

# ecoworld

## BRIEFING SHEETS: FOOD



<b>1) INTRODUCTION. SUSTAINABLE FOOD/ FARMING</b>	<b>2</b>
<b>2) ORGANIC AND GM FOOD</b>	<b>3</b>
<b>3) CLIMATE CHANGE AND FOOD</b>	<b>5</b>
<b>4) OVER FISHING</b>	<b>8</b>
<b>5) FOOD AND HEALTH</b>	<b>8</b>
<b>6) FOOD LABELLING</b>	<b>9</b>
<b>7) FOOD SAFETY</b>	<b>12</b>
<b>8) FOOD MILES</b>	<b>15</b>
<b>9) FAIR TRADE</b>	<b>17</b>
<b>10) FOOD PACKAGING</b>	<b>19</b>
<b>11) FOOD WASTE</b>	<b>21</b>
<b>12) FARMER'S MARKETS / LOCAL SOURCING</b>	<b>23</b>
<b>13) DEFINITIONS</b>	<b>24</b>

## 1) Introduction. Sustainable Food/Farming

Sustainable food is the product of more sustainable farming and food processing that makes for healthier people and planet. <sup>1</sup>

Sustainable food has three elements:

- **Environmental**- we need to use fewer resources, particularly oil, to produce food
- **Social**- We should treat those that produce food better and fairly.
- **Economic**- We should look where our subsidies are going.<sup>2</sup>

### Sustainable Food System

A sustainable food system can be defined as one that attains as many as possible of the following values:

- **Proximity**-food should originate from the closest practicable source.
- **Health**-all food should form part of a balanced diet, with no harmful biological or chemical contaminants.
- **Fairness**- fairly or co-operatively traded between producers, processors, retailers and consumers
- **Non-exploitation**- not exploiting of employees in the food sector in terms of pay and conditions.
- **Environment**- environmentally beneficial or benign in its production.
- **Biodiversity**- maintaining diversity of varieties and breeds across and within localities.
- **Welfare**-high animal welfare standards in production and transport.
- **Accessibility**-this applies geographically and in terms of affordability.
- **Social inclusion**-inclusive of all members of society.
- **Education**- encouraging knowledge and understanding of food and food culture.
- **Truthful**- honesty and transparency throughout the food chain. <sup>3</sup>

### Sustainable Farming/ Agriculture

- Sustainable agriculture involves food production methods that are healthy, do not harm the environment, respect workers, are humane to animals, provide fair wages to farmers, and support farming communities. <sup>4</sup>

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<sup>1</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>2</sup> Sustainable Food @ Work  
<http://www.sustainablefood.com/>

<sup>3</sup> East Anglia Food Link- forging links for a sustainable local food system in the East <http://www.eafl.org.uk/default.asp?topic=SustainableDef>

<sup>4</sup> Sustainable Table : Introduction to Sustainability  
<http://www.sustainabletable.org/intro/>

- Characteristics of sustainable agriculture include: conservation and preservation of the environment, biodiversity, animal welfare, economic viability and social justice.<sup>5</sup>
- Food production can be a sustainable process. We can keep producing food sustainably if farmers and those that grow and produce food do not take more resources to produce food than they give back. Sustainable farms generally avoid the use of fertilisers. This can help avoid pollution and contamination of soil and local streams and rivers.
- Sustainable farms support local economies by providing jobs for members of the community and by purchasing supplies and materials from local businesses.<sup>6</sup> They also try and sell their produce locally which avoids food miles and transport-generated pollution.

## 2) Organic and GM food

### Organic Farming/Food Production

Organic farming is an approach to food production, which makes use of crop rotation, environmental management and good care of domestic animals (animal husbandry) to control pests and diseases.<sup>7</sup>

- Crop rotation is when different crops are planted on the same land area, as opposed to growing the same crop time after time. Growing the same variety of crop every year would eventually strip nutrients from the soil. In fact, soil structure can be improved by growing a variety of different crops.
- Animal husbandry is the branch of agriculture concerned with the care and breeding of domestic animals such as cattle, hogs, sheep, and horses.<sup>8</sup>
- Environmental management is the management and control of the environment and natural resources systems in such a way so as to ensure the sustainability of development efforts over a long-term basis.<sup>9</sup>

### Key elements of organic farming:

- Some key aspects of organic farming and food are: restricted use of artificial fertilisers or pesticides, emphasis on animal welfare, and prevention of ill health, use of conventional veterinary medicines when treating sick animals, emphasis on soil health and maintaining this

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<sup>5</sup> Sustainable Table : Introduction to Sustainability  
<http://www.sustainabletable.org/intro/whatis/>

<sup>6</sup> Sustainable Table : Introduction to Sustainability  
<http://www.sustainabletable.org/intro/comparison>

<sup>7</sup> Food Standards Agency – Organic food  
<http://www.food.gov.uk/foodindustry/farmingfood/organicfood/>

<sup>8</sup> Definition of animal husbandry, <http://www.thefreedictionary.com/animal+husbandry>

<sup>9</sup> Definition of environmental management  
[http://www.google.co.uk/search?hl=en&defl=en&q=define:Environmental+Management&sa=X&oi=glossary\\_definition&ct=title](http://www.google.co.uk/search?hl=en&defl=en&q=define:Environmental+Management&sa=X&oi=glossary_definition&ct=title)

through application of manure, compost and crop rotation, no use of Genetically Modified Organisms (GMOs) on their products allowed.<sup>10</sup>

- Organic farming enhances soil structures, conserves water and ensures the conservation and sustainable use of biodiversity. It does this by using natural fertilisers such as manure and compost. These do not pollute nearby waterways or damage crops to the same extent that artificial fertilisers would.

### Characteristics of Organic Food

- All food sold as 'organic' must be produced according to European laws on organic production and farmers and processors must be certified by an approved organization<sup>11</sup>
- Every organic food product needs to gain certification from one of the six UK Certification bodies. This certification can be found on a food label to identify it as genuinely organic.<sup>12</sup>



13

- Labels on food sold as 'organic' must indicate the organic certification body that the processor or packer is registered with. Manufacturers of organic food are permitted to use specific non-organic ingredients provided that organic ingredients make up at least 95% of the food.<sup>14</sup>

### What are GM Foods?

- A genetically modified food is a food product containing some quantity of any genetically modified organism (GMO) as an ingredient. A GMO is a product which has been altered in its genetic makeup through artificial means.<sup>15</sup>

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<sup>10</sup> Food Standards Agency – Organic food

<http://www.food.gov.uk/foodindustry/farmingfood/organicfood>

<sup>11</sup> Food Standards Agency – Organic food

<http://www.food.gov.uk/foodindustry/farmingfood/organicfood>

<sup>12</sup> British Nutrition Foundation

<http://www.nutrition.org.uk/home.asp?siteId=43&sectionId=432&subSectionId=323...>

<sup>13</sup> Organic labels

[http://www.direct.gov.uk/en/Environmentandgreenerliving/Greenershopping/DG\\_064866](http://www.direct.gov.uk/en/Environmentandgreenerliving/Greenershopping/DG_064866)

<sup>14</sup> Food Standards Agency – Organic food

<http://www.food.gov.uk/foodindustry/farmingfood/organicfood>

<sup>15</sup> Google, GMO definition

<http://www.google.co.uk/search?hl=en&q=define%3AGMO&btnG=Search&meta=>

## Advantages

- GM food intends to increase yields and profits.<sup>16</sup> With GM foods, we can produce more food, like rice, and feed the world's starving people. Food could also be cheaper because there would be more of it.
- Some scientists argue GM technology is the future of food. They say plants can be bred to fight off weeds and pests, so crops are never spoiled.<sup>17</sup>

## Disadvantages

- Many lobby groups such as Greenpeace International have expressed concern about GM foods. They believe that genetically engineering the food we eat is an inherently risky process. Current understanding of genetics is extremely limited and scientists do not know the long-term effects of releasing these organisms into the environment and people's diets.<sup>18</sup>
- It is believed that growing GM crops may also threaten wildlife and habitats depending on how the crop has been altered. Some modifications to crops may produce stronger and better produce but this may be at the expense of local wildlife. This is because it is unknown what the effects may be of introducing new and very different crops into the countryside. Wildlife will live amongst and feed off these new crops and this could be potentially harmful to them. The long-term effect of growing GM foods on the local environment is still being investigated.

## 3) Climate change and Food

- Food security has been defined as access by all people at all times to enough food for an active, healthy life.<sup>19</sup> Therefore, global warming may result in detrimental effects on food supply and security, especially in developing countries.<sup>20</sup>
- Agriculture is very dependent on climate so any significant change in climate on a global scale impacts the world's food supply.<sup>21</sup>

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<sup>16</sup> Who Cares About GM Foods?, Passion for Health

<http://www.passionforhealth.org/who-cares-about-gm-foods>

<sup>17</sup> CBBC Newsround. GM Foods

[http://news.bbc.co.uk/cbbcnews/hi/find\\_out/guides/tech/gm\\_foods/newsid\\_1746000/1746938.stm](http://news.bbc.co.uk/cbbcnews/hi/find_out/guides/tech/gm_foods/newsid_1746000/1746938.stm)

<sup>18</sup> Greenpeace. GM Foods.

<http://www.greenpeace.org/international/campaigns/genetic-engineering/food>

<sup>19</sup> Climate change and food security – Climate.org

<http://www.climate.org/topics/agricul/index.shtml>

<sup>20</sup> Climate change and food security – Climate.org

<http://www.climate.org/topics/agricul/index.shtml>

<sup>21</sup> Climate change and Food Security, <http://www.climate.org/topics/agricul/index.shtml>

## Effects of Climate Change on Food

- Altered weather patterns can increase crop vulnerabilities to infection, pest infestations and choking weeds. This will not only decrease yields of crops, but also force farmers to apply harmful and expensive pesticides and herbicides.<sup>22</sup>
- Most researchers believe that higher temperatures and droughts caused by climate change will depress crop yields in many places in the coming decades.<sup>23</sup>

## Climate Change and Fish Stocks

- Climate change is warming oceans, rivers and lakes and threatening fish stocks already under pressure from over fishing, pollution and habitat loss according to environmentalist group WWF.<sup>24</sup>
- The decline in numbers of fish could have a devastating impact on human populations especially in poorer countries that rely on fish for protein.<sup>25</sup>

## The effects of food on Climate Change

Producing, transporting and consuming food makes up nearly a third of our contribution to climate change and contributes to other environmental problems.<sup>26</sup> Friends of The Earth reported that if the impact of imports is included, around a third of the EU's greenhouse gas emissions come from food and drink. Every part of the food industry produces emissions e.g. spraying fields with fertiliser, transportation of food, drink and even refrigeration.<sup>27</sup>

Food grown in heated greenhouses or transported by air uses a lot of energy. Production of meat and dairy has a much bigger effect on climate change and other environmental impacts than most grains, pulses and outdoor fruit and vegetables.<sup>28</sup> (see example below)

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<sup>22</sup> Climate change and food security – Climate.org

<http://www.cliamte.org/topics/agricul/index.shtml>

<sup>23</sup> Climate change warning over food production- earth- 26 April 2005- New Scientist

<http://www.newscientist.com/article.ns?id=dn7310>

<sup>24</sup> Climate change threatens world fish stocks test

[http://www.ezilon.com/information/article\\_13867.shtml](http://www.ezilon.com/information/article_13867.shtml)

<sup>25</sup> Climate change threatens world fish stocks test

[http://www.ezilon.com/information/article\\_13867.shtml](http://www.ezilon.com/information/article_13867.shtml)

<sup>26</sup> Greener food and drink :a quick guide: Directgov – Environment and greener living

<http://www.direct.gov.uk/en/environmentandgreenerliving/Greenerfoodanddrink/DG>

<sup>27</sup> Exposed: Food's impact on climate

[changehttp://www.foe.co.uk/campaigns/real\\_food/news/2007/november/food\\_climate\\_change.html](http://www.foe.co.uk/campaigns/real_food/news/2007/november/food_climate_change.html)

<sup>28</sup> Greener food and drink :a quick guide: Directgov – Environment and greener living

<http://www.direct.gov.uk/en/environmentandgreenerliving/Greenerfoodanddrink/DG>

**Example-** Meat and dairy production has a huge impact on climate change. It is estimated to be responsible for 18 per cent of global emissions <sup>29</sup>

There are three main reasons for this:

- It is a major driver of deforestation to create pasture and to grow feed;
- Huge amounts of fertiliser are used to grow the animal feed;
- The animals themselves release high levels of greenhouse gases by enteric fermentation - i.e. belching and passing wind.<sup>30</sup>

Parts of Africa are becoming drier and more prone to drought as greenhouse gases fuel global warming. Harvests are deteriorating and livestock are dying which worsen food shortages.<sup>31</sup>

- It is believed that countries such as Africa will most feel the effects of drought and desertification under climate change, and will experience continued food shortages.<sup>32</sup>

### **Flooding in the UK 2007**

- WWF believe that it is impossible to say whether climate change has led to flooding in the UK, for example the specific floods of the Summer of 2007 that affected the UK quite badly.
- However it is clear that climate change will increase the risk of severe weather events, and therefore it will potentially increase the risk of further serious flooding in the future.<sup>33</sup>
- A BBC News report described how many farmers' livelihoods have been devastated across the UK by the June and July floods of 2007. This has the potential to have a knock on effect on the rest of the UK in the form of food shortages and raised prices.<sup>34</sup>
- Staple food items, including fresh vegetables and salad, were also in short supply because supermarket lorries were unable to make deliveries.<sup>35</sup>

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<sup>29</sup> Livestock's Long Shadow, FAO, 2006,

[www.virtualcentre.org/en/library/key\\_pub/longshad/a0701e/A0701E00.pdf](http://www.virtualcentre.org/en/library/key_pub/longshad/a0701e/A0701E00.pdf)

<sup>30</sup> Briefing- Food and Climate Change 2007. Friends of the Earth

[www.foe.org.uk](http://www.foe.org.uk)

<sup>31</sup> One in six countries facing food shortage, Special reports, Guardian Unlimited.

<http://www.guardian.co.uk/climatechange/story/0,12374,1517831,00.html>

<sup>32</sup> One in six countries facing food shortage, Special reports, Guardian Unlimited.

<http://www.guardian.co.uk/climatechange/story/0,12374,1517831,00.html>

<sup>33</sup> WWF- UK Statement on Summer Floods 2007

[http://www.wwf.org.uk/news/n\\_0000004193.asp](http://www.wwf.org.uk/news/n_0000004193.asp)

<sup>34</sup> BBC NEWS, Floods spell crisis for farming, <http://news.bbc.co.uk/1/hi/uk/6917253.stm>

<sup>35</sup> Times online, Looting, panic buying and a water shortage

<http://www.timesonline.co.uk/tol/news/uk/article2120922.ece>

## 4) Over fishing

This is an example of a food activity that is unsustainable. Over fishing occurs when fishing activities reduce fish stocks below a reasonable or 'acceptable' level.<sup>36</sup> This is when too many fish are taken out of our rivers, lakes and oceans. It then gets to the stage whereby fish stocks are too low in these rivers for the fish to survive at an acceptable level.

According to WWF and the Food and Agriculture Organisation for the UN (FAO) State of World Fisheries and Aquaculture report (SOFIA) over 70 per cent of fish stocks are either fully exploited or over-exploited.<sup>37</sup>

Various species of fish are at dangerously low level with many facing the threat of extinction. It appears that our demand for and consumption of fish has become so great that our fisheries and oceans cannot provide us with these high levels.

In 2007, stocks of North Sea cod reached a historic low of 37,400 tonnes. Major conservation efforts including cuts in landing quotas have resulted in a 52% recovery in 2010 with an estimated stock of 54,200 tonnes. However, this figure is still well below previous figures - for example 250,000 tonnes in the 1970s.

The MSC is a registered charity seeking to find solutions to the global problem of over fishing. They provide an accreditation (their logo) where sustainable fishing practices have occurred.<sup>38</sup>

## 5) Food and health

Sustainability is not just about protecting the environment it is about looking after our economy and society also. In order to have a happy and prosperous society that has a good quality of life, it is important that we look after our health.

In today's society the links between what we eat and our health are commonly discussed in the media. Our food, lifestyle and general health are all related and when we make bad food or lifestyle choices it affects our health and well-being.

In Northern Ireland there is a growing problem of obesity in children as well as heart disease, diabetes, some cancers and other serious illnesses amongst all age groups. Many of these illnesses and diseases can be prevented by

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<sup>36</sup> Overfishing. <http://en.wikipedia.org/wiki/Overfishing>

<sup>37</sup> WWF Marine and coastal ecosystems facts and key issues. <http://www.wwf.org.uk/researcher/issues/livingseas/000000020.asp> and  
FAO report on The State of World Fisheries and Aquaculture (SOFIA)  
[http://www.fao.org/sof/sofia/index\\_en.htm](http://www.fao.org/sof/sofia/index_en.htm)

<sup>38</sup> Marine Stewardship Council.kids website.  
[http://www.fishandkids.org/show\\_staff.php?id=64&master=staffroom&page=staffroom&id=64](http://www.fishandkids.org/show_staff.php?id=64&master=staffroom&page=staffroom&id=64)

eating a balanced and healthy diet. It is particularly important to do this from a young age right the way through to later life.

A balanced diet consists of:

- fruit and vegetables (5 portions a day)
- bread, other cereals and potatoes
- Meat, fish and alternatives
- Milk and dairy
- Fatty and sugary foods ( consume in moderation) and;
- Plenty of fluids particularly water ( 6-8 glasses a day)

## 6) Food labelling

- Falsely describing, advertising or presenting food is an offence. Correct food labelling means consumers can confidently choose and purchase according to their particular requirements, this might be for diet and health, personal taste and preferences or cost.
- They want to be able to make comparisons with similar products, knowing the information on the label is correct.<sup>39</sup>  
The Food Standards Agency's annual consumer surveys continue to show that people are concerned about the nutritional quality and safety of their food.<sup>40</sup>

### The Importance of Food Labelling

- Food labelling is important because it allows consumers to make informed healthy food choices. They provide information on nutritional values; ingredients and calorie counts which help consumers make decisions on their diets.<sup>41</sup>
- The need for food labelling is to ensure that food produced, distributed or marketed meets the highest standards of food safety and hygiene reasonably available and to ensure that food complies with legal requirements.<sup>42</sup>  
Food labelling information is important in deciding if a food is safe to eat. Food with incorrect food allergy information would not be safe for someone who is allergic to that food.<sup>43</sup>

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<sup>39</sup> Food Standards Agency- Labelling Rules <http://www.food.gov.uk/foodlabelling/ull/>

<sup>40</sup> Food Standards Agency 2007 <http://www.food.gov.uk/science/surveys/foodsafetynutrition-diet/>

<sup>41</sup> Deciphering Food labels, Food labels In formation, [http://www.kidshealth.org/parent/nutrition\\_fit/nutrition/food\\_labels.html](http://www.kidshealth.org/parent/nutrition_fit/nutrition/food_labels.html)

<sup>42</sup> Food Safety Authority of Ireland, About FSAI, <http://www.fsai.ie/about/index.asp>

<sup>43</sup> Food standards Agency, Allergy leaflet <http://www.food.gov.uk/multimedia/pdfs/allergyleaflet.pdf>

## The Role of the Food Standards Agency (and Labelling)

- Part of the Food Standards Agency's role is to help prevent mislabelling or mis-description of foods. <sup>44</sup>
- The FSA has an extensive programme of surveillance devoted to food authenticity where they carry out ad hoc checks on foods. <sup>45</sup>
- The FSA is concerned not only with the food we eat but also packaging and labelling <sup>46</sup>

## Mis-Leading Labels

- Food labelling is strictly governed by law and manufacturers can't just say what they like on labels. For example, a food can't claim to be 'reduced calorie' unless it is much lower in calories than the usual version. <sup>47</sup>
- The pictures on packets and labels must not be misleading. Raspberry yoghurt that gets its flavour from artificial flavouring, and not from fruit, is not allowed to have a picture of raspberries on the pot. <sup>48</sup>
- If food is mis-described, not only is the consumer being deceived, but it can also create unfair competition with the honest manufacturer or trader. <sup>49</sup>

## Common information on Food Labels

**Best before date:** The best before date is the date until which the foodstuff can reasonably be expected to retain its optimum condition. 'Best before' dates are usually used on foods that last longer, such as frozen, dried or canned foods. It should be safe to eat food after the 'best before' date, but the food will no longer be at its best. After this date, the food might begin to lose its flavour and texture. <sup>50</sup>

**Use by date:** This is the key date in terms of safety. You will usually find a 'use by' date on food that goes off quickly, such as meat, fish, milk, soft cheese and packet salads. The use by date is a warning that the food should no longer be consumed or sold once the given date is passed. <sup>51</sup>

**Shelf life:** The period of time within which any food can be reasonably expected to retain its specific properties if properly stored. <sup>52</sup>

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<sup>44</sup> Food Standards Agency- Labelling Rules <http://www.food.gov.uk/foodlabelling/ull/>

<sup>45</sup> Food Standards Agency- Labelling Rules <http://www.food.gov.uk/foodlabelling/ull/>

<sup>46</sup> Food Standards Agency – Food Labelling <http://www.food.gov.uk/foodlabelling/>

<sup>47</sup> Food Standards Agency, Food labels, Know the rules, <http://www.eatwell.gov.uk/foodlabels/knowtherules/>

<sup>48</sup> Food Standards Agency, Food labels, Know the rules, <http://www.eatwell.gov.uk/foodlabels/knowtherules/>

<sup>49</sup> Food Standards Agency- Labelling Rules <http://www.food.gov.uk/foodlabelling/ull/>

<sup>50</sup> Food Standards Agency- Food Labels More informed choices <http://www.food.gov.uk/multimedia/pdfs/foodlabels1007.pdf>

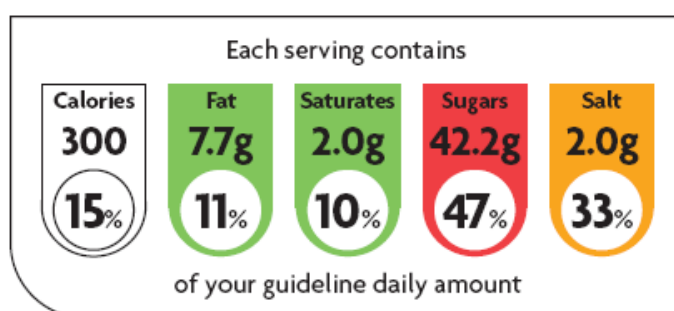
<sup>51</sup> Food Standards Agency- Food Labels. More informed choices- 'Always read the label' <http://www.food.gov.uk/multimedia/pdfs/foodlabels1007.pdf>

<sup>52</sup> Food Safety Authority of Ireland, A-Z Index, [http://www.fsai.ie/az.asp#use\\_by](http://www.fsai.ie/az.asp#use_by)

'Display until' and 'sell by' dates are instructions for shop staff to tell them when they should take a product off the shelves.<sup>53</sup>

**Storage Instructions-** It's also important to follow any storage instructions given on food labels, otherwise the food might not last until the 'use by' date. Usually food with a 'use by' date needs to be kept in the fridge.

**Traffic light labelling** is a method of helping consumers identify how healthy some food products are before they purchase them. With traffic light colours, you can see at a glance if the food you're looking at has high, medium or low amounts of fat, saturated fat, sugars and salt in 100g of the food. In addition to the traffic light colours, you can also see the amount of these nutrients that are present in a portion or serving of the food.<sup>54</sup>



55

Red represents high content, amber represents medium and green represents low. You will also see the number of grams of fat, saturated fat, salt and sugars in what the manufacturer or retailer suggests as a 'serving' of the food. So, if you see a red light on the front of the pack, you know the food is high in something we should be trying to cut down on.<sup>56</sup>

The traffic light colours will make it easier for you to compare products at a glance. If the label tells you how much of the nutrient is in a portion, this can also help you to compare products. You might be surprised how much difference there can be between similar products.<sup>57</sup>

<sup>53</sup> Food Standards Agency, <http://www.eatwell.gov.uk/asksam/foodlabels/asksamlabelterms/#A220019>

<sup>54</sup> Food Standards Agency, Traffic Light Labelling, <http://www.eatwell.gov.uk/foodlabels/trafficlights/>

<sup>55</sup> Front of Pack Traffic Light Signpost Labelling - Technical Guidance <http://www.food.gov.uk/multimedia/pdfs/frontofpackguidance2.pdf>

<sup>56</sup> Food Standards Agency, Traffic Light Labelling, <http://www.eatwell.gov.uk/foodlabels/trafficlights/>

<sup>57</sup> Food Standards Agency, Traffic Light Labelling, <http://www.eatwell.gov.uk/foodlabels/trafficlights/>

## 7) Food Safety

Over the past few decades there have been a number of issues which have raised safety concerns about our food e.g. the salmonella outbreak in the late 1980's, BSE and Bird Flu. Governments have introduced tighter controls on food production following these scares and they have a role to keep consumers informed about the safety of their food. Food hygiene regulations are in force in all food outlets and anywhere that food is produced or processed. There has also been increased pressure to ensure that foods are labelled correctly.

It is imperative that we handle, store and cook food properly to ensure that it is safe to eat and will not cause us food poisoning or other illness.

### Did you know that?

An estimated one in ten people suffer from food poisoning every year!

### Food preparation

The areas where food is prepared must be kept clean and tidy at all times. Worktops and chopping boards as well as all utensils that touch food, should always be washed in warm, soapy water (or alternatively in the dishwasher). If they aren't properly cleaned, bacteria could spread from them onto the food that we are about to eat, and make us ill. This is what is known as cross contamination.

It is important that we never put ready-to-eat food, such as salad, bread or fruit, on a worktop or chopping board that has been touched by raw meat, unless you have washed it thoroughly first.

### Personal hygiene and food preparation

It is very easy for our hands to carry germs and for these to spread around our kitchen whilst we are touching or lifting things. We should always wash our hands before starting to prepare any food, after going to the toilet, after touching pets, after handling raw food, and particularly if we have been in contact with any dirty surface, for example a bin.

### Cooking Food

To test if food has been properly cooked, check that it is 'piping hot' all the way through. This means that it is hot enough for steam to come out.

Some foods change colour when they are cooked. Looking at colour is useful for checking meat. When cooking burgers, sausages, poultry, pork, and

kebabs it is advised to cut into the middle of the meat to ensure that there is no pink areas of the meat still remaining.

When cooking a chicken it can be pierced with a skewer or knife to check that the juices are running clear. If they are a different colour especially pink or red, they are not properly cooked.

### **Food Storage**

Some foods will have to be kept in the fridge to stop bacteria from growing on them. For example; dairy products, cooked foods, many ready to eat foods.

Any food item that says keep refrigerated on the label will generally go off if it is not stored in these cool conditions so it is imperative that these instructions are followed. On most food labels there will be storage instructions. This guidance should be followed as it will protect the food from spoiling as well as the consumer. The Food Standards Agency (FSA) suggests that any food shouldn't really be left out of the fridge for any more than two hours.<sup>58</sup> All cooked and leftover food should be cooled quickly and properly before being covered and placed into the fridge.

It is vitally important that food is put in the correct place in the fridge and covered if in an open container. This will prevent germs from raw foods contaminating foods that are ready to eat or cooked.

The diagram below shows where different types of food should be placed in your fridge. It was produced by the Food Standards Agency and Safefood.

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<sup>58</sup> Food Standards Agency. Eat well website.  
<http://www.eatwell.gov.uk/keepingfoodsafestoring/#cat301168>



59

### Classroom Activity

Make a long list of different foods that you may find in a typical fridge. Pupils can decide which shelf is best to put each food on and the reasons for this.

### Food Additives

Food additives are substances which can preserve or enhance many qualities of the food item. There are many different varieties of additives; the most common of these are probably preservatives, colours and flavours. Additives may be used to maintain the unique flavour of the product, improve its appearance or to enhance the flavour. They are usually given 'E' numbers for example E108 would stand for a yellow food colouring that has been added to the product.

<sup>59</sup> Food Standards Agency and Safefood

## Preservatives

Preservatives are substances that can stop or slow down the growth of micro-organisms or bacteria on food which can lead to the item going bad. For example many types of bread contain preservatives to keep them fresher for longer and to ensure that mould doesn't appear so soon on them. Some people have safety concerns about the addition of preservatives in food as they believe that they are unnatural and may be harmful to their health. Generally most preservatives are as close to natural ingredients as possible and don't pose a danger.

## Colours

Colours may be added to make the product look more attractive or to replace the colours that are lost in the processing of the food.

## Flavours

These are added to the product to make it smell and taste better. An example of a natural flavouring that has been used for centuries is salt. Increasingly, various chemicals are used to create flavourings which have caused concern for many people.

## 8) Food Miles

### What are food miles?

- Food miles are the total distance in miles a food item is transported from field to plate including travel to and from processor and retailer. It shows us the environmental impact of food. Food now accounts for nearly 30 per cent of goods transported on our roads.<sup>60</sup>
- The rise in food miles has led to increases in the environmental, social and economic burdens associated with transport.<sup>61</sup> The direct social, environmental, and economic costs of food transport are estimated at over £9 billion each year.<sup>62</sup>
- Because of the way the food processing industry works, ingredients travel around the country from factory to factory before they make their way to the shops. Another reason for mounting food miles is comparative labour costs. For example, some British fish is now sent to China (where labour costs are much lower) for processing, and then sent back to the UK to be sold.<sup>63</sup>

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<sup>60</sup> Food miles definition- [http://www.bbc.co.uk/food/food\\_matters/foodmiles.shtml](http://www.bbc.co.uk/food/food_matters/foodmiles.shtml)

<sup>61</sup> Food miles and sustainability <http://www.i-sis.org.uk/FMAS.php>

<sup>62</sup> Food Miles and Sustainability <http://www.i-sis.org.uk/FMAS.php>

<sup>63</sup> BBC – Food – Food matters – Food miles  
[http://www.bbc.co.uk/food/food\\_matters/foodmiles.shtml](http://www.bbc.co.uk/food/food_matters/foodmiles.shtml)

### Classroom discussion

Work out how many miles this is from Britain to china and the whole way back again. Discuss what you think are the benefits and drawbacks of this sending fish away to be processed.

### The Importance of reducing food miles

By reducing food miles we are benefitting from:

- eating fresher, more locally produced food
- supporting local and regional producers and
- it helps cut down on CO<sub>2</sub> emissions.<sup>64</sup>
- Transport of food by air had the highest CO<sub>2</sub> emissions per tonne compared to any other mode of transport.<sup>65</sup>
- Food should be produced as near to the point of consumption as possible.<sup>66</sup> This in turn helps to reduce our Carbon Footprint.

### Off-Setting the harmful effects of food miles

- The concept of food miles also includes waste, which must be transported from your home to a landfill site. Buying food with as little as packaging as possible and composting waste can make a difference.<sup>67</sup>
- Throwing less food away produces less methane and reduces other harmful environmental impacts from producing, packaging and transporting food.<sup>68</sup>

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<sup>64</sup> 10 ways to reduce food miles at EcoStreet- Raising Green consciousness since 2002  
<http://ecostreet.com/blog/sustainable-lifestyle/2007/05/22/10-ways-to-reduce-food-miles/>

<sup>65</sup> Food miles and sustainability <http://www.i-sis.org.uk/FMAS.php>

<sup>66</sup> East Anglia Food Link- forging links for a sustainable local food system in the East <http://www.eafl.org.uk/default.asp?topic=LocalFood>

<sup>67</sup> BBC – Food – Food matters – Food miles  
[http://www.bbc.co.uk/food/food\\_matters/foodmiles.shtml](http://www.bbc.co.uk/food/food_matters/foodmiles.shtml)

<sup>68</sup> Greener food and drink :a quick guide: Directgov – Environment and greener living  
<http://www.direct.gov.uk/en/environmentandgreenerliving/Greenerfoodanddrink/DG>

## 9) Fair Trade

- Fair trade is an alternative approach to conventional international trade. The Fairtrade mark on the goods you buy guarantees a fairer deal for workers in developing countries.
- It is a trading partnership which aims at sustainable development for excluded and disadvantaged producers. It seeks to do this by providing better trading conditions, raising awareness and campaigning.<sup>69</sup>
- Fairtrade is about better prices, decent working conditions, local sustainability, and fair terms of trade for farmers and workers in the developing world. By requiring companies to pay above market prices, Fairtrade addresses the injustices of conventional trade, which traditionally discriminates against the poorest, weakest producers.<sup>70</sup>
- The goal of Fair trade organisations is to benefit the artisans they work with, not maximise profits.<sup>71</sup>



Look for this Mark on Fairtrade Products

### **Benefits of Fair Trade to Producers, Workers and their families**

Worldwide, the Fairtrade Labeling Organisation (FLO) is working with 800 000 producers, workers and their dependents in fifty countries. For these people, Fairtrade means:

- Fair prices and fair wages
- Decent working conditions
- Improved health and safety standards
- Security of long-term contracts

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<sup>69</sup> UNISON the public service union- Campaigns  
<http://www.unison.org.uk/campaigns/fairtrade.asp>

<sup>70</sup> Fairtrade, About Fairtrade, Frequently asked questions  
[http://www.fairtrade.org.uk/about\\_faq.htm](http://www.fairtrade.org.uk/about_faq.htm)

<sup>71</sup> Fair trade facts [http://www.fairtradefederation.org/ab\\_facts.html](http://www.fairtradefederation.org/ab_facts.html)

- Respect for people, e.g. new opportunities for women and children
- Environmental improvements, emphasising sustainable production
- More control over their own lives, through participating in democratic organizations<sup>72</sup>

### **Fair Trade and Equality**

- Fairtrade also promotes development opportunities for disadvantaged producers, especially women and indigenous people, and seeks to protect children from exploitation in the production process.<sup>73</sup> Fair trade organisations respect the UN Convention on the Rights of the Child ensuring that the production process does not adversely affect their well being, security, educational requirements and need for play.<sup>74</sup>

### **Fair trade and the Consumer**

- With Fairtrade, consumer power matters. Because of this, the Fair-trade movement is committed to raising awareness among consumers of the negative effects of international trade. This means that if consumers are well informed they may use their purchasing power positively.<sup>75</sup>
- Fair trade lets consumers assist and empower others with their buying power. Fair trade allows consumers to initiate a chain of events that will positively impact the lives of poor coffee farmers and their families.<sup>76</sup>

### **Fair trade and Farmers**

- Fair trade increases annual incomes of small farmers. Fair trade helps put in place tools for self-sufficiency. Fair trade assists small farmers to stay out of high interest debt. Fair Trade helps build infrastructure in farmers community.<sup>77</sup>
- In developing countries farmers' livelihoods are very much dependant on crop prices. These are known to fluctuate significantly. Fairtrade guarantees the farmers a long-term fixed price for their crop, whatever the ups and downs of the world market.<sup>78</sup>

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<sup>72</sup> Educational packs - Fair trade in your school

<http://www.fairtrade.org.uk/downloads/pdf/fairtradeinyourschool.pdf>

<sup>73</sup> UNISON the public service union- Campaigns

<http://www.unison.org.uk/campaigns/fairtrade.asp>

<sup>74</sup> IFAT – The 10 Standards of Fair Trade

[http://www.ifat.org/index.php?option=com\\_content&task&id=2&Itemid=14](http://www.ifat.org/index.php?option=com_content&task&id=2&Itemid=14)

<sup>75</sup> UNISON the public service union- Campaigns

<http://www.unison.org.uk/campaigns/fairtrade.asp>

<sup>76</sup> Facts about Fairtrade <http://www.cooperativecoffee.com/resources/papers/facts.html>

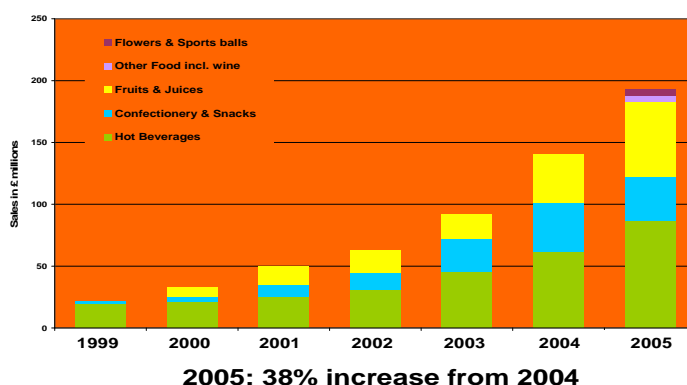
<sup>77</sup> Facts about Fairtrade <http://www.cooperativecoffee.com/resources/papers/facts.html>

<sup>78</sup> BBC – Food – Food matters – Fairtrade [http://www.bbc.co.uk/food/food\\_matters/fairtrade.shtml](http://www.bbc.co.uk/food/food_matters/fairtrade.shtml)

## Fairtrade and the environment

- Fair Trade Organisations encourage producers to engage in environmentally friendly practices which manage and use local resources sustainably.<sup>79</sup>
- Fairtrade farmers use organic methods, which are more environmentally friendly and sustainable.
- The diagram below shows how sales of products carrying the Fairtrade Mark in 2005 topped £195m.

**UK Sales of Fairtrade Products 1999 - 2005**



### Classroom discussion

What does this graph tell you? What questions do you have about this graph? / What further questions does this graph generate? Pupils could research Fair trade products and try to understand why sales of certain products are rising.

## 10) Food Packaging

Packaging can be defined as the materials used for the containment, protection, handling, delivery and presentation of goods.<sup>80</sup>

Food packaging protects and preserves food. A range of materials can be used for packaging, some of which are environmentally friendly. Labels carry information for the consumer. Some of this information is required by law.

### Packaging is necessary for:

- to preserve the product

<sup>79</sup> Facts about Fairtrade <http://www.cooperativecoffee.com/resources/papers/facts.html>

<sup>80</sup> recycling packaging <http://www.wasteonline.org.uk/resources/InformationSheets/Packaging.htm>

- to protect the product from damage
- to make the product more attractive to the consumer
- to make it easier to transport the product

<http://www.bbc.co.uk/schools/gcsebitesize/design/foodtech/packaginglabellingrev1.shtml>

### Increase in food Packaging

- Higher living standards in the western world have led to more consumer goods and to the transportation of exotic foods over long distances requiring a large amount of packaging to maintain freshness.<sup>81</sup>
- Higher demand for convenience food could be another reason for an increase in food packaging. Convenience food generally tends to have more packaging. A contributing factor to this may be that there are increases in working families (i.e. the head/ heads of the household both working) along with the increase in fridge and freezer ownership, which has led to a higher demand for convenience food.<sup>82</sup>

### Advantages, disadvantages and uses of different types of materials.

Material	Advantages	Disadvantages	Uses
Glass	<ul style="list-style-type: none"> <li>- reusable</li> <li>- heat-resistant</li> <li>- recyclable</li> <li>- keeps shape</li> <li>- low cost</li> </ul>	<ul style="list-style-type: none"> <li>- fragile</li> <li>- safety issues</li> <li>- heavy</li> </ul>	<ul style="list-style-type: none"> <li>- baby foods</li> <li>- salad cream</li> <li>- pickles</li> </ul>
Metal	<ul style="list-style-type: none"> <li>- recyclable</li> <li>- lightweight</li> <li>- impermeable</li> <li>- withstands heat</li> <li>- processing</li> </ul>	<ul style="list-style-type: none"> <li>- may react with food</li> </ul>	<ul style="list-style-type: none"> <li>- soup cans</li> <li>- take-away containers</li> <li>- bottle tops</li> </ul>
Card/paper	<ul style="list-style-type: none"> <li>- easy to print on</li> <li>- cheap to produce</li> <li>- biodegradable</li> <li>- recyclable</li> <li>- can be moulded</li> <li>- can be coated</li> <li>- lightweight</li> </ul>	<ul style="list-style-type: none"> <li>- not water-resistant</li> <li>- easily damaged</li> </ul>	<ul style="list-style-type: none"> <li>- fruit-juice cartons</li> <li>- egg boxes</li> </ul>

<sup>81</sup> Food packaging – TheSite.org

<http://www.thesite.org.uk/healthandwellbeing/fitnessanddiet/food/foodpackaging>

<sup>82</sup> Food packaging – TheSite.org

<http://www.thesite.org.uk/healthandwellbeing/fitnessanddiet/food/foodpackaging>

<http://www.bbc.co.uk/schools/gcsebitesize/design/foodtech/packaginglabellingrev2.shtml>

### **Biodegradable packaging/ Recyclable packaging**

- Some supermarkets are switching to bio-degradable packaging, In some countries they charge customers for using plastic carrier bags which help reduce the amount used.
- Even though plastics can be recycled, there are fewer recycling collection facilities than for other types of packaging waste.<sup>83</sup>
- Some re-uses of food packaging may be perfectly safe, but often packaging is designed to be used once with one food and it might not be safe to use it with others, or for a different purpose.<sup>84</sup>

### **Minimising packaging/ changing attitudes**

- Where packaging is necessary, it should be the absolute minimum required to ensure the product's physical integrity and cleanliness.<sup>85</sup>
- To achieve a change towards more suitable packaging, it's not just the packaging that requires alterations but also our lifestyles and habits of consumption.<sup>86</sup>

## **11) Food Waste**

New research by WRAP (Waste & Resources Action Programme) shows that for every three bags of shopping we bring home, we effectively put one straight in the bin.

Most of this food could have been eaten. This has a £8 billion Retail Value.<sup>87</sup>

### **Environmental impact of food waste**

Most of the food thrown away ends up in landfill where it produces methane, a highly potent greenhouse gas. As well as this thought must be given to all the embedded energy used to produce, package, transport and deliver the food to our homes which produces the equivalent of at least 15 million tonnes of carbon dioxide every year.<sup>88</sup>

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<sup>83</sup> Recycling Packaging <http://www.wasteonline.org.uk/resources/InformationSheets/Packaging.htm>

<sup>84</sup> Food Standards Agency- Re-using packaging

<http://www.food.gov.uk/foodlabelling/packagingbranch/packagingreuse>

<sup>85</sup> PACKAGING POLICY POLICIES ZERO WASTE IDEAS

<http://www.sovereignty.org.uk/features/articles/manifesto07/package.html>

<sup>86</sup> Food packaging – TheSite.org

<http://www.thesite.org.uk/healthandwellbeing/fitnessanddiet/food/foodpackaging>

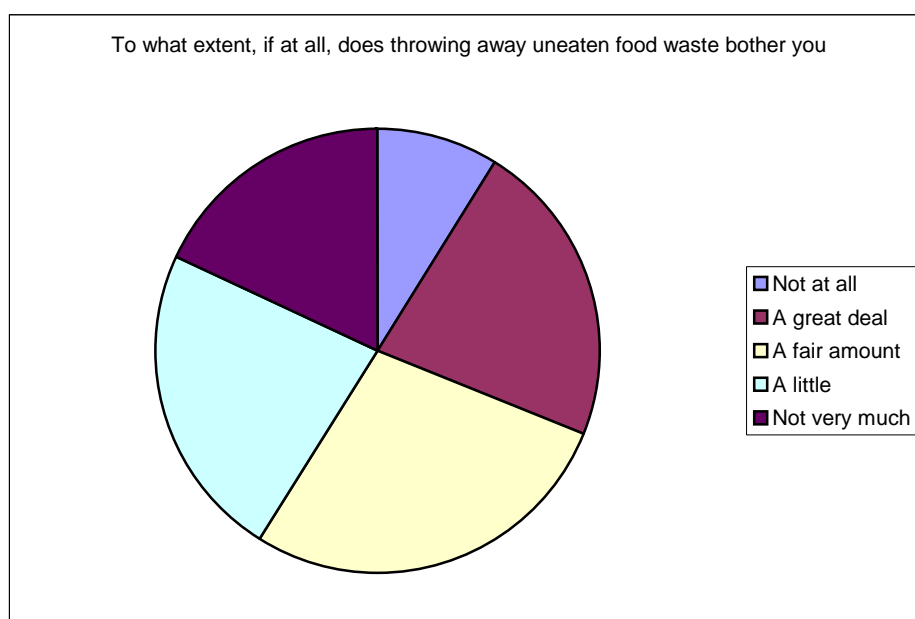
<sup>87</sup> 'A third of what we buy is thrown away.' Daily Telegraph. 14-Jan-2007(Pg 13)

<sup>88</sup> [http://www.wrap.org.uk/downloads/WRAP\\_Food\\_Waste\\_Minimisation\\_adp\\_-\\_27\\_10\\_071.d17caa17.pdf](http://www.wrap.org.uk/downloads/WRAP_Food_Waste_Minimisation_adp_-_27_10_071.d17caa17.pdf)

WRAP believes that action on food waste would deliver big environment benefits. It is believed that if the amount of food being wasted was stopped then it would have the same environmental impact as taking 1 in 5 cars of the UK roads<sup>89</sup>

**Reasons why we throw food out include:**

- Buying more than we need/ unplanned shopping
- Not enough storage room in our fridge and cupboards
- Items going past their use-by date
- Family members' dislike of food
- Informal or unplanned eating patterns leading to food being bought which isn't needed.<sup>90</sup>



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**Classroom discussion**

The diagram above is a survey that WRAP carried out on members of the public. Pupils could complete the same survey amongst their class/ school and create a pie chart as above with their results input into it. Pupils could then compare and contrast the two charts.

<sup>89</sup> [http://www.wrap.org.uk/wrap\\_corporate/news/food\\_waste\\_is.html](http://www.wrap.org.uk/wrap_corporate/news/food_waste_is.html)

<sup>90</sup> New WRAP Research Reveals Extent of Food Waste in the UK – Waste & Resources...

[http://www.wrap\\_corporate/news/new\\_wrap\\_2.html](http://www.wrap_corporate/news/new_wrap_2.html)

<sup>91</sup> [http://www.wrap.org.uk/downloads/Julia\\_Falcon.04ee9acc.pdf](http://www.wrap.org.uk/downloads/Julia_Falcon.04ee9acc.pdf)

**Composting** is a way of recycling food waste such as fruit scraps, vegetable peelings and tea-bags, whilst using composted food waste to enhance plants / shrubs in your garden. This can be done either by using small compost piles in your garden or alternatively by purchasing a Home Composter (see below) from your local council. These are available from Belfast City Council at a cost of £5 for those living in that particular council district. Prices/ availability may vary dependant on council area.<sup>92</sup>



## 12) Farmer's Markets / Local Sourcing

- **Farmers Markets-** These are stalls run by farmers and skilled food producers of the local area who are selling their own produce.
- Customers can often find out information about the produce by asking the farmer/ stallholder. This could build up trust and could lead to longer term trade.
- This direct selling can be beneficial for smaller scale, organic and environmentally -aware farmers and producers. As they may get a bigger cut than they would by selling through a shop or wholesaler.<sup>93</sup>
- These markets have an emphasis on fresh produce which is in season. They also can have a larger variety than you may find in supermarkets and aim to use the minimum amount of packaging.<sup>94</sup>
- **Local sourcing** can be defined as people choosing to buy in season produce from local farmers rather than non-seasonal produce that originated on the other side of the world or far away.
- Buying local produce saves energy and fuel from being used on freezing, refrigerating and transporting food thousands of kilometres.<sup>95</sup>
- The aim of local sourcing is to nurture the link between consumer and producer.<sup>96</sup>

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<sup>92</sup>Belfast City Council- Waste management

<http://www.belfastcity.gov.uk/wastecollections/composter.asp?menuitem=composter>

<sup>93</sup> BBC – Food- Food matters – Farmer's markets

[http://www.bbc.co.uk/food/food\\_matters/farmersmarkets.shtml](http://www.bbc.co.uk/food/food_matters/farmersmarkets.shtml)

<sup>94</sup> BBC – Food- Food matters – Farmer's markets

[http://www.bbc.co.uk/food/food\\_matters/farmersmarkets.shtml](http://www.bbc.co.uk/food/food_matters/farmersmarkets.shtml)

<sup>95</sup> [www.consumer.vic.gov.au](http://www.consumer.vic.gov.au)

[http://66.102.9.104/search?q=cache:BYHJ1HvT75YJ:www.consumer.vic.gov.au/CA256902000FE154/Lookup/CAV\\_Publications\\_Consumer\\_Stuff/%24file/ConsumingPlanetEarthPart5\(SectionC\).pdf+www.consumer.vic.gov.au+section+c+the+real+cost+of+food&hl=en&ct=clnk&cd=1&gl=uk](http://66.102.9.104/search?q=cache:BYHJ1HvT75YJ:www.consumer.vic.gov.au/CA256902000FE154/Lookup/CAV_Publications_Consumer_Stuff/%24file/ConsumingPlanetEarthPart5(SectionC).pdf+www.consumer.vic.gov.au+section+c+the+real+cost+of+food&hl=en&ct=clnk&cd=1&gl=uk)

### 13) Definitions

- **Food miles** can be defined as the distance food travels between production and consumption – ‘from plough to plate’. (Also called ‘Farm to Fork’).<sup>97</sup>
- **Food security** exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.<sup>98</sup>
- **GM Free** means avoiding all Genetically Modified ingredients, derivatives, enzymes and processes in the manufacture of the products.<sup>99</sup>
- **Local food sourcing** is food both produced and sold within a limited geographic radius but which does not necessarily have any distinctive quality.<sup>100</sup>
- **Organic farming and systems** recognise that our health is directly connected to the food we eat and, ultimately, the health of the soil. Organic farming severely restricts the use of artificial chemical fertilisers and pesticides. Instead; organic farmers rely on developing a healthy, fertile soil and growing a mixture of crops. Animals are reared without the routine use of drugs, antibiotics and wormers common in intensive livestock farming. They place strong emphasis on protecting the environment.<sup>101</sup>
- **Pesticides** are chemicals used to kill pests such as insects (insecticides), plants (herbicides) fungi (fungicides) and worms (nematicides). About 25,000 tonnes of pesticide are sprayed over the British countryside each year.<sup>102 103</sup>
- **A Vegetable Box Scheme** is an initiative where customers receive fresh, local, organic fruit and vegetables straight to their door from local producers. This helps lower the carbon foot print of food miles and reduces rubbish as minimal packaging is used. They are delivered in cardboard boxes as opposed to plastic bags.<sup>104</sup>

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<sup>96</sup> BBC – Food- Food matters – Farmer’s markets

[http://www.bbc.co.uk/food/food\\_matters/slowfood.shtml](http://www.bbc.co.uk/food/food_matters/slowfood.shtml)

<sup>97</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>98</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>99</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>100</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>101</sup> Soil association.

<http://www.soilassociation.org/web/sa/saweb.nsf/4042794258a20f4280256a680046b77e/70abf5cbc2343cb580256fa800365736!OpenDocument>

<sup>102</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>103</sup> Glossary <http://www.sustainablefood.com/guide/glossary.html>

<sup>104</sup> Vegbox, <http://www.vegboxschemes.co.uk/>



- **The food system** is a web of interconnected systems of food production, packaging, distribution and consumption. It also includes their economic, social, cultural and technological support systems and infrastructures.<sup>106</sup>

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<sup>105</sup> [http://www.whiper.com/mame/Riverford\\_vegbox.jpg](http://www.whiper.com/mame/Riverford_vegbox.jpg)

<sup>106</sup> Google, definition of food system  
[http://www.google.co.uk/search?hl=en&defl=en&q=define:food+system&sa=X&oi=glossary\\_definition&ct=title](http://www.google.co.uk/search?hl=en&defl=en&q=define:food+system&sa=X&oi=glossary_definition&ct=title)