

WWF-UK ONE PLANET FOOD STRATEGY 2009 – 2012

Final Version – updated 14th Jan 09 – EXTERNAL VERSION

1. Introduction

This strategy, our One Planet Food Strategy, sets out our vision, key goals, objectives and milestones that make up a One Planet Food Programme of work. The 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. 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.

World-wide, food production accounts for the use of 38% of the ice-free land surface. 70% of the water abstracted is used for irrigation. Agriculture and fisheries provide the main income for about 40% of the world's population. The world food economy directly accounts for more than a third of global greenhouse gas emissions. Continued growth in 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.

The UK has about 1% of the world's population but accounts for about 2% of the world food system. The food system and its impacts are typical of the developed world. We want to see the UK food economy function as an example in a wider global debate about the links between food consumption and the environment. In addition to the direct emissions to the environment, UK consumers are connected through food to global land use change, particularly deforestation. Most of the food consumed in the UK is produced in the UK. So food production is the dominant force shaping land use and terrestrial biodiversity in the UK. It is a major source of pollution emissions to air and water. In addition, the UK is heavily dependent on near-neighbours for supplies. UK consumers also and increasingly draw on global food commodities linked to the degradation of habitats of global importance, particularly through trade in beef, soy, palm oil, and irrigated fruit and vegetables.

Food production and consumption has a strong social dimension. A primary consideration is the reality of global poverty. Increasing variety in diet and healthier diets are the first steps in improving living standards of the world's poor whilst improving human well-being. Alleviating poverty combined with population growth will mean food supplies need to double by 2050. For reasons of global equity alone, there is a need to address the pattern of food consumption in developed economies and discourage adoption of developed country patterns of consumption in developing countries. There are also more local social aspects, not least the reality of poor diet in the UK. Food production in the UK also has a number of positive benefits which we recognise, including the role of grazing on our uplands, heaths and wetlands in terms of maintaining biodiversity, the economic benefits to rural communities, and the contribution of food production to the social fabric of these communities.

To deliver on its goals, the One Planet Food Strategy addresses three groups with sets of interrelated objectives:

- Policy and decision makers: Changing governance structures and markets to enable a transition to a One Planet Food system.
- Consumers: Changing UK food consumption
- Producers and the supply chain: To raise the environmental efficiency of production and support sustainable production and sourcing.

We seek outcomes for the long term with objectives chosen to meet the challenges identified in the WWF-UK Strategy and to support the Global Programme Framework Goals for 2020 and 2050 relating to the global footprint and biodiversity.

One Planet Food recognises that we need to address both demand side (food consumption) and supply side (food production) issues within the food supply chain in order to achieve our ambitious targets for change. One Planet Food takes a collaborative approach. It is a focused strategy with objectives and activities chosen to focus WWF efforts to complement and support the work of others working on the food agenda – civil society, food businesses and governments. Where necessary, these engagements will be mutually challenging.

1.1 Delivering a flexible strategy

Although based on current science it is our best guess about what we should do over the next three years to deliver on our priorities, like all plans and strategies this one is based on a snapshot in time. As such, some of the proposed activities and priorities will change over the course of our 3 year strategy. The work includes continued analysis, monitoring and stakeholder engagement to support further development of the strategy in line with the stated WWF goals.

1.2 Developing a collaborative strategy

This is our first stage strategy. Once we start to engage with strategic partners it will be co-developed with other partners including civil society, producer, government and business organisations. Our strategy is ambitious in approach and is based on a stakeholder engagement process which will allow us, and a critical mass of other key stakeholders, to work together and drive forward a number of agreed objectives. We will use our organisational strengths to drive this agenda forward whilst endorsing and supporting the work of others whose skills and resources complement ours in delivering on other specific areas of One Planet Food.

2. Our destination

By 2050, the consumption of resources and the emission of greenhouse gas arising from the production of food for UK consumption are at sustainable levels and the adverse impact of food production in key areas of biodiversity impacted has been restored. This was achieved by working with key stakeholders to collaboratively transform the UK food retail and food supply chain sectors

If everyone in the world lived as we do in the UK, we would need three planets to support us. WWF works for a world where everyone thrives within their fair share of the Earth's resources, while leaving space for wilderness and wildlife. Ours is a vision for humanity as much as for the environment that surrounds us. It is a vision that requires a transformation in the way we live – a vision for a One Planet Future¹. Food, its production and consumption, is part of that vision – this is One Planet Food.

The WWF-UK Strategic Plan 2008-2013² forms the basis to the development of our One Planet Food Strategy. One Planet Food is an important part of a One Planet Future and in one programme will help us deliver on all three of our key strategic priorities through food – safeguarding the natural world, changing the way we live and tackling climate change.



Global Programme Framework Goals

The long term goals of the One Planet Food Strategy and Programme have been developed to align with the WWF Global Programme Framework meta-goals.

2020 Footprint Goal: *By 2020, humanity's global footprint falls below its 2000 level and continues its downward trend, specifically in the areas of: Energy / carbon footprint, commodities (crops, meat, fish and wood) footprints, and water*

2050 Footprint Meta-Goal: *By 2050, humanity's global footprint stays within the earth's capacity to sustain life and the natural resources of our planet are equitably shared.*

2020 Biodiversity Goal: *By 2020 biodiversity is protected and well-managed in the world's most outstanding natural places.*

¹ <http://www.wwf.org.uk/filelibrary/pdf/oneplanetfuture.pdf>

² http://www.wwf.org.uk/filelibrary/pdf/ext_strategic_plan.pdf

2050 Biodiversity Meta-Goal: *By 2050, the integrity of the most outstanding natural places on earth is conserved, contributing to a more secure and sustainable future for all.*

One Planet Food Goals

Drawing on the Global Programme Framework and the WWF-UK Strategic Plan 2008-2013, the One Planet Food Strategy has the following Goals. The background to these is set out in Appendix 3.

2050 Goals	
	By 2050, global greenhouse gas emissions resulting from the production and consumption of food destined for the UK are reduced by 70% based on 1990 levels. ³
	By 2050, water usage in the production & consumption of food destined for the UK has no unacceptable socio-economic or environmental impacts.
	By 2050, the major adverse socio-economic and environmental impact of production & consumption of food destined for the UK is eliminated within WWF's priority biodiversity places.
2020 Goals	
	By 2020, global greenhouse gas emissions resulting from the production & consumption of food destined for the UK are reduced by 25% based on 1990 levels.
	By 2020, more than 80% of the total water footprint related to the food consumption in the UK rests on areas where water use does not exceed the water limits of the concerned area.
	By 2020 we will have halted habitat loss within our priority biodiversity places as a result of food production and consumption destined for the UK with a specific focus on the Amazon, Borneo, New Guinea, Choco Darien , North East Atlantic and Arctic.
2012 Goals	
	In collaboration with key stakeholders from business, government and civil society, to have identified a road map (action plan) for One Planet Food and the most cost-effective actions to achieve, by 2050, 70% cuts in GHG whilst reducing the social and environmental impacts on the water cycle and safeguard our priority places.
	We have detailed business and policy engagement strategies and are working with government and business to take ACTIONS to achieve our 2050 goals.
	To have launched a One Planet Food Campaign which will support our programme of work with a focus on changing consumer behaviour to support our goals and lever change by putting pressure on key stakeholders.

A summary outlining the key reasons for selecting these 3 2050 strategic goals can be found in **Appendix 3**

³ Although WWF-UK is calling for total reductions in global greenhouse gas emissions of 80% by 2050 current trends indicate that some sectors need to decrease by more than others and some are easier to target (i.e. services) than others. Recent scientific evidence suggests that a 70% target is more realistic within the food sector although WWF will be undertaking more research to look at this.

3. CONTEXT

3.1. The rationale behind One Planet Food

Producing food to feed the ever increasing world population (forecast to reach 9 billion by 2050) has consequences that include the increased pollution of water, soil and air, the loss of wildlife habitat, soil degradation and pressure on freshwater resources. To deliver our vision for a One Planet Future, reduce global greenhouse gas emissions by 80% by 2050 (based on 1990 levels) and stop the underlying causes of the escalating rate of species decline and degradation of our key priority places, we have to reduce the environmental impact of food and reduce it fast.

Food production and consumption has a strong social dimension which we must consider to ensure the developments we foster raise human well-being. The primary consideration is the reality of global poverty. Increasing variety in diet is the first step to improving living standards of the world's poor. If livestock product consumption in developing economies rose to half of the level of UK consumption today, the global demand for livestock products would double by 2050. Given our reliance on global trade in animal feedstuffs and some livestock products, for reasons of global equity alone, there is a need to address the pattern of food consumption in developed economies such as the UK. There are also more local social aspects, not least the reality of poor diet in the UK. We also recognise that a small proportion of UK food production arises from farming in areas marginal to agriculture using practices that have shaped the traditional cultural landscape and its associated biodiversity.

Food accounts directly for about one third of global greenhouse gas emissions. In the case of the UK, the food chain is directly responsible for about 17% of the UK economy's greenhouse gas emissions. About half of these emissions come from production (farming and fishing) dominated by nitrous oxide from soil and methane from cattle, sheep and manure. Precious resources are used for growing crops and raising livestock, as well as for processing, packaging, and distributing food and in travelling to shops to buy the food we eat. There are also significant indirect effects particularly through land use change. Land use change, dominated by deforestation, is the cause of about 18% of global GHG emissions and is very closely connected to agriculture – almost all deforested land is used in agriculture of one form or another. The UK food economy is linked to deforestation in the Amazon, Borneo, New Guinea and Choco Darien. When deforestation is considered, the world food economy is linked directly or indirectly to more than a third of global man-made greenhouse gas emissions.

All these environmental challenges exist against a background of increasing global demand for food. Global meat consumption has increased by 75 per cent in 20 years and the Food and Agriculture Organisation of the United Nations (FAO) predicts that between 2001 and 2050, global meat and milk consumption will approximately double. To meet this, global crop output will need to double. This can only be achieved by either increased production efficiency or expansion of the agricultural area. This would mean further loss of forest or wetland, or expansion in irrigation.

By world standards, livestock product consumption is high in the UK. UK food commodity consumption increased by 15% between 1990 and 2005 while UK self-

sufficiency in food fell from 70% to 60%. Imports increased by 51% in terms of weight. Dairy and meat products are resource intensive. Increases in pig and poultry consumption over the last 15 years have added to forces driving land-use change, particularly in the Cerrado and the Amazon, through the market for soy. The UK has become a significant importer of beef from Brazil where beef production is expanding driven by exports on the basis of pasture grown on deforested land. The UK market was the destination of about 7% of Brazilian beef exports in 2005 (by weight) making the UK the largest developed country importer of Brazilian beef and a very significant force in the expansion of agriculture into deforested land in South America.

About 30% of food grown for the UK is wasted. The UK food economy is a significant driver behind the growth of irrigated agriculture particularly in the Mediterranean region. With respect to fisheries, the UK has played a major role in the depletion of fish stocks, particularly in the North-east Atlantic. UK fish consumption patterns place pressure on resources due to reliance on resource intensive aquaculture species such as salmon and depleted wild demersal white fish stocks.

The UK food economy is sophisticated, particularly in retail. It is characterised by vertically integrated supply chains, many owned or strongly influenced by a few multiple retailers. This has implications in terms of justice for suppliers but also offers opportunities for UK consumers to influence supply chains. Our Strategy seeks to exercise influence over the governance of these supply chains to promote social justice, both in the UK and in other countries.

3.2 Public policy context

Food is an enormously complex issue and One Planet Food focuses on those big issues for which urgent change is required. We recognise that food has a dimension to many areas of public policy: from climate change to aid and development and from food safety to trade and governance systems. We also recognise that there is no single 'silver bullet' as the links between the UK food economy and our own priorities are complex, comprising a fine matrix of local and global burdens and direct and indirect impacts. While One Planet Food attempts to take a holistic approach to the food system it is almost impossible to predict every consequence of a particular policy change. There is still a great deal of uncertainty from many organisations as to where the most appropriate point of intervention lies.



Fig 1 – from ‘Food Matters’ (Defra 08)

Nevertheless we have the advantage that the public policy debate about the relationship between food and sustainable development is advanced in the UK. David Miliband’s first speech on farming in July 2006, (when Secretary of State for Environment, Food and Rural affairs) drew on WWF thinking. It outlined a policy vision of ‘One Planet Farming’ as necessary to deliver a One Planet Future. He highlighted the need to minimise the impact on the environment of patterns of food production and consumption. At the same time, the Defra Strategy for Sustainable Farming and Food was extended to further the development of “a profitable and competitive domestic farming industry which is a positive net contributor to the environment, while reducing the environmental footprint – at home and abroad – of our food consumption”. This extended English policy to encompass global impacts across the whole production, supply and consumption chain. At about the same time Defra produced their Food Industry Sustainability Strategy⁴ which was aimed at upping the sustainability practices of the food industry. With just under 40% of UK food imported, the impacts of UK consumption overseas were clearly recognised. More recently the Cabinet Office have released a report ‘Food Matters’⁵, which for the first time assesses the robustness of the current policy framework for food and determines what the objectives of the food strategy should be. Defra has subsequently initiated a stakeholder dialogue around a food vision, in which WWF-UK was invited to participate. We have also seen the WRAP focus on food waste in the UK, and agriculture features in the general debate about climate change.

We believe that this lively and advanced debate in the UK is a real asset to the wider WWF network and will help our One Planet Food Strategy to be a beacon for WWF worldwide.

While much of the public debate is focused on issues that are important in their own context, a great deal does not address what we think are the big issues of the day that

⁴ <http://www.defra.gov.uk/farm/policy/sustain/fiss/index.htm>

⁵ http://www.cabinetoffice.gov.uk/strategy/work_areas/food_policy.aspx

underlie long-term global impacts. By taking an evidence based approach with One Planet Food, we can make a valuable contribution by focussing on what matters and what is special to food in relation to the global environment and biodiversity. We will link the protection of the environment and biodiversity with the need to advance human welfare and health. Reconciling environmental and resource protection with the urgent need to address poverty puts a spotlight on moderating consumption in the developed world and raising the environmental efficiency of production. This means we won't be side-tracked by past and present emblematic issues and conflicts such as those around 'organic' food and farming, 'food miles', GMOs, large versus small scale farming, 'industrial' farming, 'factory farming' 'chemical farming' etc. What really matters is fostering sustainable consumption patterns, increasing the resource use efficiency of food production, increasing the efficiency of nutrient use in agricultural systems, improving farmland as a habitat, and reducing deforestation and other forms of land use change to agriculture.

The UK food economy is sophisticated, particularly in retail. It is characterised by vertically integrated supply chains, many owned or strongly influenced by a few multiple retailers. This has implications in terms of justice for suppliers but also offers opportunities for UK consumers to influence supply chains. Our Strategy seeks to exercise influence over the governance of these supply chains to promote social justice, both in the UK and in other countries.

3.3 Socio-economic considerations

Agriculture and fisheries account for just under 5% of world GVA. This relatively minor role in the global economy masks large differences between economies. Agriculture accounts for about 40% of GVA in poor countries and growth in agriculture is particularly beneficial to the world's poor. Agriculture and fisheries is central to the alleviation of extreme poverty and a growth in agriculture in developing economies, including growth driven by exports, is essential to increased equity and global well-being. In contrast to the link between agriculture and poverty in the developing world, farm households in western Europe have higher than average incomes and are relatively rich in terms of net assets compared with the rest of their national economies.

Although agriculture in the UK accounts for only about 0.7% of GVA in the economy, the agri-food sector as a whole accounts for 7% of GVA and 14% of employment. It represents a huge proportion of UK manufacturing.

UK consumers still get most of their food from UK farmers. Self-sufficiency is estimated to be 58% for all food in 2005. This compares with less than 50% in 1956 and more than 70% in the early 1990s when UK self-sufficiency peaked. The UK was 72% self-sufficient in indigenous food in 2005, compared with about 60% in 1955 and 86% in the early 1990s. Total self-sufficiency is declining faster than self-sufficiency in indigenous food reflecting the increase in the consumption of non-indigenous food products. Imports of meat, fruit and vegetables in particular have increased. The removal of 'compulsory' set-aside in 2008 and the upward trend in many commodity prices point to a significant recovery in UK agricultural output.

This strategy is being followed against a background of a general decline in the production of a wide range of agricultural commodities in the UK since 1990. Production of beef, fruit, vegetables, pigmeat, sheepmeat and potatoes has declined, typically by 20 – 30%. There were also significant declines in the production of horticultural crops. In addition, UK capture fisheries and fishing capacity are in long term decline due to decline fish stocks in the North-east Atlantic. Reflecting increased consumption and decreasing domestic production, imports of almost all food commodities rose between 1990 and 2005, thus increasing the potential for resource depletion and environmental burdens outside the UK.

The consumption of livestock products is the focus of some measures set out in this strategy. We endeavour to take a balanced approach recognising that ruminant livestock are a means of ‘harvesting’ pasture covering 26% of the ice-free land surface, much of it on land not suitable for crop production. They are also a source of income for 1.3 billion people, including 1 billion of the world’s poor. However, livestock (including ruminants) also consume about one third of the cereal harvest (ca 670 million tonnes) and the meal from in excess of 200 million tonnes of soybeans. This strategy seeks to foster a pattern of consumption and production that harnesses the potential eco-efficiency of livestock delivering the benefits moderate consumption of livestock bring to most diets to as many people as possible. Reducing the consumption of livestock products in the developed economies corresponds to moving lower down the food chain in the ecological sense reducing the impact on resources.

4. One Planet Food 2012 Objectives and Milestones

Our objectives flow directly from the One Planet Food Programme Goals, which in turn are driven by the WWF-UK 2008-2013 Strategy and the Global Programme Framework. Drawing on analysis of the link between the UK food economy and our Goals, we have identified six objectives relating to change in consumption, change in production, and influencing public and commercial policies. For a detailed Action Plan based on these milestones see **Appendix 14**

Objective 1: Public and private sector policy: To embed the aims of a One Planet Food System into key public and private sector policies and commercial activities by 2012 through a collaborative dialogue.	
Milestone 1a	By FY09, a ‘deliberative dialogue’ process with a key government department to engage the public around the issue of meat and dairy consumption has been initiated by end FY09
Milestone 1b	By FY09 Government policies are identified that support sustainable sourcing of key commodities – Palm oil, soya, sugarcane, fish, and beef.
Milestone 1c	By FY10, key government departments and industry sectors are committed to 70% GHG reduction targets by 2050 and agree to a GHG reduction route map for food.
Milestone 1d	By FY10, key questions and challenges with private and public sector stakeholders have been explored and key barriers to systemic change identified, leading to joint action on <i>at least two</i> One Planet Food outcomes.
Milestone 1e	By FY10 to have produced the One Planet Economy Pathways section for food. This to be used as a basis for a One Planet Food prospectus for

	external audiences explaining WWF rationale for One Planet Food
Milestone 1f	By FY11, key public policy recommendations that deliver OP food outcomes have been developed with bilateral retail and/or processing partners.
Milestone 1g	By FY12 public procurement policy supports sustainable sourcing and promote reductions in meat and dairy consumption by at least 15% by 2020 (focus on Wales and Scotland as exemplars)
Milestone 1h	By FY12, all key UK government and devolved administration policies (including public procurement standards) support the sustainable sourcing policy of WWF key commodities.
Objective 2: Supply chain governance: To transform supply chain governance so that it supports ecological restoration in priority places, equity, human well-being and a low carbon (equiv) food system by 2012.	
Milestone 2a	By FY10, the key financial levers for change and effective governance within the food supply chain have been identified and key policy asks developed.
Milestone 2b	By FY10, partnerships are developed with at least six key UK retailers and/or manufacturers/processors.
Milestone 2c	By FY11, a roundtable on beef has been established and obtained UK retailer membership
Milestone 2d	By FY11, three major retailers/processors have signed up to the Sustainable Seafood Procurement Charter.
Milestone 2e	By FY11, all major UK retailers, biofuel suppliers and food manufacturers are committed to sourcing only CSPO
Milestone 2f	By FY12, all major UK retailers, Biofuel suppliers and UK livestock producers/processors are member of the RTRS.
Milestone 2g	By FY12, all major UK based investors in the Palm Oil supply chain are using the WWF Financial screen for palm oil and other key commodities
Milestone 2h	By FY12, UK governments have committed to 100% sustainable procurement
Objective 3: Reduce & Change Consumption: To reduce livestock product consumption by at least 10% whilst encouraging sustainable consumption patterns that support & protect priority ecoregions, habitats and resources.	
Milestone 3a	By FY09, the work of other organisations who are working to reduce waste throughout the food supply chain is supported/endorsed by One Planet Food. To support the work of waste initiatives by others and communicate importance of waste reductions in our comms docs
Milestone 3b	By FY09, to have explored the links between health and sustainable consumption and explored what we mean by a One Planet diet
Milestone 3c	By FY10, the environmental benefits of moving fish consumption lower down the food chain are identified.
Milestone 3d	By FY10, a 'One Planet Diet' Campaign, which integrates reductions of meat and dairy consumption, with health and well-being improvements, has been launched.
Milestone 3e	By FY12, the consumption of certified fish species i.e. MSC has increased by 10%
Objective 4: Support eco-efficient production: To strengthen the development and delivery of a number of Voluntary Sustainable Initiatives with a particular focus on beef, palm oil, soya and fish (Msc)	
Milestone 4a	By FY10, six key Retailers and/or manufacturers/processors have

	committed to assess and manage their water footprint.
Milestone 4b	By FY11, six key retailers and processors are demanding certified feed fish and fish oil
Milestone 4c	By FY12 Retailers/processors only source fish caught by sustainable gear methods and work with producers to change gear methods
Milestone 4d	By FY12 Retailers/processors only source fish caught by sustainable gear
Objective 5: Reduce production GHG emissions in the Food Supply Chain: To develop a strategic systems approach which raises nitrogen use efficiency and significantly reduces the leakage nitrogen and methane from the food supply chain.	
Milestone 5a	By FY09, approaches to raising the nitrogen use efficiency of production for the UK food economy have been identified.
Milestone 5b	By FY09, cost effective measures that are required to deliver 25% cuts in GHG emissions by 2020 and the long term structural and policy measure that are required to deliver 70% by 2050 have been identified.
Milestone 5c	By FY10, industry take up of an action plan to reduce the reliance of the UK on Soy has been established.
Milestone 5d	By FY10, the UK livestock value chain, <i>including related crop production</i> , is engaged on how to deal with GHG emissions reductions from meat and dairy production and consumption
Milestone 5e	By FY11, industry and government (UK and EU) are committed to the GHG reduction route map that enables 25% GHG emissions reduction by 2020.

NB – Many of the milestones listed will help to deliver two or more of our 5 2012 objectives. Milestones have been placed under the most appropriate objective but will help us to deliver on others.

5. Other Food and Emblematic Issues

5.1 Other Food related issues

Our analysis has prioritised those objectives and actions listed above as the first phase of our work. One Planet Food will however continue to support and work with WWF cross cutting issues during this initial phase of our programme. These include International Development, Trade and International Governance, work to improve livelihoods of communities across the globe, the trade in endangered species for food and work on a host of other food commodities (shrimps, prawns, sugar etc.) There are a number of other areas of work which we identified that could help us to achieve one or more of our goals. Food waste, for instance, is a key impact and links to all of our 3 goals. We recognise that ‘food waste’ has not been a key area of work for WWF-UK, our skill base to deal with waste is low and other organisations, such as WRAP, through their [‘Love Food, Hate Waste’](#) Campaign have more influence and experience on this particular agenda.

For a more detailed analysis of other issues which we recognise are important but which are not directly addressed in our objectives above please see **appendix 5**

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5.2 Our position on emblematic food issues

We recognise there is much debate about food in the UK. While much of it is focused on issues that are important in their own context, a great deal does not address the big issues of the day. With One Planet Food we can make a valuable and high profile contribution by focussing on what matters and what is special to food in relation to the global environment and biodiversity. We will link the protection of the environment and biodiversity with the need to improve human well-being and health. A focus on what matters may be a significant step forward for the UK food related impacts on the environment. This means avoiding being side-tracked by past and present emblematic issues and conflicts such as those around ‘organic’ food and farming, ‘food miles’, GMOs, large versus small scale farming, ‘industrial’ farming, ‘factory farming’ ‘chemical farming’ etc. We recognise that these issues are important in their own right and will be part of the larger vision for a sustainable food system but what really matters is a more equitable food distribution system within environmental limits. This will require fostering sustainable consumption patterns, improving our governance and financial institutions, increasing the resource use efficiency of food production, increasing the efficiency of nutrient use in agricultural systems and reducing deforestation and other forms of land use change to agriculture.

We do recognise that we will require positions on these issues and we should not avoid these difficult issues but it will require a certain amount of ‘savvy’ from the One Planet Food team to move the agenda on to those big issues of the day.

6. One Planet Food Metrics

One Planet Food will use a core set of consumption indicators (Ecological Footprint, Carbon Footprint and Water Footprint). These will be supported by other indicators measuring more specific impacts where needed. For example these may include certain biodiversity / species indicators linked to key food products and commodities.

These core indicators will provide quantified information which helps to explain how things are changing over time. The data used for the indicators can be updated every 1-2 years, although it will also be possible to use modelling to assess the overall direction of the campaign and key policies in terms of the Footprint reductions possible.

1) *By 2020, global greenhouse gas emissions resulting from the production & consumption of food destined for the UK are reduced by 25% based on 1990 levels*

Key metrics - Carbon Footprint and Production emissions by key industrial sector i.e as in the GTAP database

2) *By 2020, food destined for the UK is sourced from areas where water use does not exceed the water limits of the area.*

Key Metric - Water Footprint.

3) *By 2020 we will have halted habitat loss within our priority biodiversity places as a result of food production and consumption destined for the UK with a specific focus on the Amazon, Borneo, Papua New Guinea, Choco Darien and the North East Atlantic.*

Key Metric – Composite of Metrics using Millennium Ecosystem Assessment as the key reference

For a summary of the key indicators used to monitor the success of One Planet Food see **appendix 6**

WWF will use ecological footprint as an overarching communications tool for our Food Campaign with more specific or detailed policy analysis using the Carbon and Water Footprint

7. Key stakeholders

For a more detailed analysis of key stakeholders please see **appendix 7**

The role of key stakeholders in the food supply chain:

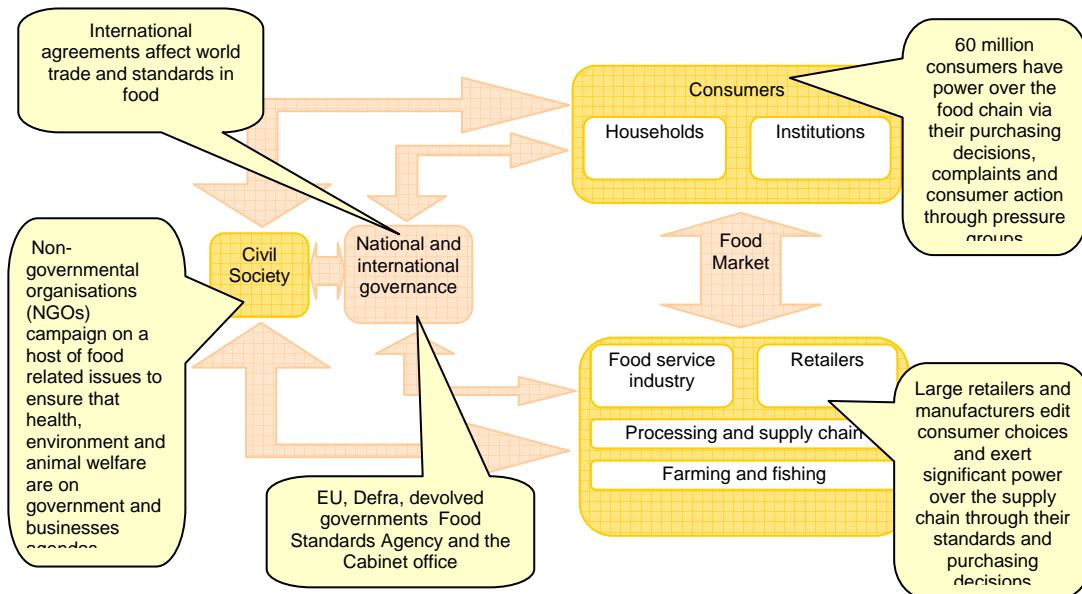


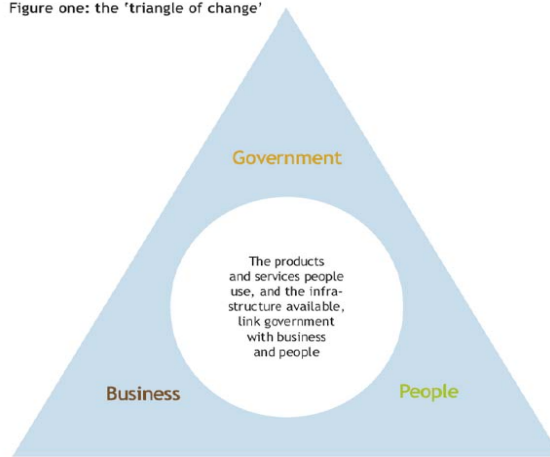
Fig 2 – from FSA

WWF-UK alone cannot influence every part of the UK's food system. However, we do have a broad range of expertise, which includes agriculture, fisheries, climate change, water, biodiversity, business, finance and government policy. We also have experience in convening successful partnerships for change, such as MSC and the Sustainable Palm Oil Initiative, and we have global reach. These, combined with our widely known and respected brand name and our extensive contacts in the areas listed above, makes us ideally placed to take a partnership approach in the UK's food system.

A review has been completed of the key players from each part in the food system, including governments, the Third Sector Businesses (the major UK retailers, processors and primary producers) and academia.

Approaches and exploratory discussions have begun with stakeholders in the third sector (including all of those listed above, and WWF-US), while further work is under way to create a comprehensive stakeholder strategy, due for completion at the end of October, 2008. Subsequent actions will depend on the recommendations of those formulating the stakeholder strategy, but it is likely that an initial stakeholder workshop will be convened in Spring, 2009. The long term outcome is likely to be a cross-sectoral partnership for change, convened jointly by WWF and others, dedicated to a commonly agreed set of goals, amongst which will be the stated goals of the One Planet Food Group.

Figure one: the 'triangle of change'



Defra is undertaking a year-long project to develop a vision for a sustainable UK food system, and we have agreed to be key stakeholders in this process (as they have in ours). Defra's work is mainly concerned with process, whereas ours is focused on change, so the two work-streams are likely to avoid redundancy.

7.1 Food retailers and processors

Food retailers and processors represent the link between production and consumption. They receive demand-side signals and respond to them with products, services and “emotional value” (via brands and experiences). They also innovate spontaneously to develop new products, service delivery systems and business models, refining them in light of feedback from consumers, operational imperatives and the demands of shareholders. (For these reasons, supermarkets have been called “gatekeepers”.) Processors produce branded products and associated messages, responding both to customer demand and to (often standardised) sourcing requirements of the supermarkets. Because consumers can only buy existing products in existing locations, the role of retailers and processors goes beyond responding to consumer demand; it includes shaping and creating this demand through both choice influencing (product information, guidance, marketing and advertising, promotions of increased consumption such as BOGOFs) and choice editing (the removal of “unsustainable” products and shopping systems from the shelves). Producers and processors also exercise influence over policy makers; we need them to concentrate their lobbying efforts on positive and sustainable change.

In selecting the appropriate retailers with which to engage, WWF-UK has considered the following:

- Their size and market share (as an indicator of their ability to influence consumption patterns and the activities of their suppliers)
- Their commitment to sustainable development/food
- Their relevance to the goals of WWF (Network, UK and Food Group)
- Their existing links with WWF (e.g. corporate partnerships, collaborative partnerships)

We do however recognise that intense competition between retailers can inhibit sector wide dialogue and action as well as the ‘internal competition’ within retailer businesses between own brands and third-party brands.

7.2 Finance

The financial sector, including banks, financial institutions and donors, has a significant influence in providing and assuring financial flows for implementing One Planet Food activities.

Further work is required to explore a number of market interventions including how retailers can influence the food supply chain via a number of key financial levers. We need to consider both equity and private equity within any analysis. We also need to capture a range of policy areas such as listing rules, FSA, company law, European law, etc. A piece of research has been commissioned to look at this area and how we may be able to engage with this sector.

7.3 Consumers

The way in which consumers choose and consume food products is a critical factor in determining environmental impacts. Where they shop, how they get there, what they buy, how they cook it, and what they waste is the result of a complex mixture of beliefs, motivations, habits and norms. It is, therefore, essential to engage with consumer groups and social scientists to ensure that any solutions will be successful in mainstream competitive markets.

We will use existing and new contacts with these partners to ensure that consumers are properly considered and represented.

Academic input will be sought primarily from the eventual winner of a current competition to establish a research centre on sustainable consumption, funded by the ESRC.

This may be sufficient in terms of consumer representation, both because of Consumer Focus’s wide remit, and because retailers and processors have a sophisticated understanding of consumers, backed up by (often confidential) behavioural data.

7.4 Civil Society

Both businesses and policy makers engage with and are influenced by third sector organisations, many of which also provide valuable specialist expertise. The food system has a broad range of impacts, including on the natural environment, human

development, health and the economy. Many third-sector organisations campaign (and work on the ground) for change in one or more of these areas, sometimes with a narrow focus (such as GMOs) and sometimes with a broad one (such as biodiversity and climate change). Partnership with other third sector organisations will ensure that all aspects of the food system are considered, without placing impossible demands on WWF-UK.

7.5 Governments – EU, UK and devolved

EU farming policy is undergoing reforms that favour the use of market signals to improve environmental and social impacts. (In the past, EU policy has relied more upon regulating production processes.) Nevertheless, national governments are still influential in shaping the production of much of the food consumed in the UK, more than 90% of which is produced within north-eastern Europe.

Policies and government programmes influence:

- UK producers, particularly of livestock, through environmental legislation, grants and agro-environmental schemes;
- UK food processors, through legislation on water, greenhouse gas and toxic emissions, as well as standards for procurement and marketing;
- UK consumers, through education and healthy eating guidance, food labelling legislation, recycling schemes and public procurement;
- Overseas governments, through land use governance (influenced by conditions for development aid), and negotiation of international, regional and bilateral trade rules;
- Overseas producers, through development funding of sustainable agriculture.

Furthermore, public policy is placing climate change near the top of the agenda. National climate bills are likely to create sectoral GHG reduction targets, and policy makers in the US have signalled their intention to strengthen both national targets and supporting legislation. It will, therefore, be necessary to understand the challenges and opportunities presented by the policy environment and agenda, and to develop a strategy that can both influence and accommodate these changes.

8. Stakeholder engagement strategies

8.1 Stakeholders – why we need them

During the development of this strategy there has been widespread recognition that we need to be more strategic when dealing with key stakeholders. These groups offer some of the most effective routes to finding long term sustainable solutions to the impacts of UK food consumption. We need a coordinated approach to stakeholder engagement and need a clear set of asks whilst recognising some stakeholders will want to publicly partner with us under certain conditions, and others would rather have less overt programmatic relations.

8.2 Food retail engagement strategy

As identified in this document, food retailers and processors are important stakeholders within the One Planet Food concept and will be crucial to the achievement of its overall strategic goals. In order to progress we will therefore need

to recruit key partners from this group, create a forum for exploration of how to move towards a One Planet Food system, and work with them to take action to improve the environmental performance of the sector in both the short term and long term. For a first draft of the food retail strategy see **appendix 11**

8.3 Food policy engagement strategy

For details of our Food policy strategy please see **appendix 12**

Key Areas of policy engagement

- **Support Food Matters where appropriate, address its shortcomings and ensure it is implemented.**
- **The UK's commitment to cut GHG emissions from the food supply chain by 70% by 2050**
- **UK Governments to commit to a target of 15-20% reduction in meat and dairy consumption by 2020**
- **DEFRA to create a road map to move the food system towards a holistic, inclusive system, in line with Omni-standards.**
- **Support organisation such as WRAP, Sustain and the Soil Association who are leading in areas we would otherwise work in.**

Many of the issues we face as a society are connected to food, even if direct changes to the food system will not solve the problem. As food cuts across many aspects of public policy the multiple aspects need to be approached in a consistent joined up manner.

What is a sustainable food system? How do we move towards one? These questions need to be answered and embedded in the Governments policies. Consumers and food chain businesses look to government to take a lead and to put in place the framework within which others can take action. On issues such as sustainable sourcing of fish and GHG mitigation within the food chain, there are opportunities for the UK to take a lead within Europe. Key steps on the road to a sustainable food system are efficient pricing of resources and making the polluter pay. For example, in many parts of the world agricultural users of water do not bear its full cost. It will be crucial that a sustainable food system is defined that reduces the tension between environmental, social and health priorities. This will need to address the current problem in which consumers and retailers are confused.

Food policy covers a wide variety of areas including climate change, biofuels, water, biodiversity, land use, labour, urbanisation, population and nutrition and is characterised by existence of uncertain synergies such as the impact of price volatilities, geo-political uncertainties and externalities like healthcare and obesity levels. It will be important to join up policy and possibly work towards a common sustainable food policy for all of Europe.

Policy Asks

Currently WWF-UK is concentrating on food policy within the UK, though we acknowledge that in future we will need to look beyond this.

The Cabinet Office recently published a report called Food Matters: Towards a Strategy for the 21st Century. This document highlighted 4 policy objectives (food security, an environmentally sustainable food chain, improved food safety and healthier diets) and has been endorsed by the Government. WWF-UK feels the does not go far enough in addressing GHG emissions from the food chain and agriculture and the impact of meat and dairy. We will encourage the government to address the short comings of the report and that it adheres to its commitment to fulfil the report's recommendations.

The government has agreed to cut the UK's GHG emissions by 80% by 2050. WWF-UK is asking for a commitment of a cut of 70% in GHG emissions in the food sector by 2050, at 1990 levels, alongside the elimination of the unsustainable impacts on water made by the industry.

Meat and dairy consumption are responsible for some 8% of greenhouse gases and are very resource intensive. In addition demand for animal feedstuffs, such as Soy, is driving land-use change and deforestation in many of the most biologically diverse parts of the world, resulting in loss of biodiversity and contributing to indirect emissions – UK governments have to address this issue. Minimum 15% reductions in animal and dairy consumption is required to reduce the impact here.

This move would be supported by a move away from the European Common Agricultural Policy and adopting a Common Sustainable Food Policy. This approach would be helped if DEFRA was to lead on creating a Road Map for moving the UK systems towards a more holistic one. This would be vital in joining up the many cross departmental policies around food and pushing the UK towards a more coherent approach.

Currently food businesses are attempting to address nutritional goals as outlined by the Department of Health and the Food Standards Agency. This has lead to environmental objectives being compromised. Other issues are often pushed to one side, such as the social impact of changes in demand on rural communities in the UK and the economic impact of changes in supply of some produce to developing countries. The industry views these as competing demands and works on the basis of a trade-off. Instead it is vital now to focus on all the elements of the food as a whole. We advocate moving towards a truly holistic approach, one that looks at Econutrition, and a One Planet Diet. This could be linked to the idea of Omni Standards, all of which are values for food, and concentrate on adding value to each standard.

Though we have policies on other issues there are organisations already working very effectively in these areas and as such it is more practical support them. WRAP have a comprehensive strategy on food waste and packaging, Sustain are working on sustainable Procurement, and a partnership, lead by the Soil Association, is working with schools on Food for Life, encouraging healthier, more ecological diets.

8.4 Campaigns strategy

To Be decided

8.5 One Planet Education

One Planet Food will link up with colleagues within One Planet Education. We will work with the education team to help us in a number of the following key areas:-

- Teaching resources
- Learning models for food
- Food Procurement

Further work will be required to explore the potential of the educational aspects of One Planet Food

For a full analysis of project delivery including our capacity analysis, details of human and financial resources and how we will operate within WWF-UK and the wider network please see **appendix 8**

9. Communications Strategy

There is already huge media interest around food – we need to tap into this and re-focus the debate on those issues which matter and as identified within this strategy. Our communications need to be clear and centrally coordinated – Once we launch a One Planet Food Campaign there is likely to be a large amount of media interest. Food is a crowded space on the media waves and we need to be able to contribute something new and innovative.

9.1 The objectives of the Communications Strategy are:

10. Fundraising Strategy

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APPENDIX 1 – Summary of the main social and environmental impacts of food

Global environmental impacts of UK food consumption

WWF now has a good understanding of the global impact of UK food consumption. There is a direct and traceable link between UK food consumption and a number of our key ecoregions

- The GHG emissions from the UK food economy are large. UK food production, processing and retailing alone accounts 18% of UK GHG emissions (ca 32 million tonnes of carbon equivalent). The UK food economy is responsible for a further 6 million tonnes of carbon embedded in imports. In addition to these direct emissions, it also contributes to pressures causing deforestation. Agricultural emissions are dominated by nitrous oxide (N₂O) from the soil largely linked to the nitrogen fertilisation and to the emission of methane (CH₄) from ruminants and farm manures.
- The ecological footprint of food is large – about a third of the total for the UK. Recent reports suggest ruminant meat consumption makes a significant contribution to footprint.
- Agriculture dominates land use in the UK and the rest of north-western Europe with a major impact on water resources and biodiversity.
- Over 30% of food is wasted within the food supply chain.
- Water for crop growth is a significant factor affecting the environmental quality of some key ecoregions
- Relatively minor changes in consumption can have large marginal effects (e.g. beef imports from Brazil – 5% of UK beef consumption has provided a market for 5-10% of the growth in the Brazilian beef industry)
- Dairy and meat products are resource intensive - The case to promote reductions in the personal consumption of animal products is compelling.
- Increases in pig and poultry consumption have amplified the consumption of soy adding to forces driving land-use change, particularly in the Cerrado, Pantanal and the Amazon.
- A focus on the N balance of UK agriculture would encourage reductions in soy imports and fertiliser application whilst maintaining or increasing production through improved recycling of organic nutrients and improved utilisation in crops and animals.
- The UK has had a major impact on the north-east Atlantic contributing to a series of collapses in fish stocks. Worldwide, more than 70 per cent of fish stocks are either fully exploited or over-exploited (*FAO*).
- The demand for land and in many cases food commodities for energy is growing and estimated to account for at least 40% of land use conversion between now and 2050. At the same time demand contributes to rising food prices and poverty – but also to the drive for the sustainable production of commodities.

- Grazing in the UK contributes towards the maintenance of biodiversity particularly in relation to our uplands, heathlands and wetlands and we recognise the important role grazing animals play in maintaining these

The development of a One Planet Food Programme will also have to take into account other social and economic factors which any programme will impact on:

- The rapid rise in the demand for food worldwide has led to global food crisis.
- The resultant increase in the prices of food commodities on international markets has hurt consumers, with particularly the poor for whom food is a major part of expenditure.
- The western diet, high in salt, sugar and saturated fats is associated with diet related ill health: high blood pressure, strokes, diabetes and some cancers. The UK exemplifies the causes of a global epidemic of obesity gradually spreading across the Developed world as diet behaviours continue to change for the worse, according to the World Health Organisation (WHO 2007a).
- A fifth of the world's population does not have enough food to eat.
- We need to reduce food consumption in some parts of the world and increase it within others
- Current approaches to international trade negotiations present challenges for the consideration of social and environmental concerns. Measures to address these concerns are often perceived as a barrier to 'free trade'.
- Changes through the food supply chain affect the livelihoods of people in food producer countries. Signals sent through the food supply chain from the UK directly affect the lives of people within the developing world.
- Human rights are intricately linked with environmental rights and the food supply chain. We need to consider the local social impact of changes to trade and production.
- Our work in relation to a number of other NI's including the Amazon NI, MTNI, Sustainable Fishing NI and China Shift NI.
- Work in relation to TIP/Global Deal

APPENDIX 3 – Summary of the 2050 strategic Goals

1) By 2050, global greenhouse gas emissions resulting from the production & consumption of food destined for the UK are reduced by 70% based on 1990 levels.

World-wide, food is responsible for between one third and one half of global greenhouse gas emissions. The UK food economy is directly responsible for about 17% of total UK consumption related emissions. Agriculture is also the main activity on deforested land (e.g. palm oil and beef production). The consideration of land-use change (mostly deforestation) accounting for 18% of global emissions brings the UK food economy up to about one third of UK consumption driven emissions. Primary production (i.e. the growing of crops and raising of animals) alone accounts for about half of the food economy's direct GHG emissions. These emissions are dominated by nitrous oxide from soils whose production is increased by all forms of nitrogen fertilisation essential to agriculture and methane from animals, particularly from cattle, sheep and animal manures.

The UK's consumption of meat and dairy products is estimated to be responsible for eight per cent of consumption related greenhouse gases.

1) By 2050, water usage in the production & consumption of food destined for the UK has no unacceptable socio-economic or environmental impacts.

Food production has a profound effect on fresh water resources and habitats through both direct abstraction for irrigation and the effect of agricultural land cover on hydrological cycles. WWF has and is undertaking a considerable amount of work on 'virtual' water which also has the potential to be a great communications tool through the food supply chain (work with retailers etc)

WWF has and is undertaking a considerable amount of work on 'virtual' water which also has the potential to be a great communications tool through the food supply chain (work with retailers etc). 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. Consumption of vegetables, fruit and olives has been highlighted in particular.

2) By 2050, the adverse socio-economic and environmental impact of production & consumption of food destined for the UK is reduced in WWF's priority biodiversity places.

We know that there is a direct and traceable link between UK food consumption and a number of priority places. The Amazon, the Cerrado, the Atlantic Forest, Borneo, and New Guinea are key priority places here. We also know that UK fish consumption

and production for export has a significant impact within the NE Atlantic in particular.

We are already working to improve the environmental and social performance of production of a number of key commodities (Palm Oil, Soy, Sugar, MSC fish) and others have been highlighted here those which we do not currently prioritise e.g. beef and dairy

ANNEX 6 – Further description of One Planet Food Metrics

Ecological Footprint:

WWF defines the ecological footprint as a measure of human demand on the Planet's resources; this is expressed as an area of land needed to produce the materials consumed and to absorb wastes produced – including a nominal and very high area of land used to 'sequester' the GHGs emitted by production and consumption. Comparison of the EF of a population with the biologically productive land available gives an idea of whether a population's use of energy and materials is environmentally sustainable.

WWF will use ecological footprint as our main overarching communications tool for of our Food Campaign, supported by the Carbon and Water Footprints for more detailed policy purposes :-

WWF will use EF:

- **as an indicator of sustainable development**

Ecological footprint calculations offer a snapshot of environmental impact and can be used:

- as an indicator of environmental impact for lobbying efforts;
- for scenario planning - to measure how changes in different consumption patterns,
- to measure how changes in different trade patterns, for example, may lead to increased or decreased ecological footprint.
- **to illustrate how changes in activities or behaviour can result in changes in environmental impact**

Illustrating links between global footprints and local activities can:

- illustrate that global ecological footprints can be affected by the sum of local activities;
- link products to their global ecological footprint and promote markets for sustainably produced goods and services;
- illustrate the effect that the UK's consumption has on the rest of the world.
- **to make the link between global footprints and local activities**

Illustrating links between global footprints and local activities can:

- illustrate that global ecological footprints can be affected by the sum of local activities;
- link products to their global ecological footprint and promote markets for sustainably produced goods and services;
- illustrate the effect that the UK's consumption has on the rest of the world.

Carbon Footprint:

The carbon footprint measures all the CO₂ (e) emissions that residents are responsible for, rather than those coming from within national boundaries. A carbon footprint counts both the direct carbon emissions for consumption (heating, cooking, lighting etc) and indirect emissions (shipping, aviation and the embodied emissions

contained in the products consumed in the UK). So emissions from power stations producing electricity for export, for example, are not counted in the carbon footprint, but the impact of electricity consumption by residents is counted. The carbon emissions account is concerned with the actual direct emissions of CO₂ within our boundaries, and covers production for direct consumption and for export. The Kyoto Protocol target relates to total climate change emissions – a basket of six greenhouse gases, of which CO₂ is the most significant in absolute terms.

WWF will use the Carbon Footprint as a measure of climate change impact. CF is our most scientifically rigorous indicator, but will be supported by carbon production indicators where necessary.

An energy/carbon footprint is included in the 2050 Footprint Meta-Goal, so the Sustainable Consumption team must have an appropriate Carbon Footprint indicator. There must be clarity and consistency in the definition of what this CF measures.

WWF will use a Carbon Footprint that measures the total amount of greenhouse gas (GHG) emissions that are directly and indirectly caused by human activity. The official way of accounting for GHG emissions, United Nations Framework Convention on Climate Change (UNFCCC) produces an incomplete picture (emissions from international transport - the fastest growing emission source in the UK - are left out). According to UNFCCC the UK has already managed to meet its Kyoto commitments. This has helped the UK to justify a European and global leadership in the international climate change debate.

The carbon footprint that WWF uses provides an alternative way of accounting for GHG emissions. It measures emissions from final consumption activities in the UK (GHGs released throughout the world to produce the goods and services consumed in the UK). Territorial accounts simply add-up emissions from the UK, the CF fully accounts for international trade by including import related emissions and excluding export related emissions.

This carbon footprint tells a very different story than territorial emission accounts. Trends show that the CF is on a continuous upward trajectory. While territorial emissions are falling, the global CC impacts from UK lifestyle keep rising. Consumption activities in the UK are therefore driving global climate change.

Water Footprint:

WWF defines water footprint of an individual, business or nation as defined as the total volume of freshwater that is used to produce the goods and services

GHG Emissions & Kyoto

WWF-UK believes that all developed countries, including the United Kingdom, need to reduce greenhouse gas emissions by at least 30% by 2020 and at least 80% by 2050 from 1990 levels to prevent catastrophic climate change and the rise in global temperatures from exceeding 2°C above pre-industrial levels. For such countries the appropriate framework is a system of binding limits on absolute emissions, building on the existing approach under the Kyoto Protocol.

We believe that indirect greenhouse emissions, based on products produced in another country, imported to and consumed within this country, also need to be measured and reported on in order to ensure that the UK is contributing fully to an equitable and fair reduction in global emissions.

consumed. WWF will use the water footprint as a measure of the impacts of human consumption on the world's freshwater ecosystems

Water Footprint: The water footprint (WF) is conceptually similar to the ecological footprint.

However, from a freshwater perspective, current EF models do not include water issues in any meaningful way. EF shows the area needed to sustain people's living whereas the WF indicates the annual water volume required for this.

A nation's or individual's water impacts under EF are calculated by equating the energy required to process freshwater for human consumption as well as the land area required to support those water-processing industries. It takes energy as the limiting factor and do not count for the impacts on the fresh water resources as such. These measures are somewhat irrelevant in terms of major threats to the world's freshwater ecosystems, where the key issues are water abstraction, water pollution, invasive species and over-exploitation of aquatic species, the physical modification of water bodies (e.g. dams, draining of wetlands), and the effects on rainfall patterns that result from climate change. Water Footprint is location specific and has a direct link between production and consumption sites. Unlike greenhouse gases a water footprint has direct implications in the places where production takes place

Millennium Ecosystem Assessment

The Millennium Ecosystem Assessment's approach is premised on the notion that management decisions generally involve trade-offs among ecosystem services and that quantitative and scientifically based assessment of the trade-offs is a necessary ingredient for sound decision-making. For example, decisions to clear land for agriculture involve trade-offs between food production and protection of biological resources; decisions to extract timber involve trade-offs between income from timber sales and watershed protection; and decisions to designate marine protected areas involve trade-offs between preserving fish stocks and the availability of fish or jobs for local populations. Accounting for these trade-offs involves quantifying the effects of the management decision on ecosystem services and human-well being in comparable units over varying spatial and temporal scales.

Indicators of biophysical condition of ecosystems do not directly reflect the cause and effect of the drivers but nevertheless can contribute to policy formulation by directing attention to changes of importance. The Millennium Ecosystem approach uses a variety of data sets and methods including remote sensing, Geographical information systems, natural resource inventories, biodiversity inventories and other socio-economic data. Due to the complex nature of measuring ecosystem impacts it is impossible to use one indicator and data sets

Appendix 7 – Stakeholder Analysis for One Planet Food

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APPENDIX 9 – Reducing GHG's arising from UK Food Consumption

Why reduce meat consumption?

- The UN's Food and Agriculture Organisation has estimated that meat production accounts for nearly a fifth of global greenhouse gas emissions. These are generated during the production of animal feeds, for example, while ruminants, particularly cows, emit methane, which is 23 times more effective as a global warming agent than carbon dioxide. The agency has also warned that meat consumption is set to double by the middle of the century. The UN suggested should have one meat-free day a week if they want to make a personal and effective sacrifice that would help tackle climate change. Dr Rajendra Pachauri, chair of the United Nations Intergovernmental Panel on Climate Change said that people should then go on to reduce their meat consumption even further.
 - Producing one kilogram of beef:
 - leads to the emission of greenhouse gases with a warming potential equivalent to 36.4 kg of CO₂,
 - releases fertilising compounds equivalent to 340 g. of sulphur dioxide and 59 g. of phosphate,
 - consumes 169 megajoules of energy.
 - A kilogram of beef is responsible for the equivalent of the amount of CO₂ emitted by the average European car every 250 kilometres, and burns enough energy to light a 100-watt bulb for nearly 20 days.(IPCC Sept 08)
 - Amount of water needed to produce 1 kg of:
 - Maize..... 900 L
 - Rice..... 3 000 L
 - Chicken..... 3 900 L
 - Pork..... 4 900 L
 - Beef..... 15 500 L (Chapagain et al)
 - 1/3 of the world's cereal harvest and over 90% of soya is used for animal feed, despite inherent inefficiencies:
 - It takes <10 kg of animal feed to produce 1 kg of beef
 - 4 to 5.5 kg of grain to produce 1 kg of pork
 - 2.1 to 3 kg of grain to produce 1 kg of poultry meat
 - A reduction in the size of the livestock industry through reduced consumption is the most effective way of cutting GHGs from animal production(IPCC Sept 08)
 - In terms of immediacy of action and to start bring down GHG emissions within the food supply chain this is clearly
 - If everyone in the UK abstained from eating meat for one day a week, this would save 13 Mtons CO₂-eq of GHGs

Why focus on methane and nitrogen?

- The majority of GHG emissions directly arising from agriculture arise either directly or indirectly from the nitrogen cycle and its modification. Nitrous oxide (N₂O) is a

product of the nitrogen cycle, the intensity of which is raised in agro-ecosystems. Atmospheric N₂O concentrations in the atmosphere have increased from a pre-industrial level of 270 ppbv to a current level of 319 ppbv.

- Emissions of greenhouse gases from agriculture are expected to increase considerably unless action is taken.
 - Emissions of nitrous oxide originate mainly from:
 - high soluble nitrogen levels in the soil from synthetic and organic nitrogen sources (fertilizers).
- The main sources of methane emissions are:
- enteric fermentation by ruminants (e.g. cows, sheep, goats).
 - anaerobic turnover in rice paddies.
 - manure handling.
- The manufacture of nitrogen fertilisers represents the major fossil energy input into agriculture accounting for 1.2% of the world's energy consumption in 1998. A central approach is a systems approach that systematically addresses leakage of reactive nitrogen (nitrous oxide, ammonia and nitrate) from the nitrogen cycle. Closing nutrient cycles, particularly by reconnecting resource use in plant and animal production is key, together with efficient animal and plant production overall. (Donal 08)
 - The GHG emissions of the supply chain of UK meat products is dominated by the methane and nitrous oxide emissions from cattle farming, which are two direct inputs to meat manufacturing. Jointly they account for 2.89 MtCO₂e. Meat manufacturing processes in the UK add another 0.55 Mt CO₂e and the production of electricity in the UK required for these another 0.38 Mt. (Minx, J., Peters, G., Wiedmann, T., Barrett, J. July 08)
 - There are clear regional hotspots in the global supply chain of meat consumed in the UK. By far biggest foreign GHG emission source outside the EU is Brazil with 3.5 Mt CO₂e. (not including indirect emissions due to deforestation)
 - Soil carbon emissions from farming are broadly equivalent in GWP to methane and nitrous oxide – at c. 2-3% of total UK GWP each.
 - Overseas carbon emissions due to land use change for commodities consumed in the UK food chain such as soya animal feed and palm oil are potentially massive.

APPENDIX 10 - Wildlife Trade & food in the UK

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APPENDIX 11 – Food Retail Engagement Strategy

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APPENDIX 12 – Food Policy Strategy

The 2020 goals for the One Planet Food are to reduce greenhouse gas emissions by 25%, ensure UK food imports are from countries where water use does not exceed water limits and to halt habitat loss within our priority biodiversity places.

Many of the issues we face as a society are connected to food, even if direct changes to the food system will not solve the problem. As food cuts across many aspects of public policy the multiple aspects need to be approached in a consistent joined up manner.

What is a sustainable food system? How do we move towards one? These questions need to be answered and embedded in the Government's policies. Consumers and food chain businesses look to government to take a lead and to put in place the framework within which others can take action. On issues such as sustainable sourcing of fish and GHG mitigation within the food chain, there are opportunities for the UK to take a lead within Europe. Key steps on the road to a sustainable food system are efficient pricing of resources and making the polluter pay. For example, in many parts of the world agricultural users of water do not bear its full cost. It will be crucial that a sustainable food system is defined that reduces the tension between environmental, social and health priorities. This will need to address the current problem in which consumers and retailers are confused.

Food policy covers a wide variety of areas including climate change, biofuels, water, biodiversity, land use, labour, urbanisation, population and nutrition and is characterised by existence of uncertain synergies such as the impact of price volatilities, geo-political uncertainties and externalities like healthcare and obesity levels. It will be important to join up policy and work towards a common sustainable food policy for all of Europe.

While the paper Best Before (ippr north: Best Before: How the UK should respond to food policy challenges) outlines 4 key issues around a coherent food policy: The role of agriculture and agricultural policy, Food Security, the role of the food citizen – individual, corporate and state, and sustainable food production and consumption

Barriers

The UK Government has not had a comprehensive and formal statement on food policy since the Second World War. In Food Matters the government states that it will do more to create more joined up advice to consumers on health, food safety and the environment. The FSA will expand its current advice to be a one-stop-shop for consumers looking for information on these issues.

“The UK needs a clearer public policy framework for food and the machinery in government to help deliver it. The key elements of that framework should be a new shared vision for the food system of the future, a set of core strategic objectives that respond to central aspects of that vision, and an integrated statement of strategy that sets out how to move forward.”

http://www.cabinetoffice.gov.uk/media/cabinetoffice/strategy/assets/food/food_matters_es.pdf

The Sustainable development Strategy has highlighted the need for consistent policies, joined-up across departments and not restricted to sustainability issues. This lack of joined up policies is a key barrier towards a sustainable food system, as highlighted in Green, Healthy and Fair. There needs to be a new thinking in government in policy development that no longer looks at trade off, the nutrition policies promote a diet that is good for our health but not aligned to the environmental impact of food.

Food policy is further muddled by a range of different ideas and terminology including:

Food security, food nationalism, food defence, food control, food resilience, food risks, food sovereignty, food democracy, food capacity, community food security, eco nutrition.

This selection of often new hard to define words and phrases causes problems for consumers and policy makers and is one of the reasons for the lack of consistency and joined-up thinking around food.

A further barrier is the complex nature of the government's relationship to supermarkets. It does not want to be seen to be interfering in the free market yet the scale and concentration of supermarkets means that they have a huge impact on public goods, such as land and water, which government has a mandate to protect. The government needs the influence of retail power to help it deliver public policy goals while not appearing to be interfering in the commercial activities of the retail sector.

Food policy across government departments

In central government there are over 100 policy areas and responsibilities ranging from animal welfare to planning to diet and nutrition. Some belong to UK Government, others, such as agriculture, fisheries and forestry, environment, health, transport and planning, are devolved to governments in Scotland, Wales and Northern Ireland. This creates a confusing, potentially contradictory, array of policies.

Food Policy is coordinated by DEFRA, with the government looking closely at the challenges and issues that impact on the food chain and how production and consumption impact on the environment and our health. DEFRA works on behaviour change, public sector procurement, the sustainable food chain, and has a departmental objective to reduce the global impact of UK food consumption and production on the environment, as measured by a decrease in net GHG emissions from the food chain. It leads on agriculture and environmental policies.

The Food Standards Agency (FSA) sets and advises on food safety. The Department of Health deals with the consequences of poor diet. BERR leads on relationships and policies towards the retail sector. The Environment Agency (England and Wales), Scottish Environmental Protection Agency (Scotland) and NI Environment and Heritage Service (Northern Ireland) oversee waste, water and air quality legislation.

WRAP, oversees the implications of waste and its reduction. The Department for Transport oversees the motorway and road infrastructure on which the retailers' logistics systems rely.

Scotland and Wales have their own food policies. While the regions and local authorities have remit connected to food. DFID, the treasury, the department of communities and local government, the cabinet office, the department for culture media and sport, the department for education, English Nature amongst others all have food related policies.

The Sustainable Development Commission recommended that DEFRA works with the FSA, Department of Health, DFID, Department for Transport, treasury, BERR, and works with the devolved administrations retailers and other stakeholders to develop a route map for sustainable food systems. This system needs to be ambitious and aspirational in setting long term goals in order to ensure the UK has a comprehensive, understandable, cohesive food strategy.

There are a wide range of policies in agriculture that indirectly affect GHG emissions (e.g. the Common Agricultural Policy, Nitrate Vulnerable Zones, Environmental Stewardship). However, there are no policies directly aimed at reducing GHG emissions. The Committee on Climate Change (CCC) recommend that the Government seriously considers developing a policy framework focused specifically on climate change objectives.

Policy Levers

Climate Change

The 2006 Food Industry Sustainability Strategy acknowledges the carbon emissions and transport are 2 of the 4 primary environmental issues within the industry, the other two being water and waste.

The Climate Change Act 2008, which commits the UK Government to addressing both the cause and consequences of climate change, is a key tool in achieving one of the stated goals of One Planet Food of a 70% reduction in GHG emissions from food by 2050. The act has committed the UK to an 80% reduction in GHG emissions by 2050, with CO₂ reductions of 26% at 1990 base levels by 2020. A key part of this is a carbon budgeting system which caps emissions over 5 years, the first of which must be set by 2009. There will also be a committee on climate change a new independent, expert body to advise Government on the level of carbon budgets and where cost effective savings could be made. The Committee will submit annual reports to Parliament on the UK's progress towards targets and budgets to which the Government must respond, thereby ensuring transparency and accountability on an annual basis.

The Climate Change Levy (CCL), is a general tax on energy use and, for particularly energy intensive industry sectors, there are Climate Change Agreements (CCAs). Industry sectors eligible for CCAs receive an 80% reduction in the cost of the CCL in return for meeting energy efficiency or carbon-saving targets, energy use or CO₂ must be reduced per unit of production, if the company is growing, then overall emissions

may still increase. Within the food industry manufacturers, the cold storage sector, horticultural enterprises, intensive pig and poultry units and certain aspects of supermarket operations (in-store bakeries and rotisseries) are eligible for the CCA.

In order to tackle emissions from less energy intensive but cumulatively significant sectors of industry, the Government is in the process of developing a new policy tool, the Carbon Reduction Commitment (CRC). The CRC will target emissions from energy use by large organisations such as hospitals, hotels and supermarkets – those organisations who fall outside the EU Emissions Trading Scheme and the Climate Change Agreements. CRC allowances will be issued to participants via an auction process. Within the context of the scheme cap, participants will be able to determine their own emissions targets, as with the ETS, and will be able to buy and sell permits among themselves.

Sustainable Procurement

According to DEFRA the public sector spends £2 billion on food and catering services. The public sector accounts for 70% of the cost-based catering sector in the UK and 30% of meals eaten outside the home. The largest 5 catering companies control 85% of the market. The Public Sector Food Procurement Initiative (PSFPI) has worked since 2003 to:

- promote food safety
- increase the consumption of healthy and nutritious food
- improve the sustainability and efficiency of food procurement catering services;
- improve sustainable performance at each stage of the food chain in support of the Sustainable Farming and Food Strategy;
- mainstream good practice in food procurement and supply
- to improve efficiency and realise savings that can be ploughed back into improving catering services.

Other important objectives cover consumer behavior, organic food, animal welfare, fair treatment of suppliers and catering for ethnic minority, cultural and religious groups.

The 2007 Sustainable Procurement Action Plan called for the UK to be among the European Union (EU) leaders in sustainable procurement by 2009, and to achieve a low carbon and more resource-efficient public sector

England a promise of nutritious, more environmentally sustainable food will be delivered through a new 'Healthier Food Mark' that will show where healthier, more sustainable food is available. The standards behind the Mark will provide a lever to drive out the inefficiencies that currently hinder cost-effective public food procurement, so that the money spent yields better food. Adoption of the standards

required to achieve the Healthier Food Mark will be voluntary. But the Government will look at making compliance compulsory for central government departments and their agencies, and prisons, by 2012, all public bodies in England will be encouraged to join. The Healthier food mark should include sustainably sourced food as a key part of its strategy. In many instances, food procurement is the responsibility of local authorities and other local bodies. In other cases, food is procured through national contracts (e.g. for the Department of Work and Pensions). Higher standards for food served by public institutions, established through the procurement process across the public sector, would create a powerful demand-side driver for healthier food. The Healthier Food Mark criteria would cover the design of menus, sourcing of ingredients and the preparation and presentation of food and include messages to improve the environmental sustainability of the food supplied.

The Healthier Food Mark might be made compulsory at the next Spending Review, (the current one runs until 2008-2011) and will be looked at as part of the developing plans for primary legislation.

Water

In the UK the industries which use the most water are agriculture, food and drink. The Food Industry Sustainability Strategy looks at the amount of water used by companies in their operations but does not look at embedded water. There is a strong policy focus on improving water quality associated with agricultural practice. The majority comes from Europe, such as the Water Framework Directive and the Nitrates Directive. The success is reliant on implementation by DEFRA and the Environment Agency and the devolved administrations. To improve the sustainability of agricultural production systems need to adopt improved crop water use efficiency, reduce diffuse pollution and adopt river-basin management plans. To aid the achievement of this goal, in 2006 DEFRA rolled out its England Catchment Sensitive Farming Delivery Initiative, farmers will be assisted in ways of improving farm practices to reduce water pollution from agriculture. The 2008 Water strategy – Future Water (DEFRA) - sets out the government's long term vision for water and water management. The paper identifies 3 actions associated with water relevant to agriculture.

- Initiatives will be rolled out over the next 3 years to support farmers on catchment sensitive farming
- Government will work with farmers to reduce the adverse impacts of agriculture on water through advice, guidance and funding for good farming practices.
- The government has committed to designating Nitrate Vulnerable Zones (NVZ), as required by the Nitrogen Directive. The directive will be implemented in January 2008.

Food Matters

This report was published earlier this year and two issues are highlighted as being high priority. One is the impact of the food chain and how it can be used to mitigate

climate change, the second being how to produce and promote less resource intensive food industry.

The 4 main policy objectives for the report are:

- Fair prices, choice, access to food and food security through open and competitive markets
- A more environmentally sustainable food chain
- Improved food safety
- A further transition to healthier diets

The report clearly embeds an environmentally sustainable food chain together with healthier diets within Government vision, building on elements already in place including The Sustainable Food and Farming Strategy (England only); UK vision for the CAP; Fisheries 2027 (England only); the Food Industry Sustainability Strategy.

The report has led to the council of food policy advisors being established. Part of its remit is to advise the Secretary of State on how to achieve the 4 objectives of the report. They will also make policy recommendations, how to achieve sustainable production, distribution and consumption of food, ensuring that it is available and affordable for all sectors of society and how the effects of global trends will impact on these.

Waste

This area is being led by WRAP who work with Local Authorities, businesses and individuals to reduce waste and recycle more. Climate change and waste span the length of the food chain while other impacts are concentrated on specific areas of the chain, for example biodiversity is focused on farming and fishing. The main types of waste in the food chain are food and packaging. Millions of tonnes of both are produced annually, much of which could be avoided with the rest needing to be better managed.

The four priority areas identified by WRAP are packaging, food waste, collection systems, quality of materials. While WWF-UK may not work specifically in these areas it can support WRAP in its work to meet and tackle the problem of waste. According to WRAP every ton of food wasted 4.5 tonnes of CO₂ equivalent could be saved.

Packaging issues are high on the agenda of consumers and policy makers. The Courtauld Commitment is a voluntary agreement between WRAP and UK retailers aimed at reducing less packaging and food going into household bins.

Household waste is being tackled in WRAP's Love Food Hate Waste Campaign, which is concentrating on behaviour change and WRAP are working with the UK grocery sector, food industry, Government and organisations such as the Food Standards Agency to develop practical solutions and improved communications to make it easier for consumers to get the most from the food they buy and waste less of it.

Other potential policy areas

The food for life partnership

This is a network of schools and communities across England aiming to revolutionise school meals, change eating habits and reconnect young people to the food chain. The partnership is led by the Soil Association, with help from Garden Organic, the Focus on Food campaign and the Health Education trust. As well as encouraging sustainable procurement in schools it aims to:

- Ensure every pupil eats a healthy and climate friendly school meal by 2015
- The government will invest an extra 50p per pupil, per meal.
- 12 hours cooking lessons per year for every pupil up to key stage 3 by 2011.
- Every pupil to have direct experience of food growing and production by 2011.

The Food Standards Agency

The FSA is committed to protecting consumer's interests in relation to food, now and in the future, as such it is committed to taking sustainable development into account in all its actions and policies.

At September 2008 the FSA agreed an approach to sustainable development in policymaking which commits it to sustainable policies. In adopting this approach, the Agency is undertaking to choose the most sustainable policy option. Only in exceptional circumstances will it not do so. In these cases the reasons will be clearly communicated and every effort made to minimize the resulting negative impacts. As such the FSA should be moving to alter its advice on eating fish.

The Food Industry Sustainability Strategy (FISS)

The strategy sets out how all those involved in the food and drink industry can help achieve sustainable development within sector. The FISS commits the government to investigating the lifecycle impacts of an average shopping trolley. An industry Champions Group is leading on this and reports to the Government on the measures being taken to make progress on the strategy and the how monitoring is being carried out. There a raft of areas covered by this strategy including Climate Change, water, waste, CSR and ethical trading. The Food Industry Better Regulation Group (FIBR) was established as a forum for the Government and the industry to add value to food policies and the legislative process, meetings are held quarterly.

A major drawback is that the food system's impact upon biodiversity and ecosystems was an omission from the Food Industry Sustainability Strategy.

BERR and HMT should ensure they use the Companies Act 2006 to get retailers and producers to report fully on their supply chains and their natural resource impacts.

DEFRA alongside industry could develop a "Green Tractor" for domestic food production by 2010 that goes beyond the current Red Tractor with improved sustainability standards. DEFRA's ecosystem services Action Plan should be

implemented across local areas to ensure local ecosystem wide solutions on water pollution and the negative impacts on biodiversity are tackled effectively.

APPENDIX 13 - References

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A list of a wide range of other technical reports and documents is available at: <\\HANNIBAL\DATA\UK-FUN~1\ONEPLA~1\Reports\TECHNI~1>

Appendix 14 – Action Plan

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