

15. AGRICULTURE

- 1 .
 - a i) Land reclamation is a process by which unproductive land is converted to productive land and used for crop or animal farming. Rehabilitation is the restoration of land that has been destroyed through human activities to its former usefulness/productivity
 - ii) - Bush following
 - Mulching
 - Planting trees
 - Filling the pits/gulleys
 - Planting cover crops
 - b i) - To occupy detainee labour from Mwea detainee Camp
 - To utilize the black cotton soils in growing rice
 - To increase agricultural production
 - To settle and create employment for former detainees
 - ii) - Diseases e.g. Bilharzia and malaria caused by water snails and mosquitoes, weaken and even kill the farmers hence affecting productivity
 - Stagnant water is the breeding grounds for water snails and mosquitoes
 - Fluctuation of world prices due to competition affects agricultural production
 - Poor payments for farmers produce that kill their morale
 - Monoculture practice has led to soil exhaustion resulting to use of fertilizer that increases cost of production
 - Mismanagement of irrigation bodies leading to losses of farmers killing their morale
2.
 - a) - Construction of productive dykes/walls to enclose area to be reclaimed
 - Construction of ring canals to carry water from the reclaimed area into the sea
 - Installation of pumping stations to pump water from the enclosed area
 - Water is pumped out of the area enclosed by the dyke
 - Reeds are sown to get excess water and prevent growth of weeds
 - Drainage ditches were cut in the land and drainage pipes laid
 - More pumping stations were put up in order to drain excess water
 - Soil treated with chemical to lower salinity
 - Drained land was flushed with fresh water to remove salts from the soil
 - Pumping out of the water and crops planted or grown
 - b) - Improves distribution of fresh water for domestic use
 - Control of floods to the south west
 - Controlled seas invasion inland
 - Improved accessibility through development of roads and railways
 - Improved tourism in the area
3.
 - a i) - Trans Nzoia
 - Nakuru
 - Uasin Gishu
 - ii) - Land is ploughed manually/mechanically

- Sowing of seeds are done at the onset of rains
 - Two seeds are sown in holes of 2-5cm in rows of 1m apart
 - Application of fertilizers or manure is done during planting
 - Weeding and thinning is done to remove weak seedlings
 - Top dressing /nitrogenous fertilizers is applied after weeding when the crop is 30-45cm high
 - The crop is ready for harvesting in 4-8months depending on variety of seeds and altitude
 - Harvesting is done manually
- b) - Maize is a staple food
- Maize stalk serve as cattle feed

- Maize is a raw material for industries
 - Stalks, leaves and cobs are important source of organic manure
 - Maize cobs and stalks are used as fuel in varied areas
 - Provide employment /income
 - Saving foreign exchange
4. - Unfavourable weather conditions/ prolonged drought lead to destruction of crops hence low yields/income
- Pests and diseases e.g. stalk rot, corn ear worm, silk worm, birds e.t.c. which attack crop reducing yields
 - Poor/low prices
 - High cost of farm inputs reduce farmers profits
 - Poor marketing strategy leading to low prices
 - Monoculture leading to soil exhaustion
 - Poor storage facilities
5. a) - Friesian
- Jersey
 - Guernsey
 - Alderney
 - Ayrshire
 - Sahiwal
- b) - Low temperatures ideal for exotic breeds
- Fertile soils, which support quality pasture
 - Reliable and constant water supply for the animals
 - A high population, which provides ready market for dairy produce
 - Has humid conditions suitable for the growth of pastures
6. a) - French beans
- Cabbages/kales
 - Celery
 - Spinach
 - Pawpaw
 - Mangoes
 - Avocadoes
 - Passion fruits
 - Carnations
 - Gladioli
 - Roses
 - orchids
- b) - Netherlands has a higher urban population than Kenya.
- There is high demand for both local and foreign horticultural products in Netherlands than Kenya
 - Farmers in Netherlands have more access to the capital needed for horticultural farming than in Kenya.

- There is more advanced and appropriate technology in Netherlands which has enhanced horticultural farming than in Kenya.
- Netherlands unlike Kenya has a highly skilled labour for production and handling of agricultural products.
- There is more advanced horticultural farming related to research in the Netherlands than in Kenya.
- Netherlands unlike Kenya has well organized marketing procedures/co-operatives/auction markets which are conducive for horticultural farming

7. a) - Vegetables/tomatoes/onions/carrots
 - Fruits/oranges/ pineapples/ plums/ mangoes/ flowers/roses
 b) - Horticultural crops are highly perishable this necessitating faster means of transport
 - Same are light in weight which makes it easy /suitable for air export
 - There is high demand for produce thus this need to supply urgently
 - High market prices are able to pay compensate for the foreign charges
8. a)(i) It's a traditional way of keeping large number of animals by nomad communities who move from place to place in search for pasture and water.
 ii) - Frequent livestock raid by neighboring communities or amongst themselves
 - Animals are grazed communally
 - They use natural pasture for grazing in the livestock
 - It is practiced in area with low and unreliable rainfall
 - Their movement is determined by availability of water and pasture
 - Different types of animals are kept
 - Animals are kept for pride
9. a i) – Jersey
 - Guernsey
 - Aishire
 ii) - Ghee
 - Cheese
 - Butter
- b i) - Cool climate/ moderate temperatures which are suitable for survival of exotic breeds
 - High rainfall that favours growth of pasture and fodder
 - Deep volcanic soils which favour pasture and fodder growth
 b ii) - Attack by diseases such as East Coast Fever and pests e.g. ticks may cause death of the animal hence total loss to the farmer
 - Poor roads delay delivery of milk to collecting centers hence losses due to milk getting spoilt
 - High cost of farm inputs discourages dairy farmers
 - Mismanagement of the framers co-operatives discourages farmers due to delayed/ low or non- payment
 - Drought reduces fodder and water for the livestock causing death or low production
 - hence losses to the farmer
- . c i)
- | | |
|---|-----------------------------|
| Kenya | Netherlands |
| 1. Done on small scale | Done on large scale |
| 2. Done in Kenya highlands mainly | Done in the whole country |
| 3. Zero grazing and out door grazing on pasture | Only zero grazing on fodder |
- c ii) - New K.C.C
 - Brook side

10. a) - Jersey
- Ayrshire
- Guernsey
- Cross breed
- b) - Disease such as rindpest may lead to death of animal
- Inadequate pasture during the dry season..
- Failure to collect milk due to glut in production.
- Delayed payments which discourage the farmers.

- Poor roads which are inaccessible during rainy season.
- 11.
- a) - Gently sloping land
 - Deep, well drained volcanic soils
 - Moderate rainfall/ 500mm – 1270mm p.a
 - Warm conditions/ temperatures of 15C – 20C
 - Warm/ dry/ sunny spell for ripening and harvesting
 - b) - Prolonged drought which lower yields
 - Attack by pests (such as dusty brown beetle, quela birds, aphids, cereal weevils and diseases e.g. stem rust, brown leaf rust, glumme blotch
 - Exploitation by middle men
 - High costs of transport due to poor roads
 - Shortage of storage facilities
12. a i) - Rift Valley
- Central
 - Eastern.
- ii) - Manitoba
- Alberta
 - Saskatchewan
- b) - 500-12700mm RF/moderate rainfall.
- Dry sunny spell for ripening/harvesting
 - At least 3 months to temp $15^{\circ}\text{C} - 20^{\circ}\text{C}$ for maturation or growing of wheat.
- Volcanic soils to sustain production.
 - Gentle /fairly level/undulating land enables mechanization to take place.
 - Deep /fertile/well drained soils for production of wheat.
- c) - Farmers in Canada are more mechanized while those of Kenya are less mechanized.
- Canada has more capital than Kenya which experiences financial problems.
 - Farmers in Canada are more skilled/have a long history of wheat production than in Kenya which is still developing.
 - There is advanced research in Canada providing yielding seeds/better farm inputs/control of pests & diseases/overcome limitation of weather than in Kenya where research is poorly done.
 - Farmers in Canada has more extensive tracts of land which are suitable for wheat growing than those in Kenya which are small in acreage
- d) - Canada exports wheat hence earns foreign exchange. Which is invested in other sectors of the economy.
- Wheat farming is a source of employment any Canadians who earn income raising their living standards.
 - Industrialization as many industries that deal in wheat products have been established. Leading to economic diversification.
 - The wheat farmers earn income through the sale of wheat raising their standards of living. Canada is self sufficient in food as wheat is the main cereal food consumed

13. a) - Narok
- Uasin Gishu
- Nakuru
- Parts of Baringo
- Trans mara
- Nyandarua
- Trans Nzoia
- Keiyo

- Laikipia
 - b) - Gentle slope to allow mechanization
 - Altitude between 1500-2900m to reduce cases of diseases outbreak
 - Moderate rainfall between 500mm to 1,270mm to supply moisture for growth
 - Warm temperature between 15°C to 20°C to allow production
 - Warm dry sunny spell which enhances ripening of wheat and harvesting
 - c i) - Wheat is ground into tiny particles. This is done in flour mills
 - Tiny particles are sifted out as flour
 - The yellow flour is bleached
 - Bleaching gives white colour to wheat flour
 - c ii) - Wheat is sold on local markets
 - Procedures sell wheat or millers e.g. Unga limited
 - d i) - Inadequate capital limiting expansion of farms and level of mechanization
 - Pests like dirty brown beetle, aphids, quelea birds damage wheat causing low yield
 - Diseases like stem rust, leaf rust, glume blotch lead to low crop yields
 - Heavy storm/rainfall cause flattening of wheat causing rotting of wheat
 - Price fluctuation lowering productivity /profit
 - Inadequate storage facilities causing wastage
- (ii) Canada has more extensive tracks of land suitable for wheat growing while in Kenya farms are relatively small.
- ✓ Canada has a higher level of mechanization while in Kenya the level is relatively low/machines are slow
 - ✓ Farmers in Canada are more experienced due to longer history of wheat production while in Kenya the level of advancement of techniques is low.
 - ✓ Advanced scientific research in Canada enables the production of higher yielding seeds than in Kenya where the level of research is low.
 - ✓ Wheat farmers in Canada specialize in wheat production while in Kenya they practice mixed farming (any 2x1=2mks)

14. a) - High temperature between 20°C to 27°C.
- Dry sunny conditions
 - High rainfall ranging 1200-1500mm
 - Deep fertile soils
 - Well drained soils
 - Gentle sloping areas to allow mechanization
- b) - Land use conflict/competition from cash crops
- High cost of inputs which was limited mechanization
 - Impassible /muddy roads during rainy season
 - High rise of cattle diseases like East Coast fever
 - abrupt and extensive drought lowers production
 - Mismanagement of co-operatives resulting in delayed payments killing the moral of farmers

15. a i) -Nigeria

- Coted'ivoire
- Cameroon
- ii) - heavy rainfall-1270mm-1500mm per year
 - high temperature-between 21^oc and 26^oc throughout the year
 - high relative humidity –over 75%throughout the year
 - deep fertile and well drained soils
 - Protection from sunshine and wind by banana plants and other shady trees
 - low altitude below 700m above sea level
- b)-The pods are harvested using long sharp knives, collected and pulled at a central place

- The pods are then split open with a sharp knife and beans are scooped out by hand
 - The beans are put in heaps on mats, covered with banana leaves and are allowed to ferment for 5 to 7 days during which the juicy pulps drain away
 - The fermented beans are washed and cleaned spread on tables covered with mat to dry in the hot sun
 - The beans are turned frequently as they dry and slowly they turn brown
 - The dry beans are put in sacks and sent to the buying centers. There the dry beans are weighted and graded ready for export.
- c) - Pest like capsid bug mealy bug destroy the crop
- The swollen shoot disease attacked the tree shoots and the black pod disease affects the pods reducing the yields
 - The strong harmattan winds break the branches and cause premature ripening of the pods
 - Fluctuation of prices in the world market discourage the farmers
 - Poor transportation facilities make it difficult for the farmer to deliver the crop in time
 - Labour is sometimes in short supply, leading to delay in harvesting
16. (a) i) horticulture is the cultivation of vegetables, fruits and flowers for commercial purpose
ii)- there is higher local demand for horticultural crops in the Netherlands than Kenya
- The Netherlands has long history of horticultural crop production and hence has established foreign markets than Kenya
 - Netherlands farmers are well organized making it easy to access loans whereas few Kenyans access loans
 - Netherlands has advanced technology while Kenya has low –level advancement of technology
 - Netherlands has well development transport network while in Kenya the transport network is poor
 - Netherlands has highly skilled labour for production and handling of horticulture whereas -
 - Kenya has a shortage of skilled labour in this field
 - In Netherlands there is advanced research in the industry while in Kenya research is less advanced
 - Netherlands is centrally situated in Europe which gives the country an advantages of Europe market
- iii) - the plants do not suffer the effects of excessive rainfall, hailstone and strong winds
- The plants will not be affected by drought because they are constantly watered
 - The spread of pests and diseases is easily controlled
 - it is easier to control the amount of moisture that the flower require
 - uniform and constant climatic conditions for the plants are created
 - the flower are grown throughout the year
17. - Temperature ranges from 15degrees c to 20 degrees c(moderate temperature)
- Warm dry sunny spell for ripening
- Rainfall between 305mm and 1015mm
- Volcanic, well drained soils
- Gently sloping/fairly level land

18. a) - High rainfall which is well distributed throughout the year ensure abundant supply of water for the animals and pasture.
- Fertile volcanic soil ensure high quality nutritious cover of grass.
 - Cool condition/temperature averaging 18°c which is ideal for the survival of exotic breeds/slow breeding of pests & disease.
- b i) Dairy farming in Kenya is mainly pasture dependant while in Denmark it is mostly dependant on fodder
- ii) In Kenya, most dairy products are consumed locally while dairy products in Denmark are

mostly exported to foreign markets

19. a) - Aberdeen Angus.
- Charolais
- Shorthorn
- Santa gertridis
- Hereford
- Red Angus
- Galloway
b) - Extensive rolling grassland which allows the cattle to graze freely.
- Fertile soils of the Andes Mountain which give rise to healthy natural grass for feeding the animals.
- Moderate temperatures of about 24⁰c during summer and 10⁰c during winter which ensures continuous growth of grass for feeding the animals.
- Moderate rainfall of about 1000mm which ensures growth of nutritious natural grass pasture/pampas.
- Adequate water for the animals.
20. a i)) X- Alberta
Y -Saskatchewan
Z- Manitoba
ii) - Warm summers with average temperatures of about 15⁰c
- Sunny late summers for ripening of wheat.
- Extensive undulating and uninhabited low lands.
- Rich dark – brown chernozem soils rich in potassium and phosphates/less acid soils.
- b) - Central province.
- Rift valley province.
- Eastern province.
21. a) Horticulture is the growing of fruits, flowers and vegetables for export market while market gardening is the growing of fruits and vegetables for local market (nearest urban centre)
b) - Hot and wet climate for growth of tropical crops and cool and wet conditions for temperature crops
- Fertile soils of volcanic origin
- High demand for the products both locally and internationally
- Investment by large companies providing the capital needed for horticulture production
- Availability of technical and financial assistance from friendly countries
- Well organized marketing system
22. a)- It refers to the extensive grazing on natural pasture involving constant or seasonal migration of people and their livestock

- b) - Pastoralists move from place to place in search of water and pasture
- Land is grazed communally, though animals may be owned by individuals
 - A large number of animals is kept resulting in overgrazing and serious incidents of soil erosion
 - There is controlled cross- breeding of animal within each herd
 - The animals are generally of poor quality due to diseases and low quality feeds
 - Animals are considered as a source of pride and not income
 - Cattle are kept as a sign of wealth, paying pride price and slaughter during cultural festival
 - Different animals are kept i.e. cattle, sheep. Donkey e.t.c.

23. a) - Improved veterinary services
 - Increase milk prices
 - Good performance of co-operatives
 - Government effort through the ministry of livestock development
- b) - Breeds kept are similar
 - Use of co-operatives
 - Artificial insemination is used
 - Open and zero grazing is done
- c) - Creation of employment
 - Earns Kenya foreign exchange
 - Self- sufficiency in milk production

24. a i) Total tones = 100800
 1 5cm rep 100,800 tonnes.
 Flowers : $\frac{42800 \times 15}{100,800} = 6.324 \text{ cm} = 6.3 \text{ cm}$
 Oranges: $\frac{20600 \times 15}{100,800} = 3.363 \text{ cm} = 3.4 \text{ cm}$
 Tomatoes: $\frac{20300 \times 15}{100,800} = 3.02 \text{ cm} = 3.0 \text{ cm}$
 Carrots: $\frac{15400 \times 15}{100800} = 2.29 = 2.3 \text{ cm}$

DIVIDED RECTANGLE SHOWING HORTICULTURAL CROPS IN TONES PRODUCED IN KENYA IN THE YEAR 2000

FLOWERS	ORANGES	TOMATOES	CARROTS
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- a) ii) $42500 - 15400 = 27,100$ tonnes
 iii) $\frac{15400 \times 100}{100800} = 15.828 \% / 15.3\%$
- b i) - They are easy to draw.
 - They are easy to read/interpret
 - They give clear visual impression of individual components.
 - They allow easy comparison.
 - They can be used to represent a wide range of data.
- ii) - Moderate rainfall of 800 – 1200 mm

- Suitable for horticultural farming.
- Cool and wet temperate crops.
- Hot and wet climate favours the growth of tropical crops.
- c - Pests and diseases such as tomato blight attack the tomatoes and lowers the yields leading to low income for the farmers.
- Most roads are impassable during the rainy season leads to delayed delivery of the horticultural crops to the collecting centre lowering the quality subsequently the profit to the farmers.
- High costs of farm inputs reduces the farmer profit margins.

- Prolonged drought/hail storms in some areas destroys the crops leading to heavy losses.
 - Stiff competition from Netherlands and Israel which reduces the international market.
 - Inadequate refrigeration facilities leads to deterioration of the quality of horticultural products and subsequently the profit to the farmers is lowered.
25. a) – Freshian - Aryshire
- Jersey - Guernsey
- b) - Creation of employment
- Establishment of other related industries
 - Milk is a source of protein hence healthy population
 - A source of income to farmers
 - Government collects taxes from sales of dairy products
 - Cow dung is used manure hence increased productivity
 - Dairy products are exported hence earning foreign exchange
26. a) – Tea
- Coffee
- Horticultural products
- b) - Kenya exports mainly agricultural commodities that fetch less revenue
- Price fluctuations in the world market which make it difficult to plan ahead
 - Competition from cheaper commodities that are imported into the country
 - Inadequate transport and communication facilities
 - Inadequate capital to expand trading activities
 - Fees paid in form of trading license discourage traders
 - Smuggling of goods (cheaper) from neighboring countries
 - Poverty among the people which reduces their purchasing power
27. (a) - Food supply
- Industrial raw materials
 - Draught animals/ beasts of burden
 - Storage of wealth
 - Medium of exchange
- b) - Sinking boreholes/ harvesting rain water
- Cross breeding
 - Discourage overstocking
 - Extension services
 - Credit availability
 - Cattle dips
 - Diversification e.g. bee keeping
 - Sensitization on quality/ selling e.t.c.
28. a) – Operation costs
- Market expenses
 - Price fluctuations

- Government policy
- b i) - Is a beverage
- Is an industrial raw material for making cocoa butter, chocolates, confectionaries cosmetics, soap and drugs.
- Cocoa husks are used as fertilizer.
- Cocoa shell is used as mulch.
- Cocoa husks may used as fuel.
- ii) - Pests such as the capsid destroy the cocoa tree.
- Diseases such as swollen shoot and black pod destroy the crop.

- Fluctuation of cocoa prices.
 - Short labour supply.
 - Flooded feeder roads delay collection of the crop.
 - Bush fires destroy the crop.
 - Strong winds e.g the harmattan cause a drying effect.
 - Low cocoa prices
29. a) Horticulture is the growing of fruits, vegetables and flowers for the export market while market gardening is the intensive cultivation of fruits and vegetable mainly for urban markets
- b) -Roses
- Orchids
 - Carnations
 - Gladio
- c) - Inadequate capital to buy the necessary farm input
- Low production of milk from indigenous breeds
 - Low managerial ability of the farmers
 - Poor pasture leading to low quality breeds
 - Inadequate labor supply
 - Competition from imported milk and milk product by unscrupulous businessmen
 - Diseases and pests
 - Delayed payment to the milk producers
 - Poor transport network
 - Prolonged drought
30. a) - Loss in livestock and crops production.
- Low agricultural production.
 - Low agricultural economic growth.
 - Reduced production agricultural land
 - Overcrowding in areas receiving adequate rainfall leading to land degradation.
- b) - Honey from bees is a major source of food as well as medicine.
- It is a major source of income in arid and semi-arid areas of Kenya.
 - It provide alternative and effective use of marginal areas where crops may do well.
 - Bee wax is used in making candle.
 - Bees are not expensive to maintain
31. a) - Traditional diet.
- Land ownership/Inheritance.
 - Religion.
 - Gender roles
 - Foreign influence
- b) - Gentle sloping terrain.
- Extensive pieces of land with low production.

- Adequate capital to set up large farms.
 - Availability of skilled labour.
32. a) - High temperature throughout the year ($21 - 27^{\circ}$)
- Plenty of sunshine during ripening period.
 - Heavy rainfall well distributed through out the year.
- b) - Cooking fat.
- Soap/both for washing and toilet soap.
 - Cosmetics.

33. a) - Pollution is the contamination of the environment with substances which are harmful or poisonous to human, plants and animal life.
- b) - Land /Soil/Ground pollution.
- Water pollution
 - Noise pollution.
- c) - Temperature ranging between $15^{\circ}\text{C} - 30^{\circ}\text{C}$
- Mean annual rainfall which should be between 400 – 1750 mm.
 - Soil should be deep, well drained but with good water – retaining capacity.
 - Altitude of between 1500 – 2200m.
 - Windbreaks essential for protection of tea bushes against damaging wind.
 - Shade.
- d) – Pests and diseases.
- Tea bushes are commonly attacked by different pests and disease.
 - Such pests include black tea thrips, red spider mites, red crevice mite and weevils.
 - Diseases include root rot.
34. a) - Aberdeen Angus
- Hereford .
 - Short horn
 - Sahiwal
- b) - Establishing priority orders by creating awareness among leaders.
- Identifying methods of approach that include retorted inclusives and dept. of Agriculture.
 - Educating farmers on strategies to improve their systems of livestock farming.
 - Investigating the prevailing market situations and make appropriate recommendations.
 - Creating Ranching schemes in arid and semi arid (ASACS) areas to improve livestock farming.
 - Identifying possible financial institutions to farmers such as AFC and banks and advise farmers accordingly.
 - Providing dipping facilities to improve the health of animals.
 - Building dams to improve water in Reserves for the animals.
 - Encouraging farmers to adopt modern methods of breeding beef cattle to improve on quantity.
 - Introducing pedigree British cattle in some suitable districts or cross breeding with indigenous breeds to improve on the quality of the animals
- c-- Unreliable and inadequate rainfall leading to inadequate pastures.
- High temp. in most parts which makes it difficult to raise cattle of good quality.
 - Pastral tribes come for quantity rather than quality, land/herds of poor animals steadily ruin pasture land.
 - Hard ancient rock that underlie Kenya produce poor soils prone to erosion. Natural grass is poor and not good for quality animals.
 - Climate conditions of Kenya encourage spread of nagana
- d i) - Well distributed rainfall throughout the year from growth of good pasture.
- Subtropical temp. with summer temp. raising above 24°C lower winter temp. of about 10°

c favours growth of grass.

- Gently slopy Lorain provide good natural grazing landscape with good pasture.
- Fertile soils washed from foot/hills of Audes losses that are fertile and encourage growth of pastures.

d ii) - Provide employment in various section e.g. stockmen ranches.

- Improved feeder road to enable farmers transport cattle to the urban centres.
- Earns foreign exchange used in other section of economy (Your exports).
- By-products like hides used as raw materials to industries thus encouraging industrial

growth.