

6

EMPLOYMENT STRUCTURES

About employment structures

Classification of economic activities

Traditionally, industry and other types of *economic activity* have been broken down into the main groups of *primary*, *secondary* and *tertiary* although, since the 1980s, *quaternary* has been added to make a fourth group (Figure 6.1).

- **Primary** industries extract raw materials directly from the earth or sea. Examples include farming, fishing, forestry and mining.
- **Secondary** industries process and manufacture the primary products, e.g. steelmaking and furniture manufacture. They also include the construction industry and the assembly of component parts made by other secondary industries, e.g. car assembly.
- **Tertiary** industries provide a service. These include education, health, office work, retailing, transport and entertainment.
- **Quaternary** industries provide information and expertise. They include the relatively new micro-electronics industries.

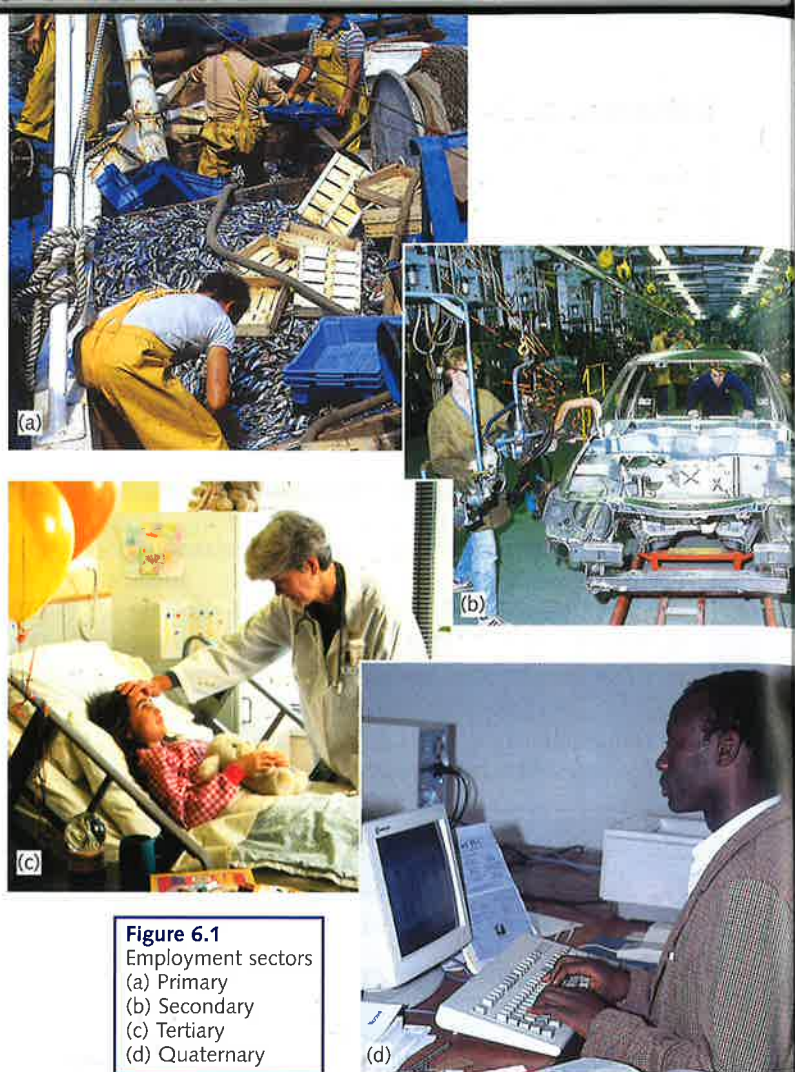
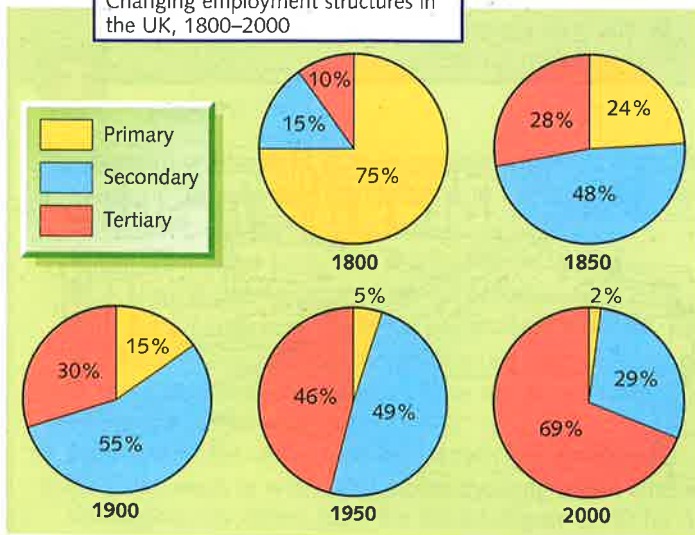


Figure 6.1
Employment sectors
(a) Primary
(b) Secondary
(c) Tertiary
(d) Quaternary

Employment structure

The proportion of people working in each of the primary, secondary and tertiary sectors is called the *employment structure*. The figure for each group is given as a percentage of the total (Figures 6.2, 6.4 and 6.6). Employment structures change over a period of time (Figure 6.2) and vary from place to place (Figures 6.3 and 6.5).

Figure 6.2
Changing employment structures in the UK, 1800–2000



Changes over time

Figure 6.2 gives employment structures for the UK and shows how they have changed over a period of time. Two hundred years ago, before there was accurate data, most working people were employed in the **primary sector** and made their living from the land. The majority were farmers while others either **made things for use in farming**, such as ploughs, or from items produced by farmers, such as bread.

One hundred years ago, and as a result of the **Industrial Revolution**, fewer people worked in the primary sector (fewer farmers) but many more in the **secondary sector** (e.g. in steelworks, shipyards and textile mills). Further changes took place in the twentieth century. Farming and industry became more mechanised and needed fewer workers. Coal became less abundant and industry faced increasing competition from overseas. At the same time, more people were needed to work in the **tertiary sector**, especially in schools, hospitals, shops, offices and in transport.

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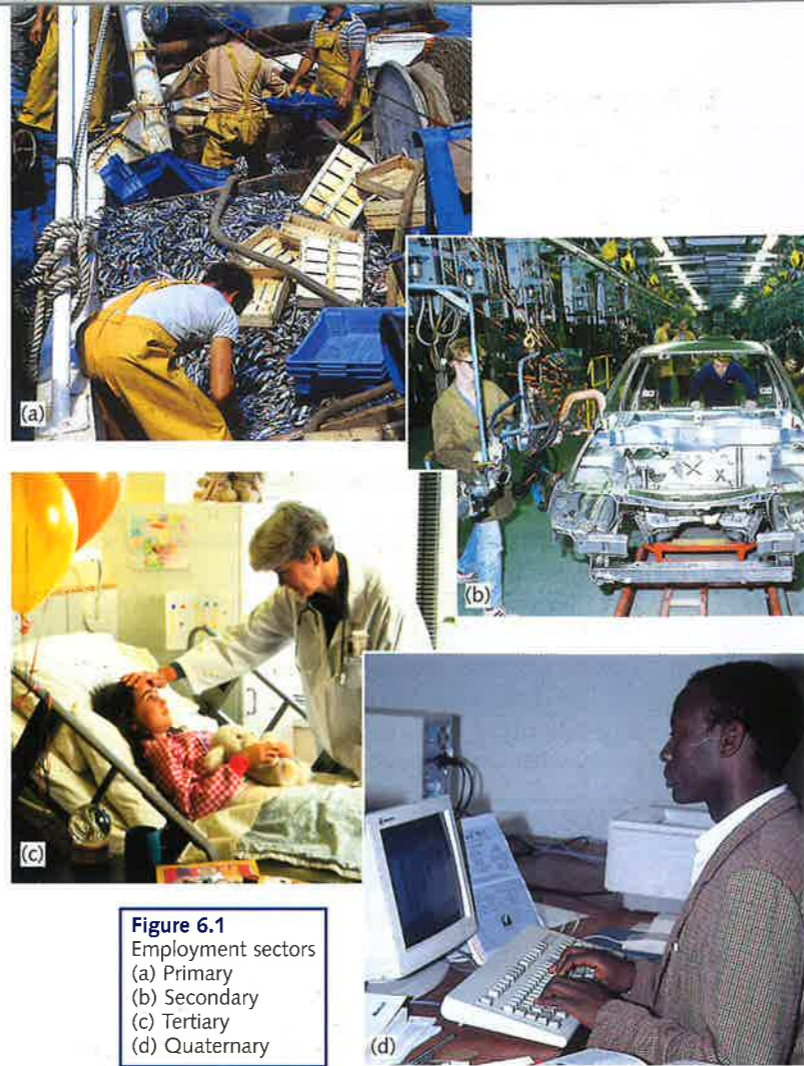


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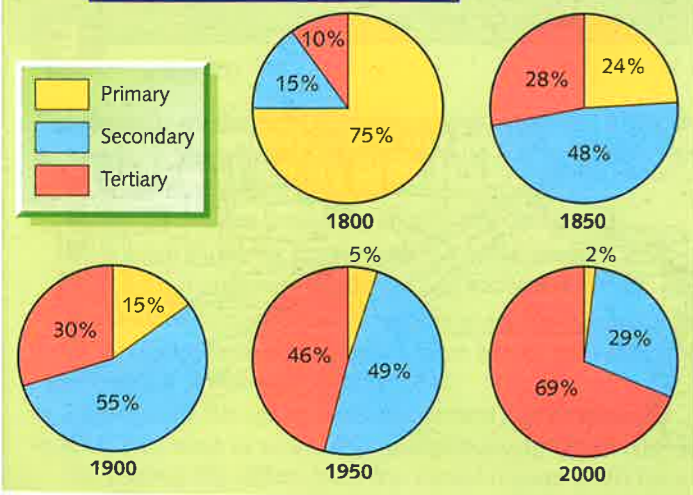
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Figure 6.2
Changing employment structures in the UK, 1800–2000



Differences between places

Employment structures can also be used to show differences between places. Figure 6.3 shows:

- changes in employment structure between the economic regions of the UK
- the number of people actually employed in each region.

The map shows that:

- the south-east region employs most people
- all regions have their highest percentage of workers in the tertiary sector and their lowest percentage in the primary sector
- the south-east has the lowest proportion in both the primary and secondary sectors and the highest proportion in the tertiary sector
- the two Midland regions appear to have the highest percentage in secondary employment.

You should realise, however, that within each region there are likely to be large differences between places. For example, as shown in Figure 6.4, one place may be a market town, one an industrial centre and one a holiday resort. Each place will, therefore, have a different population structure.

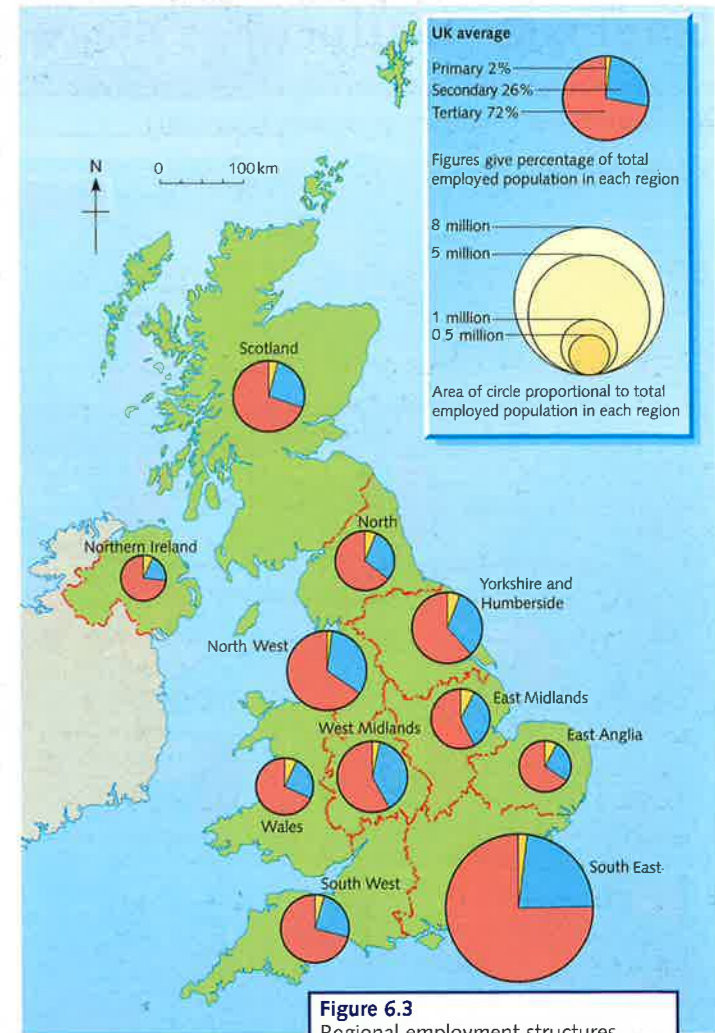


Figure 6.3
Regional employment structures in the UK, 2000

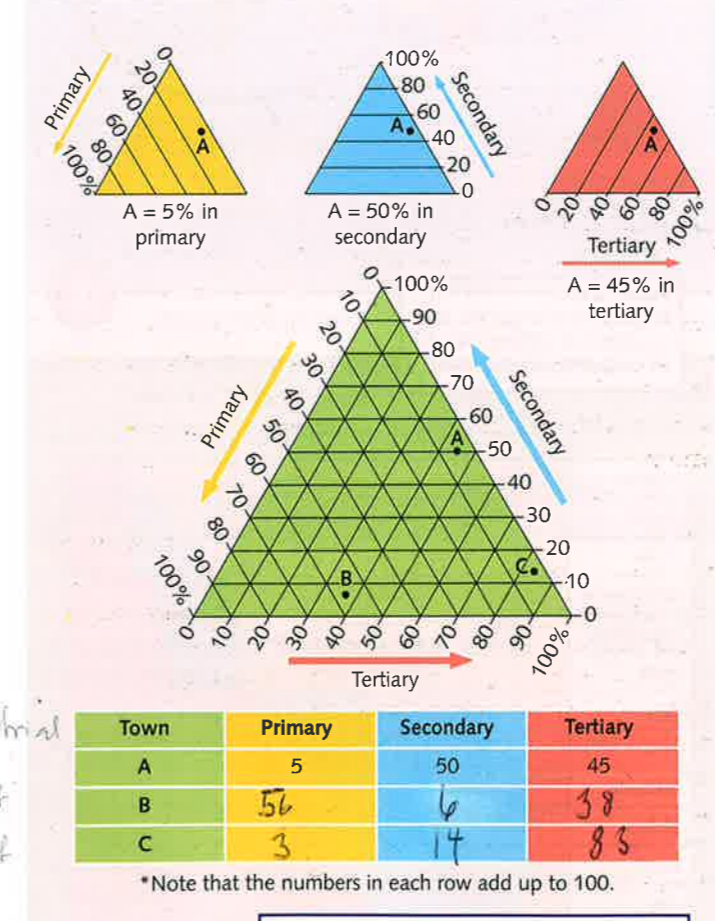


Figure 6.4
Employment structures: the triangular graph

Triangular graphs

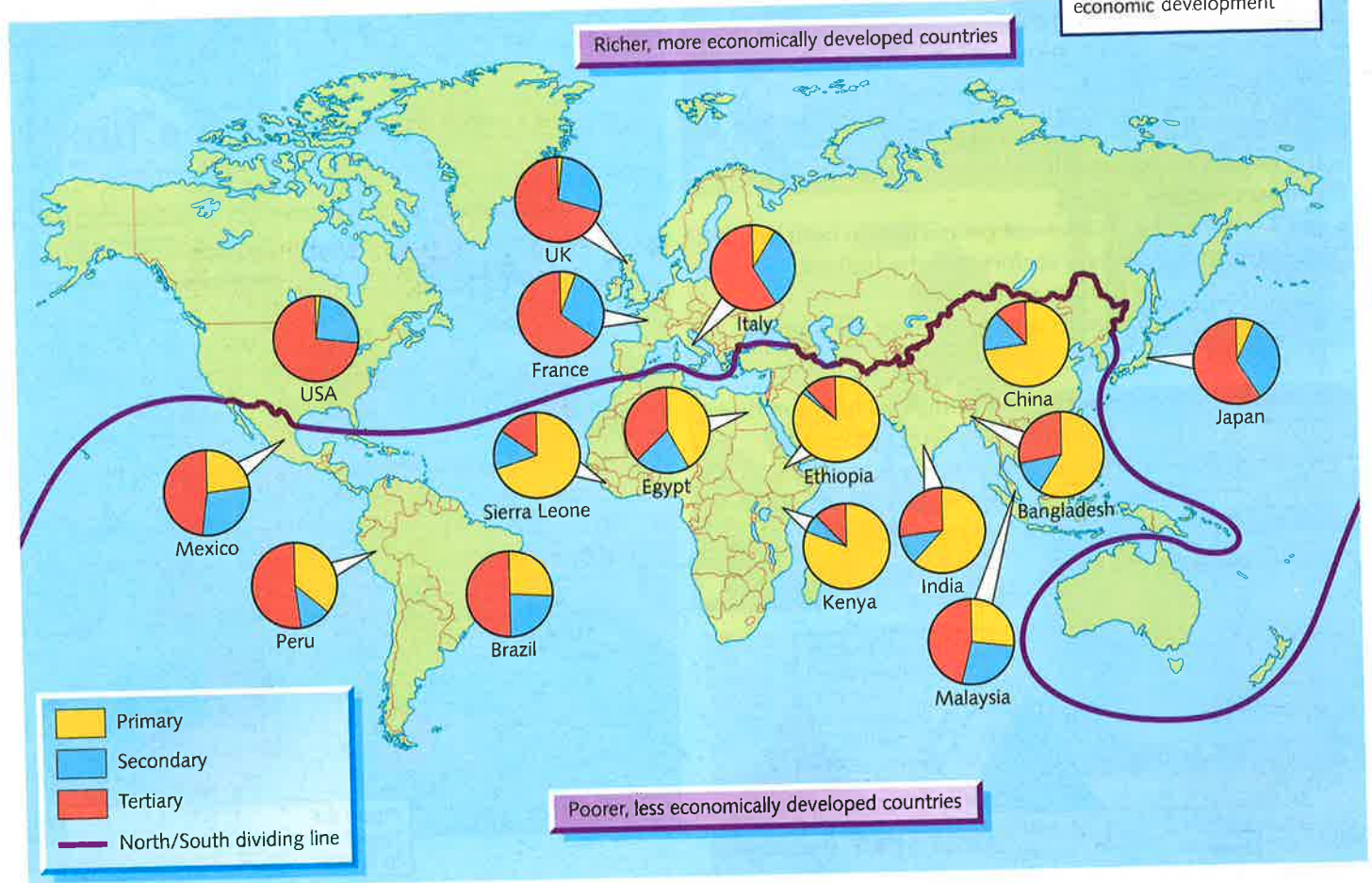
A triangular graph is an equilateral triangle with each of its three 'bases' divided into percentage scales. Each base represents one of the three variables of primary, secondary and tertiary activities. It is convenient, though not essential, to make the sides of the triangle 10 cm long (so that 1 cm = 10%).

Figure 6.4 shows how the three variables are plotted to show the employment structure of Town A. The figure for the primary sector is found by using the left-hand scale (see the yellow graph), for secondary activities by using the right-hand scale (blue graph) and for tertiary activities the base (orange graph). The answer for Town A is given underneath the graph. Try to complete the table for Towns B and C. These three towns represent (but not necessarily in this order) a small market town, a holiday resort and an industrial town. Match the figures with the appropriate letter (and be able to justify your answer).

Employment structures and development

Usually there is a link between employment structures and levels of economic development of countries, or regions (page 181).

Figure 6.5
Employment structures and economic development



As shown on Figure 6.5:

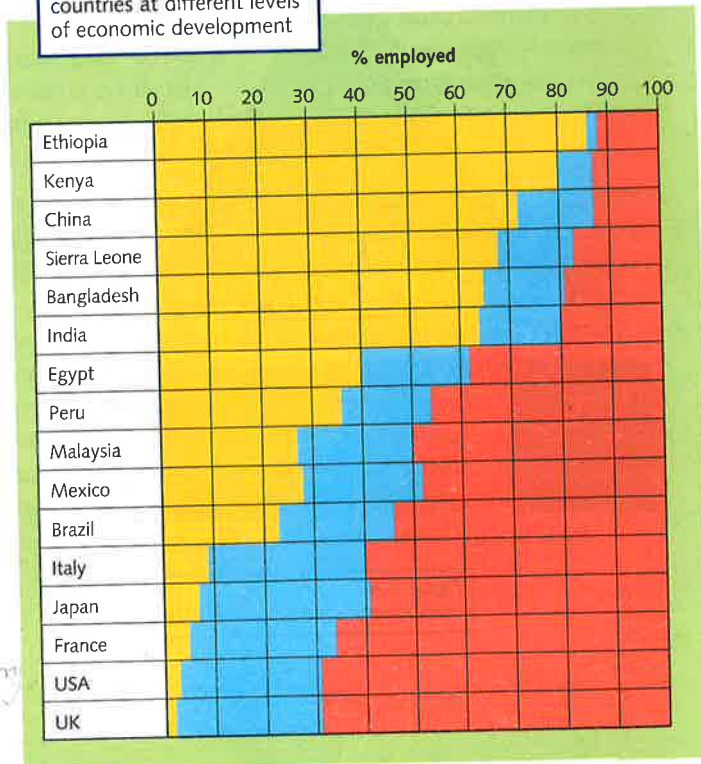
- The richer, industrialised more economically developed countries (MEDCs) have a very high percentage in the tertiary sector, a high percentage in the secondary sector and a very low percentage in the primary sector.
- The poorer, least industrialised less economically developed countries (LEDCs) have, by contrast, a very high percentage in the primary sector (most are farmers), and a low percentage in both the secondary and service sectors.

Figure 6.6 has ranked a selection of countries according to the proportion of people engaged in the primary sector. You should refer to this graph when you look at the GNP of these countries on page 180.

Figure 6.6 is a percentage bar graph. This is a horizontal bar, again ideally drawn 10 cm long so that it is easy to divide into 10 per cent segments (1 cm = 10%). The bar is then divided into three to indicate the percentage of the working population in each of the primary, secondary and tertiary sectors.

Total value of goods and services produced - by a country divided by the total no. of people living in that country

Figure 6.6
Employment structures for countries at different levels of economic development



Employment structures and development

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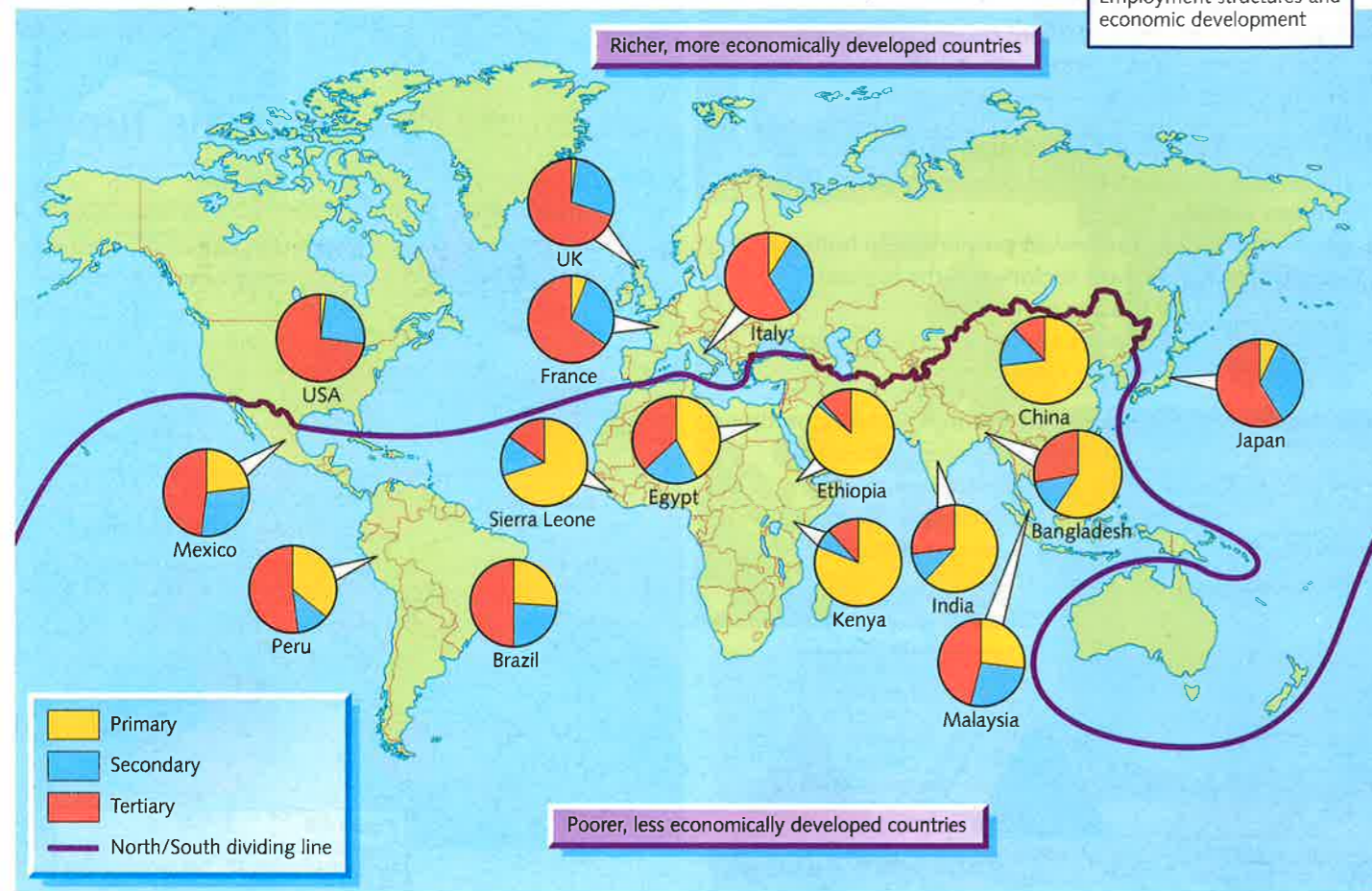


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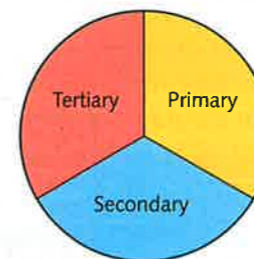
CHECKLIST: EMPLOYMENT STRUCTURES

KEY WORDS AND TERMS

- You should know the meaning of the following terms:
- employment structures
 - economic activities
 - primary activities/sector
 - secondary activities/sector
 - tertiary activities/sector
 - quaternary

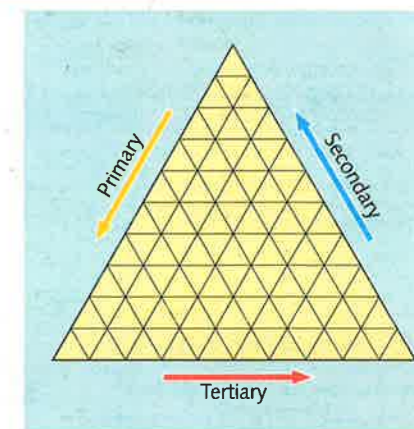
KEY IDEAS

- You should know and understand the following:
- Economic activity can be classified into (traditionally) three and (more recently) four groups.
 - Employment structures change over time and vary between places.
 - Employment structures can be used as an indicator of levels of economic development.



SKILLS, THEORIES AND MODELS

- Interpret and use pie, triangular and divided bar graphs
- Understand the process and effects of change
- Classification of economic activities



Questions

As shown on Figure 6.5:

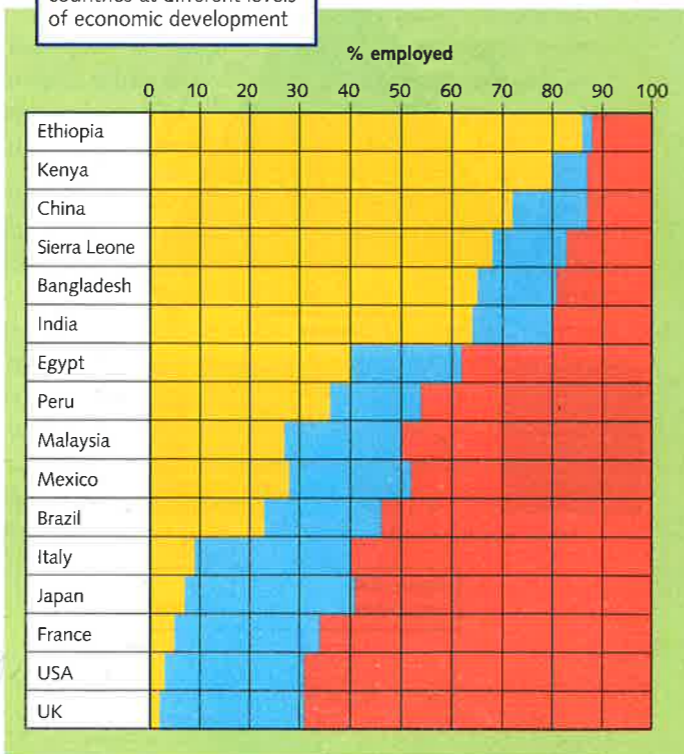
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Figure 6.6
Employment structures for countries at different levels of economic development



1

(Pages 92 and 94)

- a i) Describe the changes in the UK's employment structure between 1800 and 2000. (5)
ii) Give reasons for these changes. (6)

- b i) Describe the differences in employment structure between the four most economically developed and the four least economically developed countries shown on Figures 6.5 and 6.6. (4)
ii) Give reasons for these differences. (4)

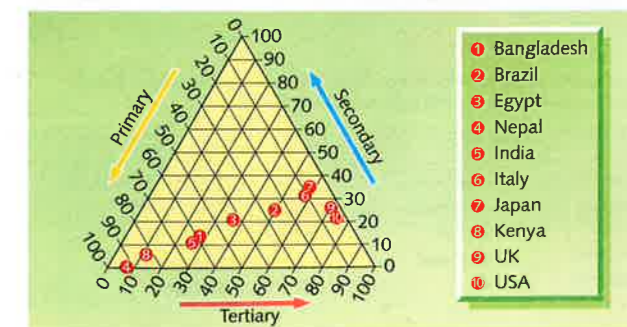
2

(Page 93)

The triangular graph shows the percentage of the working population in each of the three main sectors of activity for selected countries. Using the graph:

- a Complete the table above the graph. (5)
b Which country has 42 per cent in primary, 21 per cent in secondary and 37 per cent in tertiary? (1)
c Name the four most economically developed countries. (4)
d Name the four least economically developed countries. (4)
e Give three differences between the figures for the two sets of countries. (3)
f Give three reasons for the differences between the two sets of figures. (3)

	JAPAN	BRAZIL	KENYA
% PRIMARY SECTOR	36	25	81
% SECONDARY SECTOR	36	43	8
% TERTIARY SECTOR	56	50	11



7

FARMING

Farming systems and types

Farming is an industry and operates like other industries. It is a system with inputs into the farm, processes which take place on the farm and outputs from the farm (Figure 7.1).

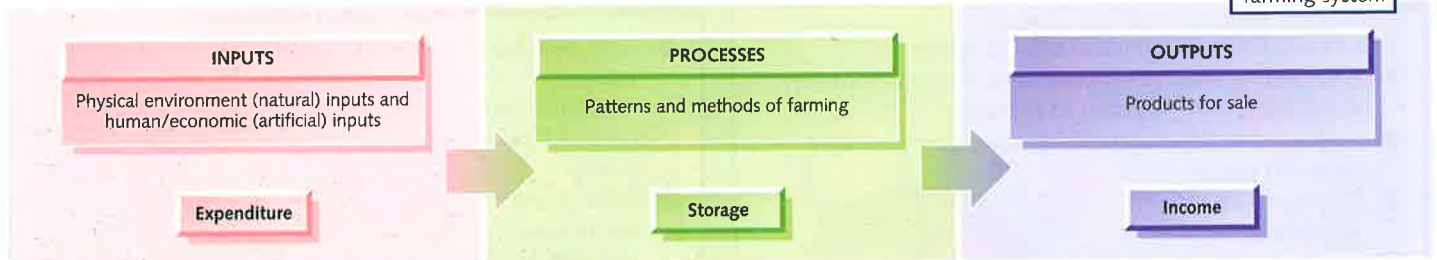


Figure 7.1
Simplified farming system

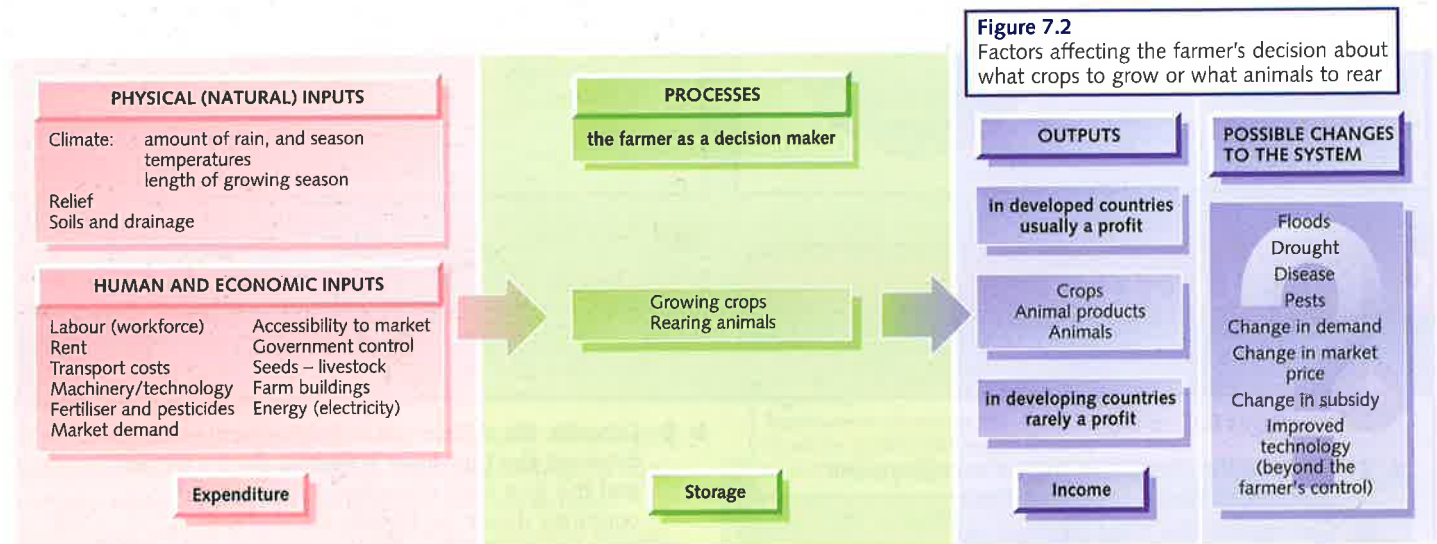
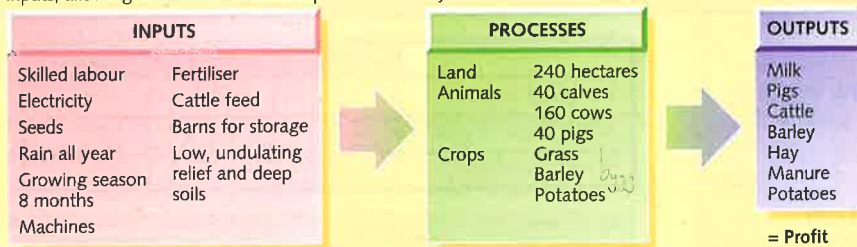


Figure 7.2
Factors affecting the farmer's decision about what crops to grow or what animals to rear

In more economically developed countries (Figure 7.3a), outputs usually exceed inputs, allowing the farmer to make a profit which may then be re-invested.



(a) Farming system in the Netherlands



In less economically developed countries (Figure 7.3b) the output is often consumed by the family with little surplus left for sale



(b) Farming system in India



Figure 7.3
Farming systems in MEDCs and LDCs

Farming systems and types

Farming is an industry and operates like other industries. It is a **system** with **inputs** into the farm, **processes** which take place on the farm and **outputs** from the farm (Figure 7.1).

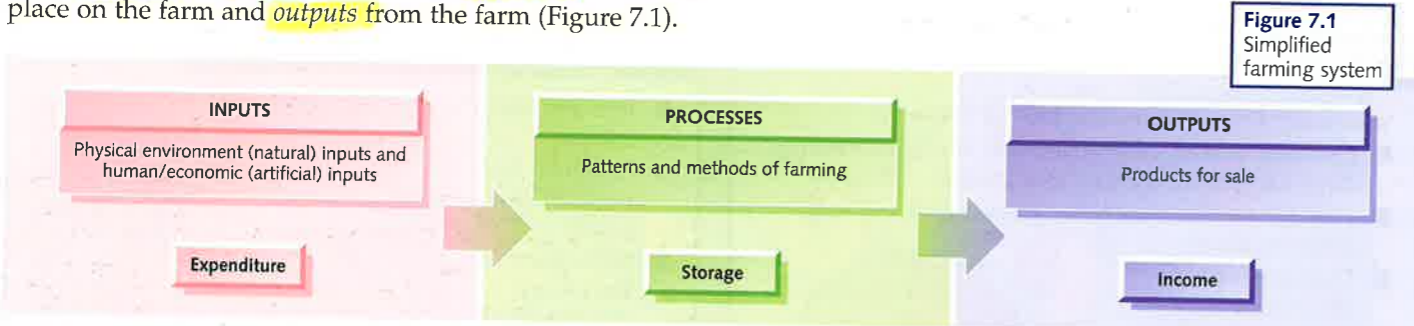


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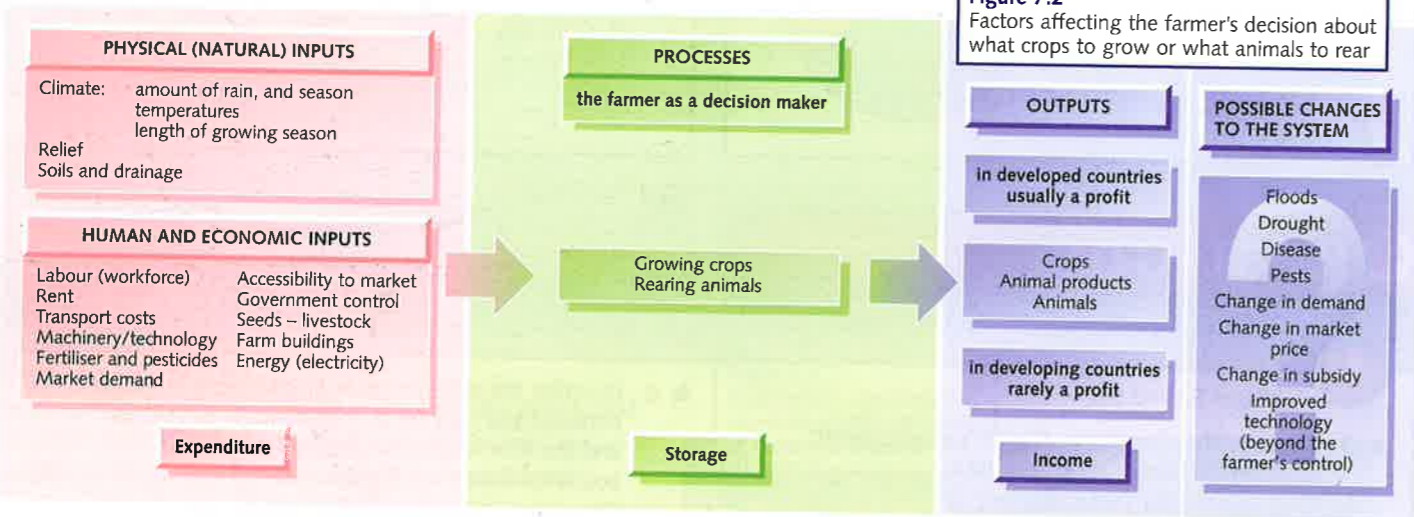


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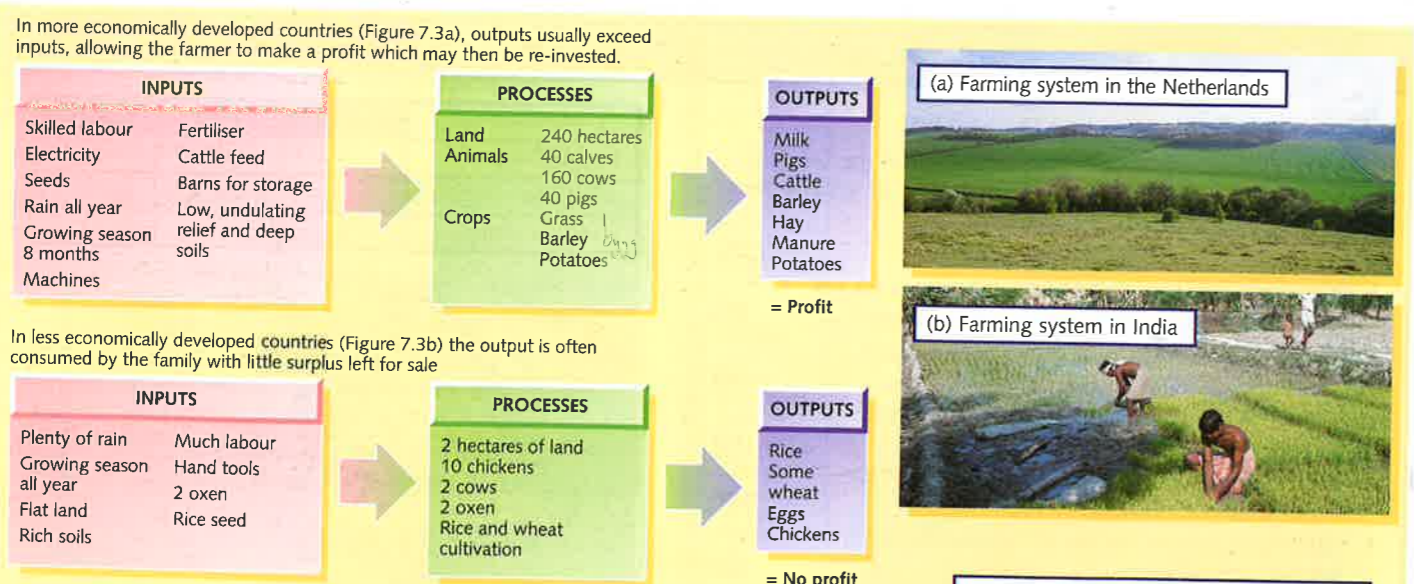


Figure 7.3
Farming systems in MEDCs and LEDCs

The farmer as a decision maker

Each individual farmer's decision on what **crops** to grow or **animals** to rear, and which **methods** to use to maximise outputs, depends on an understanding of the most favourable physical and economic conditions for the farm (Figure 7.2). Sometimes the farmer may have several choices and so the decision may depend upon individual likes and **expertise**. On other occasions the choice may be **limited** by extreme physical conditions or economic and political pressures.

Classification of types of farming

The classification shown in Figure 7.4 is based upon the following criteria:

Specialisation This includes **arable** (the growing of crops), **pastoral** (the rearing of animals) and **mixed** (both crops and animals) farming.

Economic status **Commercial** farming is the growing of crops or rearing of animals for sale (i.e. outputs exceed inputs). **Subsistence** farming is when just sufficient food is provided for the farmer's own family (i.e. outputs may be the same or less than the inputs and so the family may struggle for survival).

Intensity of land use This depends upon the ratio between land, labour and capital (money). **Extensive** farming is where the farm size is very large in

comparison with either the amount of money spent on it (Amazon Basin) or the numbers working there (American Prairies). **Intensive** farming is when the farm size is small in comparison with either the numbers working there (Ganges Delta) or the amount of money spent on it (Denmark).

Land tenure **Shifting** (and **nomadic**) cultivation is where farmers move from one area to another. **Sedentary** is where farming and settlement is permanent.

Remember that the map in Figure 7.4 is simplified. It only shows the generalised world location of the main types of farming. It **does not show local variations, transitions** between the main farming types nor if several types occur within **the same area**.

	TYPE OF FARMING	NAMED EXAMPLE
1	NOMADIC HUNTING AND COLLECTING	AUSTRALIAN ABORIGINES
2	NOMADIC HERDING	MAASAI IN KENYA, SAHEL COUNTRIES
3	SHIFTING CULTIVATION	AMERINDIANS OF AMAZON BASIN
4	INTENSIVE SUBSISTENCE AGRICULTURE	RICE IN THE GANGES DELTA
5	PLANTATION AGRICULTURE	SUGAR CANE IN BRAZIL
6	LIVESTOCK RANCHING (COMMERCIAL PASTORAL)	BEEF ON THE PAMPAS
7	CEREAL CULTIVATION (COMMERCIAL GRAIN)	CANADIAN PRAIRIES, RUSSIAN STEPPES
8	MIXED FARMING	NETHERLANDS, DENMARK
9	'MEDITERRANEAN' AGRICULTURE	SOUTHERN ITALY, SOUTHERN SPAIN
10	IRRIGATION	NILE VALLEY, CALIFORNIA
11	UNSUITABLE FOR AGRICULTURE	SAHARA DESERT

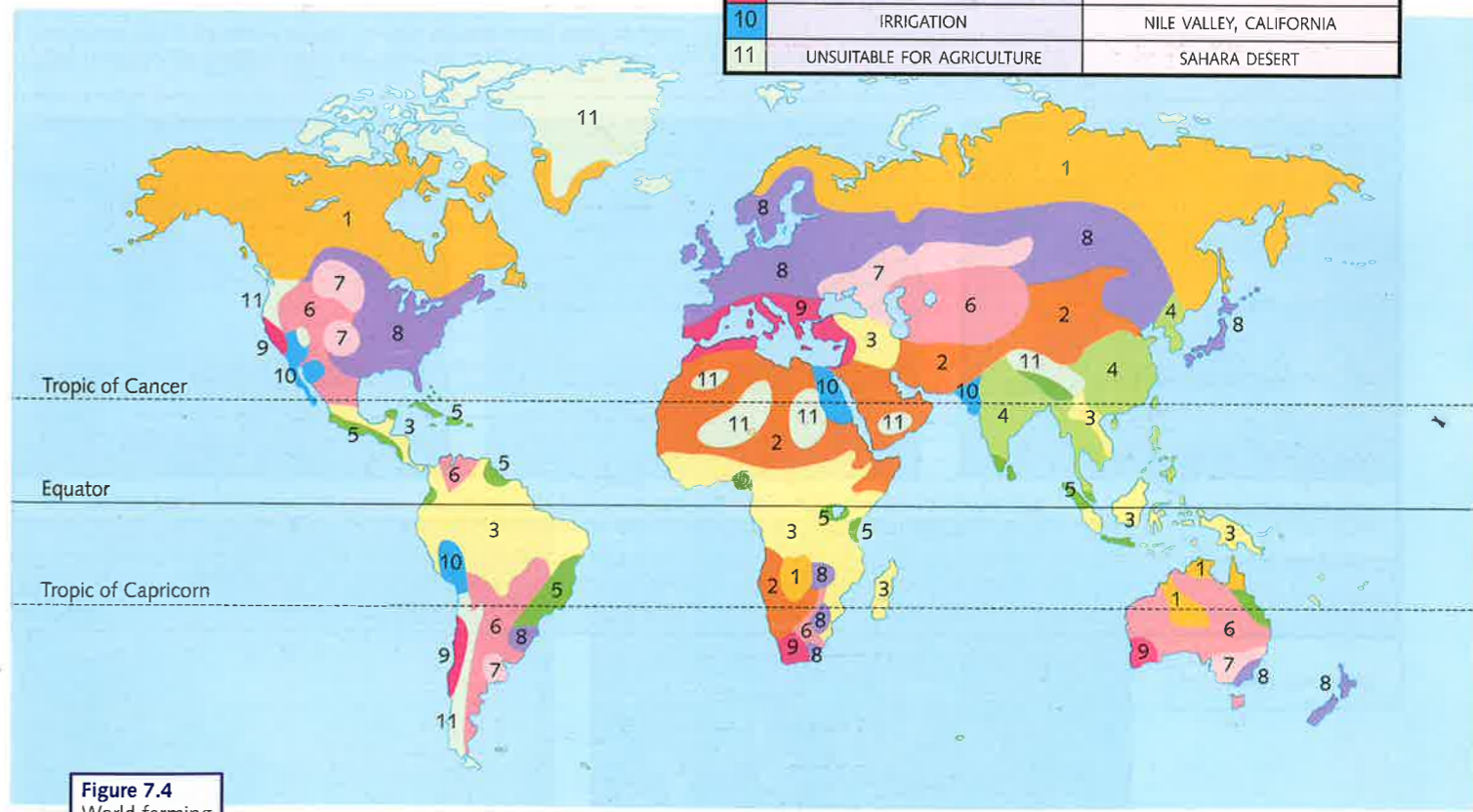


Figure 7.4
World farming types

Farming in the UK

Factors affecting farming

The location of different types of farming at all scales depends upon the interaction of three factors: physical (environmental); human (social) and economic; and political (Figure 7.5).

Ideally, individual farmers should have a knowledge and understanding of each of these factors in their local area.

They can then make decisions as to which crops to grow and/or which animals to rear in order to give them the greatest profit. Sometimes the farmer may have several choices and so the decision may depend upon individual preferences, traditions and expertise – the so-called *behavioural factors*.

Figure 7.5
Factors affecting the location and distribution of farming types in the UK

PHYSICAL (ENVIRONMENTAL) FACTORS	
RELIEF AND ALTITUDE	USUALLY THE FLATTER AND THE MORE LOW-LYING THE LAND, THE MORE EFFICIENT AND COMMERCIAL IS THE FARM (ARABLE IN EAST ANGLIA). OUTPUT TENDS TO DECREASE AS THE LAND GETS STEEPER AND HIGHER AND FARMING BECOMES LESS COMMERCIAL AND MORE EXTENSIVE (PASTORAL IN THE LAKE DISTRICT).
SOILS	THE DEEPER AND RICHER THE SOIL, THE MORE INTENSIVE AND COMMERCIAL THE FARMING (ALLUVIUM OF THE FENS). IDEALLY SOILS SHOULD BE WELL DRAINED YET CAPABLE OF RETAINING WATER.
TEMPERATURE/SUNSHINE (PAGES 201 AND 207)	IN SCOTLAND, SUMMERS ARE COOL AND THE GROWING SEASON IS TOO SHORT FOR MOST CEREALS. MOVING SOUTH , TEMPERATURES, THE AMOUNT OF SUNSHINE AND THE LENGTH OF THE GROWING SEASON ALL INCREASE. ASPECT IS AN IMPORTANT LOCAL FACTOR (MAXIMUM SUNLIGHT, PROTECTION AGAINST FROST AND WIND).
RAINFALL/WATER SUPPLY (PAGES 202 AND 207)	AREAS WITH ADEQUATE AND RELIABLE RAINFALL THROUGHOUT THE YEAR TEND TO PRODUCE GOOD GRASS FOR REARING ANIMALS (WESTERN BRITAIN). DRIER AREAS TO THE EAST GROW CEREALS (EAST ANGLIA) AND FRUIT (KENT).
HUMAN (SOCIAL) AND ECONOMIC INPUTS	
LAND OWNERSHIP/TENURE	MANY BRITISH FARMERS OWN THEIR OWN FARMS BUT SOME ARE TENANT FARMERS (THE FORMER ARE USUALLY MORE COMMERCIAL). A SMALL, BUT INCREASING, NUMBER ARE RUN BY PROCESSING COMPANIES (FROZEN FOODS IN EAST ANGLIA).
SIZE OF FARMS/FIELDS (PAGE 106)	FARMS INCREASE IN SIZE AS LARGER MORE EFFICIENT FARMERS BUY UP SMALLER, LESS SUCCESSFUL FARMS. FIELD SIZE HAS ALSO INCREASED, ESPECIALLY WHERE HEDGEROWS HAVE BEEN REMOVED (EASTERN ENGLAND). THE EU ENCOURAGES LARGER FARMS AND LARGER FIELDS.
COMPETITION FOR LAND (PAGE 62)	MANY TRADITIONAL FARMING AREAS, ESPECIALLY NEAR THE RURAL-URBAN FRINGE, ARE UNDER THREAT FROM URBAN SPRAWL AND THE DEMAND FOR NEW ROADS, INDUSTRY, HOUSING AND RECREATION.
TRANSPORT AND MARKETS	PERISHABLE GOODS NEED TO BE PRODUCED NEAR TO MARKETS FOR FRESHNESS, AND BULKY GOODS NEAR TO MARKETS DUE TO THEIR WEIGHT. FRUIT AND VEGETABLES (MARKET GARDENING) ARE GROWN NEAR MOST LARGE URBAN AREAS.
CAPITAL (MONEY)	BY WORLD STANDARDS THE UK IS WELL-OFF , SO FARMERS CAN FIND MONEY TO IMPROVE THEIR FARM BUILDINGS AND MACHINERY AND TO BUY FERTILISER AND GOOD-QUALITY SEED AND ANIMALS.
MECHANISATION/TECHNOLOGY	THE INCREASED USE OF LABOUR-SAVING MACHINERY AND COMPUTERS INCREASES OUTPUTS BUT REDUCES THE NEED FOR FARM WORKERS. FARMS IN THE SOUTH AND EAST TEND TO BE MORE MECHANISED THAN THOSE IN THE NORTH AND WEST.
POLITICAL FACTORS	
GOVERNMENT/EU POLICIES (PAGES 106 AND 107)	GOVERNMENTS HAVE PROVIDED GRANTS FOR NEW STOCK AND MACHINERY AND SUBSIDIES TO GUARANTEE A FIXED INCOME. THIS NOW COMES FROM THE EU'S COMMON AGRICULTURAL POLICY (CAP).
VARIABLE INPUTS	FARMERS ARE VULNERABLE TO CHANGES IN GOVERNMENT/EU POLICIES, MARKET PRICES AND MARKET DEMAND. THEY ARE ALSO AFFECTED BY CHANGES IN THE WEATHER (FLOODS, DROUGHT AND FROST) AND BY DISEASE (FOOT AND MOUTH, POTATO BLIGHT).

Farming in the UK

Factors affecting farming

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Distribution of the main farming types in the UK

It is essential, if British farmers are to make a profit and earn a living, that they are as efficient as possible. When looking at the different physical conditions of the British Isles (i.e. climate, soils and relief) and then taking into consideration various human and economic factors (mainly transport, markets and capital), it can be seen that different parts of the UK favour different types of farming.

Figures 7.6 and 7.7 show that there are five main types of farming in the UK. However, the map has been simplified to make interpretation easier. It suggests that all farmers within a certain location specialise in just one type of farming, e.g. sheep, cattle or cereals. The map hides local variations and fails to show that most farmers will keep some animals and grow some crops.

Arable farms are found in the **east** where summers are sunny and warm, there is less rain, the land is low-lying and flatter, soils are deep and fertile, transport systems are good, and where there are large urban markets nearby.

Cattle farms are important where summers are cool and winters are mild, there is plenty of rain throughout the year, the land is low-lying and relatively flat, transport is good and urban markets are within easy reach.

Hill sheep farms predominate in those parts of Scotland, Wales and northern England where the land is **high** and steep, soils are poor, temperatures are cool, rainfall is heavy, transport systems are poorly developed and urban markets are not within easy reach.

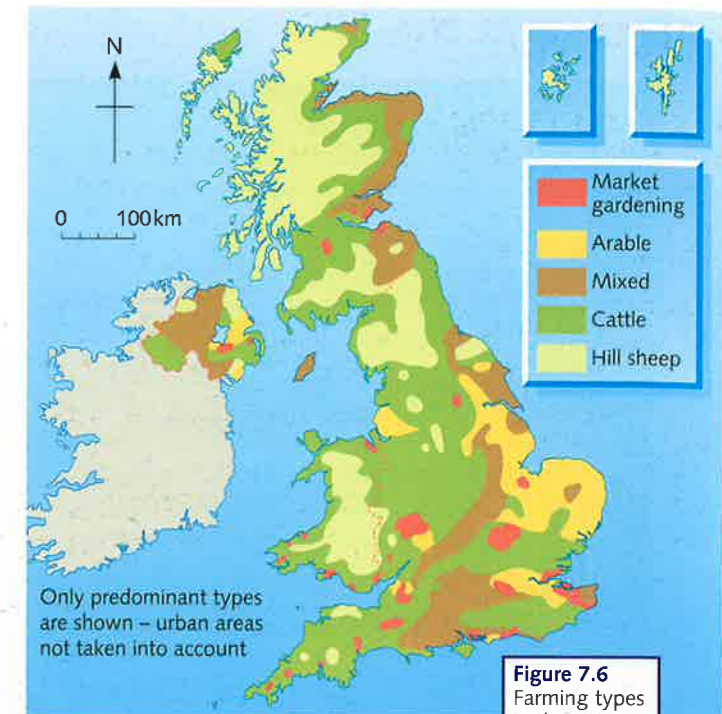


Figure 7.6
Farming types in the UK

Mixed farming tends to be found in a transition zone between the crop-growing areas in the east and the animal-rearing areas in the west.

Market gardening is important near large urban areas and where transport links are good. As some market garden produce can be grown undercover in artificial conditions (flowers, tomatoes), human factors tend to be more important than physical factors.

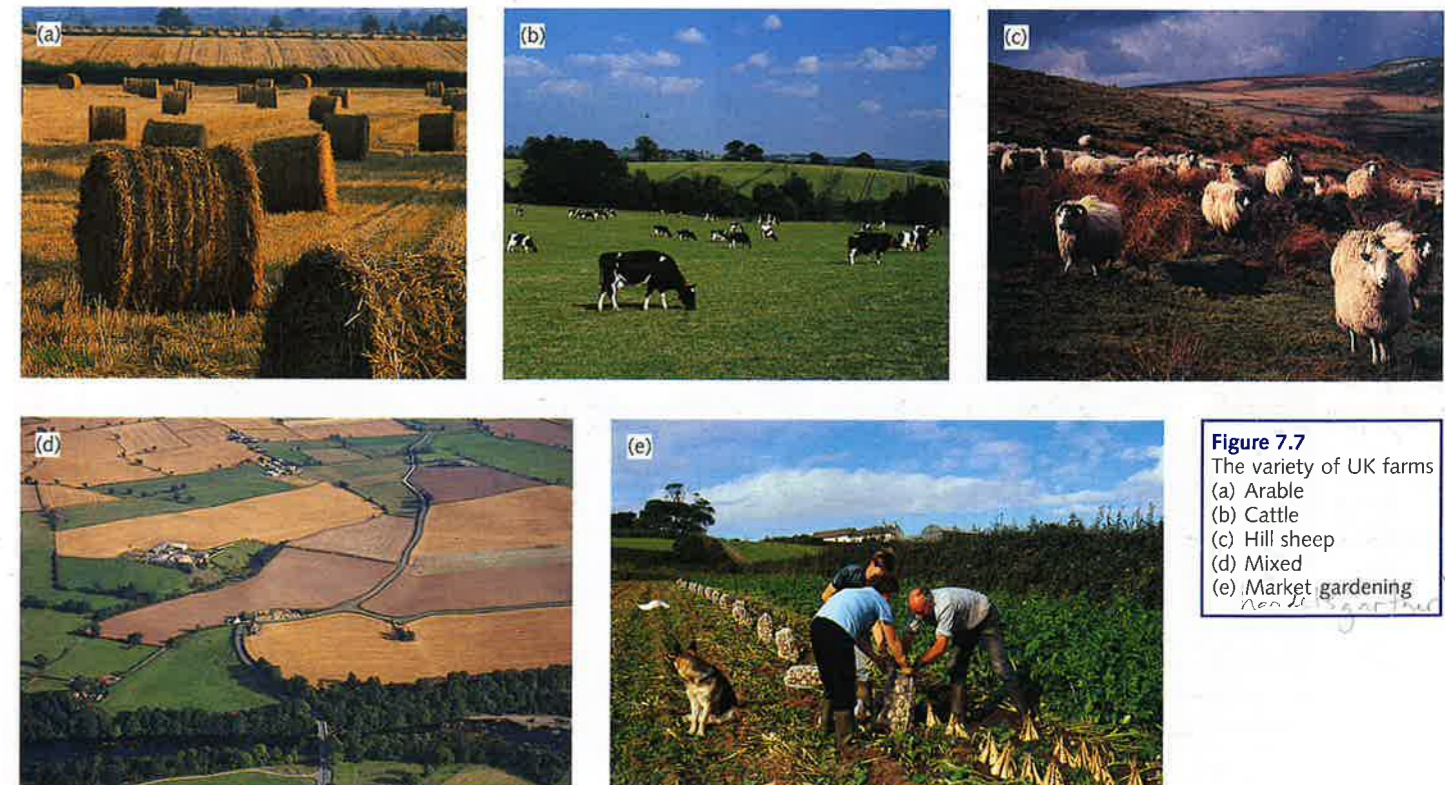


Figure 7.7
The variety of UK farms
(a) Arable
(b) Cattle
(c) Hill sheep
(d) Mixed
(e) Market gardening

BSE, bovine spongiform encephalopathy
Mad cow disease

Pastoral farming in the Lake District

The main type of farming in the Lake District is the rearing of hill sheep of which there are an estimated 1.5 million. Valley floors towards the edges of the area are suitable for cattle.

Physical inputs Rainfall is heavy throughout the year, especially on the higher fells. Summers are cool and cloudy while winters may be mild in the valleys but much colder at higher levels. The steep valley sides, with their thin, poor soils and exposed rock, and the high fells, have poor-quality grass suitable only for sheep (Figure 7.9). The low-lying, flatter valley floors, with their deeper, alluvial soil, have good-quality grass and are ideal for cattle rearing.

Human inputs The Lake District has relatively poor communications both within it (narrow roads) and with large markets which are often a considerable distance away (this increases transport costs and time). The land is unsuited to large-scale mechanisation and the area has limited capital.

Variable inputs These include occasional heavy snowfalls at lambing time; changes in government (mainly EU) policies; and outbreaks of disease (sheep affected by radioactive fallout after Chernobyl in 1986); and restrictions on the movement of animals (cattle due to BSE in 1996, sheep due to foot and mouth in 2001).

Processes On the hill farm, these include lambing, dipping, shearing, collecting hay and maintaining dry-stone walls.

Outputs Young lambs, lamb (meat), wool and hay.

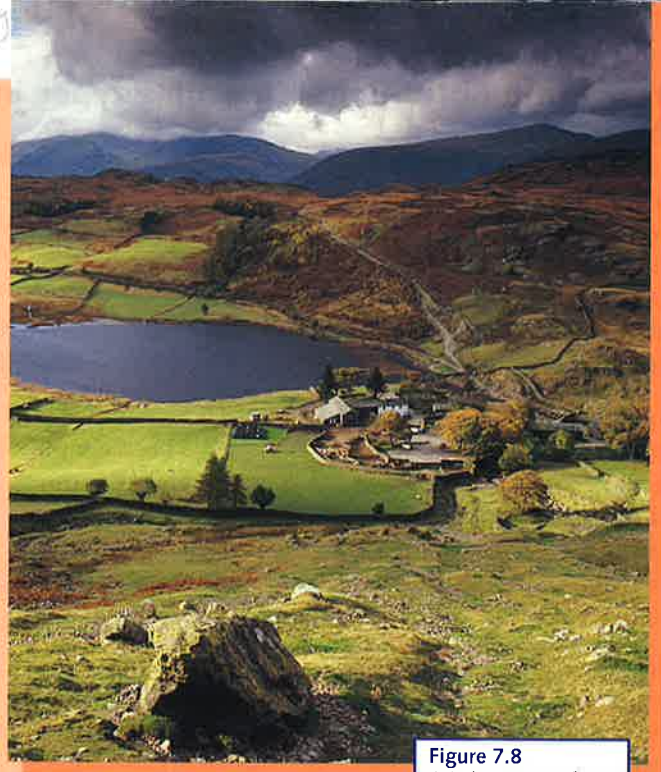


Figure 7.8
A Lake District farm

Recent changes These include:

- a fall in the price of lambs, lamb and wool
- marginal land being taken out of production
- a decrease in the number of farms
- more farms turning to other sources of income, mainly tourism, e.g. B & B, camping and caravan sites, craft shops (page 106).

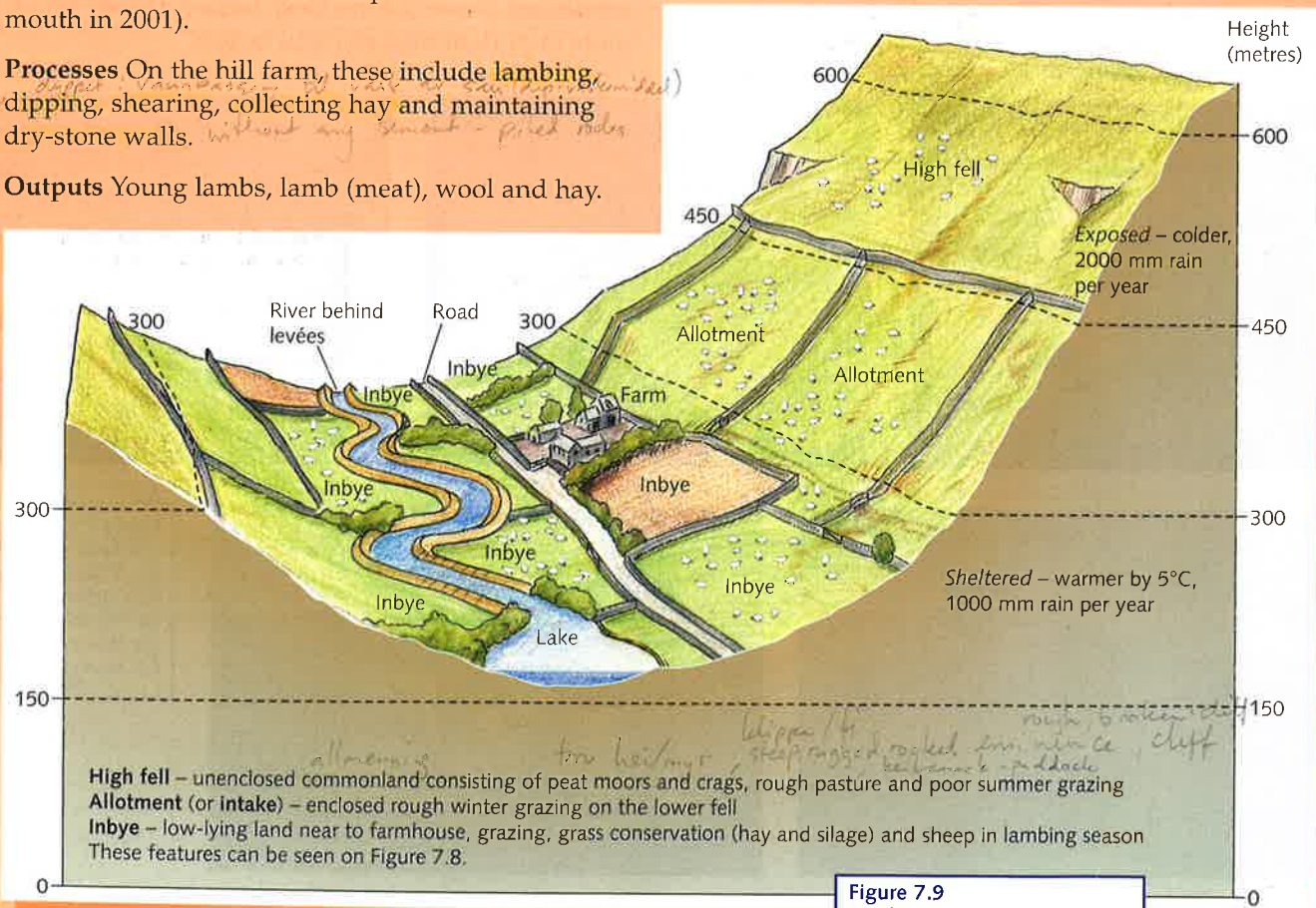


Figure 7.9
Land use on a hill sheep farm

Arable farming in East Anglia

The main type of farming in East Anglia is the growing of cereals, mainly wheat and barley, together with root crops (potatoes and sugar beet) and *subcarrots* vegetables (peas and beans).

Physical inputs Rainfall is the lowest in the UK (under 650 mm a year) but fortunately most comes during the summer growing season. The warm, sunny summers are ideal for ripening crops, while frosts during the cold winters help break up the soil. The land is gently undulating and low-lying. The soils, which are deep, fertile and well drained, are mainly either alluvium deposited by rivers, or *modern stone* boulder clay deposited on chalk during the Ice Age.

Human inputs The flatness of the land has allowed a good transport system to develop (road and rail) linking the region with large, nearby markets in south-east England (saves time and costs, easier to transport both bulky and perishable goods – Figure 7.11). The land is ideal for large-scale machinery (combine harvesters, sprayers) and the region has considerable capital.

Variable inputs These include possible droughts during summer; changes in government (mainly EU) policies; and disease affecting cereals or other crops.

Processes These include ploughing, *harvest five off* harrowing, weeding, applying fertiliser and pesticides, weeding, harvesting and maintaining field boundaries and machinery.



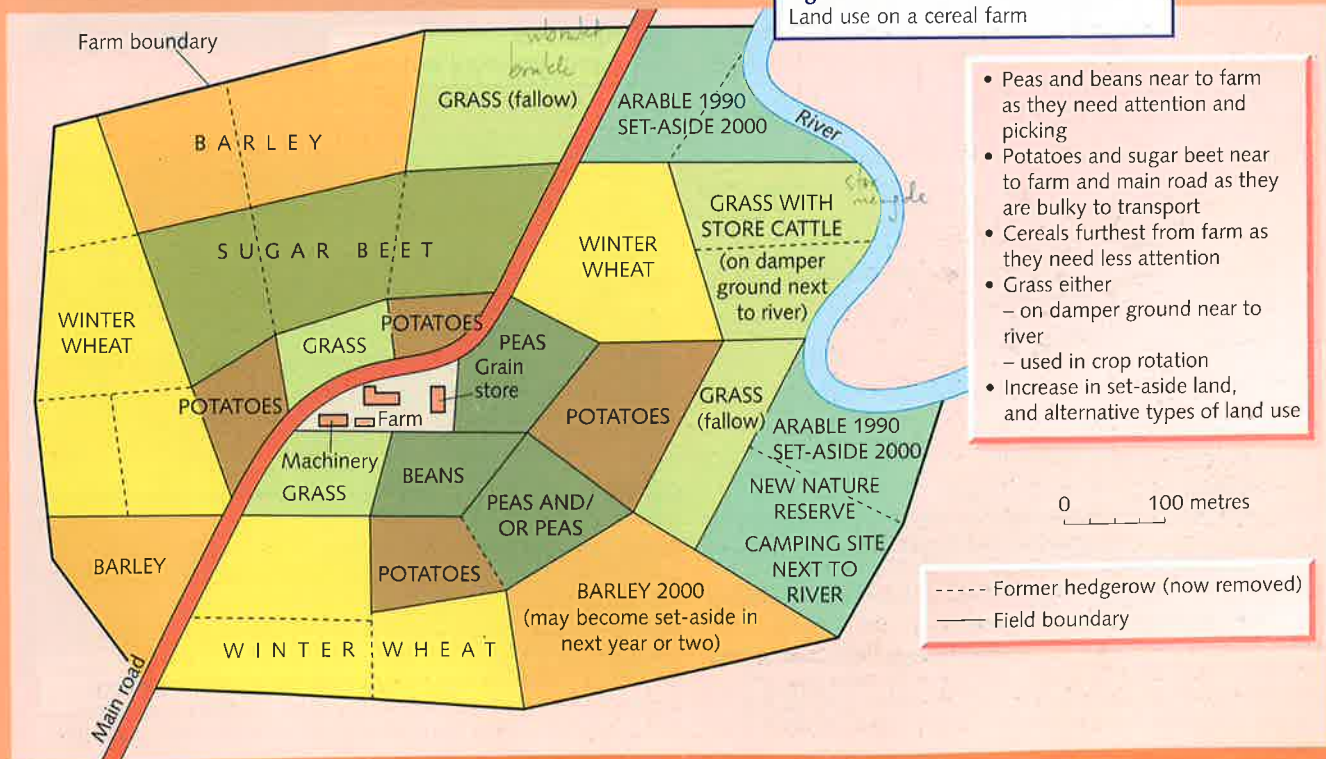
Figure 7.10
Extensive cereal growing in East Anglia

Outputs Wheat, barley, sugar beet, potatoes, peas and beans.

Recent changes These include:

- larger farms – encouraged by the EU
- larger fields (for larger machinery) due to removal of hedgerows (page 108)
- increased use of fertiliser (page 108)
- reduced subsidies (to reduce overproduction in the EU) (page 106)
- increase in set-aside land (page 106).

Figure 7.11
Land use on a cereal farm



- Peas and beans near to farm as they need attention and picking
- Potatoes and sugar beet near to farm and main road as they are bulky to transport
- Cereals furthest from farm as they need less attention
- Grass either
 - on damper ground near to river
 - used in crop rotation
- Increase in set-aside land, and alternative types of land use