



UK HEALTH

PREVENTION FIRST

FORUM



# Fresh start

A framework  
for healthy and  
sustainable diets  
in the UK

**Fresh start: A framework for healthy sustainable diets in the UK — Policy options review**

ISBN E-version: 978-1-874279-19-8

Produced by the UK Health Forum

This project is funded by the Health Foundation, an independent charity committed to bringing about better health and healthcare for people in the UK; and the British Liver Trust.

Author: Dr Modi Mwatsama

Other reports in this series:

*Fresh Start: A framework for healthy and sustainable diets in the UK — Situational analysis*

*Fresh start: A framework for healthy and sustainable diets in the UK — Recommendations for action*

© UK Health Forum 2018

**UK Health Forum**

Fleetbank House  
2-6 Salisbury Square  
London EC4Y 8JX

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

The UK Health Forum is a charity working to reduce the risk of non-communicable diseases.

**Acknowledgements**

The UK Health Forum would like to thank the stakeholders who commented on earlier drafts of this report; and also the members of the Project Steering Group who provided valuable oversight to the project.

**Project steering group**

Professor Annie Anderson (University of Dundee)  
Dr Jo Bibby (The Health Foundation)  
Professor Martin Caraher (City, University of London)  
Dan Crossley (Food Ethics Council)  
Kath Dalmeny (Sustain)  
Sue Davies (Which?)  
Sue Dibb (Eating Better), until July 2018  
Laurie Egger (City, University of London)  
Robin Ireland (Health Equalities Group)  
Professor Philip James (London School of Hygiene & Tropical Medicine)  
Dr Edward Joy (London School of Hygiene & Tropical Medicine)  
Professor Lynne Kennedy (University of Chester)  
Andrew Langford (British Liver Trust) until July 2017  
Dr Tim Lobstein (World Obesity Federation)  
Professor David McCoy (Queen Mary University London and Medact)  
Professor Erik Millstone (University of Sussex)  
Professor Mike Rayner (University of Oxford)  
Anna Taylor (Food Foundation)  
Duncan Williamson (WWF)  
Professor Martin Wiseman (University of Southampton)



## Contents

Introduction	4
Scope and definitions	5
Structure of the document	5
Food system actions to support a shift towards more healthy and sustainable diets in the UK	6
Introduction to the seven themes	7
Theme 1: Production, processing, logistics	9
Theme 2: Manufacturing	12
Theme 3: Retailing and food service	14
Theme 4: Marketing and promotions	17
Theme 5: Guidelines and communications	20
Theme 6: Food and alcohol labels and information	21
Theme 7: Cross-cutting themes	23
References	26
Annex 1:	
Headline food consumption and production trends and their impacts on health and the environment	29
Annex 2:	
The environmental impact of our food system	31

# Introduction

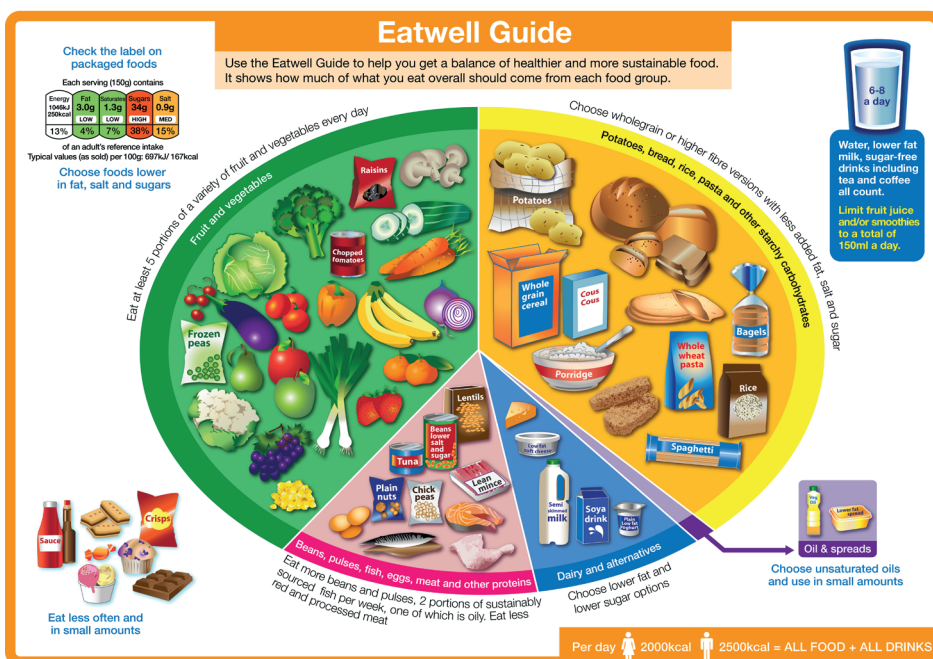
This report reviews the policy options which the UK could adopt in order to move towards the healthy and sustainable diet patterns of the government's Eatwell Guide to healthy eating (Box 1) and low risk alcohol drinking guidelines (Box 2).<sup>1,2</sup> It focuses on food groups whose altered production and consumption are integral to achieving the UK's dietary goals for the prevention of non-communicable diseases and risk factors such as obesity, diabetes and cancer. These groups are meat, dairy, fish, beans and pulses, vegetables, wholemeal and high-fibre starchy foods, fruit and unhealthy processed foods which are high in fat, salt and sugar. Alcohol is also included as a separate group.

The options included have been informed by discussions with stakeholders and existing reports and reviews of interventions published by collaborations of diverse organisations with an interest in healthy and sustainable food systems in the UK. They include the Food Climate Research Network, Food Research Collaboration, Food Ethics Council, Eating Better, Medact, Food Foundation, World Cancer Research Fund International and New Economics Foundation.<sup>4-11</sup>

This is a companion to the report, *Fresh start: A framework for healthy sustainable diets in the UK – Situational analysis* which examines the following aspects of the six major food groups set out in the government's Eatwell Guide, plus the additional category of alcohol:

1. Trends in consumption patterns
2. Trends in prices
3. Production patterns
4. Health impacts of current production and consumption patterns
5. Environmental impacts of current production and consumption patterns.

A summary of the headline food consumption and production trends in the UK and their impacts on health and the environment is provided Annexe 1.



## Box 1: Eatwell Guide

### Main food groups:

Fruit and vegetables

Potatoes, bread, rice, pasta and other starchy carbohydrates

Dairy and alternatives

Beans, pulses, fish, eggs, meat and other proteins

Oils and spreads

### Additional food and drink groups:

Foods high in fat, salt and sugar

Hydration

---

**Box 2** The UK Chief Medical Officers' Low Risk Weekly Drinking Guidelines

---

The Chief Medical Officers' guidelines for both men and women are that:

- To keep health risks from alcohol to a low level it is safest not to drink more than 14 units a week on a regular basis.
- If you regularly drink as much as 14 units per week, it is best to spread your drinking evenly over three or more days. If you have one or two heavy drinking episodes a week, you increase your risks of death from long term illness and from accidents and injuries.
- The risk of developing a range of health problems (including cancers of the mouth, throat and breast) increases the more you drink on a regular basis.
- If you wish to cut down the amount you drink, a good way to help achieve this is to have several drink-free days each week.

---

**Scope and definitions**

Sustainable diets have been defined as those diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimising natural and human resources.<sup>12</sup>

The following aspects of sustainable diets have been included within the scope of this paper: the health of humans; the environmental impacts (particularly in relation to greenhouse gas emissions, (GHGs) – see Annex 2); the need for the UK to have an international perspective; and addressing inequalities.

Although the following issues may be included as part of the broad scope of sustainable diets and food systems, they have not been included within the scope of this paper, as they are covered in detail elsewhere: palm oil production, animal health and welfare, antibiotic use in livestock and biodiversity.

This paper explores options for action across the food system to improve sustainable diets. We define food systems as the production, marketing, transformation, sale and purchase of food, and the resources, institutions and consumer practices involved in these processes.<sup>13</sup>

**Structure of the document**

The range of policy options identified have been grouped into seven themes which span different aspects of the food system from production through to manufacturing, marketing and the provision of information to consumers. Cross-cutting actions are outlined in the seventh theme. Each action is accompanied by a brief analysis of the target policy level (local, national, international), population groups that might benefit, strengths and weaknesses, supporting evidence, examples of implementation, potential unintended consequences, and who should take the action.

---

# Food system actions to support a shift towards more healthy and sustainable diets in the UK



---

## Introduction to the seven themes

### Theme 1: Production, processing, logistics

This theme explores options to shift towards healthy and sustainable diets through changes in agricultural production, processing and logistics across the food system. The complex food system in the UK has been influenced by a combination of historical agriculture production quotas and subsidies. While to date the system has largely been governed through Europe, the post-Brexit landscape presents a number of potential but uncertain opportunities. Approaches examined include fiscal measures such as shifting agriculture support towards beans and pulses and sustainable forms of meat, dairy and fish production.

### Theme 2: Manufacturing

This theme includes options to alter practices within food and alcohol manufacturing and processing to support more healthy and sustainable diet objectives. It examines the potential impacts of food and alcohol reformulation policies and a tax on processing.

### Theme 3: Retailing and food service

This theme explores the potential options to increase the sale of healthy and sustainable foods for human consumption. A variety of mechanisms are explored, ranging from price mechanisms on alcohol and unhealthy food products, to environmental changes which edit the choices available in the community and within retail and food service.

### Theme 4: Marketing and food promotions

This theme explores potential options through which marketing of unhealthy processed foods high in fat, salt and/or sugar could be reduced, and marketing of healthier and more sustainable foods could be increased. Options for action explored include marketing restrictions and removal of tax incentives for marketing of unhealthy products; rebalancing promotions towards healthier foods; reducing promotions on alcohol and regulating health claims.

### Theme 5: Guidelines and communications

Implemented as part of a package of wider measures, the provision of information, communications and education all have important roles in supporting behaviour change through improved knowledge and skills, as well as changing social norms. A range of options for action are explored, from public awareness and social marketing campaigns to professional and workforce education on healthy and sustainable diets and drinking within the government's alcohol guidelines.

### Theme 6: Food labels and information

This theme explores the provision of information about healthy and sustainable diets to support consumers through labels on nutrition, health and product sustainability on food and alcohol. Consumer research has identified the need for information that supports rapid judgements and 'at a glance' comparisons between products while shopping.

### Theme 7: Cross-cutting themes

This theme explores options to shift towards healthy and sustainable diets through approaches which involve actors across the whole food system and multiple sectors across government. Examples include legislation and tools to mainstream sustainable principles and healthy trade policies, as well as measures to address the determinants of food poverty and reduce food waste.

**Figure 1:** Summary overview of the seven potential areas for action

Theme 1	Theme 2	Theme 3	Theme 4	Theme 5	Theme 6	Theme 7
<b>Production, processing, logistics</b>	<b>Manufacturing</b>	<b>Retailing and food service</b>	<b>Marketing and food promotions</b>	<b>Guidelines and communications</b>	<b>Food labels and information</b>	<b>Cross-cutting themes</b>
a. Support horticulture	a. Reformulation of unhealthy food	a. Taxes and duties on unhealthy food	a. Unhealthy food marketing codes	a. Food-based dietary guidelines	a. Nutrition labelling	a. Legislation and bills
b. Support beans and pulses	b. Reformulation to lower alcohol strength	b. Price mechanisms on alcohol	b. Alcohol marketing controls	b. Public awareness and social marketing campaigns	b. Alcohol labelling	b. Trade
c. Shift to sustainable meat	c. Reformulation to increase fruit, vegetables, pulses	c. Carbon tax	c. Controls on unhealthy product in-store promotions	c. Education in schools	c. Information on product sustainability	c. Impact assessments
d. Shift to sustainable dairy	d. Tax on unhealthy processing technologies	d. Diversify to healthier options	d. Controls on alcohol promotion	d. Professional education		d. Responsible investments
e. Support sustainable fisheries		e. Public sector procurement	e. Nutrient profile to categorise products			e. Integrated data systems and metrics
f. Shorter value chains		f. Private sector procurement	f. Tax-deductible activity			f. Reconnecting people to food
g. Fiscal measures		g. Alcohol licencing	g. Sponsorship			g. Tackling food poverty
						h. Reducing food waste
Page 9	Page 12	Page 14	Page 17	Page 20	Page 21	Page 23



**THEME 1: PRODUCTION, PROCESSING, LOGISTICS**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<p><b>1a. Provide support and incentives for horticulture to increase production and consumption of vegetables and fruit.</b></p>	<p>International, national.</p>	<p>Whole population. May reduce inequalities.</p>	<p>Less than 1% of the UK's total utilised agricultural land area is used for growing vegetables. UK horticulture receives the least support from agriculture subsidies under the current Common Agriculture Policy (CAP).</p> <p>The farmgate share of the retail price of vegetables has been falling. Tomatoes fell from 48% to 27% between 1988 and 2015.<sup>14</sup></p>	<p><b>Finland:</b> provided subsidies to help farmers switch from livestock to berries as part of the successful NCD reduction programme in the 1970s.<sup>15</sup></p>	<p>Could support diversification away from animal feed, meat or dairy production. Could also help address the UK's trade deficit on fruit and vegetables.</p>	<p>Horticulture is less profitable than livestock production.</p> <p>May need subsidies to make it viable / sustainable.</p> <p>Seasonality will affect overall environmental impacts.</p> <p>Ecological footprint of fruit and vegetables could increase if domestic produce is grown out of season e.g. in glass-houses.</p> <p>Subsidies for healthy foods may disproportionately benefit higher income consumers who eat more.<sup>16</sup></p>	<p>Government, academia, NGOs, industry.</p>
<p><b>1b. Provide support and incentives to increase production of plant-based proteins such as beans and pulses for human consumption.</b></p>	<p>International, national.</p>	<p>Whole population. May reduce inequalities.</p>	<p>Beans and pulses fix soil nitrogen and have a lower GHG and water impact than animal proteins. When consumed in place of meat, they are good sources of protein, fibre and iron.</p> <p>UK farmers grow few beans and pulses due to lack of targeted subsidies, low yields, low profit margins, limited demand and infrastructure.<sup>17</sup></p>	<p><b>Ireland:</b> the 2015 €3m Protein Aid Scheme provides €250-280 per hectare for plant-based proteins. It led to a 300% increase in protein crops.<sup>17</sup></p> <p><b>UK:</b> The Common Agriculture Policy's greening rules led to a 40% increase in UK land use for growing beans and pulses during 2015 (but mainly for animal feed).<sup>18</sup></p>	<p>Supports CAP greening objectives and diversification away from animal feed, meat or dairy production.</p>	<p>Beans and pulses are not as profitable as animal feed.</p> <p>Lack of consumer demand for varieties grown in UK.</p> <p>Increased production could go to animal feed, thereby having no net reduction in environment and health objectives.</p>	<p>Government, academia, NGOs, industry.</p>

THEME 1: PRODUCTION, PROCESSING, LOGISTICS							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>1c. Adopt a long-term goal for sustainable meat production focused on 'less and better' meat.'</b>	International, national.	Whole population. May reduce inequalities.	<p>Animal agriculture accounts for 15% of global GHG emissions. Intensively raised animals have more lameness, leg and heart problems. Half of all global plant protein is fed to animals. Animals use 65-75% of EU antibiotics. 570,000 tonnes of UK fresh edible meat is wasted each year.<sup>8</sup></p> <p>Among the examples of 'better meat,' organic farming is linked to improved animal welfare, less antibiotics, more natural feed and better biodiversity.<sup>8,19</sup> The 'ecological leftovers' principle promotes using land unsuited to other purposes and feeding animals by-products.<sup>20</sup></p>	<b>Denmark:</b> The Government's 2015 Organic Action Plan aims to double organic land cultivation by 2020 from 2007 rates. <sup>21</sup> It includes subsidies for producers to convert to organic farming, skills training and growing demand. <sup>21</sup> As a result, Denmark has the highest market share of organic products in the world; 8% of meat products are organic. <sup>22</sup>	<p>Sustainable production shifts towards less and better meat.</p> <p>Keeps farmers in work. Supports twin environment and health objectives.</p>	<p>Could result in meat sector job and revenue losses to the economy (e.g. from fewer exports).</p> <p>Reduced domestic production and post-Brexit trade agreements could result in increased imports and no net reduction in consumption or environmental impacts. Additional mitigation measures may need to be considered, e.g. border adjustment taxes.</p>	Government, academia, NGOs, industry.
<b>1d. Adopt a long-term goal for sustainable dairy production.</b>	International, national.	Whole population. May reduce inequalities.	<p>The environmental impacts of dairy (GHG per kg) are largely lower on average than animal products (see 1c). However, cheese has a relatively high GHG intensity (8-10 times that of milk; and higher than pork).<sup>8</sup></p> <p>Switching to 'better dairy' would support reductions in GHGs and reductions in consumption as &gt;80% of dairy consumption comes from the UK.</p>	<b>Denmark:</b> See details of the Organic Action Plan in 1c, which has contributed to Denmark being the world leader in organic products; 26% of the dairy market is organic. <sup>22</sup>	<p>Keeps farmers in work. Supports twin environment and health objectives.</p>	<p>Could result in dairy sector jobs and revenue losses to the economy (e.g. from fewer exports).</p> <p>Reduced UK production and post-Brexit trade agreements could result in increased imports and no net reduction in consumption or environmental impacts.</p>	Government, academia, NGOs, industry.

**THEME 1: PRODUCTION, PROCESSING, LOGISTICS**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>1e. Increase support for, protect and strengthen positive reforms to fisheries policy.</b>	International, national.	Whole population. May reduce inequalities if affordability improves.	Consumption of fish in the UK population is lower than recommended and characterised by a social gradient.  The price per kg of a white fish fillet is double the price of beef and nearly five times the price of chicken.	<b>EU:</b> If implemented in full, the 2014 EU Fisheries policy reforms will support sustainable fisheries management, increase revenues and create jobs. <sup>23</sup>  <b>UK:</b> reforms have led to improvements in some fish stock levels. <sup>23</sup>	Supports multiple health and sustainability objectives.	Will need continued co-ordination between UK and Brussels. Lack of consumer demand for UK fish varieties could lessen health impact.  Subsidies for healthy foods may disproportionately benefit higher income consumers who eat more fish. <sup>16</sup>	Government, academia, NGOs, industry.
<b>1f. Promote shorter value chains to simplify the food system and distribute value more equitably.</b>	National, local.	Whole population. Targeted communities in specific localities, e.g. regional or local level.	UK consumers spent £198 billion on food in 2014. Of this, £9.9 billion went to farming, compared to £112 billion to retail and £26.5 billion to manufacturing. <sup>24</sup> Better infrastructure for shorter chains would help value to be more equitably distributed across a more sustainable food system. <sup>6,11</sup>	<b>Brazil:</b> a law requires that 30% of the school meals budget is spent on foods sourced from family farms, with priority for foods produced through agroecological methods. <sup>25</sup>	Shorter value chains may bring several benefits: consumers closer to producers; improved food system trustworthiness and traceability; more of the final product's value would be captured by producers and local processors; less processing and more fresh ingredients. <sup>11</sup>	Requires the development of new infrastructure. May be challenging to implement, e.g. due to potential conflicts with competition laws, and the benefits of economies of scale.	Public sector bodies, business, NGOs, academia.
<b>1g. Fiscal measures to alter livestock practices (e.g. livestock or carbon tax; environment subsidies).</b>	National.	Whole population.	The Committee on Climate Change has stated that reducing emissions from agriculture is a key priority for the next decade, and current voluntary measures are failing. <sup>26</sup>  A European study modelled the impact of emissions caps, emissions trading schemes and a livestock tax. GHG reductions of up to 20% could be achieved through increased efficiencies and less production. <sup>16</sup>	<b>Denmark:</b> See subsidies for organic (1c).  <b>Spain:</b> From 2019 the Catalonian Climate Change Law will implement a carbon tax (including agriculture) to support a climate fund. <sup>27</sup>  <b>Norway:</b> Is exploring how to extend its 1991 carbon tax to the agriculture sector, and raise the low carbon tax rate for fisheries. <sup>27</sup>	Creates a level playing field.  Funds could be reinvested to support production of healthy foods and help to redistribute value across the food system. See option 1f.	UK GHG reductions could be offset by increases in other parts of the world, e.g. due to higher imports of feed / animal produce.  As climate change is a global problem, carbon or environmental taxes may only succeed if all countries implement them. <sup>28</sup>  Health impacts may be offset by an increase in sugary foods due to their low GHGs.	Government, academia, NGOs, industry.

THEME 2: MANUFACTURING							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>2a. Reformulation to reduce saturated fat, salt and/or sugar in unhealthy processed foods.</b>	National or company level.	Whole population if implemented across the board. Otherwise might widen inequalities.	<p>The increased use of sugars, fat and salt in processed foods over time is due to their role in enhancing product palatability and their relatively low commodity price.</p> <p>In some instances, single ingredient reformulation initiatives have driven increases in other ingredients (e.g. sugar replacing fat).<sup>29</sup></p>	<p><b>UK:</b> The Food Standards Agency's Salt Reduction Programme led to reductions of 20% - 50% between 2000 and 2010.<sup>30</sup> However, progress stalled when the programme was transferred to the Public Health Responsibility Deal programme.<sup>31</sup> Public Health England's 2017 sugar reduction programme is underway but companies failed to meet the year 1 targets.<sup>32</sup></p>	A mandatory national model would support monitoring and create a level playing field. Population-level benefits. May reduce health inequalities.	Technical challenges for some categories. Lack of a level playing field may stall progress. Voluntary approach may focus on selected, as opposed to all products and could be ineffective in absence of sanctions for non-compliance. Risk of replacing sugars with fats (and vice versa) in some categories and thereby increasing the calorie content.	Government to set binding national standards. OR food industry to adopt voluntary standards.
<b>2b. Reformulation to lower the strength of alcohol products.</b>	National or company level.	Whole population.	Some actors have proposed removing units of alcohol, including through reformulation, as a way to improve consumer take-up of lower alcohol products and promote reduced consumption. <sup>33</sup>	<p><b>UK:</b> See 3c for reformulation via the alcohol duty escalator.</p> <p><b>England:</b> Under the Public Health Responsibility Deal public-private partnership (2010-2015), companies committed to reducing alcohol units in the market but focused on new lower-alcohol products rather than reformulating existing ones. This led to an increase in overall supply.<sup>34</sup></p>	<p>Low implementation cost.</p> <p>Most effective when there are penalties for non-compliance such as taxes which are linked to alcohol strength.<sup>35</sup></p>	Less effective where the focus is on developing additional new products rather than reformulating existing mainstream products.	Government, Industry.

**THEME 2: MANUFACTURING**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<p><b>2c. Reformulation to increase plant-based components in processed food products and meals in the out-of-home food service sector.</b></p>	<p>National or company level.</p>	<p>Whole population if implemented across the board. Otherwise might widen inequalities.</p>	<p>Two main approaches have been implemented by food manufacturers: 1) Increasing the fruit and vegetables components of manufactured foods,<sup>36</sup> and 2) Providing plant-based options in place of meat and animal based ingredients in manufactured foods.<sup>8</sup></p>	<p><b>UK:</b> Several food companies and NGOs are working to increase plant-based components in food retail and manufacturing.<sup>37</sup> Food service chain Pret has three vegetarian shops and is increasing the size of its vegetarian offering in all stores.<sup>38</sup> Co-op is expanding its ready meal range to include vegan options.<sup>39</sup></p> <p>NGO-led initiatives include The Food Foundation's Peas Please project.<sup>40</sup></p>	<p>May help to reduce meat consumption, when consumed in place of meat dishes. May help to increase consumption of fruit, vegetables and related nutrients.</p>	<p>Marketing unhealthy processed foods which are high in fat, salt and/or sugar as a source of fruit, vegetables or pulses may risk increasing the consumption of these unhealthy nutrients.<sup>36</sup></p>	<p>Government, Industry.</p>
<p><b>2d. Tax on processing primary products e.g. High Fructose Corn Syrup (HFCS). Or end to support for processing technologies.</b></p>	<p>National.</p>	<p>Whole population. See strengths and weaknesses for potential impact on inequalities.</p>	<p>Investment in, and support for, corn yield and processing technologies have lowered the production cost of High Fructose Corn Syrup, leading to increased use in manufacturing and contributing to obesity.<sup>41,16,42</sup></p>	<p>None identified.</p>	<p>Creates a level playing field. Revenue raising. May drive reformulation or disincentivise unhealthy processing.</p> <p>Funds could support production of healthy foods and redistribution of value across the food chain. See 1f.</p>	<p>Supply chain is complex. Difficult to link commodity inputs to end prices. Risks company competitiveness. Tax costs may be absorbed by industry and not influence the market. Primary products could be used for other purposes e.g. animal feed.<sup>16</sup></p>	<p>Department for the Environment, Food and Rural Affairs, Department of Health and Social Care, HM Treasury.</p>

THEME 3: RETAILING AND FOOD SERVICE							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>3a. Tax or duty on unhealthy products high in saturated fat, salt and/or sugar.</b>	National.	Whole population. See strengths and weaknesses for potential impact on inequalities.	Healthier foods in the UK (e.g. mushrooms, yoghurt, fish) are up to three times more expensive than less healthy foods (e.g. crisps, ice-cream, chocolates, sausages). <sup>43</sup>  Consumption patterns reflect these price trends. Taxes can be used to alter intakes, raise revenues and/or drive reformulation.	<b>UK:</b> The soft drinks industry levy aims to drive sugar reduction. Sugar in products is taxed at 24p per litre (> 8 grams per 100 ml per litre) or 18p per litre (5 - 8 grams per 100 ml). <sup>44</sup> Half of manufacturers of eligible drinks reduced sugar (by ~11%) to avoid the levy prior to its introduction in April 2018.  <b>Mexico:</b> a sugary drinks tax led to a 7.3% decline in sales; plain water sales rose by 5.2%. <sup>45</sup>	Could use existing tax mechanisms. Revenue raising. Progressive health gains. A reinforcing signal. May drive reformulation or incentivise diversification. Encourage switches to untaxed products. Public support, especially when health benefits are emphasised. <sup>46</sup>	Regressive, but could be offset by subsidies on healthier foods. Risk to competitiveness of companies. Tax costs may be absorbed by industry <sup>47</sup> and not influence purchasing. Export of unhealthy products could undermine health in other countries.  Action on a single ingredient e.g. sugar could increase the use of alternatives, such as fats.	Department of Health and Social Care, HM Treasury.
<b>3b. Tax or duty on alcohol</b>	National, local.	Whole population. See strengths and weaknesses for potential impact on inequalities.	Affordability drives alcohol consumption. Alcohol is 60% more affordable today than it was in 1980. Affordability of beer has risen 188% in supermarkets. <sup>48</sup>  Nearly two-thirds of the public believe that 'alcohol producers and suppliers should pay for reducing alcohol harm.' <sup>49</sup>  Studies have found that a 10% increase in the price of alcohol would lower intakes by 5%. <sup>50</sup>  Minimum Unit Prices (MUP) and taxes reduce affordability and work best together. A PHE analysis found that over 20 years, a 60p MUP would save 1,166 lives a year; but if combined with a duty escalator for five years, it would save 1,722 lives. <sup>50</sup>	<b>Scotland:</b> the 2012 Alcohol Minimum Unit Pricing Act was implemented in May 2018 at a rate of 50p. <sup>51</sup> In one month, retailers cut white cider lines by two-thirds and shifted to smaller bottles due to higher prices. <sup>52</sup>  <b>UK:</b> the 2008-2012 Alcohol Duty Escalator led to 2% above inflation price rises each year. Some companies reduced beer strength to avoid higher duties. <sup>35</sup> The alcohol duty escalator lowered affordability by 5% and related deaths fell. <sup>49</sup> Cuts in duty since 2013 are projected to have reduced income to the Exchequer by £5 billion over five years. <sup>50</sup>	Benefits of taxes and MUP include: progressive health gains; providing a reinforcing signal; and incentivising reformulation and diversification. In addition, taxes raise revenue as illustrated by the UK's Alcohol Duty Escalator.	UK alcohol taxes are complex and currently governed by EU Directives. Beer and spirits are taxed by alcohol content (alcohol by volume, or ABV). Wine and cider can only be taxed by volume, not strength. <sup>50</sup> However, Brexit presents an opportunity to reform the alcohol tax system to incentivise manufacturers to produce lower strength products.	Department of Health and Social Care, the Home Office, HM Treasury.

**THEME 3: RETAILING AND FOOD SERVICE**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>3c. Carbon tax on foods with high GHG emissions (e.g. meat, dairy).</b>	National.	Whole population. See strengths and weaknesses for potential impact on inequalities.	Briggs et al modelled i) a carbon tax on high GHG foods and ii) a tax combined with subsidies on low GHG foods. Both scenarios resulted in a 1.4% reduction in UK deaths. Scenario i) raised tax revenue and ii) was tax neutral. <sup>53</sup>  A European agri-food study found that taxes: reduce consumption; drive reformulation and promote substitution with cheaper options. <sup>16</sup>	<b>Europe:</b> Meat tax proposals are under consideration in Sweden, Denmark and Germany. <sup>28</sup>  In 2016, the Danish Council on Ethics – an advisory body to the Danish parliament – called for the introduction of a tax on red meat.  See section 1g for examples of carbon taxes in the agriculture sector.	Could use existing tax mechanisms. Revenue raising. Progressive health gains. A reinforcing signal. May incentivise diversification.  Unlike taxes on producers, emissions taxes affect domestic and foreign products alike and avoid 'carbon leakage', where carbon reductions are offset elsewhere. <sup>28</sup>	Regressive but could be offset by subsidies on healthy foods. Risk to competitiveness of companies. Tax costs may be absorbed by industry, and not influence consumer purchasing. Some studies suggest sugar intake could rise due to its lower GHG footprint. <sup>16</sup>	Department of Health and Social Care, HM Treasury.
<b>3d. Diversification into other products.</b>	Company level.	Whole population.	Business analysts have identified diversification to healthier alternatives as a strategy. <sup>29</sup>	<b>Worldwide:</b> Evidence that some global companies have diversified their portfolios. <sup>29,54</sup>	Risk reduction for businesses and investors in light of the increasing scrutiny of the healthiness of product portfolios. <sup>29,54</sup>	Unhealthy food market gap replaced by competitors. May affect companies' growth rates or share of market in short term, with risk of reversal.	Food manufacturers, Investors.
<b>3e. Public sector procurement and provision standards and guidelines to support healthy sustainable diet objectives.</b>	National, local, company level.	Particularly vulnerable groups e.g. children, health service users, prisoners. May reduce inequalities.	Strong parental support for schools to adhere to national school meal standards. <sup>55,56</sup>	<b>UK:</b> Government Buying Standards cover good practice in food production e.g. sustainable fish; nutrition content; ethics e.g. Fair Trade; and resource efficiency. <sup>57</sup>  <b>Brazil:</b> a law requires that 30% of the school meals budget is spent on foods from family farms, with priority for those produced by agroecological methods. <sup>25</sup>	Good potential reach. Reinforces norms for healthy and sustainable eating. Could be included within trading standards food safety inspections.	Patchy implementation and exemptions may widen inequalities.  Lack of integrated metrics.	Government, out-of-home food service providers and companies.

THEME 3: RETAILING AND FOOD SERVICE							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>3f. Private sector procurement and provision standards and guidelines to support healthy sustainable diet objectives.</b>	National, local, company level.	Whole population.	Choice editing the food procured and sold by retailers and food service outlets can help or hinder consumers' healthy, sustainable choices. E.g. a 2016 survey of 535 sandwiches from 12 major retailers found that only 4% were plant-based (i.e. animal-free). <sup>58</sup>	<b>Europe:</b> In 2005, Unilever committed to using certified fish in its frozen food business. This increased the volume of Marine Stewardship Council-certified fish in Europe from 4% in 2004 to 46% in 2005. <sup>59</sup>	Good potential reach. Reinforce norms for healthy and sustainable eating. Could be included within Trading Standards' food safety inspections.	Patchy implementation may widen inequalities. Lack of integrated metrics.	Out-of-home food service providers and companies, investors.
<b>3g. Alcohol licencing revisions to mandate public health considerations in assessments.</b>	National, local.	Whole population.	Licensing legislation regulates alcohol availability and can be used to lower health harms and other harms such as violence, injuries, sexually transmitted infections and child abuse. <sup>50</sup>  PHE's alcohol evidence review found that measures such as reducing alcohol outlet opening hours and density, and limiting displays and promotions in retail have the potential to be very cost-effective if fully enforced. <sup>50</sup>	<b>Scotland:</b> a public health objective was introduced into the licensing legislation from 2009. This enables licensing boards to take account of the health impacts of alcohol in licensing policies. <sup>49,60</sup> A 2016 evaluation found that while there are examples of good practice, the public health provisions are still being embedded. <sup>61</sup>	Strengthened licensing laws which reflect changes to alcohol purchasing patterns and mandate public health considerations will reduce the threat of costly legal action to cash-strapped councils. This will empower councils to challenge industry and take control of alcohol availability in their communities. <sup>49,62</sup>	Weak legislation can be ineffective.  Embedding public health in licensing decisions can take time, as demonstrated by Scotland.  Monitoring and enforcement can be costly for local authorities, especially when subject to legal challenges by the alcohol industry. <sup>49</sup>	The Home Office, Department of Health and Social Care, Local government.



**THEME 4: MARKETING AND PROMOTIONS**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<p><b>4a. Control marketing of unhealthy foods high in sugar, saturated fat and salt. Increase marketing of vegetables, fruit, beans, pulses, nuts and fish.</b></p>	<p>National.</p>	<p>Whole population or target vulnerable groups like children. May reduce inequalities.</p>	<p>Just 1.2% of all food and drink advertising spend goes on vegetables.<sup>14</sup></p> <p>Advertising and marketing campaigns are supported by a large body of commercial research which is not publicly available.</p>	<p><b>Canada:</b> A ban on advertising unhealthy food to children in Quebec decreased fast food consumption by 13% in targeted households.</p> <p><b>UK:</b> Unhealthy food marketing to children is regulated on TV through the Code of Broadcast Advertising (BCAP code) and in other media through the Code of Non-broadcast Advertising and Direct and Promotional Marketing regulations (CAP code).<sup>63</sup></p> <p><b>Scotland:</b> Altering placement of fruit and vegetables in small stores increased sales by 62%.<sup>14</sup></p>	<p>Help change social norms on consumption of unhealthy foods. Could stimulate reformulation and/or diversification. Could use existing Ofcom/BCAP nutrient profiling system<sup>64</sup> to extend scope of UK regulations to other areas e.g. packaging and sponsorship.</p>	<p>Reliant on effective co- and self-regulation. Likely to impact on some sectors of food industry severely, e.g. confectionery. Narrow restrictions may lead to ballooning of adverts in alternative media outlets.</p>	<p>Ofcom, Committee of Advertising Practice and Advertising Standards Authority, industry investors.</p>
<p><b>4b. Control marketing of alcohol.</b></p>	<p>National.</p>	<p>Whole population or target vulnerable groups like children. May reduce inequalities.</p>	<p>Research shows that 10-15 year-olds are 11% more likely to see alcohol adverts on TV than adults,<sup>65</sup> while over half (56%) of adverts seen by children are aired before 9pm.<sup>66</sup></p> <p>Alcohol marketing increases drinking in children. Every one hour of TV viewing raised the risk of starting to drink by 9% in one study.<sup>67</sup></p> <p>Studies also report that exposure to alcohol sports sponsorship raises consumption in children and adults.<sup>68</sup></p> <p>Complete advertising bans are more effective at reducing harms than partial bans.<sup>50</sup></p>	<p><b>France:</b> passed the 'Loi Evin' law to regulate alcohol marketing in 1991. Adverts are permitted in media aimed at adults (alcohol ads and sponsorships are prohibited on TV, in cinemas and culture and sports events). There are penalties for infringement.<sup>50</sup></p> <p><b>UK:</b> a review of existing industry self-regulatory codes on alcohol advertising found that the codes are failing to protect young people. Adverts link alcohol with youth culture, drunkenness, and sexual and sporting prowess.<sup>69</sup></p>	<p>Evidence supports a statutory approach; low implementation costs for government.</p> <p>Costs of enforcement can be divided between government and/or commercial operators.<sup>50</sup></p>	<p>If poorly implemented (e.g. see UK self-regulation), can increase health and social harm among young people.<sup>50</sup></p>	<p>Ofcom, Committee of Advertising Practice and Advertising Standards Authority, industry investors.</p>

THEME 4: MARKETING AND PROMOTIONS							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>4c. Switch in-store retail promotions away from unhealthy food towards vegetables, fruit, beans, pulses, nuts and fish.</b>	National, Company level.	Whole population. May reduce inequalities due to current distributions of intakes.	40% of UK food and drink is purchased on promotion compared to 20% in France and Germany. A recent study found over half of confectionery on offer compared to one-third of fresh fruit and vegetables. <sup>70</sup> Another found end-of-aisle displays increased fizzy drink sales by 52%. <sup>71</sup>	<b>UK:</b> Lidl and Tesco sweet free checkouts. <sup>72,73</sup> Sainsbury's and Co-op have set targets for healthier offers. <sup>74</sup>  Tesco profiles products to shape its reformulation and promotion policies. <sup>75</sup>  The Peas Please project works with retailers to increase vegetable intakes through a menu of promotions. <sup>76</sup>	Supported by customers.  Low implementation costs for government.	May be challenging on a voluntary basis, <sup>77,78</sup> and needs a level playing field. Confectionery promotions are attractive to retailers. Multi-buy offers on fresh, perishable foods such as fruit and vegetables may increase food waste.  Can be undermined by lowering non-promotional prices. <sup>50</sup>	Government, retailers, out-of-home food service providers, investors.
<b>4d. Prohibit price promotions on alcohol.</b>	National.	Whole population. May reduce inequalities due to current distribution of intakes.	Several studies have linked alcohol price promotions with higher levels of intoxication, drink driving and physical altercations. <sup>79-81</sup>  A 2008 UK modelling study estimated that a ban on alcohol discounts and price promotions such as '3 for 2' in off-trade retail (e.g. off-licences) would lower intakes by 3%. <sup>82</sup>	<b>Scotland:</b> The 2010 Alcohol etc. Act banned quantity-based price discounts in off-licences, and banned supermarkets from selling multi-buy promotions such as 'buy one, get one free'. <sup>50,60</sup> It was associated with a 2.6% reduction in off-trade alcohol sales (e.g. in supermarkets), driven by wine (4% reduction). <sup>61</sup>	Low implementation costs for government.	Can be undermined by lowering non-promotional prices. <sup>50</sup> For example, Scotland's ban on multi-buy promotions was accompanied by a reduction in the price of single products (e.g. wine was sold at £3.33 a bottle rather than three bottles for £10). <sup>61</sup>	Department of Health and Social Care, HM Treasury.
<b>4e. Agree a nutrient profile model for use in nutrition policies.</b> <sup>83,84</sup>	World Health Organization (WHO), Europe, national.	Whole population. May reduce inequalities.	Use of nutrient profiling promoted by WHO for variety of uses e.g. marketing, health and nutrition claims, product labelling and economic tools to orient food consumption. <sup>83,85</sup>	<b>Australia and New Zealand:</b> Food Standards Agency New Zealand's nutrient profile scoring criterion for food claims. <sup>85</sup>  <b>UK:</b> Ofcom nutrient profile system used in TV advertising regulation.	Scientific standardisation of definitions of healthy and unhealthy foods. Consider impact of multiple aspects. <sup>85,86</sup>	Challenge in achieving consensus among stakeholders on a nutrient profile system for health.  Profiles with sustainability do not exist yet.  Poor quality model could undermine rather than support health objectives.	WHO, European Commission, Department of Health and Social Care, Public Health England.

**THEME 4: MARKETING AND PROMOTIONS**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>4f. Disallow marketing of unhealthy foods as a tax-deductible expense for companies.<sup>87</sup></b>	National.	Whole population. May reduce inequalities due to current distributions of intakes.	Advertising and marketing costs are a tax deductible expense in the UK (some exceptions). <sup>87</sup> A US study estimated that eliminating the tax deductibility of marketing fast foods would reduce overweight in children by 5–7%. <sup>88</sup>	<b>US:</b> Proposal for a federal Stop Subsidizing Childhood Obesity Act. <sup>89</sup>	Less incentive to market unhealthy foods. Could use existing tax instruments. Potential to raise tax revenues.  Public opposition unlikely.	Likely definitional issues. Marketing activities might be commissioned from companies based in other tax jurisdictions.	Department of Health and Social Care, HM Treasury.
<b>4g. Develop guidelines to rate food and beverage companies' suitability for sponsorship (e.g. of local authority activities).</b>	International national, local.	Whole population. May reduce inequalities.	WHO global marketing guidelines to children recommend avoiding sponsorship from commercial entities associated with unhealthy foods. <sup>86</sup>	<b>Australia:</b> The Western Australia Sponsorship Risk Matrix assesses the overall risk of a particular brand and/or sponsorship linked with co-sponsored activity. <sup>90</sup>	Industry sponsored activities can increase brand loyalty and consumption of unhealthy products. <sup>54</sup> Guidelines may help minimise exposure to marketing of unhealthy foods, leading to reduced consumption.	May be difficult to keep track as companies regularly refresh, reformulate and/or diversify products and portfolios. Could reduce resource for and access to health promoting activities, such as physical activity opportunities.	WHO, Department of Health and Social Care or Public Health England, Local Government Association.

THEME 5: GUIDELINES AND COMMUNICATIONS							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>5a. Develop integrated healthy, sustainable food-based dietary guidelines and commit to regular review and revision.</b>	National.	Whole population. Impact on inequalities will depend on usage.	Food-based dietary guidelines (FBDG) are information tools which translate scientific nutrient recommendations into qualitative or quantitative food based guidelines. <sup>71</sup>  In recent years, several countries have broadened their FBDGs to incorporate sustainability considerations.	<b>UK:</b> Eatwell Guide incorporates health and sustainability.  <b>Worldwide:</b> integrated guidelines in China, Sweden, Denmark.  <b>WWF:</b> Livewell Guide models different scenarios for achieving healthy sustainable dietary objectives.  <b>US:</b> guidelines do not incorporate sustainability but are updated every five years. <sup>92</sup>	Provide practical guidelines for policy makers and consumers. Support awareness raising and policy action.	Need supportive food environments to be effective at individual level. May be hampered by competing messages from other sources. Must be up-to-date to be effective.	Cross-government including Department for the Environment, Food and Rural Affairs, Department of Health and Social Care, Department for Education and others.
<b>5b. Social marketing campaigns on vegetables, fruits, beans, pulses, nuts and fish.</b>	National, local.	Whole population. Target groups if segmented. May reduce inequalities due to current distributions of intakes.	Promoted by WHO and others as part of comprehensive policies to improve diets. <sup>93,94</sup>  On the whole, knowledge of what constitutes healthy food is better than knowledge of the environmental impacts of food. <sup>16</sup>	<b>US:</b> Sodexo's Meatless Mondays: 30% of sites reported reduced meat purchases, 49% reported increased vegetable sales. <sup>95</sup>	Increase awareness of health and sustainability concerns. Tackle misinformation. Raise knowledge of how to change behaviour. May help to increase support for government action.	Needs supportive environments to be effective. May be hampered by mixed messages from other sources. Hard to evaluate. Not cost-effective on their own.  Risk of widening inequalities if not targeted.	National and local government.
<b>5c. Education on healthy, sustainable diets in schools, including practical cooking skills.</b>	National (via curriculum) and local.	School age children and their families. May reduce inequalities if mandatory.	Promoted by WHO and others as part of comprehensive policies to improve diets. <sup>93,94</sup>	<b>UK:</b> The School Food Plan. <sup>97</sup>	Provides practical cooking skills. Raises awareness of healthy sustainable diets. Tackles myths and misinformation.	Competition for curriculum priority. Hard to evaluate. Industry sponsored activities may be counter-productive (due to increased brand loyalty and consumption). <sup>54</sup>	Department for Education, schools.
<b>5d. Professional education of health, social care and catering workforce.</b>	National, local.	Patients, clients of services, school pupils, and the wider workforce.	Promoted by WHO and others as part of comprehensive policies to improve diets. <sup>93,94</sup>	<b>UK:</b> The Association for Nutrition's Workforce Competence Model in Nutrition provides a framework for upskilling people working in health, social care, catering and fitness and leisure.	Raises awareness of healthy, sustainable diets. Tackles myths and misinformation. Supports shifts towards improved consumption.	Competition with other priorities. Effectiveness may be hampered by competing messages from other sources. May need to be mandatory to be effective (as is the case for food safety).	Professional bodies, NHS, government, caterers, food service companies.

**THEME 6: FOOD AND ALCOHOL LABELS AND INFORMATION**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>6a. Labelling nutrition.</b>	National, company.	Whole population.	A systematic review found point-of-purchase labelling influenced choice of healthier options. <sup>98</sup>	<p><b>UK:</b> National traffic light labelling scheme drove reformulation.</p> <p><b>US:</b> Calls have been made to include cancer warnings on processed meats.<sup>99</sup></p>	Labels could be used to help consumers choose more healthy products and monitor progress on nutrition e.g. by NGOs.	Lack of integrated health and sustainability metrics.	Food industry, NGOs.
<b>6b. Providing information on alcohol labels.</b>	National, company.	Whole population or specific groups e.g. pregnant women.	<p>While touted as a tool for behaviour change, most alcohol labels are poorly designed and implemented, and fail to change habits.<sup>50</sup> Researchers have identified five key elements for effective labels:<sup>100</sup></p> <ul style="list-style-type: none"> <li>• ingredients</li> <li>• nutrition information</li> <li>• standard drink and serving size</li> <li>• drinking guidelines</li> <li>• health warnings.</li> </ul>	<p><b>UK:</b> The industry-funded Portman Group's updated 2017 labelling guidance has three minimum parts:</p> <ul style="list-style-type: none"> <li>• Units</li> <li>• Pregnancy</li> <li>• Signposting to Drinkaware.co.uk<sup>101</sup></li> </ul> <p>It has stopped recommending that products carry the official drinking guidelines.<sup>49</sup></p> <p>A 2017 review of 315 UK labels found that virtually none had health warnings or the current drinking guidelines. Most included pregnancy warnings.<sup>102</sup></p>	Effective alcohol product labelling has been shown to increase awareness of the harms associated with drinking. <sup>50,102</sup>	Must be mandatory and comprehensive to be effective. The European Union does not require any content or health warning on the possible consequences of alcohol consumption.	Government, alcohol industry.

THEME 6: FOOD AND ALCOHOL LABELS AND INFORMATION							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>6c. Providing sustainability information on labels.</b>	National, company.	Whole population or specific groups.	<p>Sustainable food systems have many dimensions including health, environment, animal welfare and social aspects. However, there is currently no comprehensive scheme which integrates them all.</p> <p>One study found that while consumer demand is strong for carbon labels, 89% find them difficult to interpret, partly due to proliferation of different labels.<sup>103</sup></p>	<p><b>UK:</b> Tesco has trialled carbon labels since 2008. But plans for mass roll-out were dropped due to limited comprehension among consumers.<sup>104,105</sup></p> <p>See 6d for examples of certification schemes.</p>	<p>Increase access and help consumers choose more sustainable products.</p> <p>Labels could be used to monitor progress on sustainability e.g. by NGOs.</p>	<p>Lack of integrated health and sustainability metrics.</p> <p>Low awareness, priority and use of environment and sustainability labels among consumers.</p>	Food industry, NGOs.
<b>6d. Sustainability standards (including Assurance schemes and Award schemes).</b>	International, national, local, company or producer.	Whole population.	<p>Impact evaluations have been mixed. One study of Fair Trade cooperatives or plantation farms found small-scale farmers benefitted from higher and more stable incomes, workers benefitted from better working conditions and increased access to education and training.<sup>106</sup></p>	<p><b>UK:</b> The Food for Life Partnership is a voluntary three tier award for schools.<sup>16</sup> An evaluation study found it led to increased awareness of food issues and increased consumption of fruit and vegetables among children.<sup>107</sup></p> <p>Producer certification schemes include Fairtrade,<sup>106</sup> organic,<sup>108</sup> animal welfare,<sup>109,110</sup> sustainable palm oil<sup>111</sup> and Marine Stewardship Council.<sup>112</sup></p>	<p>Improve sustainability within wider food system.</p> <p>Increase access and help consumers choose more sustainable products.</p>	<p>Standards may be weakened to increase uptake and/or used as a marketing tool to promote increased sales and consumption of unhealthy products (conflicts between different sustainability objectives).</p> <p>Market penetration may depend on consumer and company demand.</p> <p>Lack of common metrics makes it difficult to assess the real environmental and developmental impacts of schemes.</p>	Industry, NGOs, government.

**THEME 7: CROSS-CUTTING THEMES**

OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>7a. Legislation to integrate health and sustainability principles across government policy and action.</b>	National.	Whole population.	Achieving sustainable development objectives across society will require strong leadership and a joined-up, coherent approach across government.	<p><b>Wales:</b> the Well-being of Future Generations Act 2015 places sustainability at the heart of public sector actions through promoting joined-up policies which focus on the long-term.<sup>113</sup></p> <p><b>Scotland:</b> proposals have been tabled for a Good Food Nation Bill which will create a statutory framework to join up food policy.<sup>114</sup></p>	Mandates the principle of sustainability and ensures it is a priority. Ensures policy cohesion across government.	<p>Dependent on political will.</p> <p>May take a long time to achieve.</p>	Government.
<b>7b. Trade (e.g. implement GHG emissions trading scheme; import and export tariffs on unhealthy products).</b>	National.	Whole population.	Trade affects the availability and affordability of foods. It may increase the GHG emissions elsewhere (see weakness). It can also limit the policy space for governments to pursue public-interest measures e.g. local procurement. <sup>16</sup>	<b>Fiji:</b> has removed the excise duty on imported fruits, vegetables and legumes to increase consumption. It has also decreased import tax on most fruit and vegetables. <sup>25</sup>	Potential to stimulate action to support health and sustainability objectives across food system actors.	Risk of substitution or leakage e.g. UK GHG reductions in agricultural production could be offset by increases in other parts of the world due to higher imports of feed and/or animal produce. Health impacts may be offset by an increase in consumption of lower GHG sugary foods. <sup>16</sup> Complicated by WTO rules.	Government, academia, NGOs, industry.
<b>7c. Health and sustainability impact assessments of all government policy.</b>	International, national, local.	Whole population or could target specific groups. May reduce inequalities.	Environment impact assessments are mandated by law. However, use of voluntary health impact assessments is limited. <sup>115</sup>	<b>England and Wales:</b> Environment impact assessments are currently mandated by the Town and Country Planning Regulations. <sup>116</sup>	<p>Identify and quantify policy impacts and possible actions to mitigate them.</p> <p>Build on existing mechanisms e.g. Regulatory Policy Committee to include health and social impacts in its assessments.<sup>117</sup></p>	Compared to economic impacts, health and/or health equity data may be limited, difficult to measure and not be a priority in other sectors. Potential for future trade agreements to impact on healthy sustainable diet objectives. <sup>118</sup>	Government, academia, NGOs, industry.

THEME 7: CROSS-CUTTING THEMES							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>7d. System change through sustainable investment policy.</b>	International, national, local.	Whole population.	Responsible investment aims to influence and manage businesses' environmental, social and governance issues so they do the right thing and boost value and performance. Driven by risk management and/or investor concerns, it can involve harnessing the power of people's savings and pensions to challenge the harmful practices of companies. <sup>119,120</sup>	<b>UK:</b> Share Action's Sustainable Food Systems project works with institutional and individual investors to promote best practices in sustainable food production and consumption through investments. <sup>120</sup> Recent campaigns on livestock farming and sustainable protein engaged with 93 investors worth £2.6 trillion.	Has the potential to drive system-change at scale. Responsible investment is a growing concern among investors. <sup>54,119</sup>	Relies on investors to comply with, and report on, the responsible standards they have signed up to. Measuring performance improvements and value can be difficult. <sup>119</sup>	Industry, investors.
<b>7e. Improve data collection systems and develop integrated metrics to monitor and track progress towards healthy, sustainable diets.</b>	International, national, local.	Whole population.	Robust data collection systems and integrated tools and metrics are needed to measure progress across the social, environmental and health dimensions of sustainable diets. <sup>121</sup> E.g. the Office for National Statistics could develop a new Sustainable Diet basket of measures, to accompany the Consumer Price Index. <sup>6</sup>	<b>Nutrition tools:</b> Nutrient profiles (see 4c) provide a tool to measure the overall nutritional healthiness of products or company portfolios. <b>Environment tools:</b> Friends of the Earth's Four Footprints assesses the integrated impact of: land, water, material and carbon footprints. <sup>122</sup>	Incorporate sustainability within existing mechanisms. Support integrated policy. Improve transparency. Enable comparisons across standards to support healthy, sustainable diet objectives. Can be applied to products, organisations or entire countries.	Dependent on data availability and comparability.	Government, academia.
<b>7f. Reconnecting people to food through collective approaches that promote local sustainable food economies and enterprises.</b>	National, local.	Whole population. Targeted communities.	Reconnecting people to food as a means to promote local economies and support sustainable producers. Includes supporting the infrastructure to enable shorter value chains (see 1f). <sup>6,11</sup>	<b>UK:</b> The Sustainable Food Cities network brings together public sector, businesses and NGO actors to prioritise healthy and sustainable diets, procurement, knowledge and skills, and tackling food poverty. <sup>123</sup> It also includes a Veg Cities component to promote increased access to and consumption of vegetables. <sup>40</sup> <b>Denmark:</b> see 1g. <b>Brazil:</b> see 1f.	Provide a mechanism to raise awareness and galvanise cross-sector collaboration and action. Reconnect people to food. Improve food system trustworthiness and traceability.	May be difficult to evaluate.	Public sector bodies, business, NGOs, academia.



THEME 7: CROSS-CUTTING THEMES							
OPTION FOR ACTION	LEVEL	GROUPS THAT MAY BENEFIT	CONTEXT	EXAMPLES OF IMPLEMENTATION	STRENGTHS	WEAKNESSES	WHO TO ACTION
<b>7g. Tackling food poverty (food insecurity).</b>	National, local.	Targeted communities.	While people on lower incomes are less likely to meet the Eatwell Guide recommendations, the UK does not currently measure food poverty. <sup>124</sup> Poverty reduction policies should ensure those in low paid jobs and on benefits or tax-credits receive a minimum income which enables them to afford a healthy, sustainable diet. <sup>125</sup>	<b>Scotland, Wales and Northern Ireland</b> are taking steps to measure food poverty, but use different tools. <sup>124</sup> <b>UK:</b> The Living Wage Foundation calculates a minimum wage set to enable people to afford a healthy diet. <sup>125</sup> Companies sign up on a voluntary basis. <sup>126</sup> Actions led by local councils include food poverty action plans. <sup>127</sup>	Provide a mechanism to measure food insecurity and tackle the underlying determinants of food poverty. This would also help to mitigate against any regressive impacts of fiscal measures on low income groups.	The causal pathway between income and food purchase is complex, and attribution may be difficult to prove and/or evaluate.	Government, academia, NGOs.
<b>7h. Reducing food waste.</b>	National, local.	Whole population.	The UK generates 16 million tonnes of food waste a year. <sup>6</sup> In 2015 household waste alone was worth £13 bn. <sup>128</sup> 60% of food waste occurs in the farming, production and supply chain, while retailer selling and consumer practices exacerbate the problem. <sup>6</sup>	<b>UK:</b> WRAP's 'Love Food, Hate Waste' campaign contributed to a 40% reduction in household food waste between 2007–2010, alongside price rises and recession. <sup>129</sup>	Addressing food waste will help consumers to save money and conserve water, energy and other resources across the wider food system.	Food waste is inversely associated with the cost of food. At the household level, waste rises with food deflation and reduces with inflation. As it is a system-wide problem, any approach will need to address waste across the whole system, which makes it more challenging and complex to address.	Government, industry, NGOs, households.

# References

- 1 PHE. The Eatwell Guide. 2016. <https://www.gov.uk/government/publications/the-eatwell-guide> (accessed Aug 10, 2018).
- 2 Department of Health. UK Chief Medical Officers' Low Risk Drinking Guidelines. London, 2016 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/545937/UK\\_CMOs\\_\\_report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/545937/UK_CMOs__report.pdf) (accessed July 16, 2017).
- 3 Watson F, Mwatsama M. Fresh Start: A framework for healthy and sustainable diets in the UK. Situational analysis. London, 2018.
- 4 Garnett T. Changing what we eat; a call for research & action on widespread adoption of sustainable healthy eating. 2014. [http://www.fcrrn.org.uk/sites/default/files/fcrn\\_welcome\\_gfs\\_changing\\_consumption\\_report\\_final.pdf](http://www.fcrrn.org.uk/sites/default/files/fcrn_welcome_gfs_changing_consumption_report_final.pdf) (accessed Aug 10, 2018).
- 5 Food Foundation and Food Climate Research Network. Plating up progress? Food Foundation. 2018. <https://foodfoundation.org.uk/project/plating-up-progress/> (accessed Aug 10, 2018).
- 6 Food Research Collaboration. Square Meal. Food Farming Health Nature. Why we need a new recipe for the future. 2014. <http://foodresearch.org.uk/wp-content/uploads/2014/07/squaremealfinalpdf-1.pdf> (accessed Jan 25, 2017).
- 7 Food Ethics Council. 'Fronting up: UK sustainable food systems in the spotlight.' 2018. <https://www.foodethicscouncil.org/our-work/index/fronting-up-uk-sustainable-systems-in-the-spotlight.html> (accessed Aug 17, 2018).
- 8 Eating Better. Principles for eating meat and dairy more sustainably: the 'less and better' approach. London, 2018. [https://www.eating-better.org/uploads/Documents/2018/better\\_meat\\_report\\_FINAL.pdf](https://www.eating-better.org/uploads/Documents/2018/better_meat_report_FINAL.pdf) (accessed June 27, 2018).
- 9 Medact, Eating Better. A Healthy and Sustainable Food Future Policy recommendations to embed sustainability in the Eatwell Guide and wider UK food policy. London, 2017. <https://www.medact.org/wp-content/uploads/2017/03/A-Healthy-Sustainable-Food-Future-1.pdf> (accessed April 25, 2017).
- 10 World Cancer Research Fund International / American Institute for Cancer Research. Diet, Nutrition, Physical Activity and Cancer: A Global Perspective. 2018. [dietandcancerreport.org](http://dietandcancerreport.org) (accessed July 27, 2018).
- 11 New Economics Foundation. Urgent recall: Our food system under review. 2015. [http://b3cdn.net/nefoundation/1bfd1f66401d3b5f4b\\_fsm6vjoti.pdf](http://b3cdn.net/nefoundation/1bfd1f66401d3b5f4b_fsm6vjoti.pdf) (accessed Jan 25, 2017).
- 12 FAO and Biodiversity International. Sustainable diets and biodiversity directions and solutions for policy, research and action. 2010. <http://www.fao.org/docrep/016/i3004e/i3004e.pdf> (accessed Jan 25, 2017).
- 13 Global Panel on Agriculture and Food Systems for Nutrition. How can Agriculture and Food System Policies improve Nutrition? Technical Brief. London, 2014. <http://www.glopan.org/sites/default/files/GlobalPanelTechnicalBriefFinal.pdf> (accessed Jan 25, 2017).
- 14 Hinks R, Nicolini G, Ritchie P, et al. Veg Facts. 2016. <http://foodfoundation.org.uk/wp-content/uploads/2016/11/FF-Veg-Doc-V5.pdf> (accessed Jan 25, 2017).
- 15 Puska P, Tuomilehto J, Nissinen A, Vartiainen E. The North Karelia Project. 20 Year Results and Experiences. Helsinki, 1995.
- 16 Garnett T, Mathewson S, Angelides P, Borthwick F. Policies and actions to shift eating patterns: What works? 2015. [http://www.fcrrn.org.uk/sites/default/files/fcrn\\_chatham\\_house\\_0.pdf](http://www.fcrrn.org.uk/sites/default/files/fcrn_chatham_house_0.pdf) (accessed Jan 25, 2017).
- 17 New Economics Foundation. Entry: Make protein crops a focus of a new farm entry scheme. 2017. [www.vegansociety.com/growgreen](http://www.vegansociety.com/growgreen) (accessed June 29, 2018).
- 18 DEFRA (Department for the Environment Food and Rural Affairs). Agriculture in the United Kingdom. 2015. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/557993/AUK-2015-05oct16.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/557993/AUK-2015-05oct16.pdf) (accessed Jan 25, 2017).
- 19 Farming & Growing Standards | Soil Association.org. <https://www.soilassociation.org/organic-standards/soil-association-organic-standards/farming-growing-standards/> (accessed June 27, 2018).
- 20 Rööös, E. P. M., Spångberg J, Carlsson, G. and Rydmer L. 'Ecological leftovers: a route to a sustainable diet?' 2016. [http://ec.europa.eu/environment/integration/research/newsalert/pdf/ecological\\_leftovers\\_route\\_to\\_sustainable\\_diet\\_450na2\\_en.pdf](http://ec.europa.eu/environment/integration/research/newsalert/pdf/ecological_leftovers_route_to_sustainable_diet_450na2_en.pdf) (accessed June 28, 2018).
- 21 Ministry of Food A and F of D. Organic Action Plan for Denmark. 2015. [http://en.fvm.dk/fileadmin/user\\_upload/FVM.dk/Dokumenter/Landbrug/Indsatser/Oekologi/7348\\_FVM\\_OEkologiplanDanmark\\_A5\\_PIXI\\_English\\_Web.pdf](http://en.fvm.dk/fileadmin/user_upload/FVM.dk/Dokumenter/Landbrug/Indsatser/Oekologi/7348_FVM_OEkologiplanDanmark_A5_PIXI_English_Web.pdf) (accessed June 27, 2018).
- 22 Organic Denmark. Denmark the world leading organic nation. 2017. <http://organicdenmark.com/organics-in-denmark/facts-and-figures> (accessed June 27, 2018).
- 23 ANIOL E. Managing EU fisheries in the public interest | New Economics Foundation. 2015. [http://neweconomics.org/2015/03/managing-eu-fisheries-in-the-public-interest/?lost=true&\\_sf\\_s= fisheries](http://neweconomics.org/2015/03/managing-eu-fisheries-in-the-public-interest/?lost=true&_sf_s= fisheries) (accessed Jan 25, 2017).
- 24 Lang T, Schoen V. Food, the UK and the EU: Brexit or Bremain? 2016. London: City, University of London <http://foodresearch.org.uk/publications/food-and-brexit/> (accessed June 28, 2018).
- 25 World Cancer Research Fund International. NOURISHING Framework and Policy Database. [www.wcrf.org/NOURISHING](http://www.wcrf.org/NOURISHING) (accessed June 28, 2018).
- 26 Committee on Climate Change. Reducing UK emissions: 2018 Progress Report to Parliament. 2018. [www.theccc.org.uk](http://www.theccc.org.uk) (accessed June 29, 2018).
- 27 Goyal R, Gray S, Churie Kallhauge A, Nierop S, Berg T, Leuschner P. State and Trends of Carbon Pricing 2018. Washington DC, 2018. <https://openknowledge.worldbank.org/handle/10986/29687> (accessed June 28, 2018).
- 28 FAIRR (Farm Animal Investment Risk Return). The Livestock Levy: are regulators considering meat taxes? FAIRR Initiative. 2017. <http://www.fairr.org/resource/livestock-levy-regulators-considering-meat-taxes/> (accessed June 28, 2018).
- 29 Credit Suisse. Consumption at a crossroads. 2013. Zurich <https://publications.credit-suisse.com/tasks/render/file/index.cfm?fileid=780BF4A8-B3D1-13A0-D2514E21EFFB0479> (accessed June 28, 2018).
- 30 Food and Drink Federation. Salt reduction.The Facts. <https://www.fdf.org.uk/resources/salt-thefactsfinal1.pdf> (accessed June 28, 2018).
- 31 MacGregor GA, He FJ, Pombo-Rodrigues S. Food and the responsibility deal: how the salt reduction strategy was derailed. *BMJ* 2015; 350: h1936.
- 32 Tedstone A, Coulton V, Targett V, et al. Sugar reduction and wider reformulation programme: Report on progress towards the first 5% reduction and next steps. 2018. [www.gov.uk/phe](http://www.gov.uk/phe) (accessed June 28, 2018).
- 33 Department of Health. [ARCHIVED CONTENT] Public Health Responsibility Deal: Alcohol Pledges | Public Health Responsibility Deal. 2011. <http://webarchive.nationalarchives.gov.uk/201802011175740/https://responsibilitydeal.dh.gov.uk/alcohol-pledges/> (accessed July 10, 2018).
- 34 Knai C, Petticrew M, Durand MA, et al. The Public Health Responsibility deal: has a public-private partnership brought about action on alcohol reduction? *Addiction* 2015; 110: 1217-25.
- 35 Moylan J. Will weaker beers help the brewing industry? *BBC News*. *BBC News*. 2012. <https://www.bbc.co.uk/news/business-17399368> (accessed July 10, 2018).
- 36 Public Health England. External reference group-5 A Day logo. 2014. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/463553/ERG\\_5\\_A\\_DAY\\_Summary\\_Paper.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/463553/ERG_5_A_DAY_Summary_Paper.pdf) (accessed July 20, 2018).
- 37 Eating Better. The future of eating is flexitarian: Companies leading the way. 2017. [https://www.eating-better.org/uploads/Documents/2017/Eating\\_Better\\_The\\_future\\_of\\_eating\\_is\\_flexitarian.pdf](https://www.eating-better.org/uploads/Documents/2017/Eating_Better_The_future_of_eating_is_flexitarian.pdf) (accessed July 10, 2018).
- 38 Veggie Pret | Pret A Manger UK. <https://www.pret.co.uk/en-gb/veggie-pret> (accessed July 10, 2018).
- 39 Wakefield S. Can you find vegan products in Co-op? | The Co-op Blog. 2017. <https://blog.coop.co.uk/2017/01/12/can-you-find-vegan-products-in-co-op/> (accessed July 10, 2018).
- 40 Food Foundation. Peas Please Commitments Framework. 2018. <https://foodfoundation.org.uk/wp-content/uploads/2018/06/Commitments-framework-2018-final-1.pdf> (accessed July 10, 2018).
- 41 Beghin JC, Jensen HH, Alston J, et al. Farm Policies and Added Sugars in US Diets. 2008.
- 42 OECD. Obesity and the economics of prevention: Fit not fat. 2010. <http://www.oecd.org/els/health-systems/obesity-and-the-economics-of-prevention-9789264084865-en.htm> (accessed July 2, 2018).
- 43 Jones NR V., Conklin AI, Suhrcke M, Monsivais P, Barr B. The Growing Price Gap between More and Less Healthy Foods: Analysis of a Novel

- Longitudinal UK Dataset. *PLoS One* 2014; 9: e109343.
- 44 HM Treasury. Soft Drinks Industry Levy comes into effect - GOV.UK. 2018. <https://www.gov.uk/government/news/soft-drinks-industry-levy-comes-into-effect> (accessed July 2, 2018).
- 45 Colchero MA, Guerrero-López CM, Molina M, Rivera JA. Beverages Sales in Mexico before and after Implementation of a Sugar Sweetened Beverage Tax. *PLoS One* 2016; 11: e0163463.
- 46 Timpson H, Lavin R, Hughes L. Exploring the Acceptability of a Tax on Sugar-Sweetened Beverages. 2013. Liverpool: Liverpool John Moores University
- 47 Berardi N, Sevestre P, Tepaut M, Vigneron A. THE IMPACT OF A 'SODA TAX' ON PRICES. EVIDENCE FROM FRENCH MICRO DATA. 2012. <https://www.tandfonline.com/doi/abs/10.1080/00036846.2016.1150946?journalCode=raec20> (accessed March 15, 2018).
- 48 Institute of Alcohol Studies. Briefing: The rising affordability of alcohol. 2018. [http://www.ias.org.uk/uploads/pdf/IAS\\_reports/sb20022018.pdf](http://www.ias.org.uk/uploads/pdf/IAS_reports/sb20022018.pdf) (accessed March 15, 2018).
- 49 Alcohol Health Alliance. Measuring Up: The State of the Nation. 2017. <http://12coez15v41j2cf7acjzaoth.wpengine.netdna-cdn.com/wp-content/uploads/2017/12/7119-AHA-10-year-anniversary-report.pdf> (accessed July 2, 2018).
- 50 Burton R, Henn C, Lavoie D, et al. The Public Health Burden of Alcohol and the Effectiveness and Cost-Effectiveness of Alcohol Control Policies: An evidence review. 2016. [www.gov.uk/phe](http://www.gov.uk/phe) (accessed July 2, 2018).
- 51 Scottish Government. Minimum Unit Pricing. <http://www.gov.scot/Topics/Health/Services/Alcohol/minimum-pricing> (accessed June 29, 2018) (accessed July 10, 2018).
- 52 Farrell S. Filshill axes 20 white cider lines after price hikes from MUP - Fruit & Vegetables news - NewsLocker. *Groc* 2018; : 11. <https://www.thegrocer.co.uk/channels/convenience/filshill-axes-20-white-cider-lines-after-price-hikes-from-mup/568512.article> (accessed July 10, 2018).
- 53 Briggs ADM, Kehlbacher A, Tiffin R, Scarborough P. Simulating the impact on health of internalising the cost of carbon in food prices combined with a tax on sugar-sweetened beverages. *BMC Public Health* 2015; 16: 107.
- 54 Lucas-Leclin V, Nahal S, King J. Globesity – the global fight against obesity. 2012. London: Bank of America Merrill Lynch.
- 55 LACA (Local Authority Caterers Association). The LACA/ParentPay Market Research Report on School Meals and Daily Life Issues 2012. <http://laca.co.uk/lacaparentpay-market-research-report-school-meals-and-daily-life-issues-2012> (accessed Jan 25, 2017).
- 56 Poll shows most want sugary drinks banned from UK schools - BBC News. 2014. <http://www.bbc.co.uk/news/health-27254780> (accessed Jan 25, 2017).
- 57 Sustainable procurement: the Government Buying Standards (GBS) - GOV.UK. <https://www.gov.uk/government/collections/sustainable-procurement-the-government-buying-standards-gbs> (accessed Jan 25, 2017).
- 58 Eating Better Alliance. Slim pickings for a meat free lunch in supermarkets & high street sandwich chains. <http://www.eating-better.org/blog/108/Slim-pickings-for-a-meat-free-lunch-in-supermarkets-high-street-sandwich-chains.html> (accessed Jan 25, 2017).
- 59 University of Cambridge Programme for Industry. A business primer. Sustainable Consumption and Production. <https://www.cisl.cam.ac.uk/publications/archive-publications/sustainable-consumption> (accessed July 10, 2018).
- 60 Her Majesty's Government. Alcohol etc. (Scotland) Act 2010. <http://www.legislation.gov.uk/asp/2010/18/contents> (accessed July 2, 2018).
- 61 NHS Health Scotland. Monitoring and Evaluating Scotland's Alcohol Strategy Final Annual Report. 2016 [http://www.healthscotland.scot/media/1100/mesas-final-annual-report\\_5780\\_mar-2016.pdf](http://www.healthscotland.scot/media/1100/mesas-final-annual-report_5780_mar-2016.pdf) (accessed July 3, 2018).
- 62 House of Lords Select Committee on the Licensing Act. The Licensing Act 2003: post-legislative scrutiny. 2017. <https://publications.parliament.uk/pa/ld201617/ldselect/ldlicact/146/146.pdf> (accessed July 2, 2018).
- 63 Ofcom. How Ofcom's codes & rules protect children - Ofcom. <https://www.ofcom.org.uk/tv-radio-and-on-demand/advice-for-consumers/television/the-broadcasting-code> (accessed Jan 25, 2017).
- 64 Food Standards Agency. Nutrition: Advertising to children. Guide to using the nutrient profiling model. <http://collections.europarchive.org/tna/20100927130941/http://food.gov.uk/healthierating/advertisingtochildren/nutlab/nutprofmod> (accessed Jan 25, 2017).
- 65 Winpenny E, Patil S, Elliott M, et al. Assessment of young people's exposure to alcohol marketing in audiovisual and online media. 2012. [https://ec.europa.eu/health/sites/health/files/alcohol/docs/alcohol\\_rand\\_youth\\_exposure\\_marketing\\_en.pdf](https://ec.europa.eu/health/sites/health/files/alcohol/docs/alcohol_rand_youth_exposure_marketing_en.pdf) (accessed July 4, 2018).
- 66 Ofcom. Television Advertising of Food and Drink Products to Children - Ofcom. [https://www.ofcom.org.uk/consultations-and-statements/category-2/foodads\\_new/statement](https://www.ofcom.org.uk/consultations-and-statements/category-2/foodads_new/statement) (accessed March 13, 2017).
- 67 Anderson P, de Bruijn A, Angus K, Gordon R, Hastings G. Impact of Alcohol Advertising and Media Exposure on Adolescent Alcohol Use: A Systematic Review of Longitudinal Studies. *Alcohol Alcohol* 2009; 44: 229–43.
- 68 Brown K. Association Between Alcohol Sports Sponsorship and Consumption: A Systematic Review. *Alcohol Alcohol* 2016; 51: 747–55.
- 69 Hastings G. "They'll Drink Bucket Loads of the Stuff". An Analysis of Internal Alcohol Industry Advertising Documents. 2009. [http://oro.open.ac.uk/22913/1/AERC\\_FinalReport\\_0060.pdf](http://oro.open.ac.uk/22913/1/AERC_FinalReport_0060.pdf) (accessed July 9, 2018).
- 70 Davies S. Analysis of food promotions. April – June 2016. 2016. <https://conversation.which.co.uk/food-drink/more-supermarket-promotions-less-healthy-foods/> (accessed Jan 25, 2017).
- 71 Nakamura P, Pechey R, Suhrcke M, Jebb SA, Marteau TM. Sales impact of displaying alcoholic and non-alcoholic beverages in end-of-aisle locations: an observational study. *Soc Sci Med* 2014; 108: 68–73.
- 72 Lidl. Children's diets challenged by supermarket checkout chocolates. Lidl UK. 2014. <http://www.lidl.co.uk/en/5028.htm> (accessed Jan 25, 2017).
- 73 Tesco. We're removing sweets and chocolates from checkouts across the UK - 2014. News releases - News - Tesco PLC. 2014. <https://www.tescopl.com/news/news-releases/2014/were-removing-sweets-and-chocolates-from-checkouts-across-the-uk/> (accessed Jan 25, 2017).
- 74 Which? Consumer Report: A taste for change? 2012. <https://www.which.co.uk/documents/pdf/a-taste-for-change---which-briefing---responsibility-deal-445309.pdf> (accessed Jan 25, 2017).
- 75 Tesco. Tesco and society: Using our scale for good. 2014. [https://www.tescopl.com/files/pdf/reports/tesco\\_and\\_society\\_2013-14\\_halfyear\\_summary.pdf](https://www.tescopl.com/files/pdf/reports/tesco_and_society_2013-14_halfyear_summary.pdf) (accessed Jan 25, 2017).
- 76 Food Foundation. Peas Please menu of actions for retailers - Food Foundation. 2018. <https://foodfoundation.org.uk/retailer-toolkit/peas-please-menu-of-actions-for-retailers/> (accessed July 10, 2018).
- 77 Department of Health. Fourteenth Meeting: Tuesday 25 March 2014 Public Health Responsibility Deal Food Network High Level Steering Group. <http://webarchive.nationalarchives.gov.uk/20180201175807/https://responsibilitydeal.dh.gov.uk/category/food-network/> (accessed Jan 25, 2017).
- 78 Quinn I. DH abandons plans to restrict HFSS food promotions. *Groc*. 2014. <http://www.thegrocer.co.uk/dh-abandons-plans-to-restrict-hfss-food-promotions/356616.article?redirCanon=1> (accessed Jan 25, 2017).
- 79 Thombs DL, Dodd V, Pokorny SB, et al. Drink specials and the intoxication levels of patrons exiting college bars. *Am J Health Behav*; 32: 411–9.
- 80 Thombs DL, O'Mara R, Dodd VJ, et al. A field study of bar-sponsored drink specials and their associations with patron intoxication. *J Stud Alcohol Drugs* 2009; 70: 206–14.
- 81 Baldwin J, Stogner JM, Miller B. It's five o'clock somewhere: An examination of the association between happy hour drinking and negative consequences. *Subst Abuse Treat Prev Policy* 2014; 9: 17.
- 82 Brennan A, Stockwell T, Sutton A, Wilkinson A, Wong R. Independent Review of The Effects Of Alcohol Pricing and Promotion: Part B Modelling the Potential Impact of Pricing and Promotion Policies for Alcohol in England: Results from the Sheffield Alcohol Policy Model Version 2008(1-1). 2008. [https://www.sheffield.ac.uk/polopoly\\_fs/1.956211/file/PartB.pdf](https://www.sheffield.ac.uk/polopoly_fs/1.956211/file/PartB.pdf) (accessed July 4, 2018).
- 83 WHO | Nutrient Profiling. WHO 2013. <http://www.who.int/nutrition/topics/profiling/en/> (accessed Jan 25, 2017).
- 84 European Commission. Nutrition and Health Claims - European Commission. 2007. [https://ec.europa.eu/food/safety/labelling\\_nutrition/claims\\_en](https://ec.europa.eu/food/safety/labelling_nutrition/claims_en) (accessed Jan 25, 2017).
- 85 FSANZ (Food Standards Australia and New Zealand). Nutrition, health and related claims. <http://www.foodstandards.gov.au/industry/labelling/Pages/Nutrition-health-and-related-claims.aspx> (accessed

- Jan 25, 2017).
- 86 WHO. A framework for implementing the set of recommendations on the marketing of foods and non-alcoholic beverages to children. [http://www.who.int/dietphysicalactivity/framework\\_marketing\\_food\\_to\\_children/en/](http://www.who.int/dietphysicalactivity/framework_marketing_food_to_children/en/) (accessed Jan 25, 2017).
  - 87 HMRC. Business Income Manual - Specific deductions: advertising expenses: sponsorship. <https://www.gov.uk/hmrc-internal-manuals/business-income-manual/bim42555> (accessed Jan 25, 2017).
  - 88 Chou S, Rashad I, Grossman M. Fast Food Restaurant Advertising on Television and Its Influence on Childhood Obesity. *J Law Econ* 2008; 51: 599–618.
  - 89 Centre for Science in the Public Interest. Bill Targets Tax Deductibility of Junk-food Marketing | Center for Science in the Public Interest. 2014. <https://cspinet.org/new/201405141.html> (accessed Jan 25, 2017).
  - 90 Government of Western Australia. Co-sponsorship Policy and Guidelines | Healthway. <https://www.healthway.wa.gov.au/policies/co-sponsorship-policy-and-guidelines/> (accessed Jan 25, 2017).
  - 91 WHO. Technical Report Series 880. Preparation and use of food based dietary guidelines. Geneva, 1998. [http://www.who.int/nutrition/publications/nutrientrequirements/WHO\\_TRS\\_880/en/](http://www.who.int/nutrition/publications/nutrientrequirements/WHO_TRS_880/en/). (accessed Jan 25, 2017).
  - 92 USDA (US Department for Agriculture). Dietary Guidelines | Center for Nutrition Policy and Promotion. <https://www.cnpp.usda.gov/dietary-guidelines> (accessed Jan 25, 2017).
  - 93 Global Strategy on Diet, Physical Activity and Health. World Health Organization. 2004. <http://www.who.int/nmh/waha/59/dpas/en/>. (accessed Jan 25, 2017).
  - 94 Hawkes C, Jewell J, Allen K. A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obes Rev* 2013; 14: 159–68.
  - 95 Leidig R. Sodexo Meatless Monday Survey Results. 2012. <http://www.meatlessmonday.com/images/photos/2013/01/Sodexo-F.pdf> (accessed Jan 25, 2017).
  - 96 Cecchini M, Sassi F, Lauer JA, et al. Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness. *Lancet* (London, England) 2010; 376: 1775–84.
  - 97 The Plan - School Food Plan. <http://www.schoolfoodplan.com/plan/> (accessed Jan 25, 2017).
  - 98 Skov LR, Lourenço S, Hansen GL, Mikkelsen BE, Schofield C. Choice architecture as a means to change eating behaviour in self-service settings: a systematic review. *Obes Rev* 2013; 14: 187–96.
  - 99 McDonald A. Calls made to include cancer warning on processed meat. 2016. <http://www.globalmeatnews.com/Industry-Markets/Calls-made-to-include-cancer-warning-on-processed-meat> (accessed Jan 25, 2017).
  - 100 Martin-Moreno JM, Harris ME, Breda J, Moller L, Alfonso-Sanchez JL, Gorgojo L. Enhanced labelling on alcoholic drinks: reviewing the evidence to guide alcohol policy. *Eur J Public Health* 2013; 23: 1082–7.
  - 101 Portman Group. Portman Group - Codes - Alcohol Marketing - Alcohol Labelling. 2017. <http://www.portmangroup.org.uk/codes/alcohol-marketing/communicating-alcohol-and-health-related-information> (accessed July 20, 2018).
  - 102 Alcohol Health Alliance. RIGHT TO KNOW: Are alcohol labels giving consumers the information they need? 2017. <http://ahauk.org/right-know-alcohol-labels-giving-consumers-information-need-2017/>. (accessed July 20, 2018).
  - 103 Gadema Z, Oglethorpe D. The use and usefulness of carbon labelling food: A policy perspective from a survey of UK supermarket shoppers. *Food Policy* 2011; 36: 815–22.
  - 104 Upham P, Dendler L, Bleda M. Carbon labelling of grocery products: public perceptions and potential emissions reductions. *J Clean Prod* 2011; 19: 348–55.
  - 105 Upham Mercedes Bleda Tyndall Centre Manchester P, Centre Manchester Pariser Building T. Carbon Labelling: Public Perceptions of the Debate Summary report Publication address. 2009. <http://tyndall.web.man.ac.uk/index.php> (accessed Jan 25, 2017).
  - 106 Klier S, Possinger S. Assessing the Impact of Fairtrade on Poverty Reduction through Rural Development. Saarbrücken , 2012. [http://www.fairtrade.net/fileadmin/user\\_upload/content/2009/resources/Summary\\_of\\_Results\\_Fairtrade\\_Impact\\_Study.pdf](http://www.fairtrade.net/fileadmin/user_upload/content/2009/resources/Summary_of_Results_Fairtrade_Impact_Study.pdf) (accessed Jan 25, 2017).
  - 107 Orme J, Jones M, Kimberlee R, et al. Food for life partnership evaluation: Full report. 2011. [https://www.foodforlife.org.uk/~media/files/evaluation%20reports/fflp\\_uwe-cardiff\\_evaluation-full-report.pdf](https://www.foodforlife.org.uk/~media/files/evaluation%20reports/fflp_uwe-cardiff_evaluation-full-report.pdf) (accessed Jan 25, 2017).
  - 108 Soil Association. What is Organic Certification? | Soil Association Certification. <https://www.soilassociation.org/certification/food-drink/what-is-organic-certification/> (accessed July 20, 2018).
  - 109 Free Range Dairy. What is Free range? - Free Range Dairy. <http://www.freerangedairy.org/who-we-are/free-range-cows/> (accessed July 20, 2018).
  - 110 RSPCA Assured. The RSPCA's ethical food label dedicated to farm animal welfare. <https://www.rspcaassured.org.uk/> (accessed June 27, 2018).
  - 111 RSPO (Roundtable on Sustainable Palm Oil). About us | RSPO - Roundtable on Sustainable Palm Oil. <https://www.rspo.org/about> (accessed July 20, 2018).
  - 112 MSC. North Sea cod certified as sustainable. Marine Stewardship Council. 2017. <https://www.msc.org/newsroom/news/north-sea-cod-certified-as-sustainable> (accessed Aug 1, 2017).
  - 113 Welsh Government. Well-being of Future Generations (Wales) Act 2015. <http://gov.wales/topics/people-and-communities/people/future-generations-act/?lang=en> (accessed Jan 25, 2017).
  - 114 Scottish Government. Food and drink: The Good Food Nation policy - gov.scot. <https://beta.gov.scot/policies/food-and-drink/good-food-nation/> (accessed Jan 25, 2017).
  - 115 Salay R, Lincoln P, Policy EC for H. Health impact assessments in the European Union. *Lancet* (London, England) 2008; 372: 860–1.
  - 116 Environmental Impact Assessment. GOV.UK. <https://www.gov.uk/guidance/environmental-impact-assessment#legislation-covering-environmental-impact-assessment> (accessed Jan 25, 2017).
  - 117 About - Regulatory Policy Committee - GOV.UK. <https://www.gov.uk/government/organisations/regulatory-policy-committee/about> (accessed Jan 25, 2017).
  - 118 Trans-Atlantic Consumer Dialogue. Resolution on the approach to food and nutrition related issues in the Transatlantic Trade and Investment Partnership. 2013. <http://tacd.org/wp-content/uploads/2013/09/TACD-FOOD-Resolution-on-the-approach-to-food-and-nutrition-related-issues-in-the-TTIP.pdf> (accessed July 20, 2018).
  - 119 PWC. Responsible investment: creating value from environmental, social and governance issues. 2012. [www.pwc.com/sustainability](http://www.pwc.com/sustainability) (accessed July 20, 2018).
  - 120 Share Action. Sustainable Food Systems. ShareAction. 2017. <https://shareaction.org/food-systems/> (accessed July 10, 2018).
  - 121 Jones AD, Hoey L, Blesh J, Miller L, Green A, Shapiro LF. A Systematic Review of the Measurement of Sustainable Diets. *Adv Nutr An Int Rev J* 2016; 7: 641–64.
  - 122 Friends of the Earth. Four footprints. <https://www.foe.co.uk/page/four-footprints> (accessed Jan 25, 2017).
  - 123 About Sustainable Food Cities. <http://sustainablefoodcities.org/about> (accessed Jan 27, 2017).
  - 124 Measuring household food insecurity in the UK and why we MUST do it. Four facts you should know. 2016. <https://foodfoundation.org.uk/wp-content/uploads/2016/07/MeasuringHouseholdFoodInsecurity.pdf> (accessed Jan 25, 2017).
  - 125 Barnard H. Hunger inquiry shows why we urgently need a comprehensive anti-poverty strategy | JRF. 2014. <https://www.jrf.org.uk/blog/hunger-inquiry-shows-why-we-urgently-need-comprehensive-anti-poverty-strategy> (accessed Jan 25, 2017).
  - 126 Living Wage Foundation. Living Wage Foundation - who we are <http://www.livingwage.org.uk/who-are-the-living-wage-foundation> (accessed Jan 25, 2017).
  - 127 Sustain: The Alliance for Better Food and Farming. Developing food poverty action plans. 2016. [https://www.sustainweb.org/publications/developing\\_food\\_poverty\\_action\\_plans/](https://www.sustainweb.org/publications/developing_food_poverty_action_plans/) (accessed Jan 27, 2017).
  - 128 WRAP. Household Food Waste in the UK, 2015. 2015. [http://www.wrap.org.uk/sites/files/wrap/Household\\_food\\_waste\\_in\\_the\\_UK\\_2015\\_Report.pdf](http://www.wrap.org.uk/sites/files/wrap/Household_food_waste_in_the_UK_2015_Report.pdf) (accessed Jan 25, 2017).
  - 129 Britton E, Brigton A, Parry A, Leroux S. Econometric modelling and household food waste 1. [http://www.wrap.org.uk/sites/files/wrap/Econometrics\\_Report.pdf](http://www.wrap.org.uk/sites/files/wrap/Econometrics_Report.pdf) (accessed Jan 25, 2017).

**Annex 1: Headline food consumption and production trends and their impacts on health and the environment\***

	Current consumption	Where does our food come from?	Health impacts	Environmental impacts
<b>Fruit and vegetables</b>	Two thirds of adults eat less than the recommended intake of fruit and vegetables ('5-a-day').	Just over half of vegetables we eat are grown in the UK and only 11% of fruit. Spain is the biggest source of imported fruit and vegetables in the UK.	Fruit and vegetables are an important source of vitamins, minerals and fibre. They provide protection against heart disease, stroke, several cancers, overweight and obesity. <sup>10</sup>	Fruit and vegetables are associated with much lower GHG emissions than other foods, especially red meat. UK-grown fruits and vegetables generally have small water footprints because of the high rainfall levels. However, the water footprints of imported produce are felt elsewhere.
<b>Beans and pulses</b>	Intakes of beans and pulses are very low, and few varieties are eaten other than tinned baked beans.	The fava beans used in baked beans are imported, mostly from North America.	Pulses are a rich source of protein and fibre, as well as other nutrients such as iron and B-vitamins. High fibre intakes protect against colorectal cancer, overweight and obesity.	Pulses can help lower GHG emissions from agriculture by returning nitrogen into the soil. This reduces the need for fertilisers which account for 20-40% of GHG emissions associated with growing crops. Pulses have an average water footprint compared to other crops.
<b>Whole grains and fibre</b>	Most people are not eating enough whole grain and high-fibre starchy foods. Refined cereals such as pasta, rice, pizza and white bread are more commonly consumed.	85% of wheat and 77% of potato supplies are grown in the UK. All rice consumed in the UK is imported, primarily from India, Cambodia and Pakistan.	Adult fibre intakes are 40% lower than the target level. Low fibre intakes are associated with a raised risk of colorectal cancer, overweight and obesity.	GHG emissions of plant-based starchy foods are generally low compared to animal-based foods. Rice has a particularly large water footprint compared to other starchy foods. These impacts are felt elsewhere.
<b>Milk and dairy</b>	Most people meet the Eatwell Guide advice to consume some milk and dairy. While overall intakes of milk and cheese have fallen, intakes of yoghurts and desserts have quadrupled in the last decade.	The UK is self-sufficient in its milk supply. It is a net-importer of cheese, primarily from France, Germany and Ireland.	Milk and milk products are significant sources of calcium and protein. However, they are also major sources of calories, sugar and saturated fat. Intakes of these nutrients are too high and are linked to a raised risk of obesity, heart disease and stroke.	The water footprint and GHG emissions associated with milk and milk products are large. A significant proportion of this impact is felt abroad, in the countries that produce cattle feed.
<b>Meat</b>	Men are eating more red and processed meat than recommended. While there are no target consumption levels for poultry, intakes have risen in the last decade.	Over 80% of the meat and eggs consumed in the UK are produced domestically.	Red and processed meat increase the risk of colorectal cancer, while excessive consumption raises the risk of heart disease, stroke and type 2 diabetes.	Livestock farming is the major source of UK GHG emissions from agriculture. It also has a large water footprint, which is largely amassed from growing feed (particularly soya) in other countries.

## Annex 1: (continued)\*

	Current consumption	Where does our food come from?	Health impacts	Environmental impacts
Fish	Most people do not eat enough fish.	Most of the fish consumed in the UK is imported from a variety of countries including Iceland, China and Mauritius.	Fish, especially oily fish such as salmon, sardines and mackerel, decreases the risk of cardiovascular disease. Oily fish may also be beneficial for foetal development.	The water footprint and GHG emissions associated with fish – including farmed fish – are generally lower than meat sources such as chicken and beef.
Processed foods	Half of all food and drink in the UK is unhealthy, 'ultra-processed' and high in fat, salt and/or sugar. Examples are soft drinks, meat pies, ready meals, biscuits and sugary yoghurts.	The majority of unhealthy processed foods consumed in the UK come from global food companies.	These foods contribute to high levels of fat, sugar and salt in the diet, which is associated with obesity, heart disease, stroke and some cancers.	Processing, especially concentration, adds to the carbon and water footprints of foods. For example, fruit juices have almost double the water footprint of the equivalent whole fruit, while the water footprint of ketchup is 2.5 times greater than that of unprocessed tomatoes.
Fats and oils	Fats and oils in the UK diet are obtained from a combination of spreads, cooking oils and unhealthy ultra-processed foods. While the population is meeting target intake levels for total fat, saturated fat intakes are higher than recommended.	Most butter consumed in the UK is produced domestically. Most vegetable oils are imported, such as palm oil from Indonesia and olive oil from Spain.	Fats and oils are very high in calories. Butter, palm oil and processed foods that contain them are major sources of saturated fat. The UK's excess saturated fat consumption is contributing to the high levels of obesity, heart disease and stroke in the population.	Butter production is associated with nearly as much water and GHGs as red and processed meat. Palm oil has several harmful impacts on the environment (e.g. rainforest depletion). Olive oil has a large water footprint compared to other fats and oils.
Alcohol	Alcohol consumption is common, and significant numbers of men (31%) and women (16%) exceed the low risk drinking guidelines.	Most beer consumed in the UK is produced domestically, supplemented by imports from Europe. Wine is mostly imported. The top countries of origin are Australia, US and France.	Alcohol causes many cancers and there is no 'safe' level in relation to the risk of cancer. Other conditions that are linked to alcohol include cardiovascular disease, liver disease and injuries.	GHG emissions from domestically-produced alcohol account for 1.5% of the UK total. Alcohol has an average water footprint compared to other foods: 109 litres of water are used in the production of an average 125ml glass of wine, and 74 litres in a 250ml glass of beer.

\*Summarised from the sister document, *Fresh start: A framework for healthy sustainable diets in the UK. Situational analysis.*<sup>3</sup>

---

## Annex 2: The environmental impact of our food system

Producing food impacts the environment in several ways, including through growing, manufacturing, packaging, storing, transporting and preparing food. However, primary food production – in terms of growing crops and raising livestock – is the biggest driver of these environmental impacts, in comparison to later stages such as transport and processing.<sup>70</sup> Three main measures have been developed to assess different aspects of the environmental footprint: the carbon footprint, the water footprint and land use.

---

### Carbon footprint

The carbon footprint is a measure of greenhouse gas emissions,<sup>iii</sup> usually expressed in equivalent tonnes of carbon dioxide (CO<sub>2</sub>e). It is a major contributor to global warming. The agriculture sector accounts for around a quarter of global GHGs;<sup>71</sup> two thirds of these emissions are due to the production of animal-based foods, especially the cultivation of crops for animal feed.<sup>71</sup>

GHG emissions are 'imported' and 'exported'. While around half of the food that we eat in the UK is imported, 62% of the GHG emissions associated with our food supply are located abroad.<sup>71</sup> On the other hand, the UK exports some of the food that it produces and manufactures, so giving rise to GHG emissions for foods which are consumed abroad. Thus, when it comes to monitoring progress towards GHG emissions targets, the amount of GHG emissions that are released through food production in the UK will be different to the amount associated with consumption of foods in the UK.

---

### Water footprint

Freshwater is a limited global resource. Just 0.5% of the earth's water is available as fresh water for human use.<sup>72</sup> The water footprint is the amount of fresh water used to produce a product. Agriculture accounts for around 92% of the global annual water footprint,<sup>73</sup> and is a major driver of the international trade in virtual water. The UK is among the top 10 importers of traded water in the world.<sup>73</sup> While we rarely face water shortages in the UK owing to our large amounts of rainfall, 75% of our total water footprint lies overseas. This contributes to water scarcity, depletion and pollution elsewhere.<sup>73</sup>

---

### Land use

Land is a limited global resource which is used for a variety of often-competing purposes such as human homes, agriculture, industry and infrastructure, and protecting natural ecosystems.<sup>74</sup> The land use footprint assesses the area of land required to produce a standard amount of product. Agriculture accounts for around 40% of the total land area globally, with three-quarters of this land dominated by animal-based foods. The global cropland footprint associated with the UK's food supply is rising. It increased by 23% between 1986 and 2009.<sup>71</sup> In 2008, two-thirds of this cropland footprint was located abroad.<sup>71</sup> Land use change (such as when forests are cleared for agricultural use) is a major driver of GHG emissions. For example, global land use change emissions account for 40% of the GHG emissions embedded in UK consumed food.<sup>71</sup>

---

iii A GHG is any gas in the atmosphere which absorbs and re-emits heat, and thereby keeps the Earth's surface warmer than it would be otherwise, so contributing to global warming. The main GHGs are water vapour, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and ozone.



UK HEALTH

PREVENTION FIRST

FORUM