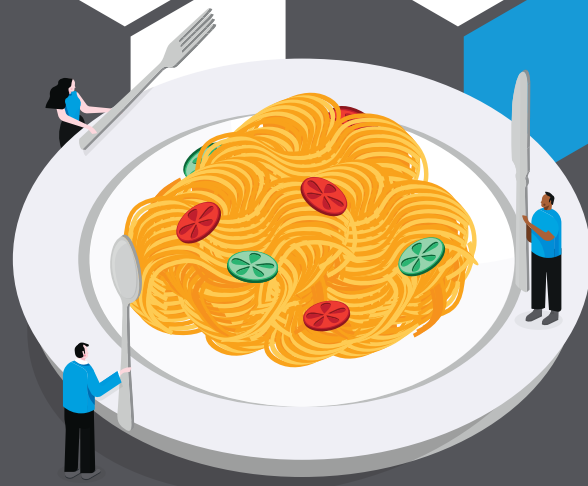


# A Menu for Change

Using behavioural science to promote sustainable diets around the world

## Executive summary

The full report, with references, can be found at [www.bi.team](http://www.bi.team)



### Overview

There is a clear and strong environmental case for shifting towards more sustainable diets, and in particular a reduction in red meat (beef and lamb) and dairy products. In order to address this global challenge:

#### Governments should:

- Incentivise product reformulation and innovation with a supplier-facing carbon tax on high-impact food.
- Develop supermarket environmental performance ratings to nudge consumers towards sustainable retailers, and thus leverage competition between retailers to drive higher environmental standards.
- Lead by example, by removing or reducing unsustainable foods from public canteens in hospitals, schools and government offices, or by using these locations to test sustainable nudges.
- Raise awareness (about the environmental issues of food) and know-how (practical cooking skills for plant-based dishes) through school and technical college curricula.

#### Industry should:

- Make plant-based food more available and more prominent in supermarkets, on menus, and in canteens.
- Make plant-based food the default choice, for example at catered events or on flights.
- Market plant-based food as delicious, normal, and satisfying, not as light, abstemious, or overtly healthy or vegetarian. Avoid terms like “meat free”, which exacerbate perceptions that plant-based food is lacking.
- Use novel in-store promotions such as meal deals, and harness loyalty card schemes’ data to create behaviourally-informed games and social platforms supporting healthy and sustainable eating.
- Rebrand plant-based food towards a mainstream identity, including a ‘masculinity makeover’ to address perceptions of femininity and weakness.
- Integrate plant-based options, such as veggie burgers and soy milk, with their meat counterparts, rather than separating them on menus, in supermarket aisles and in canteens.
- Prompt easy substitutions to more sustainable products during check-out on online grocery stores.

#### Civil society should:

- Target campaigns at key timely moments when habits are disrupted or not yet set, such as when starting university (when often first learning to shop and cook), when moving home (and thus changing supermarket), or when buying a new kitchen or cookware.
- Campaign with pride, positivity, and pragmatism, rather than guilt and idealism.
- Leverage social influence by widely publicising the shifting trend towards plant-based food.
- Reduce the complexity of sustainable eating by promoting clear rules of thumb, such as “red meat’s a treat”.

In the full report we also review the historical precedent for widespread diet shifts, and the latest emerging trends. Finally, we reflect on the likely political sensitivity of this issue, and offer our reflections as behavioural scientists for navigating public consent when developing ambitious food policy.

## The meat of the problem

The agricultural sector is responsible for 26% of global greenhouse gas emissions, and is straining the planetary systems we depend upon. Livestock, and in particular ruminant products (beef, lamb and dairy), are disproportionately impactful. This is due to their generation of methane during digestion, their vast demands on land (79% of agricultural land is used for livestock and their feed, despite providing just 18% of calories), and their outsize contribution to chemical pollution, freshwater use, and biodiversity loss.

In order to feed a global population heading towards 10 bn, healthily and sustainably, we must change the way we produce, consume and waste food. One of the most impactful changes we can make as consumers, being called for by the world's climate scientists and international organisations such as the UN, is a significant reduction in the amount of beef and dairy products we eat in the industrialised world.

## Twelve strategies for promoting sustainable diets

We present 12 strategies, deliverable by three key groups of stakeholders:



▶ **Government** (policy-makers, regulators, public procurement)



▶ **Industry** (retailers, producers, canteen and restaurant managers, marketers)



▶ **Civil society** (campaigners, educators, members of the public)

These 12 strategies encompass three critical pillars of sustainable diet change:

**1. Make sustainable food APPEALING.** Consumers won't choose sustainably if they have to significantly compromise (real or presumed) taste and enjoyment. Sustainable food must be appealing.

**2. Make sustainable food NORMAL.** More than we realise, our food habits are influenced by cultural norms and by our identity. In many industrialised countries, meat consumption is normal, and plant-based food is niche, or 'other'. Sustainable food must align with mainstream identities and norms.

**3. Make sustainable food EASY.** When motivation to change our diets is low, small hassles and inconveniences become disproportionately impactful. Substituting sustainable food choices into our diets must therefore be easy, both practically (availability and convenience) and psychologically (know-how, willpower and habit).

### 1. Make sustainable food APPEALING



**Government** Expected impact: High

**Incentivise product innovation and reformulation, for example by exploring the impact of a supplier-facing carbon tax on foods with the highest environmental footprint.**

**1a.** Modelling past efforts to reduce sugar consumption and alcohol consumption in the UK, a well-designed tax on carbon emissions per portion (e.g. of processed meat products) could drive product innovation and reformulation without unduly penalising consumers who enjoy these products. To be effective, the tax should be set at emissions thresholds that allow suppliers to avoid or reduce the tax burden by reformulating (e.g. blending mushrooms into beef burgers), seeking improvements in production processes, or diversifying to alternative products.

Designed well, very little money would be collected. The threat of consumers switching brands or products creates the incentive and competitive forces needed for producers to develop more sustainable products that escape the tax. As a consequence, all consumers consume more sustainably without needing to radically alter (if at all) their purchasing habits.



**Industry** Expected impact: Medium

### Market plant-based food as aspirational, delicious, and indulgent.

Food marketed as delicious or indulgent tends to out-sell identical food marketed as healthy or vegetarian because healthy and plant-based food is associated with being light, unsatisfying, or compromised in taste.

**2a.** Use indulgent language, moving away from perceptions that plant-based food is abstemious or 'incomplete'. E.g. don't use "meat-free", and don't excessively highlight it being "vegetarian". Terms like "field grown", or highlighting the provenance of food, have been found to be more effective.

**2b.** Imagery and design should do the same to appeal to mainstream markets.



**Industry** Expected impact: Modest

### Use novel in-store/in-app promotions, incentives and games.

Conventional marketing strategies such as in-store promotions can be used to positive ends, whilst apps and reward schemes offer many opportunities to integrate behavioural insights.

**3a.** In-store promotions such as meal deals can boost sales, raise awareness, and encourage meat-eaters to try new options. For example, common "meal for £10" type deals in supermarkets and restaurants might include a more expensive wine or free desert if the main dish is plant-based.

**3b.** Novel 'gamification' techniques and other behaviourally-informed incentives can be built into loyalty schemes and grocery shopping apps that have readily available data and offer a route to communicating with consumers. These might include tips and recipes, with weekly targets, goal-setting, competitions, peer-to-peer comparisons (see idea 6a) and sharing of food photos and ideas.



**Civil Society** Expected impact: Modest

### Campaign with pride, positivity, and pragmatism.

Messages of guilt and idealism are common in environmental campaigns. However, this often leads to resentment and avoidance, rather than changed behaviour. Promoting practical changes, which don't alienate or guilt-trip consumers, is key, and these small changes can ripple through a market and lead to bigger change.

**4a.** Avoid blame, guilt, negativity and perceptions of righteousness, and instead build campaigns around pride and positivity.

**4b.** Promote practical substitutions that remain appealing (such as beef for chicken, or small reductions), rather than purist notions of plant-based diets that don't appeal to the mainstream.



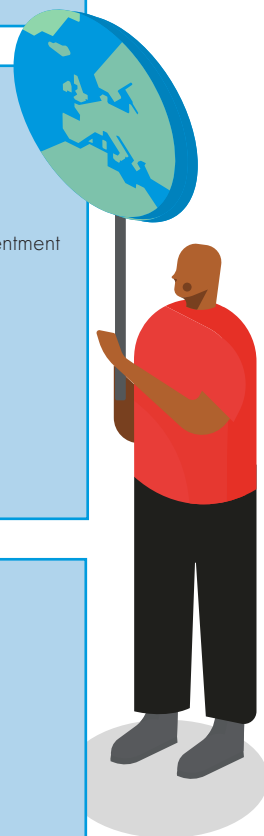
**All** Expected impact: High

### Raise awareness, and build a mandate for strong policy.

Awareness itself is rarely sufficient to lead to behaviour change. However, awareness is critical to help drive consent for wider policy measures, and public opinion can encourage industry to take action.

**5a.** Harness influential messengers who have broad appeal, relevance and credibility, for instance TV chefs, athletes, GPs, and cultural influencers, to raise awareness of, and appetite for, sustainable food.

**5b.** Increase knowledge and know-how through education, in particular through school curricula (before tastes and eating habits are settled), as well as in professional chef training.



## 2. Make sustainable food **NORMAL**



**Government & Civil Society** Expected impact: Medium

### Publicise the desirable norm, and lead by example.

We're deeply influenced by what we perceive others to be doing, and we can leverage this 'social proof' to encourage positive action to spread.

**6a.** Communicate the desirable prevailing norm, or the shifting trend, in low-meat diets (e.g. 'more and more people are cutting back on meat'), or use peer comparisons among consumers or producers.

**6b.** Lead by example in government procurement, by offering more plant-based options and less red meat in hospitals, schools, and government canteens, or by using these sites to test choice architecture nudges towards sustainable options (see idea 12).



**Industry & Civil Society** Expected impact: Medium

### 'Re-brand' plant-based food towards a mainstream identity, and promote more mainstream dishes.

Plant-based food is currently perceived as lacking, as feminine, weak and abstemious.

**7a.** Market plant-based food with a 'masculinity makeover' to address negative and narrow associations of weakness, femininity, or lack of satiety.

**7b.** Promote traditional cuisines where they are sustainable. For example, vegetarian Indian food is 'normal' and doesn't suffer associations of being incomplete by its absence of meat.

**7c.** Push for new plant-based 'power dishes' that have disproportionate sales across the market. Approximately 25 well-known dishes constitute the vast majority of food eaten in the USA, and likewise in the UK. Coordinating industry efforts to get a single plant-based dish on this list, creating a new ubiquitous classic, would have a disproportionate impact. Industry has previously succeeded in driving radical growth in particular dishes, such as the introduction of pulled pork in the UK, which saw a ~22,000% increase in consumption after coordinated marketing efforts.

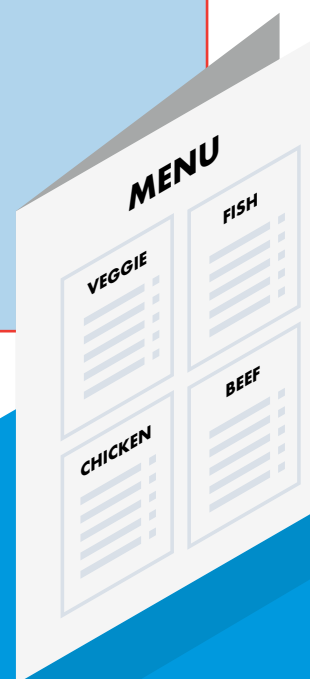
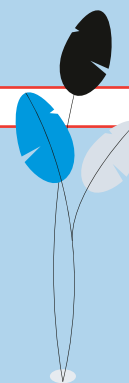


**Industry** Expected impact: Medium

### Integrate (don't segregate) the plant-based produce.

It is common to separate vegetarian food into dedicated sections on menus, in canteens, or in shops. However, this reduces the chances that a meat-eater will notice or consider choosing it, and reinforces the perception of 'otherness' in the eyes of mainstream meat-eaters.

**8a.** Don't put vegetarian options in separate aisles or in boxes on menus, but integrate them with the meat options: bean burgers next to the beef burgers, soy/oat milk next to the dairy milk, etc. When doing this, it is important to ensure the plant-based produce still remains salient and is not visually 'lost'. Prominence is important (see idea 12).



### 3. Make sustainable food EASY



**Government** Expected impact: a) Modest b) High

#### Eco-labels and supermarket ratings.

**9a.** Develop (and test) eco-labels on food. The research on the effectiveness of food labels is mixed, so research is needed – confusion between organic, free range, and fair trade already exists. However, well-designed labels on product packaging can be more effective than wider awareness-raising efforts.

**9b.** Introduce sector-wide supermarket ‘environmental performance ratings’ to nudge consumers towards more sustainable retailers. Rather than expecting consumers to make hundreds of sustainable choices once in a supermarket, this promotes one simple choice – which supermarket to shop in. Even if only a small fraction of consumers switch supermarket, this will create pressure between supermarkets to improve their environmental performance, driving improvements from farm to fork.



**All** Expected impact: Medium

#### Ease the change with ‘rules of thumb’, tips and recipes.

We are overwhelmed with information and decisions, and eating sustainably can be complex. Simplify the process of understanding and adopting a sustainable diet.

**10a.** Widely promote simple heuristics (rules of thumb) like “red meat once a week” or “red meat’s a treat”. These should be tested to avoid backfire effects, e.g. there is a risk some might increase their red meat consumption if they currently eat it less than once a week.

**10b.** Help people plan and prepare new recipes, with in-store recipe cards, and meal kits designed to help meat-eaters venture towards new dishes. Most consumers have a small repertoire of dishes they make on a regular basis, and so making it easy to adopt just one or two new dishes can bring real impact.

**10c.** Help shoppers make consciously sustainable choices, for example with selectable ‘sustainability filters’, or opt-in tips and substitutions, on takeaway apps and online grocery stores.



**Industry & Civil Society** Expected impact: Medium

#### Prompt sustainable choices at timely moments.

We are more likely to respond to prompts and information when it is salient and relevant (e.g. at the point of purchase), and more likely to change our habits at moments of disruption or before routines have formed. We are also more likely to make simple substitutions that don’t represent significant deviations from what we know and like. Combining these insights, three strategies emerge:

**11a.** Prompt one-click easy substitutions, such as from minced beef to a blended product with lower emissions, at the point of sale on online grocery sales.

**11b.** Provide timely feedback on the environmental impacts of our shopping on receipts, to reinforce sustainable purchases, motivate improvement, and cement habits. These might also include social norm messages or comparisons to the average shopper (see idea 6a).

**11c.** Identify and target campaigns during timely life moments, such as when starting university, often grocery shopping and cooking for the first time. Other moments may include when buying a new kitchen or cookware (spurring a revived interest in cooking), or moving home (keen to host dinner parties, and getting to know a new supermarket).



**Industry** Expected impact: a) High b) Modest c) Medium

### **Edit the choice architecture, to make sustainable options more prevalent, more prominent, and the default choice.**

We are influenced by the details of our choice environment, which can be edited to harness or overcome a wide range of automatic decision-making biases and heuristics. Several strategies are evidenced to effectively nudge our food choices:

**12a.** Make sustainable options more prevalent, by increasing the relative availability of options, and reducing portion size of less sustainable products.

**12b.** Make sustainable options more prominent, by putting them first in canteens and on menus, and in more salient locations in store.

**12c.** Make sustainable options the default choice, e.g. on flights or at catered events, requiring meat-eaters to proactively opt out of the vegetarian option.

## ***A growing problem, but a moment to embrace***

Recent data from consumer surveys and supermarket sales suggest we are already witnessing a rise in plant-based food. However, while this trend is capturing a lot of attention, it is nascent and reflects a small fraction of global consumers, mostly in Northern Europe. Even within these regions, there has so far been no notable reduction in the total production, import and export volumes of livestock products, and average meat consumption remains well above health guidelines.

Elsewhere, consumers across Asia and Africa are rapidly increasing their meat consumption as incomes rise. With the global population simultaneously increasing, our 'business as usual' scenario is a 74% increase in global meat consumption by 2050. Though we don't yet know how disruptive new products and production techniques might be over that timeframe, the risk is great – this forecast increase in meat consumption is seemingly to be achieved while competition for land and water also increases for cereal and other crop production, material resource extraction and infrastructure.

The problem is therefore currently getting worse, not better. Nonetheless, attitudes are changing rapidly, with awareness of and concern for the environment at a record high within the UK and elsewhere. This represents a timely moment for ambitious policy measures, and changes in industry.

## ***Diets in flux***

A common perception is that national and local cuisines are too precious and steeped in tradition to interfere with. While true that food is loaded with social and cultural significance, the history books reveal that traditions frequently change. From the government-pushed introduction of the potato in 16th century Europe (initially labelled the 'devil's apple' but now ubiquitous and deeply traditional), to the latest developments in lab-grown meat and alternative proteins, diets are constantly in flux.

Technological developments, including the plough, the Haber-Bosch process for fixing nitrogen, the invention of canning, and the extrusion of breakfast cereals have all radically altered what we eat. Immigration and geopolitical events have also left their mark as cultures cross-fertilise in all directions. Common staples like pasta were exotic outside of Italian communities half a century ago. The changes now needed, to reach net-zero emissions, also permit a timeframe of a few decades, so we should not underestimate the profound changes in diet that are possible, or indeed likely, through innovation and evolving tastes.

These changes are accelerated or steered by government and industry. Traffic light calorie labels, sugar levies, variable rates of sales tax, agricultural subsidies, welfare and food safety standards, and bans on fast food advertising near schools are all common policy interventions – though clearly the health

agenda is more familiar terrain here than the environmental. Meanwhile, producers wield just as much influence, often in the opposite direction. In the UK the industry spends 27 times more on marketing 'junk' food than the government spends on its flagship healthy eating campaign.

These and many other examples rebut those who cite tradition as a justification for inaction, or those who disregard the extent to which our diets are already profoundly influenced. This historical context is also a cause for optimism. Change is in fact the norm, and has the potential to happen more quickly today than ever before.

## ***A behavioural approach to building public consent for policy***

Though widespread diet change may be quite normal, deliberate influence will not necessarily be welcomed. The 12 strategies in this report are aimed at civil society, industry and governments, but governments in particular have some unique challenges to address. We may expect environmental NGOs to push an agenda, and industry to push for profit, but government policy demands particular consideration of public consent and sovereignty of consumer choice.

Behavioural science offers a unique perspective on these issues. We identify four key insights, and six recommendations.

### **1. Influence is unavoidable, and our choices are not entirely “our own”.**

Though tempting to think our food choices reflect an immutable set of personal tastes, those tastes are in fact formed, and continually influenced, within a food system that is far from 'neutral'. Influence is inevitable and ubiquitous - our upbringing; culture; social norms; the availability of different options; marketing; pricing; policy, and regulation. The key question is not whether our diets should be influenced, but by whom, to what extent, and in which direction, is influence most acceptable?

**Recommendation 1a:** Find the sweet spot between effectiveness, and public consent. Pragmatism is key, and small steps in policy are worthwhile because they signal the importance of the issue, and change can be reinforcing. A small number of consumers shifting their choices can cause the market to offer more sustainable options, which larger numbers of consumers then adopt.

**Recommendation 1b:** In many ways this is the perfect issue for nudging. Nudges provide a tool with which governments can support, enable, and encourage sustainable food choices without limiting consumer freedom of choice.

### **2. We don't always know, or do, what we want.**

Behavioural science reveals deep complexity behind our preferences and choices. For example, we may want to eat the cake right now, but also want to want to not eat it, reflecting a higher-level desire to be healthy. In this context a sugar tax may in some fashion reduce consumer choice, yet help us make the choices we wanted to make. Not introducing such a tax may maximise individual liberty on certain metrics, but also liberate retailers to exploit our lack of willpower and cognitive biases, to the detriment of our health. How does a government go about maximising liberty and welfare in light of such psychological complexities?

These questions are relevant to the sustainability agenda because most of us claim we want to act more sustainably but struggle to do so. There is a tension between our aspirations for the environment, and the daily temptations and conveniences we give in to, reinforced by a world that is structurally biased towards unsustainable consumption. A nudge towards the more sustainable food choices we intend to make may therefore be welcomed, and liberating.

**Recommendation 2:** Help people help themselves. Policy that helps people move in the direction they want is more likely to be acceptable than pushing them in a direction they don't. Many of our recommended strategies aim to make sustainable diets easier, for example by re-designing our food environment away from one that promotes unsustainable consumption. This clears the path to sustainable choices, rather than imposing great penalty on unsustainable choices.

### 3. We rarely like change, until it's happened.

We are innately loss-averse and risk-averse, so when faced with a change or a significant disruption to the status quo, the potential downsides and uncertainties loom larger in our minds than the potential benefits. Smoking bans, congestion charges, and plastic bag levies were also unpopular before they were implemented, but now enjoy widespread support: the benefits tend to be realised and experienced only after implementation, and we are more adaptable than we realise.

**Recommendation 3a:** Research shows highlighting a policy's benefits and its effectiveness helps build support by addressing loss aversion and risk aversion. Highlighting the extent to which our diets are influenced by other forces (e.g. marketing) can also boost support.

**Recommendation 3b:** Create policy with the people through deliberative fora and citizens' juries. These processes often lead to a stronger mandate, build public understanding of the trade-offs and benefits of a policy, maintain agency of the public, and lead to better and broader ideas.

### 4. Sustainable diet policies are not paternalistic (though it might be better if they were).

Dietary interventions on health grounds are primarily for our own benefit, and are thus paternalistic. Those on environmental grounds aim to mitigate harm to others, or society at large, and so are not paternalistic. Governments could promote reduced red meat diets through either rationale, but which is more publicly acceptable?

Despite criticism of government paternalism being common, research suggests that self-interest is more important and, as such, the more paternalistic health rationale (restricting our behaviour for our own benefit) is more popular than the environmental rationale (restricting our ability to harm wider society). Similarly, environmental regulation is popular when imposed on others (such as penalising oil-spilling firms or fly-tippers), but we fail to offer such support to policies imposed on us (such as raised fuel duty, or taxes on air travel). The distinction is that on the one hand we are victims benefitting from the policy, and on the other we are perpetrators losing our privilege. Policy-makers therefore face a challenge when presenting a sustainable food agenda in which most of the electorate is 'to blame' because intervention does not align with the self-interest of the majority.

**Recommendation 4:** Embrace the health agenda. Healthy diets are generally more sustainable, and health experts advise a reduction in processed and red meat products. This framing better aligns with self-interest, and there's no reason why the issues of health and the environment need to be separated. Relatedly, policies that reflect a 'protective' intention (e.g. stopping retailers from heavily marketing unsustainable food to a public that wants to be more sustainable) or that impose costs on others rather than on individual consumers (e.g. taxes on suppliers designed to promote reformulation of products, rather than penalising consumers) may also be more publicly acceptable.

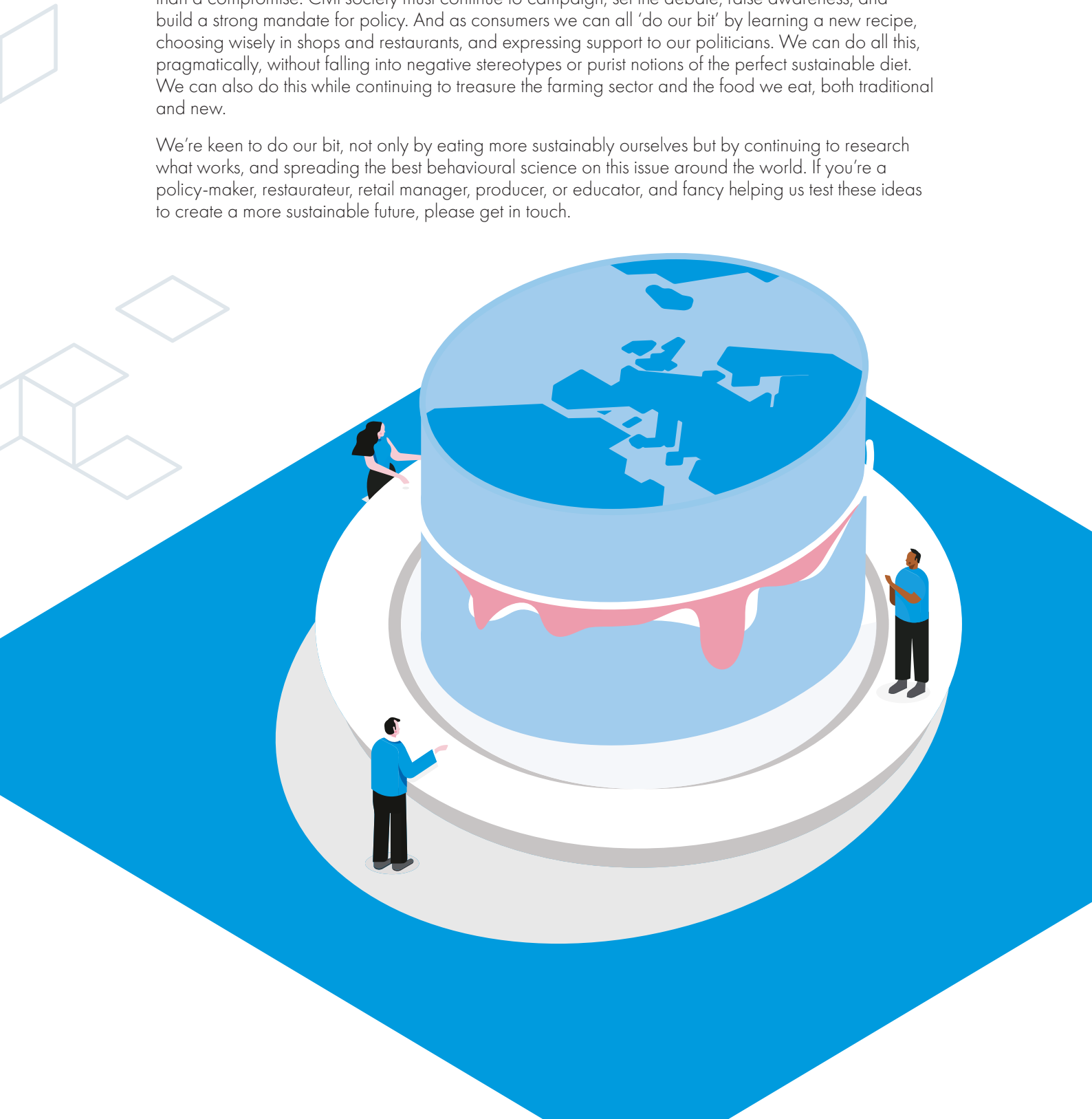


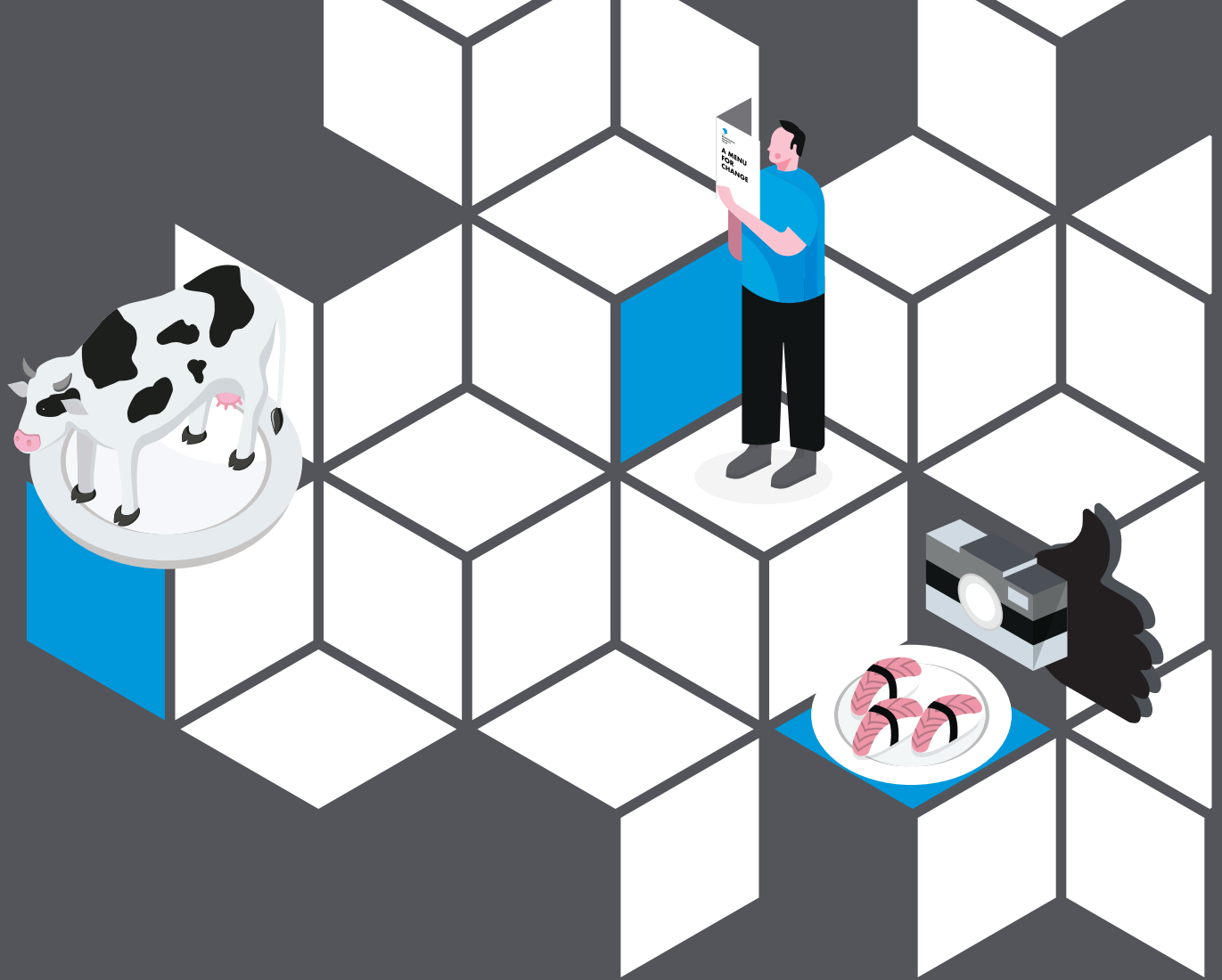
## Final remarks

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A shift towards sustainable diets is but one critical part of a sustainable food system. It is a shift that can be aided by the use of behavioural science, and in achieving this the whole sector has a role to play. Governments around the world must adopt the necessary regulations, taxes, and nudges to create a food environment in which the sustainable choices are the most widely available and affordable options. Industry must use the full power and creativity of marketing, product design, and choice architecture to ensure the sustainable choices are appealing, nutritious and an obvious choice, rather than a compromise. Civil society must continue to campaign, set the debate, raise awareness, and build a strong mandate for policy. And as consumers we can all 'do our bit' by learning a new recipe, choosing wisely in shops and restaurants, and expressing support to our politicians. We can do all this, pragmatically, without falling into negative stereotypes or purist notions of the perfect sustainable diet. We can also do this while continuing to treasure the farming sector and the food we eat, both traditional and new.

We're keen to do our bit, not only by eating more sustainably ourselves but by continuing to research what works, and spreading the best behavioural science on this issue around the world. If you're a policy-maker, restaurateur, retail manager, producer, or educator, and fancy helping us test these ideas to create a more sustainable future, please get in touch.





# The Behavioural Insights Team

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