

GERMANY – 2019 Notes

Germany lies in the middle of Europe. It is one of the world's richest nations. After World War II, it was divided into two separate countries that is West Germany, a western style democracy and East Germany, a communist state.

Today 80% of Germans live in West Germany. By 2004 Germany had a total population of **82,689,000** people and in the capital city Berlin there is **3,388,434** people.

Germany has flat plains in the northern part and the Alps Mountains in the south. Two of Europe's rivers flow through Germany. The Rhine runs from the south, where it forms a natural border with France to the north.

To the south, River Danube rises in the Black Forest and flows east on its course to the Black Sea.

ASKETCH MAP OF GERMANY SHOWING SIZE AND LOCATION (*Leave of One Page*)

The Rhine Rift Valley:

This is about 290km long and with a width of 32 and 42km. On the western sides, are the Vosges and Haardt mountains while on the east are Black Forest and Odenwald mountains.

ASKETCH MAP OF THE RHINE RIFT VALLEY (*Leave Space of One Page*)

Formation of the Rhine Rift Valley.

Was formed as a result of either tension or compression forces as a result of faulting. Faulting is the process through which crustal rocks are fractured and displaced.

Formation by Tensional:

Forces pull in opposite directions resulting into formation of multiple normal faults. Continuous pulling leads to the sinking of the middle block forming a rift valley with the side block standing high as the Vosges mountain and the right side as the Black Forest block mountains.

Economic Importance of the Rhine Rift Valley:

- ✓ Rearing of animals due to the presence of pasture. This provides dairy products consumed to improve people's welfare.
- ✓ Crop cultivation for example vine growing favoured by fertile soils. This provides the wine industry with raw materials.
- ✓ Transport along R. Rhine which promotes trade and commerce.
- ✓ Fishing along R. Rhine which provides proteins to people and supports game fishing.
- ✓ Tourism for example river cruises along R. Rhine. This brings foreign exchange used to provide social services.
- ✓ Industrialization in towns of Mainz and Mannheim which provides employment, revenue leading to development.

- ✓ Forestry and lumbering in the Black forest mountains provide materials for furniture and sawmills leading to development.

Factors Favouring Vine Growing In the Rhine Rift Valley:

- ✓ Presences of fertile alluvial soils support quick growth of vines.
- ✓ Warm temperatures along the slopes favour the growth and ripening of vines and other crops.
- ✓ Moderate rainfall to support crop growth.
- ✓ Vast land for crop cultivation and expansion of agro-based industries.
- ✓ Gentle slope that favours mechanization which make cultivation easy.

Other factors:

- ✓ Large market for agricultural products by the people in the towns of Mainz etc.
- ✓ Presence of agro-based industries e.g. breweries for wine making.
- ✓ Presence of highly skilled labour that carries out farming.
- ✓ Modern technology such as tractors for ploughing and harvesting.
- ✓ Well developed transport network by River Rhine and railways for transporting crops to market centers.
- ✓ Presence of large capital to develop agriculture through purchase of machines.

Other crops grown in the Rhine rift valley are sugar beet, vegetables, maize, tobacco, oranges, pears apricots and peaches.

Problems Facing the Vine Growing Industry:

- ✓ Flooding of the Rhine rift valley which destroys vine farms leading to losses by the farmers.
- ✓ Pests and diseases e.g. odium and peronospera disease and pests like red spiders, moths and worms destroy the crops.
- ✓ Shortage of labour during the busy harvesting periods leads to losses.
- ✓ Soil erosion on the steep slopes which leads to vine productivity.
- ✓ Soil exhaustion due to monoculture and over cultivation which leads to low vine yields.
- ✓ Frost during winter which hinders the growth of grapes leading to low yields.
- ✓ Pollution by acidic rains that destroy vine farms leading to losses.
- ✓ Limited land for extensive cultivation has limited production.
- ✓ Competition with other vine producing countries e.g. France limits market.
- ✓ Prolonged drought hinders the growth of vine.

Measures Being Taken To Solve the Above Problems:

- ✓ Application of manure and fertilizers to improve soil infertility and increase yields.
- ✓ Spraying with pesticides to control pests and diseases.
- ✓ Spray of warm air and use of “smudge pots” i.e. burning of oil in vine fields to control frost conditions.

- ✓ Use of machines to solve the problem of labour shortage.
- ✓ Use of irrigation during drought periods to enable continuous growth of vine.
- ✓ Development of processing factories on vine sites to reduce wastes due to perishability.
- ✓ Terracing and contour ploughing to control soil erosion on steep slopes.
- ✓ Land consolidation to make bigger vine farms for large scale production.
- ✓ Construct embankments along R. Rhine to control effects of flooding.
- ✓ Persuasive advertisement to create a bigger market for vines and wines.

Processing of Wines.

- ✓ The grapes are crushed and the juice is run off into wooden barrels or metal tanks.
- ✓ The juice is left to ferment for about three months.
- ✓ After fermentation, the juice is filtered and the residues are used as fertilizers in the vine fields.

Products from the Vine Growing Industry:

- ✓ Wines such as champagne, burgundy and blandly.
- ✓ Grapes are canned as grape fruits.
- ✓ Vines residues are used to make fertilizers and livestock feeds.
- ✓ Currants are used in making jams and jelly.

Products from the Rhine Rift Valley:

- ✓ White/Red wines.
- ✓ Currants.
- ✓ Canned fruits e.g. peach.

Livestock Farming:

Both dairy and beef cattle are kept along the upper slopes of the Rhine rift valley. Dairy farming is however the most important. It is practiced to produce dairy products such as milk, cheese and butter. Milk is also used in the making of chocolate.

Dairy cattle kept are Friesians, Swiss Brown, Aldermen and Jersey. Beef cattle kept are Aberdeen Angus, Hereford, Galloway, Devon and shorten.

Conditions That Have Favoured the Development of Livestock Farming In Germany:

- ✓ Favourable temperate climate of cool (mild) temperatures with a moderate to heavy rainfall above 1000mm p.a and a moisture retentive ground which favours grazing of livestock.
- ✓ Low lying relief in the Rhine valley and the gentle slopes enable free movement of dairy cattle as they graze without dangers of stumbling to break their legs.
- ✓ Presence of abundant natural pasture (alpine vegetation) supplemented with rich and nutritious grasses in the dairy farms.

- ✓ Presence of permanent water sources for drinking since dairy cattle requires a lot of water to yield more milk.
- ✓ Presence of a large market for dairy products has encouraged large scale dairy farming. Milk is exported to Switzerland, USA and Canada.
- ✓ Presence of onsite milk processing machines (Creameries) on most dairy farms which turn the perishable milk into marketable dairy products like butter, cream and cheese for export.
- ✓ Well developed transport routes used for collecting of milk from farms to households or market centres in Mainz and Haardt.
- ✓ Presence of cooperative farming organizations that teach dairy farmers better farming methods.
- ✓ Modern technology such as automatic milkers, milk pasteurizing equipment, vacuum containerization/sealing for packaging of dairy products.
- ✓ Presence of adequate capital to purchase automatic milkers and cattle feeds.
- ✓ Presence of highly skilled labour to feed, treat and milk cattle.
- ✓ Intensive research carried out by the Germany cooperative movements to breed high yielding milk cattle varieties.
- ✓ Germany is politically stable country making it easy to improve and develop the dairy sector.
- ✓ Supportive government policy through tax incentives to dairy farmers.

Benefits Of Dairy Farming To Germany:

- ✓ Has created employment opportunities to dairy farmers, milk processors and veterinary doctors who earn incomes to improve their standard of living.
- ✓ Dairy farms produce milk, butter and cheese sold to people improving their diet and welfare.
- ✓ Dairy farms generate government revenue through taxes which is used to set up social infrastructure.
- ✓ It is a source of foreign exchange through exportation of dairy products like milk, cheese, butter and cream favour the establishment of social infrastructure like power stations to generate HEP for domestic and industrial use.
- ✓ Provision of raw materials to industries e.g.creameries and other dairy industries leading to industrialization.
- ✓ Promoted agricultural diversification creating a steady flow of income to dairy farmers and the country by creating alternative source of income.
- ✓ Has promoted international cooperation and international trade through dairy exports to other countries like Newzland, Netherlands where foreign exchange and manufactured goods are got.
- ✓ Stimulated infrastructural development for example roads and railways that link dairy farms to market centres. These favour the development of other activities like trade and commerce.

Problems Faced by Livestock Farmers in Germany:

- ✓ Scarcity of pastures during the winter season leading to low quality cattle and low milk yields which reduces the farmer's income.
- ✓ Inadequate labour supply to look after cattle limits expansion of farms.
- ✓ The steep terrain in the Alps hinders the movement of cattle leading to limited milk yields.
- ✓ Poor transport facilities due to mountainous nature of the country cause marketing problems limiting farmer's earnings.
- ✓ Pests and diseases e.g. foot and mouth diseases kill the cattle and also reduces milk yields thus farmer's earnings as well.
- ✓ Competition from other livestock farming countries e.g. New Zealand and Switzerland which limits market for dairy products reducing farmer's earnings.
- ✓ Limited domestic market for dairy products limits farmer's earnings.

Measures Being Taken to Improve Livestock Farming in Germany:

- ✓ Growing of fodder crops like maize and Alfalfa grass, hay to supplement natural pastures and increase milk yields.
- ✓ Automation of the dairy sector e.g. use of automatic milkers to solve the problem of labour scarcity.
- ✓ Introduction of creameries and milk processing plants to reduce wastage of milk.
- ✓ Exportation of tinned milk, butter and cheese to solve the problem of limited domestic market.
- ✓ Spraying with pesticides and chemicals to treat animals and control pests and diseases.
- ✓ Development of electrified railway systems and tunnels to solve transport problems.
- ✓ Education of livestock farmers through seminars and demonstration ranches.

Block Mountains:

Block Mountains in Germany are Vosges, Haardt mountains on the west bank of the Rhine rift valley and Odenwald and Black forest mountains on the Eastern side.

Formation of Block Mountains:

They were formed by faulting due to compression or tensional forces.

Tensional forces occur on the earth's crust by pulling in opposite direction forming normal faults. The side blocks sink while the central block remains up forming a horst or block mountain.

Benefits of Block Mountains:

- ✓ Tap moist wind to facilitate the formation of relief rainfall that facilitates farming which provides food for human consumption.
- ✓ Covered by black forest hence promote lumbering which encourages the development of saw mills and furniture industries.
- ✓ Support arable farming and vine growing on the lower slopes providing food for human consumption.

- ✓ Supports dairy farming on the lower slopes because of the existence of pastures, hence provision of milk which improve on people's welfare.
- ✓ Promote tourism hence bring in foreign exchange used for development.
- ✓ Used for study and research purposes enabling to detect catastrophic events like earth quakes and taking measures to reduce their impact on human activities.
- ✓ Have minerals such as lignite hence promoting mining which brings in foreign exchange used for development through mineral exports.

Problems Associated With The Use Of The Mountainous Regions:

- ✓ Accelerates soil erosion due to steep slope thus reducing crop production.
- ✓ Occurrence of landslides which hinder settlement and agriculture.
- ✓ Steep slopes limit the development of transport routes thus limiting trade and commerce.
- ✓ Associated with cold temperatures that limit agriculture and settlement.
- ✓ Associated with thin soils which limit agriculture leading to reduced crop yields and so food scarcity.

Mining in Germany:

The Ruhr is the main mining region. Minerals like coal and iron ore are obtained here. The other mining area is Hamburg and Bremen. The major mineral is coal from the Ruhr and Saarf Silesian Coalfield.

Others are Uranium from Hartz, Mountains and steel from Essen.

Others are Rock salt, potash, Cobalt, Nickel, copper, lead and zinc.

A SKETCHMAP SHOWING THE RHUR INDUSTRIAL REGION AND COAL FIELDS

(Leave Half a Page)

The Ruhr Coal Fields:

This is the largest and most economic mine in Europe. The coal is in large quantities and is found in two regions namely;

Exposed coal fields and concealed coal fields.

At the exposed coal fields, coal appears near the earth crust and is easy to mine. While for the concealed, coal is deep underground and it is quite expensive to mine.

Conditions Favouring Mining in the RuhrRegion of Germany:

- ✓ Existence of large quantities of coal and iron ore near the earth's surface made it easy to extract.
- ✓ Most of the minerals such as coal and iron ore appear near the earth's surface thus reducing the mining costs.
- ✓ Existence of reliable source of energy for extraction and processing of minerals. Examples are coal from the Ruhr and HEP.

- ✓ Modern and efficient technology such as drilling rings, bucket conveyors for mining has made mining easier.
- ✓ Presence of adequate capital in mining sector used to acquire equipments, mining contracts and payment for labour.
- ✓ Supportive government policy to develop mining through provision of mining contracts to mining companies, tax exemption and loans.
- ✓ Political stability since the end of world war has reduced tension and strikes in the mining areas of the Ruhr region.
- ✓ Increased research through mineral exploration, aerial survey and Geo mapping, GPS mineral location system in the Ruhr region has led to efficiency and maximum exploration of mineral resources.
- ✓ Presence of highly skilled and semi-skilled labour that extract, processes and transport minerals.
- ✓ Well developed transport routes in form of roads, railways and canals facilitate transportation of minerals to refining and smelting centres.
- ✓ Presence of ready local and foreign market for coal and iron ore encourages mining activities.

Benefits of Mining in Germany:

- ✓ Mineral exports such as coal and iron ore bring foreign exchange used to develop the country by establishing infrastructure like roads, power stations and provision of services like education and health.
- ✓ Development of industries for example the iron and steel industries and ship building which provides employment, government revenue leading to development.
- ✓ Create employment opportunities to miners and mineral surveyors through which people's standard of living is raised.
- ✓ Has led to the growth of towns such as Dortmund, Bochum with positive effects such as provision of health care, education, trade and commerce to improve people's welfare.
- ✓ Mining has stimulated other sectors in the economy for example coal mining in the Ruhr region has promoted tourism and agriculture.
- ✓ Mining has promoted economic diversification through provision of alternative source of income and reducing over dependence on tourism and industry.
- ✓ Source of government revenue through taxes imposed on mining companies. This is used to develop the country through establishment of infrastructure.
- ✓ Acquisition of skills related to mining e.g. geo-survey, mapping, geology, mining, exploration, marketing and grading.
- ✓ Mining of coal and iron has reduced government expenditure on imported minerals.
- ✓ Mining of coal has promoted the power and energy sector for industrial and domestic use.

Effects of Mining on the Environment:

- ✓ Destruction of vegetation cover in mining fields by clearing mining areas leading to loss of wildlife like trees, birds and animals.
- ✓ Destruction of agricultural land by dumping wastes on the land thus reducing food production.
- ✓ Air and water pollution by copper dust and wastes during mining which leads to health hazards.
- ✓ Displacement of people near mining areas leading to loss of property.
- ✓ Land degradation through creation of depressions and heaps hence limiting utilization of land.
- ✓ Increase in spread of diseases due to stagnant water in depressions.
- ✓ Health hazards (silicosis) due to inhaling of too much dust by miners.
- ✓ Accelerated soil erosion and landslides which leads to reduction of land productivity.

Problems Facing Mining in Germany:

- ✓ Exhaustion of minerals in some mines has led to unemployment.
- ✓ Depreciation of mining equipments limits mining.
- ✓ Price fluctuation on the world market has led losses.
- ✓ High costs in transporting minerals to market centres leads to low profits realized.
- ✓ Competition from other countries e.g. France limits market for the minerals.
- ✓ Shortage of skilled labour to carry out mining has hindered mineral exploitation.
- ✓ Labour strikes in the mining fields have led to reducing mining activities.
- ✓ Limited market for some minerals such as coal due to changes in technology which discourage its mining.
- ✓ Limited energy/power to process the minerals.

Problems facing the coal field

- ✓ Exhaustion of coal in the exposed coal fields.
- ✓ Completion from clean energy sources e.g. HEP and oil has limited the demand for coal.
- ✓ High costs of mining in the concealed coal fields reduce profits from extracted coal.
- ✓ Competition from other coal producers e.g. USA and UK limits market coal.
- ✓ Loss of lives due to accidents in the coal fields.

Conditions That Have Led To the Decline in Coal Production:

- ✓ Introduction of new clean forms of energy e.g. nuclear, HEP and natural gas.
- ✓ Discovery of oil as substitute for coal in ships and trains and industries.
- ✓ Exhaustion of coal in some parts of the exposed coal fields.
- ✓ Introduction of modern technology which requires less coal.
- ✓ Scarcity of labour due to better paying elsewhere.
- ✓ Rising costs of mining in the concealed coal fields.
- ✓ Some of the coal fields in the exposed coal fields were closed down.

Industries that Closed due to Decline in Coal Production:

- ✓ Oil refineries.
- ✓ Petro-chemical industries e.g. plastic, food processing, electronic, iron and steel, textile etc.

Uses of Coal:

- ✓ Choking coal is used in the smelting of iron and steel and production of Tar for road construction.
- ✓ Anthracite coal is used in heating boiler.
- ✓ Bituminous coal is used as a source of energy for domestic and industrial use.

INDUSTRIALIZATION IN GERMANY:

Germany is one of the leading industrial nations in Europe and the world. Though initial industrial establishments were destroyed during the Second World War and divided, and German divided into WestGermany and EastGermany.

The Ruhr is the industrial complex in Germany as a whole. Others are Stuttgart, Bremen, Munich etc.

Industries include iron and steel, engineering, textile, chemicals, locomotives, ship building, ammunition, automobiles e.g. volks wagon, electronics e.g. Siemens, Grunding in Munich.

A SKETCH MAP SHOWING THE MAJOR INDUSTRIAL CENTERS IN GERMANY

The major industrial towns are;

- ✓ Hamburg for iron and steel.
- ✓ Essen for chemical, electoral goods and motorcars.
- ✓ Bremen iron and steel engineering.

Conditions Favouring Industrial Growth in Germany:

- ✓ Variety of reliable source of energy for example coal, nuclear from and HEP for processing of raw materials and storage of perishable raw materials in cool houses/freezers and lighting.
- ✓ A variety of raw materials such as agricultural products like vines for the wines industry, skins and hides for the footwear and minerals for industrial use.
- ✓ Presence of permanent and abundant supply of water used as raw material for soft drinks, cleaning of material and cooling machines.
- ✓ Presence of extensive land for industrial establishment.
- ✓ High level of specialization in the production of metallurgical/heavy and high precision goods like cameras, mobile phones and computers.
- ✓ Modern and efficient technology such as automation of industrial operations making work faster and efficient.
- ✓ Presence of adequate capital to invest in the industrial sector used for purchasing of raw materials, land and processing machinery.
- ✓ Supportive government policy of encouraging industrialization through offering loans and industrial protectionism.

- ✓ Presence of highly skilled labour to work in the industrial sector as engineers, technicians, accountants and managers.
- ✓ Well developed transport and communication network by road, railway, air and canals to transport industrial raw materials to the industries and finished goods to the market centres.
- ✓ Presence of ready for industrial goods both in Germany and abroad.

Environmental Problems Which Have Resulted From the Establishment of Industries:

- ✓ Pollution of air by industrial smoke/fumes, water and land pollution due to poor disposal of industrial wastes leading to health hazards.
- ✓ Congestion/overcrowding in industrial areas leading to easy spread of diseases and slowing down of movements/trade and commerce.
- ✓ Destruction of vegetation due to open cast mining leading to loss of wildlife like birds and animals and plants.
- ✓ Competition for land in industrial areas has led to high land costs.
- ✓ High cost of restoration of land and water quality to control pollution.
- ✓ Growth of towns and their related problems such as slums, theft, drug abuse and prostitution which compromise people's standard of living.

Steps Being Taken To Solve the Problems:

- ✓ Recycling of industrial waste to control land and water pollution.
- ✓ Strict legislation on waste management has been undertaken to control pollution of the environment.
- ✓ Undertaking massive reforestation programmes/green belts creation in areas where forests had been cleared to restore soil fertility and solve climatic problems like global warming.
- ✓ There is encouragement of raw material and labour saving technology to solve problems of limited/exhaustion of minerals and labour scarcity.
- ✓ There is importation of raw materials and labour scarcity.
- ✓ There is importation of raw materials e.g. iron ore from France and Sweden to solve the problem of limited raw materials.
- ✓ Diversification of the economy to reduce over dependence on industries/creation of alternative source of income.
- ✓ They have adopted treatment of industrial wastes before disposal to control land and water pollution.
- ✓ Use of alternative source of energy especially oil and natural gas which do not produce smoke to solve problems of atmospheric pollution through industrial smoke.
- ✓ They have vertical expansion/building skyscrapers to solve the problem of limited land for industrial expansion.
- ✓ There is construction of subways/underground tunnels to reduce problems of traffic congestion.
- ✓ Use of pipeline to transport oil and natural gas instead of vehicles to reduce traffic congestion.

Benefits of Industrialization in Germany:

- ✓ Have led to infrastructural development in form of air ports, roads, electrified railways, tunnels, bridges and power stations. These facilitate mobility, trade and commerce and movement of industrial raw materials and finished goods.
- ✓ Growth of towns and ports which offer social and economic benefits like better accommodation, recreation to improve people's standard of living.
- ✓ Provision of market to agro-based industries such as meat packing, leather tanning, footwear and textile industries through providing cotton, silk worms, hides and skins.
- ✓ Provision of employment opportunities hence a source of which improves on the standard of living.
- ✓ Source of foreign exchange through exportation of finished products such as electronics, televisions and radios. This is used to provide social services.
- ✓ Have promoted international relations between Germany, USA and Africa and European countries. Such good relations have promoted security and political stability and trade creation.
- ✓ Acquisition of skills to workers employed in the precision, electronics, automobiles, oil refineries and petro-chemical industries. Such skills include welding, modern engineering techniques etc.
- ✓ Have led to capital inflow through foreign investors such as Ford motors, Unilever, such capital is used to develop roads, health centers and schools.
- ✓ Source of government revenue used to develop the country by providing social services.
- ✓ Has led to economic diversification reducing reliance on agriculture, tourism and international trade and an alternative source of income.
- ✓ Industrialization is a source of consumer and capital goods such as beer, sodas, canned fish, television sets etc. this has led to improvement of people's standard of living.
- ✓ Industrialization has promoted self sufficiency in Germany reducing foreign exchange outflow on importation of manufactured goods from USA, Europe and Asia.

Comparison between Industries in Germany and East Africa.

Differences:

- | Germany. | East Africa. |
|---------------------------------|------------------------------|
| ✓ Heavy industries. | Light industries. |
| ✓ Large scale production. | Small scale production. |
| ✓ Mostly locally owned. | Mostly owned by foreigners. |
| ✓ Capital intensive techniques. | Labour intensive techniques. |
| ✓ Have branches worldwide. | No branches worldwide. |
| ✓ Based on minerals. | Agro-based. |
| ✓ Produce high quality goods. | Produce low quality goods. |

Similarities:

- ✓ In both regions industries are located near market centres.

- ✓ In both regions heavy industries are located near raw materials.
- ✓ In both regions similar goods are produced eg wines, textile, processed food.
- ✓ Both use large quantities of power.

Problems Facing Industries in East Africa:

- ✓ Inadequate capital to purchase industrial machinery, raw materials has limited industrial growth.
- ✓ Limited skilled labour to operate industries.
- ✓ Inadequate power to operate industries.
- ✓ Small market for industrial products has limited expansion of industries.
- ✓ Limited raw materials for industries.
- ✓ Political instability scares away industrialists.
- ✓ Low level of technology to produce high quality goods.
- ✓ Competition from developed countries like Japan limits industrial expansion and prosperity.
- ✓ Under developed transport network limits distribution of finished goods to market centres.

Measures being taken to develop Industries in East Africa:

- ✓ Development of power stations to produce adequate power stations for industries e.g.seven forks dam in Kenya.
- ✓ Development of agro-based industries e.g. breweries whose raw materials are available.
- ✓ Attraction of foreign investors from china and India to bridge the capital gap.
- ✓ There is development of roads to transport raw materials and finished goods.
- ✓ Provision of loans from banks to purchase industrial machinery.
- ✓ There is training of labour by technical institutes, universities and on job training by big industries.
- ✓ Joining of regional economic integrations e.g. ECOWAS, COMESA to create market for industrial goods etc.

FORESTRY IN GERMANY:

There are two types of forests in Germany;

- ✓ Coniferous forests in the highland regions like Black forest, Vosges and Haardt Mountain. Tree species here are Scot pine, Norway spruce, Fir and Cedar.
- ✓ Temperate mixed or Deciduous forest. These are found in the southern along the low land of the Rhine rift valley. Part of the black forest is deciduous forest. Tree species here are Oak, beech and larch.

Benefits of Coniferous Forest:

- ✓ Source of timber used for making furniture and construction.
- ✓ Source of raw materials for industries e.g.new sprint papers, Sawn board and plywood.
- ✓ Habitant for wild animals such as bears, foxes thus promoting wildlife conservation.

- ✓ Promotes tourism attraction e.g. picnics and holiday camping hence brings in foreign exchange used to establish social infrastructures.
- ✓ Facilitates rainfall formation which promotes agriculture producing food for human consumption.
- ✓ Controls soil erosion along the Vosges and Haardt mountains.
- ✓ Acts as a source of rivers (water catchment area) providing water for industrial and domestic use.
- ✓ Source of medicinal properties used to treat different diseases.
- ✓ Have provided employment opportunities to forest rangers, lumbering companies who earn income to improve their standard of living.
- ✓ Provide foreign exchange through exportation of forest products which is used to provide social services like health care.
- ✓ Source of wood fuel used for domestic heating and industrial use.

Conditions That Led To Disappearance of Forests:

- ✓ Over lumbering to obtain timber.
- ✓ Deforestation due to the need to create land for agriculture.
- ✓ Development of transport routes in forests.
- ✓ Fire outbreak due to holiday makers, hunters and farmers.
- ✓ Effect of acidic rain that destroys the forests.
- ✓ Clearance of forests to create land for settlement.

Steps Being Taken To Conserve Forests:

- ✓ Afforestation and reafforestation in the Great Plains (the Geest).
- ✓ Restricting settlement in forests.
- ✓ Construction of fire detection towers.
- ✓ Zoning of forests with bare strips to control spread of wild fires.
- ✓ Development of alternative energy sources e.g. HEP, and coal to reduce use of firewood.

Factors that favoured growth of forests in Germany:

- ✓ Steep slopes with limited population e.g. the Vosges and Haardt Mountains favoured the growth of forests.
- ✓ Poor soils in the Geest in the North limits agriculture hence are left to forestry activities.
- ✓ Favourable climatic conditions of cool temperatures and moderate rainfall allow the growth of forests.
- ✓ Latitudinal location in the higher latitudes favours the growth of temperate forests due to temperate climate.
- ✓ Government policy of conserving forests.

THE RHINE WATERWAY:

This is the most important waterway in Europe. It is navigable from North Sea to Basel in Switzerland and distance of 800km. It flows through Switzerland, Germany and Netherlands.

It is link to river Rhone and Mediterranean by the Rhone-Rhine canal and it's also joined by many tributaries such as Moselle and Main.

The river has been dredged, straightened and improved over much of its navigable length. It suffers little seasonal fluctuation in its water levels, rarely floods and also rarely frozen. It is the most intensively used commercial waterway in Europe.

Importance of the Rhine Waterway.

- ✓ The Rhine waterway opened up remote areas leading to economic development.
- ✓ Led to development of towns such as Mainz and Cologne in Germany which offer commercial, social and administrative services.
- ✓ Led to agricultural development through providing accessibility to agricultural regions such as vine growing in the Rhine valley in Germany.
- ✓ Stimulated industrial growth such as iron and steel, chemicals, electronic and engineering industries in Germany through transportation of raw materials.
- ✓ It stimulated international trade by handling imports and exports from Germany, France, Switzerland and Netherlands.
- ✓ Encourages settlement along the waterway for example at Cologne and Mainz in Germany.
- ✓ Have promoted tourism through facilitating river cruises and spectacular drainage features.
- ✓ Led to generation of HEP for domestic and industrial use.
- ✓ Provides water for domestic and industrial use for example the textile and brewery industries in Bochum and Mainz.
- ✓ Has facilitated the development of other forms of transport like roads and canals. The promote industrialization, trade and commerce.
- ✓ Has stimulated the exploitation of natural resources such as coal and iron ore from the Ruhr coal fields of Germany, timber resources from the RhoneAlps of France.

Problems Resulting From the Construction of Rhine Waterway:

- ✓ Have led to over exploitation of natural resources e.g. coal from the exposed Ruhr coal field, increased deforestation in the Vosges Mountains.
- ✓ Involves the pollution of River Rhine due to oil spills particularly as a result of vessel collision.
- ✓ There is congestion due to heavy traffic along the waterway hence causing delays of merchandise.
- ✓ Led to growth of towns and their associated evils such slum development, prostitution which compromise people's standard of living.

- ✓ Destruction of aquatic life such as shrimps and crustaceans due to marine activities along the waterway.
- ✓ There is high cost of water treatment due to polluted water as well as constant dredging to control siltation.
- ✓ Delays caused by single locks along the waterway.

Solutions to the Problems:

- ✓ There is construction of embankments along R. Rhine to control floods.
- ✓ Dredging to control siltation.
- ✓ There is use of traffic police to control congestion.
- ✓ Containerization to control congestion.
- ✓ Construction of other transport routes such as roads and railways to reduce traffic on the Rhine waterway.
- ✓ Construction of canals to avoid waterfalls along the waterway.
- ✓ Use of radar system to detect other vessels on the waterway when there is smoke.

Other Transport Routes in Germany:

- ✓ Dortmund-Ems-canal.
- ✓ Lippesite canal.
- ✓ Weser Meuse canal.

TOURISM INDUSTRY IN GERMANY:

Germany has a flourishing tourism industry. In 2003 it received a total of 18,400,000 tourists. The major tourist centres are; Berlin, Hamburg, Bremen, Munich, Konstanz, Bonn and the Ruhr region.

Tourist Activities in Germany.

- ✓ Sun-bathing due to sunny conditions during summer.
- ✓ Game fishing in L. Constanz, L. Schwerin and L. Maritz.
- ✓ Mountain climbing in the Bavarian Alps, Vosges and Haardt mountains during summer.
- ✓ Research and study tours in the museums.
- ✓ Swimming in L. Constanz during summer.
- ✓ Ice skating, skiing in the Bavarian Alps, Vosges Mountains during winter.
- ✓ Hunting in the Gees (Great Plains in the North).

Conditions Favouring Tourism in Germany:

- ✓ Presence of variety of tourist attractions e.g. museums, Berlinwall, Vosges Mountains, historical sites attracting tourists to carry out research, filming, winter and watersports.
- ✓ Well developed transport network e.g. R. Rhine, cable cars, roads, railways which enables tourists access tourist attraction.
- ✓ Geographical location in the heart of Europe with abundant potential tourists.
- ✓ Relative political stability for free movement of tourists to different attractions.

- ✓ Well developed accommodation facilities such as chattels, apartments and hotels like Hilton.
- ✓ Presence of highly skilled labour to work as hotel chefs, tour guides, hotel managers making tourists feel at home.
- ✓ Hospitality of Germany people who welcome tourists from different parts of the world.
- ✓ Diversity of languages and culture like French, Germany, Spanish, Italian and Latin enabling tourists to effectively communicate with the local population.
- ✓ Presence of large sums of capital to invest in tourism by building tour resorts, maintenance of historical sites.
- ✓ Warm sunny summers for sunbathing, clear blue skies attracts, winter sports like mountaineering, skating on the snow capped mountains attract tourists.
- ✓ Presence of organized tour and travel agents who offers better tour packages reducing the cost of touring the country.

Benefits of Tourism to Germany:

- ✓ It stimulates development of infrastructures like hotels, restaurants, roads and entertainment centres which offers social services to the local population.
- ✓ It creates employment opportunities to hotel managers, game rangers, tourist guides who earn income to improve their standard of living.
- ✓ It leads to conservation and protection of wildlife in game parks and game reserves.
- ✓ It facilitates development of art and crafts industries which produce drums, baskets, stools which are exported to earn foreign exchange used for development.
- ✓ It promotes international relationship/understanding between Germany and the origin of tourists e.g. USA and Britain.
- ✓ It has promoted economic diversification thus ensuring a steady income in-flow.
- ✓ Tourism provides the best form of land use in some areas which would otherwise be left idle such as the Germany Alps.
- ✓ It educates people about the culture of others e.g. traditional dances, historical background etc.
- ✓ Leads to growth of towns and tourist resorts where better services such as accommodation, health care are provided to improve people's standard of living.
- ✓ It is a source of foreign exchange used to provide social services.

Problems Facing Tourism in Germany:

- ✓ Congestion at tourist attractions e.g. tourist resorts.
- ✓ Threat of terrorists who may pretend as tourists causing destruction of property and loss of lives.
- ✓ Competition with other countries e.g. France, Switzerland limits the total number of tourists coming in the country.
- ✓ Over use of resources like electricity, water compromising provision of social services.
- ✓ Spread of diseases e.g. AIDS to the people of Germany.
- ✓ Limited wildlife/animals than those of African countries.