

# Food Sources

## Food Provenance The origin of foods and ingredients

<p>Intensive crop farming</p> <p>Plant crops grown in large fields with greenhouses / poly tunnels.</p> <p>Can use <b>hydroponic systems</b> where food is grown in a nutrient solution rather than soil</p> <p><b>Pesticides</b></p> <p>Chemicals sprayed onto crops to</p> <p>Prevent insect / mould attack</p> <p>Prevent weed growth</p> <p>Produce strong plants</p> <p><b>Artificial chemical Fertilisers</b> improve the nutrients in the soil.</p> <p>Most fertilisers contain nitrates which can affect water supplies – pond, lake or river killing plants and fish</p>	<p><b>Organic crop farming</b></p> <p>Food is produced and grown as naturally as it can be under strict standards</p> <p><b>Crop rotation</b> ,different crops are grown on same piece of land each year – so <i>that soil does not have all goodness taken out. Or left fallow</i></p> <p><b>Artificial chemical fertilisers are not allowed</b> to be used. Crops <b>naturally fertilised</b> with manure and compost</p> <p><b>Pesticide</b> use severely restricted, - <i>farmers encourage wild natural predators such as ladybirds and other insects to control pests aphids</i></p> <p>Soil association sets standards for organic production</p>
<p><b>Intensive animal farming</b></p> <p>Livestock reared indoors in large sheds, cages, tanks ( keeps costs down).</p> <p>Often fed on man made foods</p> <p>May pick up diseases so given drugs, antibiotics, growth hormones and other medicines</p> <p>May become stressed because not living in natural environment in large numbers</p>	<p><b>Free range animal farming</b></p> <p><b>Free range does not mean organic</b></p> <p>Animals have access to outdoor space for at least part of the day</p> <p>Animals can graze and look for food. Behave more naturally and have a more varied diet</p> <p>Animals can roam around and less likely to spread diseases</p> <p>Can be at risk from attack by predators eg foxes</p> <p>More land needed that needs to be maintained – can affect cost – free range often more expensive</p>
<p><b>Organic animal farming</b></p> <p>Must not be given drugs, growth hormones. Can be given medicines if ill by vet.</p> <p>Animals live as naturally as possible</p>	<p>Kept in small numbers outside to control the spread of disease</p> <p>Must be fed on organically produced foods</p>

**Grown ingredients:** plants grown for food (herbs, fruits, vegetables, cereals)

**Reared ingredients:** animals, birds and fish specially bred in captivity and brought up to be ready to eat.

**Gathered ingredients:** plant foods gathered from the wild for eating, often called foraging.

**Free range**

Hens have access to outside area

Continuous daytime access open air runs and perches

Each hen has 4m<sup>2</sup> outside space at all times

**Enriched cages**

Cages typically hold 90 hens stacked on top of each other in tiers.

Cages must provide 600cm<sup>2</sup> of usable space per hen

**Barn eggs**

Refers to the barns where hens are kept, plenty of space, perches and nest boxes freedom and space to move around

**Intensive milk production**

Cows stay inside a barn for most of the time but have access to pasture outside.

Cows are fed and milked regularly each day

**Organic farming:** producing food using manure, compost and natural methods of weed, pest and disease control rather than chemicals

### **RSPCA assured**

Foods that have this label mean that the animal has had a good life and it has been treated with compassion and respect.

If there is an RSPCA Assured label on the packaging of eggs, fish and meat, it means the farm and everyone else involved in

the animals' lives including abattoirs

have been assessed and meet the

RSPCA animal welfare standards



### **The Red Tractor Assurance scheme**

All suppliers are inspected and certified to ensure food has been produced to a set of standards from farm to packaging.

**The red tractor can only be used on foods that has been produced, packed, stored and transported to Red Tractor standards**

Independent Food assurance scheme which covers

production standards including

- Safety
- Hygiene
- Environment
- Animal welfare



Genetic modification (GM): a scientific technique that enables a particular characteristic from one plant or animal to be inserted into the genes of another

# **Food Provenance** **The origin of foods and ingredients**

### **FOOD SECURITY**

The aim is to make sure that all people at all times have the ability to buy enough safe, nutritious and affordable high-quality food to meet their dietary needs for an active and healthy life.

At the moment the world is facing problems with food security. Between 2011-2013 842 million people were suffering from continuous hunger. The population continues to grow and the demand for food constantly increases but there is less land and poorer crops due to climate change.

### **THE SUSTAINABILITY OF FOOD PRODUCTION**

In order to ensure food security then food production needs to be sustainable. This means food production should:

- Protect plant and animal diversity so consumers are not just reliant on a few varieties.
- Pay farmers enough to make it worth their while.
- Protect the welfare of farmed and wild species.
- Avoid damaging or wasting natural resources.
- Avoid contributing to climate change.
- Give social benefits to everyone.
- Reduce food waste and food packaging.

### **GM foods (genetically modified)**

Use of technology in food industry is controversial. GM food is produced from plants that have had their genetic make up changed by scientists. Scientists change a plant or animal by adding genetic information from another plant or animal to it.

**The aim is to enable farmers to breed new types of animals or plants that have**

- better resistance to pests / diseases
- faster or stronger growing rates

-a more intense flavour or colour

-a different nutrient profile ( higher in a particular vitamin for example )

### **Possible problems of GM**

- Changing nature, people can be allergic, impact on natural ecology, can't tell they have been modified.
- Can affect animal habitats, use bacteria which can create new disease, pests become resistant

### **Possible Benefits of GM**

- Cheaper
- Can survive poor weather conditions
- Increased storage life after harvest
- Faster growth
- Better resistance to pests
- Can be produced in larger amounts
- Can be developed to have a higher amount of a specific nutrient

## Food Provenance Food and the environment

Meat and dairy production	<p>This product accounts for 18% greenhouse gas emissions. Forests are cleared for livestock and to grow their food.</p> <p>Artificial fertilizers are added to grow livestock food, which pollutes the land and water.</p> <p>Animals belching and producing urine and manure releases greenhouse gases.</p>
Food processing and manufacture	<p>Large quantities of non-renewable energy form fossil fuels are used in food manufacture, they release carbon dioxide which is a greenhouse gas.</p> <p>Refrigeration of food has increased and these release greenhouse gas emissions.</p>
Food packaging	<p>Most food today is packaged and unless this packaging can be recycled it is placed in landfill sites. Fossil fuels are used in the production of plastics. The disposal of packaging especially plastics is difficult if it cannot be recycled.</p>
Transporting food	<p>Many foods we eat in the UK travel a long way to get to our table. Food miles are the distance travelled by a food from point of production to point of consumption. The concern is the fossil fuels used to fuel the planes, trains and boats. Consumers also use their cars to go to the supermarket to purchase food. These all create greenhouse gases.</p> <p>People will often buy locally sources food to reduce their food miles so there is less impact on the environment and it supports local businesses. It is often fresher and tastier.</p>



### Impact on food production of climate change

Food production contributes to global warming and greenhouse gases during its production and distribution. These gases form an insulating layer around the earth which causes it to heat up, this is known as global warming.

Climate change can have a negative affect on the weather conditions which can impact food production and people's lives in the following ways:

Drought—crops fail, animals and fish die and fires kill livestock. This can cause hunger and starvation as well as higher food costs.

Flooding—soil nutrients are washed away and livestock drown. Grown becomes polluted by sewage. This leads to starvation and disease. Food costs can be higher.

Sever gales and hurricanes—damage to crops and livestock. Leads to a food shortage and higher food costs.

Higher or lower temperatures—the growing season of plants changes so pollination may not occur resulting in no fruit. Destruction by pests leads to poor food supply.

Extreme storms—damage crops and kill livestock so reducing the food supply and clean water.

### CARBON FOOTPRINT

This term is used as a measure of the amount of carbon dioxide gas that is released into the atmosphere from food production. It is often shown on

Food packaging so consumers can chose foods with a lower carbon footprint.

The production of meat, dairy foods and eggs has the highest carbon footprint.

The production of fruit, vegetables, nuts, beans and cereals has the lowest carbon footprint.

# Food Provenance

## Food and the environment

### FOOD WASTE

The UK throws away 7 million tonnes of food per year, 4.5 million tonnes of this is still good enough to eat. Food is wasted for a number of reasons including:

- .Poor meal planning so buy more than needed.
- .Serving portion that are too large.
- .Not storing food properly.
- .Misunderstanding the use by and best before dates.
- .Limited knowledge and cooking skills to use left over foods.

The main groups of food that are wasted in order (

- )Fresh vegetables and salads
- )Bread
- )Milk, dairy foods and eggs
- )Home cooked and take aways
- )Fresh fruit
- )Meat and fish



### FOOD WASTE

Misshapen fruit and vegetables are often thrown away but Jamie Oliver and Hugh Fernanley-Whittingstall are encouraging people to buy mis-shaped fruit and vegetables or wonky vegetables. Supermarkets often give food that is just out of date but still safe to eat to homeless or low-income families.

Scientists are developing 'smart' packaging which changes colour when it is starting to go off and is unsafe to eat.

Wasted food has a significant impact on the environment as it is put in landfill sites and produced greenhouse gases like methane as it rots. The local Sainsbury's uses the methane from the landfill site produce the electricity to run its store.

**Climate change:** changes in the earth's temperature that can lead to unusual and extreme weather conditions.

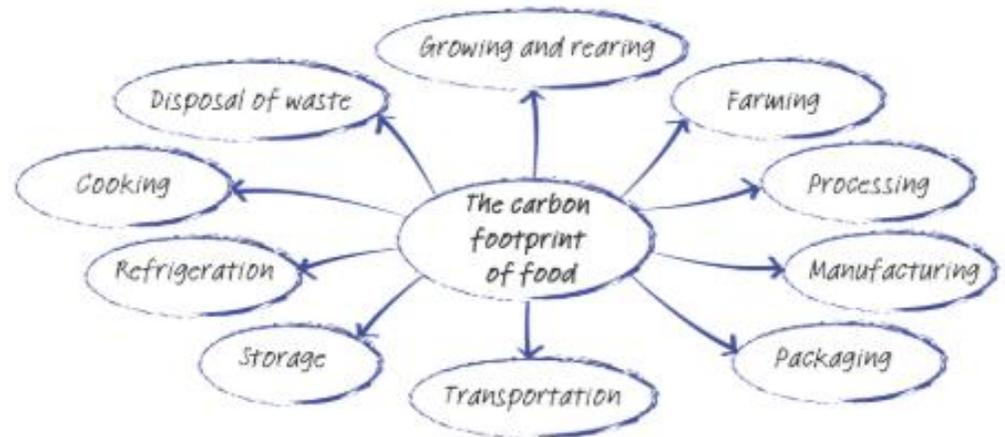
**Greenhouse gases:** form an insulating layer around the earth's atmosphere which traps heat and raises the earth's temperature

### FAIRTRADE

The Fairtrade foundation was established to ensure that farmers and their workers who work in under-developed countries producing food are paid a fair price for their goods. That they are not exploited and paid very little which means they are unable to feed their families.

Over 1.4 million farmers and workers in 1140 producer organisations are in the Fairtrade systems and many Fairtrade products are available to buy in the UK.

Fairtrade products have a logo so people know which ones to buy.



**Non-renewable energy:** energy produced from fossil fuels that cannot be renewed once they are used up.

**Fossil fuels:** fuels such as coal, oil and gas that were created over million of years by fossilized plants and animals.

**Wonky vegetables:** these are sold by the supermarkets to encourage the consumer not to generate more food waste because they will only eat the perfect fruit and vegetables.