinery is non-existent to facilitate power generation and distribution.
- Contradicting pressure from environmentalists who support the preservation and conservation of nature especially marine life.
- Poverty and low incomes of Africans. Domestic use of power is limited due to low market potential resulting from low incomes.
- The nature of African economies, Agriculture with limited industrialization presents less need for power production. This is why much that is produced is exported to fairly industrialized nations like Kenya and S. Africa.
- Poor and underdeveloped transport and communication potential areas of power generation are in areas too remote to attract investors e.g. Murchison falls, Sipi falls and Kisizi falls.
- Poor government initiatives where African government lack vision for benefits of power generation.
- Political instability in potential areas scaring investors e.g. civil wars in Angola, struggle for independence in Namibia affected power production at Gunene falls and at Calueque.
- Presence of other cheaper forms of power e.g charcoal and firewood limiting HEP production / competition.
- Where minerals like coal and oil exist, they are in small quantities hence uneconomic.
- Poor economic integration, accidents.

To what extent is limited power responsible for the low levels of industrial development in Africa?

Approach:

- Define power
- Identify the power potentials in Africa
- Show how power has limited industrial development
- Give other factors
- Give a conclusion

Answer

Power refers to substances that provide energy to or act as a source of fuel to do work and run machines power resources in Africa include;

- Coal mining for Zimbabwe, South Africa, Ghana and Tanzania
- Hydro electric power from dams like Awan, Kainsi, Kariba, Nalubale, Volta. * Geotherman from Hot springs, Biomas.
- Thermal power from Kenya, Zambia and Malawi coil, coal, petroleum)
- Wood and charcoal mainly in DRC, Gabon and Cameroon.
- Natural gas from South Africa, Zimbabwe, Ghana Solar energy highly tapped from Nigeria, South Africa, Nuclear from uranium.

NB: Power resources in Africa are not fully developed hence the low levels of industrial development, inadequate power supply in Africa is due to:

- In some countries, power is just inadequate and the little that is used is imported e.g. Kenya from Uganda, Rwanda from Uganda and South Africa from Mozambique.
- In other countries there is little power e.g. in Somalia, Sudan, Eritrea, Djibouti leading to low levels of industrialization.
- In some countries power is very expensive e.g. Uganda, Rwanda, Tanzania hindering industrial activities.
- In some countries power resources are poor e.g. poor quality coal, Tanzania and south Africa.
- In some countries there are areas with no power e.g some parts of Sierra Leone, Angola, Kenya, Tanzania, Somalia, limiting industrial expansion and development.

Other factors include

- Lack of skilled labour force due to poor training and education
- Poor transport systems
- Limited market
- Low levels of technology
- Lack of capital
- Lack of mineral resources
- Competition from other sectors of production
- Unfavourable government policy

Sample questions

1. Assess the contribution of either Aswan high dam or the Tennessee valley authority multi-purpose project to the development of the respective country.
2. To what extent is limited power supply responsible for low industrial development in Africa.
3. Examine the role played by either Kariba dam in Zambia or Aswan high dam in Egypt in the economic development of the country.

4. To what extent is power responsible for industrial development in South Africa or Germany.

Importances of power

- Source of foreign exchange through exportation of power
- Government revenue through taxing power companies
- Improvement in social services e.g. schools
- Environmental conservation e.g HEP, Biogas which are environmentally friendly.
- Economic diversification reducing on dependence burden
- Promotion of education and research.
- Improvement in transport and communication
- Alternative land use like rivers with water falls
- National planning attracting investors
- Urbanization near power centres
- Tourism
- Entertainment centres like theatres
- International relations
- Used for exploitation like fishing and lumbering
- Employment opportunities

Positive

- Accidents through misuse of power especially in schools
- Displacement of people
- Deforestation of people in activities in areas generated with power.
- Pollution using firewood, oil, thermal engine.
- Regional imbalance
- Profit repatriation
- Conflicts and tensions through the use of nuclear and energy on China, Iran.
- Urban problems
- Diversion of labour
- Hinders transport and communication due to construction of dams.
- Loss of water because of increased evaporation rates
- Economic dependence

Factors leading to development of dams

- Presence of water supply
- Presence of rivers with water falls and rapids
- Narrow R. Valleys like a gorge
- Labour supply
- Need to control floods, pests and diseases

- Water for irrigation
- Need for H.E.P
- Presence of marked i.e. High population in towns
- Availability of land gazette in areas of sparse population.
- Positive government policy
- Nature of the population
- Strong and hard basement for construction
- Good international relations
- Political stability and security
- Relief
- Improved science and technology
- Presence of entrepreneurs, big companies providing capital

Uses of power in an industry

- Transporting labour – use of lifts
- Storage e.g freezers, cold rooms
- Lighting
- Running machines (production)
- Transporting raw materials

Problems facing power plants in LDCs

- Inadequate capital
- Poor technology
- Poor transport
- Limited research like oil in Bundibugyo
- Political instabilities
- Limited market
- Corruption
- Poor economic integration
- Poor government policies
- Competition
- Environmentalists
- Accidents

Solutions

- Private investors
- Training skilled labour
- Promotion of research
- Improvement in research
- Exploitation of difference power resources
- Loans for constructing dams
- Reducing power tariffs
- Economic integration
- Fighting corruption using IGG
- Ensuring political stability
- Government supportive policy
- Investment
- Increasing power markets
- Increasing power dams

RIVER DAM PROJECTS IN U.S.A

- St. Lawrence seaway
- Great lakes

River dam projects include Naigara falls, Ullonis dam (H.E.P)

- In California around; R. Sacrament, R. San Joaquin and R. Colarado.
  These include: Shasta dam, Delta modenta, Houver, Friant, Cachella.
- Tva around R. Missisippi, R. Ohio, R. Tenesse, Camberland.
  States include: States of Missisippi, Tennessee, N. Carolina, S. Carolina, Kentucky, Ohio.
  Dams include; Nashiville, Hutshiville, Pickwick, Chattanoga.

A sketch map of USA showing River Dam projects

Factors for its development

- To control floods, pests and diseases
- To provide HEP for domestic and industrial use
- Need to improve navigation
- Need for employment opportunities
- Need to help in soil conservation
- Presence of rivers
- Adequate capital
- Improved science and technology associated with skilled labour
- Positive and supportive government policies
- Low population rate due to availability of land for constructing water reservoirs, canal.
- Availability of market
- Relief
- Limited resources like minerals
- To promote economic growth and development
- Good international relationships
- Hard basement rocks. Give firm foundation for the construction of the dam.

Benefits

- Production of HEP
- Control of floods
- Reducing on pests and diseases
- Attracting settlement and agriculture
- Employments leading to increase standards of living

- Development of industries
- Improvement in transport and communication through navigation
- Development of trade because of industries and population increase
- Exploitation of resources
- Government revenue
- Improvement in agriculture
- Development of tourism industries

Negatives

- Displacement of people and other activities
- Breeding grounds of snails
- Environmental degradation
- Pollution and ozone layer through construction of canal, aquaeducts
- Loss of fertile soils (Sodimentation, segmentation)
- Growth of urban centres
- Improvement in social services
- International relations e.g. States of Virginia, Albama
- Climate modification
- Land reclamation by controlling floods
- Help in soil conservation
- Education and research
- Increased costs of maintenance e.g dredging
- Urban problems because of population increase
- Promotion of accidents
- Production of people and property
- Regional imbalance
- Diversion of labour and capital
- Occasional floods causing submergence

RIVER DAM PROJECTS AT TENNESSE VALLEY

The Tennessee valley covers states like Alabama, N. Carolina, S. Carolina, Mississippi, Tennessee, Virginia, Georgia. They are found around R. Mississippi, Tennessee, R. Ohio, Chamberland. Examples of the dams include Nshville, Heartshville, Chatanuga, East London, Fountana, Pickwick. They have aims and objectives like to control floods, provide HEP, to develop agriculture, to provide employment opportunities and to promote economic growth and development.

A sketch map of Tennessee showing River Dam Projects

FACTORS FOR THE LOCATION, GOWTH AND DEVELOPMENT OF TENNESSE VALLEY

There are physical and human factors.

- Extensive land gazetted for the development of the project covering states like Alabama.
- Presence of water supply for irrigation and for producing power like R. Ohio.
- Presence of resources which needed exploitation like minerals, forests, fertile soils.
- Soil types composed of clay, less porous and permeable helping in retaining water.
- Presence of a narrow gorge on R. Mississippi providing a good site for construction of the dam.
- Relief which is flat and gentle sloping, wide valley leading to the construction of dams, water reservoirs, canals and aqueducts.
- Limited obstacles like relief features, highlands, mountains, water bodies, thick forests making exploitation and development easy and cheap.
- Strategic location near R. Mississippi, Tennessee, industrial areas, transport routes helping in marketing.
- The occurrence of floods on R. Mississippi, Tennessee, Ohio which caused accidents, pests and diseases and they needed to be controlled.
- Limited pests and diseases attracting many people for settlement and agriculture in the areas of Alabama, Georgia.
- Good international relations and regional cooperation between states like Alabama, N. Carolina helping in joint investments.
- The availability of adequate capital provided by the government. The capital is used for paying labour, constructing dams, canals, purchasing transformers.
- High levels of technology helping in the construction of dams like Nushville.
- Political stability and security helping in attracting investors and diverting resources to economic development.
- Positive and supportive government policy like gazetting land, ensuring security, attracting investors, providing loans, improving infrastructure.
- Presence of labour supply both the skilled and unskilled working in different sectors like the power sector, industries and agriculture.
- Improved transport like roads, railway lines for transporting workers, investors and for marketing.
- Presence of hard basement rocks composed of quartz, granite providing a firm foundation for construction of the dam.
- Presence of research stations by the USA government helping in environmental conservation, exploitation of resources, marketing and sustainable development like East London dam.
- Nature of the population being hardworking, innovative, enterprising leading to economic growth and development.

- Presence of wide market for power, agricultural products for power and minerals leading to many economic activities.
- Alternative land use by reclaiming areas around Tennessee, Ohio, contributing to economic growth and development.
- Good management because of TVA, big companies, entrepreneurs, investors helping in planning, good services and high production.
- Presence of power supply like HEP using coal, nuclear energy for domestic and industrial purposes, irrigation, transport.

Importance, effects, contributions / Role played

Positive effects

- Employment opportunities leading to improved standards of living like engineers, researchers e.g. in Alabama, S. Carolina.
- Promoted education and research for example fieldwork near R. Tennessee, Nushville dam.
- Led to development of urban areas due to increase in economic activities like Alabama, Georgia, N. Carolina.
- Provided power supply for domestic and industrial purposes for example in areas of N. Carolina and industrial.
- Promoted international relations between Tennessee and other states like Alabama, Georgia and other countries like Britain, USA.
- Economic diversification leading to reduced dependence on one sector for example agriculture, power production e.g. in Georgia, S. Carolina.
- Promoted mining activities for example around Niagara falls.
- Fishing has been promoted on R. Ohio, R. Tennessee leading to improved diets and reduced malnutrition e.g in S. Carolina, N. Carolina.
- Development of industries around the Tennessee valley in areas of Alabama like lumbering due to cheap power.
- Source of government revenue through taxation of companies and their workers.
- Development of tourism industry in areas of R. Ohio earning foreign exchange.
- Control of flooding, pests and diseases around R. Ohio.
- Agriculture due to soil conservation, application of fertilizers e.g. around Virginia, S. Carolina.

Negative effects

- Displacement of people and activities in areas of Tennessee, R. Ohio for construction of dams e.g Nushville.

- Over exploitation of resources causing exhaustion like minerals, fish around R. Ohio and Mississippi river.
- Breeding grounds for disease vectors like mosquitoes, snails due to construction of drainage channels like R. Ohio.
- Urban problems because of increase in population like slums, high crime rate e.g in Alabama.
- Environmental degradation and destruction of the landscape because of construction of dams like Nushville dam.
- Profit repatriation by foreign companies managing the projects leading to capital outflow.
- Diversion of labour and capital to the power sector affecting other economic activities.
- Regional imbalance causing economic problems like income inequalities.
- Promotion of accidents destroying people and property because of R. Ohio and HEP.
- High expenses for maintaining the dam like for constant dredging, removing silts and deposits.
- Pollution from industries and wastes affecting areas like R. Ohio, R. Tennessee.
- Occasional floods causing submergence.
- Destruction of fishing grounds due to construction of dams like Fontana.

POWER AND ENERGY

Power refers to energy for doing work and moving machines due to improved science and technology like in industries, in mining, for domestic work, for social services, for infrastructure leading to economic growth and development and high standards of living.

Types / Potentials and Assets of power.

1. HEP produced by rivers having water falls and rapids like R. Nile, R. Congo, R. Tennessee.
2. Biomas produced from forests like using firewood and charcoals e.g. DRC, Gabon, Sweden.
3. Thermal energy produced from oil, coal and natural gas e.g. in Germany, S. Africa.
4. Biogas produced from animal wastes and vegetation wastes by cattle keepers, wastes.
5. Goo thermal energy produced from volcanic eruptions like hot springs like Sempaya.
6. Wild energy produced by using windmills on highlands, mountains and hill tops e.g. for irrigation in Sudan.
7. Nuclear energy produced by using Uranium e.g. in Iran.
8. Solar energy from sun rays in the tropics and equatorial region especially in urban areas and middle income families.

In LDC's like Africa, S. America, the tropics, equatorial regions, power and energy are not enough and this is shown by constant load shading.

Corruption and embezzlement leading to poor services, diversion of public funds.

- Limited skilled labour like engineers, surveyors, technicians leading to high cost of using expatriates.
- Presence of physical obstacles like highlands, mountains making power development difficult and expensive.
- Climatic changes causing drought, fluctuations of water levels, load shedding.
- Poor transport and communication making areas remote,
-

Qns.

Natural resources have led to industrial development in either China or Germany. Discuss.

Define Natural resources, name the country. Other factors, define industrialization, types of industries and areas, explain the intl.of natural resources / physical factors, conclude with a stand point.

Industrialization is the turning of raw materials into finished products using labour and capital. China is a developing country found in S.E. Asia important for manufacturing and secondary industries. Types of industries; vehicle assembling, food processing, chemical industry, iron and steel rolling, textile industries, electronics, metal works. Industrial areas; Hongkong, Beijing, Taiwin, Manchuria, Shangai, Yangtze, Yangho, Shanxiskiang.

Industrial development is influenced by natural resources (physical factors and human factors) the intl. of natural resources is explained below.

Physical

- Water bodies; R. Yangtze, Pacific ocean.
- Raw materials furniture chemicals
- Power supply i.e natural gas, oil, HEP
- Strategic location
- Ltd resources like land in urban areas
- Extensive land
- Flat and gently slopes

Human

- Capital
- Large manufacturing industries
- Skilled and unskilled labour (dense population)
- Science and technology

- Political stability after 2nd World War
- Good international relations with neighbours
- Transport and communication i.e pacific ocean
- Positive government policy through gazetting land
- Industrial inertia
- Nature of the population
- Presence of commercial services
- Research forgetting raw materials

Despite the presence of enough mineral potentials, the mining industry is still under developed. Discuss with reference to either Brazil or DRC.

Mining is the extraction of earch resources found in rocks. DRC is a less developed country in central Africa. It is rich with mineral resources. Minerals in DRC; Gold, copper, zinc, cobalt, diamond, uranium, oil, lead. Mining areas: Kisangani area, Goma Katanga, Bukavu, Kivu, Shaba, R. Congo, R. Kasai, R. Lubaguli.

Mining in DRC is still underdeveloped because of physical and human problems.

Physical

- Thick vegeration around Congo basin
- Poor quality of minerals, scattered small quantities
- Minerals in deeper layers eg copper
- Limited power supply
- Presence of other resources
- Limited market – low income, poor quality

Human

- Political instability
- Limited capital
- Limited science and technology
- Poor transport and communication
- Limited skilled labour
- Poor government policies

Discuss the characteristics of tropical rain forests

(b) Examine the effects of forestry industry on the environment either Gabon or Brazil.

- Tall about 30 to 50ft
- Long gestation period 30 – 50
- Hard wood timber e.g Mvule, Musizi
- Buttress roots for support
- Under growth e.g linnas, climbing plants
- Broad leaves

(b)

- Illegal activities such as mining
- Competition with other countries on world market
- Hostile tribes and back ward cultures
- Profit repatriation
- Accidents
- History and colonial policies
- Poor economic integration e.g. AU

It is found in central Africa important for tropical, equatorial rain forests found in areas like around R. Ogouwe, Livindo, Gentil, Qyendo, Libraville, coast of Atlantic ocean. Mt. Ibangi, Mekako, Masaku, Belinga, Mekambaku.

The forestry industries in Gabon has positive and negative effects on the physical and human environment.

Positive

- Formation of rainfall
- Capital
- Employment
- Attract tourists
- Medicine

Negative

- Displacement of people
- Habitats for wild animals
- Occupy a lot of space

Account for the development of fishing industry in either Japan or N.E. Atlantic
Norway / Morocco

Fishing is the extraction of aquatic animals from water bodies for commercial and subsistence purposes. N.E Atlantic include fishing grounds of Norway e.g. in Atlantic ocean, Norwgian sea, North sea, Baltic sea. Fishing landing sites; Brest, Hammertest, Stavanger, Tromson, Bergen, Oulo, Sebastin. Fish species commercial marine – Haddock, cocl, Hernings, Marckerel.
Factors for sishing in Norway are both human and physical;

- Water bodies
- Temperate climate

To what extent have physical factors contributed to environmental degradation in either S.E. Asia (Sahel region) of S. Africa.

Environmental degradation is the destruction of natural resources in terms of quantity and quality leading to increased production. e.g soil, wild life, vegetation, water, resources and it is composed of biosphere, hydrosphere, stratosphere It is characterized by soil erosion, landslides, mass wasting, famine and hunger, desertification, acidity, floods, soil exhaustion.

The Sahel region is a dry area near the Sahara desert with areas like Mali, Chad, Somalia, Nigeria, Eritrea, Mauritania. The causes of environmental degradation in S.R are physical and human. The intl. of physical factors include the following;

FISHING
N.E. Pacific
Canada (Pacific, Atlantic, R. Fraser, Skeera, Stikine) around Vancouver, Churchill, Rupet, Alaska.
N.E. Atlantic, (Norway, Hammerfest, Brest, Saranger, Iromso, Oslo, Sebastian)
S.E Pacific, (Peru, S. Africa, Lima, Pisco, Chimbote, Mollendo, Atico)
N.W. Africa (Morocco, Tangier, Agadir, Safi, Rabat, Casblanca)

TOURISM
Switzerland (winter resoirts. St. Moritz, Gasterd, Zermatt, Oberlan, Jura, and Alps)
(summer resorts; Geneva, Zurich, Bern Basel, Lugano, St. Gallen)

USA: (Appalacian mts, Rocky, Bufallo. Great lakes, mining areas of Mesabi, Tennessee valley, California desert, Holly wood)
Kenya: (rift valley, Mt. Kenya and Meru, Indian ocean, Tsavo NP, Marsabit, Fort Jesus, Malindi.

Egypt: (Nile Delta, Sinai peninsular, Persian Gulf, Aswan high dam, Suez canal, pyramids.
S.A: (Wit waters rand, Kimberly, Limpopo Np, Kregersdrop, Roben island, Zulu kingdom)

INDUSTRIALIZATION

Germany: (Duisseldolf, Wessel, Dortmund, cdogne, Essen, Duisburg) (canals – Wuppersite, Lippesite, Ems canal)
Switzerland: (Zurich, Geneva, Bern, Basel, Lugono, ucern, Neachatol)
USA: (Tennessee valley, Great lakes, New York, California, Boston).
Japan: (Yugoslavia, Hiroshima, Nagasaki, Tokyo, Yokahama, Kyoto.
S. Africa: (Durban, Cape town, Natal, Transvaal, Kimberly, Jumeson, Wit waters)
China: (Manchuria, Shangai, Skiang, Tianjing, Beijing, Hong Kong)

Factors

- Raw materials
- Water supply
- Power supply
- Transport and communication
- Labour
- Market
- Technology
- Hardworking population
- Commercial services
- Strategic position
- Relief
- Availability of land
- Limited economic activities
- Limited obstacles
- Government policy
- Political stability
- Entrepreneurship

Importances

- Urban development
- Diversification
- Employment
- Increased government revenue
- Infrastructural development e.g inds.

- International relation
- Tourism
- Promotions of education and research
- Social services
- Foreign exchange

Negatives

- Over utilization of resources
- Capital outflow
- Pollution
- Displacement of people
- Accidents / loss of lives
- Conflicts and tension
- Environment degradation
- Diversification of labour and capital

MINING

Germany: (Esuen, Puivdtorf, Duisburg, Essen, Cologne, Wessel, Dortmund)
USA: (Tennessee valley, great lakes, Rock mts, Appalacian mts, California desert)
Zambia: (Kabue, Chingola, Ndola, Nkana, Chibaluma, Kaliba, Banguculu, Mweru)
SA: (Kimberley, Witt waters rand, Jameson, OFS, Transvaal, Port Durban, Natal)
Nigeria: (Jose plateau, Niger delta, port Harcourt, Sokoto, Kaduna states, R. Bense.

ENVIRONMENT AND NATURAL RESOURCES

Environment refers to man's surroundings. It is composed of biosphere, hydrosphere, lithospheres, atmosphere, air and its components and stratosphere (ozone layer).

Environment is the mother of life because everybody uses it. Environmental protection should be a duty of everybody because when it is destroyed everybody is affected exclusively.

Environmental degradation is the destruction of natural resources in terms of quality and quantity. It becomes unidole to sustain life like leading to low economic growth and development.

Natural resources are gifts from nature which are exploited by man to produce further wealth and promote economic growth and development.

Types of resources

Renewable natural resources; these are exploited by man and after exhaustion they can be replaced or regenerated e.g. water, soil, trees, wild life.

Non-renewable are exploited and after exhaustion they cannot be replaced.

Characteristics / indicators of environmental degradation include soil exhaustion, deforestation, reduction in plant and animal species, desertification and aridity, global warming, poverty, low economic development, landslides, mass wasting, floods, reduction in humidity, air and water bone diseases, destruction in rainfall.

Areas most affected by environmental degradation (densely populated areas) like Kampala, China, India.

Desert areas (Kalahari, N. Eastern Uganda)
Areas with political instabilities and insecurity (Somalia, Congo).
Mining areas like Great Lakes, Germany.
Industrial areas like Ruhr conurbation.
Major transport routes, Mbarara, Masaka, Kampala highway, Entebbe areas.
Areas with backward communities, Pygmies, Karamajongs.

Forms of environmental degradation

- Pollution – contamination of the environment by introducing organic or ironic substances causing harmful or undurable effects.

- Desertification – this is the extension of desert conditions to areas which were not formerly debts e.g. desert margin or fringes.
- Aridity
- Tropical worm deserts on Mt. Rwenzori, Mt. Kenya, Kirimanjaro.
  Famine
- Soil erosion – this is the washing away of top soil by running water, wind. Type: gully, rill, wind, rainfall.

Masswasting and landslides soil erosion
This refers to the movement of rocks and particles from a greater slope to a lower slop under the influence of gravity.

Types of masswating
Mud flow
Soil
Soliditiration normally slow and less destructive

Causes of environmental degradation
Desertification, pollution, famine
Landslides.
These are physical and human factors.

- Deforestation in densely populated areas for firewood, charcoal and timber.
- Rugged and steep slopes in highlands and mountains
- Development of industries causing pollution
- Climatic changes due to global warming
- Swamp reclamation for agriculture, settlement, transport
- Pest and diseases like locusts, aphids, caterpillars
- Mining using open cast methods
- Fire outbreak caused by natural factors or human factors
- Population increase e.g. in K'ble, China, India.
- Poor farming methods causing soil exhaustion, shifting cultivation
- Political instability due to use of ammunition
- Overgrazing caused by overstocking like in national parks and areas of nomadic pastoralists.
- Ignorance, backwardness / low d level so of education and poverty
- Drilling of boreholes construction of valley dams and tanks
- Cold ocean currents like the cool canary and Benguell

- Development of transport; roads and railway lines and ports
- Weak government law leading to illegal activities
- Wind systems or prevailing winds like the westerlies
- Pollution because of poor disposal of wastes and hazards
- Natural calamities and hazard like land slides especially earth quakes
- Absence of water bodies
- Poor vegetation cover
- Distance from the sea (sentimentality)
- Wild animals like elephants, destroying trees and herbivorous animals
- Floating vegetation, water hyphen and papyrus
- Accidents on roads, air and water bodies
- Poor sandy soils
- Illegal methods like illegal lumbering, fishing and poaching
- Pests and diseases destroying crops and livestock like coffestain, East coast.
- Absence of clouds leading to high temperature range which cause exhaustive and evaporation
- Relief also causes rain shadow

Effects of environmental degradation

Negative

- Reduces land for agriculture & settlement
- Leads to famine and hunger
- Lowers water table causing water shortage
- It causes global warming
- Promotes soil erosion causing exhaustion
- Encourage natural calamities, disasters, hazards
- Reduction in biodiversity like plants and animals
- Occurrence of air and water borne diseases
- It causes poverty, unemployment and low economic development
- It causes siltation, sedimantion and deportion
- Lower life span because of poor living conditions

Positive

- Tourism because of landforms earning foreign exchange
- Employment like environmentalists
- Education and research in affected areas
- Soil formation by wastes breaking rocks

- Rain formation like dust particles in the atmosphere
- Reduction in pests and diseases
- Political stability
- Development of transport and communication

Solutions/steps/measures/Environmental conservation

Environment is important to man because it has productive and protective uses hence need of conservation. The steps / measures/policies/ways include;

- Tree planting using afforestation and reafforestation programmes with soft wood species influencing the youth and women because they are the majority and to make it sustainable.
- Formation of government agencies and non government organization dealing in environmental matters helping in supervision and monitoring e.g.NEMA, NFA.
- Mass education and modernization helping in creating awareness on environmental matters by using formal and informal education.
- Using modern methods of farming helping in soil conservation like agro forestry, ranching, irrigation farming in dry areas.
- Using alternative sources of energy like solar, biogas, HEP reducing on forest destruction for firewood and charcoal.
- Strengthening laws and regulations by putting heavy fines reducing on illegal activities like bush burning, illegal lumbering, forest encroachment.
- Gazetting areas of forest reserves, national parks, game reserves helping in displacing people and activities e.g. Queen Elizabeth N.P
- Population control using modern methods of family planning like using pills, condoms and setting population policies.
- Using alternative building materials like using bricks, tiles, using iron sheets, metallic and furniture.
- Spraying using insecticides in areas having locusts, termites, ants like in Sahara and Kalahari deserts.
- Acquisition of loans from financial institutions, developing countries for financial environmental conservation programmes
- Promotion of research on tree planting species like planting the neem tree, moringa tree, planting trees with flowers, fruits.
- Political stability through regional co-operation, good governance, defence reducing the use of ammunition like developed countries.
- Using soil conservation methods helping in maintaining soil fertility like terracing, mulching, agro forestry.

- Training skilled labour like environmental officers helping in supervision, monitoring and education.
- Fire fighting by using fire extinguishers, water bombers, having control towers and planting artificial forests.
- Government support by giving loans, equipment, input, seedlings and gazetting forested areas.
- Proper waste management by gazetting dumping grounds, treatment of waste before discharge and recycling.
- Good international relations and regional co-operation like E. African Community.
- Reducing on excessive lumbering by giving licences like NFA in Uganda.
- Proper land use management by separating industrial areas and conservation areas.
- Using energy conservation methods like energy saving stoves, energy saving bulbs.
- Privatization and economic liberalization attracting investors leading to availability of capital, good management and better services.
- Improvement in transport by constructing roads, railway lines, water ways helping in conservation and exploitation.
- Improvement of soil fertility through adding organic fertilizers and inorganic fertilizers or practicing organic farming.
- Environmental sustainability by using the environment without compromising needs of the future e.g. by cutting trees and planting others.
- Environment diversification by having many economic activities and exploiting different resources for employing people and reducing on dependency burden.
- Using local communities for planting forests leading to easy supervision, monitoring and mobilization.

Revision Qns.

1. Examine the causes, effects and solution of environmental degradation.

2a. Account for the occurrence of environmental degradation in either Nigeria or Ethiopia.

b. Outline the steps being taken to solve the problem of environmental degradation in the country chosen in (a) above.

3. "The famine problem in Africa is primarily a result of human factors." Discuss.

4a. Explain the causes of desertification in either Botswana or Mali.

b. Outline the steps being taken to combat desertification in the country chosen in (a) above.

5. To what extent is man responsible for environmental degradation in East Africa.