WWF for a living planet

Questions and Answers

Food

WWF-UK viewpoint

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Food: Questions and Answers

Q. What is One Planet Food?

A. WWF-UK's One Planet Food strategy runs from 2009-2012 and supports environmental and social justice by safeguarding the natural world, tackling climate change, and changing the way we live in the context of the UK food system. By 2050, we aim to reduce greenhouse gas emissions from the food economy by 70%, eliminate unsustainable impacts on water, and change trading patterns and governance structures so that UK food is making a net positive contribution to WWF priority places, such as the Amazon and Borneo. We will be working on areas such as reducing the impacts of agriculture; sustainable fishing; helping retailers and consumers reduce their impacts through food choices; and reducing meat and dairy consumption.

Q. Why does WWF work on food?

A. WWF's mission is to stop the degradation of the planet's natural environments and to build a future in which humans live in harmony with nature by: conserving biodiversity; ensuring the sustainable use of renewable sources; and reducing pollution and wasteful consumption. The transition to a more sustainable food system will be central to the achievement of this mission.

The world food economy directly accounts for more than a third of global greenhouse gas emissions. These emissions contribute to climate change, one of the greatest threats to global ecosystems and biodiversity. Continued expansion of agricultural land and the intensity of production driven by population growth and increased consumption of livestock products is a major driver behind habitat loss and degradation.

A key initiative that will help WWF to address these impacts is One Planet Future – reducing our impact on the world by moving from lifestyles that would require the resources of three planets to sustain, towards lifestyles that fit within the environmental limits of one planet. Our ecological footprint – a calculation WWF uses to assess our impact on the planet – demonstrates how much land is required to provide us with all the resources we need (food, energy, timber etc.) and how much land is required to absorb our waste (including CO_2).

The UK has about 1% of the world's population but accounts for about 2% of the world food system. Currently, food production and consumption is the single largest component of our footprint in the UK. The food we eat accounts for roughly a third of our environmental impact on the world[1]. A wide range of resources are used for growing crops and animal feed and for raising livestock, as well as for processing, packaging, and distributing food and in travelling to shops to buy the food we eat. WWF is working hard to find ways that we can all reduce our food footprint, such as supporting the international Better Sugarcane Initiative, which tackles the social and environmental impacts of sugarcane production.

[1] Garnett, T (2008), *Cooking up a storm – Food, greenhouse gas emissions and our changing climate* www.fcrn.org.uk/frcnPubs/publications/PDFs/CuaS_web.pdf

1. Food production

Q. What's the answer – organic, vegetarian, Fairtrade or local?

A. As a global environmental organisation, WWF wants to address the impact that our food consumption has across some of the world's unique environments. However, there is no easy solution to this problem. While buying organic, Fairtrade and local can help to reduce the impact of your diet, these remain niche markets which currently have a limited ability to make a difference on a global scale. That's why WWF is putting most resources into working with mainstream growers and buyers to measurably improve the key environmental impacts of conventional food production – impacts such as climate change, water pollution and loss of biodiversity.

Examples of this work include WWF setting up and supporting the Roundtable on Sustainable Palm Oil and the Roundtable on Responsible Soya. Both are multinational partnerships which aim to establish international standards for the production of two of the global commodities that most threaten biodiversity in South-east Asia and Latin America.

For the concerned consumer, it is not always obvious how best to shop to reduce the environmental impact of your diet. WWF advocates:

(1) trying to buy food that is in season in your location whenever possible;
(2) buying food that is certified by an independent third party, such as the Marine Stewardship Council (sea fisheries), the Soil Association (organic), the Rainforest Alliance (protecting vital habitats) or Fairtrade;
(3) telling your retailer about your concerns and asking them to do more to prove, and to communicate, their environmental credentials; and
(4) reducing the quantities of food of animal origin that you consume, as these require far higher inputs of resources than do more plant-based diets.

Q. Should I choose organic?

A. Like for like, organic food has a lower footprint than conventional food because it uses fewer resources (particularly fossil energy) to produce. The methods used result in farm practices which coexist with rather than dominate natural systems, sustain or build soil fertility, minimise damage to the environment, and minimise the use of non-renewable resources. Strict regulations define what organic farmers can and cannot do. Organic farmers cannot grow genetically modified crops, are severely restricted in the use of artificial chemical fertilisers and pesticides and raise livestock without routine use of drugs and antibiotics. The result is food which is GM-free, lower in pesticide residues and has fewer additives. Some people also believe organic food to be tastier and healthier, with higher levels of nutrients such as antioxidants.

However, organic food generally requires more land to produce the same amount of food than intensive systems. Therefore, if organic became the accepted way of producing food there is a possibility that more land would be required to produce sufficient food, resulting in less land being available for biodiversity. Additionally, choosing organic food need not necessarily mean that you are automatically opting for a low food footprint. Choosing organic food out of season means that food has been grown either in heated greenhouses in the UK or abroad, with large amounts of energy used either for heating or transport.

Q. Should I choose vegetarian or vegan?

A. In general, the footprint of meat and dairy products is much higher than that of other food: livestock production uses large amounts of land, water and energy. If you

wish to reduce your footprint, one effective way would be to reduce the amount of meat and dairy produce that you eat.

Q. If everyone in the world were vegetarian we would not need to make sacrifices in other parts of our lives to address climate change and other environmental problems. If this is the case shouldn't we all become vegetarians?
A. WWF is not advocating that everyone becomes vegetarian, but as part of our One Planet Food campaign we will be encouraging people to consider reducing their meat and dairy consumption. It is every individual's right to make their own dietary choices, but with this right comes the responsibility to consider the impact of the choices we make on other people and the environment. In order to do so, it is important that we have as much accurate information as possible about these impacts, and this is why WWF-UK aims to raise awareness of the environmental and social impact of food.

In order to address environmental problems such as climate change at the scale and urgency required, we believe that changes need to be made not only in diet but also other aspects of developed world lifestyles such as travel, and energy use in the home. We do not consider these changes to be sacrifices – sustainable lifestyles should lead to a better quality of life and increased human well-being.

Q. Should I choose Fairtrade?
A. Fairtrade standards have a social goal. They are primarily designed to ensure that disadvantaged producers – small farmers or plantation workers – in the developing world gain more control over their lives and can participate more equitably in global trade. The standards cover issues such as working conditions, fair prices and enabling producers to make decisions for themselves. Environmental conditions are important in Fairtrade, and producers have to implement environmental improvement plans. The use of dangerous chemicals is banned.

While many producers seek to use organic practices, Fairtrade certification does not require them to do so. This is because many of the most disadvantaged farmers cannot meet organic standards, so they won't be able to benefit from the premium prices. Fairtrade does not exclude producers who are unable to meet organic standards, as its priority is towards the most marginalised producers.

Fairtrade products may have travelled many miles to reach the UK. You can minimise the footprint of Fairtrade food by choosing food which has travelled to the UK by ship rather than air. Bananas, tea, coffee, chocolate and sugar can all be efficiently transported by sea.

Q. Should I choose local?
A. Some of the food we eat has travelled huge distances to reach our plate. Family farms, local abattoirs, local food distribution systems and small shops are all disappearing, unable to compete in today's global market. Food miles are a contributor to our food footprint but they are not the largest one.

WWF's work shows that choosing in-season food grown as locally as possible can be a significant step to minimising the environmental impact of your diet. You will also be supporting your local economy, helping to re-create local food networks and the food you eat will be fresher for having travelled less. If possible, you can buy direct from source or from local farmers markets and guarantee your produce is local.

It can be difficult to know where your food has come from as labelling is not always comprehensive, and this raises the issue as to what is 'local' – 5 kilometres, 50 kilometres, within the UK? Retailers and the government could take action to encourage better food labelling and, as a consumer, you can put pressure on your retailer to do this by asking where produce has come from whenever and wherever you shop.

Q. Can changing what I eat help to reduce my impact?

A. WWF's work on food footprints shows that we can significantly reduce our environmental impact by changing the balance of our diet. A healthy diet based on nutritional recommendations – lots of fresh fruit and vegetables, wholegrain products, nuts, seeds and legumes – can benefit both your health and the planet. Reducing your intake of meat and dairy products will also substantially lower your food footprint, as keeping livestock for meat and dairy uses large amounts of land, energy and water. Additionally, always try to buy produce that is local and in-season wherever possible. This should mean that you can source the majority of your food from the UK, so that energy used for transportation and food storage is kept to a minimum. Finally choose food that is largely unprocessed and with as little unnecessary packaging as possible.

Q. Is it true that organic food is worse for the environment because it requires more water to produce?

A. Some organic products require more water to produce than the non-organic equivalent. This is because organic farming has a lower yield for a given area, so the amount of water used per unit yield is higher. This can be an important consideration in areas which are water-stressed or where there is competition between water used for farming and that left in the natural environment for wildlife.

On the other hand, organic farming techniques can help to improve water quality. Pollution from artificial fertilisers and pesticides contributes significantly to the degradation of water resources and ecosystems.

Q. Why is WWF advocating that people reduce their meat and diary consumption?

A. Keeping livestock for meat and dairy uses large amounts of land, energy and water – for grazing, housing and growing grain to be used as animal feed – so the food footprint of livestock is much greater than that for fruit and vegetables. Converting plant material into animal material is very resource-intensive. While a hectare of land can produce up to 155kg of wheat and as much as 400kg of soya, it will only produce on average 20kg of beef. Cows also produce large quantities of methane, a greenhouse gas 23 times more potent than CO_2[2].

Small-scale rearing of livestock can be an efficient way to use poor quality farmland that could not otherwise grow crops. In some cases livestock is an important conservation tool in managing semi-natural habitats like plant and wildlife-rich meadows and pastures. The problem comes when we use crops like wheat and soya to feed animals on an industrial scale, as this is very inefficient. As a consumer, choose meat that has a lower footprint – locally-sourced, naturally-grazed and organic where possible – and consider reducing your meat consumption and using all the cuts of meat from the animal.

[2] Steinfeld H, et al. (2006), *Livestock's Long Shadow*. UN Food and Agriculture Organisation

Q. Why do we import certain foods and export the same amount?

A. In industrialised countries such as the UK, people have come to expect an extensive range of food to be available all year round. Food production, distribution and retailing systems have undergone great change over the past 50 years to make this availability and choice possible; and as a result there are fundamental differences between today's food system and that of 50 years ago. Four developments have led to this situation: the intensification of agriculture; a commitment to free trade; the provision of transport infrastructure and low transport costs; and the emergence of large retailers which increasingly coordinate the production, processing, distribution and marketing of food products. As a result, the food system is now based on complicated supply chains and large volumes of international trade.

Sometimes trade figures can be difficult to understand. For example, in 2005, the UK imported 350,000 tonnes of chicken, while in the same year more than 180,000 tonnes of chicken was exported. However, the way that import and export statistics are collected may mask the fact that actually slightly different products are being imported and exported. For example, we eat more chicken breast in Europe and export chicken legs to South-east Asia where they prefer the darker leg meat.

Q. What kind of food production is best for the environment?

A. All food production causes some disruption to the natural environment. The system best for the environment would be one which produces the nutritious food we need, while minimising our impact in terms of climate change, soil quality, biodiversity, pollution and water use. In practice, this means food production that minimises artificial nitrogen use, maximises organic matter in the soil, maximises the area managed for biodiversity within farming, minimises the area of natural habitat that is converted to food production, minimises use of toxic chemicals and minimises water use, particularly in water-stressed areas.

Q. What kind of food production is best for supporting sustainable livelihoods?

A. The number of people working on farms in the UK has declined by 80% over the last 50 years[3]. Changes to farm practices have replaced skilled labour with agrochemicals and larger machinery, and have been coupled with increased size and simplification of farms and fewer workers employed in agriculture. WWF supports sustainable food production systems that keep people working on the land in safe and remunerative employment, so safeguarding livelihoods and providing security in food production.

If you want to support local farming communities, seek out food produced as close to home as possible, buy at your nearest Farmer's Market, or use a local fruit and vegetable box scheme. Buying organic can help too. Organic farms create more job opportunities because they need more people to manage crops and livestock. Organic farms also tend to be more diverse, which means that they require a correspondingly larger number of people and skills to fulfil a wider range of jobs.

For overseas produce, buying food with the Fairtrade logo ensures that you are supporting the rights of workers in developing countries and that farmers are getting a fair deal for their labour.

[3] Soil Association, *Organic works: providing more jobs through farming and local supply*

Q. What does WWF think about the use of pesticides?
A. Pesticides are chemicals used to kill living things, and include weed killers (herbicides), insecticides and fungicides. Pesticides are applied to control pest species and act by affecting a species directly or by affecting its food or habitat. More than 400 different kinds of pesticide are available for use by non-organic farmers in the UK.

Pesticides are known to affect wildlife and have, for example, been implicated in the decline in farmland birds in recent years. Pesticides affect whole ecosystems, entering watercourses, the soil and the food itself. There are real uncertainties about the long-term effect of pesticides on human health. Pesticides have been linked to cancer, birth defects and the disruption of hormonal systems. Their introduction to the environment has a heavy environmental and economic cost – the removal of pesticides from drinking water is estimated to cost the UK public £1 billion a year.

WWF recommends that the use of pesticides be measured as their total toxicity burden on the environment and that this burden be reduced to as low a level as possible. Farmers should also be given advice – both about the environmental impacts of pesticides and alternative methods of pest control. WWF supports the use of organic farming techniques where natural methods are used to control pests, weeds and disease, thus eliminating dependence on chemical pest control.

Q. How can WWF justify promoting organic food which is more expensive and therefore not affordable by those on low incomes?
A. WWF believes that good food should be available to all, not just those who can afford it. Most of our work on food is targeted at mainstream producers, so that we can influence the vast majority of food purchased by consumers. We work to address the six key environmental impacts of food production – climate change, water pollution, use of water when it is scarce, toxicity, biodiversity loss and soil deterioration. While there are strong arguments for believing that organic food production benefits many of these impacts, WWF does not currently invest significant resources in working on organic food production.

It is true that choosing an organic diet is currently more expensive than opting for non-organic. Organic food costs more to produce because it is more labour intensive, crops are grown less often in the same piece of ground and animals are held at lower stocking densities. The disparity in price, however, masks the fact that non-organic food production has environmental costs that are hidden from the consumer. To remove pesticides from UK drinking water, for example, costs about £1 billion a year. This is not reflected in the cost of the food, but is paid indirectly by the consumer all the same. There are fewer environmental costs with organic production, so you get a more accurate reflection of the real cost of the food you are buying.

If your aim is to reduce your food footprint, you don't have to spend more. Choosing local food that is in-season could well be cheaper, and reducing your meat intake may save money too. There's always an option to grow what food you can. Whether it's in window boxes, containers in a yard, your garden or an allotment, growing your own food is a cheap way to get healthy food to your plate.

Q. Should I buy food that's been grown in heated greenhouses in the UK?
A. Different ways of farming have different footprints and growing summer salads in heated greenhouses in the winter is an inefficient way to feed ourselves because it uses

a lot of energy. Tomatoes grown in Spain in winter have a lower footprint than ones grown in a heated greenhouse in the UK in winter[4].

Q. Does moving to organic/Fairtrade/local have to mean saying goodbye to cheap food?

A. Over the last 50 years, world food production has changed markedly, with a continual push for ever greater intensification of agriculture. During this period, consumer expectations have changed too. We now have access to vast quantities of food from all over the world and expect this to be available all year round and at a cheap price. We spend significantly less of our income on food now than we did 50 years ago, though generally, due to the change in our diets our food footprint has increased.

Not all foods cost the same though, and there is evidence that choosing healthier food is more expensive than an unhealthy diet. Importantly, access to a healthy diet, particularly for low income families, can be far more difficult than getting hold of cheap processed food high in fats, salt and sugar.

To suggest that we need a cheap food policy to tackle this problem is inappropriate. Indeed, a national UK opinion poll soon after the start of the foot and mouth outbreak in 2001 showed that 82% of people across all social groups were willing to pay more for a return to more traditional farming and food production.

A range of policies is needed to make healthy food affordable for all, including initiatives to promote local food production and enhance community food projects, and to raise awareness of what constitutes a healthy diet. As an example, more than £3 billion is spent on supporting UK farmers each year. Much more could be done with this money, as it is in mainland Europe, to create local, distinctive, healthy food economies. One initiative could be to financially support public procurement of healthy food for schools and hospitals that would stimulate growth in local food markets.

Q. Does WWF support eating cloned animals?

A. Based on current evidence WWF adopts a precautionary approach to technologies that involve genetic manipulation including cloned foods.

Cloning is a method of asexually reproducing a genetic copy of an animal. In the technique of somatic cell nuclear transfer – so-called "cloning" – the sperm is not needed. You take an egg and replace its own genetic material with genetic material from the animal you want to clone then place that egg into an animal, which carries it to full term and gives birth to the cloned animal. There are no proven differences between the products from animals produced by sexual reproduction and those from animals produced by cloning.

There aren't millions of cloned animals in the world to study, but there have been major studies on the milk from cloned dairy cattle and on the meat from cloned beef cattle. The evidence to date suggest that the product is safe and that there is no danger from any meat or milk from cloned animals. The Food Standards Agency (FSA) consider

[4] Defra (2005), *The validity of food miles as an indicator of sustainable development*

cloned food to be safe to eat, as do the European Food Standards Agency, and the Food and Drug Administration in the US.[5]

The addition of cloning to breeding programs can help accelerate the breeding process. If you've got one good animal, you're limited to the number of offspring you can produce from it. If you clone it, on the other hand, you can increase the number of offspring, meaning that you can disseminate those desired genes into the population faster.

Yet cloning is less efficient and more expensive than other methods of animal reproduction. We also need to be cautious as overreliance on vulnerable monocultures of genetically identical animals are more vulnerable to a single disease and have the potential to reduce genetic diversity and the ability to adapt to external environmental changes.

WWF sees no evidence that consuming products from healthy clones, or their offspring, poses a food safety risk. There are however animal welfare issues relating to birth complications and abnormalities in offspring. Meat and products from clones and their offspring are considered novel foods and we continue to support the need for these foods to be authorised before being placed on the market.

Q. Does WWF support eating lab-grown meat?

A. WWF supports the concept of cultured meat inasmuch as this would reduce the environmental impact of meat production. One study suggests replacing factory farms with meat labs would create 80% fewer greenhouse gas emissions and use 90% less land and water, as land is not needed to culture the animals or the feed.[6] Cultured meat has the potential to produce a lot more meat in a much shorter space of time and may play a role in addressing current concerns about future food security. Further, the nutritional profile of lab grown meat could, in theory, be 'adjusted' to make it more healthy. Creating the meat in a lab allows for a sanitary environment free of many animal borne diseases such as avian flu and salmonella. It allows researchers to control how much and what kinds of fat are in the meat.

Cultured meat is still a novel food and would need to be regulated for potential health impacts.

[5] http://www.food.gov.uk/news/newsarchive/2010/aug/updateclonedanimals; http://www.efsa.europa.eu/en/ahawtopics/topic/cloning.htm; http://www.fda.gov/AnimalVeterinary/SafetyHealth/AnimalCloning/default.htm

[6] Tuomisto, H. and M. De Mattos. Life cycle assessment of cultured meat production. 7th International Conference on Life Cycle Assessment in the Agri- Food sector. Sep 2010.

2. Genetically modified food

Q. Is it possible to feed a global population of nine billion without resorting to genetically modified (GM) food?

A. Although the world's population has doubled since 1960, so far food production has kept up. But pressures are mounting on the land and water resources we need to feed the planet. The UN estimates that we will need 50% more food to meet the needs of the world's growing population in the next 30 years.[7]

While some people think that GM technology is the answer, WWF has always believed in a strong precautionary approach to this technology. We believe that it is possible to feed a growing world population without genetically modified organisms by altering farming systems, food distribution and consumption habits. The solution to hunger does not lie with a GM technical fix but with changes such as:

- reducing consumption of meat, dairy, grains and soya, which are all resource-intensive;
- creating markets for environmental services and providing farmers with financial incentives to produce food in environmentally-sympathetic ways;
- establishing management of water at the catchment scale and encouraging tradable water rights and equitable decision-making over water allocation;
- encouraging equitable international trade; and
- changing diets so that people consume in-season, unprocessed foods produced as locally as possible.

Q. As an environmental organisation, wouldn't WWF prefer efficient GM to clearing more land for farming?

A. We do not know the unintended side effects of some new genetic modifications in crops, and so WWF chooses to act with a strong precautionary approach to GM technology. There is a need to maximise the efficiency of farming in any area, but efficiency can be achieved by a variety of methods other than GM, such as using land to grow edible crops rather than to raise livestock. However, if it were possible to resolve the serious concerns about the unknown impacts of GM, it could have a role to play in increasing the productivity of cultivated land, thus reducing the pressure for clearing more land for farming.

3. Specific crops

Q. What's the problem with palm oil and what is WWF doing about it?

A. Palm oil is used in a wide range of consumer products, from margarine to lipstick and detergent. Most of the nine million loaves of bread eaten every day in the UK are made in industrial bakeries and contain vegetable fat, often made from palm oil. In countries such as Indonesia and Malaysia, millions of hectares of rainforest are being cleared to plant this crop, destroying the habitat of highly endangered species such as the Asian elephant, the Sumatran tiger and the orang-utan.

WWF is a founder member of the Roundtable on Sustainable Palm Oil (RSPO) which aims to ensure that production and use of palm oil is carried out in a sustainable manner based on economic, social and environmental viability. Ecologically-friendly palm oil plantations must not be established on recently deforested land, should not

[7] FAO, 2008

replace forests of high conservation value, should have management practices that minimise pollution, and must include measures to protect biodiversity such as wildlife and forest corridors. This helps to protect highly endangered species of animals, such as the Asian elephant, which currently faces losing habitat to palm oil plantations.

Q. What is the problem with soya, and what is WWF doing about it?

A. Over 70% of all oils and fats consumed in the world are derived from vegetable crops, and the largest source of vegetable oil is soya.[8] Millions of hectares of South American savannah and rainforest are cleared every year to grow this crop, endangering wildlife such as the jaguar and the toucan, and contributing to climate change. In place of a unique tropical habitat for 130,000 species, vast soy fields are planted, mainly to supply the European market with soya oil for foodstuffs or soya for livestock feed. Large quantities of chemicals are used to maintain the fertility of this intensively-farmed soil and these pollute freshwater supplies and affect the unique range of wildlife in the region. As big soya producers move in to clear forests, small farmers are pushed off their land and deeper into the forest, causing further destruction and usually bankruptcy.

Soya cultivation, just like palm oil, provides an income for millions of people in the tropics, so a boycott is not the solution. Instead, manufacturers and retailers must take responsibility for insisting on tropical oil from producers with sustainable plantations. WWF is involved in establishing global criteria for sustainable soya oil, similar to those used for palm oil. These include creating protected areas in areas of soybean expansion and using zoning to restrict expansion to degraded or abandoned agricultural areas. WWF International is a participating member of the Round Table on Responsible Soy Association.

Q. What is the problem with sugar, and what is WWF doing about it?

A. The full impact that conversion of land to sugar plantations has had on natural environments will never be known, because it happened hundreds of years ago. In all likelihood, many species of animals and plants, unique to the thousands of islands on which sugar was planted, were lost. The cultivation of sugar results in soil erosion and degradation, and uses chemicals to correct the resulting problems. As a consequence, sugar cultivation has an important impact on other ecosystems. For example, siltation from soil erosion clogs coral reefs and seagrass beds, which are important habitats for a wide range of species.

To address the impacts of sugar production, WWF is working on several scales. At the farm level, WWF is encouraging improvements to irrigation systems. Up to 50% of the water used could be saved using a technique called drip irrigation, which also significantly reduces the problem of polluted run-off water.[9] At a European Union level, WWF is advocating preferential access being granted to environmentally sustainable sugar from developing countries. We would also like to see money from the Common Agricultural Policy being used to finance development aid packages linked to raising environmental and labour standards in developing countries.

[8] Vaughan, A (2007), "Fat of the land – The impact of the production and consumption of vegetable oils on people and the environment", *Sustain*

[9] Postel, S. *Last oasis: Facing water scarcity.* New York, Norton, 1997

4. Food miles

Q. Are there any problems with the concept of food miles?

A. The issue of food miles is complex – it is not as simple as it first seems, or as it is often expressed. It is necessary to take into account the entire food cycle to get an accurate picture, from the transport of fertilisers and seeds to the grower, transporting produce to processors and retailers, to transporting the end product to our homes. There are many steps that need to be calculated, which can mean something grown in New Zealand has a lower footprint in the shopping basket that the same product grown in England.

Q. Why not try to always buy locally-produced food where possible?

A. In Africa alone, an estimated 1.5 million people depend on agricultural exports to the UK for a living[10]. To suddenly stop importing food we would be damaging the economic and social structures of many developing countries that we have encouraged to grow food for our plates. This damage would cause significant social problems and could result in widespread ecological damage as communities seek new ways to survive. If the UK were entirely self-sufficient, this would arguably increase the vulnerability of the nation's food supply to bad weather, disease and crop failures. In addition, agricultural inputs such as fertilisers, machinery and energy supplies would continue to be imported.

There are many foods and products, such as coffee, cocoa and bananas that do not grow in the UK but will always be part of a shopping basket. If a food cannot be grown in the UK, we would advocate buying responsibly-sourced foods from other countries, while trying to ensure the majority of food and drink bought is seasonal and local to you.

Q. What is the largest contributor to greenhouse gas emissions in relation to food miles?

A. On average, around 52% of emissions related to food come from people and lorries driving to and from the shops or markets in order to buy or deliver their food and drink.[11] Not buying fresh produce air freighted from Africa will reduce UK total greenhouse gas emissions by less than 0.1%.[12]

Q. How much better from a CO_2 perspective is shipping rather than flying food?

A. Transporting food by ship rather than by air produces much less CO_2. The UK government's figures show that long-haul air transport produces more than 80 times as much carbon dioxide per tonne-kilometre as large bulk carrier sea transport. Shipping is not appropriate for all foods and air freighting food from sunny African areas may be less carbon intensive than trying to produce them in Northern Europe.

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[10] MacGregor, J, Vorley, W (2006), *Fair Miles? The concept of 'food miles' through a sustainable development lens*, London: IIED.

[11] Defra (2005), *The validity of food miles as an indicator of sustainable development*

[12] MacGregor, J, Vorley, W (2006), *Fair Miles? The concept of 'food miles' through a sustainable development lens*, London: IIED.

5. Supermarkets

Q. Is WWF anti-supermarket?
A. No. WWF concentrates its work largely on mainstream food production so that it can influence food bought by the vast majority of consumers. Supermarkets are key to this work, as they are the major vehicle for changing UK food-purchasing habits. They have the power to raise environmental standards with their suppliers. For instance, all major UK supermarkets are now members of the Roundtable on Sustainable Palm Oil (RSPO) and are reviewing their purchasing of palm oil, to ensure that they only stock goods with oil obtained according to new sustainability standards.

Q. Supermarkets demand too much from farmers, which results in a lot of wasted food. What can be done to address this?
A. Millions of tonnes of edible food are dumped into landfill each year, including food rejected for cosmetic reasons, unsold food, and products caught out by changes in the weather. In fact, it is estimated that approximately 30% of all we buy ends up as waste.[13] Retailers are responsible for a large amount of waste along the food chain and can take action by improving logistical planning and forecasting to reduce waste, but we all have a part to play. Start by reducing the amount of food you waste and then try to compost unavoidable food waste. If we meet the government target of recycling and composting 25% of our waste, we could reduce our waste Footprint by as much as 20%.

WWF also supports schemes that aim to offer an alternative to sending food to landfill. For example, FareShare works with major supermarkets to distribute unsold food to the homeless and those on low-incomes.

6. Food labelling

Q. How can eco-labels be trusted and standards maintained when there are so many schemes around?
A. There are a lot of different eco-labels and no statutory body to enforce standards at present. WWF recommends setting up a scheme to monitor eco-labels by devising a system to assess their performance against major farm-level indicators covering health, quality, environmental and social justice issues. Standards can be maintained and improved by setting up multi-stakeholder alliances that investigate and promote locally appropriate better management practices.

The Marine Stewardship Council (MSC) is a good example of a credible food-labelling scheme. The MSC standard rewards environmentally-responsible fisheries management and practices with a distinctive blue product label. Consumers concerned about overfishing and its environmental and social consequences are increasingly able to choose seafood products which have been independently assessed against an environmental standard and labelled to prove it.

Q. Who will be monitoring carbon footprint labelling?
A. Carbon footprint labelling is a new scheme that aims to reduce carbon dioxide emissions related to food production. Goods have a label showing how many grams of CO_2 were emitted during production, from sourcing raw materials, to manufacturing and transporting the products to stores. In order for products to carry the label, companies

[13] WRAP (2008), www.lovefoodhatewaste.org

have to undertake a carbon audit of the supply chains and commit to further CO_2 reductions. The Carbon Trust – a government-funded company – will administer and monitor the label.

7. Seafood

Q. Is any non-MSC fish is all right to eat?
A. Choose MSC-certified fish products whenever you can. Several fisheries around the UK are already MSC-certified, and some big North Sea fisheries are working towards certification. You can find products as diverse as Scottish langoustine and Dover sole. Several major supermarkets have committed to sell nothing but MSC-certified fish in the future, so the choice will expand rapidly over the next few years.

If MSC is not available, WWF recommends you follow these guidelines:

- Diversify! Try different species as alternatives to your traditional choice. More than 50 species are regularly caught in British waters, but we generally eat only five species. Try out new fish recipes to take the pressure off stocks.
- Buy locally-caught fish. This will support the local economy and fishing industry and also helps to ensure your fish is fresh.
- Ask your fishmonger how the fish was caught. Traditional methods such as lines, creeling, setting traps (i.e. lobster pots) and using divers can be better than less selective nets such as trawls. These methods can target fully-grown fish and tend to be better at avoiding other species.
- Get to know your local fishmonger. Let your fishmonger know you are a discerning consumer and that you want to know what you're eating.

Q. Why doesn't MSC address workers rights? How can we ensure that fishermen have sustainable livelihoods?
A. Fishermen and conservationists share a common long-term vision of healthy seas and abundant fish stocks. WWF works with partners in the fishing industry to find new, innovative forms of management that conserve fish stocks, don't harm other marine species, protect the structure and function of marine ecosystems, and support sustainable fisheries and the fishers that depend on them.

Q. What is WWF's position on eating cod?
A. Many North-east Atlantic cod stocks (including UK stocks from the North Sea, the Irish Sea and the west of Scotland) are currently overfished. These populations are severely depleted and are currently well below minimum safe levels, yet fishing pressure remains high. Other cod stocks, however, are much healthier. The best option is to ask your fishmonger for MSC-certified Pacific cod, caught by longline with minimal environmental impact. You could also choose cod from better-managed fisheries, such as those off Iceland and the Barents Sea. Indeed, many UK supermarkets now only stock cod from these sources. Alternatively, why not try something different? Saithe and pollack make good substitutes for cod, and stocks of these species are under less pressure.

Q. Should I buy farmed or wild-caught fish?
A. The fish farming industry has a number of significant challenges to overcome if it is to become more sustainable. For example, catching fish to feed to farmed fish can seriously deplete wild stocks. WWF is working with the industry to address this challenge, and part of the solution is for the industry to use fish from MSC sources.

While organically farmed fish generally has a lower environmental impact, problems still remain with captive fish, as parasites escape into wild populations. Buying MSC-certified wild fish will always be better than buying farmed fish, because of escapes, genetic contamination, chemical use, disease risks and animal rights concerns.

Q. What is the Aquaculture Stewardship Council?
A Aquaculture is the fastest growing food production system in the world, and if done responsibly, is a viable way to meet the huge demand for seafood. WWF is working with a huge number of different stakeholders to create standards that will measurably reduce the key impacts associated with the industry.

Since the process to set up the ASC began in 2004, a significant amount of funding has been invested in engaging stakeholders in the process and ensuring that the dialogue is not industry-based. More than 35 aquaculture dialogue meetings have been held in the world's most prominent aquaculture regions. This includes shrimp meetings in Asia and South America last year, and salmon meetings in Scotland. The dialogues are open to anyone and WWF encourages all stakeholders, not just industry players, to engage with them.

8. Eating out

Q. What choices can I make to minimise my impact when eating out?
A. You could select to eat out at a restaurant that advertises its environmental credentials. There are schemes being set up to promote such initiatives across the country. You could also ask the restaurant owner what they are doing to reduce the environmental and social impact of your meal. When choosing from the menu, opt for vegetarian alternatives and produce that is in-season.

9. Water

Q. Why is water such an important topic?
A. Freshwater resources have been unsustainably managed throughout most of the world since the spread of modern agriculture, resulting in the depletion of rivers and groundwater aquifers, the long-term build up of pollutants, and the degradation of wetland habitats and ecosystems. Global pressure on freshwater resources is increasing, mainly through rising global population and income levels, which have led to an increase in demand for water-intensive products such as meat, sugar and cotton. Food production has a profound effect on freshwater resources and habitats through both direct abstraction for irrigation and the effect of agricultural land cover on hydrological cycles. Climate change is exacerbating the problem by, in some areas, dramatically changing precipitation patterns, leading to increased flooding and droughts, and by melting glaciers, which are the source of many of the world's great river systems.

Q. What is a water footprint?
A. This is a measure of the total water used to produce a product or service, and is made up of direct and indirect water use throughout the value chain (from the growing or extraction of raw materials through production to the end consumption and disposal by the consumer). For example, to produce 1kg of beef, 10-20,000 litres of water are needed, and one cup of unsweetened black coffee requires 140 litres[14].

[14] Chapagain, A, Orr, S. 2008, UK Water Footprint: the impact of the UK's food and fibre consumption on global resources

WWF has and is undertaking a considerable amount of work on water footprint, which, like the ecological footprint, is a great way of communicating how resources are used throughout the food supply chain. However, it is important that water footprint is set in the context of where and when the water has been taken from the environment, and therefore the impact that a product has.

Q. Is there a region that WWF is most concerned about?
A. The Mediterranean region is of particular interest: we know UK food consumption has a direct impact on the Mediterranean, which is a key water-scarce area; and agriculture has a major impact on this WWF priority place through water use. In particular, consumption of vegetables, fruit and olives has been highlighted.

10. Wine

Q. Does wine have any environmental impacts?
A. The UK is the largest importer of wine in the European Union. In 2004 we imported 1.8 billion bottles of wine.[15] Consumption on this scale does have significant environmental impacts.

The main negative impacts of the agricultural stage of wine production are soil erosion, compaction of soil, water pollution and impacts on biodiversity through the use of fertilisers and pesticides. As with other forms of agriculture, WWF advocates an approach that minimises nitrogen use, maximises organic matter, maximises the area managed for biodiversity, minimises use of toxic chemicals and minimises water use. A wide range of organically-produced wines are now available.

Bottling of wine also has significant impacts on the environment, because the production of glass bottles uses a lot of energy. Apart from recycling, one initiative underway is to encourage the use of lightweight bottles which use fewer raw materials and less energy to produce.

Choice of wine stopper also has an impact on the environment. Cork stoppers are processed from bark harvested sustainably from cork oak woodlands that have existed in the western Mediterranean for thousands of years. Using cork stoppers is vital in maintaining the economic value of cork oak forests, which support a wealth of biodiversity. The increase in use of alternative wine stoppers (such as plastic stoppers and screwtops) reduces the economic value of cork forests, therefore leading to conversion to other uses, abandonment, degradation, and loss of one of the best examples of a system that balances the needs of people and nature.

WWF's Mediterranean cork oak forest programme aims to restore and maintain cork oak landscapes, to promote sustainable livelihoods for the local population and to ensure conservation of biodiversity. Consumers can do their bit by buying wine with cork stoppers and by asking supermarkets to label wine clearly as to what kind of stopper has been used. Forest Stewardship Council (FSC) cork stoppers will soon be available. Choosing FSC cork means that the cork is from well-managed forests.

Transporting 1.8 billion bottles of wine to the UK – half a billion of which come from New World countries, such as Australia – uses vast amounts of energy with corresponding CO_2 production. This is being addressed by encouraging importers and retailers to bulk

[15] Defra, www.defra.gov.uk/foodrin/wine/industry.htm

import wine, then bottle it once it has reached the UK. As well as cutting glass waste, it is estimated that there could be up to 40% reduction in CO_2 emissions by transporting wine in bulk loads before bottling the wine in the country where it is to be sold.

In South Africa, WWF is working in partnership with the wine industry to minimise further loss of threatened natural habitat and to adhere to biodiversity guidelines in wine-producing areas, thus ensuring that future wine production becomes sustainable.

11. Nutrition

Q. What is a One Planet Diet?
A. This is a diet that that is both sustainable and nutritious. It looks at the links between food, health, nutrition, society and the environment and how all can benefit from a new approach to what we put on our plate, in line with the concept of eco-nutrition.

Q. What is eco-nutrition?
A. Eco-nutrition combines healthy eating, sustainable produce and social implications. The two main features are: 1) healthy eating with the lowest carbon footprint possible, while acknowledging and responding to the problems inherent in eating locally-produced food, the type of seasonal foods available and still taking fairtrade into consideration; 2) choosing foods that are from sources that are not endangered, for example some fish, or whose increased production will lead to the destruction of vital habitats, as has happened with soya and the Amazon rainforest.

WWF's food policy

(1) Genetically modified (GM) food ingredients are unacceptable.

(2) We source organic milk.

(3) We use a local café as our in-house caterer. Its policy on sourcing food is:

- All eggs, butter, cheese, ham, bacon and chicken are free range.
- All tuna is dolphin-friendly.
- All tea, fruit and drinking chocolate are Fairtrade.
- All coffee is Rainforest Foundation certified.
- Where possible all fruit and vegetables from the UK are locally and seasonally sourced and are organic.

WWF Scotland's catering policy for events goes further: it requires majority local, seasonal food, organic where possible, is entirely vegetarian, and prohibits tropical fruit.

CATERING guidelines

- Food should be seasonal, organic and local with reduced amounts of animal protein and packaging. According to a One Planet diet, this means reducing meat consumption by ordering only a quarter of food/sandwiches containing meat or only serving meat as the main course (i.e. not in a starter as well). Meat should be organic and from grass fed animals in the UK. Food should contain

no more than quarter of other livestock products like cheese, the remaining 50% of food should be sourced from non animal sources, there are plenty of alternatives for sandwiches like roasted vegetables, salads, hummous etc.

- Fish & seafood must be Marine Stewardship Council, MSC, certified (go to www.msc.org for more info and to find certified suppliers).
- Tea, coffee, sugar, chocolate & bananas should be Fairtrade (look out for other Fairtrade products too).
- Do not serve bottled water, instead choose jugs filled with tap water.
- Wine should be fair-trade and/or organic and choose bottles with real corks. The WWF-UK trading catalogue is currently stocking wine https://shop.wwf.org.uk/.
- Use re-usable crockery, cutlery and glasses. If disposable crockery, cutlery, and cups must be used, opt items that are made from recycled or natural materials for example Aware! has a range of different items.
- Support local suppliers (e.g. for Panda House use the Baytree if appropriate to the event).