AGRICULTURE IN THE WORLD.

Agriculture is the growing of crops (Arable farming) and rearing animals (livestock farming) for commercial and subsistence purposes. The crops grown include; G. nuts, potatoes, bananas, sorghum and the animals reared include; goats, cows, pigs, sheep, poultry.

Agriculture is mostly developed in the tropics, equatorial regions, developing countries and it is less common in Scandinavian, Polar region and developed countries.

IMPORTANCE / EFFECTS OF AGRICULTURE

- Source of government revenue by taxing people and companies leading to capital accumulation and improving the national income.
- Source of foreign exchange by exporting agricultural products helping in importation and investment e.g. Rubber from Liberia.
- Improvement in transport and communication through the construction of roads, railways, benefiting the surrounding communities.
- Increase development of industries like industries making agriculture equipment, processing agriculture products and using agriculture raw materials.
- Provision of employment opportunities leading to high standards of living like the farmers, people working in agro-based industries, traders, extension workers.
- It leads to economic diversification by reducing on dependency burden e.g. industrialization, transport, tourism.
- Promotion of international relationships and regional cooperation through export and import trade like between developing and developed countries.
- Source of food reducing on the dangers of hunger and malnutrition and food buying like cassava, bananas, cows, sheep.
- Growth of urban centres like towns and ports around marketing industrial areas because of increase in population.
- Resource exploitation leading to economic growth and development e.g. land in developing countries.
- Promotion of education and research by visiting farms, industries, markets for acquiring skills and improving science and technology.
- Capital accumulation by foreign investors through taxation, foreign exchange earnings leading to other projects.
- It helps in environmental conservation through climate modification, soil formation and conservation and protection of wildlife like plant species and animals.
- Agriculture is an alternative land use in areas with limited resources, low

population, areas with fertile soils, wet climate like in the tropics, equatorial regions and the developing countries.

NEGATIVE EFFECTS / DISADVANTAGES

- Soil exhaustion because of monoculture, using poor methods of farming like shifting cultivation, over cultivation, Nomadic pastoralism and using plantational farming with specialization.
- Displacement of people and activities by occupying big areas like plantational farms, ranches.
- It leads to pollution of air, water and land around agro-based industries, using fertilizers, pesticides, insecticides with toxic ad acidic elements causing destruction of plants and animals.
- Diversion of labour and capital by investing in agriculture limited the development of other sectors.
- It leads to economic dependence and its related problems like Balance of payment, poor terms of trade, price fluctuations, due to specialization like in developing countries.
- It leads to profit repatriation by foreign investors causing capital outflow and lowering the national income like in less developed countries, foreigners owning plantations.
- It is affected by marketing problems because of over production, perishability and this affects planning and it causes problems of competition.
- Agriculture mostly depends on environmental factors like climate, soil fertility, pests and diseases and this affects planning.
- Agriculture encourages soil erosion like gulley, rill, shit, and the occurrence of landslides and mass wasting like rock fall, rock slide or slump and these affect soil fertility and may lead to destruction of plants and animals especially in highlands, mountain slopes and densely populated areas.

FACTORS FOR THE DEVELOPMENT OF AGRICULTURE

There are physical and human factors influencing and accounting for the location, growth and development of agriculture.

- Presence of favourable climate like wet conditions like heavy rainfall, moderate temperature in equatorial regions, tropics, savannah areas in less developed countries.
- Presence of flat and gentle slopes form undulating landscape leading to easy mechanization, transport, drainage, construction like in hilly areas.
- Presence of fertile soils and well drained like loam soils, volcanic soils, alluvial

soils found in highlands, mountain slopes, lowlands and valleys.

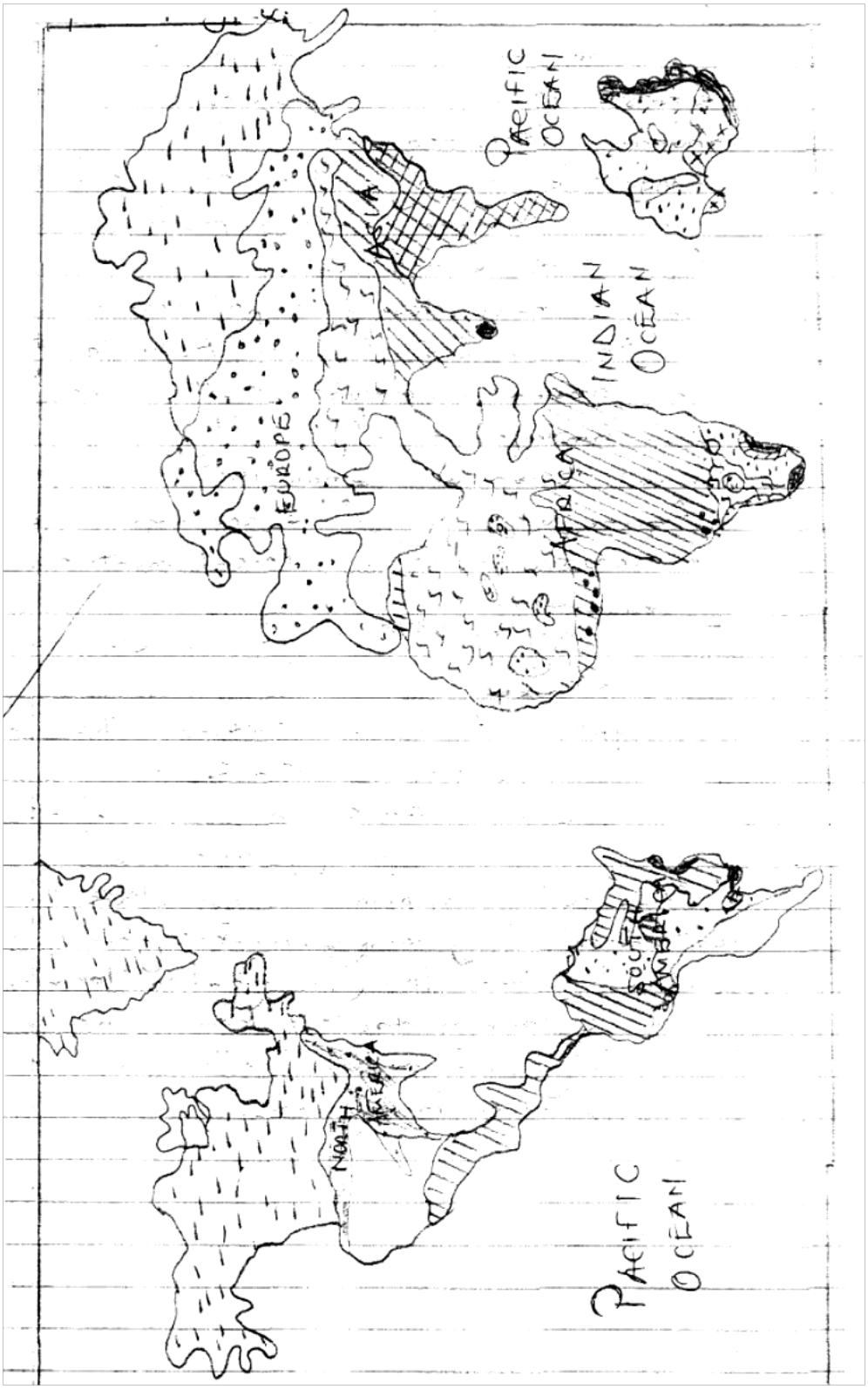
- Agriculture is developed in areas with limited pests and diseases to destroy crops and livestock e.g. in highlands and mountain slopes.
- Presence of water supply and well drained areas leading to easy exploitation limited pests and diseases like in gentle slopes, hills, plateaus.
- Agriculture is developed in areas with limited other resources like minerals, fishing potentials, forests for lumbering.
- Presence of better breeds of crops and livestock which are pest resistant with quick maturity contributing to increased production.
- Agriculture is developed in areas with limited obstacles like relief features, land forms, drainage features and thick vegetation making exportation easy and cheap like in Savannah areas.
- Presence of improved transport like the construction of roads, railway lines, modern ports helping in transporting labour supply extension workers and agriculture products to the markets.
- Presence of labour supply both skilled and unskilled leading to development of agriculture in areas with increased population tropics or savannah areas.
- Presence of wide market intern and external like in urban areas with increased population and exporting to other countries like cotton from Sudan to Britain, rubber from Liberia to Japan.
- Presence of capital provided by the government and private investors used for buying farming equipments, paying workers and building industries.
- Presence of improved science and technology leading to availability of skilled labour and the use of modern methods of farming e.g. irrigation in Sudan, Horticulture in Holland and Ranching in Argentina.
- Presence of positive and supportive government policies like offering loans to farmers, constructing transport routs, attracting investors and market research.
- Presence of research stations leading to better breed and helping in controlling pests and diseases, processing agricultural products and marketing.
- Presence of political stability and security helping in attracting investors and diverting resources to improving infrastructure, social sciences and economic activities e.g. like developed countries.
- Presence of good international relations and regional cooperation helping in marketing getting loans and in labour supply like between low developed countries and more developed countries.
- Presence of cultures and traditions influencing agriculture e.g. Banana growing by Bantu communities, millet by Nilotics, Nomadic pastorlism by Karamajongs, Masai and the Turkana.

- Presence of land tenure system ownership like private land ownership, freehold leading to easy availability of land for agriculture purposes.
- Presence of entrepreneurs' big companies and cooperatives providing capital managerial skills, for large scale and commercial farming like firestone for rubber growing in Liberia.
- The factors influencing agriculture are many and they work in a combination there is no single factors which can explain in isolation. The physical factors mainly influence in developing countries and human factors mostly in developed countries.

TYPES / AGRICULTURAL SYSTEMS IN THE WORLD

The types of agricultural system in the world are commercial, modern large scale and traditional or subsistence or small scale and these include; Extensive farming, ranching, paddocking, Nomadic pastoralism, horticulture, floriculture, market gardening, plantation farming, Arable irrigations, cooperative farming, factory farming, truck farming, shifting cultivation, rotational bush fallowing, collectivization.

A SKETCH MAP OF THE WORLD SHOWING TYPES OR SYSTEMS OF AGRICULTURE



SUBSISTANCE FARMING

This is the growing of crops and rearing animals on a small scale for domestic or home use. It is mainly practiced in the tropical equatorial regions. Less developed countries by peasants in rural areas. It includes shifting cultivation, rotational or bush fallowing.

Nomadic pastoralism, intensive subsistence farming.

Characteristics of subsistence farming

- Farms cover a small area like five acres.
- The farms are scattered or fragmented.
- They use traditional methods of farming or simple technology.
- They use mixed and intercropping like maize with beans, G.nuts and soya.
- They mainly grow food crops like cassava, millet and maize.
- They grow cereal and annual crops which are harvested in a year.
- They use family labour because of small plots.
- There is law production for subsistence purposes.
- They depend on natural environment, physical factors.

SHIFTING CULTIVATION

This is a subsistence method of farming involving farmers moving from one place to another when the soil loses fertility. It is mostly practiced in sparsely populated areas like equator regions, the tropics e.g. Zambia, DRC, Brazil, Argentina, Zimbabwe, India, Indonesia and Venezuela.

Characteristics of shifting cultivation.

- There is bush burning during clearing land.
- Movement of people from one place to another after a loss of fertility.
- They have temporary settlement patterns.
- They grow crops for subsistence purposes.
- They grow cereal and annual crops like maize, millet.
- They use simple technology like hoes, pangas
- They specialize in growing food crops.
- They use barter system of trade.
- They grow some few cash crops.
- They are found in sparsely populated areas.
- They use communal and ownership for easy movement.
- They depend on nature and physical factors with no improvement and little attention.

- The land regains fertility by abandoning.
- They use family labour because of small plots.
- They use simple and traditional technology.

Importance / effects of shifting cultivation.

Positive advantages:

- Source of food like cereal and annual crops reducing on dangers of hunger, multrution and food imports.
- Mixed and intercropping reduce on soil exhaustion e.g. Beans and maize.
- The farmers get enough time for other activities like hunting, fishing, art and craft.
- It is less expensive because of using simple tools like hoes, pangas, using family labour.
- Bush burning destroys pests and diseases, weeds and it adds soil nutrients like potash.
- The land regains fertility naturally by abandoning, there is no use of fertilizers.
- The cracks created by burning and during cultivation encourages the penetration of air and water for the living organisms in the soil which helps in soil formation.
- Provision of employment opportunities like the farmers leading to increased standards of living like Zambia, Brazil, India.
- Improvement in transport and communication like the rural feeder roads and social services in areas occupied by the farmers.
- The system is simple to use because of simple technology and no need of training like peasants in rural areas.

Disadvantages / Negative

- It encourages deforestation leading to loss of timber during the clearing of land.
- Bush burning leads to destruction of humus causing soil exhaustion.
- It leads to poverty and law economic development because of specializing in food crops and hence low production.
- It encourages soil erosion because of bush burning exposing to erosion agents e.g. wind, running water like rill, sheet, gulley and splash.
- It is found application in areas with sparse population and with population increase it becomes difficult.
- Time is wasted by moving from one are to another because the crops are scattered and fragmented.
- It leads to environment degradation because of bush burning, deforestation, swamp reclamation leading to destruction of plants and animals.
- It leads to poor land mismanagement because soil conservation measures are

not practiced and land is owned communally.

Reasons for the decrease in shifting cultivation

- Population increase leading to shortage of land and changing to other systems like rotational, bush fallowing, intensive subsistence farming.
- Change of land tenure / ownership system from communal to private land ownership discouraging movement.
- Agricultural modernization leading to use of modern and scientific methods of farming leading to development of commercial agriculture.
- Economic diversification leading to other economic activities depending on other resources reducing on the dependence on agriculture e.g. fishing.
- Introduction of other crops and other types of farming reducing on specialization and monoculture.
- Improvement on marketing both internal and external contributing to increased production.
- Presence of research stations leading to better breeds and helping in controlling pests and diseases.
- Change of cultures due to education interaction and exposure reducing on ignorance and backwardness.
- Improvement in transport like the construction of feeder roads helping in marketing, movement of workers e.g. extension workers to advise the farmers.
- Development of agro-based industries processing agricultural products for easy marketing and transport.
- Improvement in educated farmers using seminars / workshops by using extension workers e.g. agriculture, officers, veterinary officers, use of soil conservation measures leading to proper land use management e.g. intercropping, mulching, strip cropping.
- Environment conservation leading to gazetting of land as game and forests reserves, wetlands reducing on the rate of deforestation and encroachment.
- Presence of positive and support government policies like giving seedlings, giving loans, constructing transport routs, extension workers.

Qn: Account for the development or existence or persistence of shifting cultivation in either Congo basin or Amazon basin.

ROTATIONAL BUSH FALLOWING

This is an advanced form of shifting cultivation replacing it because of population increase leading to scarcity of land and need for agriculture modernization. It involves farmers moving from one plot to another when the land looses fertility but in the same area on rotational basis.

Similarities between rotational bush fallowing and shifting cultivation

- Subsistence crops are grown in both like cassava, beans and potatoes.
- They both use bush burning for clearing land.
- They use small plots leading to low production.
- Mixed cropping and intercropping is used in both.
- They use simple or rudimentary tools like pangas, axes and hoes.
- They use traditional methods of farming like peasants in rural areas.
- Both depend on nature and environment no use of fertilizers or irrigation.
- They both use simple technology like the peasants for subsistence farming.
- They are both practiced in areas with low population.
- They both grow cereal and annual crops which are harvested within a year.

Differences / contrasts

- In rotational bush fallowing villages are demarcated and settlements are permanent which in shifting cultivation it is temporary.
- In shifting cultivation land returns to forests and woodland while rotational bush fallowing it doesn't because it takes a short time.
- Rotational bush fallowing is practiced in areas with increasing population which sifting cultivation is in sparsely populated areas like DRC, Zambia and Brazil.
- In rotational bush fallowing the plots are well defined and there is a fixed system of rotation whereas in sifting cultivation the system is harpzard.
- In shifting cultivation there is specialization in arable farming whereas in rotational bush burning there is also livestock farming like keeping cattle.
- In rotational bush fallowing land ownership is private whereas in shifting cultivation it is communal.
- In rotational bush fallowing they are applying some modern and scientific methods of farming where in shifting cultivation it is subsistence farming.
- In rotational bush fallowing there is proper land use management and using some soil conservation measures whereas in shifting cultivation land is poorly managed.
- In shifting cultivation land regains fertility by abandoning while in rotational bush fallowing there is mixed farming.

Qn: Compare and contrast shifting cultivation and rotational bush fallowing.

SMALL SCALE FARMING (INTENSIVE SUBSISTENCE FARMING)

This is the growing of crops and rearing animals on a small scale for subsistence purposes e.g. growing cereal crops, annual keeping local breeds e.g. cassava, potations, beans, millet. It is mostly practiced in low developed countries e.g. Africa, S. Africa, Australia and some parts of Asia.

Characteristics of intensive subsistence farming.

- They have permanent fields for rice, bananas, coffee.
- They use family labour.
- They mainly grow food crops and some few cash crops e.g. cotton and coffee. The plots are small and scattered (land fragmentation).
- They use simple and rudimentary tools e.g. pangas, hoes, axes.
- They depend on physical environment, natural conditions or environment factors.
- Soil fertility is maintained by fallowing and by adding manure and using mulching, they don't use fertilizers.
- It's mainly practiced in sparsely populated areas e.g. in rural areas by peasants.
- They use intercropping / mixed cropping and this helps to maintain soil fertility.
- They mainly grow crops for subsistence purposes and sell some surplus for purchasing the basic equipment.

Advantages of small scale farming / intensive subsistence farming.

- Source of employment opportunities leading to high standards of living.
- Development of infrastructure e.g. rural feeder roads.
- Development of agro based industries e.g. maize milling plants and dairy industries, etc.
- Source of foreign exchange through exporting coffee, cotton.
- Promoting education and research like fieldwork and scientific experiment.
- Source of food e.g. crops and livestock products e.g. beans, millet, milk, meat.
- International and regional relations because of exporting and importing.
- Development of tourism industries e.g. rice growing in India and China.
- Environmental protection by providing habitants for plants and animal species.
- Source of government revenue through taxation.
- Alternative land use pattern like sparsely populated area.
- Provides market for industrial products e.g. fertilizers, pesticides, hoes.
- They take limited capital / cheap and easily managed by farmers.
- Leads to promotion of economic diversification reducing on problems of independence.
- Climate modification through evaporation and evapotranspiration
- There is use of small pieces of land.

- There is use of limited labour and are cheap.

Demerits of subsistence farming

- It leads to poverty and low economic development because of low production.
- They lead to environmental destruction because of deforestation.
- In small areas, there is specialisation e.g. cocoa growing in Ghana, G. nuts in Gambia and Senegal leading to problems of economic dependence.
- Soil exhaustion because of monocultures e.g. G. nut growing in Kondoa district central Tanzania.
- Pollution by agro-based industries.
- Limiting land for other activities because they occupy a big area.
- Leads to rural urban migration like to towns which are used as marketing centres.
- Price fluctuation on the world market affecting planning leading to low prices.
- Bush burning leads to destruction of plants and animals.

COMMERCIAL INTENSIVE FARMING

This is the growing of crops and rearing animals on a small piece of land using scientific and modern methods of farming leading to high production. It is mostly practiced in densely populated countries, near urban centres, densely population areas.

Examples:

Horticulture is the growing of fruits and vegetables on a small piece of land leading to high production in Netherlands, Holland, and Carlifornia through irrigation.
Market gardening: This is the growing of fruits, crops and vegetables near urban centres where there is easy access to markets.
Truck farming: This is the growing of crops and rearing animals where there is good means of transport to the market.
Factory farming: Is the rearing of animals using factory feeds like poultry, piggery, zero grazing, dairy farming.

Characteristics of intensive commercial farming

- Farms are small i.e. 3-6 hectares because of increased population density.
- Production per unit area is high because of using modern and scientific methods of farming.
- They use labour intensive technology because of small plots.
- Land is not allowed to rest because of population pressure.
- Fertilizers are used in this system.

- They grow cereal and annual crops.
- They rear animals for milk and its products are perishable and they need good transport (truck farming and easy market) in market gardening.
- They use supplementary feed from factories for livestock (factory farming.)
- Crops and animas are for commercial purposes.

Intensive commercial farming in Netherlands or Holland

Netherland or Holland is found in Europe and it is a developed country and it is important for horticulture like the growing of fruits and vegetables and it is important for dairy farming and zero grazing.

Agriculture is mainly carried out on reclaimed areas like Zuyder zee, Eastern Polder, Western Polder, Friesland, Makerland and these are found near North sea and mouth of R. Rhine.

It is important for growing fruits and vegetables like grapes, Barley, Apples, Spinach, Lettuce, Pears, Tomatoes, Cabbage, Cucumber. The animals reared include Fresian, New Jersey, Aghus, Red bull which are important for milk production and its products e.g. Cheese, Butter, Ice cream.

There is increased production for internal and foreign market.

A SKETCH MAP OF NETHERLANDS OR HOLLAND SHOWING AGRICULTURAL AREAS IN RECLAIMED LAND.

Factors of commercial intensive farming in Netherlands.

They're physical and Human factors.

- Presence of market because of increased population in towns like Rotterdam, Amsterdam, Hague. Foreign market by German, Britain, France.
- Presence of fertile alluvial soils like clay in low lands near water bodies like R. Rhine and the North sea.
- They improved transport by constructing roads, railway lines, water transport, Air transport for easy marketing because the products are perishable.
- Presence of water supply for crops and animals from R. Rhine, North sea, manmade lakes by reclamation.
- Netherlands has limited pests and diseases because of cool temperate climate encouraging the growth of fruits, vegetables and rearing animals.
- Presence of flat and gentle slopes for easy transport and easy flow water by gravity in reclaimed areas like Friesland, Makerland.
- Presence of strategic location near the North sea and R. Rhine for cheap water transport are near international ports like Rotterdam.
- Holland has limited resources like minerals, land discouraging other activities and encouraging intensive farming.
- Presence of improved science and technology like the use of modern scientific methods of farming like irrigation, glass have contributed to increased production.
- Presence of improved and better breeds with quick maturity, pests and diseases resistant e.g. Fresian cattle, fruits and vegetables.
- Presence of capital provided by the government and private investors for constructing lands, aqueducts for building industries.
- Presence of agro-based industries processing agricultural products e.g. diary factories for making beverages.
- Good international relations and regional cooperation helping in marketing, transport and labour supply like in Germany, Britain and France.
- Political stability and security leading to a favourable investing, climate and reducing expenditure defence.
- Use of cooperatives helping in marketing, giving loans, transport, processing, supervision and monitoring.
- Presence of positives and supporting and government policies like land reclamation, giving loans, carrying out research.
- Temperate climate with cold conditions for the growth of fruits, vegetables, rearing animals and hot summers for ripening the fruits and harvesting.
- Presence of labour supply both the skilled and unskilled because of increased

population in town like Rotterdam, Amsterdam using immigrants and holiday makers during harvesting.
- Presence of research stations leading to better breeds, control of pests and diseases, processing and marketing.

Importance/ effects of commercial intensive farming in Netherlands.

Positive / advantages

- Small piece of land is used making it good for densely populated areas like near urban centres and reclaimed areas.
- Mixed farming is less affected by price fluctuations and crops are used as animal feeds and animals provide manure.
- It helps in soil conservation like getting manure from animals, growing cover crops.
- Constant production because of using irrigation farming and this helps in planning.
- Crops have increased food value like vitamins improving health of people and ensuring food supply.
- Growth of urban centres around marketing areas and processing factories e.g. in Amsterdam, Rotterdam, Hague.
- Improved transport and communication by constructing roads, railway lines, ports connecting agricultural areas to markets and industries.
- International relations and regional cooperation with counties like German, Britain, Iceland, Belgium.
- Government revenue by taxing people and companies improving the national income.
- Employment opportunities like the farmers, in agro-based industries leading to increased standards of living.
- Foreign exchange by exporting fruits, vegetables and livestock products helping in importation and investments.
- Development of agro-based industries e.g. Dairy plants, industries for making beverages.
- Capital accumulation through investments, taxation, foreign exchange earnings leading to development of other products.
- Education and research by visiting fruit and dairy farmers, agro-based industries for acquiring skills and improving technology.
- Alternative land use because of limited resources and land.

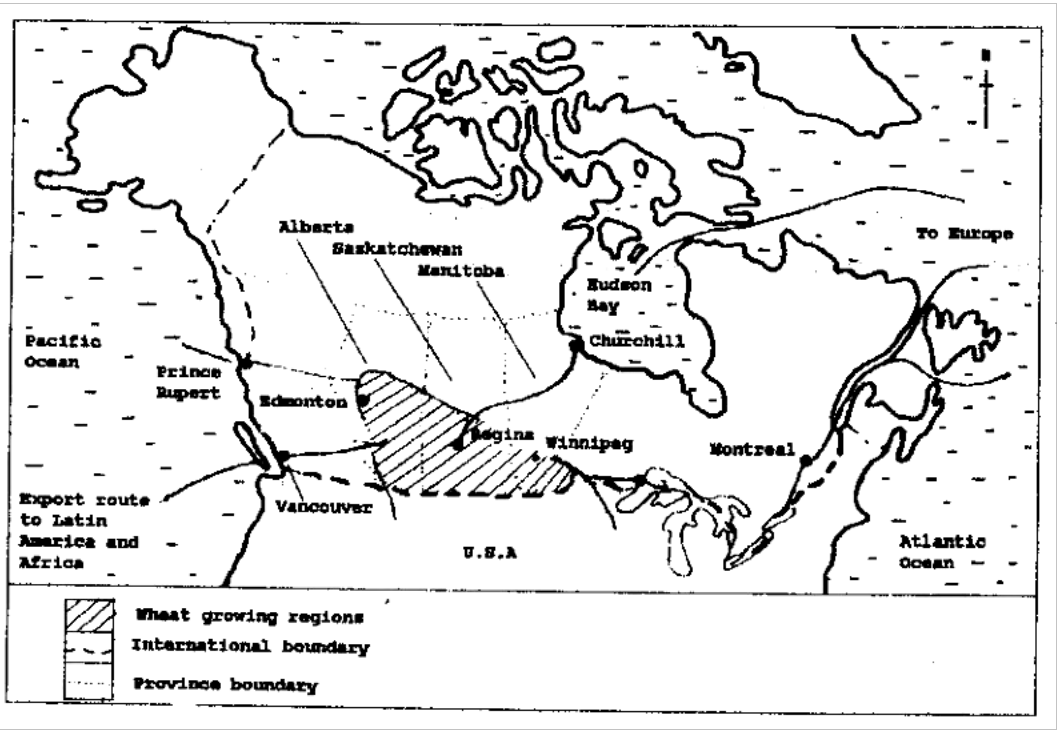
Disadvantages

- It uses labour intensive technology making it tiresome and labourious.
- The products are perishable and expensive for storage like using cold rooms, freezers and refrigerators.
- Low production because of using small plots reducing on exports.
- It is not easy for peasants because of using scientific and modern methods of farming (it is expensive / needs a lot of capital.)
- It is expensive because of applying fertilizers, pesticides, insecticides, weed killers, irrigation and research.
- Environmental degradation because of deforestation, swamp reclamation and destruction of landscape in the reclaimed areas.
- Urban problems because of increased population around marketing areas, industries.
- Soil exhaustion because of using monoculture, specialization and latant cultivation, soil Stalinization by floods.
- Diversification of labour and capital into Agriculture affecting other sectors.
- Displacement of people and activities by occupying big areas.
- Breeding grounds around irrigated areas and reclaimed lands.
- Regional imbalance causing economic problems.

COMMERCIAL EXTENSIVE FARMING - WHEAT GROWING IN THE CANADIAN PRAIRIES

Extensive Commercial Farming is the growing of crops and rearing animals on a large scale using a big piece of land for commercials purposes. The Canadian Prairies are found in North America covering part of Canada and USA covering the provinces of Alberta, Saskatchewan, Manitoba and it is important for growing wheat and other crops like soya bean, maize, barley, oats, wheat using scientific and modern methods of farming under specialization of monoculture with low production per unit area but high production because of using extensive land for external and foreign market.

A SKETCH MAP SHOWING WHEAT GROWING IN THE CANADIAN PRAIRIES



Factors favouring wheat growing in the Canadian prairies.

Physical factors:

- Availability of land for extensive farming because of sparse population in the provinces of Alberta, Manitoba and Saskatchewan.
- Presence of fertile, Black Chenozerm soils which are well drained less acidic and not easily leached and they have high content of potassium and phosphates.
- Improved transport and communication like wing railway lines, roads, modern ports for export like Vancouver using St. Lawrence Sea Way and New York port.
- Presence of Savannah tropic climate with wet and dry conditions having rainfall around 1000mm, frost / free conditions encouraging the growth of wheat.
- Presence of relief which is flat and gentle slopping with hills, plateaus, broad valleys leading to easy mechanization, drainage and transport.
- Presence of wide market both internal and external because of increased population in towns like Vancouver, Regina, Emonton, Winnpeg and exporting wheat to other countries like China, Britain, Japan.
- Presence of industries supporting the growing of wheat for making equipment and inputs, for processing what and using wheat as a raw material e.g. bread, beverages.
- Strategic location near the coast near Pacific ocean leading to development of

ports like Vancouver, Churchhill, Prince Rupert are near the Great Lakes helping in use of cheap water transport internally and externally.

- Presence of capital provided by the government and private investors used for by buying machinery, equipments like tractors, combine harvesters, purchasing inputs like fertilizers.
- Limited resources in the Canadian Prairies like minerals, forests, discouraging other activities leading to specialization in wheat growing.
- Presence of international relations with wheat importing counties like China, Britain, Japan.
- Presence of labour supply both the skilled and unskilled working on wheat farms, processing factories contributing to increased production.
- Presence of improved breeds of wheat and other crops like soya bean, maize with quick maturity, pest and diseases resistant, drought resistant leading to increased production.
- Presence of positive and supportive government policies like gazetting agricultural land giving loans, training skilled labour, building industries, carrying out research.
- Political stability and security in USA and Canada leading to a favourable investment climate and reducing expenditure on defence.
- Limited obstacles like relief features, drainage features, land forms, thick vegetation making exploitation and development easy because of Savannah vegetation with grassland and scattered trees.
- Presence of entrepreneur and big companies providing capital and managerial skills for large scale commercial farming.
- Limited pests and diseases because of good climate using scientific and modern methods of farming.
- Presence of improved science and technology leading to availability of skilled labour working on the farms and industries.
- Presence of water supply for the growth of wheat like rainfall during winter season and from water bodies like rivers, swampy areas and pacific ocean.
- The nature of the population being hardworking, innovative, good planners, enterprising people composed of Negroes, Jews, Indians, Europeans contributing to economic growth and development.

Importance / effects on environment

- Provision of employment opportunities leading to increased standards of living like the farmers and in processing factories.
- Source of government revenue by taxing farmers and companies improving the

national income.

- Source of foreign exchange by exporting to China, Japan, Britain helping in importation and investment.
- Improvement in transport and communication like the construction of railway lines, modern ports like Vancouver connecting the wheat growing areas to markets and industries.
- Growth of urban centres around marketing areas and industries because of increased population like Regina, Edmonton, Winnpey, Calgary.
- Economic diversification by influencing other activities like trade, transport and industrialization.
- It requires few workers because of using capital intensive technology like tractors, combine harvesters.
- Less fertilizers are used because the land regains fertility by fallowing.
- Source of food like making bread reducing on the problems of hunger and food imports.
- Development of agro-based industries like bakeries, milling wheat.
- Leads to increased production because of specialization, monoculture, using modern scientific methods and extensive farming for internal and foreign market.
- Development of tourism industries like visiting the farms, industries of high income.
- Promotion of education and research by visiting wheat farms and industries for acquiring skills and improving technology.

Disadvantages / negative effects.

- Low production per unit area because of depending on nature and environment.
- Soil exhaustion because of monoculture and specialization contributing to environment degradation.
- It is only practiced in areas with sparse population and having extensive land.
- It leads to over production leading to problems of price fluctuations at the world market.
- It uses a lot of capital for purchasing tractors, combine harvesters which is not easily managed by scale farmers.
- It is affected by weather and frost (climatic) conditions like winter and snow.
- Pests and diseases because of low rainfall affecting planning.
- It causes unemployment because of using capital intensive technology.
- Pollution of air, water and land around agro-based industries, using fertilizers, weed killers.
- It leads to urban problems because of increased population like high costs of

living around market areas and industries.

- Environmental degradation because of deforestation, swamp reclamation, destruction of the landscape affecting plants and animals.
- Regional imbalance in economic development causing economic problems like the provinces of Alberta, Manitoba, Vancouver.

PLANTATIONAL FARMING

This is the growing of one type of perennial crop on a large scale for commercial purposes e.g. sugarcane, tea, cotton, rubber, cocoa, palmoil.

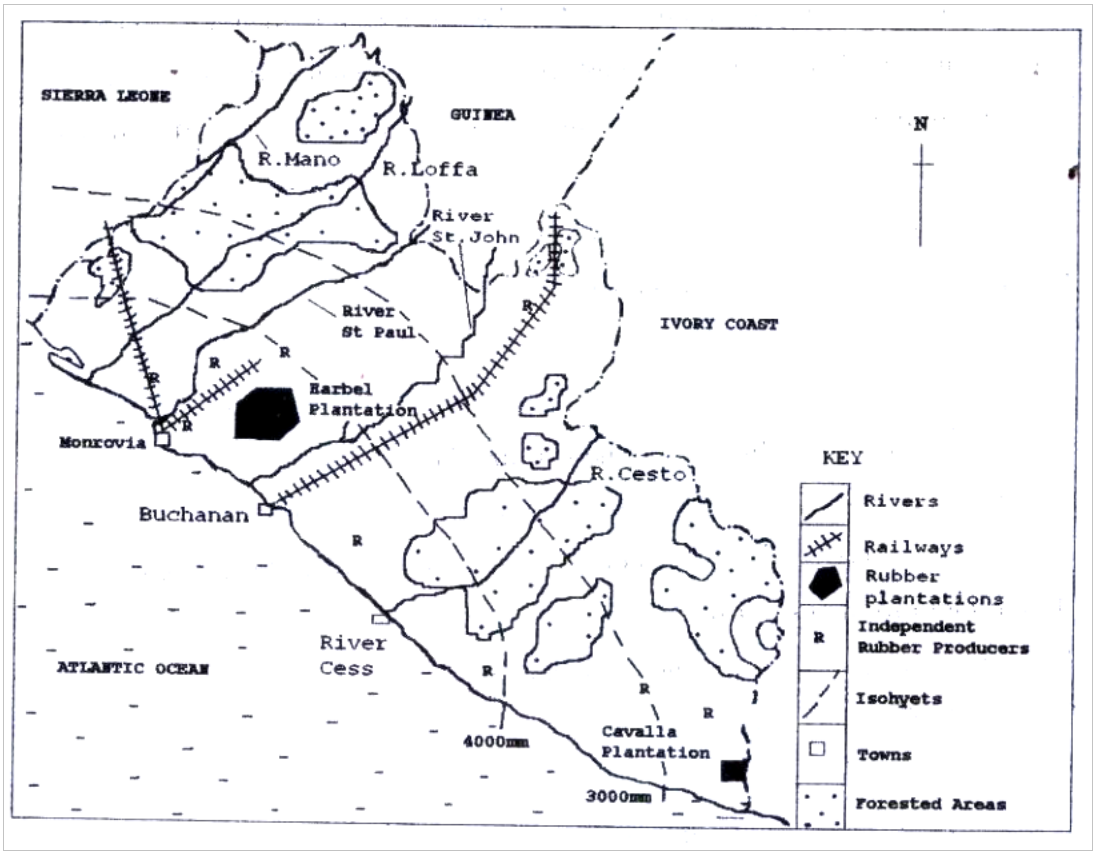
Characteristics of plantational agriculture

- It involves specialization or monoculture.
- It employs many people both the skilled and unskilled.
- Capital intensive technology is used.
- It has a processive factory because the products are perishable and bulky.
- Crops are grown for commercial purposes.
- The management provide social services to attract the workers.
- It covers a big area or extensive land.
- A lot of capital is used.
- Mostly found in areas with sparse population.
- They are found in equatorial climate or tropical region.
- They use research / modern and scientific methods of farming.

RUBBER PLANTAION IN LIBERIA

Liberia is a developing country found in West Africa and it is important for rubber growing in the areas of harbel, Carvalla Bomi hills near Monorovia. Rubber plantations are contolled by firestone company from USA and Britain. And the Rubber was introduced from Malaysia.

A SKETCH MAP OF LIBERIA SHOWING RUBBER PLANTATION



Factors for Rubber growing in Liberia

There are physical and human factors accounting for rubber growing in Liberia.

- Presence of equatorial (wet) climate with wet conditions like rainfall around 1000 -500mm humidity of 70%, temperatures around 25^0c because Liberia is found near the equator.
- Availability of land for extensive farming because of sparse population in rubber growing areas like Habel, Carvalla, Bomi hills.
- Presence of fertile soils like volcanic soils in hills and plateaus, alluvial and loam soils in lowlands and valleys e.g. at Carvalla.
- Presence of flat and gentle slopes leading to easy transport, mechanization and drainage like Bomi hills.
- Presence of improved breeds imported from Malaysia which are pest and disease resistant with quick maturity leading to increased production.
- Presence of equatorial forests near plantations leading to fertile soils, heavy

rainfall and helping in soil conservation.

- Limited pests and diseases to attack rubber plantations contributing to increased production and reducing on the costs of growing rubber.
- Strategic location near Atlantic ocean leading to development of ports like Monrovia, USA, Japan, Germany.
- Presence of water supply for the growth of rubber like from Atlantic ocean, from rivers, wetlands, leading to growth of rubber without irrigation.
- It has limited resources like minerals discouraging other activities and promoting the growth of rubber.
- Presence of improved science and technology leading to availability of skilled labour helping in rubber growing and processing.
- Availability of adequate labour supply both skilled and unskilled because of increased population in towns like Monorovia using expatriates and immigrants like from Benin, Togo.
- Presence of capital provided by the government and firestone company for financing the growth of rubber, building processing factories, constructing transport routes, carrying out research.
- Political stability and security in Liberia helping in attracting investors like firestone company and diverting resources, to economic activities, improving infrastructure and social services.
- Presence of positive and supportive government policies like gazetting land to Habel, Carvalla, Bomi hills attracting investors like firestone company, improving infrastructure, building industries.
- Presence of good international relations and regional cooperation helping in marketing, getting loans, labour supply e.g. USA, Japan, Britain.
- Presence of entrepreneurs and big companies like firestone company providing capital and managerial skills for rubber growing.
- Presence of industries related to rubber growing e.g. rubber processing industry making shoes, tyres, insulators.
- Presence of improved transport and communication like the construction of roads, railway lines, modern ports connecting rubber growing areas to markets and industries.
- Presence of research stations like at Monorovia leading to better breeds, control of pests and diseases helping in processing and marketing.
- Presence of market both internal and external in towns like Monorovia and exporting rubber to other countries like Japan, USA, Britain.

Importance / effects of rubber growing in Liberia.

- Provision of employment opportunities leading to increased standards of living like the farmers in industries, in areas of Habel, Monorovia.
- Source of foreign exchange by exporting rubber, Germany, Britain and this helps in importation and investment.
- Source of government revenue by taxing employed people and companies like Firestone helping in improving national income and leading to capital accumulation.
- Growth of industries related to rubber growing like processing factories at Monorovia, industries for making tyres, shoes, insulators.
- Improvement in transport and communication like the construction of industries, modern ports like in areas of Monorovia and Habel.
- Promotion of international relations and regional cooperation like in USA, Japan, Britain because of international trade.
- Promotion of education and research by visiting plantations at Habel, Carvalla, Bomi hills, Monorovia for acquiring skills and for improving technology.
- Economic diversification by influencing other activities like trade, transport, tourism.
- Alternative land use because of limited resources and due to availability of extensive land for large scale farming.
- Development of tourism industries by visiting rubber plantations, processing factories at Monorovia and because of increased income.
- Growth of urban centres because of population around industries, marketing centres like Monorovia town helping in promoting trade and improving social services.
- Environmental conservation through climate modification, soil conservation and providing habitats for plant and animal species.
- Capital accumulation by foreign investors through taxation, foreign exchange earning leading to development of other projects.
- Improvement in social services in areas like Harbel, Carvalla, Bomi hills, leading to high standards of living e.g water.
- Development of out growers like small scale farmers growing rubber benefiting from the near by plantations like forgetting seedlings, market, extension workers.

Negative effects or disadvantages

- Soil exhaustion because of monoculture leading to infertile soils due to specialization.
- Pollution of air, water and land around processing factories using fertilizers,

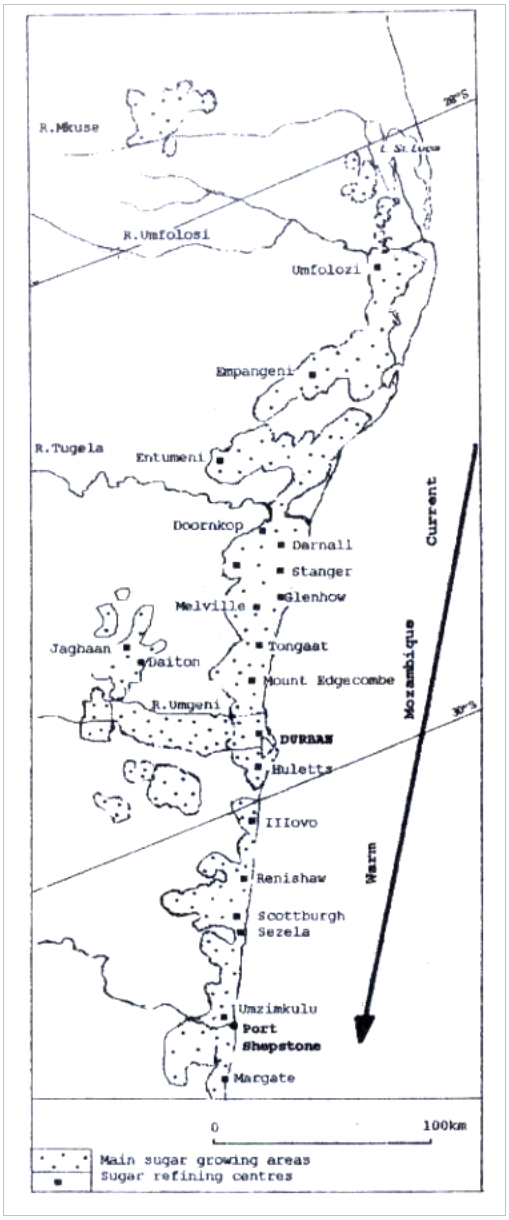
pesticides, weed killers.

- Regional imbalance causing economic problems like Monorovia town, Harbel, Carvalla.
- Displacement of people and activities by occupying big areas.
- It leads to urban problems because of increased population in towns like in Monorovia like increased crime rates, creation of slums.
- Profit repatriation by foreign investors like firestone company causing capital outflow.
- Diversion of labour and capital into rubber growing affecting the development of other sectors.
- Environmental degradation because of deforestation, swamp reclamation and degradation of the landscape in rubber growing.
- It is affected by marketing problems like price fractuation on the world market, competitions and this affects planning.
- It is affected by environmental factors like climate and weather, soil fertility, pests and diseases and this also affects planning.

SUGARCANE GROWING IN ANTAL PROVINCE IN SOUTH AFRICA

Natal province is found in S.A and it is important for sugarcane growing in areas like coast of Indian ocean, areas near Durban port and River Tugela, River Mkuse, R. Umazimkulu, R. St. Lucus and the sugarcane is managed by S.A sugar association.

A SKETCH MAP SHOWING SUGARCANE GROWING IN NATAL PROVINCE.



Factors of sugarcane growing in S.A

- Presence of wet climatic conditions like heavy rainfall, increased temperature, increased humidity because of warm Mozambique ocean currents.

- Presence of labour supply both the skilled and unskilled working in plantations and processing factories.
- Flat and gentle slopes leading to easy transport, mechanization and drainage.
- Presence of water supply from Indian ocean, River Tugela and from swamps and wetlands.
- Improved transport like the construction of roads, modern ports, railway lines connecting the plantations to markets and industries.
- Presence of capital provided by the government for financing, sugarcane growing and processing.
- Availability of land for extensive farming because of sparse population in the areas of River Tugela, Umzimukulu, Mkuse.
- Improved breeds of sugarcane with quick maturity, drought and pest resistant leading to increased production.
- Positive and supporting government policies towards sugarcane growing like giving loans, constructing industries.
- Strategic location near Indian ocean leading to development of ports like Durban and suing cheap water transport.
- Political stability and security helping in attracting investors, developing infrastructure, social services and economic activities.
- Presence of good international relations and regional cooperation helping in marketing, getting loans, labour supply in Zimbabwe, USA which import sugar from S.A.
- Improved science and technology leading to availability of skilled labour working in plantations and processing factories.
- Presence of fertile alluvial soils are found in lowlands, valleys near water bodies.
- Nature of the population being hardworking, innovative, good planners, enterprising people leading to agriculture on a large scale and the development of industries.
- Limited pests and diseases to destroy sugarcane plantations and reducing on the costs of production.
- Presence of forests acting as windbreakers, increasing on rainfall, soil conservation by providing humus and building materials.
- Limited resources in the Natal region like minerals, discouraging other activities and encouraging sugarcane growing.
- Presence of research stations leading to better breeds helping in controlling pests and diseases, processing sugarcane and marketing the products.
- Presence of industries like for processing sugar, sweets, papers, distilling alcohol from sugarcane wastes.

- Presence of entrepreneurs and big companies like S.A. sugar association leading to good management, provision of capital for large scale commercial production.

Importance / effects of sugarcane growing in Natal.

Positive

- Source of foreign exchange by exporting sugar to other countries like China, Zimbabwe and the foreign exchange is used for importation and investment.
- Provision of employment opportunities leading to increased standards of living like workers in plantations, processing factories like at Durban.
- Improvement in transport and communication by the construction of roads, railway lines, modern ports around areas of Natal and Durban.
- Environmental conservation through climate modification, soil conservation and providing habitats for plants and animals.
- Promotion of education and research by visiting sugarcane plantations, processing factories for improving skills and technology.
- Economic diversification by influencing other activities like transport, trade, industrialization, tourism.
- Growth of urban centres around industries and marketing areas because of increased population e.g. Durban.
- Development of industries related to sugarcane growing like for processing sugar, distilling alcohol, making sweets, papers.
- Improvement in social services like water supply, power supply, health facilities leading to increased standard of living.
- Production of power like Biogas, Biomas used for domestic and industrial purposes reducing on deforestation for firewood and charcoal.
- Source of government revenue through taxation, foreign exchange earnings, capital by investors, helping and improving international income and developing other economic products.
- Development of tourism industries by visiting plantations, processing factories and because of increased income.
- International relations and regional coperations like USA, Britain, Zimbabwe leading to development of international trade.

Negative effects / disadvantages

- Soil exhaustion due to monoculture.
- Unemployment and air pollution due to high level of technology and use of machinery such as tractors.

- Displacement of people from areas which have been gazette for sugarcane growing like Natal.
- Profit repatriation by foreign investors by S. African sugar association causing capital outflow.
- Diversion of labour and capital into sugarcane growing affecting the development of other sectors.
- Environmental degradation because of deforestation, swamp reclamation and destruction of the landscape in rubber growing areas.
- It leads to urban problems because of increased population in towns like Natal and Durban like increased crime rates and creation of slums.
- Regional imbalance causing economic problems
- Fluctuation in world market prices of sugar which affects the incomes farmers receive.
- Large quantities of cane being destroyed due to large wild fire outbreaks.
- High costs of production such as those involving irrigation.
- Over dependence on foreign markets hence fluctuation in rubber prices.

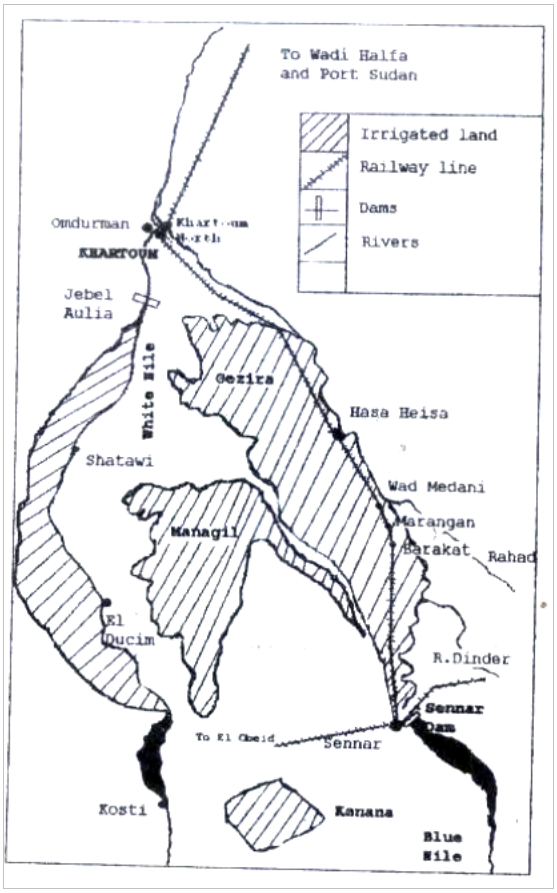
IRRIGATION FARMING

Irrigation farming is the artificial application of water to growing crops either permanently or temporarily. It is mostly practiced in dry areas e.g. Mubuku, Gezira, Carlifornia, Egypt, Middle East and types of irrigation include; Basin irrigation, perennial, annual, well, overhead sprinkler, drip and canal irrigation.

GEZIRA IRRIGATION SCHEME IN SUDAN

It is found between Blue Nile and White Nile at the tributaries of R. Nile.
In the south there is Sennar dam, North there is Khartoum town, started by the British in 1910 and it is managed by Gezira irrigation board.
It is important for cotton and other crops like maize, millet, beans, G. nuts.

A SKETCH MAP SHOWING GEZIRA IRRIGATION SCHEME



Factors for the development of Gezira irrigation scheme

- Water supply from Blue Nile and White Nile which are the tributaries of River Nile providing water for irrigation.
- Presence of flat and gentle slopes leading to easy flow of water by gravity helping in transport and mechanization.
- Limited pests and diseases to destroy crops reducing on the cost of production leading to increased production.
- Presence of dry climatic conditions with rainfall below 1000mm leading to irrigation for supplementing the rainfall.
- Limited obstacles like relief features, vegetation types, water bodies because it is found in a savannah area making exploitation easy and cheap.
- Presence of fertile, clay and loam soils which are less porous and permeable helping in retaining water.
- Availability of land for extensive agriculture because of sparse population.
- Improved breed of cotton with quick maturity, pest and drought resistant.
- Limited resources like mineral, forests, water bodies for fishing discouraging other activities.

- Strategic location near river Nile and its tributaries near Khartoum town which is used as a port, marketing area and an industrial area.
- Presence of capital provided by Britain and Sudan used for constructing canal, building canals, carrying out research.
- Positive and supportive government policies like gazetting land, attracting investors from Britain, avenging extension workers.
- Presence of wide market for cotton and other crops in towns like Khartoum and exporting to other countries like Britain.
- Labour supply both skilled and unskilled working in the farms, processing factories because of increased population in Khartoum and getting expatriates from Britain.
- Improved science and technology leading to availability of skilled labour like Engineers, technicians for constructing canals, aqueducts, industries like Ginneries, carrying out research.
- Good international relations with importing countries like Britain and helping in getting loans, political stability and security, attracting investors and diverting resources to economic growth and development.
- Power supply like HEP from Sennar dam, Jabel dam used in engineering, spinning mills, textile industry and used for irrigation.
- Presence of research stations leading to better breeds, control of pests and diseases, processing of cotton and marketing.
- Good management by Gezira irrigation board helping in providing capital, extension workers, social services, loans.
- Presence of industries related to cotton growing, textile factories, cotton ginneries, oil processing and industry for marketing equipment and inputs.

Importance / effects of Gezira irrigation scheme

Advantages / positive

- Food supply like the growing of maize, beans, G.nuts, cooking oil from cotton, reducing on dangers of hunger and malnutrition and food inports.
- Provision of employment opportunities leading to high standards of living like in irrigation farms and processing factory e.g. ginnery, textile.
- Promotion of international relations and co-operations with Britain promoting international trade.
- Growth of urban centres because of increased population around marketing areas, industries helping in promoting trade and social services e.g. Khartoum town.
- Source of foreign exchange by exporting cotton to Britain helping in importation

and investments.

- Government revenue by taxing people and companies and the money is used for development activities for infrastructure and social services.
- Promotion of education and research by visiting irrigation areas and industries helping in acquiring skills and improving technology.
- Economic diversification by influencing other activities like trade, transport, tourism.
- Development of industries e.g. cotton ginning and spinning, cooking oil extraction.
- Improvement in transport and communication like the construction of roads, railway lines benefiting the surrounding communities.
- Environmental conservation by encouraging afforestation and reafforestation programs in areas not good for agriculture.
- Source of HEP from Sennar and Jabel dams used for domestic and industrial purposes.
- Control of floods by constructing canals, aqueducts, reducing on pests and diseases and attracting people for settlement and agriculture.
- It has helped in land reclamation by controlling floods, pests and diseases and application of water in a dry area.
- Development of tourism industry by visiting irrigation areas like Gezira, managing dams, visiting dams and industries.
- It has helped in demonstration and influenced the development of other dams like Manergil.
- Promotion of forestry and lumbering, getting timber for building and construction.

Disadvantages / Negative

- Soil exhaustion because of monoculture and specialization in cotton growing.
- Displacement of people and activities by gazetting land like the nromadic pastoralists who occupied the area.
- Regional imbalance causing economic problems.
- Breeding grounds for disease vectors like mosquitoes, tsetse flies, Bilharzia – snails.
- Environmental degradation, swamp reclamation, deforestation, destruction of landscape, construction of canals, aqueducts.
- Encourages floods leading to breeding grounds destroying crops and property and causing soil salinisation (infertile).
- Diversion of labour and capital into the agricultural sector destructing other economic activities.
- Foreign repatriation by foreign investors from Britain causing capital outflow and

lowering the national income.

- Pollution of air, water and land around industries by using in fertilizers, pesticides and weed killers.
- Urban problems because of increased population around industries, marketing areas like increased cost of living in Khartoum.
- Marketing problems because of over production, price fluctuations, affecting planning.
- Loss of fertile soils through siltation and deposition, sedimentation.
- Increased costs of maintenance and rehabilitations through constant dredging like removing silt, sediments, deposits.
- Water loss by evaporation from water reservoirs from canals, aqueducts.
- Promotion of accidents because of HEP, canals, aqueducts, water reservoirs, dams, floods.

IRRIGATION IN CALIFORNIA (USA)

California is a dry area found in USA and it is important for irrigation farming in areas around imperial valley around rivers San Joaquin, Colorado and Scramento, around Delta Mondata, Frient dam, Shasta dam.

It is important for crops like fruits and vegetables like cucumber, eggplants, oranges, pears, lime berries, cauliflower.

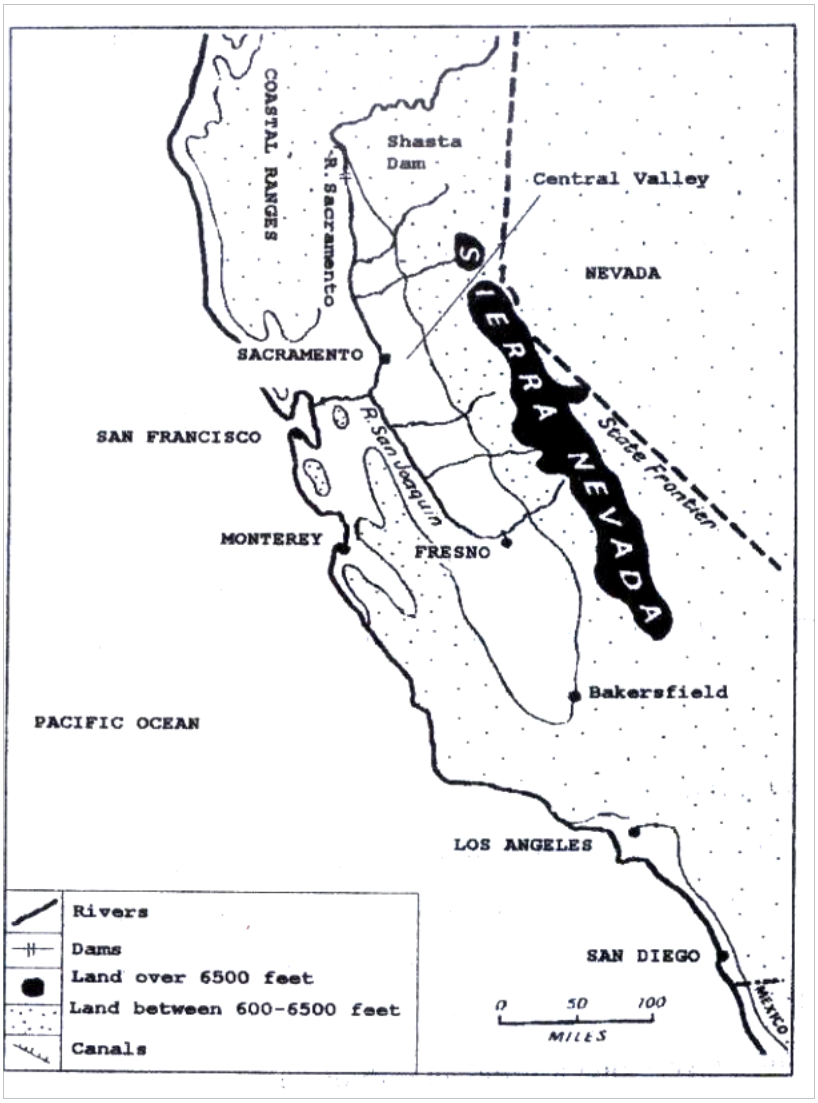
Factors for irrigation farming in California

- Dry climatic conditions because of being in a rain shadow of the Sierra Nevada and Appalacian markets.
- Presence of fertile soils composed of clay, alluvial soils which are less porous and permeable. These soils are found around rivers Sacramento, San Joaquin.
- Flat and gentle slopes leading to easy flow of water by gravity and helping in transport.
- Water supply from R. San Joaquin and from a dam like Shasta, Frient dam and Atlantic ocean.
- Availability of land because of low population for extensive agriculture.
- Improved breeds of fruits and vegetable which were pest resistant, have quick maturity and high production e.g. cauliflower, apples, etc.
- Limited pests and diseases to attack crops contributing to high production.
- Limited resources like mineral dry conditions discouraging other activities and promoting irrigation farming.
- Positive government policies like gazetting land, developing infrastructures and

subsidization and also availing extension workers which has helped in promoting irrigation farming in California.

- Adequate capital provide by government and private investors for constructing canals aqueducts, water reservoirs.
- Wide market for fruits and vegetables in towns like Ney York, Los Angels, San Francisco exporting to Japan, Canada, etc.
- Improved science and technology leading to the availability o skilled labour working in farms and agro based industries.
- Labour supply both skilled and unskilled because of high population in towns like Los Angels using holiday makers during harvesting.
- Good management by using co-operatives and educated farms contributing to high population.
- Political stability leading to a favourable investment climate.
- Presence of research station helping in improving breeds, controlling pests and diseases.
- Presence of agro based industries helping in processing fruits, vegetables and adding value for easy marketing like soft drinks, beverages, wine, tomato sauce, etc.
- Strategic location near Atlantic ocean developing its own ports like Los Angels and using cheap water transport.

A SKETCH MAP FOR IRRIGATION FARMING IN CALIFORNIA



Importance of irrigation farming in California.

Advantages

- Source of government revenue leading to capital accumulation and improving national income.
- Development of tourism industry by visiting irrigation areas like around the Imperial valley, Shasta dam.
- Source of foreign exchange by exporting fruits and vegetables in California / Canada.
- Provision of employment opportunities e.g. fruits and vegetable farmers, holiday makers and people working in agro based industries hence improving on the standards of living.
- Source of food to the people of California e.g. fruits, vegetables, etc reducing on

malnutrition and food imports.

- Land reclamation by using desert areas and flooded areas.
- Good international relations with importing countries like Canada, Japan and Britain.
- Economic diversification by influencing other activities like trade, transport, tourism, reducing on depend burden.
- Development of urban centres used as marketing areas and having industries helping in trade and improving social services e.g. Los Angels.
- Improvement in transport like construction of rails, railway lines connecting agricultural areas to major water ports like San Joaquin, Los Angels.
- Power supply by dams used for domestic and industrial purposes e.g. Frient dam, Shasta dam.
- Control of floods reducing on pests and diseases attracting settlement.
- Provision of raw materials for the agro based industries which leads to industrial development.
- Environmental conservation though afforestation and re-afforestation programmes in flooded areas and areas with infertile soils.
- Promotion of education and research by attracting people for demonstration purposes.

Disadvantages

- Loss of water by evaporation from canals and aqueducts, water reservoirs.
- High costs of development maintenance and rehabilitation like constant dredging.
- Loss of fertile soils through sedimentation, deposition, siltation by floods around canals, aqueducts.
- Pollution of air, water, land around agro-based industries using fertilizers.
- Breeding grounds for disease vectors because of poor drainage and floods.
- Urban problems because of population like high costs of living, creation of slums.
- Environmental degradation because of deforestation, swamp reclamation and destruction of landscape.
- Limited land for other activities by occupying big areas displacing people and activities.
- Promotion of accidents caused by floods, power supply destroying people's lives and property.
- Regional imbalance in economic development causing income inequality.
- Soil exhaustion by monoculture and specializing in growing fruits and vegetables.
- Marketing problems because of high production, poor storage, price fluctuation.

LIVESTOCK FARMING

This is the rearing of animals for commercial and subsistence purposes e.g. cattle, sheep, pigs and goats. It also has types like Nomadic pastoralism, ranching, dairy farming, zero grazing, poultry, piggery.

NOMADIC PASTORALISM

This is a subsistence form of livestock farming involving farmers moving from one place to another looking for water and pasture like latitudinal Transhumance which is moving according to latitude like in wet season moving North wards then dry season moving South wards.

And Altitudinal transhumance moving according to altitude like in the wet season they move to highlands and in dry season moving to lowlands.

Characteristics

- Constant movement looking for water and pasture.
- Temporary settlement patterns like building hats which are grass thatched.
- Found in areas with sparse population with enough land for easy movement.
- Keep large numbers of cattle because they value quantity.
- Keep local breeds.
- They are found in dry areas with limited water and pasture.
- They use traditional methods of farming.
- They depend on nature and environmental factors.
- They practice cattle rustling causing conflicts and tensions.
- They are found in remote and backward areas with poor social services and infrastructure.
- They specialize in animal rearing.
- They are found in areas with infertile soils with limited resources not good for other economic activities.
- Communal grazing because of communal land ownership.
- They keep cattle for subsistence purposes e.g. for food, bride price.

Examples

Fulani, Sahel W. Africa
Masai, Kenya, Tanzania
Turkana, Western Kenya.
Somali in Kenya & Somalia.
Barbers in Tuaregs Sahara desert.
Bushmen Hotentos Namibia, Kalahari.
Bahima in Uganda.
Karamajong North Eastern

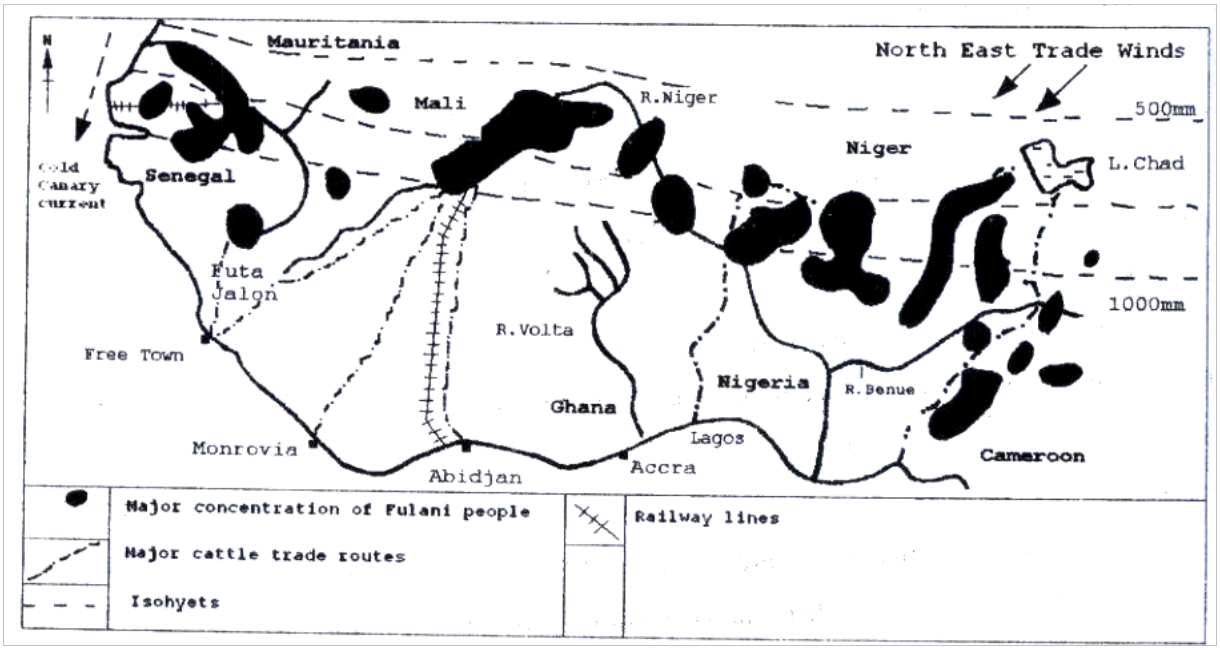
Uganda.

THE FULANI OF WEST AFRICA

The Fulani nomadic pastoralists are found in the Sahel region of West Africa covering areas of Northern Nigeria, Mali, Gambia, Chad, they practice altitudinal and latitudinal transhumance according to different seasons. They specialize in cattle keeping using local breeds for subsistence purposes.

They have introduced using modern and scientific methods of farming like setting up demonstration farms, carrying out cross breeding, valley dams for water supply.

A SKETCH MAP SHOWING FULANI REGION IN WEST AFRICA.



Factors that have favoured Nomadic pastoralism in the Fulani region

Qn: Account for the persistence in nomadic pastoralism in Africa.

- Presence of dry conditions leading to low and unreliable rainfall causing aridity and desertification e.g. rainfall between 500mm discouraging the growing of crops.
- Sparse population giving enough land for constant movement and keeping large quantities of cattle.
- The Fulani region in the Sahel has limited resources like mineral, water bodies for

fishing, forests for lumbering, fertile soils for arable farming leading to specialization in Nomadic pastoralism.

- Presence of wild animals scaring people for settlement and for other economic activities e.g. Hyenas, Leopards, Lions.
- Presence of pests and diseases like tsetse flies, locusts discouraging settlement of other activities and promoting the keeping of local breeds which are resistant.
- Presence of poor infertile soils which are porous and permeable discouraging the growing of crops.
- Poor social services leading to low standards of living like water supply and power discouraging settlement.
- Poor science and technology like the use of traditional methods of farming like bush burning for clearing land.
- Presence of savannah and desert vegetation like grassland, herbs, shrubs giving pasture for animals.
- Limited water supply leading to constant movement discouraging other activities and encouraging keeping of local breeds.
- Presence of backward cultures and traditions making them conservative not willing to change like valuing quantity rather than quality.
- Practicing cattle rustling, being wonderers.
- Presence of flat and gentle slopes with broad valleys leading to easy movement of animals looking for water and pasture.
- Poor government policies like not giving them loans, not developing infrastructure, social services making areas remote and backward discouraging other activities.
- Limited capital to purchase modern equipment leading to subsistence farming.
- Limited market for cattle and their products contributing to small production.
- Keeping local breeds which are resistant to pests and diseases can survive dry conditions, they consume limited pasture.
- Limited extension workers like veterinary officers, agricultural officers to advise the farmers.
- Lack of co-operatives to help in giving loans, supervising the farmers, storage contributing to low production.
- Limited industries to process livestock products like dairy plantations, leather turning industry, meat packing leading to subsistence farming.
- Political instabilities like cattle rustling causing conflicts and tensions discouraging settlement of other activities.

Problems faced by Nomadic pastoralists.

Qns:

a. *To what extent are the problems faced by Nomadic pastoralists of their own making.*
b. *The problems facing Nomadic pastoralists are physical and human. Some are of their own making, others not of their own making.*

- Over stocking causing over grazing contributing to environmental degradation like promoting soil erosion.
- Cattle rustling causing conflicts hence leading to death of people and animals hence creating instabilities.
- Animal diseases like rinder pest, tick fever, anthrax.
- Drought leading to limited water supply for animals and growth of pasture because of low rainfall and limited water bodies.
- Moving for long distances looking for water and pasture making animals tired leading to low production.
- Keeping of poor breeds like long horned cattle, zebu, Masai land leading few production in terms of meat and milk.
- Presence of wild animals like hyenas and lions eating people and animals hence leading to movement from one place to another.
- Limited market because of low income and population causing wastage and discouraging high production.
- Poor social services and infrastructure like roads affecting marketing.
- Ignorance and backward culture by being more conservative limiting modern agriculture and contributing to cattle rustling.
- Limited government support in form of loans not developing infrastructure and availing extension workers.
- Communal grazing encouraging the spread of diseases and poor land use management.
- Presence of poor pasture composing of shrubs and leading to low production.
- Natural calamities like locusts, floods destroying pasture for animals.
- Bush burning leading to environmental degradation and growth of poor pasture used as the means of clearing land.
- Competition with other countries on the world market leading to low prices and because of having other substitutes.
- Infertile sandy soils discouraging the growth of vegetation for pasture.
- Limited capital to purchase modern equipment like spray pumps.
- Limited skilled labour like agricultural officers to advice farmers.
- Using poor farming methods like bush burning accelerating environmental

degradation and causing low population.

- Political instability scaring away investors and farmers, diverting resources for defense.
- Lack of co-operation among farmers affecting getting loans.
- Poor transport in remote areas affect marketing and movement of farmers and workers.

Ways of developing Nomadic pastorallism area (solutions)

- Carrying out cross breeding between local and exotic breeds thus increased production.
- Formation of co-operatives among the farmers helping in marketing, getting loans.
- Construction of valley dams and tanks for storage of water to be used in the dry season (areas).
- Using insecticides, pesticides and animals drugs for controlling pests and diseases.
- Mass advocation and mobilisation about modern methods of farming and environmental conservation.
- Planting artificial pasture like Alfalfa for feeding animals on fodder crops leading to increased production.
- Using modern methods of farming e.g. using paddocks leading to controlled and reducing on spread of diseases by communal grazing.
- Improvement in transport like construction of rural feeder roads helping in marketing and movement of workers and farmers.
- Getting loans for putting up modern facilities like dip tanks and buying drugs.
- Economic diversification reducing dependence burden like arable farming.
- Political instability attracts investors developing infrastructure and economic activities through good governance and regional co-operation.
- Reduction on cattle rustling by decreasing nomadic pastoralists and through massive education and mobilization.
- Availing extension workers like veterinary officers and advise the pastoralists on better farming methods.
- Supporting government policies like developing infrastructures attracting investors.
- Introduction of exotic breeds leading to increased production like Fresian cows.
- Building agro-based industries processing livestock products e.g. dairy plants helping in adding value for easy transport and marketing.
- Increase in market by expanding market centres and exporting animal products

to other countries.
- Gazetting areas for livestock, tourism and environmental protection.
- Training skilled labour by promoting science producing agricultural officers and veterinary officers.
- International relations and regional co-operation helping in marketing and labour supply.
- Promotion of research modern methods of farming helping in disease control.

RANCHING IN ARGENTINA

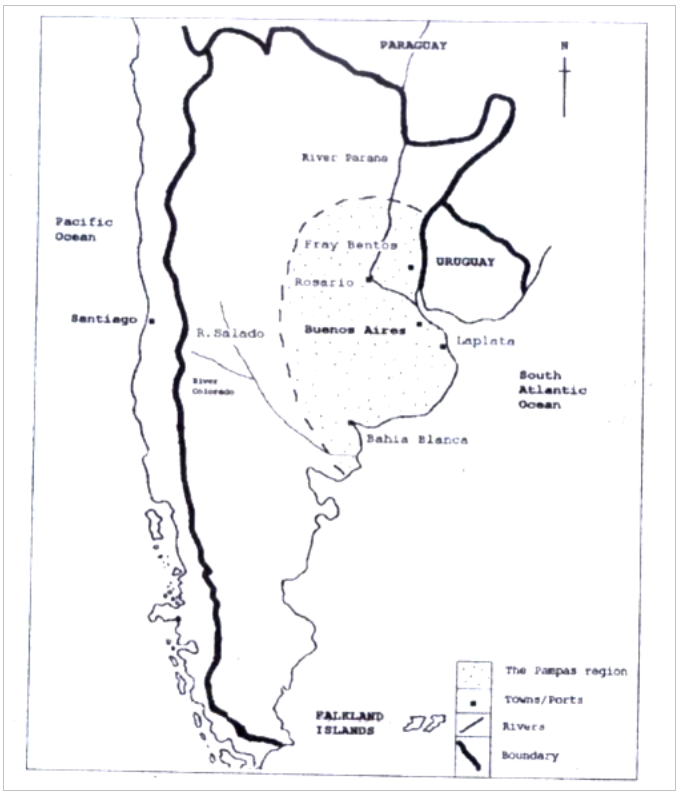
Ranching is the rearing of animals on a large scale or extensive basis like Boran, Aghus. It involves using paddocks, rotational grazing, dipping animals, spraying and using scientific and modern uses of farming.

Argentina is found in South America and near Atlantic ocean and it is important for ranching around the pampas grassland in the Eastern part of Argentina.

Other factors:

- Presence of soil with medium fertility composed of sand and clay leading to growth of pastures, food crops and animal feeds like Alfalfa.
- The pampas of Argentina have limited resources like minerals discouraging other activities like mining, no forests for lumbering, limited water bodies for fishing hence promoting livestock farming.
- Strategic location near Atlantic ocean leading to development of ports e.g. Buenosaires and helping in using cheap water transport.
- Presence of better breeds like Boran, Aghus which are pest resistant with quick maturity and having increased production.

<u>A SKETCH MAP OF ARGENTINA SHOWING RANCHING AREAS.</u>



Factors favouring ranching in Argentina

- Extensive land for large scale farming because the area is sparsely populated.
- Presence of Savannah grassland on the pampas giving enough pasture for the animals and leading to increased production.
- Presence of savannah climate with wet and dry conditions, frost free conditions favoring the growth of pasture and fodder crops like maize, corn.
- Limited pests and diseases to affect livestock leading to increased production and reducing on the cots for operation.
- Relief which is flat and gentle slopping on the pampas leading to easy mechanisation, transport and drainage.
- Presence of water supply for the growth of pasture and for the animals like from pacific ocean, rivers like Uruguay, Paraguay.
- Presence of limited obstacles in the pampas like thick vegetation relief features, landforms, water bodies making exploitation and development easy and cheap.
- Political stability and security leading to a favourable investment climate and helping in diverting resources, economic activities, infrastructure and social services.
- Presence of wide market both internal and external and in towns like Buenosaires and exporting to USA, Japan and Britain.
- Improved transport and communication like the construction of roads, railway

lines connecting the interior and the coast and connecting to markets and industries.

- Presence of capital provided by the government and private investors to purchase equipments, pay workers and set up industries, constructing valley dams.
- Presence of improved science and technology leading to the availability of skilled labour like agricultural officers, veterinary officers, bio chemists helping in suing modern and scientific methods of farming e.g. cross breeding, fattening animals, artificial insemination.
- Good international relations with beet importing countries like Japan, USA and Britain and helping in getting loans.
- Presence of labour supply both the skilled and unskilled like the cowboys, grazing the animals, people working in factories, veterinary officers, agricultural officers and biochemists.
- Presence of positive and supportive government policy i.e. giving loans to farmers, constructing roads for transportation of products, gazetting land, availing extension workers, building industries.
- Presence of industries supporting livestock farming like beet processing factories, dairy factories, leather canning industries.
- Presence of research stations helping in controlling pests and diseases, getting better breeds, processing livestock products and marketing.

Importance / effects of ranching in Argentina

Positive

- Source of government revenue by taxing people and companies leading to capital accumulation and improving international income.
- Presence of co-operatives and big companies e.g help in management.
- Provision of employment opportunities like cowboys grazing the animals in processing factories, vet and agricultural officers leading to increased standards of living.
- Source of foreign exchange by exporting beet to Canada, Japan helping in importation and investment.
- Development of industries like beet processing, dairy plants, leather industry because of getting raw materials from ranches or animals.
- Source of food like beef, milk, cheese, ghee reducing on hunger, malnutrition, famine and food imports.
- Development of tourism industry by visiting ranches, processing factories and because of increased income.

- Promotion of education and research by visiting the ranches, processing factories, helping in acquiring skills and improving science and technology.
- Growth of urban centres like Buenosaires because of increased population around marketing areas, industries promoting trade and improving social services.
- Promotion of international relations and regional co-operation through export trade with USA, Japan and Britain.
- Promotion of economic diversification by influencing other activities like trade, tourism, industrialization reducing on the dependency burden.
- Alternative land use because of limited resources like minerals, having infertile soils being dry, limited water bodies discouraging other activities.
- Capital accumulation for other development projects because of foreign investors through taxation, foreign exchange earnings contributing to economic growth and development.
- Environmental conservation because the animal products are used for improving soil fertility like cow dung, urine and they are also used for producing bio-gas energy, reducing on deforestation for firewood and charcoal.

Negative

- Environmental degradation because of deforestation in the farms through the construction of industries, transport routes, destruction of the landscape and swamp reclamation.
- Displacement of people and activities by occupying big areas around the pampas.
- Pollution of land, water and air around industries and using drugs and chemicals.
- Profit repatriation by foreign investors causing capital outflow and lowering the national income.
- It leads to urban problems because of increased population around marketing areas and industries like Buenosaires e.g. increased cost of living, congestion, slums, unemployment.
- Diversion of labour and capital into livestock farming e.g. the cowboys affecting other economic activities because of specialization.
- Marketing problems due to over production, price fluctuations and the products being perishable.
- It leads to regional imbalance in economic development e.g. coastal towns like Buenosaires causing economic problems like wage difference, income

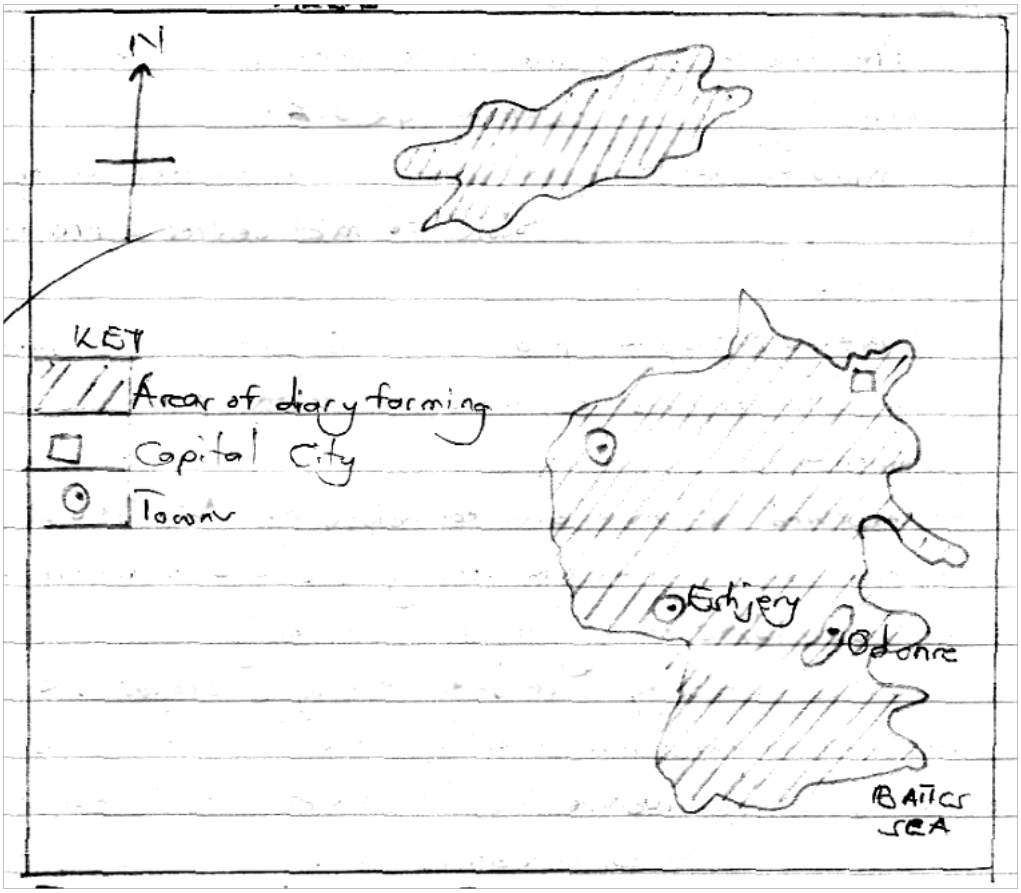
inequalities, labour immobility.

- Economic dependence because of specialization causing problems like balance of payment, poor terms of trade, inflation.

DAIRY FARMING IN DENMARK

Dairy farming is the rearing of animals for production of milk and its productions e.g. Bongo, cheese, yoghurt, ghee, butter, etc. it is a modern method of farming using scientific methods. Denmark is a developed country found in Western Europe and it is important for dairy farming.

A SKETCH MAP OF DENMARK SHOWING FARMING AREAS.



Factors for dairy farming in Denmark

- Medium soil fertility composed of sand and clay for the growth of pasture and fodder crops.
- Temperate climate with low temperature leading to limited pests and diseases encouraging growth of pasture.
- Availability of land gazette for dairy farming because of low production due to temperate climate.
- Good breeds like Fresians, new jersey with quick maturity contributing to increased production.
- Use of co-operatives helping in marketing, transport, getting loans, processing, carrying out supervision and monitoring.
- Use of scientific and modern methods of farming like artificial insemination, deworming, dipping, spraying contributing to high production in terms of quantity and quality.
- Improved transport like using railway lines, modern ports like Copenhagen, air transport helping in marketing.

- Adequate capital provided by the government and private investors for purchasing modern equipments, building factories and developing infrastructure.
- Wide market because of increased income in Copenhagen, Alberg, Odense and exporting to the neighbouring countries like Britain, Germany and France.
- Good management because of trained farmers helping in fighting diseases and planning.
- Positive government policies like maintaining political stability, giving loans to farmers and availing extension workers e.g. agricultural officers and veterinary officers.
- Good international relations with European union member countries helping in marketing like Germany, France, Britain.
- Alternative land use because of limited resources like minerals, having temperate climate discouraging arable farming.
- Strategic location near the coast because it is made up of Islands developing its own ports like Copenhagen and using cheap water transport.
- Presence of agro-based industries helping in processing and marketing for easy transport and marketing like making butter, cheese, ghee, packed milk.
- Presence of enough pasture like alfalfa and using artificial feeds, maize, aiming at increased production.
- Flat and gentle slopes help in transport and drainage and mechanization.

Importance of Dairy farming in Denmark

- Source of foreign exchange by exporting milk and its products like cheese, butter, ghee, packed milk to other European countries.
- Source of food like milk and its products reducing on malnutrition and food imports.
- Improvement in transport like expansion of Copenhagen port, construction of roads, railway lines in areas of Alberg and Odence.
- Provision of employment opportunities like the dairy farmers in dairy industry leading to increased standards of living in Copenhagen.
- Government revenue through taxation of farmers and companies generating capital and improving natural income.
- Development of industries processing milk, cheese, butter and ghee making biscuits like ice cream and leather industries.
- Growth of urban centres used as marketing areas and industries like Copenhagen improving trade and social service provision.
- Promotion of education and research by visiting the farms factors for scientific studies.

- Alternative land use because limited resources, having infertile soils, temperate climate surrounded y water discouraging other activities.
- Development of tourism industry by visiting the farms, industries and because of increased income.
- Good international relations and regional co-operations with importing countries like Germany, Britain, France hence creating friendship.
- Environmental conservation by getting manure from animals and using animal products for the production of power e.g. biogas.

Disadvantages

- Limiting land for other activities by occupying big areas.
- Pollution around agro-based industries because of water and sewages.
- Urban problems around marketing areas and industrial centres.
- Environmental degradation because of deforestation, swamp reclamation and destruction of the landscape during clearing of farms and because of construction work.
- Marketing problems because of high product price fluctuations, competitions affection planning.
- Agricultural products are highly perishable.
- Regional imbalance causing income inequalities, wage difference, labour mobility around Copenhagen.
- Diversion of labour and capital in the development of dairy farming affecting other sectors like industrialization, arable farming.

CO-OPERATIVE FARMING

This is the grouping of farmers in different areas helping in improving quantity and quality of agricultural products leading to agricultural modernization e.g. Denmark, Usama villages in Tanzania, Communes in China. They are characterized by;

- Use of modern and scientific methods of farming.
- Managers are chosen from the farmers.
- They mediate between government and the farmers.
- Leaders are chosen democratically.
- Communal ownership of means of production.

Factors for the development of co-operatives in Denmark

- Presence of educated farmers using modern and scientific methods of farming.

- Good management because of choosing leaders democratically from the farmers.
- Presence of adequate capital for improving infrastructure, building factories and for purchasing equipment.
- Improved transport like the construction of roads, railway lines and ports connecting agricultural areas to market and industries.
- Presence of wide market both internal and external leading to increased production for commercial purposes.
- Positive and supportive government policies like giving loans, availing extension workers, carrying out research.
- Political stability and security leading to a favourable investment climate and diverting resource to economic growth and development.
- Good international relations with European union member countries helping in marketing.
- Availability of land for extensive farming because of sparse population e.g. areas for dairy farming.
- Presence of temperate climate with cool conditions encouraging dairy farming growing of fruits and vegetables.
- Presence of research stations helping in controlling pests, diseases, improving breeds, processing, marketing.
- Presence of labour supply both the skilled and unskilled like extension workers, biochemists.
- Presence of agro-based industries for processing agricultural products e.g. dairy plants.
- Presence of flat and gently slopes for easy transport, mechanization for the growth of fruits, vegetables, fodder crops, pasture.
- Presence of water supply because Denmark is made up of Islands and water helps in the growth of crops, pasture and for animal rearing.
- Improved science and technology leading to availability of skilled labour working on the farms, processing factories, and using modern and scientific methods of farming.
- Limited resources like minerals discouraging other activities and promoting agriculture.

Importance of co-operatives (contributions) / effects

Positive:

- They help in marketing by carrying out research and collecting the products from the farmers.

- They help in getting loans for the farmers by acting as security.
- They help in transport by constructing roads, railway lines, expansion of ports.
- They help in processing agricultural products by building agro-based industries, helping in adding value.
- They help in fixing prices by marketing boards like minimum and maximum price.
- They help in agricultural modernization by using scientific and modern methods of farming like application of fertilizers, using pesticides and insecticides.
- They help in training farmers by using workshops, seminars, establishing demonstration farms using extension workers.
- They help in improving storage reducing on wastes and helping in marketing and transport.
- They help in supervision and monitoring, helping in maintaining quality and quantity.
- They improve social services leading to high standards of living like health facilities.
- They control pests and diseases by spraying, dipping, vaccination using drugs.
- Economic diversification by developing other income generating projects reducing on the dependence value.

Negative

- They are affected by poor administration because of government interference and using farmers who are not trained.
- They kill the spirit of competition because of working jointly leading to low production.
- They are affected by managers being corrupt and embezzling funds.
- They are affected by poor transport in rural areas affecting marketing.
- They are affected by limited capital leading to low production.
- They are affected by environmental factors like climate, weather, pests, diseases, floods and this affects planning.
- Environmental degradation because of deforestation, swamp reclamation, pollution of air, water and land because of wastes and sewage.
- They are affected by marketing problems because of over production, price fluctuations, competitions, perishable products.
- Soil exhaustion because of monoculture, specialization, over cropping.
- Poor land mismanagement due to communal ownership of means of production.
- Promotion of conflicts and tensions over the management of resources.

COMMUNES, COLLECTIVE FARMS, GREEN REVOLUTION

A commune is a large scale farm created by compulsory grouping people (farmers) into large units of production for the improvement of quality and quantity of the agricultural products leading to agricultural modernization e.g. in China, Russia, Middle East countries, South East Asia, Mexico, Romania.

In China they are found in areas like Honan, Kiangish, Kweichow, Skiang, Shiang, River Yangho, R. Yangtze, Knang. They were important of growing crops like rice, wheat, soya bean, oats and rearing animals like cattle, goats, sheep, piggery, fish farming.

Characteristics of communes

- There is compulsory ownership of means of production e.g. land, capital.
- They are divided into teams and brigades for easy management e.g. Grigade has an inspector approved responsible to the state.
- Use of labour intensive technology.
- The state controls the marketing of the produce.
- The state determines the crops to be grown and animals to be reared.
- The state controls the people who work on the farm as employees.
- The state determines the quotas of production.
- The surplus above the fixed quotas or amount is shared depending on the input.
- The state provides financial and technical assistance.
- They undertake processing of the produce.
- They use modern and scientific methods of farming.
- Research is carried out by the state.
- Teams decide on how the surplus is used like sharing or they save it for buying machines.
- The management committees act as mediators and they provide social services.
- The leaders of the teams and brigades are chosen from the farmers democratically elected.

Contributions of communes in China / importance / effects.

- They encourage co-operation and teamwork leading to increased production.
- They provide employment opportunities like the farmers in industries, the managers leading to high standards of living.
- They lead to improvement in quality and quantity of the agricultural produce because of using scientific modern methods of farming and because of specialization.
- It enables easy government assistance to farmers because the farmers are together e.g. like social services, infrastructure.

- They lead to improvement of social services e.g. power supply, education, health facilities leading to increased standards of living.
- They enable the development of agro-based industries helping in adding value before marketing like processing wheat, barley, oats.
- Development of urban centres used as marketing areas and industries like in Shangai province.
- Co-operative marketing eliminates exploitation of farmers because they work as mediators.
- There is improvement in transport and communication like the construction of roads, railway lines around agricultural areas.
- Provision of food for the increasing population reducing on hunger, malnutrition, food imports.
- Land consolidation leading to extensive farming and commercial farming.
- Economic diversification reducing on dependence burden.
- Source of government revenue by taxing people and companies.
- Land reclamation by controlling floods and using irrigation in dry areas.
- Source of foreign exchange by exporting agricultural products like wheat, oats.
- Development of international trade, regional co-operation and international relations.
- Promotion of education and research by visiting farms, industries for better skills and technology.
- Development of tourism industry by visiting the farms and industries leading to foreign exchange.
- Controlling floods by building canals, dams, aqueducts for easy flow of water reducing on pests and diseases and attracting people for settlement.
- Soil conservation though application of organic and inorganic fertilizers.
- Environmental protection through afforestation and re-afforestation programs like in dry areas and poorly drained areas.
- Increase in agricultural production because of using better breeds, using scientific and better modern methods of farming.
- Help farmers in getting credit facilities like loans for purchasing modern equipment.

Disadvantages

- Mismanagement of farmers who are not trained.
- Poor production because of large farms which were hard to supervise.
- Soil exhaustion because of monoculture and agricultural specialization.
- Pollution around agro-based industries using pesticides and insecticides.

- Urban problems because of high population around marketing areas leading to problems like increased cost of living.
- Environmental degradation because of deforestation, swamp reclamation, destruction of landscape.
- Marketing problems because of price fluctuations.
- Promotion of conflicts and tensions due to displacement of people and isolation of people's rights by taking land.
- It was the top bottom policy which started with poor planning and not involving the farmers leading to success for a short time eventually collapsing.
- The new breeds were tasteless and this affected marketing, they couldn't be grown in very part of land e.g. rice.
- High costs of production like using machines, fertilizers, carrying out irrigation.
- It reduces on the spirit of competition among the farmers.
- Regional imbalance causing income inequalities like communes in well favoured areas and these are poor areas.
- It was affected by bureaucracy like consulting many people according to teams, brigades delaying decision making.
- They were affected by environmental problems like pests and diseases, drought which affected planning.
- Soil salinisation by irrigation farming causing salination, sedimentation.
- Agriculture modernization like using tractors causing unemployment.

Factors for the development of communes

Areas with communes in China include Skiang, Shiang.

Physical factors:

- Flat and gentle slopes for easy irrigation and mechanization.
- Fertile soils near river valleys like alluvial soils.
- Favourable climate like heavy monsoon rainfall and high temperatures.
- Water supply from rivers like Yangtze for irrigation purposes.
- Availability of gazette land for communes e.g. in Chaunshan, Skianga.
- Improved breeds leading to high production like rice, wheat, soya beans, etc which have quick maturity.
- Limited resources like mineral discouraging other activities.
- Limited pests and diseases promoting arable farming, fishing, livestock farming.

Human factors

- Availability of cheap labour both skilled and unskilled because of high population.

- Wide market for food because of dense population.
- Change in land tenure system from land fragmentation to consolidation.
- Supportive government policy of socialism helping in sharing resources and state control.
- Improved science and technology helping in land reclamation and using irrigation farming.
- Improved transport helping in marketing, movement of extension workers using roads and rails.
- Adequate capital provided by the government for purchasing modern equipments developing infrastructure.
- Good management by using team spirit using brigades.
- High level of research helping in improving breeds, controlling pests and diseases.
- Political stability by the communist government helping in diverting resources to economic activities and infrastructural development.
- Good international relationship helping in marketing, getting loans.
- Presence of entrepreneurs providing capital and managerial skills.
- Positive government policy of creating marketing opportunities to the high population and improve standards of living.

AGRICULTURAL MODERNISATION

Agricultural modernization is the use of scientific and modern methods of farming helping to improve the quality and quantity of agricultural products through land extension and intensification of agriculture land this aimed at improving the quality. In low developed countries they're common with subsistence methods of farming e.g. shifting cultivation, bush fallowing, small scale farming, modern methods of farming like irrigation, horticulture, ranching, dairy farming are limited and this is because of physical and human problems.

Problems hindering agricultural modernization

- Presence of rugged and steep slopes in highlands and markets are limiting the use of mechnisation and leading to small scla e farming e.g. Kenya Ethiopian highlands.
- Limited capital to purchase modern equipment to carryout research to build processing factories e.g. shifting cultivation in Zambia, DRC, Brazil, Nomadic pastoralists in Masai, Karamoja.
- Poor government policies like not giving loans to farmers leading to low production and putting high taxes increasing on production expenses.

- Presence of pests and diseases destroying crops like cotton stain, banana weevil, coffee wilt and animal diseases like Nagana, East coast fever, Anthrax e.g. among the Masai or Turkana.
- Drought leading to low rainfall causing shortage of water for animals, for growing crops leading to low production like in the Sahel region, Kalahari, Karamoja, Masai land.
- Limited research leading to poor breeds, affecting processing and marketing.
- Limited skilled labour like agriculture, veterinary officers to advise the farmers in rural areas and bio chemists to process agricultural products.
- Limited international market because of low incomes causing low production like for dairy farms, horticulture.
- Competition with other countries on the world market like coffee from Brazil, livestock products from Argentina, Denmark and because of other substitutes which leads to low prices.
- Poor transport and communication affecting marketing the movement of workers e.g. in the Congo basin, Amazon basin, Sahel region, Southern Tanzania.
- Political instability and insecurity leading to destruction of crops, livestock, making people refugees and diversion of resources to defense like DRC, Somalia, Southern Sudan, Northern Uganda, LRA.
- Poor science and technology leading to limited skilled labour affecting processing of agricultural products and discouraging the use of modern methods of farming.
- Limited land for agriculture in densely populated areas causing conflicts and tensions, causing over cultivation and soil exhaustion, land fragmentation, Kenya highlands, China, India, Jos plateau in Nigeria.
- Poor entrepreneurship skills by peasant farmers leading to poor management, poor services and low production, poor planning.
- Presence of other resources diverging in Gabon, fishing in S.A.
- Presence of backward cultures and ignorance causing low production and environment degradation because of conservation like shifting cultivation in Zambia, Nomadic pastoralists in Fulani region and peasants in rural areas.
- Poor breeds of crops and livestock which are easily attached by pests, diseases and drought leading to poor products and low production. E.g. shifting cultivators in DRC, animals kept by nomadic pastoralists.
- Presence of infertile soils like sandy soil in Sahara desert which are porous and permeable discouraging the growing of crops and pasture.
- Poor drainage near water bodies which are flooded, water logged, increasing the costs for exploitation are affecting transport and encouraging multiplication of

pests and diseases e.g. Sudd region in Sudan.

- Poor land tenure system like communal ownership leading to poor land, mismanagement and encouraging communal grazing leading to easy spread of diseases e.g shifting cultivation in the Brazil.
- Occurrence of natural calamities and natural hazards leading to destruction of people, crops and livestock e.g. floods in Mozambique, locusts in Sahara desert, landslides and mass wasting like on Mt. Elgon.
- Poor storage facilities causing wastage and poor quality products due to lack of co-operatives like in Uganda affecting the cotton, coffee, maize and beans growing.
- Profit repatriation by foreign investors causing capital ouflow and lowering the National income e.g. rubber growing in Liberia by foreigners, sugarcane and tea growing in Uganda.
- Price fluctuations on the world market and discouraging farmers and investors because agricultural products are perishable and they are not easily stored.
- Poor economic integration affecting marketing joint investments leading to low bargaining power and causing competition e.g. E. African community, COMESA, ECOWAS, PTA, LGAD.

Solutions, measures, steps, policies of Agricultural modernization

- Using irrigation farming in dry areas e.g. Karamoja, Sahara, Kalahari, Egypt.
- Improvement in transport and communication like rural feeder roads, railway lines, modern ports, water ways, helping in marketing and movement of workers e.g. S.A, Kenya, Nigeria.
- Using modern and scientific methods of farming leading to increased production like ranching in Botswana, dairy farming in Kenyan highlands, plantational farming like rubber in Liberia.
- Economic diversification through exploitation of other resources like lumbering, mining, fishing, tourism reducing on the dependence value e.g S.A.
- Political stability and security through good governance, regional cooperation, strengthening defense leading to a favourable investment climate like S.A, Kenya.
- Acquisition of loans from financial institutions and development agencies like African development bank, world bank for investment in agriculture like soft loans.
- Mass education and mobilisation using informal and formal education about environmental protection and agricultural modernization e.g. UPE, USE, radios, TVs, newspapers.
- Change of land tenure system like land consolidation for extensive agriculture,

private land ownership and giving land to landless people.

- Land reclamation like draining flooded areas, irrigation in dry areas, spraying for pests and diseases.
- Positive and supportive government policies like availing land giving loans, extension workers, improving infrastructure, marketing, processing.
- Improving storage facilities by using co-operatives reducing on wastage and leading to good quality like giving granaries, national silos (stores).
- Development of agro-based industries like dairy plants, cotton ginneries, coffee processing helping in adding value transport, marketing, application of organic and inorganic fertilizers helping in improving soil quality.
- Control of pests and diseases by spraying using insecticides, vaccination, drugs, chemicals and controlling weeds by spraying.
- Using soil conservation measures like terracing, crop rotation, strip cropping, contour ploughing, intercropping.
- Promotion of research on control of pests and diseases, on improved breeds, processing and marketing.
- Population control using modern methods of family planning like using pills for females, condoms for males, population policy like in China, Nigeria, Kenya.
- Agricultural diversification by introducing new crop breeds, animal breeds e.g. exotic animals imported from Germany, Netherlands.
- Privatization and economic liberalization leading to capital accumulation, good management, better services, increased production.
- Market extension by exporting to developed countries like USA, Britain, with good marketing and advertisement strategies like using the internet.
- Good international relations and regional co-operations helping in marketing like E. African community, COMESA.
- Agricultural mechanization by using tractors, combine harvesters leading to increased production.
- Training skilled labour by encouraging sciences like Bio-chemists, agricultural engineers.
- Environmental protection by gazetting areas, waste management and proper land utilization.

Revision questions (Sample questions)

1. To what extent have physical conditions affected agricultural modernization in Africa?
2. Write an explanatory account of the distribution and main features of agricultural activities in West Africa.
3. Assess the extent to which irrigation has benefited either Sudan or California.

4. Examine the role of their communes in China or specialization in the USA in the modernisation of agriculture.
5. To what extent are problems faced by the livestock farmers in Africa of their own making.
6. With refrence to specific examples from either an MDC or an LDC examine the advantages and disadvantages of monoculture.
7. “The problems faced by nomadic pastoralists are mainly physical” Discuss.
8. a. Describe the main features of co-operative farming.
   b. Assess the role played by co-operative farming to the development of either Denmark or Tanzania.