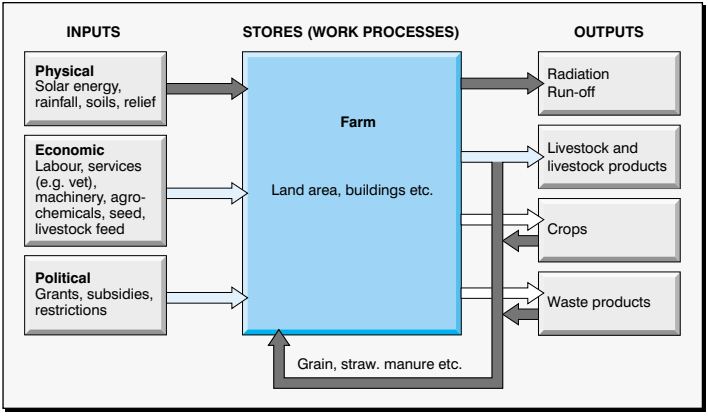
AGRICULTURE (1)

- **Agriculture** can be thought of as a **system** with **inputs**, **processes** and **outputs**. The system can range from an individual farm up to a regional, national or international scale.
- The inputs are **physical**, **economic** and **political**. Agricultural processes happen on a farm. The outputs are products such as crops and livestock. Government grants and subsidies are increasingly important in farming.



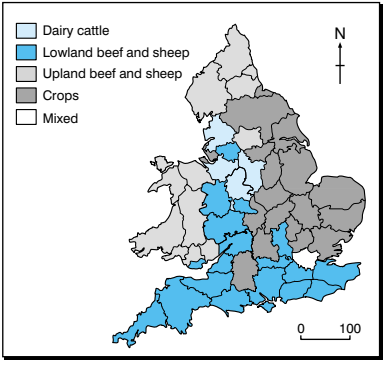
The farm system

Types of agriculture

- Farming can be classified as **commercial**, **subsistence**, **intensive**, and **extensive**.
- Subsistence farms produce sufficient outputs only for the farmer's family and unlike commercial farms they do not produce a surplus for sale. In intensive farming the yields are high because of high inputs of labour, capital or agro-chemicals. Extensive farming produces low output per area, even if output per worker is high. It is practised where land is plentiful and relatively cheap.

AGRICULTURE (2)

- **Pastoral** farming dominates the north and west of the British Isles. **Arable** farming is abundant in the south and east. This pattern reflects the difference in climate, relief and soils. In eastern and South-east England low precipitation and warm summers favour crops. The high precipitation in the west is ideal for grass growing, and hence cattle and sheep rearing.



Farming distribution in England and Wales, 1995

- **East Anglia** practises commercial arable farming producing wheat, sugar beet, potatoes and other vegetables. The summer temperatures of 15–20 °C encourage ripening. The precipitation is low enough to discourage fungal diseases and the summer maximum swells the crops ready for harvesting. The harsh winters break up the soil and kill pests.
- **Economies of scale** have produced **agribusinesses**. Farms have merged and field sizes have increased through the removal of hedges. **Agro-chemicals** are bought in bulk.
- **South-west England** practises dairy farming and market gardening. The North Atlantic Drift deters frosts. The growing season is long and crops are ready for market earlier than the rest of the UK.
- **Extensive sheep farming** is the most important form of agriculture in the uplands of Wales and Scotland. While many areas still depend on rough grazing, fertiliser use improves much of the pasture. Farming is heavily dependent on subsidies in these areas.

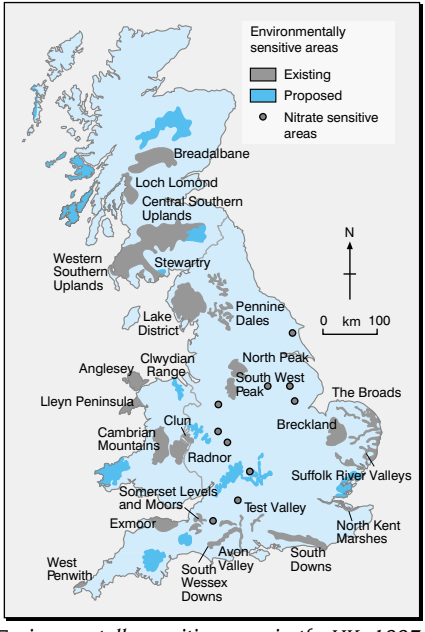
Types of agriculture (cont.)

- **Shifting agriculture** is the traditional farming method in tropical rainforests. It is a form of subsistence farming, often combined with hunting and gathering. Shifting cultivators avoid the problem of poor soils by making temporary forest clearings. Initially crop yields are good. However, cropping and heavy rainfall soon reduce soil fertility, so the farmers move on. Shifting agriculture is **sustainable** providing the population is not too high.
- In semi-arid areas **extensive nomadic herding** takes place. The quality of the grazing is poor, so animals are moved to new grazing lands following the seasonal rains. Lack of water and poor pasture mean a large area is needed to support each animal.
- **Intensive horticulture** is both labour and capital intensive. High-value crops such as fruit, vegetables and flowers are produced. There is a reliance on advanced technology and scientific research. **Cooperatives** provide growers with credit for materials and expensive machinery. They also help to process and market the products.
- Increasingly farming in Europe is dominated by the **Common Agricultural Policy (CAP)**. The success of farming depends as much on CAP as on environmental factors. CAP aims to provide farmers with a guaranteed income. Surplus produce is bought up when prices do not reach a minimum target price. Farming in marginal areas receives grants and subsidies. Money is also available for modernisation, **diversification** and **conservation**. Farmers are paid to '**set-aside**' land to reduce overproduction

Environmental issues

- Increased food production has harmed the environment. Hedgerow removal causes wind erosion. Overuse of agro-chemicals has led to **eutrophication** and contamination of water courses. **Biodiversity** has been reduced too.

- In recent years EU policies have tried to balance the needs of farmers with those of conservationists. **Incentives** have been given for replacing hedgerows and woodland.
- The **Green Revolution** is responsible for agricultural change in LEDCs. **High yielding varieties (HYVs)** of crops have increased food production. However, HYVs require expensive irrigation and fertilisers. Farmers need credit if they are to benefit from the Green Revolution.



Environmentally sensitive areas in the UK, 1997

- Rapid population growth in LEDCs has lead to overuse of land. **Overgrazing** and **overcultivation** produces **soil erosion**, **salinisation** and **deforestation**. The destruction of vegetation exposes soil to wind erosion. **Contour ploughing**, **cover crops**, **windbreaks** and **crop rotation** help to conserve soil.

Agriculture (1–4)

1 What is crofting? (1)

2 How can an output become an input in a farming system? (1)

3 Why is 'slash and burn' an appropriate alternative name for shifting agriculture? (1)

4 What are 'economies of scale'? (1)

5 How can the removal of hedgerows increase the danger of soil erosion? (1)

6 What is diversification? (1)

7 What is the effect of eutrophication? (1)

8 What is a quota? (1)

9 How can contour ploughing reduce the danger of soil erosion? (1)

10 What is sustainable agriculture? (1)

11 Name three ways in which an agricultural ecosystem differs from a natural ecosystem. (3)

12 Why can plantation farming be described as a commercial intensive agricultural system? (2)

13 State an advantage and a disadvantage of organic farming (2)

14 Draw a system diagram to show the main features of an extensive ranching system. (3)

SCORE

1 A family run hill farm in the Scottish Highlands. (1)
These survive by government subsidies.

2 Manure and crop waste are good fertilisers. (1)
On commercial farms profits can be reinvested.

3 Clearings are made in the rainforest by cutting down and burning vegetation. (1).

4 Buying and selling in bulk. (1)
This increases a farm's profits by reducing costs.

5 It removes shelter and exposes greater areas to erosion. (1)
This is a particular problem in East Anglia.

6 Where a farm develops other sources of income outside of its agricultural practices. (1) For example, tourist facilities.

7 Ground water supplies become contaminated (1). Algae and bacteria grow, reducing oxygen levels and killing fish.

8 The amount of milk a dairy farmer is allowed to produce. (1)
Quotas were introduced to reduce overproduction when people changed from dairy to vegetable oil products.

9 Ploughing across slopes slows surface run-off. (1)

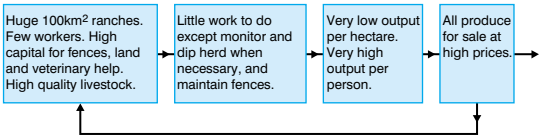
10 Agriculture which does not destroy the environment (1)
Sustainability ensures resources are left for the next generation.

11 An agricultural ecosystem concentrates on a few plants and animals, so there is less biodiversity. (1) It is not sustainable because most outputs are removed from the ecosystem and are not recycled. (1) There are fewer trophic layers. (1)

12 The products are for sale. (1) Labour and capital inputs are high. (1)

13 Organic food is less likely to be harmful to humans because agro-chemicals are not used. (1) It is expensive to produce because outputs are lower. (1)

14



(3)

TOTAL