

Economic Activity of the UK

How sustainable is agriculture
in the UK?



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How sustainable is the primary sector of the UK economy?

1



Key question we will answer:

How sustainable is agriculture in the UK?

Key geographical knowledge we will use: Human Geography

Key geographical concepts we will use: Human Processes, Environmental Impact and Sustainable Development

Key question we will answer:

How sustainable is energy generation in the UK?

Key geographical knowledge we will use: Human Geography

Key geographical concepts we will use: Human Processes, Environmental Impact and Sustainable Development

Key question we will answer:

How sustainable is water use in the UK?

Key geographical knowledge we will use: Human Geography

Key geographical concepts we will use: Human Processes, Environmental Impact and Sustainable Development



Key vocabulary for this lesson:

agriculture – farming and the methods that are used to raise and look after crops and animals

consumption – using up of a resource

efficient – achieving maximum productivity with minimum wasted effort or expense

greenhouse gases – gases in the atmosphere, such as carbon dioxide, which trap heat similar to the glass roof of a greenhouse

sustainable – able to be continued over an extended period with limited consequences

topography – detailed description of the surface features of a region

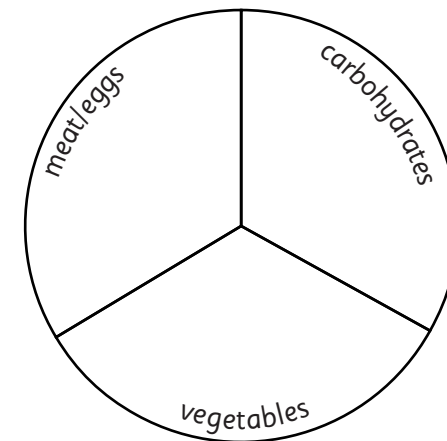


Stop and jot 1

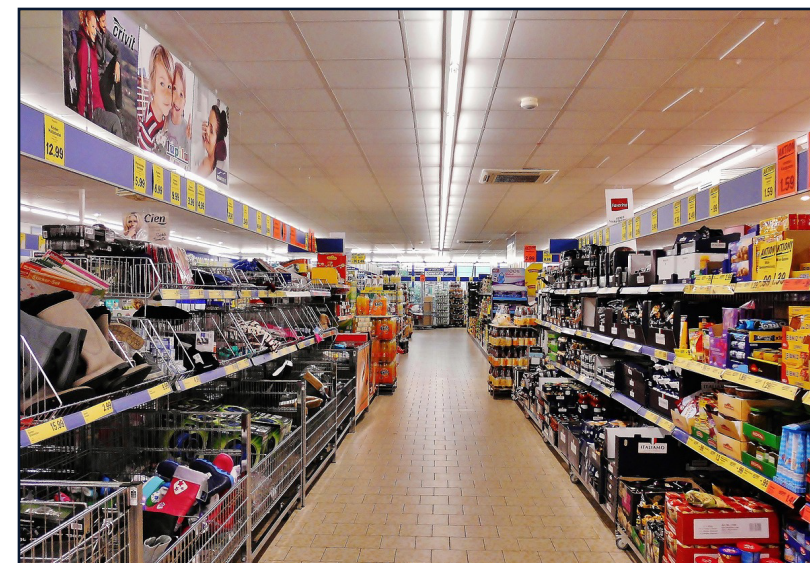


Hi! My name is **Tanvir**. I am an **economist**. I conduct research and collect large amounts of economic and social policy information.

You need to feed your family of four for **three days**! Who in the class can spend the **least amount of money**? Each meal needs one meat/egg, one carbohydrate and one vegetable. Choose your products **wisely** and write them on your stop and jot 1 worksheet.



Meat/eggs	Carbohydrates	Vegetables
Organic Beef (feeds 2 people) - £4		
Chicken (feeds 4 people) - £2		
Barn eggs (feeds 4 people) - £1		
Free range beef (feeds 4 people) - £4		
Organic chicken (feeds 4 people) - £5		
Organic eggs (feeds 2 people) - £2		
Free range chicken (feeds 2 people) - £2		
Free range eggs (feeds 4 people) - £3		
Beef (feeds 4 people) - £3		
	Rice (feeds 4 people) - £1	
	Pasta (feeds 8 people) - £3	
	Potatoes (feeds 8 people) - £1	
	Bread (feeds 2 people) - £1	
		Peas and sweetcorn (feeds 4 people) - £3
		Carrots (feeds 4 people) - £2
		Broccoli (feeds 2 people) - £2



Let's discuss!



Discuss the **following questions** with your **learning partner** and be ready to **share your feedback** with the class:

- Why do you think some **meat and eggs** were **more expensive**?
- Why would people buy **organic or free range** if it's **more expensive**?

These **questions will be answered** during the rest of the lesson, and we will ask them again at the end to see what you've learned!



What is agriculture?



Hi! My name is **Florence**. I am a **countryside ranger**. As part of my job, I **plan and create habitats** to protect plants, animals and birds.

Agriculture is farming and the methods used to raise and look after crops and animals. It's one of the UK's **major industries**. Farming affects everyone as it helps **feed** the population.

There are **different types of farming**: arable, pastoral, and mixed farming - and different areas are better suited for certain types of farming. This depends on **the weather, the land's topography, and the soil's condition**.

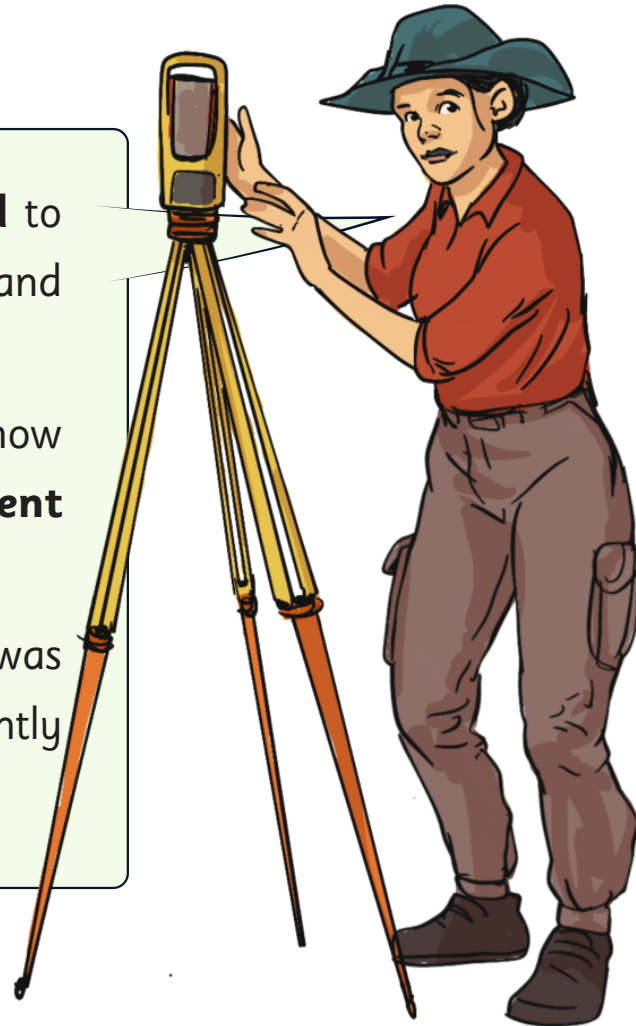


UK consumption

In the **UK**, we use our **own land** to grow food and other products and **land abroad**!

Look at the **map** which shows how much UK land is used for **different purposes**.

In **2021**, **71%** of land in the UK was used for **agriculture**, predominantly **beef and lamb pastures**.



How does farming fit into the UK economy?

Primary sector jobs involve working with raw materials and farming, e.g. a farmer growing wheat.

Secondary sector jobs involve manufacturing, such as factory workers making cereal from the farmer's wheat.

Tertiary sector jobs provide a service to others, e.g. the cashier at the supermarket checkout when you buy the cereal.



Types of farming

Arable farming is when only **crops** are grown on a farm and then **used or sold by farmers** according to their needs. **The southern and eastern UK** has many arable farms.

In **pastoral farming**, only **animals** are reared for products such as **eggs, milk, wool or meat**. **Highland areas** of the UK, which lie in **the northern and western regions**, are most commonly known for pastoral farming. **Dairy farms** are more prevalent on **flatlands**.

Mixed farming combines arable and pastoral farming, meaning **animals and plants are reared and grown**.



Intensive and extensive farming

Based on the **input involved** and **techniques used** in farming, there are **two other subcategories** of farming.

- **Intensive farming** – When a **large amount of production** is done from a small patch of land with the help of **inputs** such as **labour, fertilizers** and **machines**.
- **Extensive farming** – When **small inputs** are involved, but the **land is relatively large**, it is called extensive farming.

Most of the farming in the UK is **intensive**, but some areas of **Scotland** and **Wales** also fall into the **extensive farming subcategory**.



Let's discuss!



Discuss the **questions** below with your **learning partner**, and be ready to **share your feedback** with the class.

- Why do you think the **majority** of UK farming is **intensive**?
- Which **method of farming** do you think is **more environmentally friendly**?



Let's discuss!

answers



Hi! My name is **Lula**. I am an **environmental scientist**. I develop, implement and advise on policies and plans for managing and protecting the environment.

The rise in **intensive farming** has been fuelled by Britain's **demand for cheap meat**, especially chicken. Intensive farming is **more efficient** because animals are fed nutrient-rich feeds that allow them to reach maturity quickly, produce fewer greenhouse gases, and need less land.



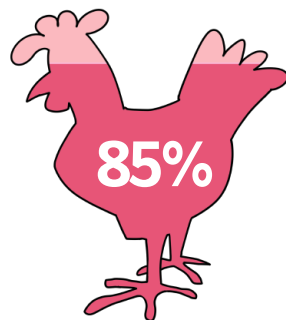
Mega-farms



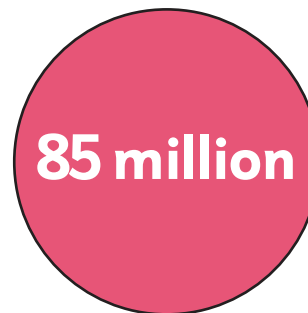
In the **UK**, we have a **large population** for a small island. To meet the demands for food, the UK uses **mega-farms**. A mega-farm is a farm containing **many livestock kept in intensive conditions**.

According to statistics, there are nearly **17 million factory-farmed animals in Herefordshire, 15 million in Shropshire and 12 million in Norfolk**.

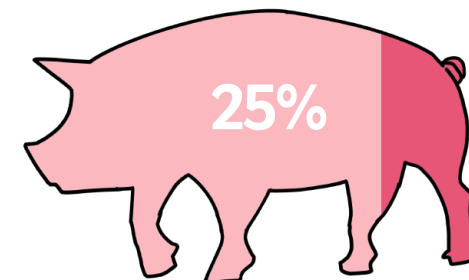
Poultry farms are the **largest mega-farms** in the UK, housing huge birds in **cramped conditions**. Seven out of the ten largest poultry farms in the UK house more than **one million birds, including chickens, ducks and turkeys**.



Over **85%** of the UK's farmed land animals live in factory farms.



More than **80 million** animals are living in intensive farms at any given time.



The number of **mega-farms** in the UK **rose** by more than **25%** in the six years leading up to **2017** and continues to climb.



Why do mega-farms exist?

These massive farms say they exist because people want to buy **cheap meat**, and intensive farming is the only way to **satisfy that demand efficiently**.

Many **national and international companies** benefit greatly from the success of mega-farms.

Those who run intensive farms claim they always maintain **high environmental, hygiene and welfare standards**.

On the following slide, we will look at some of the **positives and negatives of mega-farms**.



Positives and negatives of mega-farms

Large quantities of meat can be produced very quickly.

Growing **free-range and organic** chickens requires **a lot of space**, whereas **intensive farms** typically have about **15 chickens per square metre**, about the area of an A4 sheet of paper per bird.

It keeps the **prices of food cheap** for consumers. Lots of people **cannot afford** to buy organic or free-range food.

Animals bred in mega-farms often **spread and suffer more diseases** and other **health problems** due to the stress of small spaces.

It can happen **all year round**, as multiple ageing cycles can happen on the same farm. This allows **more choice** at the supermarket.

Mega-farming produces **large amounts of manure, carcasses, silage and dirty water**, which hurts the environment.

Mega-farms help local economies by **creating jobs**, e.g. drivers, meat processors and other workers.

Local people say these farms **ruin local communities**, clogging up local roads as they transport food and waste, produce foul smells and have ugly buildings.



Activity 1



We will now **split the class into 'for' or 'against' mega-farms.**

Remember, you may **not get the side you agree with,** but you must make **convincing arguments!**

Use your activity 1 worksheet to help you **plan and be ready to debate** with the other side!

Key Geographical Skills: Human Geography
Key Geographical Concepts: Human Processes, Environmental Impact and Sustainable Development

Activity 1: Plan your debate **against** mega-farms

Choose which **two** of the points below are the **strongest** and tick the boxes.

Growing free-range and organic chickens requires **a lot of space**, whereas intensive farms typically have about **15 chickens per square metre**, about the size of an A4 sheet of paper per bird.

Key Geographical Skills: Human Geography
Key Geographical Concepts: Human Processes, Environmental Impact and Sustainable Development

Activity 1: Plan your debate **for** mega-farms

Choose which **one** of the points below is the **strongest** and tick the box.

Key Geographical Skills: Human Geography
Key Geographical Concepts: Human Processes, Environmental Impact and Sustainable Development

Activity 1: Plan your debate **for** mega-farms

Choose which **two** of the points below are the **strongest** and tick the boxes.

- ☐ Laws regulate mega-farms so they **can't be harmful**.
- ☐ Running costs are **lower** due to housing **large quantities** of animals in smaller spaces.
- ☐ Manure from animals can be used as a **natural fertiliser**.

Think about the **lesson** you've just had and add **two more** of your own ideas:

Look at the **points** below that some of your **'against'** classmates may argue. Write a sentence deciding how you would **oppose their point**:

Planet-damaging **greenhouse gases** are emitted from animals, especially **methane gas from cows**.

Chemicals like **pesticides** are used, which are **not environmentally friendly**.



TIME TO DEBATE!

Share your feedback with the class to convince them that **mega-farms are harmful or beneficial**. When the debate is over, consider as a class which side you all think was **more convincing**.



How sustainable are mega-farms?

Sustainability is when something can be continued over an **extended period with limited consequences**.

With your learning partner, **discuss the following question**:

Do you think the **consequences of mega-farming are worth the benefits**?

Be ready to **share your feedback** with the class before we hear from someone who can see the **global impact of mega-farms**.



How sustainable are mega-farms?

answers



The environmental impact of factory farming is **colossal**. Factory farms (or mega-farms) are a major contributor to **greenhouse gas emissions**, accounting for around **15%** of the world's total. Intensive farms pollute **rivers** and **lakes**, causing **algal blooms** that suffocate water systems and even destroy entire ecosystems. How **shocking** is that?



Let's discuss!



Let's return to the questions we asked at the start of the lesson.

Discuss the **following questions** with your **learning partner**. Be ready to **share your feedback** with the class.

- Why do you think some **meat and eggs** were **more expensive**?
- Why would people buy **organic or free range** if it's **more expensive**?



Let's discuss!

answers

- Why do you think some **meat and eggs** were **more expensive**?

Meat and eggs which are 'organic' or 'free range' are from animals which are farmed more 'extensively' – this means they have more space to roam and are kept in healthier conditions.

Why would people buy **organic or free range** if it's **more expensive**?

People may buy 'organic' or 'free range' as they feel happier knowing the animals are kept in healthier conditions. Remember, this is not an option for everyone as the costs of 'organic' and 'free range' products are much higher!

Are these the **answers you gave at the start of the lesson**, or **have you learned something new**?

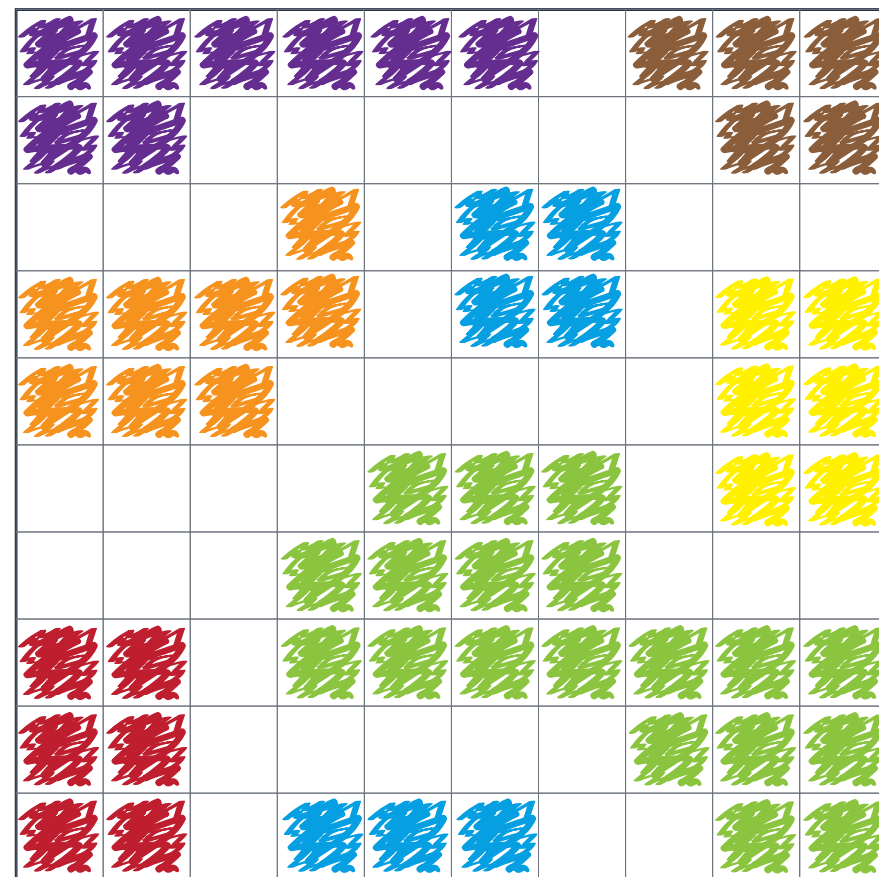


Challenge

Use the **grid** on your challenge worksheet to **design your own farm**.

You must ensure your **animals have enough room**, but make **as much money as possible!**

Check your challenge worksheet for the **rules**.



-  – cow field
-  – milking shed
-  – water
-  – chicken field
-  – storage shed
-  – winter shed
-  – pig field

