

www.gov.uk/defra

Sustainable Consumption Report

Follow-Up to the Green Food Project

July 2013

© Crown copyright 2013

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/ or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk

This document/publication is also available on our website at:

<https://www.gov.uk/government/publications>

Any enquiries regarding this document/publication should be sent to us at:

greenfoodproject@defra.gsi.gov.uk

PB 14010

Contents

1. Introduction.....	4
2. Executive Summary.....	8
3. Principles of a Healthy and Sustainable Diet	13
4. Consumer Behaviour.....	21
5. Sustainable Consumption and Growth	28
Annex A : Working Group Volunteers.....	41
Annex B : Vision	42
Annex C: Example of draft behaviour change template	44
Annex D : Selected outputs from the three templates	51
Annex E : Framework.....	54
Annex F : Figures used for discussion on mechanisms	55

This report and the conclusions of the Sustainable Consumption Project, published on 29 July 2013, have been jointly developed and owned by members of the working groups.

1. Introduction

1.1 The Foresight Report into the Future of Food and Farming examined the decisions that policy makers would need to take to address challenges of future food security. The report recognised that there is a rising global population, a limited amount of land that can be used to meet that growing demand and increasing environmental pressures on the food system, including those resulting from climate change.

1.2 Domestically the UK Government has placed a strong focus on growth and competitiveness in the agriculture and food sector and the Defra business plan pledges to support an increase in food production. This sits alongside the strong environmental commitments made. We wanted to consider the role that the UK has in achieving global food security and environmental improvement.

1.3 The Green Food Project was a response to a commitment made in the Natural Environment White Paper, to examine the challenges of increasing food production and improving the environment and how any tensions that this raised can be reconciled. Recognising that this was not a job for Government alone, the project was a co-creation with organisations from across the farming, food and environment sectors. The initial project conclusions published in July 2012 were jointly owned and developed by the project Steering Group. They set out the strategic steps that can be taken to deliver win wins and make decisions about the trade-offs. These covered a number of themes, including: research and technology, knowledge exchange, our future workforce, investment, building effective structures, valuing ecosystem services, land management, consumption and waste. In taking forward the Green Food Project conclusions and proposed actions, the project steering group considered that:

- The Green Food Project has stimulated greater levels of awareness and interest from across the farming, food and environment sectors and that work in this area should continue under this banner, where appropriate;
- The innovative, open policy making approach taken in this project has generated a positive collaborative approach, which should continue as the actions are taken forward;
- In areas where the issues are complex and solutions could not be easily found, particularly due to the differing views involved, a more strategic and substantive discussion is needed;

1.4 The Green Food Project report in July 2012 concluded that follow-on work was required to enable a broader and more sophisticated debate around the roles that diet and consumption play in the sustainability of the whole food system.

Consumption and Waste: Green Food Project Recommendation

The Green Food Project steering group partners will work together to facilitate a wider, more sophisticated debate across the whole food chain about the role diet and consumption play in the sustainability of the food system. This will begin with a scoping discussion that will take place within three months of this report being published, to maintain momentum. Within that debate the project steering group will examine issues such as (but not exclusively):

The information base required to support the debate and future change, including:

- information we have about what constitutes a healthy and a sustainable diet;
- scenarios for how we might expect the food system to change in the coming decades, bearing in mind the substantial changes we have seen in the last generation to the way in which people buy food, and the types of food they eat;
- information about how global diet changes will affect production in England, including the impact on exports and imports;
- information about the implications of potential changes in food prices and what this will mean for affordability of food in England, and how prices will affect the choices that producers, processors and consumers make.

The potential for behavioural change, across all sectors, including:

- in relation to consumer practice, a deeper understanding of what drives consumer purchasing and consumption decisions, who (including which trusted intermediaries or messengers) influences that behaviour and how they might be influenced to deliver 'public good', the levels of public acceptability of new products and technologies and how this might change, based on ongoing research;
- how far retailers might be able to influence sustainable consumption patterns going forward and barriers they may face in doing so;
- how far British producers are responding to the demands of consumers and might do so in the future;
- how we might seek to influence the way in which the next generation purchase and prepare food in order that they develop sustainable practices.

The potential for alternative approaches to consumption and waste, including:

- the potential for reformulation of products and substitution of high impact ingredients, drawing on evidence such as the work of the bread and curry subgroups;
- how we can ensure that livestock feed is sustainable;

- the potential for sustainable sources of fish, shellfish, algae and aquaculture generally to expand as a market for low impact protein;
- recognising the amount of work already being undertaken to address food waste, building on this by looking at post harvest food waste, particularly within horticulture, the potential for smarter regulation and also the potential for using food waste as feed.

1.5 It was agreed that this work should continue with the same approach taken in the Green Food Project, to work collaboratively with a range of stakeholders. In the light of this and after further discussion at follow-up meeting in Oxford on 28 September 2012, it was decided to focus on three themes to be taken forward:

- Principles of a healthy and sustainable diet
- Consumer behaviour
- Sustainable consumption and growth

1.6 The project was reliant on the quality and quantity of the input from all partners and there has been an excellent contribution in terms of time and resources from all of those involved.

Workshop and formation and scope of working groups

1.7 A broader stakeholder workshop was held on the 1 March 2013 to discuss each of the three themes attended by over 70 different individuals. The workshop's aim was to get wider stakeholder involvement in the project and to identify the priority areas to work on.

1.8 This workshop helped to successfully form three working groups (members of each group are listed in **Annex A**) as attendees volunteered and committed to further work.

1.9 The three working groups each met three times over the course of two months to discuss their respective topic in detail. The groups consisted of a cross-section of key stakeholders, which included pre-farm gate representatives such as NFU, members of the food and drink manufacturing industry, packaging industry, food service industry and a range of NGOs, retail representatives and a few academics. Every effort was made to develop diverse and balanced membership but not all of the working groups had a full range of representation. However, all meeting notes and draft reports have been shared for comment across all participants and more widely with those taking part in the stakeholder workshop.

1.10 Each working group was invited to define their outcomes and recommendations during this period of time which, considering the very short timescale was particularly challenging. Due to this, all of the work has been based on previously published reports and there has not been the time to create

any primary research. However, the broad range of stakeholders involved have drawn widely on their experience and knowledge of existing evidence.

- 1.11 The groups were given a reasonably strong steer not to focus on **food waste** as it was recognised that there was already a large amount of work being undertaken to address this area (e.g. The Review of Waste Policy in England 2011, WRAP Love Food, Hate Waste Campaign, Courtauld Commitment, Hospitality and Food Service Voluntary Agreement). To avoid repetition of existing work it was decided that the expertise in each of the groups should be focussed on other aspects, whilst drawing on existing evidence and ongoing initiatives around food waste.
- 1.12 During this period, the consumer behaviour working group began work to develop a vision to try and define what 'success' would look like, in terms of both sustainable consumption and production. This was shared with the other working groups and could be further developed in to an overarching vision (see **Annex B**).

2 Executive Summary

Principles of a healthy and sustainable diet

- 2.1 This group was chaired by Tara Garnett (FCRN) and Maureen Strong (AHDB) and set itself the task of producing a set of clear bullet points defining the **key principles** of a sustainable, healthy eating pattern. These will, when finalised, form a robust set of dietary guidelines that could be used to inform further policy developments, industry actions, and NGO messaging.
- 2.2 The approach adopted was as follows: it a. reviewed a broad range of food literature focusing on health, sustainability or both¹; b. distilled a set of key principles and c. validated each in a table which referenced the rationale, highlighted caveats and qualifiers, and identified literature sources.
- 2.3 The review of the literature found clear potential compatibility between pro-environmental eating patterns and good health, as defined by the Eatwell recommendations.² The synergy is much less obvious between health/environmental goals on the one hand, and economic objectives on the other if a narrow definition of economic development is used. The group recommends a broadening of economic thinking to capture the value of ecosystems services, and conversely the costs of environmental damage, the costs to society of ill health and loss of educational attainment due to poor nutrition; and the costs (to individuals, to business and to local authorities) of food waste.
- 2.4 The group formed the following draft key principles for healthy and sustainable eating:
1. Eat a varied balanced diet to maintain a healthy body weight.
 2. Eat more plant based foods, including at least five portions of fruit and vegetables per day.
 3. Value your food. Ask about where it comes from and how it is produced. Don't waste it.
 4. Moderate your meat consumption, and enjoy more peas, beans, nuts, and other sources of protein.
 5. Choose fish sourced from sustainable stocks. Seasonality and capture methods are important here too.

¹ Both peer reviewed and grey literature

² That is, while a healthy diet is not always necessarily a sustainable one, and while it is possible to have a low-environmental impact but unhealthy diet need not be a healthy one, there is significant scope for alignment of the two objectives.

6. Include milk and dairy products in your diet or seek out plant based alternatives, including those that are fortified with additional vitamins and minerals.
7. Drink tap water
8. Eat fewer foods high in fat, sugar and salt

Consumer behaviour

2.5 The group, chaired by Dan Crossley (Food Ethics Council) and Andrew Parry (WRAP) discussed what the vision should be in terms of consumer behaviour, how this could be achieved and what should be considered within the scope of the project. It was agreed to explore potential interventions through three lenses - a food practice ('cooking from scratch') a meal occasion (breakfast) and a meal type (curry) - which helped focus the development of the vision, a set of 'guiding principles' and recommendations for future action. In parallel, Defra commissioned work (by Best Foot Forward³) to review evidence on consumer food related behaviours that impact on sustainability.

2.6 The group concluded that there is a need for effective leadership in, and ownership of, sustainable food consumption and production activity and for a robust governance framework. Government should play a key role in providing a clear steer, helping coordinate resources and activity, and agreeing methods to prioritise activity and monitor progress. There should be an agreed approach for setting goals, assessing progress, and communicating this, demonstrating success through action.

2.7 The group supported the Best Foot Forward report's findings that it was vital to have a joined-up, overarching vision of what 'good' might look like across social, environmental and economic long-term interests to give a shared sense of purpose and focus. It will also be important to have a transparent mechanism for identifying potential trade-offs between the different aspects of sustainability and for determining relative priorities. The group also concluded that influencing consumer behaviours requires an integrated 'multi-layered' approach, involving local/community engagement, activity at the point of purchase (in and out of home), education together with larger scale media and other communications work. This needs to be supported by activities undertaken by business and government to provide a facilitating environment for enabling healthier, more sustainable food choices. The evidence base supporting policy in this area is under developed and more research in this area is clearly needed. Policy options that merit further research include (but are not limited to) choice editing, nudge-

³ <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=2&ProjectID=18666>

type approaches, fiscal incentives and disincentives and changes to public procurement rules.

2.8 The group identified a number of recommendations, including that the Green Food Project Steering Group – and relevant Government departments – should implement a process to convene and support relevant policy, commercial and NGO groups to build on and refine the outputs of the three groups; agree an overarching vision for the Green Food Project (building on the one developed by the Consumer Behaviour group); and identify target audiences and behaviours for each of the principles underpinning sustainable consumption (including a healthy, sustainable diet). From that, it should also develop action and research briefs, and associated roadmaps, to move towards the vision, and it should review where win-win opportunities from all three groups could be developed into a set of action research pilot projects (e.g. growth of the UK sustainable food sector). A cross-Government group (which meaningfully engages devolved administrations), should be established to sponsor delivery of the vision and to agree ways to implement it, taking advantage of existing mechanisms where possible (for example WRAP's Product Sustainability Forum).

Sustainable consumption and growth

2.9 The Group, chaired by Andrew Kuyk (FDF) set out to examine the opportunities for growth in the agri-food sector from changes in what people buy and eat and from adding value through more efficient use of resources and from innovation in products and processes across the value chain.

2.10 In addition to considering the general drivers and principles involved, the Group also looked in more detail at two illustrative examples of areas where early progress might be made – increasing consumption of domestically produced fruit and vegetables, and the potential for creating a brand concept around the sustainability of British farming and food.

2.11 A number of clear themes emerged: the underlying issues are complex and inter-related; they require collective and collaborative action; market forces alone will not deliver the necessary scale or pace of change (partly because of commercial tensions within supply chains and the provisions of Competition Law); similar arguments apply to research and innovation where the financial returns to individual funders may not support a business case for investment but there are wider benefits for the sector and society as a whole.

2.12 British food and farming has a good story to tell in terms of sustainable intensification (producing more from less and with less environmental impact) but this needs to be better articulated and communicated in ways which resonate

with consumer concerns. This suggests the need for new mechanisms, both to integrate and improve on existing developments and to provide a safe space for future collaboration, and for a clear strategic framework setting a strong direction of travel for all to follow. Further work also needs to be done on capturing costs and benefits which are not currently monetised within the food system, though this has to be done at EU and international level as well in order to maintain a level playing field.

Cross-cutting conclusions

- 2.13 Government has a key role to play on sustainable food issues, providing leadership, reinforcing a sense of urgency, indicating priority areas for action and enabling others to deliver much needed action. This leadership must be integrated, i.e. key government departments for food such as Defra and Department of Health working together more effectively.
- 2.14 It is vital to look across the whole supply chain, from field to fork, and across the whole food system. Hence there is a need to address both production and consumption, in an integrated manner, rather than looking at elements in isolation.
- 2.15 There are a number of areas where Government providing a stronger steer would be valuable to the rest of the food system, for example on issues relating to consumption (e.g. how trade-offs will be addressed), on the integration between consumption and production side approaches, and on official and impartial consumer facing advice and labels.
- 2.16 There is need for an agreement on 'what good looks like', both in terms of a healthy, sustainable diet, but also broader sustainable food consumption (and how it links with food production). This would provide a focus for activity, and enable industry action and more effective communication to consumers. Participants in the consumer behaviour working group stressed the need for a vision and a roadmap (or roadmaps) for sustainable food production and consumption (developed through a gap analysis of current knowledge and activities).
- 2.17 As part of the above we recommend that the principles of a healthy, sustainable diet are circulated for peer review to experts in the fields of nutrition and environmental sustainability. Once a final version has been agreed, we recommend that the principles are adopted by government and other relevant stakeholders (including industry and NGOs) as a basis for developing policies and strategies to increase adoption of healthy, sustainable diets.

- 2.18 The need for business, government and civil society to take concerted action is urgent, given the scale of the challenges, and so a compelling vision must be accompanied by mechanisms for taking actions forward.
- 2.19 Synergies between health and environmental sustainability are potentially strong but the synergy was much less obvious between health/environmental goals on the one hand, and economic objectives on the other, if a narrow definition of economic development is used. We recommend a broadening of economic thinking to capture the value of ecosystems services, and conversely the costs of environmental damage, the costs to society of ill health and loss of educational attainment due to poor nutrition; and the costs (to individuals, to business and to local authorities) of food waste.
- 2.20 There is a need for some focussed additional research, particularly around understanding the implications of a healthy, sustainable diet (for the population as a whole but also for specific segments; and for the UK food industry – in terms of costs, availability, UK and international supply chains etc).
- 2.21 This piece of work has been valuable first and foremost in galvanising support from a diverse range of stakeholders to explore issues around food consumption (and their links to production). It is important to build on that platform. Harnessing the collective power of that group is a good basis for continuing to address key food challenges. For example, the stakeholder group could be used to feed in a collective response to the current consultation on the EC's Communication on Sustainable Food, and help support the Global Food Security Programme.

3 Working Group 1: Principles of a Healthy and Sustainable Diet

Overview

3.1 The healthy and sustainable diets working group has devised a set of eight key principles of a healthy and sustainable diet. These have been agreed by all members, including both industry and NGO stakeholders. In our view, this represents an important step forward.

3.2 The eight principles are:

1. Eat a varied balanced diet to maintain a healthy body weight.
2. Eat more plant based foods, including at least five portions of fruit and vegetables per day.
3. Value your food. Ask about where it comes from and how it is produced. Don't waste it.
4. Moderate your meat consumption, and enjoy more peas, beans, nuts, and other sources of protein.
5. Choose fish sourced from sustainable stocks. Seasonality and capture methods are important here too.
6. Include milk and dairy products in your diet or seek out plant based alternatives, including those that are fortified with additional vitamins and minerals.
7. Drink tap water
8. Eat fewer foods high in fat, sugar and salt

3.3 All principles are supported by peer reviewed evidence.

Headline Recommendations

3.4 We recommend that these principles are circulated for peer review to experts in the fields of nutrition and environmental sustainability.

3.5 Once a final version has been agreed, we recommend that the principles are adopted by government and other relevant stakeholders (including industry and NGOs) as a basis for developing policies and strategies to increase adoption of healthy sustainable diets.

The Principles in Detail

3.6 The eight principles are each structured as follows:

- a. Short headline message
- b. Further brief explanation to state rationale
- c. Qualifiers and caveats
- d. Available consumer facing advice
- e. Peer reviewed literature sources

3.7 These principles are currently not intended to replace but rather to complement the Eatwell plate. In the longer run however, it may be necessary to develop a new version of Eatwell that incorporates sustainability advice. There is also much follow up work that could be done to examine what sustainable, healthy diets look like in practice and how far they align with eating patterns already present among some population groups, and to develop ethnically appropriate visual materials and meal planners that would provide concrete illustrations of what achievable healthy sustainable diets look like in practice.

MESSAGE 1: Eat a varied balanced diet to maintain a healthy body weight

Explanation: Eating the right amount of food will help you, as part as an overall healthy diet, to maintain a healthy body weight and you are more likely to get the full range of nutrients you require. Eating more than you need means that energy and natural resources are used to produce food that is ultimately not utilised. Eating a variety of foods can help you manage your weight, improve general wellbeing and reduce the risk of conditions including heart disease, stroke, some cancers, diabetes and osteoporosis.

Qualifiers & caveats: Physical activity is also an important part of the energy balance equation, but is covered in other guidance

Available consumer facing advice: The Eatwell plate⁴

References:

- Michaelowa A, Dransfeld B. Greenhouse gas benefits of fighting obesity. Ecological Economics, 2008, 66:298-308; Edwards P and Roberts I (2009) Population adiposity and climate change Int. J. Epidemiol. 38 (4)
- WCRF/AICR's Second Expert Report: Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective

⁴ <http://www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx>; <http://www.nhs.uk/Change4Life/Pages/healthy-eating.aspx>

MESSAGE 2: Eat more plant based foods, including at least five portions of fruit and vegetables per day.

Explanation: Base your meals around complex carbohydrates, such as: potatoes, bread, pasta and rice; peas, beans and pulses such as lentils. Choose wholegrains where possible. We particularly need to boost our vegetable intake. Choose fruit and vegetables in season, where possible, as these are likely to have been produced and distributed in less environmentally impactful ways. Enjoy nuts and seeds in moderation.

Qualifiers and caveats: Plant based foods generally require less energy and fewer natural resources to produce. A well planned plant based diet can be healthy and meet all our nutritional requirements, at all stages in our lives. Eating a diversity of foods will help ensure you get all the nutrients you require. Most people do not eat enough fruit and vegetables to meet nutritional guidelines. Some plant based foods carry higher environmental costs than others (for example air freighted produce, or vegetables grown in heated greenhouses). It is important to choose carefully within this food category bearing in mind that environmental goals may sometimes clash with international development objectives, as in the case of air freighted foods whose production supports economic development in low income countries. Note that there is as yet no formal definition of what constitutes a 'plant based diet' and clearly some foods of plant based origin (e.g. chocolate, sugar and vegetable oils) should only be eaten sparingly, and are not in keeping with the spirit of the approach advocated here.

Available consumer facing advice: The Eatwell plate

References:

- Garton, L. & Harland, J . (2011) The Plant-based Plan - Reference guide for plant based nutrition. Lannoo Campus
- WCRF/AICR's Second Expert Report: Food, Nutrition, Physical Activity, and the Prevention of Cancer: Recommendations: plant foods
- Sim S, Barry M, Clift R et al. The Relative Importance of Transport in Determining an Appropriate Sustainability Strategy for Food Sourcing. Int J LCA,2007, 12(6):422–431
- Understanding the environmental impacts of consuming foods that are produced locally in season – Defra project FO0412

MESSAGE 3: Value your food. Ask about where it comes from and how it is produced. Don't waste it.

Explanation: Seek out foods produced to higher ethical and environmental standards. Throwing food away is a waste of energy and natural resources, as well as money. Plan what you are going to buy, store it appropriately, think about portion size to reduce waste and if you have leftovers, use them up.

Qualifiers and caveats: Environmental and ethical labels vary in their criteria and focus. Different labels may measure different things (eg. labour standards or animal welfare) and there may also be disagreements within categories (eg. animal welfare) about the merits of different labelling schemes.

Additional consumer facing advice: There is a wide variety of certification schemes offering consumers information about different types of environmental and ethical standards met by food products. Most of these are run by private or charitable organisations. There is research which shows that consumers find the variety of different labels of this type confusing. There is currently no single source of impartial information on sustainable sourcing that provides an overview of such schemes. This seems to be a significant gap and the working group recommends that addressing this gap with a credible, independent source of consumer facing sustainable sourcing information would be worthwhile. As regards waste, WRAPs Love Food Hate Waste website contains information about how to reduce food wastage.

References:

- WRAP (2009) Household Food and Drink Waste in the UK.
- WRAP (2011) New estimates for household food and drink waste in the UK.
- WRAP & UNEP (2009). The environmental food crisis: The environment's role in averting future food crises, Nairobi.
- Tallontire, A. (2012) A Review of the Literature and Knowledge of Standards and Certification Systems in Agricultural Production and Farming Systems. Natural Resources Institute, Greenwich.

MESSAGE 4: Choose fish sourced from sustainable stocks.

Explanation: The health message is that we should be eating two portions of fish per week, one of which should be oily. Oily fish are rich in long chain omega-3 polyunsaturated fatty acids and at present there are no adequate plant based sources of these nutrients. Dietary advice on fish is already available from the NHS Choices website.

Qualifiers and caveats: Although there are clear health benefits in eating more fish, many fish stocks are over exploited. There is clearly a trade off here between health and environmental objectives which requires resolution. With regards to sustainability of fish stock levels, there are also issues to consider such as capture methods and breeding seasonality. As a priority there is need for more research into development of alternative, plant based sources of long chain omega-3 polyunsaturated fatty acids.

Additional consumer facing advice: The fish red list contains information of fish to avoid buying.

References:

- Advice on fish consumption: benefits & risks, SACN
- The State of World Fisheries and Aquaculture, SOFIA

MESSAGE 5: Moderate your meat consumption, and enjoy more peas, beans, nuts, and other sources of protein

Explanation: All of these are good sources of protein but meat carries relatively higher environmental cost. The term meat includes red and white meat, both fresh and processed. Peas, beans or lentils combined with starchy staples provide a balanced and adequate protein intake, and are a cost-effective option. Alternatively make meat stretch further by combining with pulses. Protein intakes in the UK are more than adequate for most groups, and well-planned plant based diets should not compromise protein adequacy amongst consumers in general.

Qualifiers and caveats: Different kinds of meat/animal products (eg. beef, lamb, poultry, pork and eggs) impact upon the environment in different ways. It is not possible to say that one type of meat is 'better' or 'worse' for the environment since there are different issues involved. For example, pork and poultry meat tend to be associated with fewer GHG emissions than beef or lamb but the latter can graze on land unsuited to other agricultural purposes, and consume by-products, so contributing to resource efficiency. The rearing method will also impact upon nutritional quality. Generally speaking animal products carry a higher environmental cost than plant based proteins so consuming more legumes and other plant based proteins will help reduce your footprint. There is no optimal level of meat consumption, although the Department of Health advises limiting intake of red meat to no more than 70g (cooked weight) /person/day⁵. By eating a diversity of plant based protein sources you will be able to obtain the full range of amino acids (the building blocks of protein) that you need. Examples of 'complete' protein meals include beans on toast, dahl and chapatti/or rice, chilli-sans-carne with rice etc.

⁵ Average red meat consumption for the UK is in line with these recommendations (72g/ v 70g).

Available consumer facing advice: There is little official advice available⁶⁷ but ways of moderating meat consumption could include : eating meat free meals (or having meat free days); eating meat in smaller portion sizes, basing meals around plants and simply using small quantities of meat to add flavour.

References:

- Garnett T. (2009) Livestock-related greenhouse gas emissions: impacts and options for policy makers. *Environmental Science & Policy*;12(4):491-503
- Williams, A.G., Audsley, E. and Sandars, D.L. (2006) Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities.
- NHS Choices: <http://www.nhs.uk/Livewell/Goodfood/Pages/meat.aspx>
- WCRF (2007) Guide to portion sizes.
- Westhoek, H. *et al.* (2011) *The Protein Puzzle: The consumption and production of meat, dairy and fish in the European Union*. The Hague: PBL Netherlands Environmental Assessment Agency.

MESSAGE 6: Include milk and dairy products in your diet or seek out plant based alternatives, including those that are fortified with additional vitamins and minerals.

Explanation: For good bone health, eat a range of calcium rich foods – from dairy or non dairy sources – and ideally from low fat sources, where they exist. Dairy products are a particularly rich source of calcium which is good for bone health, as well as of other important nutrients. However, as animal products, dairy foods are also resource and GHG intensive. If you choose to avoid dairy products become informed about plant based alternatives, including those fortified with additional vitamins and minerals.

Qualifiers and caveats: These foods are resource intensive. However, while it is possible to meet our calcium needs from plant based sources, it is necessary to take care. Fracture rates among vegans tend to be about 30% higher than that of meat eaters, fish eaters or vegetarians although, notably, among those who took care to consume adequate calcium intakes, their bone fracture rates were on a par with other groups.

⁶ But see <http://www.nhs.uk/Livewell/Goodfood/Pages/meat.aspx>

⁷ Note the recent launch of 'eating better' (<http://www.eating-better.org/>)

Additional consumer facing advice: There is little official advice for people who don't consume dairy⁸.

References:

- Millward D and Garnett T (2010). Food and the planet: nutritional dilemmas of greenhouse gas emission reductions through reduced intakes of meat and dairy foods, *Proceedings of the Nutrition Society*, 69, 103–118
- Dr Adrian Williams, Environmental Burdens of Agricultural and Horticultural Commodity Production - LCA (IS0205)
- Appleby P, Roddam A, Allen N et al. (2007) Comparative fracture risk in vegetarians and non-vegetarians in EPIC Oxford. *Eur J Clin Nutr* 61, 1400–1406

MESSAGE 7: Drink tap water

Explanation: Tap water is the cheapest and most environmentally low impact way of delivering hydration. Drink tap water in preference to bottled water. Avoid sugary drinks. Fruit juices only count as one of your 5-a-day however much you drink.

Qualifiers and caveats: Fruit juices, because of the way they are produced, contain more of the sugars that are associated with dental decay.

Additional consumer facing advice: The Eatwell plate

References:

- Jungbluth, L. (2005) Comparison of the Environmental Impact of Tap Water vs. Bottled Mineral Water, Swiss Gas and Water Association (SVGW)

MESSAGE 8: Eat fewer foods high in saturated fat, sugar and salt

Explanation: Keep pies, cakes, sweets, chocolate and biscuits to an occasional treat. Try eating unsalted instead of salted nuts.

Qualifiers and caveats: There are many forms of sugar.

Additional consumer facing advice: The Eatwell plate

References:

- Eatwell plate model (<http://www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx>)

⁸ Some is available at <http://www.nhs.uk/Livewell/loseweight/Pages/Healthyfoodswaps.aspx>

Additional Research and Knowledge Recommendations

3.8 As a priority there is need for more research into development of alternative, plant based sources of long chain omega-3 polyunsaturated fatty acids.

3.9 There is currently no single source of impartial information on sustainable sourcing that provides an overview of such schemes. This seems to be a significant gap and the working group recommends that addressing this gap with a credible, independent source of consumer facing sustainable sourcing information would be worthwhile.

4 Working Group 2: Consumer Behaviour

Objective

4.1 The original objective of the consumer behaviour working group as set out by the Green Food Project Steering Group was as follows:

4.2 “This work would look for clarity on what is well understood about consumers’ behaviours relating to diet and sustainable food and what is not with a view to identifying where priorities lie for further investigation/follow-up action.

- “in relation to consumer practice, a deeper understanding of what drives consumer purchasing and consumption decisions, who (including which trusted intermediaries or messengers) influences that behaviour and how they might be influenced to deliver ‘public good’, the levels of public acceptability of new products and technologies and how this might change, based on on-going research”

4.3 Much of this was picked up by the work commissioned by Defra and undertaken by Best Foot Forward. Therefore the working group’s objectives were revised to:

- Agree the basis of a vision/goal on sustainable consumption of food
- Agree a set of guiding principles/framework
- Explore potential areas for interventions
- Make recommendations for action from business, Government and civil society

Composition of the group

4.4 The working group consisted of a cross-section of key stakeholders, which included representatives from the food and drink manufacturing industry, packaging industry, foodservice and a range of NGOs. With the exception of colleagues from Defra the group consisted of those who had volunteered, and whose interests included how best to bring about changes in consumer behaviour, what any changes (in behaviour and broader changes to production etc) needed to deliver (covering different aspects of sustainability) and what the impact of consumer behaviour change might be (for example on the food industry). There were some key gaps in representation (e.g. retailers and Department of Health) and an under-representation of those with specific experience and understanding of consumer behaviour change.

Approach

4.5 The group started with a discussion around what the vision should be in terms of consumer behaviour, how this could be achieved and what should be considered within the scope of the project. It was agreed to explore potential interventions through three lenses, a food practice (‘cooking from scratch’) a meal occasion (breakfast) and a meal type (curry), which helped focus the discussions and development of the vision, a set of ‘guiding principles’ and recommendations for future action.

Vision

4.6 The group developed a vision to help build a consensus across the range of stakeholders involved, around what 'success' would look like. The full text can be found at Annex B.

Exploration of potential interventions

4.7 It was agreed to explore potential interventions in the context of valuing and reconnecting with food, through three lenses, a food practice ('cooking from scratch'), a meal occasion (breakfast) and a meal type (curry), as working on more specific potential interventions would have value in itself but would also help develop learnings that could be applied more broadly, and inform development of the vision, a set of 'guiding principles' and recommendations for future action. Selection of the three intervention areas – which are intended to be viewed as illustrative examples - was informed by work commissioned by Defra and undertaken by Best Foot Forward⁹. Templates for the three areas were developed, and one ('cooking from scratch') is included in full in **Annex C**¹⁰. For the 'cooking from scratch' example, the aim was to explore how (in this case) a particular food practice can deliver on desired outcomes of healthy, sustainable diets for all. It should be stressed that the group did not have the time or resources to undertake detailed reviews of the literature, nor to explore in much depth the feasibility and specifics of these interventions, but this work could feed in to subsequent more detailed development of action plans. The vision, 'guiding principles' and recommendations are covered later in this paper, but some specific outputs from the three templates are included in **Annex D**. These focus on different elements of sustainable consumption, to a lesser or greater extent (e.g. social aspects, diet and health etc).

Guiding principles / key points to consider

4.8 Through developing and discussing the three intervention areas, the group arrived at a set of 'guiding principles' or important considerations:

- It is vital to have a shared understanding, and clear and consistent information about 'what good looks like', reflecting the different elements of sustainability (social, environmental and economic) and the scale of change required. An overarching vision/goal will give a shared sense of purpose and help focus and prioritise discussions, research and action.
- There should be an agreed approach for setting goals, assessing progress, and communicating this, demonstrating success through action (positive reinforcement and showcasing what is possible).

⁹ 'Review of evidence on consumer food related behaviours that impact on sustainability: Final Report SEG 1204'. It should be noted that this report was being finalised in parallel to the working group meetings, and therefore draft outputs were shared with different members of the group over the time period

¹⁰ Some of the content was taken from a draft of the Best Foot Forward report, as Best Foot Forward were on the sub-team developing this template

- It will be important to have a transparent mechanism for identifying potential trade-offs between the different aspects of sustainability (accepting that different approaches will be needed by, and relevant for, different consumers) and for determining relative priorities, at what level this needs to be done (e.g. product/food type, consumer segment etc) and what data / tools are required to undertake this (e.g. Product Sustainability Forum hotspots, Best Foot Forward ‘trendspots’ research).
- Government, business and civil society must come together to deal with the ‘difficult issues’, including composition of the diet, for example amounts of sugar, saturated fats and meat consumed.
- It is important to remember that much food behaviour is not based on rational choice: preference and habit strongly influence dietary intake. Individual food ‘choice’ is also constrained by factors at higher levels of scale, including what food is available, accessible and affordable. It is also constrained by what food is culturally perceived as ‘acceptable’. Most consumers are not motivated by explicit sustainability messages¹¹, but by price/value for money, taste, quality and freshness.
- There is much we can do drawing on current consumer motivations and concerns, to help change behaviours and bring about change in habits – even if this is not stimulated by wanting to help deliver a more sustainable world (but it is critical to know how more sustainable consumption might deliver against current motivations and concerns). However this, and other more direct activities, should be able to influence deeper values and/or how people see and interact with food. Both approaches may well be needed, to bring about short to medium term change but also more embedded (normalised) and significant longer term change.
- Bringing about changes in consumer behaviours and habits will not be achieved through a single approach (there is no silver bullet), such as a national awareness raising campaign. An integrated ‘multi-layered’ approach will be required, involving local/community engagement, in-store activity, education (whole life) together with larger scale media and other communications work (as has been achieved through the Love Food Hate Waste campaign and the Courtauld Commitment). It also requires business and Government to undertake a range of activities to provide people with a ‘better’ set of food choices – including (but not limited to) choice editing, providing incentives (fiscal or otherwise) and making changes to public procurement rules.
- Interventions need to have positive messages and tone, be engaging and inclusive and be creative in how they are designed and delivered (to tackle what will be a challenging shift in behaviours). It is important that key target behaviours and key target audiences are identified, and acted on.

¹¹ See recent research from Which? [<http://www.which.co.uk/campaigns/food-and-health/future-of-food/>] and WRAP [<http://www.wrap.org.uk/fresherforlonger>]

- Business, Government and civil society need to mobilise and direct those most willing, able and ready to help bring about change (within consumers, business¹², NGOs etc), drawing on good practice and evidence from around the world. Partnerships will be critical, and the GFP work should exploit / be delivered through existing (or planned) campaigns / structures / groups where possible¹³, so that recommendations stand more chance of being activated.
- Moments of change should be explored as potentially effective times to influence consumers (exploit learnings from existing and new Defra research¹⁴). Examples discussed included young people leaving home and new parents.
- The emphasis should now be on action/action-based research. It must build on existing evidence (which is extensive, and includes that by Best Foot Forward) and the outputs of the other two working groups. It is important to identify critical (to bring about change) evidence gaps and agree how to fill these. Much that is needed to start taking action is now known, but there are evidence gaps, particularly around the implications, and therefore potential motivating benefits (relevant to consumers now), of more sustainable consumption (e.g. the financial implications of a sustainable diet). In addition whilst there seems to be a good understanding of what food-related behaviours are relevant (to a particular practice, occasion or food type) less is known about why they occur. More research is needed to address this, and develop principles that can inform the design and testing of interventions.
- Influencing the consumer, and strategies and activities aimed at more sustainable consumption, should not be considered in isolation from working on improving the sustainability of production / products. The UK food industry needs to be supported in delivering these improvements. An integrated approach will ensure the most effective balance of solutions are developed, and that there is an awareness that all across the supply chain are taking action (e.g. showcasing to consumers what industry are doing, and how consumers can benefit from this¹⁵).
- It will be critical to have effective leadership in, and ownership of, this area going forwards, to provide a clear steer, help co-ordinate resources and activities, and to enable resolution of conflicting priorities.

Some of the points above are illustrated in **Annex E**.

Constraints/ challenges/ learnings from the process

4.9 The group welcomed the opportunity of allowing a broad cross-section of people from the food system to help influence the future direction of policy and action to address this important issue. However the group did find this a challenging process, which made it difficult to achieve the objectives originally set. Challenges included:

¹² For example many large retailers and food brands have commitments in this area, and groups such as the IGD have established a 'Sustainable Diets' working group

¹³ Provided these are not at odds with the underlying principles of a healthy and sustainable diet

¹⁴ E.g. <http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=16193>

¹⁵ As has been done successfully through WRAPs Love Food Hate Waste and Fresher for Longer campaigns

- **Insufficient steer from Defra:** There was a lack of a clear steer at the outset of the process, and a disconnect between outputs from the initial phase of the Green Food Project, and early discussions prior to setting up the three working groups (i.e. not reviewing the guidance / steer from those, as many in the group had not been involved in the earlier work). For the working group to be effective, it needed a clearer steer from Defra on how and what they wanted to achieve, how this work fits in and what will happen to the outputs (the group spent some time itself considering these questions, see charts in **Annex F**).
- **Governance issues:** A lack of clarity of the role of the Steering Group and Defra through the process, and therefore mixed expectations around direction the group might receive, and feedback on progress.
- **Sequencing:** Not knowing the output of the Sustainable Healthy Diets group (i.e. knowing what we should be aiming for), because it was running in parallel, and at least initially mechanisms for sharing outputs from the working group meetings were unclear. Ideally the consumer behaviours working group would have been initiated after, and have been informed by the outputs from the other two working groups, and the peer-reviewed Best Foot Forward report. There were different levels of awareness of the Best Foot Forward work and some were unclear how this related to the working group activities (i.e. feeding in and helping shape the groups work versus being reported at the same time to the Steering Group as an alternative piece of work). There were concerns, especially as the author of that report was part of the group, that the group risked duplicating work undertaken by Best Foot Forward, or at worst producing 'second class' versions of key sections of that report (rather than being able to extend/add value to these) through the three templates.
- **Insufficient behaviour change expertise:** We did not have many behavioural change experts in the group, and in general members of the group had very little time to allocate to any work/research in between meetings. Ideally the group would have tapped into more behaviour change expertise outside the group.
- **Commitment of time:** It is difficult to expect people to be able to commit lots of funds/ time/ resource from their day jobs – without a plan identified early on for activation and without a commitment from Defra for what they will do with the work.
- **Diverse stakeholder views:** There were differing views (as should be expected) around where the focus of the group should be, on changing the diet as an outcome versus focused on changing values and the broader relationship with food. The process the group went through to develop the vision helped bridge these views, combining both how we as consumers may think about and interact differently around food, as well as this delivering real change (in diets and more broadly). There was an early consensus on helping consumers to value food more, but some difficulty in agreeing how this might best be achieved (and the role various partners could play) - the question of shifting values versus behaviours, and perhaps a pragmatic versus 'visionary' view.

Recommendations

4.10 The group has identified the following as key recommendations:

4.11 Government should update and implement an overarching food strategy that is joined up across relevant departments and meaningfully engages devolved administrations, to provide a shared sense of purpose and direction, and position sustainable, healthy consumption and production in to this overall context. This should also place appropriate emphasis on the importance of positively influencing consumer behaviours around food.

4.12 The Green Food Project Steering Group – and relevant Government departments (including Governments from all UK nations) – should:

- agree and implement a process for convening and supporting (with access to the right expertise and funding) the relevant policy, commercial and NGO groups to review and build on the outputs of the Healthy & Sustainable diets, Consumer Behaviour and Sustainable Growth working groups – to:
 - refine outputs and recommendations, addressing any gaps or ‘tensions’
 - agree an overarching vision for the Green Food Project (building on the one developed by the Consumer Behaviours Group)
 - identify target audiences and behaviours for each of the principles underpinning sustainable consumption (including a healthy, sustainable diet)
 - develop action and research briefs, and associated roadmaps, to move us towards the sustainable consumption vision
 - to review where win-win opportunities can be found within the recommendations made by all three subgroups that could be developed into a set of action research pilot projects and funded by businesses or the Government, e.g. growth of the UK sustainable food sector.
- bring together the refined outputs from the three working groups (and the research done in parallel by Best Foot Forward) and make this publicly available as soon as possible
- adopt/endorse the proposed sustainable consumption vision
- develop an associated set of specific, time-bound and measurable targets to support the vision

4.13 A cross-Government group (with ministerial support) should be set up to:

- provide leadership and governance, and to sponsor delivery of the vision
- agree mechanisms to support the development and implementation of action and research briefs, and associated roadmaps, for sustainable consumption – taking advantage of existing mechanisms where possible (for example this could

include expanding WRAP's role with the Product Sustainability Forum / Love Food Hate Waste to include consumption).

5 Working Group 3: Sustainable Consumption and Growth

Introduction

5.1 The first phase of the Green Food Project in 2012 looked at the potential for sustainable increases in production – how to **produce more, whilst also improving the environment** – both in order to help meet the twin challenges of future food security and climate change and to contribute to growth in a rebalanced UK economy.

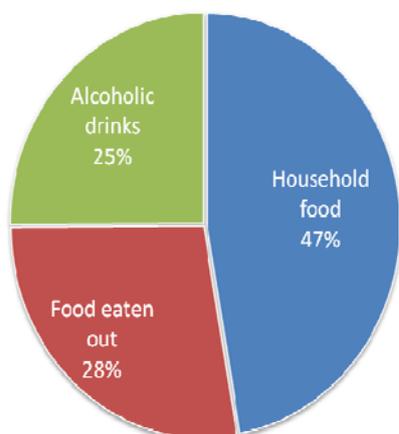
5.2 This working group report looks at the consumption side of the equation – **consuming better, with less impact** – to see if there is also potential for growth from changes in what people buy and eat and for creating value through innovation and resource efficiency.

5.3 Other working groups looked more specifically at what drives behaviour change and the health and nutrition issues associated with dietary choices. Their findings clearly have a vital bearing on how to achieve more sustainable outcomes and for genuine win-wins. This report will therefore need to be considered in that broader context.

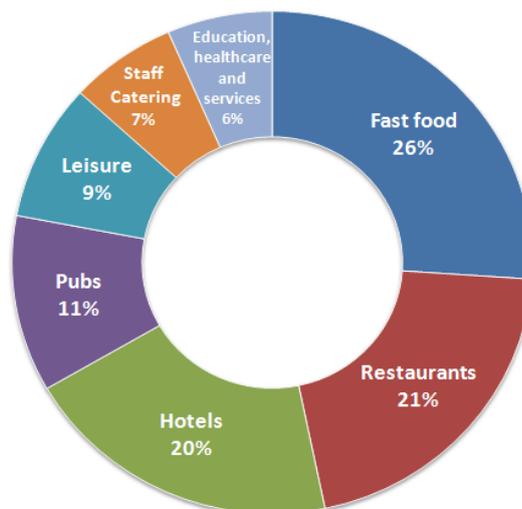
Scene-setting and myth-busting

5.4 Although we tend to think of food consumption in terms of shopping habits – and consumer information as something which appears on packets or labels - the reality is that over 1/3 of all consumer expenditure on food is on various forms of “out of home” eating – catering, restaurants, fast food etc - and which are not subject to the same detailed compositional, nutritional and other labelling requirements, making it more difficult for people to judge the impacts of the choices they make. And even the retail sector is becoming more diversified with the growth of online shopping and various forms of convenience stores.

Household final consumption expenditure on food and alcoholic drinks 2012



Food Service Sector sales, 2011



5.5 People also tend to overlook that the storage, preparation and disposal of food often results in bigger environmental impacts than those involved in its production. For example, a survey by the Sustainable Restaurant Association suggested that 65% of catering waste was accounted for at the preparation stage (peelings, off-cuts, spoilage during cooking etc), 30% left-overs on customers' plates and only 5% from other forms of loss¹⁶. In the home, significant amounts of energy are used in refrigeration and cooking and more food is thrown away because of out of date issues and/or overbuying. Much of this also applies to cooking from scratch, even if left-over food is more likely to be consumed later or in another meal.

5.6 There are similar "hidden" forms of waste or inefficiency elsewhere in the food system, for example in fruit and vegetables being rejected as not meeting commercial or regulatory marketing standards and finding no alternative market outlets before they perish. Although such products cannot be used to supply retail they can often be used for processing or animal feed, and this economic loss should not be confused with waste (disposed to landfill or energy recovery)¹⁷.

5.7 Packaging is another area of common misunderstanding. It is frequently seen by consumers as unnecessary or excessive, even though it actively reduces waste by protecting food in transit and increasing shelf-life, both before and after sale. Growth in high value added opportunities is available in pre-packaged fresh and cooked foods. The nature of the supply chain processes ensures that wastage is minimised – both in overall scale and in the effective use, disposal and treatment of process waste. The finished products are portion-size controlled and often presented in forms that enable

¹⁶ Too Good to Waste, Sustainable Restaurants Association, 2010

¹⁷ Mapping fruit & vegetable waste through the retail and wholesale supply chain, WRAP, 2011

minimised energy use within the home e.g. microwaving. The footprints of process energy use, wastes process management and primary packaging are substantially less than those of home preparation and conventional cooking. What matters is how, where and when things are grown, stored, transported and transformed and the picture that emerges from proper life-cycle analysis – local is not necessarily more sustainable either and food miles are a poor proxy for total environmental impact^{18 19 20 21}.

5.8 Last but not least, there is substantial confusion over how what we eat measures up to recommended guidelines. Although there are clearly major variations at individual level, Defra's 2010 Family Food Survey found that the total amount of meat, fish, eggs, beans and other non-dairy sources of protein corresponded almost exactly with the recommended share of diet in the Eatwell Plate. Consumption of bread, rice, potatoes, pasta and other starchy foods was actually below recommended levels – contrary to most public perceptions of carbohydrate intakes. Other research²² shows that healthier food is not necessarily always more sustainable either, in terms of its resource use and environmental impacts. What matters is how, where and when things are grown and made and the picture that emerges from proper life-cycle analysis techniques.

5.9 This report looks to identify some specific areas where we think there are real opportunities for the British farming and food industries to achieve growth through more sustainable patterns of consumption. These are intended to be illustrative of the kinds of issues involved, not a comprehensive set of actions which could apply across the whole food chain. But we hope they will serve as useful examples to stimulate further thought and debate.

Fresh Produce

5.10 Consumption of fruit and vegetables is one of the areas where there is a significant discrepancy between the Eatwell recommendations and current behaviour. It is also a sector of UK agriculture where Government has previously identified potential – notably in the report of the 2010 Fruit and Vegetables Task Force²³. Around 67 per cent of fruit and vegetables we consume are imported into the UK²⁴, mainly from within the EU, providing consumers with produce outside the UK season as well as varieties which cannot be grown here.

5.11 But there is significant potential to increase the production of crops which are suited to our climate and for plant breeding and other forms of scientific innovation to extend

¹⁸ Defra, Comparative life-cycle assessment of food commodities procured for UK consumption through a diversity of supply chains, 2008

¹⁹ 'Water Footprint: The impact of the UK's food and fibre consumption on global water resources', WWF, Ashok Champagain, Stuart Orr

²⁰ 'Food Miles – Comparative Energy/Emissions, Performance of New Zealand's Agriculture Industry', Caroline Saunders, Andrew Barber, Greg Taylor, July 2006, Agribusiness & Economics Research Unit, Lincoln University, PO Box 84, Lincoln 7647, New Zealand

²¹ Audsley, et al. (2009). *How low can we go? An assessment of greenhouse gas emissions from the UK food system and the scope to reduce them by 2050. FCRN-WWF-UK.*

²² Macdiarmid, J. (2012) Is a healthy diet an environmentally sustainable diet? Proceedings of the nutrition society.

²³ Defra, Report of the Fruit and Vegetables Task Force, August 2010

²⁴ Defra, Agriculture in the UK, 2012

growing seasons and adapt other crops to UK conditions, which themselves are likely to change in the years ahead. Provided that increase can be achieved sustainably – or more sustainably than in the case of the relatively high level of imported produce – there would seem to be real win-win opportunity.

5.12 Whilst the Department of Health has achieved significant consumer awareness of 5-a-day, this has not translated into widespread adoption of a healthy diet and greater consumption of fresh produce. This would be facilitated by a greater focus on fresh produce as part of a healthy diet within Government campaigns such as Change4Life. The Department of Health could do more to protect the 5 A DAY brand from misleading claims by some products which purport to contribute towards maintaining a healthy diet. Government departments can also make a far greater impact to combat poor diets and rising obesity levels simply by having a **coherent policy for public sector food procurement** which encourages greater consumption of fresh fruit and vegetables, regardless of their origin, and in line with Defra’s own definition of ‘locally in season’ which includes imported produce²⁵

5.13 Affordability of fresh produce is also recognised as an important factor for consumers and significant efforts are already being made in the relative pricing of fruit and vegetables to help increase consumption. Research published by Defra in 2012²⁶ also found that perceived cost was the main barrier to consumption of seasonal food, even though seasonality was strongly associated with positive attitudes to local sourcing. Overcoming the barrier or perceived cost should therefore produce a further win-win in respect of UK growth.

5.14 In addition, the fresh produce sector has a relatively low carbon footprint in comparison with some other food sectors and is actively putting in place measures to monitor greenhouse gas emissions, cut food waste and increase re-use and recycling, as well as reducing packaging and recovering energy. It is also meeting the challenge of minimising inputs through the use of integrated pest management.

Case Study 1: Enterprise Resource Planning (ERP)

Many fresh produce businesses have invested considerably in IT solutions to manage large volumes of produce through the production process, whilst meeting the demands of quality, packaging, delivery and traceability standards. ERP enables:

- The packer to pinpoint quickly any issues regarding quality issues and share these with the grower, enabling him to take action to rectify the

²⁵ Defra, Understanding the environmental impacts of consuming foods that are produced locally in season, 2012

²⁶ Defra, Understanding the environmental impacts of consuming foods that are produced locally in season, 2012

problem.

- Integration of order intake and production to eliminate over-packing.
- Advance notification of the work schedule which avoids loss of products in the supply chain which become unfit for sale. With real time systems, date related alerts are issued, pinpointing product that needs moving for dispatch.

Case Study 2: Extending UK seasons

UK grown strawberries can be available from March to October and UK home production in strawberries has increased from 56% in 2000 to 74% in 2010. The extension of the season for growing strawberries in the UK is a result of a successful combination of selection of varieties, improved plant scheduling, and the use of protection such as poly-tunnels/glasshouses to control environmental conditions. However, consumer demand is still driven by current weather conditions, with high temperatures increasing demand by around 40%.

Creating Brand Value around Sustainability

5.15 From farm to fork, the food chain comprises many different stages and players. All generate different impacts and sustainability challenges; and all have responsibility and influence. A meaningful strategy towards sustainable growth requires the cooperation of the entire food chain to tackle issues of resource use. There are, however, competitive tensions within the chain and risks of market failure associated with this, notably in respect of investment in research and technology and the need for collaborative mechanisms which promote collective action (within the constraints of Competition Law)²⁷. The role of WRAP as an independent non-industry expert adviser on resource efficiency is particularly helpful in this context and could be developed further as we move towards a lower carbon circular economy.

5.16 But sustainability is a challenging concept to communicate to consumers on its own. It needs to resonate with other concerns such as quality, provenance, nutrition, safety and affordability in order to become a “brand value”. One way of doing this would be to demonstrate that UK food and farming industries are genuinely world leading in terms of their production methods and use of natural resources and that the traceability and

²⁷ Protecting against this is the role of the various divisions in AHDB. It is the purpose of the levy funded activity to invest in research and promote levy supported products as part of a healthy balanced diet.

assurance of well managed supply chains enables people to trust the British brand, providing opportunities for growth both in our domestic market and through exports, the value of which has doubled in the last decade.

Delivering more than food: our environmental sustainability credentials

5.17 Food and drink is already the UK's largest manufacturing sector, accounting for 15% of total output and contributing some £95 billion to the UK economy, the equivalent of 7.3% of GVA²⁸. It also buys over two thirds of what our farmers produce. For every £1 that farming contributes to the UK economy, our food manufacturers and wholesalers contribute a further £5. And collectively, the UK agri-food sector employs some 3.5 million people and is continuing to create jobs²⁹ (the national agriculture workforce grew by 1.9% in 2011 and by a further 1.1% in 2012, adding an extra thirteen thousand jobs to the industry over the two years).

5.18 At a time when the security of future food supplies is fast becoming an issue in its own right and an increasing proportion of consumers at home and abroad expect their food to reflect high standards of environmental protection and animal welfare, the economic case for a profitable, sustainable and competitive UK food and farming sector could not be stronger. We believe we have the resources, skills, knowledge and technology to deliver this, provided we have the right frameworks to do so and can create genuine brand value around our environmental performance across the whole chain. However, we also need to recognise that we operate in global markets where different standards may apply.

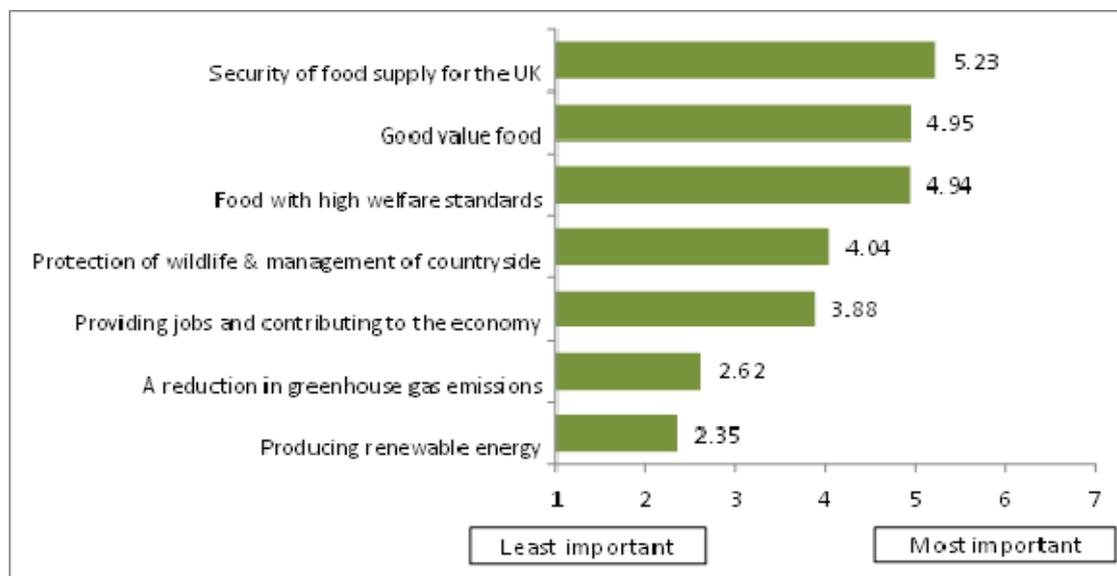
5.19 An over-regulatory approach which imposes disproportionate burdens on our own industry or which stifles innovation will not foster growth and may undermine the improvements we are seeking to make. For example, in 1999, the UK Government introduced legislation that banned tethers and close-confinement stalls for breeding sows to improve pig welfare. The UK bans were introduced ahead of EU wide bans. Although polls suggest high welfare standards are high on consumer expectations from their food, supply chain and consumer behaviour did not actually reflect this in reality and led to substitution with cheaper imports. This resulted in the UK going from being around 70% self-sufficient in pig meat down to 40%, losing just under half of the UK breeding sow herd at a time when farmers were trying to recoup the capital cost of adapting systems ahead of the rest of Europe. The Food Research Partnership also recently reviewed the impacts of regulatory obstacles which can lead to reluctance from industry to invest in new innovation and thus undermine the resilience and sustainability of the food supply chain. They concluded that the regulatory framework

²⁸ Defra, Agriculture in the UK, 2012

²⁹ Defra, Agriculture in the UK, 2012

can act as an inhibitor to scientific development, such as GM, with scientists being unable to access funding in key areas³⁰

NFU consumer poll: What consumers believe UK farming should deliver³¹
(Sample size: 1822 adults)



Exploring the sustainability credentials of British food

5.20 The sustainability of the global food system has long been called into question by environmental groups. Many of our major companies are already taking steps to address some of these challenges, be they stewardship of the world's fisheries, responsible sourcing of palm oil, or more vertical integration in their supply chains in respect of key commodities and ingredients. They also have a good track record of promoting resource efficiency in their own operations, through initiatives such as the Food and Drink Federation's Five-fold Environmental Ambition³², the British Retail Consortium's Better Retailing Climate³³ and a range of individual company programmes.

5.21 In recent years:

- Food and Drink Federation members have reduced their CO₂ emissions by 27% (against a 1990 baseline) and are on track to meet a target of 35% by 2020
- Water use in food and drink processing has been cut by over 14% since 2007 (excluding that in product) by signatories to the Federation House Commitment
- Food and packaging waste across the grocery supply chain has been reduced by almost 9% in the space of two years (2009-2011)

³⁰<http://www.publications.parliament.uk/pa/ld201012/ldselect/ldcom/171/171.pdf>

³¹ NFU commissioned One Poll public survey, January 2012

³² http://www.fdf.org.uk/environment_progress_report.aspx

³³ http://www.brc.org.uk/brc_policy_content.asp?iCat=43&iSubCat=673&spolicy=Environment&sSubPolicy=A+Better+Retailing+Climate

- Manufacturers and retailers have strong commitments to eliminate waste to landfill
- Carbon emissions from stores were reduced by 33% (relative to floor space, 2005-2012), while carbon emissions from store deliveries were reduced by 27% (relative to turnover, 2005-2012)
- The food and grocery sector has removed 204 million GHV miles from UK roads (2007-2012)
- Manufacturers and retailers support the UK national statement on palm oil

Creating brand value around sustainability – manufacturer case study

For food and drink manufacturers good environmental practice makes good business sense. Manufacturers continue to reduce CO₂ emissions, waste, and water use because it contributes directly to cutting costs and increases the efficiency of operations. However many businesses are going further and are working with farmers and other stakeholders to address environmental and social impacts throughout the supply chain, both in the UK and abroad. For example:

- Tetley's Farmers First Hand initiative aims to give consumers a direct insight into the tea-growers' experiences. Tea farmers use phones and cameras provided by Tetley to share what they are doing via the Facebook page, allowing consumers to experience the estate's journey towards Rainforest Alliance certification as it happens, and get a sense of day to day life on a tea estate. Consumers are also able to communicate directly with the tea workers and each other
- Nestlé has been working with British dairy farmers to reduce their environmental impact, improve the quality of their milk and in turn benefit their farming business. The milk from these farmers goes in to producing some of the company's famous confectionary brands such as *Kit Kat* and *Aero*
- New England Seafood is active in a Fishery Improvement Project in Sri Lanka, alongside others, to help achieve MSC certification for Yellowfin tuna. This initiative helps to meet increasing demand for responsibly sourced seafood now and also helps to ensure fish are available in the future.

Creating brand value around sustainability – retail case study

Grocery retailers provide information to their customers on how and where products are produced or sourced through a variety of channels. The challenge is to make it easy for customers to make more sustainable choices, without presenting barriers such as increased cost or decreased functionality. Retailers are creating brand value around sustainability through a range of measures, including:

- Implementing sustainable sourcing policies for items such as fish, soy and

- palm oil;
- Ensuring that everyday foods, such as fresh chicken, eggs and milk, are 100% UK sourced;
- Committing to selling free range eggs which have been laid on the British mainland;
- Changing the packaging on British produce to showcase some of the British farmers supplying stores; and providing information on-line, in store and in in-house magazines on suppliers;
- Communicating directly with customers about sustainability and how retailers will help them to live healthier, more environmentally sustainable lives, for example through a 'sustainable' or 'eco' product identifier;
- Improving labeling to make it easier for customers to eat well;
- Entering into partnerships with NGOs such as WWF and the Marine Conservation Society;
- Increasing the amount of British meat and poultry sold, working with farmers and suppliers to shorten supply chains;
- Introducing higher welfare standards, such as the RSPCA Freedom Food standard, over and above the legal requirement.
- Minimising and optimising the use of pesticides and chemicals.

Creating brand value around sustainability - hospitality and food service case study

Populus research in 2013 showed that 84% of diners want to know more about the sustainability of restaurants they eat in, but just 85% say they currently know little or nothing about it. It is up to the industry to close that gap, and restaurants increasingly see a value in communicating sustainability to customers.

'Local and seasonal' has become the standard short-hand for sustainability in food over the past five years. Animal welfare and traceability are increasingly seen as important too and the industry is starting to respond to this at all price points.

- A Populus poll for McDonalds of 2,000 UK adults indicates consumers do want high standards of welfare from their food:
 - Nearly three quarters (73%), say they prefer to buy food that is produced from farms with high standards of animal welfare in place
 - People rank price, animal welfare standards, and traceability as the top factors behind their food purchasing decisions
- One of the issues is customer confusion over what constitutes high welfare and the wide range of certifications and different language used to describe welfare standards. Supermarkets such as Sainsbury's are putting their support behind Freedom Food³⁴ as it goes beyond the minimum standards and the

³⁴ Examples of current assurance schemes; there is a requirement for more official independent sources of consumer facing sustainable sourcing information

hospitality sector is starting to follow suit as exemplified by McDonald's switching to the it for all their pork products

- The restaurant sector can contribute to the food industry making wider positive change. Since McDonald's worked with its suppliers to make the switch to free-range eggs 15 years ago, the free-range egg market has quadrupled in size.
- McDonald's has managed to switch to Rainforest Alliance³⁴ certified coffee and organic milk for teas and coffees without changing the price point for customers.
- KFC makes a virtue of its on-bone chicken being British and that any non-British chicken is reared to at least the same standard as UK legislation allows.

5.22 The environmental impacts of primary production were dealt with in the first stage of the Green Food Project but there are a number of things that can reinforce the sustainability messages of the whole food chain. Productive farming depends upon fertile soils and clean water, so it is hardly surprising that farmers prioritise the protection of these vital national resources. Indeed many of the country's water gathering grounds, whether over aquifers or around reservoirs, are on farmland. This places special responsibility on the farming community to reduce the impact of their production activities on water, whether from fertilisers, manures or pesticides. Some two thirds of the farmland in England and Wales is now being actively managed under an agri-environment scheme, so as to produce landscape and biodiversity as well as food and fuel. For example:

- The proportion of rivers in England designated as being of 'good biological quality' was up from 63% in 1990 to 73% in 2009, with similar improvements in the chemical quality of rivers and in levels of nitrate and potash³⁵.
- Thanks to the Voluntary Initiative, over 14,000 sprayers and 20,000 spray operators now undergo regular testing to ensure professional competence and effective use³⁶, contributing to a sustained 30% reduction in already very low pesticide levels in key water catchments.
- Some 18% of farms abstract water to irrigate food crops and this comprises the largest volume of water used on farms. The majority of those using large volumes of water do so more efficiently now than five years ago and have plans for further improvement, if sufficient capital is available.
- Since it was launched in 2009, the Campaign for the Farmed Environment has resulted, as at spring 2012, in over 190,000 hectares of land being managed voluntarily as wildlife habitat, and 75,000 hectares entered into key priority options in Environment Stewardship³⁷.

³⁵ Defra, The Environment in Your Pocket, 2009

³⁶ Voluntary Initiative Annual Report 2009-10

³⁷ CFE Steering Group, Feb 2012

- Farmers and growers are embracing new technologies that harness energy from the land, the sun and the wind, as well as biogas digesters which help with waste disposal. The NFU estimates that more than 130 megawatts of “solar farms” were operating on agricultural land by April 2012³⁸. Including farm rooftop systems, the likely total is already about 200 megawatts (MW) of agricultural PV out of nearly 1,000 MW installed in the UK so far, which is enough power to meet the annual needs of around 40,000 households. 16% of farms currently have some renewable energy, and 21% intend to install some in the next two years³⁹.

5.23 In addition, the sector has put in place a Greenhouse Gas Action Plan (GHGAP) to meet the Government’s target of an 11% reduction in greenhouse gas (GHG) emissions from farming by 2018-2022. The Action Plan focuses on how farmers and growers, across all sectors and farming systems, can improve resource use efficiency to help reduce GHGs and make cost savings per unit of product. During 2012-2013, industry partners have delivered a number of important initiatives in support of the GHGAP e.g. HGCA published its Cereals and Oilseeds environmental roadmap⁴⁰, the AIC launched its Feed Adviser Register⁴¹ and EBLEX released its carbon calculator for sheep⁴².

How to move forward

5.24 What are needed are ways of integrating all these various initiatives and achievements into a coherent narrative which can support the concept of a sustainability brand for UK production. There are already examples of assured produce schemes and of retailers utilising cost of production models to support the economic viability of farmer suppliers and providing a platform for assessing environmental credentials, notably for liquid milk and potatoes. But much more needs to be done to address the sustainability and resilience of supply chains in general and to communicate this to consumers. Current concerns over authenticity, traceability and provenance and the need for less complexity and more transparency could provide a real opportunity for the industry as a whole to work together.

Conclusions and Recommendations

5.25 Farming and food are fundamental, not just to human health and nutrition but also to the future of the resources and life systems of the planet as a whole. Rising demand means we have to produce and consume in more efficient and less damaging ways. This is not something which can be achieved by any one part of the industry or its customers on their own. Up to now, many of the complex issues involved have been

³⁸ NFU, Renewable energy and finance in agriculture survey, January 2012

³⁹ Defra, Greenhouse gas mitigation practices – England Farm Practices Survey 2013 and Farm Business Survey 2011/12, March 2013

⁴⁰ [http://publications.hgca.com/publications/documents/Roadmap_2012_\(low_res\).pdf](http://publications.hgca.com/publications/documents/Roadmap_2012_(low_res).pdf)

⁴¹ http://www.agindustries.org.uk/document.aspx?fn=load&media_id=4460&publicationId=3405

⁴² <http://www.eblex.org.uk/news/carbon-calculator.aspx>

largely left to market forces in a system where few of the costs (or benefits) are truly reflected in price formation or in the criteria people use to make their daily choices.

5.26 Changing the global food system is clearly not something which can happen overnight. But the challenges are now better understood and the environmental, economic and social drivers more powerful than in the past. What seem to be needed at this stage are ways of integrating developments which are already taking place and providing a strong direction of travel so that they become mutually reinforcing and deliver genuinely sustainable growth.

5.27 This should not be taken as calling for a top-down prescriptive model. But there are legitimate questions as to where leadership can be found and how supply push and demand pull can be made to work together. There are also questions as to where the boundaries between informed choice and choice editing should lie.

5.28 This report does not attempt to provide those answers. But discussions in the working group have confirmed that there needs to be a whole chain approach to finding them, underpinned by a strategic framework that encourages collaborative action. The examples we have provided around fresh produce and the potential to harness sustainability as a brand value in its own right are intended to stimulate further debate within the Green Food Project as a whole.

5.29 As far as the specifics of those examples are concerned, we would recommend:

Fresh Produce

- Revisiting the findings of the 2010 Fruit and Vegetable Task Force alongside developments on diet and more recent assessments of the impacts of resource constraints and climate change impacts on existing non-UK sources of production
- Exploring the potential for research and technology to enhance domestic production, including of crops not currently grown here
- Ensuring that marketing standards and retail specifications are adapted to optimising domestic production
- Reinforcing Government (and other) messaging about potential health benefits
- Promoting the benefits of local sourcing and eating in-season foods, while dispelling the barrier of perceived cost.

Sustainability as a brand value

- Encouraging a whole chain approach with shared responsibility, including dissemination of best practice, translational research and collaborative innovation at a pre-competitive stage
- Better articulation and communication of the “British” sustainability narrative, including improved consumer information and education
- Maintaining (or enhancing) funding for WRAP as a non-industry, cross sector source of advice and expertise on resource efficiency issues
- Providing a “safe space” where collective discussion of initiatives and ambitions can take place without infringing Competition Law and providing a framework for data collection and monitoring which preserves commercial confidentiality (as in the existing Courtauld and Federation House commitments on waste and water)
- Better functioning of the supply chain in terms of transparency, origin and sourcing policies, including facilitation of longer term supplier relationships
- More investment in science and technology to raise performance and exploit advances in basic research within an appropriate strategic framework
- Exploring ways of capturing costs and benefits which are not currently monetised in order to make a better business (and consumer) case for further improvement
- Stimulating and engaging in EU and international discussion to ensure a level playing field and help make progress elsewhere

Working Group Volunteers

Principles of a Healthy and Sustainable Diet

Name	Organisation
Tara Garnett (Chair)	FCRN
Maureen Strong (Chair)	AHDB
Sue Dibb	Eating Better
Louise Symington	National Trust
Duncan Williamson	WWF-UK
Joyce D'Silva	CIWF
Lucy Bjork	RSPB
Richard Warren	Dairy UK
Selina Paine	FDF
Helen Ferrier	NFU
Sophie Elwes	The Sustainable Restaurant Association
Mark Bush	DH
Ailsa Jackson	Scottish Government
Lindsay Harris	Defra
Sue Riley	WRAP
John Dyson	BHA

Consumer Behaviour

Name	Organisation
Dan Crossley (Chair)	Food Ethics Council
Andrew Parry (Chair)	WRAP
Lorna Hegenbarth	NFU
Edward Gardiner	Behavioural Design Lab
Rob Moore	Behaviour Change
Rachel Blain	Which?
Natan Doron	Fabian Society
Vicki Hird	FoE
Mary Roberts	NFWI
Tim Burns	Waste Watch
Dick Searle	Packaging Federation
Claire Oxborrow	FoE
Vicky Grinnell-Wright	Best Foot Forward
Peter Andrews	FDF
Barney Smyth	The Sustainable Restaurant Association

Sustainable Consumption and Growth

Name	Organisation
Andrew Kuyk (Chair)	FDF
Natan Doron	Fabian Society
Dick Searle	Packaging Federation
Sian Thomas	Fresh Produce
Tim Burns	Waste Watch
Alice Ellison	BRC
Ed Franklin	The Sustainable Restaurant Association
Andrea Graham	NFU
Phil Bicknell	NFU

Annex B (Consumer Behaviours Working Group)

Vision

The consumer behaviour group developed a vision to help build a consensus across the range of stakeholders involved, around what 'success' would look like. This broadened in to an overarching statement and a series of goals/sub-visions which were informed through discussions on the guiding principles for achieving more sustainable consumption. The group also felt strongly that changing consumer behaviour, and achieving more sustainable consumption should not be considered in isolation from efforts to optimise products and systems, to achieve more sustainable production and to support more sustainable consumption.

This vision has therefore been developed by the Consumer Behaviour's working group, but with a broader scope in mind. It was shared with the other group co-chairs, and might also form the basis of a vision for the overall project going forwards.

"Sustainable food consumption and production, balancing social (including health), environmental and economic wellbeing, achieved through changes in behaviour across all those involved in the food supply chain (including consumers), and changes in systems and products

Realised through:

- developing a shared understanding, and clear and consistent information about 'what good looks like', including where trade-offs are inevitable (being transparent about the different elements of sustainability), accepting that tailoring will be needed for different people and organisations
- accelerating changes in both consumption **and** production, which over time results in a 'virtuous circle' with increased availability of, and demand for, a more sustainable food system (i.e. consumer demand changing and industry making sustainable products more available through choice editing and optimising ingredients, processes, packaging and products)
- a co-ordinated approach to motivating, educating and supporting people throughout their lives, with relevant approaches and messages. This would enable shifts in behaviours, habits and over time result in more engaged, confident, knowledgeable and empowered people who feel connected to their food and put greater value on it
- identifying, supporting and directing partners most willing, able and ready to help bring about change ('early adopters'/champions), drawing on good practice and evidence from around the world

- Government taking bolder steps to encourage the provision of a healthier and more sustainable set of choices including (but not limited to):
 - making changes to public procurement rules
 - providing guidelines to the food industry (supporting choice editing and optimisation)
 - developing the Eatwell plate to encompass environmental factors (to reflect joined up policy and guidance)
 - removing barriers to change (e.g. regulatory, trade-related, barriers to collaboration on sustainable food)
 - providing fiscal incentives and disincentives
- making affordable, healthy and sustainable food choices available and accessible to all, wherever food is purchased or consumed (in home and out of home)
- people being enabled and/or encouraged to buy foods that support a sustainable UK food industry, and protect the natural systems that produce our food
- innovation in urban planning, the design of homes, other eating places, and food-related appliances and services that make it easier for people to eat well, healthily and sustainably
- developing an agreed approach for assessing (measuring where possible) and reviewing progress (against agreed goals), and communicating this, demonstrating success through action (positive reinforcement and showcasing what is possible)”

Annex C (Consumer Behaviours Working Group)

Example of GFP behaviours template - Cooking from scratch⁴³

The behaviour/practice/food moment

Cooking from scratch* (more people feeling confident and enthusiastic about cooking from scratch, and doing this more often and with a greater range of ingredients and meals)

* Defining what we mean by this will be important, and it will mean different things for different segments of the population, for example a move to more fresh vegetables versus frozen/tinned, more home-made “one pot” meals versus pre-prepared, multi-component meals prepared from scratch, including stocks etc.

Ultimately this is about both the potential direct benefits that might be associated with cooking from scratch (e.g. social aspects of sustainable consumption; helping to reconnect people with food), but also helping people value food more, and get to a point where they have the skills and confidence to make changes to how they interact with food, which would help enable moves towards a healthier, more sustainable diet, including for example trying more plant-based meals or those with less meat (i.e. the health and environmental aspects of sustainable consumption). This is NOT about demonising pre-prepared foods, or suggesting that these shouldn't form part of a diet, but that more cooking from scratch, and the changes in attitudes and behaviours that stem from this, could deliver significant benefits.

List the different elements/aspects involved in the behaviour you're working on.

There are specific behaviours related to cooking from scratch where change may be required (see below), both to enable more cooking from scratch but also to reduce the risk of unintended consequences (e.g. increases in waste due to purchasing unfamiliar and more perishable ingredients; unforeseen impacts on diet due to poor portion control / use of salt etc) but there is a key role for awareness raising (benefits of cooking from scratch), building skills and confidence around cooking, and changing habits.

Specific behaviours could include:

- Meal planning (incl. knowledge and access to recipes)
- Selection of, and flexibility around choice of ingredients
- Storage to maximise freshness and product life

⁴³ Note – this is a partially completed template

- Preparation and cooking (incl. batch cooking to reduce costs)
- Use of leftovers (including unused ingredients)

What are the key barriers or motivations behind this behaviour/practice/food moment?

Barriers:

Access - *physical, psychological, financial*

- Genuine (low income) and perceived (fresh ingredients/better quality ingredients seen as expensive) financial access barriers (Celnika et al, 2012, Ying Lee et al, 2013, Warde, 1997, Winterman, 2013) – i.e. cost of raw ingredients may be higher or perceived to be higher
- Physical (geographical) access to positive choices – Food Swamps and Food Deserts where cheap, low quality pre-prepared foods are dominant (Short, 2006, Meah et al, 2011, Warde, 1997). Access to sustainably produced raw ingredients especially meat. No local and affordable suppliers
- Physical and psychological time barriers impeding the cooking and consumption of ‘from scratch’ meals– including relative priority and value ascribed to ‘from scratch’ cooking. Perceived time scarcity is the main driver of pre-prepared food consumption but is also heavily influenced by the marketing of these as a ‘convenience’ food choice (Celnik et al, 2012)
- Physical and psychological - a lack of, or perceived lack of ability to cook from scratch (i.e. a skills gap) (Blythman, 2006)
- Potential lack of (relevant) resources, including recipes, cooking equipment/tools to enable cooking from scratch, and to fully realise the benefits of cooking from scratch (e.g. fridge and freezer space for ingredients and leftovers/additional portions from batch cooking)

Appeal – *social norms, habits, taste preferences, culture*

- Actual taste preferences i.e. (evolved palate towards the) appeal of processed meal (higher sugar, salt, fat content in many cases), in comparison to fresh ingredient choices (Lawrence, 2008, Meah et al, 2011)
- The self-perpetuating trend itself and normalization of no-cook households and pre-prepared foods as a social norm, across social demographic (Ahlgren et al, 2006)
- In spite of a strong interest and growing industry surrounding the ‘art’ of ‘from scratch’ cooking (as evidenced by book sales and TV viewing figures), the appeal of regular ‘from scratch’ cooking has dwindled. There is a clear values/action gap evidenced by the escalating cookery book and equipment sales, un-matched by corresponding rises in the sales of ‘from scratch’ ingredients (Blythman, 2006, Lawrence, 2008, Wallop, 2013)
- Perceived or real acceptability of home-made meals by other members of the household
- Habits around the usual supplier and usual ingredients without need or motivation to change/investigate alternatives – see Behaviour Change’s work - <http://www.behaviourchange.org.uk/#>)

- Cultural issues will dictate to some extent how much can change
- Lack of motivation or receptiveness to messages, be they around health benefits, reduced costs (eg of expensive meat items) or environmental concerns
- Habits formed around what cook (and related food behaviours) are very entrenched and hard to change

Note - the role of time and economies of time have played an important role in the changing nature of our consumption over the last century. Tied in with external factors such as technological advances, industrialisation and mechanisation the way time has come to be viewed as a resource and a commodity, able to be traded or saved, has hugely influenced the time spent between our work and home lives. Southerton argues that much of our food related anxieties are associated with this role of time in our lives, for example the breakdown of shared meal times, increased need for snacking, scattered family schedules and the increase in availability and demand for ready meals and fast food (Southerton, 2012)

Appealing for meat reduction can appear as a threat to those who strongly identify as 'meat-eaters' (Abrahamse, 2009). But the market for meat-free (and other Free-From food products) is growing, with meat eaters being increasingly targeted by the industry on the basis of value and health (Mintel, 2012)

Awareness – knowledge, skills

- Educational/information gaps in relation to the benefits (health, social, financial) of 'from scratch' cooking/the risks and impacts of a highly processed food habit (Brzozowski 2006)
- Skills gaps associated with cooking from scratch, and in particular new ingredients / new meals. This would cover a wide spectrum of behaviours, including planning, purchasing, storage, preparation, portioning, use of leftovers, freezing etc. This also applies to un-used fractions of ingredients used for one meal, which might either be used in another meal or end up being wasted (research by David Evans, Manchester, 2010-12)
- Lack of confidence in using new source/shops for ingredients, and cooking differently

Motivations:

More work is needed to explore this, for different groups of the population, as this will be influenced by a wide range of factors, including current cooking habits, skills and attitudes (e.g. 'foodies' versus 'fuelies') and household demographics. It will also be important to quantify and effectively communicate actual benefits of cooking from scratch and to link these to current motivations around food (see recent research from Which? [<http://www.which.co.uk/campaigns/food-and-health/future-of-food/>] and WRAP [<http://www.wrap.org.uk/fresherforlonger>], which highlight the importance of price/value for money, taste, quality and freshness.

Potential areas to explore would be:

- Personal benefits (self-satisfaction, confidence etc) and strengthens / supports role of a “good provider”
- Social benefits if linked to cooking/eating with other members of the family
- May allow greater ‘control’ over what is cooked and eaten (e.g. tailored ingredients and portion size) – ‘cooking to suit your taste’
- Benefits to the local economy if linked to buying more local produce
- Potential financial and health benefits (but note evidence gaps around potential versus actual benefits) [could also link more cooking from scratch with increased growing of food at home]

[Note – there are many sources to draw upon relating to health benefits, incl.

http://www.wcrf-uk.org/cancer_prevention/recommendations.php;

<http://www.nhs.uk/Change4Life/Pages/healthy-eating.aspx>]

Are there any key aspects of this behaviour/practice/food moment to focus on?

Two aspects of this may be a good place to start, 1) raising awareness of the benefits of cooking from scratch (and in doing so addressing major barriers around perceptions of ‘too expensive’ and ‘would take too long’), in a more integrated manner and 2) equipping people with the knowledge and materials to get them started or to do more (which includes how to get the most from the food that is bought and prepared, reducing costs [through for e.g. buying in bulk and batch cooking/freezing], avoiding the risks of more food being wasted and as a consequence cooking from scratch not being adopted as a long term behaviour). This could include ‘starter packs’ from retailers/brands.

To avoid this being too generic an approach, and not connecting with people, it will be important to have a focus, which could be a meal occasion (e.g. breakfast, Sunday lunch) or a meal type (e.g. curry), understand the target audience and have clear objectives / messaging, e.g. ‘try something a bit different’ (e.g. changing a bit of what type of food is used e.g. of vegetables or meat or of processed versus unprocessed or replacing the usual foods with other ingredients such as vegetable proteins , meat substitutes, pulses, vegetables fish etc)

For the aspects you want to focus on, what would the positive behaviour/attitude be?

More people cooking from scratch more often, and gaining confidence to try new things

- Desire to learn about alternative ways of doing things
- Desire to change ingredients (to reflect healthier and ‘better’ options)
- ‘confidence to add new meals to the list of family favourites’

And ultimately the positive outcome would manifest itself through more sustainable food practices (social or environmental) and valuing food more

Effectively influencing behaviours

Existing evidence suggests shifting values and making it easy will lead to lasting behaviour change so please keep these in mind for this exercise:

[This is very high level and would need to be repeated for specific intervention ideas, e.g. ‘make your own lunch week’, ‘food made by you, for you’ etc]

Cooking from scratch is already promoted through a variety of methods targeted at differing socio-demographics from adults to children. These interventions are delivered through a variety of platforms and via multiple stakeholders and levers of change (Government, Business, and Civil Society). However, the multiple interventions lack a clear, coherent and consistent message, and tend to be concentrated around national campaigns and advertising/marketing. Tactical and ‘trriage’ interventions, whilst creating important and immediate grass roots shifts in practice, do not necessarily lead to widespread and sustained attitude change, either within the target (often low income) households, or across wider demographics. The aims of the proposed ‘cooking from scratch’ interventions are to remove real and/or psychological barriers to more sustainable food behaviours and to *build a more engaged, confident and empowered food consumer making choices that lead to more sustainable food consumption.*

Who

- *Retailers, brands, other food outlets and those representing the food sector (e.g. trade bodies, Dairy UK, AHDB⁴⁴ etc)*
- *Those publically-funded to communicate to and engage with consumers about relevant aspects of food and cooking, including Let’s Get Cooking, Food for Life, Department of Health (Change4Life; NHS Choices), Food Standards Agency (Food Safety Week), Love Food Hate Waste etc*
- *Groups (community, Government funded etc) involved in training/education, specifically around food or broader ‘lifeskills’*
- *The media (all channels) covering food and/or ‘lifeskills’*
- *Policy makers across relevant departments (Defra, Health, Education)*

What

- *Short to medium term – Co-ordinated and integrated large scale*

⁴⁴ Collectively the Divisions of AHDB represent all the commodities groups featured in the Eat well plate; EBLEX, BPEX, DairyCo, HGCA, HDC and the Potato Council. Via the BNF they fund Food a Fact of Life.

communications campaign(s) (making use of existing initiatives, private and public sector), in parallel with more targeted local engagement and provision of advice, tools and training, supported by increased availability/accessibility of relevant foods and tools in-store designed to bolster Britain's ability to (and love of) cooking from scratch, but incorporating the wider benefits of doing so

- *Medium to long term – Greater emphasis on food and cooking from scratch in schools and adult education courses, with practical training available / affordable to more people, to 'embed' the skills and confidence needed to make cooking from scratch the norm*

How

- *First step would be to bring together those in Government and other organisations responsible for developing and delivering relevant policies (food, health, education, community etc), to identify how current and planned activities and mechanisms could be better integrated or modified to support a move towards more cooking from scratch*
- *Existing voluntary agreements / responsibility deals could be used as a framework to engage with the food industry and other partners to support the initiatives agreed by the cross Government group*
- *Agree mechanisms whereby appropriate training etc can be supported and delivered 'on the ground' by community groups, membership-based organisations (e.g. WI), local Government (e.g. Sure Start) etc (funding, grants, sponsorship)*
- *Develop a detailed roadmap for specific interventions, with clear goals and metrics to assess progress*
- *Arrange a high profile launch of the new approach (incorporating the results from research to fill gaps around benefits etc), to maximise awareness and media coverage*

Targeting 'moments of change', such as young people leaving home, or families starting a family may be one effective strategy.

Evidence

Existing relevant evidence

see Best Foot Forward report and detailed list of references

See relevant papers by David Evans (Manchester University;

<http://staffprofiles.humanities.manchester.ac.uk/Profile.aspx?Id=David.Evans-2&curTab=4>)

Relevant WRAP research can be found at

http://www.wrap.org.uk/sites/files/wrap/Food%20waste%20resource%20listing%20Apr%202013_0.pdf)

Gaps in evidence

More work is needed on the implications of greater levels of cooking from scratch⁴⁵ (financial, environmental, social, health [e.g. portion control, salt and fat levels etc), both the benefits and risks (“transition” and end-point, e.g. food waste levels).

Need a fuller review of the available evidence to determine whether enough is known about barriers to cooking from scratch, for specific groups of the population.

Other considerations, in terms of understanding benefits and impact include:

- How and where food is purchased (incl. travel)
- Foods & packaging used
- Means of cooking and storage (e.g. using microwave versus oven versus hob – slow versus fast; use of freezer)
- How much is wasted (incl. unavoidable food waste – peelings, shells, bones)

⁴⁵ This should include what consumer perception of cooking from scratch is today. For many it will mean using short cuts such as cooking sauces.

Annex D (Consumer Behaviours Working Group)

Selected outputs from the three Consumer Behaviour Group templates

'cooking from scratch':

- This is about the potential direct benefits associated with cooking from scratch (e.g. social aspects of sustainable consumption; helping to reconnect people with food), but also helping build the skills and confidence to make changes towards a healthier, sustainable diet, including for example trying more plant-based meals or those with less meat.
- There are specific behaviours related to cooking from scratch where change may be required, both to enable more cooking from scratch but also to reduce the risk of unintended consequences (e.g. increases in waste due to purchasing unfamiliar and more perishable ingredients; unforeseen impacts on diet due to poor portion control / use of salt etc) but there is a key role for awareness raising (benefits of cooking from scratch), building skills and confidence around cooking, and changing habits.
- There is an extensive body of work relating to barriers to cooking from scratch, but more work is needed on potential motivations, for different groups of the population, as this will be influenced by a wide range of factors, including current cooking habits, skills and attitudes (e.g. 'foodies' versus 'fuelies') and household demographics. It will also be important to quantify and effectively communicate actual benefits of cooking from scratch, and to link these to current motivations around food (see recent research from Which? [<http://www.which.co.uk/campaigns/food-and-health/future-of-food/>] and WRAP [<http://www.wrap.org.uk/fresherforlonger>], which highlight the importance of price/value for money, taste, quality and freshness.
- Cooking from scratch is already promoted through a variety of methods targeted at differing socio-demographics from adults to children. These interventions are delivered through a variety of platforms and via multiple stakeholders and levers of change (Government, Business, and Civil Society). However, the multiple interventions lack a clear, coherent and consistent message, and tend to be concentrated around national campaigns and advertising/marketing. Tactical and 'triage' interventions, whilst creating important and immediate grass roots shifts in practice, do not necessarily lead to widespread and sustained attitude change, either within the target (often low income) households, or across wider demographics. The aims of the proposed 'cooking from scratch' interventions are to remove real and/or psychological barriers to more sustainable food behaviours.
- To avoid this being too generic an approach, and not connecting with people, it will be important to have a focus, which could be a meal occasion (e.g. breakfast, Sunday lunch) or a meal type (e.g. curry), understand the target audience and have clear objectives / messaging.

- Targeting ‘moments of change’, such as young people leaving home, or families starting a family may be one effective strategy.
- More work is needed on the implications of greater levels cooking from scratch (financial, environmental, social, health [e.g. portion control, salt and fat levels etc), both the benefits and risks (“transition” and end-point, e.g. food waste levels).

Curry:

- Buying/eating curry from a restaurant or take away was chosen as the specific intervention area.
- Traditional Indian cooking uses meat as a flavour rather than the centre piece of the dish or does not use meat at all (although this has changed in many Indian restaurants in Britain). It is potentially a useful style of cooking to test/encourage vegetarian choices due to the more authentic/traditional Indian food culture where vegetarianism is widespread and meat consumption is low. In certain areas in Britain vegetarian restaurants exist and other restaurants give more prominence to authentic vegetable based dishes. This would be more about encouraging the promotion of vegetables rather than saying everyone should be eating less (or no) meat, that is a positive initiative promoting more vegetable and fruit consumption (‘try something different’, whilst avoiding over simplistic messages.
- Work with restaurants/award schemes to encourage vegetarian choices using an integrated approach based upon vegetable based dishes being authentic, adventurous, cheap and healthy which all prescribe to both British Indian and English customer values.
- Whilst there is evidence that Indian meat based meals have higher GHG emissions than vegetable meals it would be important to understand the broader impacts (e.g. seasonality of vegetable ingredients, and their impacts). There is also very little evidence about Indian restaurant culture, behaviours etc relating to sustainable food.
- Could extend this to in-home, either cooking from scratch (stimulate interest in use of different ingredients, e.g. more vegetables and less meat) or purchasing pre-prepared meals.
- Would need to link to changes made by the sector around the product offer (including ingredients, portion sizes, cooking oils etc).

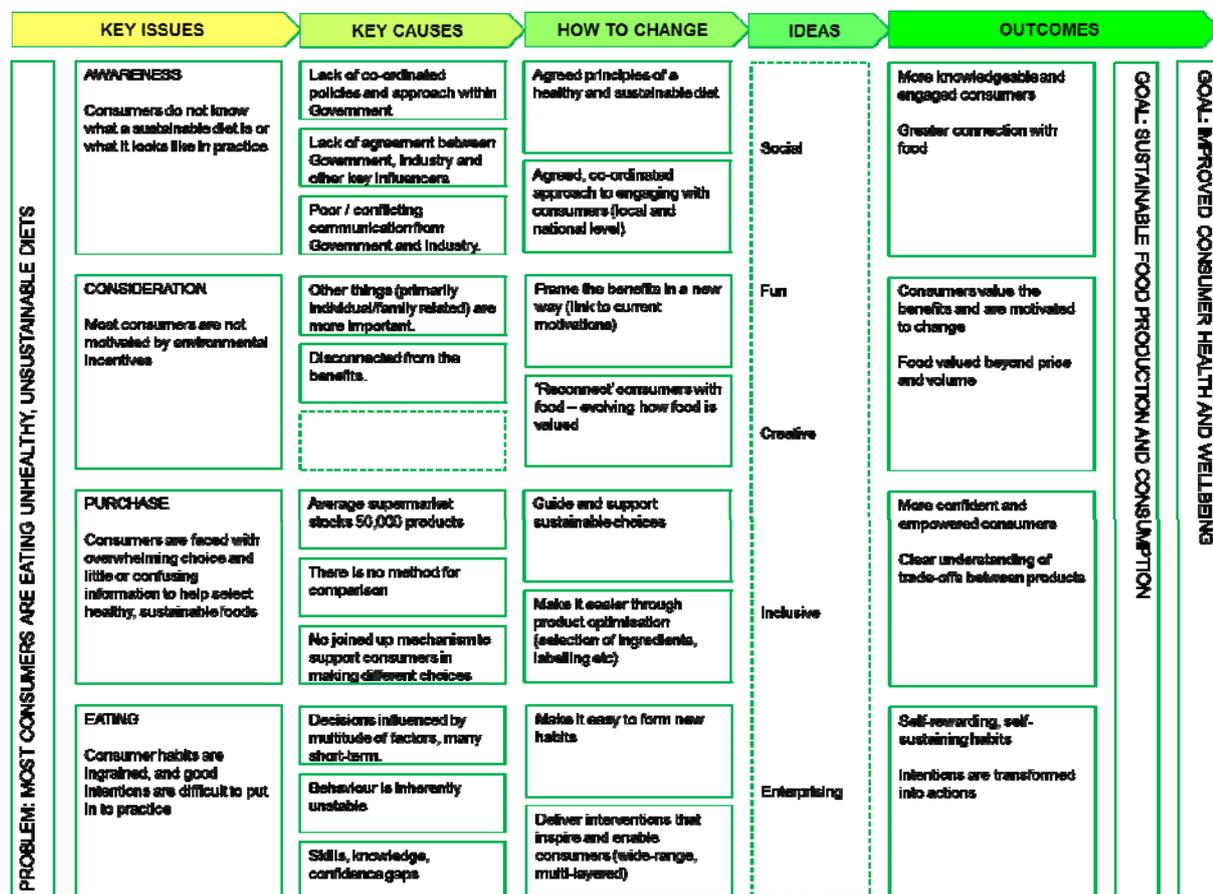
Positive breakfasting:

- The benefits of having breakfast are well documented, this is has particular relevance when talking about children, especially young children. However breakfasting at home is in decline, more importantly a “positive” breakfast is in decline (a breakfast that has sufficient calories derived from foodstuff that are nutritious as well as filling).

- With longer working hours, breakfast is increasingly eaten on the go, with more parents both working, children's breakfast is increasingly eaten out of home, at childcare providers. Fewer families now eat breakfast together as a meal time occasion, with the exception of weekend, or special family occasions. More children do not eat any breakfast at all, or a breakfast of non-traditional breakfast foods, e.g. chocolate and crisps.
- The messages of good breakfasting, positive breakfasting, are beginning to filter through and can have a positive effect on those capable of making the change. There are however individuals who may not be able to access or act this information. This could be due to financial restraints, lack of planning, or not having received the messages in a clear enough tone.
- Focus on reinforcing the values and benefits of positive breakfasting, to reach individuals who are currently not receiving or acting on the information. Adults may choose to breakfast in a particular way, or skip it all together. This intervention could focus on those that don't have a choice about how, if at all breakfast is delivered to them, young children, hospital patients, residents in care homes etc.
- Existing evidence suggests shifting values and making it easy will lead to lasting behaviour change. Should look at using simple key messages that are easily transferred in to point of sale material, posters etc., and that are accessible to the audience in tone. <http://www.shakeupyourwakeup.com/> is a good example that parents and children can identify with being fun, bright and colourful.
- There appears to be a good evidence base around habits and barriers. People know the benefits of having breakfast but many consumers still not actually doing it.

Annex E (Consumer Behaviours Working Group)

Framework (note: this is a draft template to help visualisation – it requires further work to fully populate it)



Annex F (Consumer Behaviours Working Group)

Figures used for discussion on mechanisms

