Shaaban Robert Secondary School.

GEOGRAPHY NOTES

FORM TWO (2).

2020

HUMAN ACTIVITIES

The Meaning of Human Activities

- Are functions or tasks or work carried out or done by human beings over time for achieving certain purposes or goals.

- It is any task performed by man for the purpose of earning his or her livelihood.
- Are what people do or cause to happen in order to achieve a certain goal in life.

- Are acts or processes of producing certain things intended by people in a place, which can be a country, region, district or a village.

In Geography, human activities refer to tasks human beings do modify the environment as well as extract the resources from the environment which are needed for survival, that is, satisfying human needs and wants. To fulfil this goal, man has been modifying the tools needed for obtaining resources from the environment from basic to more advanced and efficient technology.

Goals or Purposes of Human Activities

1. Production of food crops.
2 Production of cash crops.
3. Construction of infrastructure that facilitate movement of goods, services and people
4. cleaning the area to avoid pollution and outbreak of diseases like cholera, amoebic dysentery, etc.
5. Human activities use up resources to produce products and services.

MAJOR TYPES OF HUMAN ACTIVITIES

Human activities may be classified into four types namely:

1. Primary activities
2. Secondary activities
3. Tertiary activities
4. Quaternary activities

1. **Primary Activities**

Primary activities involve exploitation of nature in the production of materials. Production in this kind of activities largely depends on the earth's natural resources.

<u>Examples of primary activities include:</u>

- Farming (Agriculture), hunting and gathering
- Mining and Quarrying,
- Fishing, mining and quarrying,
- Forestry (Lumbering)
- Hunting and gathering, livestock keeping

Agriculture

2. **Secondary Activities**

These are human activities that involve a process of manufacturing raw materials into useful products. Secondary activities are of great importance as they lead to fast economic development since they produce products that have immediate demands in the society. They also accelerate development of primary activities by providing a market for raw materials produced through lumbering, agriculture and mining.

<u>Examples of Secondary Activities:</u>

- Coffe pulping, cotton gining,
- Sisal decortication, cloth making,
- Construction of houses, manufacturing of glass,
- Car assembly, making paper, making glue,
- Processing of steel and iron from ore.

Constraction

3. **Tertiary Activities**

These are the activities that involve the provision of services that are needed in the society. Examples of tertiary activities include:

- Trade (restaurants, hotels, lodges, supermarkets), water supply
- Schools (Teachers), advertising, mechanics
- Hospitals (Doctors), legal services in court, entertainment,
- Transportation (Driving), plumbing, waste management, religious services.

Teaching

4. **Quaternary Activities**

These are activities that involve provision of intellectual services and information. These activities were formally included in the tertiary activities. Quaternary activities include, *High-tech industries with information technology, Scientific research, consultancies and library services. Computer based activities like making software are part and parcel of quaternary activities*.

In general quaternary activities are considered to be new and started in the last decade.

Computer based activity

5. **Quinary Activities**

These are activities that are done by top executives or officials in fields such as governments. They involve the highest level of planning and decision making in the society or economy. Quaternary and quinary activities e.g. research and information are important in the development of farming, mining, tourism and trade.

Leadership

Importance of Human Activities

Human activities are important in various ways:

1. Helps in generation of government revenue

2. Helps in producing raw materials such as cotton for textile industries.

3. They provide employment to peoples in the country..

4. Human activities such as agriculture and fishing lead to production of food.

5. Activities like construction of roads contribute to the development of transport and communication networks.

Environmental Problems Caused by Human Activities

Apart from having positive impacts on the development of the country, human activities tend to lead to occurence of varios environmental problems as follows:

1. Air pollution. This can be caused by industrial emissions and burning of agricultural activities

2. Water pollution. It can be caused by dumping of untreated waste materials into the water bodies.

3. Soil pollution. It can be caused by dumping of radioctive materials into the ground and applying chemicals in the farms.

4. Deforestation. This can take place when trees are excessively cleared during preparation of large farms, lumbering, overgrazing and settlements.

5. Soil erosion. This takes place easily on the land that has been left bare due to excessive cutting of trees for lumbering, farming and construction.

Air Pollution

Measures for Controlling Environmental Problems Caused by Human Activities

Environment problems caused by human activities can be addressed in varios ways which include:

1. Discouraged the improper dumping of waste in the soil or water

2. The use of modern methods in agricultural activities such as crop rotation, inter cropping, fallowing strips, contour ridging.

3. Encouraging Afforestation and restricting deforestation 4. Excessive use of chemicals in the control of pests should also be discouraged.

5. The government should Enact strict laws.

Planting Trees

AGRICULTURE

Agriculture is the branch of science which deals with crop cultivation and animal keeping. Crop cultivation is called arable farming and it is carried out on a better quality of land. Pastoral farming is normally carried out in less fertile land.

TYPES OF AGRICULTURE

SMALL SCALE AGRICULTURE

It is the type of agriculture [crop cultivation] where a farmer owns a piece of land and not more than 5 hectares.

Small scale farming may involve growing annual crops such as cotton, coffee, tea etc. Annual crops are grown mostly on areas where rainfall is scarce and perennial [permanent] crops are planted once and remain planted, for example;

- Coffee
- Tea
- Rubber
- Palm oil
- Sisal

Characteristics of small farming

i) Farms are usually small in size with 1-5 hectares

ii) Ownership is at family level

iii) Farmers produce crops for subsistence like for immediate use

iv) Farms are heritable in nature like land is passed from father to son

v) Low levels of technology is used like the use of local tools like hoes , pangas and slashers

vi) More than one crop may be grown in one plantation

vii) Low capital is used to run the farm.

viii) It involve the use of unskilled laborers.

Advantages

i) Easy to control farm work [less cost full]

ii) More than one crop can be obtained from the farm [one plot]

iii) Provide employments to the family members

Disadvantages

- Low productivity hence poor standard of living
- Gender imbalance [women are not involved in land heritage and ownership has no power on what they produce]
- Heritage of land leads to land fragmentation and over population in a small piece of land hence results into shortage of land
- Applications of machines such as tractors is difficult because of small farming size.

Problems facing small scale Agriculture

Lack of enough funds
Poor government support.
Climate changes.
Low level of science and technologies.
Low level of education among farmers.

TYPES OF SMALL-SCALE AGRICULTURE

There are two types of small-scale agriculture;

a) Shifting cultivation/ non-sedentary

b) Bush fallowing /rational

Shifting cultivation [non-sedentary]

Is the system in which a peasant keeps on shifting from one area to another as a result of soil exhaustion. In this type of agriculture peasants cultivates certain piece of land until the soil is exhausted after 2-5 years then shifts to a new piece of land where he cleans and cultivates.

It is the oldest method.

Done by burning of trees on a given area and set the area ready for cultivation

There is no formation of permanent settlement as the land is abandoned and fresh area is cleared it is sometimes called flash and burn agriculture

The crops grown most of them being scanty crops

It involves slashing and burning of bushes and grasses

It is practiced when there is low population for easy shifting and possession of a certain piece of land

Production is for subsistence

Simple tools are used like hand hoes because of low technology

The cultivators do not have permanent settlements since they expect to leave any time, sites are selected in the virgin forest and therefore tend to be fertile

Advantages

1) More than one crop can be harvested in a plot

2) Burning involves production of ashes which assist in soil fertility

3) Food supply is assured since the family cultivates for self-sufficient basics

4) The system does not cost since simple tools are used for production

5) Family labor is used in the production process

Disadvantages

1) Deforestation and soil erosion

2) The use of fire kills [destroys] the natural habitats and wild animals 3) The system can be applied on the low populated areas

4) Low productivity because the plots are small and due to poor control of pests and diseases.

5) Destruction of ozone layer due to burning of bushes and grasses.

Decline of shifting cultivation

Shifting cultivation has declined nowadays due to the following reasons;

- Increased population
- Rapid increase of population has resulted in the shortage of land for cultivation
- Advancement of science and technology
- Influence of government policy which encourages on sedentary and other farming types which are environmentally friendly
- Reaction from environmentalists
- Engagement of people in other economic activities

ROTATIONAL (BUSH FALLOWING)

Is the system of farming in which peasant cultivates in a certain area until it gets exhausted and leave it for a certain period of time to regain its fertility?

It differs from shifting cultivation in that farmers are settled and hence are rotating rather than shifting to a new home.

Rotational bush fallowing is the simplest form of sedentary farming. This system took place after shifting cultivation failed to perform well due to increase in population.

CHARACTERISTICS OF ROTATIONAL /BUSH FALLOWING

- Simplest tools are used through slightly more advanced technology than shifting cultivation
- Slashing and burning of bushes
- The community can involve or engage itself into other activities like fishing, hunting etc.
- Farmers are settled but the farms are the ones which are rotating.

Advantages

- Since the people are settled, they engage fully and effectively in the production process.
- Slashing and burning involved in the farm preparation add fertility to the land
- Fallowing gives room for the improvement of the soil and encourages the recovery of vegetation
- It takes places where there is high population unlike shifting cultivation
- Farmers can involve in other economic activities such as fishing

Disadvantages

- There is low production because of the use of low technology and simple tools
- Slashing and burning can lead to environmental degradation as well as loss of biodiversity
- Poor trade among communities

SEDENTARY FARMING

Is the farming system in which a farmer does not move and establish a permanent settlement? The farmer

grows crops and keeps animals.

Effects of overpopulation on small scale agriculture

What is over population?

Is the demographic situation where number of people at a given area is greater than the available resources? The available resources may include;

- Land

- Water
- Minerals etc.

Over population is sometimes called population pressure

CAUSES OF OVER POPULATION/POPULATION PRESSURE

i) Immigration [shifting or movement] of people from one place to another for their own interests or by force due to different situations such as conflicts, hunger etc.

ii) Social services, where there is availability of social services such as medical care may lead to the increase in population

iii) Economic activities such as industries or mining activities may lead to the population pressure

iv) Cultural attributes such as marriages, polygamy, naming of relations, and unplanned reproduction and sex preferences.

(v) Availability of employment.

v) Government policy

EFFECTS OF POPULATION PRESSURE

- Increase of crimes such as prostitution, theft and bandits.
- Shortage of land for cultivation.
- Results into land degradation due to cultivation, deforestation, bush burning
- Spread of diseases such as cholera, malaria as well as malnutrition due to shortage of food.
- Poor arrangement of houses or improper housing.
- Poor provision of social services. E.g. Water, Health, Education etc.
- Overcrowding i.e. small piece of land to be occupied by many houses.

How small-scale agriculture is improved

In order to improve small scale farming the following should be done i.e.

i) Proper ways of using fertilizers and pesticides etc.

ii) To educate farmers 0n good farming methods/ practices iii) To discourage some

traditional ways of life i.e. sex preference

iv) Farmers should be given loans

v) To establish market for selling crops

vi) The government should facilitate good transport and communication network

vii) To encourage people to have permanent settlements so that they can organize their farms

LARGE SCALE FARMING

Is a type of agriculture which take place in a large area of land approximately 100 hectares? This is also known as commercial agriculture or state agriculture.

The money gained from large scale agriculture is essential for keeping the system going on. The type of farming practiced is normally monoculture.

In developing countries monoculture is associated with tropical and sub-tropical plantations which were established through European colonization.

The most pronounced from large scale agriculture is plantation agriculture

Characteristics of large-scale farming

- Involves the production of cash crops

- Only one crop is produced [monoculture]
- Farms are very large found in sparsely populated areas
- Use of high levels of technology [tools are very much modern] hence high capital.
- It involves the use of skilled and unskilled laborers.

Advantages of small-scale agriculture

1) Productivity is very high and large amounts of capital/income is obtained

2) Risk of pests and diseases is highly reduced

3) Promotes the growth of other sectors

4) Promote the development of social services i.e.

- Housing
- Electricity
- And water supply

5) Provides employment to the people.
6) It is the source of foreign money exchange.

Disadvantages of small-scale agriculture

1) Large capital is needed

2) Fluctuation of price in the world market [the farmers may face loss when the price falls down]

3) It causes unequal development in different areas

4) Loss of soil fertility due to continuous application of artificial fertilizers for example ammonia sulfate

5) It involves the exploitation of workers

6) It causes air pollution

7) It may cause separation of people away from home.

Problems facing large scale agriculture.

(1) Population increase which resulted into short age of land.

(2) Lack of Government support.

(3) Loss of soil fertility due to the act of practicing monoculture.

How large-scale agriculture is improved.

(1) The Government should enact and implement laws about population increase e.g. family planning policy.
(2) The Government should improve transport and communication systems such as railways, roads etc.
(3) The Government should control rural-urban migration to overcome the problem of labor supply
(4) The Government should provide loans/capital to the farmers
(5) The Government/stakeholders should encourage the use of modern farming methods such as the use of machine and fertilizer

Crops grown on large scale farming

Beverage crops

- Coffee
- Tea
- Cocoa

- Sugar cane

Cereal crops

- Wheat
- Rice
- Ryan
- Oats

Fruits and vegetables

- Pineapples
- Mangoes
- Apples
- Carrots etc.

Industry crops

Crops grown not primarily as a source of food.

- Jute
- Sisal
- Cotton
- Rubber
- Tobacco

PLANTATION AGRICULTURE

Refers to the large farm or large area of land designed for agricultural growth. Often includes housing for the owner and workers. The crops planted for commercial purposes.

Major African countries involving in plantation agriculture

Palm oil are found in Nigeria and DRC. Rubber –Liberia

Sisal – Tanzania (Morogoro, Tango) Tea - Malawi and Kenya

Sugar – South Africa [natal] and Tanzania [Tibia] Tobacco – Zimbabwe & Tanzania (Laming) Cotton – corn-

USA

Plantations were established by foreign companies in collaboration with local joints.

Crops from the plantations were processed right after holders to raise value of the product per unit weight and reduce its weight long distances transferring i.e. sisal and tobacco, perishable products like meat and fruits were given special treatment packing. The crops grown in plantation agriculture are;

Coffee

There are several types of coffee but the famous ones are three;

A. Arabica

Have large leaves and can grow to 9m high It has the finest flavor

B. Robusta

They grow up to 5m tall

C. Liberia

It is a low land coffee

CONDITION FOR COFFEE GROWING/ FACTORS THAT FAVOUR COFFEE GROWING

1. CLIMATE

a) Temperature

Coffee prefer high temperature above 32^0c

b) Rainfall

Annual range of 1100mm to 1780mm is required.

Also, a dry period of 2-3 months is however necessary for stimulating flowering. From flowering to maturity time taken is 8-9 months

Coffee grows well in areas which lie between 1400m to 1900m with well-drained soil.

2. SOIL

The best soils are well drained, volcanic fertile soils

3. SHADE

Trees of different varieties are needed to protect the coffee from strong winds and sun light
e.g. grevilleas and eucalyptus

4. LABOUR

People are needed to work in the farms, harvesting is done by picking red ripe berries ready for processing.

Steps / procedures for coffee growing

- Clearing of the area to establish the farm
- Raising of seeds to produce seedlings on the seed's beds for about six months
- Transplanting of the seedlings to the farm
- Pruning [Is the removal of the not well grown branches]
- Spraying of the coffee leaves (insecticides and pesticides)
- Harvesting which is done by picking red ripe berries

Uses of coffee

- Beverage packing
- Source of income
- Leaves are used as medicine to treat stomach aches
- Trees are used as fire wood
- Pulps are used for fertilizers

The chief producers of coffee in the world are such as;

- Brazil
- Columbia
- Ivory coast

And the other percent comes from

- Mexico
- Uganda
- Indonesia
- Ethiopia
- India

In Tanzania coffee is produced in Mbeya, Arusha, Kilimanjaro and Bokova.

1. COTTON

It is an annual crop which is divided into three varieties basing on the size of the fibrous and the lint.

I. Long staple cotton

Over 45mm

It is grown in Egypt and Persia

II. Medium staple cotton

Between 22mm to 28mm

It is grown in Brazil and Russia

III. Short staple cotton [Asiatic cotton]

Below 29mm

It is grown in Brazil and Russia

Requirements for the growing of cotton/ Conditions for coffee growing

1. Climate

- Cotton grows well in warm temperatures

Low temperature means slow rate of production, slow rate of vegetation growth and late flowering.

- Rainfall required is about 1000mm and well distributed will give good yields. When rainfall is low irrigation is applied i.e. Gezira scheme in Sudan

It requires dryness towards the end of the growing season for ripening and picking

- Excessive water during picking leads to lint discoloration and high incidence of bacterial and fungal ball rot.

2. Soil

It requires dark brown soils

3. Relief

It grows well on a flat land or undulating relief of up to 1500mm above sea level

Inter cropping cotton is discouraged because shading there leads to retarded flowering.

Steps for cotton growing

i) Clearing of the land to remove trees, plants etc.

ii) Cultivating of the land.

iii) Sowing of the seeds in the holes or rows

iv) Thinning [to reduce the number of seedlings per hole or per row]

v) Weeding

vi) Fertilization

vii) Spraying of the seedlings [to kill pests]

viii) Harvesting

Uses of cotton

i) Textile fibers are used for cotton clothing

ii) Seeds are used to produce cotton oil

iii) The cotton husks are used to manufacture cotton cakes [molasses] which is used to feed animals

iv) Dead cotton trees are used totally as a fire wood

Cotton producers in the world

- USA
- China
- Pakistan
- Uzbekistan
- Australia
- Turkey
- Brazil
- Egypt
- Syria
- Sudan
- Russia

MAIZE

The crop is an annual grass which usually grow to a height of 1 to 4m

There are varieties of maize such as

a) Dent

These are soft maize and have a high commercial value in the market

b) Flint

Which are hard maize and takes a short time being harvested

c) Popcorn

Are hard grains and are small in size?

d) Sweet corn

Contains starch and sugar which tastes sweet for human consumption

e) Flour corn

Shrinks when ripen and contains soft starch

f) Wax and pop corn

These are not grown for commercial purposes

Conditions for growing maize

1. Climate

a) Temperature

About 18^0c to 27^0c is good for maize growing

b) Rainfall

Moderate summer rains of about 896mm especially during growing period. Maize grows well between sea level and 2500m. Time taken to maturity period vary from 60 to 300 days

Steps for growing maize

i) Seed bed should be prepared

ii) Sowing and weeds

iii) Thinning is done when the maize has grown to a height of 15cm

iv) Herbicides may be used to control weeds in a maize field

v) Harvesting by cutting the maize plant and the cobs are then removed by the hand, the grains are then removed from the cobs by shelling before the grains are stored, they should be dried.

Producers are

- USA
- China
- Brazil
- South Africa
- Russia
- Romania
- Yugoslavia
- Mexico
- France
- Argentina
- Italy
- India
- Hungary

Uses

- Maize is a source of vegetable oil
- Used for human consumption
- Feeding animals like

- Pigs

- Cattle

- Poultry

- Horses

- And sheep

- It can be used to manufacture papers

Oil palm

Palm trees vary from 7.5m to 14m in height the crops take three years to mature

Fruits are red or black in color

Conditions necessary for palm growing

- High temperature and heavy rainfall of about 2040mm

Procedures for palm growing

- Clearing of the land.
- Seeds are sown
- Seeds are transplanted in already prepared farms
- Weeding is done
- Spraying is done to prevent insect pests
- Harvesting is done after every 10 days by a strong curved knife
- Fruits are taken to the industries ready for processing
- Cooked in the sterilizer to remove waste materials

- fruits are then cooked again in digested to separate pulp from kernel

- kernels can be packed in snacks exported to the consuming countries to be crashed

Capital

High capital is needed in order to support the modern oil palm processing because processing using hands leads to poor oil quality.

Producers

- West Africa
- South west Asia
- Malaysia
- Nigeria
- Indonesia
- Zaire

Uses

- For cooking.
- By products are used as fertilizers or animal feeds.
- Making candles, soaps and margarine.

Importance of oil palm in West Africa

- Rise of the standard of living.
- Employment.
- Development of cities.

- Improvement of the transport system.
- Increase in income through foreign currency obtained.
- Contribution of produced large crops to the economy of USA and Tanzania.
- Examples from Tanzania and USA to explain problems facing large agriculture.

LIVESTOCK/ PASTORAL FARMING

It is the keeping/rearing of animals (goats, cattle, sheep) and poultry (birds). It can be distinguished into traditional(subsistence)livestock keeping and modern(commercial)
livestock keeping

(A) TRADITIONAL/SUBSISTENCE LIVESTOCK KEEPING

PURE – PASTORALISM (NOMADIC)

Is practiced by wondering groups of people in remote areas especially semi – desert and desert areas. Nomads are members of a group of people who having no fixed home, move around seasonally in search of food and water.
The farmers specialize in keeping animals on natural pasture land for example, Masai, Braais, Kava, Karamojong

- They keep on moving looking for water and grazing land (pasture)

- They live in simple temporary houses

- Their wealth depends on number of cattle they have thus they do not sell their animals unless are exchanged for necessary requirements, hence the problem of overstocking, soil erosion and desertification, also they may cause sedentary cultivator.

E.g.

- Gogol pastoral & Gogol sedentary

- Kava pastoral & Kava sedentary

- Maasai pastoral & Kagura sedentary

- Kura pastoral & Agita sedentary

SEMI – NOMADIC

The livestock keepers have permanent place of residence when they practice cultivation of crops.

They travel in distance searching for a pasture & water during the dry Seasons e.g. Masai Turkana

- They keep large number of animals
- Poor cultivation of crops
- Overgrazing
- Animal diseases are easy to spread.

SEDENTARY LIVESTOCK KEEPING

- Livestock are kept in one permanent place
- Food and water are brought to the animals hence zero grazing because no grazing is involved.

PASTORALISM

Definition: -

Pastoralism is an economic activity which involves grazing livestock (animals) on natural pastures.

The pure pastoral societies of East Africa include: Maasai, Karamojong

- The cultivator pastoralists (mixed farmers) include the Sukuma, Gogol and Nyamwezi.

NOMADIC PASTORALISM

This is a livestock farming in which pastoralists constantly move from place to place in search of pasture and water.

- Animals are normally kept for food. Examples of the nomads include Maasai, The Fulani.

CHARACTERISTICS OF NOMADIC PASTORALISM

(i) Animals i.e. cattle are kept for prestige, for paying bride gift, for food and for sale.

(ii) The breeding process is uncontrolled

(iii) The herds are large in size

(iv) There is poor control of pests and other diseases

(v) The animals are of poor quality and low value

(vi) It takes place where the population is scarce

(vii) There is no permanent settlement as farmers move constantly with animals

(viii) There is no crop cultivation and therefore animals are the support for family life.

(ix) There is poor or no use of technology.

ADVANTAGES OF NOMADIC PASTORALISM

i) It is cheap
ii) It guarantees food for the family especially when the animals are many
iii) Some traditional varieties of animals are resistant to diseases and other environmental hardships

DISADVANTAGES OF NOMADIC PASTORALISM

i) The animals produce little milk and of low value

ii) A lot of time is wasted moving from one place to another

iii) This system of livestock keeping causes soil erosion and desertification iv) Many animals perish

due to lack of pests control

SEMI-NOMADIC/SEDENTARY PASTORALISM

- This is the system of livestock keeping in which a farmer has started selling and began growing crops to supplement pastoral activities.
- The farmers travel from their home state with their herds to distant places grazing, in search of pasture and water especially during the dry season.

SEDENTARY LIVESTOCK FARMING

This is a system of livestock keeping where by a farmer keeps animals while settled permanently in one place.

FACTORS FOR THE CHANGE FROM NOMADIC PASTORALISM TO SEDENTARY LIVE STOCK FARMING

i) Population increase has decreased the size of the pasture

ii) Involvement of farmers in other economic activities

iii) Advancement of technology

iv) Government advice

CHARACTERISTICS OF SEDENTARY LIVESTOCK FARMING

i) More advanced technology is used

ii) The number of animals is not so high

iii) The animals are kept in shades

iv) There is disease control

v) It can be practiced in relatively densely populated areas e.g. town

ADVANTAGES OF SEDENTARY LIVE STOCK FARMING

i) The animals are healthy and hence have high yields
ii) There is a disease control
iii) The method encourages the improvement of the environment
iv) Sedentary livestock keeping enables the farmer to engage themselves in other activities.

(2) COMMERCIAL LIVESTOCK FARMING

Definition: -

- This is the practice of keeping livestock for sale. It includes Beef farming and dairy farming on ranches.

- Beef farming is keeping of animals for production of meat for sale

- Dairy farming is keeping of animals for production of milk for sale

Commercial livestock farming is more developed in the temperate grasslands such as the prairies of USA and Canada, the pampas of Argentina and the downs of Australia.

CHARACTERISTICS OF COMMERCIAL LIVESTOCK FARMING

(i) Commercial livestock farming takes place in ranches which occupy thousands of hectares.

(ii) It is characterized by the application of modern scientific and technology methods. (iii)It

normally involves the use of improved breeds or hybrids in order to advance high yields.

(iv) It is capital intensive; substantial amount of capital is required for farm machinery and fencing.

(v) Large number of animals is kept for commercial purpose (sale) rather than for subsistence purpose.

(vi) There is little or no migration in livestock farming. This is due to the permanent and reliable food supply

(vii) The animals are of high quality and value.

ADVANTAGE OF COMMERCIAL LIVESTOCK FARMING

(i) It stimulates the development of other sectors such as industry

(ii) It reduces unemployment through creating employment chances

(iii) It generates government revenue

(iv) It provides food products such as meat and milk.
(v) They are source of foreign exchange.

DISADVANTAGES OF COMMERCIAL LIVESTOCK FARMING

(i) It involves ranches which are expensive to maintain and establish.

(ii) It needs large areas with scarce population; therefore, it cannot take place where the population is high.

(iii) It may cause environmental problems such as land degradation, deforestation.

(iv) It influences climate changes due to deforestation in order to establish ranches.

Comparative study of livestock keeping between Australia and Tanzania.

Livestock keeping in Tanzania and Australia has some similarities and differences

Similarities

(1) Livestock keeping in both countries there are common types of livestock kept. There mainly cattle, goats, sheep and poultry.
(2) Animal products ad like animals are sold in both countries, some common products meat, milk, skin, etc.
(3) In both Countries are practiced at both the subsistence ad commercial levels.
(4) Sedentary livestock keeping is practiced in both countries. This is done in areas that are highly populated. E.g. Chagas in Tanzania
(5) Ranching in Tanzania and Australia is carried out in the sparsely populated areas. In Tanzania, It is mainly carried out I areas such as Kagura, Tango, and Morogoro which in Australia this is practiced in the areas. Referred to as outback.

Differences

(1) In Australia more, scientific methods are employed in the management and running of livestock keeping compared to Tanzania. Australia, they use paddocks, animal
food supplements and proper animal health care.
(2) Livestock keeping in Australia is more advanced than in Tanzania for example when it comes to use of machinery in activities such as milking ad sheep shearing.
(3) Pastoralism and sedentary livestock keeping ad the main types of livestock keeping practiced in Tanzania while in Australia, ranching in the main type of livestock
keeping.
(4) In Tanzania main types of animals kept are cattle while in Australia main types of animals kept are sheep.
(5) Ranching in Tanzania and Australia is carried out in the sparsely populated areas. In Tanzania, It is mainly carried out in areas such as Kagura, Tango and Morogoro while In Australia; this is mainly practiced in the areas.

WATER MANAGEMENT FOR ECONOMIC DEVELOPMENT

Definition

Water

Is a colorless, odorless and tasteless liquid found naturally on land surface, atmosphere and water ground reservoirs, and essential for most plant and animal life.

Water management

Refers to the skillful and careful use and control of water and water resources. It is the management of water resources under set policies and regulations. Water should be managed since it is becoming a more valuable commodity due to droughts and over uses.

Sources of water

- Rainfall
- Well
- Springs
- Lakes
- Seas/ oceans

Economic uses and importance of water.

- Water is used for domestic purposes
- Water is used for agriculture development [irrigation]
- Water is used as a source of hydro-electric power
- Water is used for industrial development
- Water encourages the development of the fishing industry
- It encourages the development of the tourist industry
- Water is used for navigation i.e. it stimulates the development of transport and communication
- Water influences weather activities i.e. rain formation
- Water provides habitat for various living organisms

Relationship between family size, water supply and quality of life.

- There is a very close relationship between quality of life and water. An adequate and reliable water supply greatly improves the quality life of people. This is because they do not have to spend most of their time, income and effort searching for water. Availability of water means that family members are easily able to cook, clean themselves and do other family chores.

- Also, the family size determines how much water is needed at a given time and how frequently available it should be. The larger the family the larger the amount of water, the smaller the family the lower consumption of water.

- Where the water is not piped and frequently supplied for example in rural areas, family members especially girls and women spend most of their time and effort looking for water. In some other communities, girls are not allowed to go to school since they are required to fetch water and ensure that it is available for the whole family.

- In case of a smaller family, they are able to use stored water over a long period in case the frequency of water supply is low. Therefore, under conditions of low water supply, a small family is more likely to experience water shortage problem than a large family.

Relationship between Vegetation and water supply.

- Vegetation play a very crucial role in ensuring a continuous water supply. Presence of places with dense forests and other forms of vegetation act as water catchments. This means that they retain water by preventing it from easily washing away or rapidly evaporating.

- Places with abundant vegetation therefore have higher chances of experiencing a reliable water supply than places that have little or no vegetation. Indeed, the lack of vegetation may lead to desertification and consequently very little or no water availability.

- It is also important to note that vegetation cannot exist if there is lack of water. Even desert vegetation requires water, though in small amounts for it to exist. The more available water is the denser and healthier the vegetation will be. Where there is little water available the vegetation is sparse.

- Vegetation and water supply are therefore highly related and dependent on each other.

How long distance to water sources affects the girl child.

- In rural areas, family members especially girls and women spend most of their time looking for water. In Tanzania, most rural communities the task of fetching water is placed on women and girls.
It is the girls who have to do this as the women are engaged in other domestic duties or family chores such as taking care of babies and cooking.

The distance between the home and the water source affects the girl child in the following ways; -

(i) When the distance is long, it means that the girls have to walk the long distance to fetch the water. By walking the long distance, they get tired, they may get attacked/molested along the way and in some cases, there is a little time left for activity such as learning or playing. For those who are lucky to go to school, they tend to be too tired to pay much attention in class hence, poor performance. But for those who are not lucky enough to go to school are condemned illiteracy. All of these may turn into early marriages or teenage pregnancies and some of them tend to experience psychological problems in their childhood as well as in their adulthood due to lack of time to play, robs them of a happy and balance childhood.

(ii) On the other hand, if the distance from the home to the water source is short, then the girls spend less time in fetching water and hence they have more time to play and to go to school, thus they will be able to pay attention in the class and do well in their studies.

(iii) In addition, children who are consistently exposed to hazardous, unportable water or exposed to pumps or water source that have been contaminated by water-bone bacteria, contracting diseases such as cholera and they are often affected by life threatening diarrhea from parasites in unclean water.

PROBLEMS CAUSED BY WATER

i) Water causes floods

ii) Water provides habitat of dangerous animals

iii) Polluted water is a source of water borne diseases

iv) Flowing water causes soil erosion

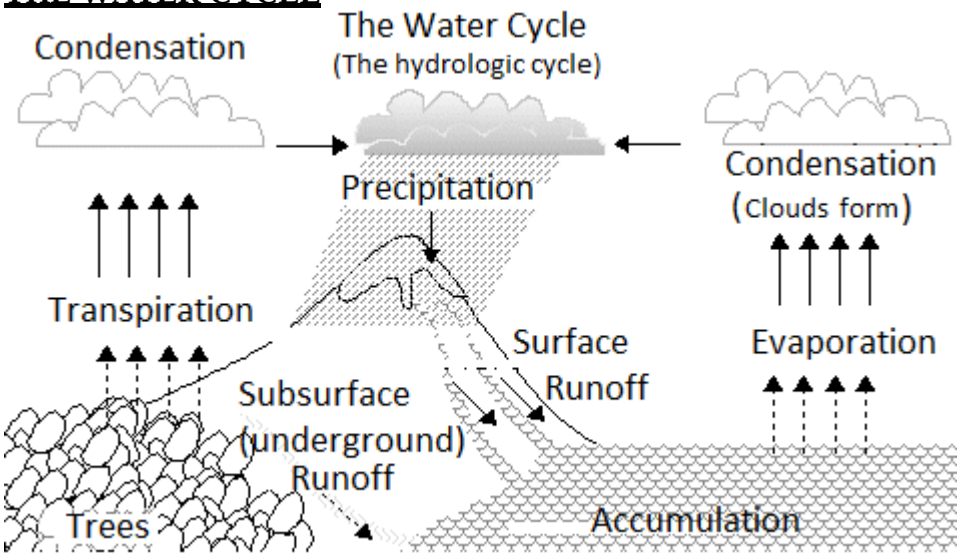
v) Large water bodies may cause barrier for communication.

HYDROLOGICAL CYCLE [WATER CYCLE]

Is the continuous circulation of water between the atmosphere and biosphere and lithosphere

It is brought about by the processes of evaporation, condensation, infiltration percolation, surface run off etc.

THE WATER CYCLE



WATER POLLUTION

Is the addition of unwanted substances in the water

Or

It can be defined as addition of pollutants to water making it unsafe for use by organisms and people

It is said to be polluted if it contains much organic and inorganic wastes

Causes of water pollution

Water may be polluted by;

1) Industrial wastes including chemicals and metal materials, some of these chemicals are toxic.

2) Sewage or effluent and other wastes from residential areas which are dumped in water sources.

3) Oil spills from tanks and pipelines.

4) The use of pesticides and insecticides in agriculture.

5) Fishing activities that involves the use of dynamite and other chemicals which lead to the pollution of water.

6) Debris and other materials found on construction sites get into water sources and cause water pollution.

7) Bomb tests in the major water bodies can lead to the spread of chemicals, hence water pollution.

EFFECTS OF WATER POLLUTION

1) Polluted water causes death of aquatic organisms i.e. uniform layer which prevents oxygen from penetrating into deeper layer of water which causes damage of marine life.

2) Polluted water is a source of water borne diseases such as cholera and typhoid etc.

3) Polluted water can cause decline of the fishing industry.

4) Polluted water can discourage irrigation since some of the pollutants can kill plants.

5) Polluted water emits bad smells as a result of decomposition of waste in the water bodies.

6) Shortage of clean water for domestic uses.

7) Polluted of clean water can cause land pollution when poured on it.

MEASURES TO CONTROL WATER POLLUTION OR WATER CONSERVATION MEASURES

i) Fishing by using chemicals should be prohibited

ii) Much attention should be paid to all oil containers and pipe lines and other transportation systems so as to avoid contamination through spillage

iii) Discourage settlement in catchment areas

iv) Population control so as to avoid / reduce wastes production dumplings in the water bodies

v) Use of fertilizers and chemical in farming should be cut down as much as possible to avoid contamination through surface run off

vi) Wastes should be properly disposed of by burning or burying

vii) Sewage disposal centers should be located far from water sources

viii) Wastes should be recycled for example iron and steel materials, papers boards

ix) Avoiding mining activities near water bodies

x) Encourage the use of good fishing methods

REASONS FOR WATER CONSERVATION

i) To ensure constant supply of water [clear and safe] so as to prevent the outbreak of diseases such as cholera and typhoid

ii) To simplify or ease the work of the women and girls of fetching water far from their home stead

iii) To ensure development by facilitating environmental conservation

FACTORS THAT HINDER WATER CONSERVATION PROCESS

i) Lack of enough education

ii) Lack of enough technology for recycling of liquid wastes

iii) Rapid population growth makes management difficult and expensive

iv) Poverty

People lack money for construction of good sewage systems buying trucks for the collection of wastes etc.

v) Low priority given to the problem of waste management by the authority

vi) Irresponsibility of the concerned people

TAPPING WATER FOR ELECTRIC POWER GENERATION

Water plays an important role in the development of hydroelectric power generation Hydroelectricity is the form of electricity produced by power of falling water i.e.

- Streams.
- Glaciers.
- Natural water falls.
- Manmade lakes.

The main rivers of Africa which have tremendous head of water important for power development are Nile, the Niger, Zaire, Zambezi Limpopo and the Orange river. It is estimated that African rivers can supply 23% of potential worlds HEP. Hydro turbines are used to produce hydroelectric power.

HYDRO ELECTRIC POWER (HEP) GENERATION

How to set up hydroelectric power generation center

1) A reservoir or dam is constructed normally across a river or along a coastal strip where tidal waves are common to make water to fall through a large pipe called pen stock.

2) A power house is constructed and turbines installed.

3) Water is then drilled to the turbine chamber where by its presence cause rotation of the turbines. As the turbine rotate the generator also rotates to produce electric power.

4) The power produced is then transported to the transformer.

NECESSARY CONDITIONS/REQUIREMENTS FOR HARVESTING HEP

1) The presence of the source of water

2) Steep gradient or slope so as water can run off or fall

3) Presence of enough skilled labor for construction of dam and running of the project

4) Availability of market for both domestic and industrial use.

PROBLEMS OF HARVESTING/LIMITING OF HEP IN AFRICA OR TANZANIA

1) Lack of capital for construction of dams and installing the power plant

2) Lack of appropriate technology

3) River regime, variation of volume of water in the water bodies

4) Sitting of the reservoirs or dams due to sedimentation

5) Theft of power lines and transformer oils

6) Lack of good transport facilities especially in remote power plant

IMPORTANCE OF HEP

1) It stimulates the development of economic sectors such as mining industry.

2) It encourages environmental conservation by reducing dependence on forests as a source of power.

3) It promotes living standard.

4) It is a source of national income.

5) It facilitates the growth of science and technology.

SUSTAINABLE USE OF WATER RESOURCES

Types of underground water

Water is found both at the surface of the earth and underground. Underground water, also called ground water or subterranean water, is water that is found below the surface of the Earth. These are the main types of underground water.

(a) **Connate water;** It mainly also be referred to as fossils water. This trapped in the pores of rocks during the formation of the rock. The chemical composition of the water changes with the changes that the rock is undergo. Most of connate water is saline.

(b) **Meteoric water;** This refers to underground water which originates from rainfall and other forms of precipitation such as hailstorms and snowfall. It is a result of precipitation water seeping into the ground.

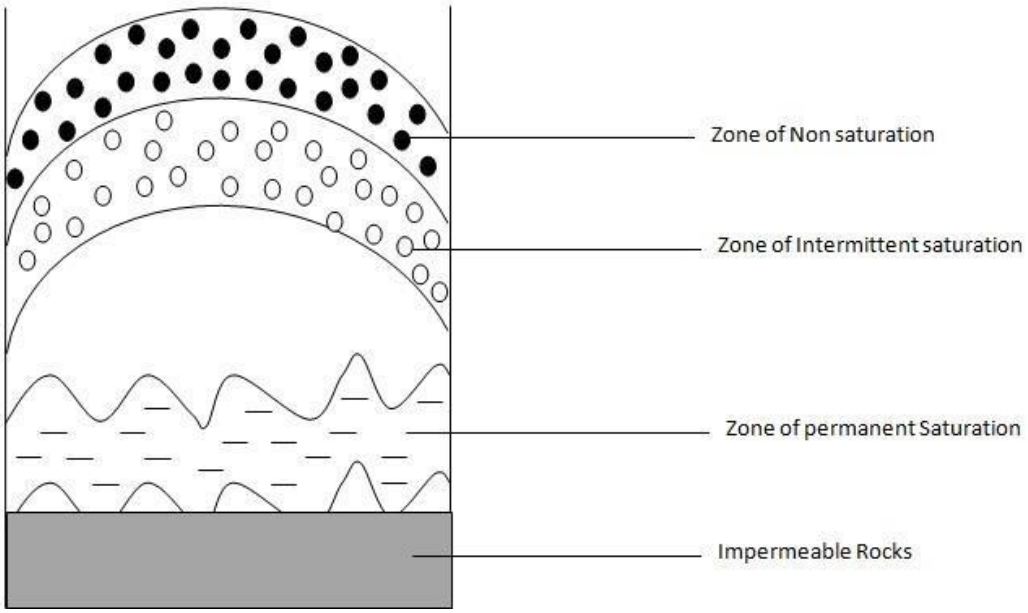
(c) **Juvenile water;** It is also referred to as magnetic water. This is water that is brought closer to the Earth's surface due to volcanic activities. It usually has high mineral content.

(d) **Oceanic water;** This is underground water that results from seepage of ocean water into the ground. It is most common in coastal areas where ocean water seeps horizontally into the ground from the ocean.

TAPPING UNDERGROUND WATER SOURCES

Underground water is water which is found in the ground. It is also called subterranean water.

It is found in layers of sediments or rocks which are highly permeable contain water, those rocks are called AQUIFER.



- **Zone of non-saturation**

This is where the pore spaces never contain water but simply allow water to pass through them.

- **Zone of intermittent saturation**

This is where the pore spaces in a rock contains water only after heavy rain.

- **Zone of permanent saturation**

It is where pore spaces in rocks are always filled with water, the upper surface of this layer is called the water table.

Water can enter a rock in two ways

1) Via the spaces called pore spaces separating the individual grains of the rock

2) Via the joints or faults in a rock

A rock which has pore spaces into which water can infiltrate is called a porous rock.

The one which has fault or joint into which water can infiltrate is called pervious (permeable) rock

A rock is said to be permeable if it allows water to pass through them.

Features resulting from underground water are springs, wells and artesian basins

Springs

Water is flowing naturally from the ground.

Well

If a hole is sunk into the ground beyond the water table, water seeps out of the rock through the hole which is then called a well.

Artesian basin

Consists of a layer of permeable rock lying between two layers of impermeable rocks such that the whole forms a shallow syncline with one or both ends of the permeable rock layer exposed to the surface layer.

Artesian well is constructed on artesian basin the artesian basin is in the Saharan desert

1) The great western e.g. [1,500,000 m^3] Algeria.

2) Great southern e.g. [1,700,000 m^3] Algeria.

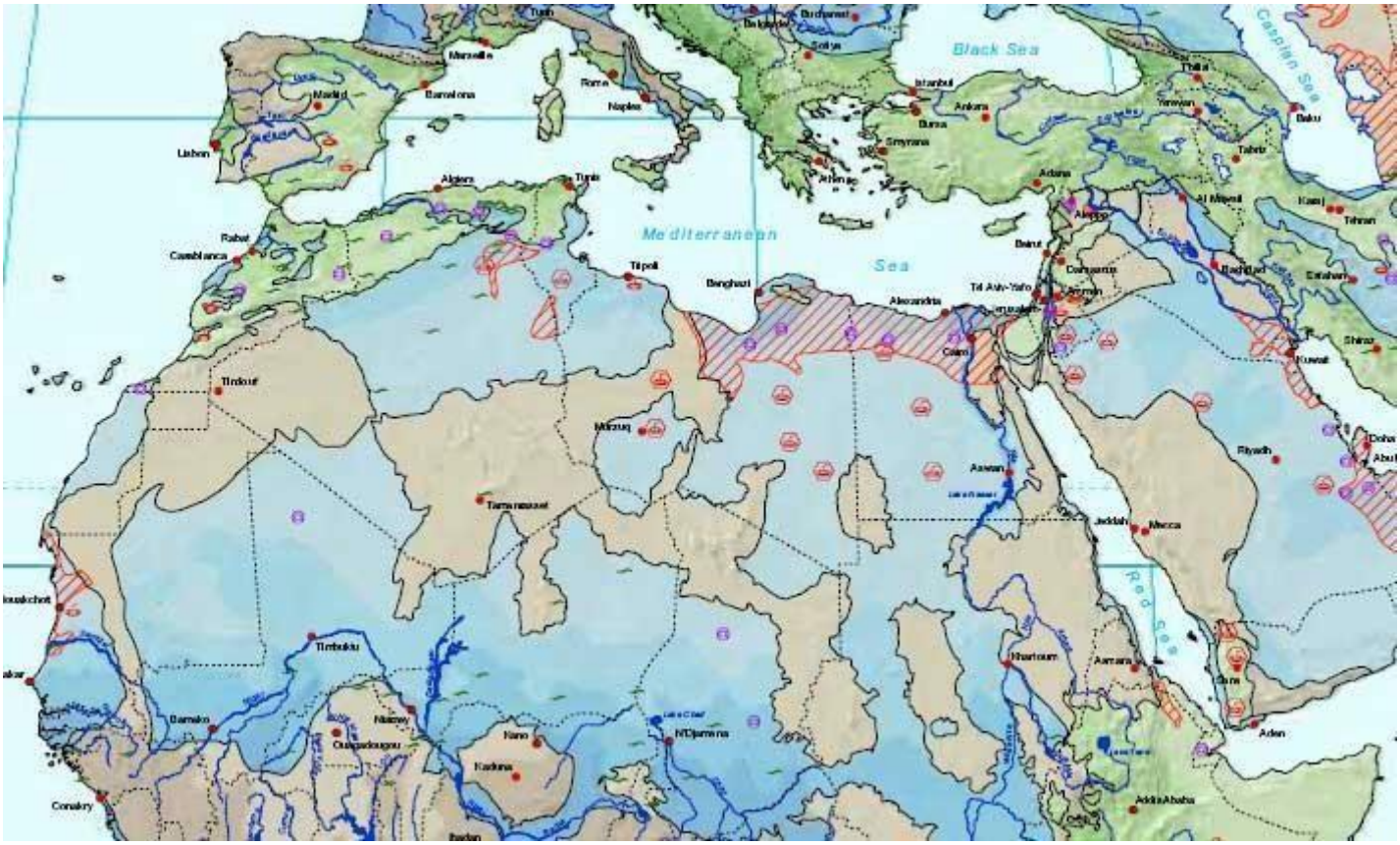
3) Tenebrous [400,000m^3] between Mali and Niger.

4) Fezzan [400,000m^3] Libya.

5) Niger [1,800,000m^3] Mali and Niger.

6) Western Egyptian desert [600,000m^3] Sudan and Egypt.

7) Chad [3,500,000 m^3] between Niger and Chad.



The map above is a part of a recently released world map that shows, in blue, the presence of the underground water.

Importance of underground water

1) Provide water for domestic use

2) Encourages the development of agriculture through irrigation

3) Source of rivers through springs

4) In volcanic regions may form hot springs for geothermal power

5) From underground water we can extract mineral salts e.g. soda ash

6) Encourage development of tourism

7) Hot springs are sources of medicine

POLLUTION OF UNDERGROUND WATER

1) Pollution can be caused by septic tanks or pit latrines which have been improperly located or constructed e.g. if they are too close to the well under ground water will get contaminated

2) Disposal of untreated wastes from residential areas contaminate the underground water if the water table is too close to the surface

3) Industrial and farm wastes can sink into the ground and cause pollution

4) Acidic rain can cause pollution

5) Oil spills from tankers, containers pipes etc.

6) Surface runs off containing waste materials can enter the ground through the sink holes

EFFECTS OF POLLUTION OF UNDER GROUND WATER

i) Decline in agricultural productivity for example if underground water is polluted with acid, plant growth will be stifled and crop failure can occur

ii) Soil structure can be destroyed due to the presence of salt, iron oxides etc.

iii) Polluted underground water possesses a health risk and therefore unfit for human consumption

iv) It can cause migration of the people from the area where the underground water is highly polluted

v) Starvation and hunger can occur as a result of crop failure caused by polluted water

How to prevent pollution of underground water

- People should avoid dumping wastes unnecessarily in the ground
- The use of poisonous chemicals in the farms should be avoided
- The waste to be dumped in the ground should be treated first so as to render it harmless
- Waste material should be recycled for example plastic material can be used to make pillows etc.

WAYS OF EXPLOITING UNDERGROUND WATER

i) By drilling bore holes

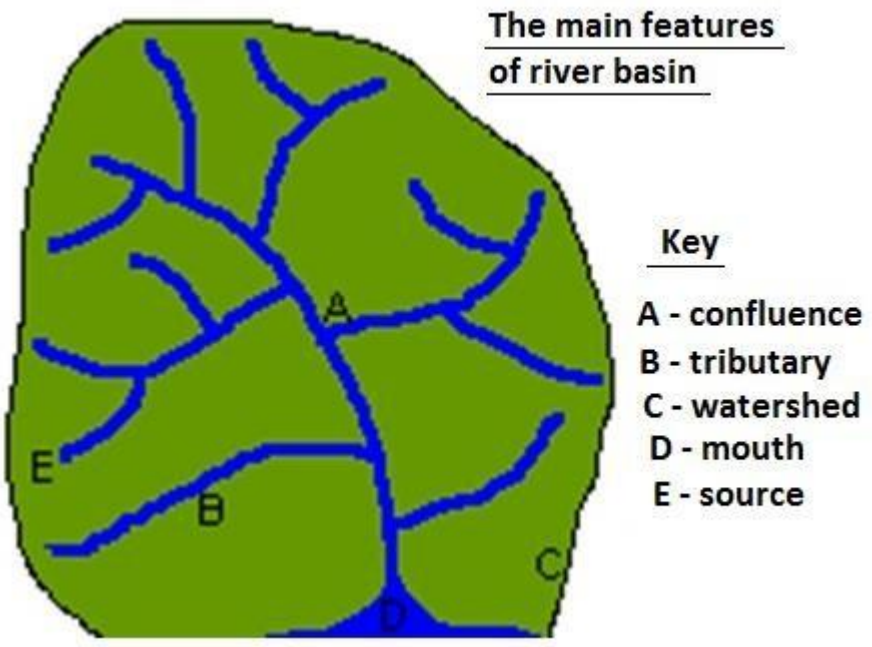
This is done by digging the hole into the soil which goes below the water table [water flow at low pressure]

ii) By constructing artesian wells

Water is pumped to the surface [no pumping]

RIVER BASIN DEVELOPMENT

River basin is an area surrounded by water or River basin is the land that is drained by a river and its tributaries (smaller rivers, also called streams).



River basin development is the scheme developed in order to ensure continuous availability and renew-ability of river basins water and other resources or River basin development is the sustainable use of river basin resources for economic gain.

These schemes aim at different purposes such as:

- Better water uses for domestic use, irrigation and industrial use.
- Adequate energy HEP and food supply.
- Improve health through fishing.

- Protection of the environment.
- Improve navigation.
- Control floods.
- Tourism activities.

BENEFITS OF THE RIVER BASIN DEVELOPMENT

1) They help in controlling floods whenever they are established

2) They encourage environmental conservation by planting trees.

3) They improve the standard of living by creating employment opportunities both within the river basin and outside.

4) Encourage tourism since dams are used as recreational centers.

5) Development of timber industries for example in Canada rivers are used for transporting logs.

6) Lead to improvement in river transportation.

7) Water comes from where projects have been allocated helps much in.

- Irrigation.
- Domestic.
- And industrial use.

8) Influences the growth of towns and industries.
9) They are center for HEP generation

Examples of river basins projects in the world and Africa

In Africa

i) River orange basin in south Africa.

ii) Gezira scheme along River Nile in Sudan.

iii) Rufiji basin in Tanzania.

iv) Kilobar basin in Tanzania.

v) Kagura river basin in Tanzania.

vi) Tana river basin in Kenya.

vii) Volta river project at Akosombo dam in Ghana.

In the world

- Tennessee valley project in USA
- Punjab on the Indus river basin
- Ganges project on river Ganges in India
- Amazon basin in brazil
- Rhine river basin in Rhine river in Germany
- Yang tee – kiang basin in Yangtze kiang river in china
- Hwang – Ho basin in Hwang –Ho river in river in china
- Si-kiang basin in Si- kiang river in china

SETBACKS /HINDRANCE /PROBLEMS ASSOCIATED WITH RIVER BASIN PROJECT

1) The project may cause displacement of people within an area

2) The project can also cause environmental degradation and soil erosion in case of poor irrigation

3) Project may cause loss of some species

4) They may increase the debt burden to poor countries as many of the countries are forced to borrow from richer countries so as to establish and run such projects

5) River basin development projects are often associated with the outbreak of diseases such as malaria and cholera

TENNESSEE RIVER VALLEY AUTHORITY [TVA]

Tennessee River valley is in the tributary of the Ohio River in the tributary of Mississippi river. It starts from

Appalachian Mountain in the eastern part of the USA.

It spreads across seven states of the USA;

- Alabama
- Georgia
- Virginia
- Kentucky
- Tennessee

- North
- And South Carolina

TVA was created/established in 1933 by the USA government, is a fully government owned body in charge of development activities in this Basin.

a) Short term aims/goals/objectives

To solve the economic and social problems of the people such as;

i) Navigation i.e. to improve navigation.

ii) Flood control.

iii) Provision of reforestation [forestry].

iv) Production and distribution of electricity.

v) Improving farming techniques.

vi) Establishment of recreational facilities.

vii) Industrial development.

viii) Wild life conservation.

ix) Road and railway development.

x) Planning for towns

xi) Erosion control

b) Long term aims/goals/objectives.

To raise the standard of living of the people in the area.

STEPS TAKEN FOR CONSTRUCTING TVA.

1) Construction of dams.

2) Reforestation on steep slopes.

3) Modern farming methods were introduced i.e.

- Terracing
- Contouring etc.

4) Planting of grasses or cover crops on slopes to reduce surface run offs.

Nine dams were constructed on the main Tennessee River and 23 on its tributaries. The biggest dam in the area is Kentucky dam which regulates water of the dams up stream.

All dams are capable of generating HEP, assisting transportation and controlling floods.

Benefits /results of the TVA

- Floods is controlled.
- Provision of electricity to 8 million residents as a result a number of industries have been set up in the valley i.e. copper smelting at Duck. town, iron and steel industries at Chattanooga textile industries at Knoxville, Bristol and king sport.
- Increase of water supply.
- Provision of recreational lakes.
- Navigation became possible.
- Tourism activities have increased in the valley.
- Fishing industries have increased as a result of improved fishing activities in the lakes.
- Education was given to the farmers to prevent soil erosion by practicing better farming methods such as crop rotation and terracing as well as environmental conservation technique.
- Provision of employment opportunities.

Problems

- Very expensive to manage the project.
- Many people are displaced due to the establishment of the project.

AMAZON RIVER BASIN DEVELOPMENT

Amazon is the river which is found in South America [Andes Mountains]. It covers the following countries

- Brazil
- Venezuela
- Ecuador
- Bolivia
- And Guyana

There are many kinds of fish that live in the river, also the basins are covered with the largest tropical rain forests where animals such as alligators, anacondas, monkeys, parrots, sloths and

species of insect's dwell, also rain forests has the great variety of plants covers approximately 3000 species in 2.6km^2 where by the basin covers 7,000,000km^2

Due to over population large areas of the forest was destroyed because of

- Agricultural activities
- Setting and construction of towns
- Construction of roads and railways
- Mineral extraction

As a result

- Loss of plants and animals' varieties
- Global warming
- Water logging [water stagnation]

CONSERVATION OF AMAZON BASIN

This was under the Amazon River project which was set by Brazil government together with other American countries.

STEPS TAKEN FOR CONSTRUCTION

i) Reforestation

ii) Reduction of pollution and global warming

iii) Proper farming methods

iv) Practicing selective logging

v) Setting aside protected areas

AIMS OF THE PROJECT

1) Sustainable forest management under the support of the world wildlife fund

2) To meet the goals of Kyoto protocol [the government of industrialized countries to reduce the emission of destructive gases by 5.2% this was on December 1997] also to meet the goals of an international treaties to combat global warming.

INDUS BASIN

Punjab region is in the Indus basin.

It refers to the land of five rivers i.e. tributaries of Indus river: -

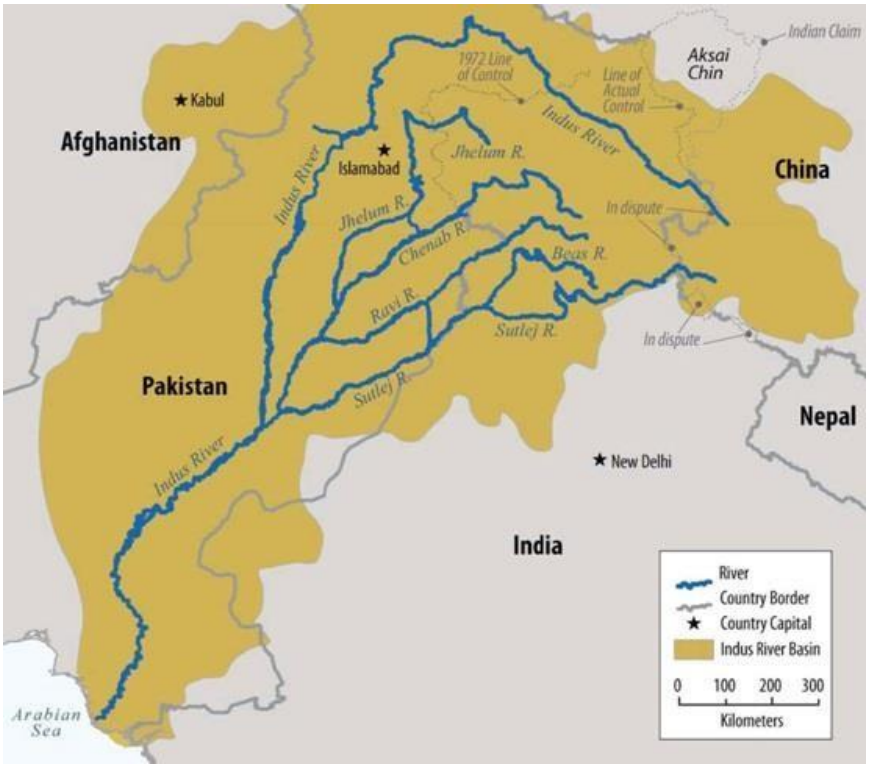
i) Jhelum

ii) Chenab

iii) Ravi

iv) Sutlej

v) Beas



Indus River starts from Himalayas Mountains.

These rivers flood with water during summer and dry during winter which demand irrigation the main crops grown are

- Wheat
- Millet and

- Cotton

Other crops are

- Maize
- Barley
- Oil seeds and
- Sugar cane

Wheat is dry season crop while others are wet season crops

Problems

1) Water logging i.e. the impervious soil prevents the water from soaking and also due to the gently slope

2) Development of salt layers [Salinization] i.e. the surface water when evaporates left salt on the surface leading to the dying of the crops in farms

3) Population increase led to pressure on land

4) There were frequent conflicts in the country which led to poor investment on the basin

ADVANTAGES /ACHIEVEMENTS

- Development of industries with the aid of the government e.g. cotton raw materials processing industries
- Supply of natural gas and lignite
- Improvement of the railways
- Variety of crops [e.g. Lahore] which was ancient city into the important market centers
- The Indus basin has earned the country a world reputation through HEP and irrigation dams e.g. Mongla dam on Jhelum river.

RUFIJI BASIN DEVELOPMENT AUTHORITY [RUBADA]

Was authorized by the government of Tanzania in 1975 to plan and coordinate the development activities in the Rufiji River. Rufiji river has two main tributaries: -

- Great Rutha
- Kilobar River

It is situated in Iringa but there are other centers which are located close to the basin Boarders i.e.

- Dar es salaam

- Morogoro
- Mbeya
- Sonyea
- Dodoma

Benefits of RUBADA

1) Hydro power plants.

Twenty-two major hydro power sites have been identified in the Rufiji basin of karate, Metra, Manga, Ruhudji, Meara and Iringa Loose.

- It generates electricity which is used within the immediate area in other parts of the country.

2) Agriculture

A large number of irrigation projects have taken place in the basin (Improvement of Agriculture production due to irrigation).

i.e. Sugarcane, growing rice in the kilobar and using plains.

3) Forestry

10% of the total basin is covered by forests which are important for regulation of water resources.

4) Industrial development

Due to the availability of power, industrial activities have advanced in the region hence increase the volume of trade in the country.

5) Tourism

Rufiji basin is one of the major tourist attractions in Tanzania i.e. Selous game reserve, Runge and Using game reserve as well as Misumi and Rutha and National parks which are tourist attractions, are located within the basin.

Problems faced by RUBADA

- Lack of enough capital to invest in the area.
- Infrastructure is poorly developed.
- Lack of qualified personnel.
- Low level of technology.

- Rural-urban migration
- Fluctuation of water levels.
- Lack of support by local communities.

KAGERA RIVER BASIN DEVELOPMENT PROJECT

It was established in 1977 by the government of Tanzania Rwanda and Burundi then later Uganda joined in 1981.

Aim

To establish massive hydroelectric power at Resume falls in Kagura.

Characteristics of river Kagura basin: -

- It gets enough rainfall per year.
- It has fertile soil.
- It has mineral deposits

The expectations of the project;

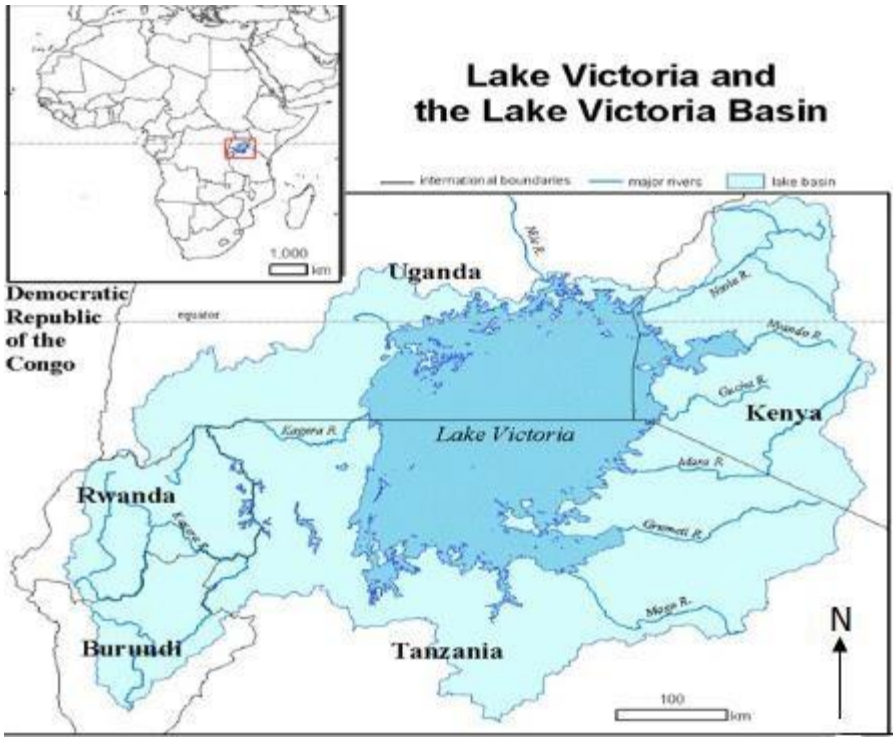
- Hydroelectric power generation.
- Increase the employment opportunities.
- Improvement in transport and communication.
- Cooperation among member countries.
- Development of mining and agriculture.
- Expansion and improvement of market.
- Development of tourism.

Problems encountered

- Labor supply

Is the problem because of people moving from one area to another?

- The ongoing civil wars in Rwanda and Burundi as well as political problems in Uganda and the DRC which keep people restless and hence causing retardation in development of the project
- Low technology among the local people
- Hesitations by Rwanda and Burundi who will lose part of their land to give room for development of the scheme



KILOMBELO IRRIGATION SCHEME

Is located along river kilobar a tributary of river Rufiji in southern Tanzania

Aims of the scheme

- To open up the remote and undeveloped areas of southern Tanzania
- To improve the crop yields [sugar cane] as well as Rice, Beans, Maize and vegetables

Factors that facilitated the development of the scheme

- Need to develop rural areas of the southern part of Tanzania.
- Need to fight poverty.
- The available large land in the river basin with the fertile soil.
- Reliable water supply from the river for irrigation and other uses.
- People's high need for sugar.
- Availability of transport services i.e. TAZARA railway lines.

Advantages of the scheme

1) There has been flood control.

2) Improvement in transportation i.e. railway.

3) Increase in sugar production hence decrease dependency on imported sugar.

4) Creation of employment opportunities.

5) It promotes the standard of living of the people through.

- Training
- Employment

6) Development of villages and towns i.e. karate, MA Kambako, Misumi etc.

7) Development of timber and fishing industries.

PROBLEMS FACING THE SCHEME

1) Poor labor supply due to rural urban migration

2) Farmers are affected by water borne diseases like cholera and malaria

3) Change of the volume of water

IMPORTANCE OF RIVERS, DAMS AND LAKES

1) Helps in generating HEP

2) Promote transport and communication

3) They supply water for irrigation and domestic uses and industrial activities

4) They modify the environment like introducing moisture to the atmosphere which later leads to the formation of rainfall

5) They attract settlement

6) Features like waterfalls attract tourists

7) They promote fishing industries

PROBLEMS OF RIVERS, DAMS AND LAKES

1) Fluctuation of volume of water

2) May lead to spread of diseases like bilharzia etc.

3) Flooding of rivers may lead to destruction of properties

4) The invasion of vegetation in these water bodies lead to problems in fishing and navigation.

LAND RECLAMATION

The recovering of land that has been rendered unsuitable for use to make it usable again Or

Is the process of turning the poor land into a useful state through the improvement practices for economic and social development.

AIMS OF LAND RECLAMATION.

The main aims of land reclamation are as follows; -

(i) To increase the size of land available for agriculture purposes. This was carried out in the Tennessee valley. Previously unused land was irrigated in order to increase crop production.

(ii) To increase the size of land available for human settlement. This may become necessary if the population of an area grows beyond the land is available. It may also create land to resettle people who are being moved from another area.

(iii) To make available more land for the establishment of industries and offices.

(iv) To be in proximity to resources in order to be able to gainfully utilize them.

FACTORS WHICH MAY CAUSE LAND TO BECOME UNUSABLE

1) Land may be damaged due to natural hazards like fire

2) Human activities can also damage the land i.e. poor farming methods, mining and pollution.

3) Cares of water-logged land for example swamps and marshes

Methods of reclaiming the land/Land reclamation techniques.

1) A forestation or reforestation [planting trees]

2) Tsetse fly control which is done by clearing, spraying the area in order to kill them

3) Irrigation which is practiced where the natural precipitation is not sufficient to meet the crop moisture requirements

4) Draining water using canals and pumps can reclaim or constructing embankment for water logged land /marshy areas or wetlands

5) Planting reeds so as to allow water absorption by plants so as to dry the areas for cultivation.

6) Planting grass cover to check erosion

7) Burning reeds so as to clear the area for cultivation and settlement

PURPOSES OF RECLAIMING THE LAND

1) To increase availability of arable land for cultivation.

2) To expand carrying capacity of land. This means that the land can be used for industrial areas as well as residential areas.

3) For road and railway construction.

4) To control floods caused by water from the sea.

- The best examples of land reclamation in the world is the Zuider Zee land reclamation scheme in Holland [Netherlands].

LAND RECLAMATION IN NETHERLANDS

Netherlands lies between the North Sea [north] and Belgium [south], Netherlands means low lands, it was covered by flood water from the sea, in one part were marshes, swamp land or land covered with poor soil.

Netherland occupies an area of 40844 square km. the land in the northern parts of the country have been reclaimed from the sea and made arable.

An area of reclaimed land is called POLDER.

A project drawn by a Dutch engineer called CORNELIS LELLY.

AIMS OF LAND RECLAMATION IN NETHERLANDS

- To increase dry land for residential and industrial development.

- To reduce the danger of over flooding and obtain land for agriculture and livestock keeping activities e.g. in 1953, 1800 people died due to the rise of sea level.

STEPS OF LAND RECLAMATION TAKEN IN NETHERLANDS

1) Dykes /embankments were built to enclose part of the sea water. The sand was imported from Germany and Sweden

2) Water was pumped out of these areas using wind mill and electrical pumps

3) The dry land was planted with reeds to control weeds and preserve moisture in the soil and to absorb more salt from the soil.

When they were dry then reeds were cut and used as mattresses lied on surfaces of the dykes to protect the wall from sea wave erosion.

4) More dry soils were added to the dried areas

5) Soil was grouped according to the type for different uses

6) Ditches were cut at the floor of the enclosed land in order to put water into the main pump and back into the sea

In Netherlands the major reclamation projects are; -

- Zuider zee.
- Delta plains.
- Warden plains.
- Barrier plains.

ZUIDER ZEE SCHEME

This was carried between 1927 up to 1933 by a dyke [embankments] of 32m long, 7km high and 180m wide which was built across the sea [south sea].

Today the Zuider–zee has 300 polders i.e. over 220,000 hectares [40%] of arable land have been recovered from the sea through the Zuider- zee project.

BENEFITS OF THE ZUIDER ZEE SCHEME

- Daily production has increased from keeping white and black type of Friesian and Holstein breeds.
- Enlargement of space for settlement for people who could otherwise have been greatly short.
- People and their properties were protected against the sea floods caused by tides.

- Fresh water lakes were developed to provide fresh water to the communities.

Reasons for the success

i) Capital.

ii) Technology.

iii) Determination of the people.

iv) Strong support from the government.

Problems

1) It is too expensive to rehabilitate, or to restore.

2) Over population has increased pressure on arable land

3) Seepage of sea water has resulted into salination of soils

Examples of land reclamation in Tanzania

HADO

Hibachi Ardhi Dodoma which was started in 1973 with the aim of arresting the accelerating land degradation in Dodoma through destocking, cutting off drains that had been constructed as well as to control surface run offs from higher slopes.

HASHI

Hibachi Ardhi Shenyang started in 1986 by introducing the indigenous system of forest management known as Nigiri where by dry fodders are conserved as standing hay hence solutions to the shortage of fodders caused by long droughts.

Land reclamation process in Tanzania.
Various efforts have been made to reclaim land in Tanzania. Some of these efforts include the following;

- **Irrigation**

This has been carried out in the dry lands found in Rufiji basin.

- **Drainage**

This take place in some parts of Dar es salaam and Dodoma. Example, this include some areas

such as Conducti and Masani. Most of this land was reclaimed for settlement.

- **Afforestation and Agroforestry.**

Shenyang region is a good example of land reclamation though afforestation. The government encourage planting of trees to create forests as well as planting trees in farm.

- **Clearing of vegetation**

This involve clearing of vegetation for another activity. Example livestock keeping.

SUSTAINABLE USE OF FOREST RESOURCES

EXPLOITATION OF FOREST RESOURCES

Forest refers to an extensive area of land which is mostly covered by trees of different sizes and species. It is also covered by some grasses and shrubs.

Forests can be natural or manmade (planted)/ Artificial forest.

Importance of forests

i) Forests form a protective cover to the ground and hence preventing soil erosion from degrading the surface of the earth. Trees and grasses preventing movement of agents of erosion like water winds and moving ice.

ii) Forests provide habitats for animals and birds of different varieties.

iii) Forests contribute to the modification of the climate especially through rain formation and moisture conservation.

iv) Forests also introduce oxygen in the environment which is produced during photosynthesis. In this process the trees clean the air by absorbing carbon dioxide. Carbon dioxide is the raw material used during photosynthesis.

v) Trees are also a source of fuel energy since they are used for firewood and charcoal making.

vi) Forests also provide raw materials for paper and pulp industries from which writing materials are produced.

vii) They provide building material like poles and timber.

viii) Some tree species are used for making medicine and also provide fruits as well as ornamental flowers.

ix) Forests contribute to soil development through rotting of leaves which lead to formation of humus. Humus is very important in plant growth.

x) Trees are used for extracting gums.

xi) They maintain water sources like rivers, catchment areas, springs and lakes. This is due to the fact that forest support rain formation.

xii) Forests are also used for scientific studies (research).

xiii) Where there is a variety of trees, tourism can develop because of scenic beauty. Hence the country can gain foreign money.

CLASSIFICATION OF TREES

There are two classifications of trees: -

i) Hard wood i.e. Tropical rain forest, Deciduous rain forest (monsoon forest

ii) Soft wood i.e. Coniferous forests

TYPES OF FORESTS

a) Tropical hard wood forest

Tropical rainforest found in equatorial region [latitude forest]

Tropical monsoon forest

b) Deciduous forest

c) Coniferous forest

A. TROPICAL HARD WOOD FOREST

Tropical rain forest

Extend approximately 10^0N and south of the equator i.e. The Amazon in Brazil, Congo basin, Coastal land of west Africa.

These trees have evergreen appearance, also have varieties of tree species such as Mahogany, Rosewood and green heart etc. there is little undergrowth.

Trees are arranged in layers;

i) Emergent (very tall trees)

ii) Canopy (taller trees)

iii) Under canopy (smaller trees)

Tropical monsoon forests

Found in south East Asia

- Malaysia
- Indonesia
- Papua
- New guinea
- Burma
- Thailand
- And sub-continent of India.

These trees grow in areas of tensional drought thus they shed their leaves (leaves falling) abscission during the dry season. Also, there is a thick undergrowth of shrubs and small trees i.e.

- Teak
- Green heart
- Ebony
- Bamboo
- Ironwood

B. DECIDUOUS FOREST OR TEMPERATE LATITUDE FORESTS (Summer green forests).

They are located between latitude 30^0N and South of the equator. These trees shade their leaves (leaves falling)

in autumn [dry season]

The leaves are broad and it has a mixture of different species scattered irregularly throughout the forest i.e.

- Oak
- Leech
- Elm
- Chestnut
- Maple
- Aspen
- Poplar
- And birth They are found in;

- Northern china
- Japan
- Eastern North America
- And southern part of Australia

C. CONIFEROUS FORESTS

Found between 50^0 and 70^0 north of the equator, they are mainly soft woods i.e.

- Pines
- Spruce
- Fir
- And larch

These trees are narrow, needle shaped leaves to limit transpiration (loss of water through stomata pores of plant leaves) during winter, and they are evergreen and are inverted V- shape, simple root patterns, and cone shaped trees.

They are found mainly in;

- North America
- Scandinavian countries, parts of central Europe, and parts of USSR

Types of forest resources

1) Timber

For making furniture and constructional works or match making for pit pups and making of wood pulp for manufacturing new prints and crayon.

In Brazil 30% of timber is used mainly for furniture, harbor piles and clock gates, boat building and tanning extractions, 70% is used for fuel

2) Raisins and gum

Are obtained from tree balks

3) Fiber materials

For different uses such as shifting for upholstery cushions etc.

4) Oil from nuts

Can be processed for vegetable oil

5) Fruits and flowers

For human and animal consumptions

6) Medical plants

Including the castor oil plant, salsa parrilla, cinchona which are used for making genuine

Ways of obtaining forest resource

i) Uncontrolled method

ii) Controlled method

Uncontrolled method

Plant cover is removed over an extensive area and leave the land open unreliable to erosion agents i.e. using fires, shifting cultivation, deforestation.

Controlled method

Are governed by government directions which discourage the use of fire and encourage sustainable development of forests for the benefits of the people and the creatures that

inhabit such places. They include reforestation i.e. planting trees to replace harvested forest resources.

Problems arising from exploitation of forest resources

Over exploitation of forest resources can cause the following environmental problems;

i) Increase in soil erosion
As the rain drops /falls harshly in the exposed soil and remove the fertile soil.

ii) Excessive evaporation
This causes drought (problems of water because streams and springs dry up).

iii) Destruction of animal habitat.

iv) Accelerated desertification. This caused by prolonged drought of an area since the absence of forest affect rain formation.

v) Pollution of the atmosphere which can lead to greenhouse effect and global warming i.e. when forests are cleared by burning adding carbon dioxide in the atmosphere.

vi) Disappearance of some species of trees (loss of biodiversity).

vii) Unreliable rainfall due to the excessive evaporation.

Forest conservation measures

i) Planting trees where other trees have been cut (reforestation) and planting trees where there never existed any tree before (afforestation). Setting aside some areas and declaring them as protected areas.

ii) Educating people on the importance of conserving the forest and persuading them to fully participate in all activities involving forest conservation. Also, there should be clear policies giving directions on the proper use of the forest resources.

iii) There should be alternative energy resources used instead of depending on the trees. For example, Solar energy, Geothermal power, bio-gas and HEP.

iv) There should be careful land use planning in order to avoid destruction of trees. Population control should be encouraged in the countries so as to reduce pressure on the forest resources and the land in general.

v) Agricultural methods should be improved so as to encourage proper land use methods like shifting cultivation should be discouraged.

vi) Destocking (reducing the number of animals) should be encouraged among the pastoralists, because having too many animal leads to the destruction of vegetation.

vii) New and fast-growing trees should be introduced. Argo-forestry means the practice of inter cropping trees and crops in the same farm. Trees can be inter-cropped with crops like beans, bananas etc.

Advantages of inter cropping the trees with crops (ago-forestry)

i) Trees prevent soil erosion while the crops like beans add nutrients to the soil.

ii) A farmer gets a variety of profits from the same farm. That are forest products and crop products.

iii) Family members get firewood from around homestead without traveling very far in search for firewood.

iv) Trees provide shades to other plants on farm land.

v) The rotten trees add nutrients to the soil hence soil fertility.

Disadvantages related to Argo-forestry

i) When large trees are inter-cropped the annual crops tend to suffer leading to decline in production. This is so because the large trees tend to take up most of the moisture, nutrients and block the light from reaching the annual crops.

ii) Some trees are harmful to crops since they produce poisonous substances.

iii) Mechanization cannot be easily done because of the trees.

Examples of areas with timber industry are: -

- Sweden
- Canada
- And some parts of Japan where coniferous trees provide most of the forest resources. 60% of Canada is covered by forests and the major species are Oak, Chestnut, Spruce, and Pines

Factors which have led the development of the timber industry

1) Low temperature discourage settlement hence leave room for trees

2) Enough rainfall leads to the growth of the coniferous forests

3) Availability of capital

4) Cheap means of transport

5) Sound forest management strategies

In Gabon

Hard wood is available like

- Mahogany
- Ebony
- And iron wood They are natural

Factors which have led to the development of the timber industry in Gabon

i) Availability of many tree species.

ii) Availability of rivers like Olowe facilitates the transportation of the timber products.

iii) Large foreign companies which were given concession to exploit the forests have capital.

iv) Constant market for timber products.

SUSTAINABLE MINING

1. Meaning of some common terms:

Mining

Is the process of obtaining or extracting minerals from the ground or Is the extraction of valuable minerals or other geological materials which form the package of economic interest to the miners?

Mines

Are places where Minerals are obtained or are the places where minerals are extracted.

Minerals

Substances with constant chemical composition which are formed naturally in the earth's crust or Is the chemical composition of two or more elements within the earth's crust.

2. Types of mining industry

a) Surface mining

Extraction of minerals found close to the earth's surface, e.g. corals and limestone.

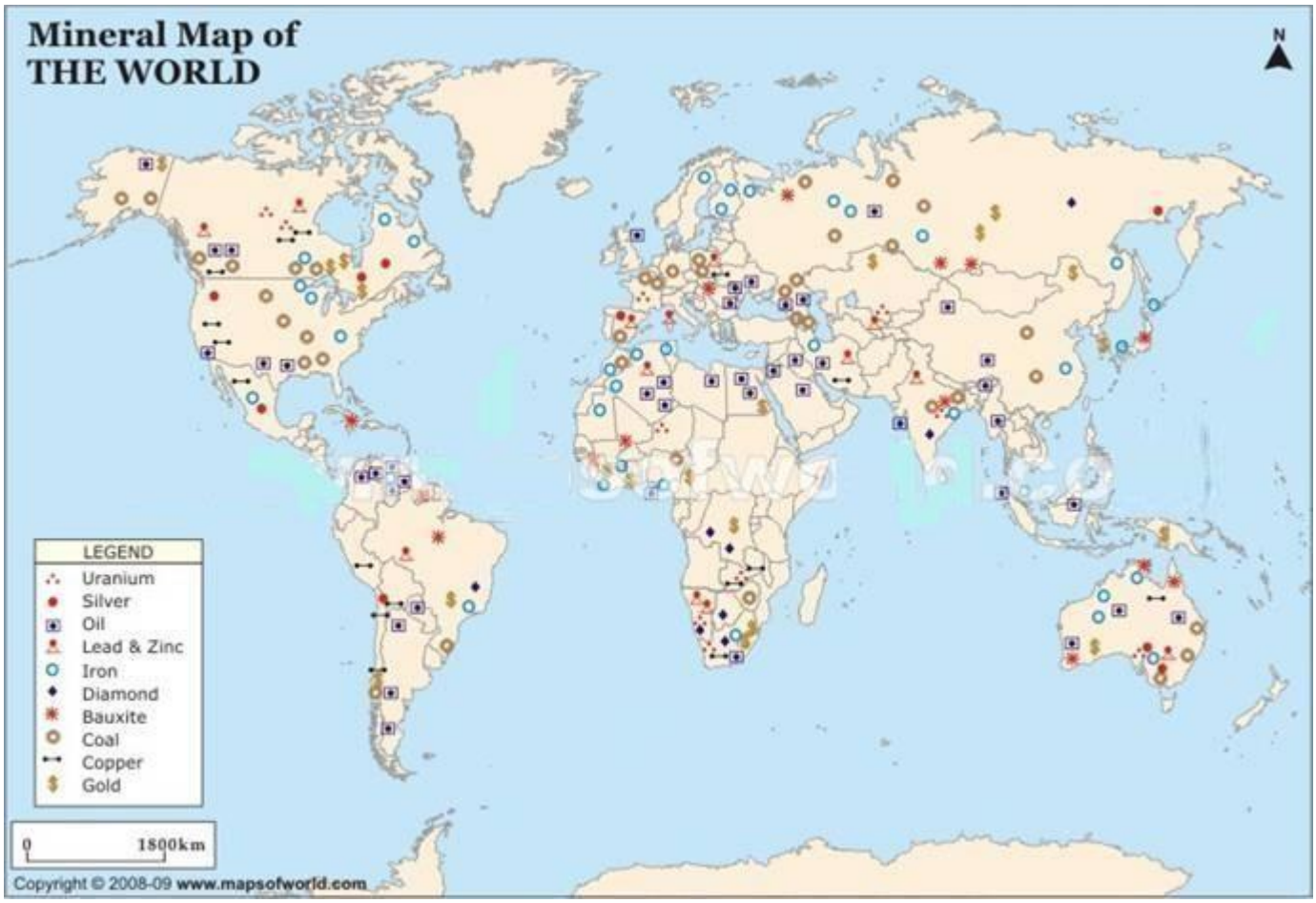
b) Underground mining

Extraction of minerals found deep in the ground e.g. gold, diamond etc.

3. MINERAL DISTRIBUTION IN THE WORLD.

Distribution of mining industry regions in the world, minerals are unevenly distributed in the world. Mining activities are concentrated where minerals deposits are in, some regions are rich in mineral resources e.g. south Africa while others are poor in minerals this is due to geological factors which led to their occurrence.

Mineral distribution world wide



4. Methods of mining

(a) Open cast mining

It is used to extract minerals which usually occur close to the earth's surface
It involves removing the top layers of the earth and other overlying materials above the mineral areas
Earth moving machines and bulldozers are used.
Electric shovels-to dig up minerals and load it into the lorries or trucks It is the cheapest method

Example

Quarrying of lime stone and corals at conducti in DSM and Barebone in Kenya

(b) Alluvial mining

Takes place where minerals occur in alluvial deposits (materials deposited by water).

It involves mixing of alluvial deposits with water.
Then the mixture is rotated until light particles like sand, mud and small stones are crashed off
Then the mineral particles like gold, platinum and diamonds are left behind

(c) Underground (shaft mining)

It is used in mining ore that lie deep below the surface of the earth
Vertical shaft is dug up to the layer containing the mineral, and then the tunnel is dug up horizontally to reach the minerals. Hence, the minerals are transported from the tunnels to the base of the shaft from where it is hoisted onto the surface.

5. TYPES OF MINERALS AND DISTRIBUTION OF MINING REGIONS IN THE WORLD

a) Metallic minerals /inorganic

Gold, iron, silver, copper, lead, nickel, cobalt, manganese, tin, aluminum etc.

b) Non – metallic minerals

Salt, potash, nitrate, Sulphur, diamond and graphite.

c) Energy mineral

Coal, natural gas and petroleum

Coal

It is found in USA in Pennsylvania, West Virginia, Ohio, and interior states like Illinois, Indiana, Kansas, Oklahoma and the gulf province in states like Texas, Alabama. The former USSR in Moscow, Donetsk coal basin and keenest coal basin. Other countries include china, United Kingdom, South Africa, Zimbabwe at wonky, Zambia, Nigeria, Botswana, The Democratic Republic of Congo, Mozambique, Morocco, Malawi, Sudan and Tanzania [from the Ruhuhu basin, ketewaka- Mchuchuma and Songwe- kiwira]

Gold

It is found in South Africa, Ghana, Tanzania, Zimbabwe, DRC, Uganda and Kenya

Salt minerals

It is found in Tanzania along the coast, Uvinza in kigoma and China

Copper

It is found in Zambia, DRC, Uganda – kilembe, Mauritania, Botswana, Chile, Canada, the former USSR and USA

Natural gas

It is found in Tanzania at Songosongo Island in Kilwa, Nigeria and Middle East

Diamond

This is found in Tanzania [Mwadui shinyanga], South Africa, DRC, Namibia and sierra Leone and guinea

Phosphate

It is found in Tororo –Uganda and Morocco at khourigba, youssonta and ben gueri within the maseta

Rouaite

It is the ore of aluminum. It is located in guinea, Ghana and Cameroon.

Iron ore

It is in German, Sweden, USA, and china, Brazil, Australia, France, UK, Liberia, Mauritania, Zimbabwe, Gabon, Algeria, Angola and South Africa.

6. Contribution of mining industry to the economy (economic importance of mining industry) of any country

i) Mining leads to the development of industries in the country for example steel cutting industry, coal has led to the development of heavy industries in china, USA and chemical industries.

ii) Mining contributes to the earning of foreign currency in the country for example copper in Zambia, gold in South Africa, oil in Nigeria, Libya, Algeria and Middle East and Kuwait.

iii) Mining industry provides employment opportunities to the people i.e. in Zambia copper mining employs a lot of people also many people are employed in the gold mining areas in south Africa [in rand mining areas]

iv) Mining stimulates the development of transport and communication of other economic systems in any country for example in South Africa mining led to the development of a dense network of roads and railway lines in the eastern part.

v) It encourages the development of other economic sectors since it generates capital for the country, for example mining in china has led to heavy investment in agricultural machinery.

vi) Mining also leads to the improvement in the international relations through forming international organizations for the countries which deals with mining and exporting certain types of minerals for example Nigeria is the member of OPEC to the oil mining industry

vii) Mining leads to the development of towns and large cities like the industrial conurbation of rand in South Africa. Conurbation is the large zone formed as a result of the combination of many towns into one zone.

viii) Also mining leads to the diversification of the economy of the country so that the country cannot depend on one source of revenue or income

ix) Mining has stimulated the construction activity especially in the supply of corrugated iron sheets for roofing the buildings etc.

x) It also supplies some energy since some minerals are energy reserve like coal, petroleum, uranium and natural gas

7. FACTORS THAT INFLUENCE THE DEVELOPMENT OF THE MINING SECTOR INCLUDE THE FOLLOWING

a) Availability of capital to be invested in the mining industry like buying the machinery. Lack of enough capital, the mining industry develop slowly.

b) Nature of transport system.
If the transport system is efficient mining develops fast but if the transport is poor then mining does not develop fast.

c) Availability of labor.
Is another factor that contributes to the development of the mining sector, for mining to develop fast there should be readily available labor but if labor is unavailable then mining

becomes poor.

d) Nature of market.
If the market is good then the mining industry grows fast if it is poor the mining industry develops slowly.

e) Water availability.
This also leads to the fast development of the mining industry if the supply of water is reliable. But the situation is different when the supply of water is poor. Water is needed for cooling the engines of the machines and cleaning the minerals.

f) Nature of government policy.
If the policy is supportive the mining industry develops fast but if the government policy is non-supportive then the mining industry develops slowly.

g) The availability of deposits and their value.
If the deposits are large and valuable mining takes place fast. But if the deposits are small and poor valuable mining take place slowly.

8. Problems facing the mining industry in Africa and other parts of the world

a) Decline or exhaustion of mineral deposits because of over exploitation like coal, copper in Zambia and some parts of USA and south Africa.

b) Poor number of skilled labors in the developing countries like Tanzania this has led to poor exploration and low yield. i.e. low quality and quantity minerals.

c) Some countries lack important mineral deposits like Japan and Norway, in some countries the available mineral deposits are of poor quality like coal in Tanzania.

d) Poor capital in the developing countries has led to the decline in the mining sector.

e) Poor transport system especially in the developing countries has led to the poor mining activity some parts of central Tanzania have poor roads which are impassable during the wet season.

f) Competition with other economic sectors for water supply is a problem for example in south Africa water is scarce and the available is competed for by agricultural sector, mining and manufacturing industry.

g) There is a severe problem of constant power supply. This affects the mining industry

h) Poor conditions of workers in the mining areas leads to a problem in labor supply

i) Political problems especially civil wars lead to the poor mining development caused by labor unrest

j) There are problems of local market especially in the developing world. There is also a problem of price fluctuation in the world market which affects the development of the mining industry in many countries in the world

k) There are problems of food supply in some countries like Zambia this leads to the poor mining development

9. Problems caused by the mining industry

i) Mining leads to environmental problems.

Like land degradation, soil pollution, water pollution and deforestation.

ii) It attracts people causing high population pressure in the mining centers which in turn causes many social and economic problems like poor
housing, unemployment, shortage of land for other activities and sometimes food shortage.

iii) Mining leads to the death of people due to accidents caused by the collapse of mines

iv) Mining causes the decline of the economic sectors especially agriculture many people rush to the mining centers to labor supply

v) Mining industry has also led to the occurrence of conflicts like wars which are taking place in the DRC and the Gulf war of 1990s was due
to mineral resource that is oil

vi) Spread of diseases due to high population pressure in mining centers.

10. Effects of mining to the environment

i) Mining leads to environmental pollution Like water pollution, air pollution, soil pollution and noise pollution

ii) Mining causes land dereliction (abandoning of exhausted land)
This destroys the nature of the landscape and leads to mineral resource exhaustion

iii) It accelerates deforestation as a result of clearing of vegetation so as to establish the mining centers and settlement

iv) The size of the land is reduced and the soil structure and texture are destroyed because of the mixture with rock fragments and hence plant
growth cannot take place easily.

v) Mining leads to the disappearance of valuable plant species. i.e. loss of biodiversity.

vi) Greenhouse effect and global warming can occur as a result of the used energy generating minerals like coal, uranium etc. these produce
gases like carbon dioxide which pollute the atmosphere.

vii) The pits which are flooded with water act as mosquito breeding places and hence accelerate the spread of malaria

11. SUGGESTED WAYS OF MINIMIZING THE EFFECTS OF MINING TO THE ENVIRONMENT

a) Improving the methods of extraction

b) Reducing the population pressure

c) Reclaiming the areas which have been affected by mining like planting the trees

d) Developing other sources of energy rather than depending on energy resources from the ground

e) Establishing other economic activities like fishing, tourism and market gardening instead of depending on mining only

CASE STUDY

COAL MINING IN USA

USA is the leading producer of coal in the world and accounts for 24% of the world's total production. The major coal fields include:

The eastern province which is the most productive in which there are states like Kentucky, Pennsylvania, West Virginia and Ohio
The interior that include the states like Hunan, Indiana, Illinois, Missouri, Oklahoma and Kansas
The gulf province that includes the states like Texas, Alabama and Arkansas

Factors that have stimulated the development of coal mining

1) Presence of large deposits in many parts of USA.

2) Advanced technology used in the mining activity. The use of machines.

3) Good market within and out of the USA due to the presence of iron and steel industries.

4) Well-developed transport system.

5) Capital availability since the country is very rich.

Advantages of coal mining in the USA

1) It has stimulated the development of industries since it provides power.

2) It has led to the development of the transport system especially the railway lines.

3) It has created employment opportunities.

4) It has stimulated the development of the iron mining sector.

Disadvantages of coal mining

1) It has led to the creation of pits in the ground leading to the formation of ugly landscape.

2) Coal has contributed to the environmental pollution like air, water and noise pollution.

3) It is facing a great challenge from the environmentalists and other sources of energy.

4) It has led to the reduction in the size of the arable land.

5) Coal is a non-renewable resource hence it gets exhausted when exploited.

OIL PRODUCTION IN THE MIDDLE EAST

Middle Eastern countries together produce over 1/3 of the world's petroleum [oil]. The major producers being Saudi Arabia, Iran, Kuwait and U.A.E. Others are Oman, Iraq, Turkey, Syria, Lebanon, Israel and Jordan.

Factors leading to the production of oil in the Middle East

1) The deposits are very large. The Middle East has a very huge deposit of oil.

2) The oil is easily obtained in the Middle East. Most of the oil is obtained from underground, only a small percentage obtained from under sea.

3) The oil can be easily exported (transported). Most of the Middle East fields are located around Persian Gulf (easy to export).

4) Oil drilling is the only economic activity in the Middle East.

Problems that have been facing oil extraction in the Middle East

1) There has been technological backwardness in many countries combined with small populations and lack of local capital. This forced the international companies to involve themselves in the oil exploitation.

2) Labor unrest due to frequent conflicts that take place in the Middle East like the gulf war. These conflicts have made the oil mining industry become insecure also there are frequent disputes which complicates oil mining because of these issues/conflicts.

3) Poor transport system from production areas to refining ports.

4) Reduction of oil reserves as it is nonrenewable resources i.e. it is decreasing day after day.

DIAMOND MINING IN SOUTH AFRICA

South Africa is the third world producer of diamond, the first is DRC and the second is the former USSR. Others are Botswana, Ghana, and Sierra Leone etc. Diamond is the hardest mineral. In South Africa mining began in 1871 at Kimberly. The methods involved in the mining process are placer method for alluvial diamond and shaft method for the diamond found in the deep ground.

Diamond is used for making jewels, manufacturing the drilling bits, making cutting instruments like for cutting glass, diamond dust for polish. Places or areas where diamond is produced in South Africa are;

i) Kimberly cape province
ii) Transvaal
iii) Port muss burg

iv) Orange free states (Pretoria)

Importance of diamond mining in South Africa

i) Provision of employment opportunities not only in South Africa but also in other countries.

ii) Development of social services.

iii) Development of towns and cities e.g. Pretoria.

iv) Increases the national income from its sales.

Problems facing diamond mining in South Africa

i) Price fluctuation in the world market which causes low profit making.

ii) Labor unrest, no peace, misunderstanding among blacks and whites.

iii) Shortage of food among workers caused by overpopulation around mining centers.

iv) Competition from other mining countries.

IRON MINING IN LIBERIA

Liberia is well endowed with large resources of Iron ore. Liberia is the leading producer of Iron ore in Africa. Iron mining is very important to the economy of Liberia. The areas with mineral deposits include Wagogo's Mt. ranges in Western Liberia, Bomu hills, Bong Mountains, Number Mountains ranges and Bio mountain ranges. Open cast method is widely used.

Factors for the development of Iron mining in Liberia

1) Availability of iron ore both high grade and low grade.

2) Development of the railway to Bomu hills from Monrovia.

3) Labor availability since west Africa has high population.

4) The government policy favors mining industries in Liberia.

Advantages of iron mining in Liberia

1) It has contributed to the export earnings.

2) It has contributed to the development of industries especially steel industry and Buchanan.

3) It has encouraged the development of towns.

4) The mining industry has stimulated the development of social services like schools, roads, hospitals, shops and police stations.

5) It has led to the improvement of the port facilities such as Buchanan.

6) Iron mines have provided market for the locally produced food stuffs.

7) It has stimulated the development of infrastructure like the railway system etc.

8) Employment opportunities.

Problems facing iron mining in Liberia

1) Competition from other countries like south Africa which produce iron.

2) There is exhaustion of deposits in the mining areas.

3) Poor transport from other west African countries.

4) The deposits are scattered.

5) Civil war between the government and rebels.

IRON MINING IN SWEDEN

Sweden is endowed with iron minerals. It is among the Scandinavian countries. Areas where iron mining takes place include places around koruna and other mining centers at Gallivan and Saavedra.

Factors for the development of iron mining in Sweden

1) The development of the railway stimulates the iron mining industry.

2) High market in Europe due to the developed industry especially in Germany.

3) Power supply from the great hydroelectric power at Portus etc.

4) The use of advanced technology.

5) The government supports industrial development.

6) Constant water supply needed in the cooling of engines and cleaning.

7) High government stability has encouraged the mining industry, this is because labor is under high security.

8) Availability of high-grade iron deposits

Importance of iron industry in Sweden

1) Creation of employment opportunities.

2) Has stimulated the development of transport and communication.

3) It has led to the development of heavy industries including steel and iron industry as well as car and ship building industry Volvo and Scania cars are produced in Sweden.

4) It has promoted agriculture, forestry and tourism.

5) International trade has expanded.

6) Towns have developed due to the contribution of iron ore mining.

7) Social services have improved to a great extent.

Problems facing iron industry in Sweden

1) Formation of ice in winter at the Luck port complicated the transportation. To solve this problem another link was formed to ice free port at Nervi.

2) Exhaustion of some iron deposits due to excessive extraction.

3) Stiff challenge from the environmentalists who are against the current trend of fast industrial development.

NATURAL GAS PRODUCTION IN TANZANIA

In Tanzania natural gas deposits have been discovered at Singsong in kiwi in 1975 but there has been a delay in realizing full exploitation of gas due to the following reasons;

1) There is low technology among the Tanzanians that can be used in exploiting natural gas at Singsong island along the coast of the Indian ocean.

2) Low capital to be invested since Tanzania is one of the poor countries.

3) Poor transport [infrastructure] that can facilitate exploitation of natural gas.

4) The use of other available sources of energy like HEP and forest has delayed full extraction of natural gas from Singsong.

Advantages of the extraction of the gas from Singsong

1) It will lead to the reduction of over dependence on gas from outside.

2) It will stimulate the development of some iron and steel industries by using the available iron deposits in Tanzania as well as scope iron materials.

3) It contributes to the promotion of environmental conservation since natural gas is clean and environmentally friendly.

4) It will lead to the creation of employment opportunities in the country so as to solve the problem of unemployment for example some people are now employed to dig traces and lay down the pipe lines and construction of other important structures.

5) The standard of living among the people will raise due to the provision of efficient sources of energy.

6) It can stimulate exploitation of other resources like petroleum which is expected to be present at Singsong.

7) It can stimulate the gain of foreign currency through selling it abroad.

TOURISM

Tourism involves the temporary or permanent movement of people away from home to other place of interests either for leisure, pleasure, recreation, or research studies etc.

It involves visiting places of interest like wildlife, conservation areas, historical sites, museums, beaches etc. In developing countries tourism is the largest foreign currency earning sector of economy.

Tourism can be categorized as a territorial or service industry

TYPES OF TOURISM

Basically, there are two types of tourism industry these are: -

1) Domestic tourism.

2) International tourism.

Domestic tourism

It involves people travelling to places within the country for example from dar-es-salaam to Misumi or from Tabora to Serengeti national park

International tourism

It involves the movement of people moving from home countries to other countries for leisure or studies [research].

Factors that encourage the development of tourism in the country Physical factors

1) Presence of good climatic conditions especially sunny conditions attract tourists from cooler countries during winter

2) Attractive landscape [scenery] due to physical features like mountains, craters, lakes, coastal beaches, canyons and deserts.

Social cultural factors

1) Presence of horizontal and architectural sites for example cities, churches, temples, palaces and pyramids.

2) Presence of conventional resorts like swimming places etc.

3) Good social services like shopping centers, medication, good food and water supply and well-trained stuff etc.

4) Presence of national parks like Serengeti, yellow stone, Yosemite etc.

Economic factors

1) Availability of capital to be invested in the tourism industry

2) Advancement in transport and communication for example air transport, road transport and railway and water as well as internet services these facilitate accessibility of different places of interest in the country.

Political factors

1) Peace in the country encourages the tourism development in the country since the tourists like visiting countries where there is peace like Tanzania in East Africa; they normally avoid the areas with political problems like civil wars.

2) Also, the government policy can encourage the development of the tourism industry by financing or giving favorable conditions which are restrictive.

Importance of tourism

1) It provides employment for the people in hotels, guiding sections, game parks and travelling agents

2) It provides foreign currency to the country which is being visited

3) It can facilitate rapid improvement in technology related to the tourism industry

4) It provides opportunity for the recreation or enjoyment

5) It leads to the introduction of new culture

6) Strengthening the international relationship

7) It enables the marginal land to be used for economic development rather than staying idle for example national parks occupy these areas which were unproductive

8) It promotes international capability of a country for instance today Switzerland is well known for flourishing tourism industry and is known as “the playground of Europe”

Why tourism has increased now days

1) People have accumulated greater wealth and are of higher standard of living such that they can afford travelling [greater affluence societies]

2) There has been a greater need for studying other cultures in other countries

3) The start of a long holiday with pay

4) Development of better transport facilities particularly in the air transport sector, this has made traveling fast and easy. In other words, it can be said that accessibility and mobility have improved, including the increase in car ownership and affordable charter air flights to over seas

5) Cheaper transport services especially air transport

6) The development of attractive national parks in different parts of the world

7) Increasing number of active people

8) Greater awareness of location facilities and opportunities through education, advertising and media.

Negative impacts of tourism

1) Tourism leads to the environmental degradation like deforestation, erosion and pollution like water pollution, soil pollution and air pollution.

2) It leads to the spread of disease like AIDS etc.

3) Tourism needs higher capital and hence if there is low capital it cannot develop easily. This discourages the development of other economic sectors.

4) Tourism can accelerate terrorism in the tourist country the terrorists can come to the country as normal visitors.

5) It can also lead to the destruction of culture in the countries which are visited. This is because the local people emitting western culture like dressing, dancing.

6) It leads to the occurrence of conflicts in the country due to cultural destruction.

7) Emergence of traffic congestion due to the increase of people especially tourists.

Solution to the problems

1) The visitors should be taught the cultures of the natives in the country where they are visiting so that they cannot interfere with the people's cultural aspects like dressing styles etc.

2) Reducing the number of visitors who visit the country so as to conserve the environment.

3) New areas should be opened up to reduce congestion in the existing touristic centers.

4) The government and international organizations should be active enough in supporting and governing the touristic activities in the country that are concerned.

5) There should be involvement of local community in order that the local people can benefit and help in conserving the tourism centers (tourists' attractions) like wildlife conservation areas etc.

6) There should be integration of touristic activities with promotion of the environmental conditions through the eco-tourism approach.

7) There are should be provision of education to the local people so as to understand the importance of tourism.

ECO- TOURISM (GREEN TOURISM)

It is the terminology which denotes ecological (eco) aspects combined with tourism activities. Eco-tourism sometimes is referred to as green tourism.

Eco tourism or green tourism can be defined as an integrated approach that involves carrying out tourism activities with minimum negative impacts on the natural environment.

This means that when tourism activities taking place should involve the promotion of environmental conservation.

In principle (Eco-tourism includes,)

1) Eco- tourism based on undisturbed natural environment and encourages undertaking of these activities in a non-damaging manner.

2) Eco –tourism enhances the conservative attitude among people.

3) Eco-tourism should strive to improve local communities economically and socially at the same time conserving the natural environment. It means that it should be geared towards poverty alleviation in the local communities. For example, creation of job opportunities.

4) It should promote positive interaction between the tourists themselves and the local communities because the benefits of the conservation areas are for all people.

5) It should promote awareness among the local people through education so that they can be able to know the importance and strategies of conserving the natural environment fortouristic activities.

6) Eco- tourism should also emphasize the proper planning and monitoring of the touristic activities and conservation aspects.

Hence eco-tourism is a wider concept which involves several issues like traveling, business, economics, attitudes and behavior of local community, participation and related benefits, research and environmental education, natural environment and its management and other resources as well as other human activities.

Importance of eco-tourism to the local community

1) It leads to the empowerment of the local community since they themselves design, organize and control the activities in the conservation areas hence local profits, they get motivated and become more willing to take part in the conservation process.

2) It promotes the living standards and responsibility of the people.

The living standard promoted through income generation as some people are employed and ways from the conservation areas.

3) The cultural aspects and the environmental of the local community are preserved.

4) The relationship between the local community, the visitors and the conservationist are improved and hence the community lives in peace

5) It helps in the control of diseases like AIDS since the participation of the local community leads to the strict control of human behavior in the tourism areas, like games reserve areas, National parks.

6) Eco tourism promotes environmental awareness among the local people, through this people can know the potentials of their environment.

7) The local community gets new technology through the visitors who come to their conservation areas, some special training centers on nature conservation can be established in the local communities where people can benefit getting education and experience

8) It also helps in the reduction of water pollution as a result of the washed management

9) The market for locally produced goods like the Makonde carvings of Tanzania can be improved

10) It stimulates the development of transport and communication system in the local community.

In general, eco-tourism in Tanzania can help in fighting against poverty (poverty alleviation)

TOURISM POLICY

Tourism policy refers to the statement or guidelines or plans of action established by an organ in authority like the government with the aim of influencing or directing or guiding tourism activities. This plan of action contains some principles, goals, objectives and strategies that give guidance or direction on how to manage tourism so as to maximize benefits while encouraging sound social, cultural and environmental status. The developed countries like the USA, Canada, Switzerland, South Africa and Nether lands have well established policies that govern tourism activities.

Importance of tourism policies

1) They guide or direct how to manage tourism by stimulating the objectives, principles and strategies to be used

2) The policies guide the evaluation process

3) They provide suggestions on what to be done in order to attain improvement in tourism in a particular country

4) They help in avoiding or reducing losses as far as tourism industry is concerned

5) They also insist on how to distribute the benefits obtained while focusing on the promotion of the life standard of the local people in a particular country

CASE STUDIES

TOURISM IN KENYA

The concept of tourism in Kenya.

Tourism is the second largest source of foreign exchange revenue following agriculture. The main tourist attractions are; -

-Mosque at Mombasa.

-The great rift valley.

-The coffee plantation at Thika.

-A view of mountain Kilimanjaro, across the border into Tanzania.

-Amboseli National park.

- Lake Nakuru National park.

Factors for the development of tourism in Kenya

1) It is magnificently endowed with a lot of fauna and flora, which are one of the attractions in the country.

2) It has very attractive scenery, climate and beaches. there are mountains like Mount Kenya and lakes which attract the visitors.

3) The nearness to the coast has also facilitated easy movement of visitors in the country.

4) Kenya's tourism industry is managed more efficiently than any other East African country.

5) There is a strong government support in tourism industry.

6) Relative political stability that has been prevailing in the country has proved a way for more visitors to come into the country.

7) Kenya has advertised its industry so widely in the world. There are promotional centers in England, Zambia, Switzerland, Germany and USA.

8) Industrial base and agricultural prosperity like tea plantations have encouraged development of tourism in Kenya

9) The knowledge of English language among Kenyans has attracted visitors from English speaking countries to come to the country since they can easily understand each other.

10) Development of transport system like roads and railways. It is due to the external pressure due to the fuel change, currency fluctuations.

Attractions [honey pots] in Kenya

i) There are several national parks like

- Tsavo
- Meru
- Nairobi

- Amboseli
- Mountain Kenya
- Mount Elgon
- Lake Nakuru
- Marine national park
- Malindi

Historical and archeological national parks

- Sicilia
- Oblonyo
- Sabuki
- And saiwa national park

ii) There are game reserves like

- Shimba hills
- Maasai Mara
- Marsabit
- Buffalo spring

These are having a wide variety of animals, plants and birds which attract visitors into the country

iii) Coastal attractions include fishing grounds, beaches, hotels and swimming areas

iv) Attractive scenery made of the Great rift valley, mountain Kenya, lakes and rivers etc.

v) Developmental schemes like Galole and Mea-tebere, irrigation schemes, large scale tea plantations in Kericho and other areas

vi) Antiquities and historical sites like Fort Jesus in Mombasa, Gedi ruins in Malindi and others found at Voi and Kilagoni.

TOURISM IN TANZANIA

Tanzania with its unique features is one of the famous countries in the world of tourism, as touristic country has a bright future because of the following reasons;

1) The government has shown a great interest in promoting this industry for example the minister of national resources and tourism has been so much active in promoting this economic sector. The departments in the ministry have their own policies

2) There are promotional offices in different countries for advertising tourism in Tanzania for example promotional offices are in Germany [Frankfurt], Sweden [Stockholm], north America [New York] and England [London]

3) There is a wide variety of tourist's attractions

4) The permanent stability that has made the country maintain some degree of peace will continue attracting the visitors in the country. Visitors go to places where there is peace and avoid countries with conflicts like democratic republic of Congo, Rwanda and Burundi

5) - Local people are being involved and this will promote the status of tourism since there will be more participations and peace in the conservation areas. For example, there are various communities which raised wildlife conservation projects which have been established in different parts of Tanzania like the Serengeti Regional Conservation Strategy [SRCS] and the Amani Nature Reserve [ANR] in Tango that was established in 1997.

- Hence the number of tourists has been increasing year after year, for example in 1997 tourists visiting Tanzania increased from 326,188 in 1996 to 360,000 in 1997. This earned more than USD 393.4 million, Also in 1999 the number of visitors increased to 627,325 earning 733.2 million USD. The increase was a result of efforts made by the government and private tour operators to advertise Tanzania's touristic potentials in the recent and past years. (Source: BOT journal 1997).

- Improvement of transport and communication problem like roads.

Tourist attractions [honey pots] in Tanzania

- Attractive landscape made by the presence of mountains like Kilimanjaro which is snow caped, active volcanic mountains like Oldonyo Lengai [the mountain of God], large lakes like Tanganyika and Victoria, the remarkable Rift valley and The Indian ocean.

- Large attractive network of national parks and Game reserves covering about 25% of the land area. There are national parks like Serengeti, Manyara, Tarangire, Arusha, Kilimanjaro, Misumi, Rutha and Katavi.

- There are pre-historical sites like Olduvai George in the Serengeti plain which visitors get important information of the past, Bagamoyo, Kondoa-Irangi.

- Shifting sand across the Ngorongoro plains is another tourist's attraction. The sand shifts at 17meters per year.

- There coastal attractions like mangrove plants, fishing grounds, coral reefs, beaches, hotels, islands like Mafia island and water for swimming.

- Conducive climate in the mountains [cool], warm coastal climate good for swimming.

- The national language (Kiswahili) and other languages like French and Germany facilitates communication between the visitors and the local people.

- Tanzanian cultural aspects like Makonde

- carvings, Maasai dressing style and the paintings at Kondoa Irangi.

- Improved accommodation in hotels and restaurants as well as lodges

- Peaceful political atmosphere in the country attracts tourists.

- Improvement in transport and communication like air, road and water

ADVANTAGES OF TOURISM IN TANZANIA AND KENYA

1) It led to the creation of employment opportunities

2) It has contributed to generation of the government revenue for example in 1997 Tanzania earned more than USD 393.4 million from 360,000 tourists and in 1999 it earned 733.2 million USD from 627,325 visitors.

3) It has promoted the living standard of the local people in the respective areas.

4) It has facilitated the fast development of science and technology as a result of the influence of the visitors who come to east Africa.

5) There has been promotion in the standard of the hotels and lodges in the touristic centers.

6) The countries have become well known worldwide through the visitors who come and leave the country with information back home.

7) The market for the locally produced goods has been promoted.

8) Tourism has encouraged positive attitude towards environmental conservation since people have realized the potential values of the natural environment.

9) 9) It has strengthened international relations with many other countries like Germany, France, Sweden, Finland, Canada, Japan, Norway, Britain etc.

10) It act as the source of foreign money exchange.

Disadvantages of Tourism in Tanzania and Kenya.

(1) Tourism leads to the environmental degradation like erosion, deforestation.

(2) It facilitates the emergence of terrorism since the terrorist can act as the normal tourists.

(3) It facilitates the spread of diseases especially sexual transmitted diseases (STD's) like HIV/AIDs.

(4) It facilitates the occurrence of cultural destruction as the local people are attracted by the foreign culture like dressing styles, dancing styles and eating styles.

(5) It leads to the occurrence of conflict between the local people and Government due to the Government policy.

THE WILD LIFE POLICY OF TANZANIA

The ministry of natural resources and tourism in its vision of the wild life sector clearly stated as to "involve all stake holders in the wildlife conservation and sustainable utilization as well as fair and equitable sharing of benefits". Among the challenges the sector has to address are;

1) To promote involvement of the local communities

2) To integrate wild life conservation with rural development

3) The policy also outlines the strategies for integrating wild life conservation and the rural development especially sharing benefits

The policy for the national parks in Tanzania

The policy states the purpose of the national parks in Tanzania as "to ensure optimum levels of revenue and benefits accrue to the national economy, the parks and the communities without impairing park resources". The issues pointed out in the policy pertaining local communities are;

a) To facilitate co-ordination and shared benefits with local communities

b) To provide material services and facilities for public information and education needed by the target groups, among them there are selected groups from local communities

The policy states that TANAPA [Tanzania national parks] will have an outreach program into surrounding communities with focus on local people and the government up to district levels. Some of the guiding principles of the outreach program are;

a) Local people should be approached as equal partners with TANAPA in the process of solving problems of mutual concern

b) TANAPA to seek ways to share the benefits of the conservation with local communities in ways that are sustainable and promote sound development

c) Neighborhood relations, dialogues and partnerships to be sought with all local communities without prejudice or preconception based on the past events. This means that the conflicts of the past should be forgotten and new available relations should be established.

The policy also specifies that law enforcement staff to cooperate with local communities around the national parks and the public in general to win confidence and support the people in the fight against illegal activities within and out the park boundaries that may have impact on the park resources.

Limitations of the tourism development in East Africa

1) Low capital availability especially Tanzania whose economy is very low

2) Problems of transport and communication which is still not well developed. In some areas the roads are impassable in the wet season.

3) Tourism is a seasonal activity in East Africa unlike Switzerland where it takes place all year round

4) Population encroachment on the existing tourism potentials like national parks, game reserves and sanctuaries. This has been due to high population growth rates on the margins of these gazette areas

5) Low managerial or poor managerial skills cause problems in general management of the tourism centers.

6) There is a problem of political instability especially in Uganda as well as terrorism that involved the bombing of the American embassies in Tanzania and Kenya in 1998, this scared American tourists from visiting East Africa. The wars accelerated the breaking down of the established infrastructure and discourage investments in the tourism industry.

7) There has been low advertisement because of low capital, poor communication system as a result of low technology etc.

8) Poor quality of services as compared to other countries has been discouraging tourism. These services are accommodation, health services etc.

What has to be done so as to improve tourism in East Africa?

1) To re-equip or rehabilitate the existing lodges and hotels so that they can be of good standard

2) There should be more efforts in the advertising the tourism industry of East Africa

3) There should be comprehensive training given to those who engage themselves in the tourism industry for example the government should train game rangers/ wardens who will be in position to defend the national parks and game reserves against the dangers of poaching

4) More new areas should be opened like coastal areas and lakes, already Tanzania has started developing the coast areas into tourism centers

5) Massive campaigns should be launched to local people so that they can learn how to appreciate the importance of gazette areas and even participate in the conservation process.

6) The central government should encourage the development of the private tour operations so as to assist in the promotion of the industry. They can be given loans to invest in the transport at minimal expense

7) There should be control of population so as to avoid people's encroachment into the conservation areas

8) Anti – poaching units should be established in East Africa so as to protect the animals

9) Extensive advertisement outside should be emphasized so as to attract more tourists 10) Peace and

harmony has to be maintained in the East African countries

TOURISM IN NAMIBIA

Namibia is a newly independent country but the tourism sector has grown very fast within a short period of time. Incidentally tourism is the 3rd largest contributor to the gross domestic product after mining and agriculture.

The number of visitors in Namibia has been increasing year after year. For example, in 1993 over 368,000 visitors came to Namibia, 560000 in 1996, 615000 in 1997 and over 800000 are projected for the year 2007. The overall growth of the tourism sector is targeted at 10-12 percent per year

Factors that have contributed to the tourism growth in Namibia

1) Strong policy on promoting the tourism industry

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

13) infrastructure has facilitated easy accessibility of different places in Namibia

14) Advertisement that has been done by the government and the private sector. There are promotional offices in Johannesburg, cape town, Germany, Spain, New York, United Kingdom and other offices are planned to be opened in Nairobi and Dar es salaam.

15) There are attractions which include: -

- Climate endowed with beautiful sunshine

- Abundant wild life in the game reserves like hardtop and mahango game reserves, national parks like the Etosha and Malili national park, Caprivi Aaan and Viljoen game parks.

- The presence of attractive grand canyon's like the fish river canyon with hot springs resort at Ai-A3

- The Namibia desert landscape also offers a high possibility for strategizing for the customers

- There are beautiful rivers

- Diverse cultural attractions like the traditional crafts which include wood carvings from the Kavango and Caprivi, Owambo and Himba baskets as well as bush man egg shells jewellery, embroidery work, carpets woven from karakul wool, beading, metal forging and a presence of many cultural groups with their respective traditional dances and music

- Variation in the geological and Geomorphologic structures has been another attraction to the

visitors in Namibia. The Daan Viljoen game park has a gravel surface and rolling hills which facilitate accessibility and provide the ideal condition for game viewing especially at sunset

- There are sand dunes of spectacular nature in the desert. These also attract visitors.

- The capital town of Windhoek is another attraction. This is a business hub and has an international conference venue.

- The influence of the SADC on the promotion of tourism among member countries, in attaining this goal it has created the regional tourism organization at the southern countries [RETOSA]

16) The establishment of the Namibia stock exchange [NSX] that has attracted foreign investors, has been another contributing factor in the tourism development

17) The hard work made by both the public and private sector. The private sector has invested substantially in the development of infrastructure

18) The influence of development of other activities has facilitated the development of tourism in Namibia

19) The aid from European countries has also enhanced the tourism development process in the country

20) Namibia has a favorable investment potential created by Namibia's free market economy and the government commitment to promote free enterprise

Importance of tourism to Namibia

It has stimulated the further development of infrastructure It has contributed to the employment creation in the country It has also contributed to the gross domestic product.

It is the third contributor to the GDP after mining and agriculture

Social services have improved in the country especially with the introduction of the community-based tourism
It has promoted the move towards environmental conservation in the country with an aim
of maintaining the country's beauty
It has led to the preservation and boosting of the country's cultural values and norms
Tourism has earned Namibia an international repute
It has led to the formation of the people's lives in general

Problems facing the development of tourism in Namibia

Namibia is not yet well marketed since it has just attained its independence

It got its independence on 21st march 1990 and the head of state being President Sam Daniel Sakishima Nujoma

At the beginning more, focus was put on mining and agriculture and fishing then tourism the costs of maintaining the quality of tourism are high
It is facing stiff challenge or competition from outside, it has a long way to go Lack of service culture and inability to gauge the strength of the market There has been slow implementation of the tourism policy since 1994

The country is young and hence its economy is still young it has not led to the generation of capital to be invested in the high-quality tourism enterprise
The economic crisis that took place in the far East and Europe in 1994 had negative effects on the tourism development. This is because other sectors that could generate capital like mining were affected

Tourists resorts in Namibia

Cape gross seal reserve

It is known of 23 colonies of cape seals which breed along the coast of South Africa and Namibia

Caprivi Game Park

It is wedged between Angola and Botswana. It extends from Okavango River in the west to the Kwando River in the east.

Viljoen park

It is a weekend, retreat for Windhoek as well as relaxing stop over for tourists

Duwisib castle

Etosha national park

It is a shallow depression having various games

Fish river canyon

It has hot spring resorts.

Gross barmen hot spring resort

It is built on the site of one of the earliest missing stations in Namibia

Hardap recreation resort and game reserve

It is situated along the Hardap dam [the largest dam in Namibia]

Khowdum Game Park

With a wide range of game species

Mahango game reserve

It has a Riverine forest, abroad flood plain, magnificent baobabs, large herds of Elephant and red lechwe.

Mamili, Mudumu and Namib-Naukluft national parks.

Sandwich harbor, Skeleton Coast Park, Von Bach dam recreation resort etc.

TOURISM IN SWITZERLAND

Switzerland is a famous country in the world due to its tourism development. It is also referred to as the playground of Europe since tourism takes place all the year around and many tourists visit Switzerland because of its attractions.

There are also different games and sports that are of interests to the tourists.

Factors influencing the development of the Swiss tourism industry

Physical factors;

1) Ideal climate which allows the activities to take place both in winter and summer

2) Beautiful scenery made by the Alps Mountains which have U-Shaped valleys pyramid peaks and snow cover. There are also water bodies like Geneva which adds to the beauty of the scenery.

3) Its central location in Europe has also led to high accessibility of the country from different directions in Europe and other countries like America etc.

Human factors

The transport system has been improved for example the railway network has been electrified, the transport cost is low and the movements are fast. Switzerland has modern tracks and modern locomotives and this has encouraged tourism development.

Availability of HEP due to the exploitation of numerous rivers, hanging valleys and water falls Good hotel

management so as to meet tourists demand

Capital availability that was invested in the tourism industry. Capital was accumulated from Swiss foreign trade

Availability of skilled labor. This has led to the efficient running of the tourism industry Hospitality of the

Swiss people has been another attraction to the tourists

Its policy of stability has made peace dwell in the country and hence tourists have been encouraged to visit the country

It has international institutions like banks and conference centers used by different nations because of its peace

Importance of tourism in Switzerland

i) It is the major employer in the country. During the peak season it employs more than 120,000 people. This is six or seven times as many as Tanzanian tourism employments.

ii) It has contributed to the earning of foreign exchange in the country hence capital is accumulated from the tourism industry in a great amount.

iii) It has stimulated the development of science and technology for example electrification of the railway systems.

iv) It has accelerated the foreign responsibility of the Swiss country. This has been followed by the improvement in the international
relations between Switzerland and the countries where tourists come from.

v) It has contributed to the provision of employment to the people.

Problems facing tourism in Switzerland

1) Severe cold during winter which leads to the blocking of railway lines

2) Landslides and avalanches are dangerous to the tourists

3) There is competition between the tourism industry and transhumance in the use of the Alps mountains

4) Steep slopes of the mountain have led to the problems of transport to different parts of Switzerland. The Alps occupies about 60% of the total area giving small room for the diversification of the tourism industry

5) Environmental pollution due to the coming visitors

Touristic areas in Switzerland

Summer tourism centers where tourists view snow: -

- capped peaks
- clear blue sky
- cascading water falls
- sun bathing
- swimming

The centers include: - the Swiss plateau towns of Lausama Geneva, Bern and Zurich. Also, around the Lake Shock of Lucerne, and in Tizimo where there are towns of Locarno and Lugarno. The visitors come from June to august

Winter season areas which are visited from November to march offer the following aspects; abundant snow on the slopes and glacial lakes for viewing and practicing ice-skating and skiing [or tobogganing]

The main resorts are confined to the slopes of Alps mountain s and are called alpine centers which include:

St Maritz Monen Grinde lwald Kandersteg Gstaad Lauterbrunner

Tourism in USA

USA has a very advanced tourism industry. There are several factors which have led to the advancement of the tourism industry in the USA these include:

the strong government support on the development of the industry

The government has formulated this policy which provides favorable conditions for investment

The availability of capital due to the advanced economy of the country.

USA is the leading country in terms of economic development in the world hence it has been easy for the country to invest in the tourism industry

Well established transport and communication network in the country.

Internet communication has made easy for arrangements to be done in advance. The roads are good and efficient

There are many touristic attractions [honey pots]

Like national parks i.e. Yellowstone Grand Canyon and Yosemite, volcanic eruptions like the old faithful geysers, good lakes like the great lakes and towns like Los Angeles, San Francisco etc. Strong political stability due to the advanced defense sections in the country

Variable climatic conditions

In the USA such that there are areas with warm conditions and other areas with cool conditions hence this makes people to be encouraged to travel

- Good social services in the lodges, restaurants and hotels have stimulated the fast development of tourism in the USA

TOURIST ATTRACTIONS IN THE USA

1) There are lakes which are used for swimming, fishing and viewing like the great Salt Lake and crater lake national parks

2) There are spectacular gorges created in the desert areas of California like the Grand Canyon etc.

3) There are national parks with a variety of animals like the Yosemite, yellow stone, redwood national park, Zion national park etc. in which the species like bear, elk and buffalos exist

4) Spectacular volcanic features like faithful geysers and hot springs as well as Crater Lake. There are other impressive features like the Grand Canyon which was formed as a result of water erosion in the desert it attracts people from different parts of the world

5) Various centers for sports and games like swimming centers, skiing centers, fishing centers and surfing centers

6) There are monuments like the Dinosaur national monument

7) The country's economy is another attraction to the tourists into the country

8) American English language and other social aspects have been a great attraction to the tourists into the country. Some go to America to learn the American ways of:

Living Speaking Dressing
And general interaction

PROBLEMS FACING TOURISM IN THE USA

1) The problem of water supply which affects the arid areas of California and other parts.

This has been due to the general change in the climate but water conservation measures are being instituted so as to ensure proper use of water, for example people are being encouraged to construct toilets which do not use a lot of water

2) Terrorism is another problem affecting tourism of the USA.

For example, the destruction that took place on the 11th of September 2001 in Washington DC has created a great threat to the tourists who want to visit the USA. In this incidence the hijacked plane crashed into the world's trade center towers and the pentagon building leading to loss of lives and destruction of properties

3) Population pressure in the tourism centers.

This has led to land degradation but strict rules and regulations are being put in place so as to ensure that the tourism centers are not greatly destroyed some of the measures include restriction of the tourists from getting into national parks with their own private cars.

4) Frequent fires which affect national parks have been a problem. The fires can be a result of natural hazards like thunderstorms volcanic eruptions or by man.

5) Tourism is getting a great challenge from other countries which are active in the development of tourism in their own countries like South Africa Tanzania and Switzerland etc. this means that the member of the tourists might decrease because of the other centers in other countries.

6) Animals like buffalos attack some visitors when they are viewing them.

7) Other animals like elk are shy and hence tend to run away when the visitors are viewing them. So, taking photographs become cumbersome.

8) Noise pollution because of the cars cause distress (discomfort) to animals.

9) Water pollution in the lakes and rivers is another problem facing the tourism in the USA.

MANUFACTURING INDUSTRY

Manufacturing industry refers to the industry which involves processing and changing the materials in order to make new products of greater value to man. Manufacturing industries are also referred to as secondary industries

Significance/Importance of manufacturing industry

i) It provides employment

To the fast-growing population in the world especially in the tropical countries

ii) Diversification of the economy

Industries lead to diversification of the economy of the country and reduce the reliance on one type of product

iii) Earning of foreign currency

It contributes to earning of foreign currency in a country for example Japan earns a lot of foreign currency because of exporting the manufactured products

iv) It leads to self-sufficiency.

This means that the country reduces its reliance on imported goods hence its economy becomes stable

v) Development of transport and communication

It stimulates the development of transport and communication like roads railway lines, ports etc.

vi) It reduces expenses on imports

vii) It encourages improvement of social services

TYPES OF MANUFACTURING INDUSTRIES

Manufacturing industries are divided into processing and fabrication industries.

Processing industries are the ones which deal with preparing the raw materials for fabrication. For example, coffee pulping, decorator and cashew nuts hullers.

Fabricating industries are the ones that deal with making new products from the processed materials for example textile industry.

Manufacturing industries can also be classified as heavy industries or light industries

Heavy industries are industries which involve the production of bulky and heavy products like iron and steel industry, car assembling and shipping etc.

Light industries are those which involve the production of light and complex products for example the manufacture of plastics, textiles, cosmetics and paper

Factors influencing the location of industries

These are several factors which combine to influence the location of industries these include:

1) Raw material availability.

Some industries are located near to the source of raw materials. Example most of the processing industries and food manufacturing industries are located near to the farms or productive areas.

2) Fuel and power availability

Some industries are located where there are sources of fuel and power for example coal deposits in United Kingdom and china have led to the location of iron and steel industries in coal fields.

3) Human resources

This is connected to the labor supply both skilled and unskilled. Also determine the location of industries. for example, electronics industry is located in the areas where there is skilled labor also industries which need high labor like cement industries are located in areas with dense population

4) Availability of capital

This is needed for the investment in the machinery and importation of raw materials

5) Market availability.

Also encourages the development of industries in certain countries, where the market is poor and the industrial development also becomes poor.

6) Availability of transport and communication systems. Some industries are located near the transport system like railway lines because of being bulky

7) Government policies, are the documents that announces the perception of government on the particular issues.
Government policies play a great role in the location of industries. The government can encourage the location of a certain industry in a certain place for the sake of balancing the economic development of a certain area and provision of jobs

8) Government stability, Is the ability of government in maintenance of peace of a particular place.

This can encourage the development of industries in a certain country due to peace and harmony. People feel safe in investing in that country unlike where there are political problems like wars

9) Industrial inertia and historical factors

Industrial inertia is the tendency of old industries to remain in the same area without shifting to the new area. Despite of unfavorable conditions these industries continue being in the same area because of the well-established transport system and assured supply of labor as well as social services supply

Effects of the manufacturing industries on the environment

The effects caused by industries can either be positive or negative, positive effects involve the use of virgin land which was once useless and the negative effects on the environment include;

1) Land degradation because of clearing the forests to establish the industry and extraction of raw materials from the land

2) Environmental pollution includes air pollution which caused by the introduction of greenhouses gases like carbon dioxide and nitrogen oxide. Water pollution caused by introduction of hot water and chemicals from the industries, soil pollution and noise pollution.

Types of pollutants

Gaseous pollutants

Are the pollutants which occur in gaseous form.

These include greenhouse gases like carbon dioxide, carbon monoxide, nitrogen oxide etc. which pollute the air.

These pollutants on polluting the air lead to the formation of acidic rainfall and global warming. Acid rainfall leads to the addition of acid in the soil which in turn causes the death of plants and microorganisms as well as destruction of buildings by removing the paint on the walls.

Particulate dust matter and other solid matter

Are the pollutants which occur in particle or solid which emirates from the industries get into the air or water bodies or soil and cause contamination. These can lead to the increase in acid or toxicity in places where they can be dumped

Liquid matters

These includes all forms of molten or semi molten materials (liquid).

These involve hot water and chemicals from industries. Hot water leads to thermal pollution of water bodies which can kill the aquatic animals/organisms because of the sharp rise in temperature

General effects of industrial pollutants on the health of an individual employee and communities living around

1) Water pollutants cause disease like

- Cancer
- Typhoid
- And diarrhea

2) Air pollution can lead to respiratory diseases like bronchitis to employees and people around.

3) Soil pollution can cause decline in an agricultural production and hence lead to starvation to take place

4) People are also affected by noise and sometimes can lead to problems in the blood circulation. For example, Blood pressure and heart attack.

Ways of reducing pollutants

a) The industries should be located far away from the residential areas.

b) Recycling the wastes for example the metal materials should be recycled so as to produce other materials.

c) The combustion system in the engines should be filled with efficient facilities so that the amount of greenhouse can be reduced if not solved totally.

d) To avoid noise pollution the parts of the engine should be lubricated and materials used should be like bronze which does not make noise.

e) There should be concerted efforts by the government and non-governmental organizations and some committed individuals in certain environmental pollution.

f) There should be strong policies governing the industrial operations and ensuring that people who invest in industrial operations /development are given proper education on how to handle the waste products properly i.e. recycling

g) The industrial wastes should be treated to render them harmless to the health of people.

h) Alternative energy sources which are environmentally friendly like solar energy, natural gas, wind power etc.

i) There should be other activities developed so as to avoid over dependency on manufacturing industries only especially in Japan etc.

CASE STUDY

SHIP BUILDING IN JAPAN

Ship building in Japan expanded fast after the Second World War The main reasons for that expansion have

been outlined below;

- Japan's enormous increase in external trade which led to the increase in demand of merchant ships.
- Japan's large engineering industry has stimulated the development of ship building.
- Absence of old established ship building industry made it easy to introduce modernization. Normally old industries tend to create problems in introducing new technology.
- A large skilled labor force

Technology is well advanced and efficient hence has stimulated the fast development of the industry.

- Strong determination to become successful in industrial and trade activities in Japan.
- Introduction of prefabricated ship building.
- The development of fishing industry in Japan and worldwide has stimulated the development of the ship building industry.
- Forestry industry in Japan has also contributed a lot since the forest materials are used as one of the components in ship building.

- Ready market worldwide especially in rich countries.
- The government policy has supported the industrial development of the shipping industry in Japan.
- Reliable supply of power like HEP power and nuclear energy.
- The need to import raw materials has stimulated the development of the Ship building industry. This is because the country lacks raw materials so it imports most of its raw materials and the ship building industry could help in cutting down some coasts of transport.

PROBLEMS OF THE SHIP BUILDING INDUSTRY

1) Frequent earth quakes threaten the industry because the country lies within the weak zone of the earth's crust

2) Stiff challenge from the other countries like China and South Korea which are also developing their own shipping industries. This reduces the market

3) The industry also faces opposition from the environmentalists and is believed to be one of their sources of pollution in the world. Coastal areas have been polluted and this affects people and animals

Location of the shipping industries

Most of Japanese ship yards are located along the coast these include:

- Kobe
- Osaka
- Chiba
- Yokohama
- Kawasaki
- Tokyo
- And Hiroshima

CARS AND AIR CRAFT INDUSTRIES

These are basically assembly industries. Assembly industries are those that put together various components or parts manufactured by other industries

CAR ASSEMBLY IN USA

The motor cars and Lorries are now produced in the USA on assembly line. Assembly needs considerable engineering Skills. USA is the largest producer of road vehicles and the industry is located along the shores of the great lakes in regions such as Detroit, Cleveland and buffalo. Another important center is Los Angeles in California.

Early modern car manufacturing in the USA begun in the early 1900 and half of the world cars are produced at Detroit and the southern shores of the great lakes.

Car assembly needs a large area of flat land and there must be good communication with the other industries which supply component parts. The large units of the car are chassis or frame, engine, body, wheels, springs and column.

Materials needed for manufacturing the car parts are

- Iron and steel for making the body and engine frame
- Lather and cloth for making the seat covers
- Rubber for making the tires
- Electric wire coverings
- Glass for windows and the wind screen
- Lead for the accumulator etc.

Factors that have influenced production of cars in the USA

- The use of advanced technology in the making of the car components.

Availability of labor used in the car assembly and high industrial and agricultural production which need car transport for ferrying the goods produced

- Also, availability of iron and steel for making the car parts, capital availability for the cars produced in the USA, the USA has the market both within the country and out of the country
- The influence of the government policy that has been encouraging heavy industrialization in order to obtain advanced economic development. Good road network has also encouraged the manufacturing of cars.

Challenges facing the car industry in the USA

- Car industry in the USA is facing a great challenge from other countries like Japan contributing at Tokyo and Yokohama. German centering on Nuremberg, Dusseldorf and the Stuttgart. UK centering on Coventry, Birmingham, Derby, oxford and Dagenham

- Terrorism has been threatening the country, keeping people uncomfortable. Much of the financial resources are directed to the fight against terrorism

- Environmentalists also discourage the manufacture of many cars

AIR CRAFT IN RUSSIA

Aircraft cannot be mass-produced.

They are like ship buildings which have to be built very much by individual schedules. The Airplanes are usually assembled in the areas where road vehicles are made.

But the Russian aircraft industry is highly challenged by the USA which is the largest producer in the world with industries near Los Angeles at Seattle (on the pacific coast)

Advantages of the car and aircraft industries

1) Have stimulated the development of international trade

2) Transport has become efficient

With planes urgent problems can be attended to.

3) Have stimulated the spread of technology and information. The world has become a global village.

4) It has strengthened unity among the different countries in the world.

Car and air craft industries have greatly contributed to the following problems:

1) Air pollution because of the introduction of gases in the atmosphere

2) Acceleration of accidents in the air and on the road claiming the lives of the people

3) Drug trafficking from country to country

4) Spread of diseases like AIDS due to the global contacts among the people

5) Acceleration of terrorism and civil wars in many parts of the world

The weapons are transported from one continent or country to another

6) Acceleration of climate change due to the destruction of ozone layer caused by smoke produced by cars and airplanes.

HEAVY DUTY VEHICLES IN GERMANY

Germany is one of the world's leading countries after the USA in terms of production of heavy-duty vehicles.

The heavy-duty vehicles are the ones that carry heavy goods (bulky) or do heavy works like earth moving. Examples of heavy-duty vehicles include; -

1) Transport vehicles such as containers carries [trucks]

2) Earth moving machines like bulldozers, caterpillars, drilling vehicles, tractors used for ploughing etc.

Factors that have influenced the development of the heavy-duty vehicles in Germany

1) Availability of raw materials like iron and steel from the Ruhr region

2) Availability of energy especially from coal mined in the Ruhr region

3) Hard working attitude of the people in Germany has contributed to the fast development of this industry

4) Good transport and communication network have stimulated the manufacturing of heavy-duty vehicles. Germany is having well advanced high ways.

5) Advanced science and technology among the people of Germany because of high education

6) Availability of market both in the country and outside the country due to the good quality of goods

7) Availability of enough capital which enable them to implement their objectives.

Problems that Germany has been facing in this industry

1) Tariffs [taxes] charged to the industry tend to be high

2) The WWII which was under the influence of Hitler caused deceleration of the industry.

3) Other countries wanted Germany to limit its industrial sector because it became a threat to them.

4) Germany is currently facing challenges from other countries that are producing the same goods like Japan and the USA

5) Exhaustion of some raw materials like coal and iron is another problem.

Positive effects of heavy-duty vehicles

1) They facilitate road construction in the country for example they are being used in Tanzania for road construction such as the Morogoro road.

2) They help in the distribution of goods and services in the country.

3) They also promote the development of industries in the country since they facilitate the supply of raw materials.

4) They create employment opportunities for the people in the country like drivers or operators.

5) It has contributed greatly to the development of International trade.

Problems caused by heavy duty vehicles

1) The heavy trucks that carry bulky and heavy goods contribute to the destruction of the roads especially where the roads are of low quality like the largest part of Tanzania

2) They cause delays on the way during road construction

3) They accelerate the rate of accidents on the way as some other vehicles happen to slam into them when no signs are put on the road during the road construction.

ELECTRONIC EQUIPMENT PRODUCTION IN SOUTH KOREA

South Korea is among the newly industrialized countries whose economy has been growing very fast due to heavy investment in the industrial development. Other NICs are:

- Taiwan
- Hong Kong
- And Singapore etc.

The economies of these countries are referred to as Tiger economies because they have been growing very fast.

Electronic equipment production industry is classified as high technology industry since it produces light articles like

- Television
- Electronic watches
- Desk tops
- Calculators

- Radios

- Sophisticated materials like

- Microphones

- Magnetic disks

- Computer terminals

- Software etc.

In South Korea the major center for electronic production is around Tango in the south where there are more than 150 electronic factories.

Factors for the development of electronic equipment production in south Korea

1) Labor supply in the initial stages of industrial development have been reliable and people are hardworking and efficient

2) High technology because of the advanced education among the people

3) The industry is flexible [foot loose] in location.

- It can be located in a small space like the city center it does not need a large area.

4) Ready market for the articles produced in South Korea since they are of high quality and of the current demand in the world.

5) There has been strong government support on the industrial development

6) Agricultural development supports this industry especially in creating capital for investment

7) Efficient transport system in the country

Advantages of the electronic industry in south Korea

1) It has led to the creation of employment to the population of the country

2) It has stimulated fast information flow especially through the internet services which use computers

3) The use of computers has stimulated efficiency and accuracy in processing bulky data in the different enterprise or companies etc. Hectic/laborious work has been avoided through automatic use of machines. In some areas there is a use of robots which can work more than a human being

4) The economy of the country has risen fast as a result of exporting electronic facilities

5) It has stimulated the growth of other industries like heavy industries

6) The export trade has expanded leading to the increased international relation between South Korea and other countries

7) It has contributed to the diversification of the economy of the country

Problems of the electronic industry

1) The spread of viruses in the computers leads to error in data processing.

2) It does not have high market in the developing countries where technology is very low and many people do not know how to use electronic facilities.

3) It has led to the rapid growth of urban population due to the rural-urban migration. This has led to the rise of squatters and congestion as well as the decline of rural areas.

4) It has contributed to the retrenchment of employees (trimming down employees) since few computers can do most of the work more efficiently than human beings for example The use of robots in the ship building and car assembly.

5) There has been worldwide competition especially from America in the manufacturing of electronic devices.

6) They are expensive.

IRON AND STEEL INDUSTRY IN TANZANIA

Among the East African countries Tanzania has a brighter future as far as iron and steel industry is concerned.

The bright future is due to the following factors;

1) About 500 million tons of iron deposits have discovered to exist in Liganga area

2) There are large deposits of power resources

3) The existence of high demand for construction materials like iron bars

4) The existence of the present steel rolling industry in Tango has led to the inspiration for establishing iron and steel rolling industry

5) There also exist other sources of power like HEP especially at strigglers Gorge. These will provide power for the iron and steel industry

6) The need of cutting down costs which incurred in the importing the iron from other countries

Advantages expected from the iron and steel industry in Tanzania

1) It will create employment opportunities for the populations especially in the southern parts of Tanzania

2) It will lead to the local supply of steel material to steel rolling industry in Tango

3) This will cut down costs of importing steel from other countries and hence it will save a lot of government revenue that could be used in importing steel

4) It will facilitate the construction sector such that stronger buildings and bridges will be set up.

5) It will also facilitate the development of transport and communication within the country

6) Agriculture will also improve since farm implements will be produced in a greater quantity and will be cheaper compared to the imported iron and steel materials

Factors limiting the development of iron and steel industry in Tanzania

1) Lack of capital since Tanzania's economy is very low

2) Low technology among many Tanzanians This has led to the existence of poor skilled manpower.

3) There are poor transport and communication systems such that the transportation of iron and steel materials will be problematic.

4) shortage of internal market is another hindering factor delaying the development of iron and steel industry in Tanzania.

5) 5) Traditionally Tanzania has poor industrial base since it has been depending on agriculture as its economic back bone [economic mainstay].

6) Lack of Government support.

Factors that hinder the development of the manufacturing industries in East Africa

1) Low levels of science and technology

2) Low levels of capital to be invested in the industries

3) People are so migratory [they keep moving from place to place and hence they cannot concentrate on production]

4) Civil wars also hinder industrial development in Tanzania and East Africa in general

5) Low government support on industrial development

6) Poor availability of raw materials

7) Poor transport and communication

Hence the transportation of manufactured goods and raw materials is very costly.

8) Poor labor supply to the industrial places.

9) Limited or poor marketing system.

10) Limited mineral sources and sources of energy.

Ways of improving the industrial base in East Africa

1) There should be improvement in transport and communication system.

2) There should be improvement in science and technology so as to facilitate industrial growth.

3) The government should formulate policies which support industrial development in the country.

4) The local resources should be explored and exploited for industrial use.

5) There should be control of population growth so that the capital can be invested in industrial development rather than supporting the rapid growth of population rather than wasting time moving from one place to another.

6) Competition should be encouraged among the Industrial producers.

7) The development of Internal and external trade should be encouraged.

SUSTAINABLE USE OF POWER AND ENERGY RESOURCES

Energy

Is defined as the power required to carry out an activity. Energy is one of the most important of the entire world's resource. To be able to do work one needs energy or power.

Power

Is the rate of doing work. It is equivalent to the amount of energy per unit time. We can therefore say that energy produces power and power is then used to carry out activity.

Energy uses

1) Is used in the running of machines in industrial, agricultural and transport sectors.

2) Energy is used in cooking, warming the bodies, lighting etc.

3) It is used in facilitating photosynthesis in plants

A. MAJOR SOURCES OF POWER.

Energy resources are classified as renewable and non renewable resources

Non renewable energy resources

Are also known as exhaustible resources.

These are resources which once used up cannot be replaced. Examples are

- Coal
- Petroleum
- Natural gas
- Fuel wood
- And nuclear resources

Renewable energy or power resources

Are the resources which can be replaced after being used up. They are inexhaustible and hence sustainable.

Examples are

- Hydro electric power
- Tidal energy
- Solar energy
- Wind
- Geothermal power

- And bio-gas/biomass

Inexhaustible energy resources are resources that can never be finished through use. Examples of inexhaustible energy resources are

- Solar energy
- And wind energy

Human beings cannot exhaust or deplete these resources

METHODS OF EXTRACTING POWER AND ENERGY.

(I) Non renewable energy source

Coal

- Is a black or brown rock which consists mainly of carbon
- It supplies energy after being burnt
- It is used in different ways in the world
- The countries in which coal is mined include

- USA
- China
- Russia
- Zimbabwe
- South Africa
- Nigeria

- It is used for generating electricity, heating, cooking and producing gas, cosmetics, adhesive, fertilizers, dyes, perfumes and synthetic fibers

Advantages

1) It has promoted the industrial development of the iron and steel industry

2) It leads to the creation of employment opportunities

3) It has stimulated the development of transport through manufacturing of locomotives and ships

4) It has facilitated the domestic activities like cooking, warming etc.

5) It is used in producing other energy sources like oil and gas. South Africa is using coal to produce oil

Disadvantages

1) It is non-renewable resource. Once exhausted cannot be replaced.

2) It leads to air pollution by emitting carbon dioxide, which leads to global warming, Sulfur dioxide which leads to acidic rain.

3) Mining of coal leads to the destruction of the landscape or land degradation.

4) It is heavy and bulky causing problems in transport

5) It uses a lot of capital in exploitation leading to the decline of other sectors.

6) The oil spills are dangerous to eco system

7) It leads to accidents due to fire outbreaks and explosions

The demand for coal has been declining due to the following reasons;

1) It has low calorific value

2) It is dirty

3) Higher costs of production due to the reopening of mines

4) Transport problems since it is bulky and heavy

5) Competition from other energy sources which are more efficient and environmentally friendly

Oil

- It is also a non renewable source and was found underground from decaying plants and animals
- Main producers include;-

- Middle east

- USA

- Russia
- Mexico
- China
- UK

It is used for;

- generating electricity
- Fuel energy
- Producing petroleum gas
- Cooking
- Making fertilizers
- Medicine and plastics

Natural gas

- It is a non renewable resource
- It is formed underground from decaying animal and plant material
- The main producers are;
  - USA
  - Canada
  - Russia
  - Mexico
  - Venezuela
  - Algeria
  - And china
- Tanzania has discovered the natural gas deposits at Songosongo
- It is used for cooking, heating and production of electricity

Advantages of natural gas

1) It is efficient

2) It is clean-least polluting of the fossil fuels

3) It is easy to transport

Disadvantages

1) It explodes easily leading to destruction and death

2) It causes some air pollution

3) It is exhaustible [non renewable source of energy]

4) Oil coal and gas are referred to as thermal energy sources

Nuclear energy

- It is a non-renewable source
- It is produced as a result of the reaction of the nuclei of the radioactive metals like uranium
- The countries that have developed nuclear power stations are Britain with about 35 power stations, the USA about 80 power stations, France with about 36 plants, the former USSR with about 43 plants, Japan with about 28 plants others are;

- Germany
- Canada
- Sweden
- Belgium etc.

- Coal is used in producing heat for electricity and in making nuclear bombs

Advantages of nuclear energy

1) It is clean and produces fewer green house gases.

2) It is efficient in terms of use.

3) It is economical since it uses very small amounts of raw materials and produces little amount of waste.

Disadvantages

1) Radiation produced is dangerous like the chemabyl leakage in Russia which led to different problems like cancer etc.

2) Building the nuclear plant is very expensive.

3) There are problems of disposal of wastes since the wastes are radioactive.

4) It has accelerated the rate of terrorism in the world which involves bombing of important places like the American embassies in Kenya and Tanzania.

Fuel wood

- Is a non renewable fossil fuel
- Trees provide it
- The main producers are the low economically developed countries [LDC]in Africa and Asia
- Fuel wood can be converted to charcoal by heating the fire wood under limited supply of oxygen.
- It is used for cooking and heating

Advantages

1) It is easily available

2) It is not expensive and largely obtained freely from the forest

3) Replacement is possible by planting new trees

Disadvantages

1) It is not efficient and hence time consuming

2) The collection of the fuel wood leads to deforestation which in turn causes other problems like soil erosion and desertification

3) It is non renewable since replanting cannot keep pace with its consumption

4) It contributes to the environmental pollution

The use of fuel wood in Tanzania

People in Tanzania will continue using the wood for many years to come this is due to the following reasons;

1) poverty

2) Expenses associated with other sources

3) Other sources are unreliable in supply

4) Lack of strict policies to control the use of fuel wood

5) High population growth

6) Some people in some tribes believe that good food can be cooked using fuel wood since other sources can lead to bad taste according to their belief

7) Poor knowledge and skills in using other sources of energy among most of people especially in rural areas

8) Poor or lack of awareness of the impacts of continued use of fuel wood on the environment

The ways that Tanzania can use to reduce the use or avoid use of fuel wood

There are various ways Tanzania can use to reduce or avoid the use of fuel wood these include:

1) Encouraging the use of other alternatives energy sources like solar Energy, hydro electric power, natural gas and kerosene.

The prices of these sources should be very low in order that the majority of Tanzanians can afford them.

2) Educating the local people on the economical use of energy sources or resources such as the use of modern stoves that use very small amount of fuel wood

3) People should be encouraged to plant as many trees as possible in order to counteract the problems of wood crisis

4) Formulating policies that restrict excessive fire wood extraction

5) Encouraging the control of population since this also creates more demand for energy

(ii) Renewable resources

Hydro electric power

- It needs good regular supply of water to drive the turbine
- The countries producing are;

- Canada
- Norway
- Tanzania
- Russia
- Brazil
- China etc.

- It is used in the production of electricity, lighting and heating.

Advantages

1) It is very clean and environmentally friendly

2) The reservoirs/ dams can help in the control of floods and provision of water in terms of shortage

3) It is often located in remote mountainous areas where population is low

4) It stimulates the industrial development. South Korea have benefited a lot from the electric power

5) it has led to the improvement in the communication system like internet services, radios, TVs and satellites that depend on electricity

Disadvantages

1) The construction of dams leads to the flooding of large areas and people's displacement like the Akosombo dam in Ghana.

2) Lack of rainfall and silting of the dams easily affect it

3) The pylons which are constructed can lead to visual pollution

4) The dams also lead to the outbreak of diseases

Some of the hydro electric power generation schemes in Africa can be identified. Others are;

- Kidatu
- Metra
- Stiegler's Gorge and
- Kihansi in Tanzania
- Orange river Project
- Nkula falls in Malawi etc.

Tidal power source

- It is a renewable source. The power is produced when the tidal water along the coast drives the turbines

The main producers are;-

- France
- USSR
- China
- Canada

The tidal energy is used in producing electricity

Advantages

1) It is clean and hence does not pollute the environment

2) The barrages built for tidal energy production help in protecting the coast from erosion

3) If the scheme is large a lot of electricity is produced

4) The supply of the tidal power can encourage the development of the fishing and tourism industry

Disadvantages

1) Tidal power centers are expensive to construct

2) There are few suitable sites in the world and the location should be along the coast hence the areas far away from the coast can be disadvantaged

3) It can lead to the destruction of the coastal areas and disruption of the shipping system

SOLAR ENERGY

- It is a renewable energy from the sun
- It is used for direct heating, drying clothes and crops as well as production of electricity
- Potential areas are the tropical areas where there is abundant supply of sunshine
- Examples of the areas are;

- USA

- India

- Kenya at Kibwezi and Ikutha Health centers in Machakos and Kitui districts and some parts of Tanzania

Advantages of solar energy

1) It can be used in many parts of the world

2) The supply is limited (renewable energy)

3) It is non pollutant (it's clean and efficient)

4) It is easy to install in new buildings

5) Solar energy can lead to the development of tourism in the country where there is plenty of sunshine.

For example in east Africa many visitors from Europe come to enjoy the plentiful supply of sunshine when it is winter back in their countries

6) Solar energy provides vitamin D in the bodies which is good development of strong bones. Deficiency of vitamin D in the body can cause rickets in human beings

7) Solar energy facilitates rainfall formation through evaporation of water from the surface of the earth

Disadvantages of solar energy

1) It is expensive to install and hence needs high capital for buying some equipment

2) When it is cloudy or at night the supply of sunshine stops and hence leads to the problem of energy supply

3) It is unlikely to produce large amounts of energy compared to HEP

WIND ENERGY

- It is the energy produced by moving air mass
- Wind is a renewable source of energy since it does not get exhausted
- Wind energy can be used in generating electricity and pumping of water from the deeper levels in the ground
- It is also important in the pollination of the flowers distributing rainfall by blowing the clouds regulating temperature and accelerating evaporation.
- Areas where wind energy is used are

- Denmark

- California

- UK where there are many forms of wind.

- In Tanzania there are several turbines which have been installed in Singida and Dodoma for pumping water from the ground.
- The group of turbines installed at a certain place is referred to as wind farm

Advantages of wind energy

1) It is a very clean type of energy

2) It is naturally non pollutant in air

3) It is cheap to harness or run

4) Small scale and large scale schemes are possible

5) It is used in producing electricity

- This is done through driving the turbines

Disadvantages of the energy

1) Winds are unpredictable and not constant

- When the wind stops the energy production also stops

2) It leads to the visual pollution and noise pollution in areas which are quiet

3) Many turbines are needed to produce a lot of energy and hence these involve a lot of costs

GEOTHERMAL POWER

- It is also a renewable source of energy
- It is the heat energy generated from the interior of the earth.
- It is generated through volcanic eruption like geysers and hot springs
- Examples of areas with geothermal power are;

- Kenya

- Japan

- Russia

- New Zealand

Advantages of geothermal power

1) It is used for generating electricity and direct heating

2) There are many potential areas especially where there are many volcanoes

3) It attracts tourists and hence aids in the earning of foreign exchange

4) It encourages the development of communication network like internet service which need electric power to operate

5) In cold areas geothermal power is used for heating and warming the residential areas in winter

Disadvantages of geothermal power

1) A lot of water from the ground can introduce sulfuric gases in the atmosphere when loosely tapped. This can later cause acidic rainfall

2) Geo thermal plants are expensive to develop

3) Very high temperatures can create maintenance problems since some metallic parts can melt

4) Geo thermal power stations are developed in areas which are weak like the rift valley areas with volcanic eruptions. These eruptions can interfere with the supply of energy if the construction has been poor

Factors limiting the development of geothermal power in Tanzania

1) Poor or low capital available for being invested in the installation of geothermal plants.

2) The presence of other sources of energy which are currently supplying power like HEP, fuel wood, wind, oil etc.

3) Low rate of exploration of potential areas going on currently is another limiting factor. The researchers are costly.

4) Low market in the country since the country is still poor and its people in rural areas have low economic abilities.

5) Low ability in affording charges for supply.

6) There is low level of technology among many people of the country.

B. THE IMPORTANCE AND USES OF POWER AND ENERGY.

Power and energy resources are important in the following ways;-

- **Industry**

Power and energy resources are used to produce energy and power, which is then used to run machines, provide light, provide electricity and provide heat for processes like welding. This leads to industrial development which is critical to the development of economics.

- **Agriculture**

Power and energy are used to run heavy farm machinery such as those used to plough or

harvest crops. Most of these run on diesel which is a petroleum product, this promotes the development of agriculture.

- **Transportation**

Motorcycles and vehicles, airplanes, trains and ships all need fuel to provide energy and power for them to work. This in turn promotes the movement of people and goods from one place to another.

- **Mining**

The machines for mining and lighting inside and outside mines and other activities associated with mining, need power and energy.

- Also energy and power resources have the following direct economic and social importance like source of employment, source of foreign exchange , source of government revenue, improvement of transport and communication infrastructure and promotion of trade and other industries.

C. PROBLEMS FACING POWER AND ENERGY PRODUCTION

(i) Changing climatic conditions; Occurrence of droughts and the general reduction in rainfall may lead to a fall in water levels at waterfalls and dams at hydroelectric power stations.

(ii) Lack of capital; This problem mainly affects developing countries. It is very expensive to set up energy and power generating facilities. Developing countries are normally unable to meet these costs. Their energy and power production capabilities are therefore very limited.

(iii) Lack of varied energy resources in individual countries; Some countries have limited sources of energy. Geothermal steam and uranium, for example are not common in many countries.

(iv) Poor technology and lack of skilled personnel; This is another problem that largely affects developing countries. Most of the power and energy exploitation technology used in developing countries is very old and therefore less efficient and also less productive.

(v) Environmental pollution; Energy and power has been blamed for polluting the environment. This has happened through spillages on land as well as through explosions in nuclear reactors.

D. Ways to address the problems power and energy production

(a) Regular dredging (removal of slit) to ensure that the dam capacity is not reduced by the accumulation of silt.

(b) Countries should diversity their energy production to reduce the effects of such factors as petroleum prices and climate.

(c) Developing countries should ensure that they keep up with technological advancements to ensure that their energy production is efficient and highly productive.

(d) Research should be carried out often in order to improve energy and power production methods as well as come up with new production methods. Research will also help in finding power and energy production methods that cause less environmental pollution.

(e) Establishment of Colleges, University and other higher learning institutions to train professionals in the energy and power production field.

(f) Countries should partner to raise adequate capital to fund the setting up of power and energy production facilities.

E. FOCAL STUDIES.

Solar and Wind power in the USA

The USA is technologically advanced country with a wealthy economy. It is developed country with great demand for power and energy for its industries and its large population.
Solar power accounts for a very small percentage of total energy production in the USA. It is mainly exploited in the sunny areas of the country. These include California and Nevada.
The government and other bodies such as the American solar energy society continue to encourage and promote investment in solar energy.
Wind power is more used compared to solar power in the USA. Wind power is used to generate about 0.7% of the total electricity production in the country. Texas is currently the largest wind power producer in the country followed by California. Wind power is tapped by use of wind mills.

- **The importance of solar and wind power in the USA**

i) Source of employment.
ii) Industrial development.
iii) Agricultural.
iv) Conservation of non- renewable energy resources.
v) Reduced environmental pollution.

- **Problems facing solar and wind power in the USA**

(i) The harnessing of solar and wind power is highly dependent on the prevailing weather conditions. In case there is little or no sunshine or very low wind speeds, then it is difficult to harness the power. This is in turn means little or generation of electricity.

(ii) People are still reluctant to change from the traditional energy sources such as hydropower. They are therefore slow in adapting the use of solar and wind power; hindering fast development.

(iii) The cost of equipment used in tapping solar and wind power on a large scale is quite high. This has led to limited investment.

Biogas

- It is a renewable energy
- It is derived from the decay of plants and animals [including human] water matter.
- The gases produced as a result of fermentation or decay of these wastes includes ethanol and methane gases.
- Bio gas is used for:

- Heating
- Lighting
- And generating electricity

- The main producers are

- Brazil
- Japan
- China
- Germany
- Denmark
- India
- Tanzania
- And Kenya

Advantages of Bio gas

1) It is cheaply produced and widely used

It is affordable in developing countries

2) It needs intermediate technology [not advanced technology]

3) It can be used at a local level

4) It helps in waste management since the wastes are recycled hence pollution controlled

5) The remains from digested can be used in the farms to encourage crop production

6) It improves the living standards of the people since they get energy which is cheap

7) The gas can be exported to other countries and bring in foreign currency

Disadvantages of Bio gas

1) It needs high care in handling otherwise it can cause destruction after burning because of careless handling

2) People have to ensure a large and regular supply of suitable waste material which is cumbersome

3) It can be expensive to set up. Buying the digested requires a lot of capital

4) Emission of methane gas leads to Air pollution

5) Other wastes used as fertilizers can cause water pollution and spread of disease

BIO GAS IN TANZANIA

What factors have influenced the development of Bio gas in Tanzania?

1. The need to cut down the costs on the other source of energy

2. To avoid over dependence on fuel wood as the source of energy in rural areas

3. Abundant supply of plants and animal wastes

4. The need to raise the standard of life in rural areas

5. The government assistance through the ministry of water, energy and minerals as well as the assistance of Khadi and village industries commission of India and the input made by missionaries i.e. in Mwanza at kwimba, Tabora and Morogoro at Lutheran junior seminary.

Major constraints against the wide spread of bio gas energy in Tanzania

1) Shortage of building materials for digesters.

2) Problem of transportation of building materials and raw materials for digesters.

3) Cost of digesters tends to be high thus most of local people cannot afford getting them.

4) People's rigidity in accepting new technology because of being using fuel wood traditionally most people have low levels of technology.

5) Siltation; This reduces the volume of water in the dams, thus reducing the capacity of electricity generation.

F. Solutions to problems facing power production

Some of the solutions to the problems discussed before include the following;-

(a) Frequent dredging of reservoirs to avoid siltation.

(b) Development of other sources of power

(c) Establish training institution to provide skilled personnel to work in power generation plants.

(d) Liberalization of power generation might lead to greater availability of funds for development of biogas and hydroelectrical power production.

(e) Aggressive marketing by the government and other concerned Organization will help to encourage people to adopt the production and use of biogas.

G. Lessons to be drawn by Tanzania from the USA.

1. Diversity - Tanzania should diversity her energy sources to reduce the negative impact of reduced production from one source.

2. The government should form departments to encourage the development of alternative sources of energy such as solar power and wind power.

3. The government should support the development of various energy sources. It can do this by negotiation for funds as well as formulating and implementing policies that support this endeavor.

TRANSPORT AND COMMUNICATION

The meaning of the concept

Transport means the movement of goods people and services from one place to another. Transport is an important aid to economic activities like trade, agriculture, lumbering, Fishing, Industry etc.

Types of transport

There are three main forms of transport which are;

- Land transport
- Air transport
- Water transport

Land transport refers to the movement of goods and people from one place to another on land surface. The major means of transport on land are;-

- Human transport
- Animal transport
- Road transport
- Railway transport
- Pipe line

Human portage

Refers to the transportation of people, goods and services by using human muscle power in the form of walking or running.

It's the most common type of transport used by the majority of the people in various parts of the world.

This is because most of the parts of the world are remote, severely lacking capital and skills to put in place modern methods of transport.

ADVANTAGES OF HUMAN TRANSPORT

(i) Human transport is available; It is a means of transport that is readily available whenever it is needed.

(ii) It can be used when the other forms of transport cannot be used for example in mountainous areas.

(iii) It is cheap; It is very affordable means of transport which can be used anywhere by anybody.

(iv) It is safe; It is safer than road, air or water transport because few accidents occur during transportation.

(v) It is flexible; Human transport can be used to transport goods to various places in towns and rural areas.

(vi) Human transport doesn't pollute the environment. It cause little or no noise, emits no smoke spills.

DISADVANTAGES OF HUMAN TRANSPORTATION

(i) compared to other means of transport, it is slow.

(ii) Human transportation cannot be used to carry heavy and bulky goods.

(iii) Human transportation depends on a person remaining physical strong and healthy. When person gets sick he or she cannot carry it out.

(iv) It can be affected by weather conditions especially during the rainy condition.

Animal transport

Refers to the use of working animals for the movement of people, goods and services. It is the form of transport which involves the use of animals and is not well developed in many parts of the world.

It is commonly used in those areas which are wild and hostile so that other means of transport are hard or difficult to be used

The animals commonly used include

- Camels
- Donkeys
- Horses
- Cattle
- Dogs etc.

Animals can be used for riding as well as carrying or pulling loads. These animals which are involved in this type of transport are referred to as drought animals.

Advantages of animal transport

1) Animals are quicker than human beings.

2) They carry heavier and larger loads than human beings.

3) Animals are capable of being used in adverse [hard or hostile] conditions like deserts and water logged regions.

4) It is relatively cheap and more developmental than human beings.

Disadvantages of animal transport.

1) It is defenseless since it can be affected by attack like robbery.

2) It is extremely slow compared to road transport.

3) It cab be affected by weather condition especially rain condition.

Road transport

Refers to the identifiable rout, way or path used to transport goods, people and services. Road transport involves the use of

- Vehicles
- Bicycles
- Motor vehicles and so on

It is well developed in the various parts of the world, the best example of well developed road network is in Germany.

In Africa it is south Africa which has the best road net work in the eastern part of the country due to mining, industrial development and agriculture.

In Tanzania and East Africa at large road transport is the most important and it will continue to play a vital role in the economic development of the country/ countries.

Advantages of road transport

1) Road transport is flexible

It can be constructed in many places and can serve even individual homesteads.

2) Road transport offers a variety of transport facilities giving a customer a wider choice of the type of facility to use for example the facilities can be the trucks, taxes, buses etc.

3) It is faster and cheaper at shorter distances.

4) It is suitable for delivering perishable goods for shorter distances i.e. vegetables, milk, fruits and so on.

5) Road transport is easy to construct and run compared to railway transport or air means.

6) Vehicles that run on the road do not need to run on time schedule like trains and planes but schedule can be involved at minimal extent with buses.

7) Act as the source of employment opportunities for instance drivers and operators.

Disadvantages of road transport

1) It handles a specific and limited amount of goods.

2) Usually heavy loaded lorries are too slow to cover up the expected distance.

3) It is too risky especially for delicate goods.

This can cause breakage or destruction of goods like computers and glass materials causing a great loss.

4) Weather conditions tend to disrupt the road transport especially during the rainy season.

5) It is highly susceptible to attacks of high way robbers on the way.

6) Road transport has led to the increased road accidents leading to loss of lives of many people.

7) Road transport is usually congested because of traffic jam in the urban areas, may end up being expensive for different users.

8) Transport facilities have contributed to air and water pollution in the world.

9) Construction of roads encourages land degradation.

10) It is expensive to be constructed since it needs more capital.

The nature of roads in Africa

1) Most of the roads are not tarmacked and are not all weather roads.

They are passable during the dry season and impassable in the wet season due to slippery caused by rainfall.

2) They are not evenly distributed.

The dense network is in the areas which are economically potential e.g. mining areas, towns due to the market, industrial areas or political influence like administrative head quarters or capital cities.

3) Most roads were built during the colonial period and the local government have added few.

4) They connect different nations and regions but inter connection between the local areas is poor.

5) Most of them are located in urban areas.

Rail way transport

This involves the carrying of goods and passengers by train. Today rail way transport has become an important means of transport for bulky goods.

This has been as a result of rapid industrial development in the various parts of the world where bulky raw materials and finished products have to be transported for long distances.

Rail way transport has also become an important means of transport in the Western Europe due to traffic congestion of various vehicles which slow down greatly people's movements

Advantages of railway transport

1) it is suitable and relatively cheaper for transporting bulky commodities or goods over long distances.

2) It is less affected by unpredictable weather conditions if it is well constructed.

3) Once the railway has been constructed its operating costs are very low and the freight charges are usually lower over long distances than those charged by the roads for most commodities.

4) More loads and a greater number of people can be transported at a single journey compared with road transport and air transport systems.

5) It has created employment opportunities to many people like drivers and operators.

Disadvantages of railway transport

1) The railways are expensive to build.

A lot of money is required to lay down lines and all other facilities for example stations, warehouses etc.

2) It is not flexible like road transport.

Only areas with railway lines are the ones which are served also door to door services cannot be done by the railway transport.

3) It is not suitable for commodities which are perishable like milk and vegetables which are urgently needed like medicine, news papers etc.

4) Railway transport is not mostly efficient and time serving.

Especially in the third world countries train services are too slow and backward.

5) Because of strictly adhering to time schedule sometimes it may cause inconvenience and delays.

6) Rail way transport is a bit costly in terms of equipment, rail setting and train purchasing and maintenance.

7) The gauges of a railway line vary from place to place

In some places the gauges range from 1.5-1.7 meters while others are as narrow as one meter. Many parts of Africa have narrow gauges.

The characteristics of railway transport in Africa

1) The rail way lines are running parallel to each other with little or no interconnection within local areas

2) Most of them are running from the areas with economic importance to the coastal areas for export

For example Ghana has a railway line running from Secondi to the Tarkwa gold mining area , sierra Leone has a railway line which runs from Free town to Pendembo which was mainly to serve the oil palm growing areas , Liberia has a railway line which was built to serve the iron- ore mining area in the interior

3) The railway lines are unevenly distributed

Water transport

Refers to the transportation of goods, people and services using water based vehicles such as boat. Considering the geographical location of continents, water transport is the most convenient means of handling the movement of goods between continents.

This type of transport has been used from the earliest times, this type of transport can be divided into two sub divisions that are

- Inland water transport
- Ocean transport

Inland water transport involves the use of;

- Lakes
- Rivers
- And canals

The facilities that are involved in water transport are

- Ships
- Boats
- Canoes etc.

Advantages of water transport

1) Water transport is cheap since there is no cost of constructing a water ways unlike the railways and roads

2) Water navigation facilities such as ports, tugs and lighthouses do not need frequent repair and maintenance

3) It carries heavy and bulky goods over a long distance. Usually little time is wasted on the traffic control unlike in other forms of transport

4) It is suitable for the transportation of fragile or breakable goods e.g. glass, since there will be very limited shaking and jolting on the water ways

Disadvantages of water transport

1) Perishable or urgently required goods such as news papers cannot be transported through this means to the final consumer

2) If there is use of water canals, they are greatly affected by the season. This increases maintenance costs

3) Water transport system cannot be constructed any where it is specific in areas with water bodies while roads and railways can be put anywhere.

4) There is a problem of strong storms and winds which greatly interfere with the shipping schedule

5) These are dangerous animals like crocodiles and hippopotamus which affect the lives of the people

Pipe lines

Refers to the movement of goods, people and services through a pipe mostly common liquid and gases. Pipelines constitute another form of transport system which has grown an importance since the formation of the customs union in Euro pipelines carry liquids especially oil.

In Tanzania TAZAMA is an example of a pipeline which runs from Dar es Salaam oil refinery [tipper] to Ndola in Zambia which is 1700 km. In Kenya the pipeline managed by Kenya pipeline Company extends from oil refinery near Mombasa to Nairobi covering a distance of 450km

Advantages

1) It involves low unit costs and easy to maintain and there is lack of physical barriers

2) It has high ability to cover long distances also where volume and market demand are sufficiently great and steady. Pipelines are more economical than other forms of transportation

3) There is low rate of risk unlike tankers and it is very reliable

Disadvantages

1) The pipelines are inflexible since they are built in certain places only.

Therefore door to door services are hard

2) They have fixed carrying capacities which cannot be exceeded

3) Because of traversing (passing) the wild areas, low care is given and hence people can destroy them easily. Construction and installation are costly and time consuming.

4) It cannot be used to transport solid goods and this limits its usefulness.

5) It cannot be effective and efficient in areas which are mountainous. To lay down the pipelines becomes difficult and when there is leakage soil pollution occurs through oil spills.

6) It is expensive to be constructed.

Factors limiting the construction of pipe lines in Africa

1) Low or lack of capital to invest in the construction of pipelines. Higher costs of construction are also a limiting factor

2) Poor cooperation between or among countries in Africa

3) Political instability in different countries which leads to outbreak of conflicts and hence civil wars

4) Lack of reliable deposits especially in Tanzania and other east African countries

5) Low technology among Africans

Economic importance of the pipelines in east Africa

1) They have stimulated industrial development because of stimulating the supply of fuel oil in the countries

2) They have stimulated the development of trade between the countries sharing the pipelines.

For example Tanzania has established a strong relationship with Zambia because of sharing TAZAMA pipeline.

3) Also the living standard of the people in these countries has improved due to fuel supply. Pipelines have cut down the costs of transportation

AIR TRANSPORT

Refers to the movement of goods, people and services from one place to another through air. It involve the use of aircraft such as helicopters, airplanes and hot air balloons. Air transport is the latest and fastest means of transport in most countries. It is usually confined to urgent cases. The first successful air flight was made by the American Wright brothers in 1903.Great development has taken place since then. Airplanes were developed for military purposes during the First World War. But nowadays they are used for transporting passengers and goods.

Advantages of air transport

1) It is the fastest means of transport, therefore it's useful for urgent cases and transportation of perishable goods

2) It leads to low risk of damage since there is no rough movement and goods don't stay long in transit.

3) It is free of physical barrier [sea, mountain etc.] and hence it is free to go in any direction

4) It is comfortable and less tiresome especially where one is required to travel great distances. Operations of air transport are on schedule and this ensures no time wasting

5) Planes play a major role in providing relief in major disaster areas where other forms of transport are absent or unable to reach

6) Air transport has facilitated tourism in different parts of the world like Western USA

7) It can be used in carrying out political activities like campaigns in remote areas

Short comings of air transport

1) It can't transport bulky or heavy goods or poorly packed goods. Dangerous commodities such as those which are likely to cause fire e.g. petrol, paraffin etc. are transported using air means

2) Usually weather conditions like fog or mist greatly interfere with the schedule compared to other means of transport

3) construction of air field [airports] are usually expensive

4) Usually considerable time is wasted in air traffic control over the air field e.g. checking, booking etc.

5) During accidents there is very little chance of survival

6) It faces problems of hijacking like what happened in the USA on September 11 where the world trade center in the new York and the pentagon building in Washington DC were dangerously destroyed leading to the loss of many people's lives.

7) The airports are normally built far from towns therefore time is lost in taking goods to the airport

8) It contributes to the air pollution as a result of the burning of fuel and emission of greenhouse gases

9) There is limited freedom of air since many nations claim all the air space over their territory foreign planes cannot use their space without their permission. To obtain flying rights is often a long and expensive battle

The problems facing the development of air transport in East Africa

1) There are few air fields

2) Establishing air ports is very expensive

3) Low capital availability

4) Lack of market since many people are poor and hence they cannot afford this type of transport.

5) There are no local industries for producing planes.

6) Absence of advanced security in East African countries.

Communication

Is the exchange of information or messages between people, It can also be defined as the process of passing on information from one part to another part. Transport and communication are so related since through transportation information can move from one place to another place. This means that transportation facilitates communication.

Channels of communication

Communication has several channels which are oral, written and visual as follows;

Oral communication

Is the method through which people contact one another through telephone, radio, face to face conversation, and records messages.

Written communication

Involves the transmission of information in written form like

- Letters
- Parcels
- Post cards
- Telegrams
- E-mails
- Telex
- And fax

Visual communication

Includes passing information through

- Charts
- Photographs
- Films
- And graphs

Sometimes these channels can be in combined form e.g.

- Oral and visual form
- Audio visual communication

The role or significance of communication

1) It has led to the spread or diffusion of ideas and information on various aspects of a human society.

2) It has lessened the isolation of remote places especially telecommunication and radios.

3) It has enhanced the ability to warn of disasters and to organize relief or rescue more rapidly.

4) It has greatly assisted in the promotion of trade by allowing shipping firms to direct their vessels.

5) Radio and televisions have become important in the entertainment aspect.

6) Communication helps in spreading education and promotion of technology.

7) It has a big role to play in the political matters all over the world. leaders use different means of communication to speak to their people and mobilize them for the general human and economic development.

8) It has been used in enhancing gender equality through education and reducing violence against women in the societies. communication is used in encouraging people on the necessity of facing different challenges.

9) It has created employment opportunities to many people.

Disadvantages of communication

1) It can lead to disunity or conflicts among people especially when negative information or reports on people are passed from one place to another

2) Distortion and fallacies always affect it.

It is costly especially telephone such that few people in the country like Tanzania can afford

3) Establishing communication lines need high capital.

4) The services are supplied unevenly. Some places are better served due to their economic importance than
other places.2

Factors affecting transport and communication

These can be sub divided into physical, political and human factors

Physical factors

a) Relief

Distance and relief features affect the cost and possibility of building the line of communication. Where the land is flat transport and communication develop easily and involves low costs

b) Earth movements [earth quakes, faulting and Volcanism]

Lead to the difficulties in developing transport and communication systems. These movements can also destroy the existing transport systems.

c) Climate

It also determines the development of transport and communication. The areas which experience heavy rains like the Congo forest area and the Amazon lead to poor transport development

Political factors

Political factors influence the development of transport and communication in the country. The government can therefore decide on the development of transport and communication system in their respective countries.

Economic factors

Development of transport and communication system takes place fast where there is enough capital, but lack of capital leads to poor development of transport and communication in the country. Also areas which have resources attract the development of transport and

communication while the areas which are not having enough resources experience poor development of transport and communication.

Importance of transport and communication

1) They encourage the development of industries, through the supply of raw materials and transportation of manufactured goods to the markets or consumers.

2) They create employment in the country. For example some people are employed as drivers, station masters etc.

3) They facilitate the spread of technology in the country and enhances the accessibility of places.

4) They lead to the promotion of trade in the world.

5) Transport and communication encourages the development of tourism in the country.

6) It can make goods available where they are demanded.

7) It facilitates mass production by enhancing the supply of raw materials, movement of goods to the market and necessary equipment for production.

8) Transport and communication are factors which improve trade relations within economic units.

9) It leads to the intensification of unity among the nations.

10) It is a source of foreign money exchange.

Negative effects of transport and communication

1) Transport leads to accidents especially in the roads, water and air.

2) The emergence and introduction of crimes, due to to the use of mobile phones.

3) Transport and communication facilitate terrorism in the world

4) Also the construction leads to the destruction of people's properties and displacements of people for the sake of laying the transportation and communication lines across a certain area.

5) The emergence of death and depopulation due to the emergence of road accidents.

Problems facing transport and communication in Africa

1) Low capital for investing in the development of transport and communication system

2) Remoteness is another problem. Such areas which are so remote such that they are not accessible easily

3) Political conflicts lead to the destruction of the transport and communication lines. They can also limit the construction of communication lines

4) Climatic factors

Like heavy rain falls leading to floods affect the development of transport and communication

5) Land locked leads to high costs since land locked countries have to pass through other countries when exporting or importing their goods

6) Restriction involved in gathering information from the societies leads to poor communication among the people in the country

7) Transport and communication facilities are costly. Hence some people cannot afford the costs

8) The variation in language between different places is another problem

This leads to poor understanding between the people concerned

9) Other problems include

Physical features like mountains with steep slopes and swamps which limit the construction of the infrastructure and movement of transport facilities

10) Cost of repairing of the old facilities and the transport and communication lines are high.

HUMAN ACTIVITIES

(i) CONCEPT OF HUMAN ACTIVITIES.

An activity is something that people do in order to achieve a certain goal.
Human activities refer to the sum of all things that human beings do to modify the environment,

as well as the exploitation of the environment for the resources needed to survive. Over time , human beings have moved from basic tools to more improved and efficient technology for this purposes.

(ii) TYPES OF HUMAN ACTIVITIES.

Human activities can be categorized into two types; social and economic activities. The social activities studied in geography include population and settlement.

Economic activities studied in geography include agriculture as referred to the cultivation of crops and rearing of livestock. This is commonly practiced human activities and many people take it as an income generating activity or for the purposes of meeting the family's food requirements.

Tourism is another economic activity which involves traveling to interesting places for leisure, education or business. Some of the tourists place in Tanzania like Ngorongoro crater, Serengeti National Park, Zanzibar and others.

Another economic activity is Energy and power generation which includes all activities aimed at producing and distributing power or running machinery, lighting as well as heating.

Trade is also one of the economic activities where it refers to the buying and selling of goods and services. This referred as one of the oldest human activities and is still very common today.

Transport also involves the movement of people and goods from one place to another. Transport often goes with communication as it refers to the sending of messages between people. These are vital human activities on which most of the activities rely on.

Mining is also another economic activity as it referred to the extraction of valuable minerals from the ground. Some of these minerals are scarce and therefore expensive.

To sum up, therefore economic activities include agriculture, tourism, energy and power generation, trade, transport and communication and mining.

IMPORTANCE OF HUMAN ACTIVITIES.

(1) They provide employment to the people.

(2) They can facilitate rapid improvement in technology.

(3) They facilitate the improvement of transport and communication in a particular area.

(4) They promote the living standards and responsibility of the people. The living standard promoted through income generation as some people are employed in various human activities like Agriculture, trade e.t c.

(5) It has contributed to the generation of Government income (Government revenue).

(6) They act as the source of foreign money exchange.
