Agricultural systems

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Classification of agriculture

- Specialisation
  - Arable: growing crops
  - Pastoral: rearing animals
  - Mixed: combination of both growing crops and rearing animals
- Economic status
  - Commercial: growing crops or rearing animals for sale
  - Subsistence: crops grown or animals reared to feed the farmers family
- Intensity
  - Intensive: the farm is small in land size but produces a high yield per hectare by using a lot of labour / machines / chemical fertilizers
  - Extensive: large area of land but produces small yield per hectare because the land is not very productive e.g. infertile soil or extreme climate e.g. low rainfall
- Method of using the land
  - Sedentary: the farm is located in one fixed place
  - Nomadic: the farmer moves from one place to another e.g. moving his animals in search of food/water OR shifting cultivation when farmers clear land to create fields but move after 2-3 years to clear another area to farm

Examples of each type of farm

- Commercial pastoral: dairy farming (keeping cows for milk production)
- Commercial arable: plantations growing palm oil/coffee
- Subsistence pastoral: nomadic herders
- Subsistence arable: slash and burn agriculture in Amazon forest
- Extensive arable farming: shifting cultivation in Amazon
- Extensive pastoral: cattle ranching in Mojave
- Intensive arable: rice growing in Asia
- Intensive pastoral: battery chicken farms in UK

Agricultural system parts

- Physical Inputs
  - Natural things which are needed for farming
- Human Inputs
  - Things needed by the farmer which are man-made
- Processes
  - Actions which take place on the farm that turn inputs into outputs
- Outputs
  - Products made through the farming process
  - Often sold
  - Waste also produced
    - e.g. manure can be used as a physical input to fertilise soil

Physical inputs

- Soil (fertile = arable, infertile = pastoral)
- Precipitation
- Solar energy
- Relief
- Animals

Human inputs

- Labour
- Machinery

- Buildings
- (Genetically modified) seed to grow crops
- Animal feed
- Chemical fertilisers / pesticides / herbicides

Processes

- Rearing
  - Caring and support of animals to maturity
- Ploughing
  - Turning over the land and preparing it for planting seeds
- Fertilising
  - Adding chemicals to the soil to try and make it more fertile
- Weeding
  - Removing alien plants from crop fields
- Irrigating
  - Watering the land
- Cultivating
  - To care for and grow crops
- Slaughtering
  - The killing of animals once they have reached maturity and are ready to sell
- Planting
  - Putting seeds into the ground

Outputs

- Profits
- Crops
  - Corn, wheat, etc.
- Animal products
  - Meat products
  - Wool
  - Milk
  - Waste
  - Methane

Use of outputs

- Crops and animal products can be sold for money or used as own's food
- Waste can be used to fertilise the soil

How do physical factors influence the farmers decision

- Climate:
  - Temperature
    - Crops require at least 5 months above 5℃ to grow
    - Areas with temperature extremes (semi desert regions like Australia) = pastoral farming (often nomadic in search for water)
  - Precipitation
    - Pastoral farming usually takes place in areas of heavy / low rainfall (too much / less for crops)
    - Areas with moderate rainfall e.g. 600-1000mm per year are suitable for arable farming
  - Amount of sunshine
    - Crops require a certain months with sunshine in order to ripen them for harvest
    - High sunshine = arable, low sunshine = pastoral
  - Growing season
    - The number of months when temperatures are above 5℃ so the crops can grow
    - The length of growing season affects how many harvests can take place and the amount of yield
- Relief(the height and steepness of the land)
  - High and steep slopes are usually used for pastoral farming

        - It will be difficult to use machines which are required for arable farming
        - Steep soils often have thin eroded soils which are infertile and not productive enough to grow crops
        - It is colder + some animals survive better e.g. sheep
    - Flat land = easy to use machinery = commercial arable farming
- Soil fertility
    - Deep fertile soil encourages commercial arable farming because it is more productive than thin infertile soils
    - Infertile, only grass supported → pastoral farming

How do human factors influence the farmers decision

- Financial investment (capital or money)
    - Wealthy farmers will invest in machineries, chemical fertilizers, farm buildings to increase their yields = commercial farming
    - Poorer farmers with less money to invest = subsistence farmers
- Labour
    - High inputs of labour are found on intensive farms which produce high yields
    - Low inputs of labour are found on extensive farms e.g. cattle ranching or shifting cultivation where production is low
    - The amount of labour available for the farmer depends on the amount of money a farmer has to pay wages
- Tradition / inertia
    - The cost of growing different crops and keeping different animals varies
    - The investment needed in buildings and machinery can mean that changing the farming activity can difficult
    - This can lead to farmers staying with the type of farming they know best / family tradition
- Government incentives
    - Some governments use financial incentives to encourage farmers to produce specific crops in order to ensure food security for the people
- Agricultural technology
    - e.g. artificial seeds like GM seeds
    - Some governments will not allow GM crops to be grown due to the risk to the natural environment
    - Farmers can only use these artificial seeds if they can afford them and they are permitted
- Size of farm
    - In some countries the inheritance laws means that land is divided equally between all sons
    - This has reduced farm sizes so that often the farms is too small and can only be used for subsistence farming
    - In general large farms are more efficient at producing food because they can benefit from economies of scale → commercial farming
- Land tenure
    - Some farmers rent land and there are restrictions on what they can use the land to produce
    - Owns the land = can choose type of farming

Problems with commercial farming

- Deforestation to clear land e.g. in Amazon for cattle ranching
- Over use of antibiotics for animals
    - Germs are developing resistance to antibiotics and forming super bugs
- Eutrophication
    - Chemical fertilizers run off into rivers
    - This causes algae to grow on the water surface and block sunlight
    - Kills the river ecosystem
- Animal welfare issues in factory farms
    - Animals are packed together with insufficient light and space
- Global warming
    - Greenhouse gases produced from farming contributes to global warming
        - CO_2 from increased mechanisation

        - Methane from cows
    - Ice caps melt: sea levels rise and floods low lying countries
- Hedges removed to increase field sizes for machinery
    - Causes loss of habitats + safe green corridor for wild animals

Shifting cultivation in tropical rainforests - farming methods

- Farmers cut down trees using hand tools
- They burn trees to clear the land and the ash is used as a fertiliser
- The heavy tropical rainfall washes nutrients out of the soil into the rivers (which turn red)
- Farmers grow crops on the field for 2-3 years until the land is infertile (2-3 years)
- The farmer then moves on to another area & repeats the process
- The abandoned clearing is left for at least 50 years to regrow
- Food is also obtained through hunting & gathering

Problems with this method

- Deforestation leads to the ground being exposed to heavy tropical rainfall
    - This causes soil erosion and increased flooding so soil becomes infertile
- Loss of habitats for animals & loss of natural biodiversity
- Low yield
    - Low food production so few people can be fed from this type of agriculture
    - Large amount of land required
- The forest is increasingly being cut down for commercial agriculture e.g. coffee and tobacco growing so less land available for subsistence farmers

Food shortages

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Keywords

Word	Definition
Hunger	Not having enough food to meet energy needs
Malnourished	A person's diet does not provide enough variety of vitamins or minerals which are needed for a person's healthy growth
Undernourished population	% of the people who eat less than minimum calories required

Location of food shortages

- 800 million in LEDC countries undernourished
- Mainly found in sub Saharan African countries but also in parts of Latin America
    - e.g. Haiti
    - A few in Asia e.g. Yemen and Syria

Physical causes of food shortages

- Unreliable rainfall and drought
    - Much of East Africa e.g. Ethiopia + Sudan has periods of low rain + drought
    - Crops fail + do not produce seeds for next year's planting so farmers run out of seeds
    - Animals die of dehydration + lack of feed
- Tropical storms
    - Hit areas like coastal Bangladesh + Haiti with high winds, heavy rain and storm surges
    - The sea floods low lying coastal areas causing salinization (salt) of the soil
        - Destroys farm land and crops
        - Soil becomes infertile
    - Subsistence farmers do not have the resources to recover and return the soil to fertility
- Floods
    - Heavy rainfall will cause rivers to overflow the land and destroy the crops/ drown animals
- Pests and diseases
    - Pests e.g. locusts can destroy crops, plant diseases causes lots of crops to die
    - Farmers lack the money to buy expensive pesticides and cope with these insects

Human causes of food shortages

- Deforestation and overgrazing causes soil erosion
    - Deforestation = forest cleared
    - Overgrazing = farmers keep too many animals and they eat the natural vegetation
    - Removes the natural cover of vegetation
    - The soil is exposed to heavy rainfall which washes the topsoil away
    - The soil loses its nutrients and becomes infertile
- Poverty
    - Farmers do not have the money to invest in improving their farms
        - e.g. through buying chemical fertilizers, pesticides, machines or building irrigation
    - Farmers still use traditional methods which are not so productive
- War
    - Civil war causes people to leave their homes and farms to escape from the fighting
    - This means they cannot produce any food
    - Crops and animals are often destroyed or stolen by the soldiers
- Increasing population
    - Farms are divided into smaller and smaller units amongst the farmer's children until the farms are too small to support the subsistence family
    - Farmers are forced to use more marginal and unproductive land to grow food to feed their

families
- Unstable food prices
  - Food prices increase when there is a poor harvest
  - Even if there is food available, the poorest people cannot afford to buy the food.
- Rise in global food prices
  - Because of increasing demand for food in the last 10 years, global wheat price has doubled and rice price tripled
  - This has caused food shortage amongst the poorest
- Insufficient food aid
  - Aid agencies criticised for not responding fast enough following a disaster

Impacts of hunger

- Economic costs for aid
  - More than $2 billion spent for food insecure people in the Sahel Belt by the UN
- People starve and may die from lack of food
- People are weakened due to lack of food and may be more likely to die from diseases
  - e.g. scurvy (lack of Vitamin C), rickets (lack of Vitamin D)
- People out migrate from the area in search of food, increasing the number of refugees
  - Refugees put pressure on food and water supplies of neighbouring regions
- Malnutrition for people
  - Malnutrition → cannot work due to poor health → less food produced / lost earnings → less food to eat → more malnourished

Solution to food shortages

- Food aid
  - Supplied by World Food Programme (WFP) to 90 million people a year
  - Also make poor children go to school as food is given out in schools
  - Problems with food aid:
    - Short term solution
    - Encourages dependency
    - Can arrive too late: people already dying
    - Decreases the price of food which is produced locally → farmer get less income
    - Does not solve the causes of food shortages
    - Often involves corruption
    - Not enough for all people that are in food insecurity
- Educate farmers on appropriate technological solutions
  - Contour ploughing
    - Land is ploughed across the slope, following the contour lines of the land
    - This allows rainwater runoff to collect in the furrows and contributes to soil and water conservation
  - Strip farming
    - Planting small strips of crops, which are harvested at different points of the year
    - Taller crops protect areas downwind from wind erosion and the variety of crops mean no one type of nutrient is exhausted
  - Terrace farming
    - Create small patches of flat land in hilly areas
    - This is achieved by building small steps into the side of a mountain to prevent mudflows, and reduce soil erosion, while conserving nutrients
  - Crop rotation
    - Alternating crops that require lots of nutrients from the soil with those that add nutrients into the soil
  - Drought resistant plants
    - Grow crops or trees that require little water to survive (seeds can be given to farmers free)
    - e.g. acacia tree
      - Can provide feed for animals, adds nutrients to the soil and its gum can be cold in the market for money to buy food

    - Bunds
        - Building a low wall of mud/stone on gently sloping land
        - This traps water behind it and stops soil being carried downslope
        - Thus a deeper and more moist soil is created immediately behind the wall, allowing larger plants like fruit trees to be grown.
    - Mulching
        - Covering the soil in dead organic matter such as hay or leaves
        - Reduce evaporation losses, meaning soil is more moist and less likely to be eroded by the wind
    - Planting high yield varieties
        - e.g. IR8 is an HYV of rice
- Large scale solutions
    - Great Green Wall
        - A tree planting project that is aiming to be 8000km long, 15km wide, across the Sahel region of Africa
        - Aim is to reduce desertification by tree roots holding the soil in place and trapping moisture in the soil → there is more good soil for growing crops
        - It also involves small scale sustainable farming methods used in between the trees, such as bund farming, mulching, drought resistant plants etc.
    - Green revolution
        - Intensification of farming originally in India via USAID investing in infrastructure, and TNCs such as Ford providing machinery (e.g. diesel pumps for irrigation) and research from the Rockefeller centre to produce high yield rice (IR8) and wheat varieties

Industrial systems

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Classifying industries

- Primary industry
  - Extract raw materials e.g. mining, agriculture, fishing and forestry
- Secondary industry
  - Process and manufacture products using the raw materials from primary industry e.g. iron + steel, food processing
- Tertiary industry
  - Provide a service e.g. education, retail (shops), office work, transport
- Quaternary industry
  - Information technology industry e.g. microelectronics

Employment structure

- The % employed in each sector
- Primary sector
  - Decreases over time
  - Mechanisation of farms reduces need for farm workers.
  - Raw materials run out leading to loss of mining jobs
  - Rural depopulation because people prefer the better paid and less physically demanding jobs in the cities
- Secondary sector
  - Increases at first but then decreases
  - Industrialisation needs a large workforce in factories
  - But factory jobs eventually replaced by automation causing decline in secondary employment
  - Manufacturing industries increasingly move from MEDCs to NICs where land and labour are cheaper.
- Tertiary sector
  - Increases over time
  - Large and growing informal service sector in urban areas of LEDCs as workers migrate from the countryside
  - As a country develops, demand grows for industrial services e.g. banks and also government services such as health + education
  - Strong growth in MEDCs of jobs in the knowledge economy

Formal and informal employment

- Formal employment
  - Official jobs where the worker is registered with the government, pays tax and has the legal protection
  - Workers receive a regular weekly or monthly wage
- Informal employment
  - Part time, temporary jobs which do not pay tax and have no job security, not registered with the government
  - They are usually low paid
  - Found in LEDCs e.g. street sellers, shoe shiners or farm workers

Industrial system

- Inputs
  - Physical inputs: natural things needed to set up a factory
    - Raw materials
    - Flat land
    - Energy (electricity or fossil fuel)
    - Water supply e.g. river

    - Human inputs: man-made things needed to set up a factory
        - Transport
        - Labour
        - Capital (money)
        - Government policies
        - Market
- Processes
    - Actions completed in a factory to change raw materials into products
    - Processing of raw materials
    - Assembling components
    - Packaging
    - Transporting/distributing
    - Selling
- Outputs
    - Things that a factory produces either to sell or as a by-product
    - Finished products
    - Profits
    - Waste
    - Pollution
- Feedback to the inputs
    - Profits
    - Knowledge
    - R&D

Physical factors that influence industrial location

- Access to raw materials
    - Heavy or large raw materials e.g. coal are expensive to transport
    - Factories using these raw materials locate close to where the raw materials are found or where they can be easily transported to e.g. a port
- Cheap flat land
    - Factories need large areas of flat land e.g. river or coastal plain as it is easy to build on
    - The land needs to be cheap and have space for any future expansion of the factory
- Easy transport routes
    - Natural transport routes e.g. rivers attract industry (airport for hi-tech industry)
- Water source
    - Cooling and washing machines
    - e.g. river (fresh water preferred)
- Access to cheap energy sources (* not for light or hi-tech)
    - Industries using coal as the source of energy locate near coal fields because it is heavy to transport
    - If electricity is energy source then the industry is footloose because electricity is easily transported by the national grid → not a locational factor for light industry
- Hi-tech only: attractive environment
    - To attract skilled workers to live and work there

Human factors that influence industrial location

- Availability of labour
    - Heavy = large, semi-skilled labour force
    - Light = large, semi-skilled or skilled labour force
    - Hi-tech = skilled labour force
- A market to sell the products
    - To reduce transport costs because the product is heavy e.g. drinks
    - Product might be perishable e.g. food products like milk or has a short life span e.g. newspapers
- Government policies
    - Industries may be attracted to certain regions by lower taxes, lower rents, improved transport links and cheap loans offered by governments and the EU because these areas have high

unemployment e.g. South Wales
- Economies of scale
  - All parts of the processing are located in one large factory
  - It should make more profit than many smaller ones by sharing some of the costs e.g. by buying in bulk
  - Light industry = components produced nearby to reduce transportation cost
  - Hi-tech = near universities and other hi-tech businesses to share R&D costs
- Technological development
  - Internet + video conferencing = many IT industries do not need to be in offices + people can work from home
  - Some service industries e.g. banks have moved their offices from expensive MEDCs to LEDCs e.g. India where labour costs are lower
- Capitals for investment

Reasons why businesses move

- Raw materials exhausted
  - The raw materials that the industry used has run out or is too expensive to be extracted
- Fall in demand for product
  - Consumers no longer buy the product because it is out-dated
  - The factory closes
- Mechanisation
  - Workers replaced by machines e.g. robots in car industry
- Increases in production costs
  - A rise in wages, transport costs or costs of raw materials
  - The factory close and move to another region or country where production costs are cheaper
- Foreign competition
  - Imports from countries with cheaper production costs can undercut the price of home products
  - The factories cannot compete and close

Reasons for factories not moving even if some locational factors are gone

- Inertia
  - Easier to remain there than moving
- High cost to relocate
- Skilled labour force in the factory
  - Expensive to train workers elsewhere
- Reputation of the area for producing that product
- Transport links on coast e.g. port
  - Raw materials can be imported so no need to relocate

Characteristics

- Set up in the last 25 years and produce high value products e.g. computers
- Use advanced manufacturing techniques e.g. using micro-electronics
- Employ highly skilled workers & carry out a lot of research and development (R and D)
- Normally footloose (link to reasons below)

Footloose industries

- An industry that is not dependent on locational factors because:
  - They use small component parts which are not heavy to transport
  - Their finished product is small and light so cheap to transport
  - They use electricity as their energy source
  - They need a small labour force
  - They are non-polluting and can locate near houses

Business and science parks

- Science Parks = modern industrial sites where hi tech industry is grouped together
- Found on the edge of towns / cities which have universities

- Surrounded by countryside and have modern buildings built in landscaped gardens/parkland
- Room for expansion

Reasons for locating in science parks

- Near universities to benefit from research facilities and ideas from academics
- Near other hi tech industries to exchange ideas
- The small companies can share costs of maintenance and administration
- Pleasant living and working environments to attract skilled workers
- Good transportation and communication networks e.g. near international airports and motorways

Tourism

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Tourist definition

- Tourist
  - Tourists are people who travel and stay away from their home for at least one night for leisure, business or other purposes e.g. visiting friends and relatives
- Domestic tourist
  - A person who travels within their own country
- International tourist
  - A person who travels to another country

Global tourism situation

- An important and rapidly growing industry
- Over 1 billion tourists a year + tourist income estimated to be worth $900 billion + 7% global employment
- Rapid increase in international tourist numbers in the last 50 years from less than 100 million to over 1 billion with an annual growth rate of 4%
- Europe is most important international destination with over half the international arrivals
- Americas and East Asia / SE Asia have 1/3 of international tourists

Reason for growth in tourism number

- Rise in disposable incomes
  - So people have more money to spend on leisure
- Increased leisure time
  - Because there are more paid holidays and increasing number of retired people with pensions to spend on leisure
- Flying is more affordable
  - Because of budget airlines e.g. Easy Jet
  - Technological development in flying has meant that planes are larger and more fuel efficient so the cost of each flight per passenger is less
- Cheaper holidays
  - Introduction of package holidays where one price pays for the transport + hotel has reduced cost of foreign holidays
  - Also there is more competition between travel companies
- Media coverage
  - Increasingly the TV, internet etc
  - Advertises different holiday destinations
- Increased international migration
  - This has rapidly increased the number of people visiting friends and relatives

Physical factors that encourage tourism

- Suitable climate e.g. hot/dry climate with long hours of sunshine for summer holiday or reliable snowfall for winter sports activity holidays
- Attractive coast with sandy beaches/warm sea for water sports
- Attractive / beautiful scenery with spectacular views or biodiversity for nature holidays
- Mountainous environment for hiking / walking holidays

Human factors that encourage tourism

- Developed transport network e.g. roads, rail or airport so access is easy
- Politically safe country e.g. low crime rates + no war
- Places of historic importance e.g. ancient buildings, sites where specific events took place
- Places with cultural importance e.g. centres of religious importance or with museums / art galleries

- Socially interesting e.g. good food, music, dance etc.
- Developed tourism infrastructure e.g. hotels, resorts, theme parks

Positive economic impacts of tourism

- Creation of jobs which will increase household incomes
  - Jobs can be direct e.g. tour guide OR indirect e.g. farmer
  - Most jobs are labour intensive
- Increased taxes paid by both local + tourist businesses
  - Govt. can use this money to invest in infrastructure e.g. transport, education + health
- Increase in foreign exchange
  - e.g. US$ to help pay for imports from abroad
- Cumulative causation will help to attract further economic development of the area

Negative economic impacts of tourism

- Mainly seasonal jobs
  - Unemployment during off season
- Jobs are often low skilled + low paid
- Economy can become dependent on tourism
  - Risky business because tourist numbers can fall dramatically due to natural disaster or a political event e.g. terrorist attack
- Leakage
  - Hotels and travel companies are often owned by international companies who send their profits back to their own country
  - Local economy does not gain from this

Positive social impacts

- Increased understanding between cultures
- Increased language skills
- Preservation of historic sites + culture e.g. dance
- Improved social services for locals e.g. education + health care if govt. invests tourist taxes in these so living standards improve

Negative social impacts

- People are displaced (forced to move) from their homes so their land can be used to build hotels
- Traditional way of life may be abandoned as people copy the tourist culture in terms of their clothes, food, behaviour
- More crime due to prostitution, drugs, alcohol
- Young people leave family farms to go + work in tourist industry which earns more money. This leaves more elderly people in the rural areas

Positive environmental impacts

- Tourism money can be used to protect the environment e.g. money paid to enter national parks or a tourist tax

Negative environmental impacts

- Over use of water for hotels + swimming pools can cause water shortages
- Air travel creates more CO_2 which contributes to climate change
- Litter/waste pollutes land + can poison wildlife
- Water pollution from motorboats + sewage can pollute sea water which damages marine wildlife
- Golf courses require a lot of water for irrigation + use fertilizers which run off into rivers + cause eutrophication
- Deforestation + habitat destruction to clear space to build hotels + transport networks

Sustainable tourism

- Tourism is organised so that it will not cause damage to the economy, living conditions of the local people or the environment
- This means that the tourist development should provide jobs for locals, increase people's living

standards and protect the natural environment.

Types of sustainable development

- Ecotourism
  - A specialist type of tourism where people experience untouched natural environments e.g. tropical forests + remote mountain areas
  - They do not damage the environment because they are small scale, use local building materials, use renewable energy, control waste disposal + educate tourists on how to behave to minimise their impact on local culture + environment
- Tourist hubs
  - Concentrate tourism in a specific location so that the negative impacts are only found in one area
  - The majority of the area is therefore protected from damage
  - e.g. tourists encouraged to go to the hub by building car park + facilities there
- Protected areas
  - Areas have protected status so that any tourist development is restricted
  - Preservation: maintain the location exactly as it is. No development allowed
  - Conservation: development is allowed but it must not damage the character of the place
  - Example: World Heritage sites + National Parks e.g. Yellowstone, USA or Wilderness Areas (the highest standard of protection) e.g. Denali NP in Alaska There are two ways to protect these areas:
- Quotas
  - A limited number of tourists are allowed to visit the place each year
  - This allows some jobs to be created for the locals / supports the local economy but reduces the impact of the tourists on the environment
  - e.g. Antarctica: limited to ships with less than 500 passengers, only 100 people ashore at one time

Adney Farm, Shropshire, UK

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Location

- 2km SE of Shrewsbury
- Near Attingham Park National Trust property

Natural inputs (relief, climate and soil)

- 2.2km^2 flat land
- Fertile alluvial soil from flooding of River Severn
- Temperate climate
- Rainfall: moderate rainfall 700mm per year, rains throughout the year with about 60mm per month
- Temperatures: warm summer average 16℃, only 3 months of the year average below 5℃ so a 9 month growing season

Human inputs (economic, people and machines/ICT)

- Capital intensive
- Low labour input: most work done by farmer
- High tech machinery e.g. tractor with on board technology using GPS for accurate planting
- Chemical fertilizers and pesticides used to maximise yield
- Large area of barns for storage

The outputs of the farm

- Winter wheat for animal feed
- Summer wheat for cereal production
- Wheats sold to a merchant
- Oil seed rape for biofuels and cooking oils
- Cattle raised to sell bulls for dairy farm breeding (currently own 38 cows and their calves), calves sold to dairy farm for breeding
- Manure from animal waste to fertilise the soil

Reasons for different land use on the farm

- Arable farming on land owned by the farmer
    - Located next to the River Severn on the flat, alluvium deposition fertilise the soil
        - Flat land + fertile soil = commercial arable farming, good for using machineries
    - Wheat + oil seed rape in rotation
        - Oil seed rape = high output rotation crop
            - An important crop for intensive arable farmers, as it can provide a good income and goes well in a rotation with wheat (a profitable cereal crop) as it helps to fertilise the soil
        - Wheat earns most profit
- Pastoral farming on land rented from the National Trust
    - Owns 38 cows
    - They have a rule that their land must be left as grassland
- Reasons for mixed farm
    - Allows farmer to spread the risk in case there are changes in prices of crops and weather impacting on his crop yields
    - Also it spread out the work load
    - Manure from animal waste fertilise the soil
    - Winter wheat to feed the cows

Darfur, Sudan

2023年11月29日 20:41

Physical causes of hunger

- Low rainfall, only 400mm per year
- Seasonal rainfall with long dry period → difficult to grow crops + feed / water animals, short growing season
- Heavy rainfall in wet season → flood roads and prevents transportation of food
- Increased use of marginal land for agriculture → not productive enough to support the population
- Periodic drought when wet season fails to arrive → crops fail and animals die

Human causes of hunger

- Conflict
  - Started in 2003 and continues today
  - Caused by disagreement between people of Darfur (predominantly African) and government in Khartoum (predominantly Arab) over sharing of resources
- Crops / animals stolen and destroyed by rebels during the conflict
- Difficult to transport food into the conflict zone
- Farmers cannot plant crops due to the insecurity and fighting, people fleeing to other regions
- Refugees flee to Chad (200,000 live in refugee camps) so there is now pressure on food supplies in Chad

Impacts of food shortages

- On Darfur
  - Increased malnutrition, especially in children
    - Leading to stunted growth
  - Increased levels of starvation and famine
  - Estimated 2 million people displaced
    - They move to cities in Darfur or out-migrate to Chad and live in refugee camps often for years
  - Very poor conditions in camps
    - Overcrowded, limited food, lack of water in arid location
    - Poor sanitation and diseases spread
  - Dependent on food aid from United Nations World Food Programme (WFP)
- On Chad
  - 200,000 refugees live on border with Darfur
  - Pressure on local food supplies in the border region
    - Need to feed local population + refugees
  - Pressure on water supplies
    - In area with low rainfall and drought as well
  - Local population are afraid that the conflict will spread into Chad
  - Local population concerned that diseases will be brought with the refugees
    - e.g. measles

Bangalore, India

2024年1月17日 12:43

Basic information

- Located in Southern India on the Deccan plateau
- Called the Silicon Valley of India
- Many TNC hi-tech companies locate there e.g. Microsoft, Google, Samsung and Texas Instruments

Reasons for the growth of hi-tech industry

- Physical Geography
  - Located on high Deccan Plateau
    - Creates pleasant climate : often called the Garden City
    - This makes it a good place to live which is important for attracting skilled workers.
- Government support
  - Government investment
    - Government set up hi-tech industries in the city e.g. India Space Research Organisation
    - This caused the multiplier effect which means other hi tech companies located there to provide services for these government tech industries
  - Government incentives
    - To encourage investment, the government identified the city as a Special Economic Zone
    - Businesses can set up there with lower taxation and regulations
  - Science and IT parks set up
    - e.g. Electronic City
    - Smaller business can benefit from agglomeration economies
      - Agglomeration economy = smaller hi-tech firms group together so they can share the cost of services e.g. administration and therefore reduce costs
- Human factors
  - English is widely spoken
    - Historically it was a site for British military offices and so people learned English
  - Workers
    - 8.5 million people live in the city so there are a large number of workers living nearby
    - Labour costs are cheaper in India than in Europe or USA and willing to work unsociable hours
  - University
    - There are over 20 universities located in the city which can supply skilled labour + provide research and development facilities

Philips Innovation Centre (PIC)

- Located in Manayata Tech Park in Bangalore, India
- Key software for Philips products is researched and designed there
- Flat land input = helpful for building PIC, allowing large number of computers to be installed on → the process of coding software occurs on computer → make software e.g. software for MRI scanners with advanced molecular imagery
- Skilled labour = supplied by the nearby Bangalore university, 2500 workers hired → research and design products so they are safe and easy to use → high quality app made and can then be sold, e.g. air purifier app which allows control of an air purifier from mobile phone
- Good internet connections provided by fibre optics cabling paid by the government → allows good internet speeds for designing and researching as well as communicating with other companies → allow easy sale of apps
- Profits made provide capital for investment to improve the inputs

Dubai, UAE

2024年1月17日 12:43

Location

- Dubai is one of the 7 Emirates in the United Arab Emirates
- Located in the Middle East on the Persian Gulf

Basic information

- Population 2.8 million people (small)
- Sparsely populated desert region
- Most people are Arab and both English and Arabic is spoken widely
- Main religion is Muslim
- Developed country with high GNI per capita of $25,000
- Economy based on export of oil and natural gas and tertiary industry particularly tourism, retail and trade
- Socially developed e.g. life expectancy 78 years
- HDI: 0.84, ranked 41st in the world

Overview of tourism in Dubai

- 9 million people visited in 2015 worth $4 billion
- Tourist numbers increasing by 10% per year (global average is 4%)
- Earns $4 billion a year which is 25% of Dubai's GDP

Physical tourist attractions

- Geographical location being equally distant between Europe and Asia
    - Used as a stop off point between these continents
- Hot climate averages 30℃
- Guaranteed sunshine all year round
- Dry climate with less that 160mm of rainfall a year
- Excellent destination for winter break from cold European winter with temperatures around 20℃ in December to March
- Attractive desert environment with opportunities to camp out in the desert
- Located on coast with warm Persian Gulf Sea

Human tourist attractions

- Easily accessible from Europe by air with 120 airlines flying there including the national airline Emirates
- Major hotel developments including 6* hotels e.g. Burj as Arab
- Highly developed tourism infrastructure and leisure facilities including golf courses, ski dome and water parks
- High end shopping malls with tax free shopping
- Traditional culture: opportunities to see historic buildings e.g. mosques and spend time in desert with traditional people

Economic impacts of tourism

- Increased direct employment opportunities in hospitality and entertainment industries
- Increased foreign direct investment (FDI) for example international hotel chains and entertainment companies investing in the rapid development of Dubai
- There have been major hotel developments in Dubai which widely include the Palm, Dubai Tower, Burj al Arab hotel
- Infrastructure developments for tourism create indirect employment in construction e.g. currently over 100 tourism and leisure projects are underway
- Tourism sector accounts for almost a quarter of the Emirate's annual GDP.
- Dubai Airport is 7th busiest in the world for passenger numbers indicating the economic importance

of tourist industry

Social impacts of tourism

- Domestic community can mix with individuals from the different nationalities
- Wide range of cultural and social events available for domestic people which include exhibitions, entertainment etc.
- Enhanced facilities for sports and leisure developed for the tourists which might be in use by domestic people

Environmental impacts of tourism

- Extensive use of air conditioning
    - Tourists can cope with the hot temperature in summer uses a lot of electricity (produced by burning fossil fuels, mainly oil) and water
- Lack of water means they use desalinated water to produce fresh water
    - This uses a lot of fossil fuel energy in the process and creates a concentrated saline waste which is deposited in the sea and pollutes the sea
- Fresh water is abundantly used to irrigate golf courses, gardens and swimming pools
    - A waste of the precious resource in the desert environment
- Reclamation of land to create developments
    - e.g. The World, the Palms
    - Causing environmental damage to the marine ecosystem
    - Sediment being deposited on coral reefs which are destroyed + stagnant water in some areas causing algal bloom
- Quad biking in the desert region
    - Damaging fragile desert ecosystem as the plants are crushed
- Flying to Dubai
    - Increased the amount of CO_2 produced from burning jet fuel

Al Maha

- 225km^2 desert conservation area with a tourist resort at the centre
- Social
    - Built using traditional Arab architectural style and traditional artworks and paintings are used to decorate the resort
    - Low rise + designed to blend in with the shape of dunes so no visual pollution
    - 2000 rare cultural items used
    - Some traditional crafts can be bought in the shop
    - Helps to preserve the culture / traditions of the local people
- Economic
    - High end tourism with 37 large hotel suites which are located in an attractive location in the reserve
    - Serving international food and offering spa treatments
    - This means that the hotel will generate a high income and create job opportunities (directly through hotel employees and indirectly through the construction of the resort)
- Environment
    - Money earned from tourism is used to protect the natural environment and wildlife park which include 33 indigenous (local) animals including the Arabian oryx and 100 bird species
    - Nature reserve created around it
    - Planted 6000 tree species
    - Number of oryx increased from 100 to 400
    - All waste are disposed carefully and recycled
    - Tourists are educated about the importance of protecting nature