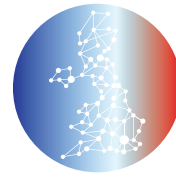




**BRIGHT
HARBOUR**



**TRANSFORMING
UK FOOD
SYSTEMS**
Strategic Priorities Fund




Shifting food business behaviours for human & environmental health:

A behaviour science perspective:
A Report for the Transforming UK
Food Systems SPF Programme.



The £47.5M 'Transforming the UK Food System for Healthy People and a Healthy Environment SPF Programme' is delivered by UKRI, in partnership with the Global Food Security Programme, BBSRC, ESRC, MRC, NERC, Defra, DHSC, PHE, Innovate UK and FSA. It aims to fundamentally transform the UK food system by placing healthy people and a healthy natural environment at its centre, addressing questions around what we should eat, produce and manufacture and what we should import, taking into account the complex interactions between health, environment and socioeconomic factors. By co-designing research and training across disciplines and stakeholders, and joining up healthy and accessible consumption with sustainable food production and supply, this Programme will deliver coherent evidence to enable concerted action from policy, business and civil society.



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WHO THIS IS FOR AND WHAT IT INCLUDES

This work has been commissioned by the UK Research and Innovation as part of its wider Strategic Priorities Fund¹ on [Transforming the UK Food System for Healthy People and a Healthy Environment](#). UKRI has invested an ambitious £47.5M in the commissioning of projects that can help us fundamentally transform the UK food system by placing healthy people and a healthy natural environment at its centre.

This report lays out a flexible approach for creating more strategic and holistic behaviour change initiatives, by mapping drivers of behaviour change against a socio-ecological framework and applying the Behaviour Change Wheel framework. The Behaviour Change Wheel framework is more typically used to shape behaviour change strategies for individuals, but conceptually can also help guide thinking for people wishing to shift the behaviour of organisations, like food businesses. As an example and to guide readers through the process, we also provide a short-hand summary of common drivers of food business behaviour, drawing on a selection of recent literature as well as qualitative interviews and conference discussions with a total of 21 senior food system professionals.

This report is aimed at anyone involved in the food system who 1) thinks that there are changes to be made to ensure it better supports human and planetary health and 2) is eager to drive more targeted, strategic, effective change. For example, this may include

readers who have been inspired by the recent National Food Strategy and its focus on the evolution of more sustainable food systems and policy. Its authors have issued us with a challenge: to take advantage of the 'once in a lifetime' opportunity we have to reshape the food system.

Specifically, this report may be particularly useful for those who are:

- **specifically interested in shifting food business behaviour**; although the process we outline is also relevant to understand how to shift the behaviour of other actors in the food system (e.g. consumers).
- **eager to take a strategic approach to identifying effective pathways to change**: putting behaviours of interest into wider context, understanding which behaviours to target and how tractable these are, choosing interventions that are more likely to work, and adapting as things change.
- **interested in practically applying behavioural frameworks** - in this case, focusing on the COM-B model² and wider Behaviour Change Wheel framework, as developed by the UCL Centre for Behaviour Change³.

We have focused this work on this behavioural framework for several reasons. It is an established framework - that indeed may already be familiar to some of our readers - yet is simple, practical and flexible enough to be applied by non-specialists in a variety of contexts. It also has an extensive history of useful application within the UK public and commercial sectors alike that readers can learn from and model, particularly within the

4 STEPS TO IDENTIFYING EFFECTIVE BEHAVIOUR CHANGE INTERVENTIONS



domains of public health⁴, UK Government⁵ and charity sector⁶ behaviour change. Although the target of our application is novel (food businesses, rather than individuals), the logic of application is one that the authors have used in a wide variety of behaviour change domains. We think it is a reasonable and potentially powerful way to look at the issues and plan appropriate responses - and in line with the SPF programmes' centering of innovation as necessary to finding effective ways to disrupt current practice.

In this piece, we lay out a 4-step process for

applying these frameworks to questions about how to shift food business behaviour - drawing on an approach for mapping and visualising change factors that the authors have used in a wide range of public sector behaviour change research, insight, and strategy development.

¹ UK Research and Innovation. [Strategic Priorities Fund: Transforming the UK Food System for Healthy People and a Healthy Environment](#). 2021.

² West R, Michies S. [A brief introduction to the COM-B Model of behaviour and PRIME Theory of motivation](#). 2020.

³ University College London. [Centre for Behaviour Change](#).

⁴ West R, Michie S, Rubin G.J. et al. [Applying principles of behaviour change to reduce SARS-CoV-2 transmission](#). Nat Hum Behav 2020; 4: 451-459. <http://www.thebsa.org.uk/wp-content/uploads/2016/03/FB-JC-article.pdf>. <https://implementationscience.biomedcentral.com/articles/10.1186/s13012-018-0821-y>.

⁵ Public Health England. Achieving behaviour change. A guide for national government. 2020. <https://gcs.civilservice.gov.uk/publications/the-principles-of-behaviour-change-communications/>.

⁶ Webb K, Hall J, Hall K. [Increasing the frequency of physical activity. Very brief advice for cancer patients](#). Macmillan Cancer Support. 2016.

01

INTRODUCTION



INTRODUCTION

1.1 Aims, methods and limitations

Our primary aim in this piece of work is to explore the ways in which taking a structured approach to considering the sources of behaviour, mapping and visualising these, and using frameworks like the UCL Behaviour Change Wheel, can help create more effective plans for intervention and change.

We particularly focus on supporting more strategic thinking and action for those seeking to shift food business behaviour. This focus is in large part driven by a desire to support change-making within what UKRI terms 'the missing middle' of the food system. There is an enormous amount of information available about technical and scientific possibilities to enable planetary and human health, and a lot of focus on end consumer behaviour, but less that helps us understand how to shift the actions and mindsets of other actors like food producers and retailers.

In the following chapters, we combine and adapt approaches from our own experience in behaviour change strategy, and from the flexible behaviour change framework of the Behaviour Change Wheel, and walk through a relatively simple, flexible approach to applying it in complex behaviour change spaces like food systems. We provide examples throughout of how readers might use each step of this approach to help structure their thinking and action. The approach laid out in this piece of work, and the examples used to illustrate it, focus on the example of food business behaviour change specifically. This is, of course, only one point of intervention - and many exciting developments in food systems offer opportunities further 'upstream' in the supply chain that may positively shape what food businesses can offer consumers. However, the overall process we

follow can and has been applied to many other domains of behaviour change.

"We focus a lot on consumer behaviour, on retail behaviour, but changes elsewhere can also have big influence on both. For example, we focus so much on what foods are chosen - but we can actually increase nutritional quality external to choice - we can grow healthier through interventions like soil fortification; we can increase support for the blue revolution, considering safe and sustainable alternative food sources from the sea, and so on."
- Vincent Doumeizel, United Nations Global Compact

We assume that readers of this report already have substantial knowledge about some of the key factors in their problem area of interest - e.g., food waste, minimising unhealthy food marketing, etc - which they could also fairly easily expand upon either via collaboration or further brief review. And, in fact, that you hold far more expert knowledge about the range of behavioural drivers in your respective space of expertise than we, the authors of this piece, ever could.

Thus, rather than focus our examples in this piece on one particular behavioural problem or area of interest, likely imperfectly and incompletely, we have instead chosen to use a range of examples as we flow through our behavioural process. In doing so, we highlight some of the current and emergent high-level behavioural drivers influencing food business, and the ways that these might make it easier or harder for businesses to promote environmental and human health. Our evidence base is drawn from:

- **a brief and wide ranging review of current**

evidence and insight, ranging from academic literature on emerging changes in the food system; rapid horizon scanning materials conducted under pandemic; and statistical data on changing consumer habits

- **qualitative interviews and conference discussions with 21 senior professionals in the food system**, conducted between July 2020 and April 2021 dates. Interviews explored participants' perceptions of emergent trends and changes in the food system, focusing on evolving drivers of food business behaviour. Conference discussions were drawn from contributions of attendees of the UKRI's conference on **Transforming UK Food Systems: Addressing the Gaps**

This evidence we provide and draw on - verbatims from interviewing, statistical and other data on behavioural drivers of food business behaviour - is in no way exhaustive and does not aim to provide a definitive picture of the current or even most significant drivers. Instead, the examples and data we use are provided for illustrative purposes of some of the 'big picture' drivers of behaviour that may need to be taken into account alongside issue-specific detail. However, as this evidence may in itself be useful for readers, additional detail and full referencing is provided in the Appendix.

1.2 A context of uncertainty, unpredictability and rapid change

The last two years have shepherded explosive and often unpredictable change to so many of our public domains - and our food systems are no exception. Food businesses were already expecting to spend much of the year adapting to the substantial disruption and uncertainty of Brexit. And then, of course, by March 2020 food businesses, along with everyone else, found themselves focused on the urgent and unpredictable shifts in practice demanded by the Covid-19 pandemic. Yet, far from Covid-19 distracting from the environmental issues that are so enmeshed with our food systems, 2020 would only accelerate public concern around climate change⁷⁸⁹; perhaps little surprise in a year that started with Australia on fire. Public expectations are rising of Governments and businesses alike to take action¹⁰.

In many cases, existing trends were amplified and accelerated, as 10-year business plans suddenly collapsed into the urgent response work of weeks or months. See, for example, the immediate and sustained increase in consumer online shopping under pandemic¹¹ - requiring profound and rapid shifts in food business strategy and substantial unexpected infrastructure investment¹². This early cost may yet pay off for food businesses who are only now beginning to see profit return in online shopping.

7 Department for Business, [Energy & Industrial Strategy](#). BEIS Public Attitudes Tracker (June 2020, Wave 34, UK). 2020.

8 House of Commons Library. [The rise of climate change activism?](#) 2020.

9 Evenson D, Whitmarsh L, Bartie P, Devine-Wright P, Dickie J, Varley A, Ryder S, Mayer A. Effect of "finite pool of worry" and COVID-19 on UK climate change perceptions. Proceedings of the National Academy of Sciences 2021; 118(3): e2018936118.

10 Barasi L. [Guest post: Polls reveal surge in concern in UK about climate change](#). Carbon Brief. 2019.

11 Eley J. [Covid growth turns online grocery profitable](#). The Financial Times. 2021.

12 Eley, J. [Why supermarkets are struggling to profit from the online grocery boom](#). The Financial Times. 2020.

Consumer attitudes shifted too, with consumer concern levels around issues like food waste, plastics use, animal welfare and food insecurity¹³ all continuing to intensify; far from distracting us from human and environmental health issues, 2020s' pandemic and string of unprecedented global weather events seems to have amplified and accelerated existing concern. Business adaptations to keep pace with evolving consumer expectations and behaviours around health and environmental sustainability will also profoundly shape organisational priorities, marketing strategies, new product offers, and more.

At the same time, established certainties and ways of working have destabilized or been called into question, and what replaces them is often as yet unclear. Take for example the overnight skyrocketing in home working, which profoundly reshaped the take-away and convenience landscape, or the more subtle pandemic rise of food localism^{14,15}. As it feels safe to do so, will consumers be eager to 'get back to normal', including resuming their former work and eating patterns? Will consumers simply return to former levels of reliance on the supermarket giants who currently own 95%¹⁶ of the grocery market share? Or will new connections to local areas begin to challenge that dominance, enabling new momentum for local food schemes - which typically have more positive overall environmental impact - and different spending patterns in terms of the location and type of food businesses frequented?

Other changes, small in some ways but revolutionary in others, have involved how

food businesses relate with each other and the Government bodies that both support and regulate them. In the early weeks of pandemic, the urgent need to reshape supply chains and avoid widespread food scarcity or insecurity ushered in new collaborations between food system actors used to spending most of their time competing, not collaborating. Grocery retailers found themselves round tables working hand in hand with each other, charity advocates, and Government partners to ensure the nation stayed fed and food scarcity was minimised. Could these ways of working be retained and adapted to face the challenges yet to come - creating the space for, as one retail representative called for, 'alternative visioning'?

"This has been a time of such incredible, rapid change for food businesses. New platforms, we're suddenly relying on new tech, we're convening groups to tackle basic provision and food insecurity outside of our standard policies, engagement dynamics, even standard regulatory practice. This has been challenging but also liberating in some ways - permission to work differently is critical to alternative visioning"
- UK Supermarket Representative

The impact of impending economic challenges for UK food businesses are as yet unclear. Future UK (and global) recession/depression are still possible, despite currently rosy GDP gains¹⁷; the markets are divided on whether to expect inflation, deflation or stagflation; consumer confidence has been fairly rocky, although beginning to recover¹⁸. What is clear is that the consumer economic experience has been deeply divided, reflecting and entrenching existing

economic and wider inequalities, in ways that are likely to profoundly shape the consumer food landscape. Whilst higher income consumers saved on travel, holidays and luxuries, many more found themselves profoundly economically damaged during 2020 - losing jobs or income, or even unable to keep enough food on the table^{19,20}. Worries of a two-tier food economy²¹ that may yet come to pass, with a growing proportion of the UK public now in financial distress that shapes their food choices.

Food inequalities: poverty, diet & the emergence of a 2-tier food system

- 4 million people, including 2.3 million children, experienced moderate or severe food insecurity in the first 6 months of pandemic²² - often skipping meals or compromising nutritional quality, with profound physical and emotional effect²³.
- 43% of the public were worried about the extra costs of providing food for their household - including 50% of participants ages 25-55²⁴.
- 83% of low income families struggled to afford the food they need²⁵.
- Meeting the recommendations of the Eatwell Guide would currently require families on the lowest incomes (those earning less than £10,000) to spend 60% of their disposable income on food²⁶.

1.3 Imagining food systems that nourish human and environmental health

One of the more pressing changes wrought by pandemic is the way in which it amplified existing fault-lines in the food system, adding urgency to what already felt like critical questions. How might we create systems that better nourish both people and the planet? What are food businesses' roles, responsibilities and opportunities in enabling human thriving and environmental health? And what is needed to enable and support that visioning and delivering of 'better, healthier, greener'?

Critically, the last two years have highlighted the ways in which poorer diets drive negative impact on health outcomes: covid-19 death and complication rates are substantially higher for people who are obese and/or have preexisting food-associated health conditions like diabetes²⁷. And, of course, we know that it isn't as simple as educating people about the importance of dietary fruit and veg; obesity and food-related long term health conditions are far more common amongst lower income consumers, who face layered and systemic

13 Food Standards Agency. [FSA's Public Attitudes Tracker Survey Wave 19 results](#). 2019

14 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 57.

15 Ipsos MORI. [Covid-19 Consumer Tracker Waves 5 – 8](#). 2020.

16 Kantar Worldpanel. [Grocery Market Share](#). 2020.

17 Romei V. [UK consumer confidence rises to highest level since start of lockdowns](#). The Financial Times. 2020.

18 Romei V. [UK consumer confidence rises to highest level since start of lockdowns](#). The Financial Times. 2020.

19 Connors C, Malan, L, Canavan S, Sissoko F, Carmo M, Sheppard C, Cook F. [The lived experience of food insecurity under Covid-19](#). Bright Harbour and Food Standards Agency. 2020.

20 The Food Foundation. [The Impact of Coronavirus on Children's Food](#). 2020

21 Fortune, A. [No-deal food hierarchy warning issued to Government](#). Food Manufacturer. 2018.

22 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 6.

23 Connors C, Malan, L, Canavan S, Sissoko F, Carmo M, Sheppard C, Cook F. [The lived experience of food insecurity under Covid-19. Bright Harbour and Food Standards Agency](#). 2020

24 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 6.

25 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 23

26 Cornelsen L, Cuevas S, Cummins S, Sutherland J, Taylor A, Gridley J. et al. Healthy Returns: [Opportunities for market-based solutions to childhood obesity](#). The Food Foundation. 2018.

27 Public Health England. [Disparities in the risk and outcomes of COVID-19](#). 2020.

barriers to 'eating well.'²⁸ Many of these barriers have been entrenched and exacerbated by deepening and widening poverty under pandemic; it is difficult if not impossible to strive for 'nourishing' when even basic caloric sustenance seems out of reach. Fresh produce and vegetables are often the first things to go²⁹.

"The price of fruit and veg has never been cheaper, and yet there remains a whole group for whom good food is just not affordable."
- UK Supermarket Representative

And of course, the urgency of calls to re-shape the sector for better planetary health is rapidly increasing. Globally, nearly 750 million people were food insecure in 2019, with climate shocks a major contributor, and undernourishment and food insecurity continue to rise³⁰. In the UK, food production and consumption represents around 20% of our emissions, and current estimates suggest that in order to meet our carbon targets we would need to reduce the amount of food lost and wasted along the food supply chain, from production to consumption, by a full 50%³¹.

"Long story short: without dietary change, our hopes of averting global temperature rises of 2C or above become very slim indeed."
- UKRI Conference Attendee³²

"I think 10 years ago, even 5 years ago, the question of whether our food systems were an urgent contributor to climate change was a matter of debate in most circles. That has changed. Now, anywhere I go, the question is not whether we need to act - it's what we do, and how we move faster."
- Henry Dimbleby, National Food Strategy

The good news is that we know from the behaviour science literature that it is moments like these that create profound opportunities for shifting behaviour: existing habits, patterns and systems tend to repeat themselves unless disrupted³³. And it is becoming increasingly clear that 2020's disruptions, as the early intensity of pandemic settles into prolonged disruption, are shaping the public imagination and desire for change. Few want to return to 'business as usual', and support for re-thinking the ways that our food systems could better support both human and environmental health is growing.

PUBLIC CALLS FOR CHANGE

Health

- An overwhelming majority of the UK public (89%) agreed that "every child has the right to have a healthy meal at least once a day,"
- more than half (63%) agreed that "it is the government's responsibility to make sure no-one goes hungry," and more than two thirds (71%) believed the government should be doing a "great deal" or a "fair amount" to encourage people to eat more healthily³⁴.
- 58% agree that 'businesses who sell food have a responsibility to get more people to eat healthily, even if they would make more money selling unhealthy food.'³⁵
- The majority (75%), agree the government should incentivise the food sector to provide healthier products and a further 65% agree with direct subsidies.

Environment

- More than two-thirds (67%) think that a failure to tackle the UK's existing social and environmental issues through new funding and policy measures would be "bad for the economy in the long-run."
- Environmental issues were ranked as the third most important issue facing the UK during Spring/Summer 2020 - behind only health and the economy.
- A majority of UK consumers worry about issues like animal welfare (76%), packaging waste (76%), the degree of food processing (71%) when buying food³⁶.

28 Cornelsen L, Cuevas S, Cummins S, Sutherland J, Taylor A, Gridley J. et al. [Healthy Returns: Opportunities for market-based solutions to childhood obesity](#). The Food Foundation. 2018.

29 Defeyter G, Mann E. [The Free School Meal Voucher Scheme: What are children actually eating and drinking?](#) Northumbria University. 2020.

30 Food and Agriculture Organization of the United Nations. [Food Security and Nutrition Around the World in 2020](#). 2020.

31 UK Health Alliance on Climate Change. [All-consuming: building a healthier food system for people and the planet](#). 2020

32 Gill M, Wellesley L, Sark C, Reay D. et al. Experts: [How do diets need to change to meet climate targets?](#) 2020.

33 Wood W, Tam L, Witt, M. G. Changing circumstances, disrupting habits. *Journal of personality and social psychology* 2005; 88(6): 918.

Verplanken B, Wood W. Interventions to break and create consumer habits. *Journal of Public Policy & Marketing* 2006; 25(1): 90-103.

Verplanken B, Walker I, Davis A, Jurasek M.. Context change and travel mode choice: Combining the habit discontinuity and self-activation hypotheses. *Journal of Environmental Psychology* 2008; 28(2): 121-127.

34 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 26-37

35 Lasko-Skinner R, Sweetland J. [Food in a Pandemic. From Renew Normal: The People's Commission on Life After Covid-19](#). Demos. 2020: 26 -37.

36 Rower O. [Purpose & Ethics in Grocery](#). YouGov. 2020.

Matching declarations of interest in building back better and greener from the Government³⁷ and the business community alike is an encouraging foundation for positive change - though it remains to be seen how faithfully they will be translated into practice and action. The recent publication of the National Food Strategy (Part 1)³⁸, and widespread media coverage of campaigns with similar focus such as Marcus Rashford's work on Free School Meals, have also acted as a powerful call to arms and catalyst for change.

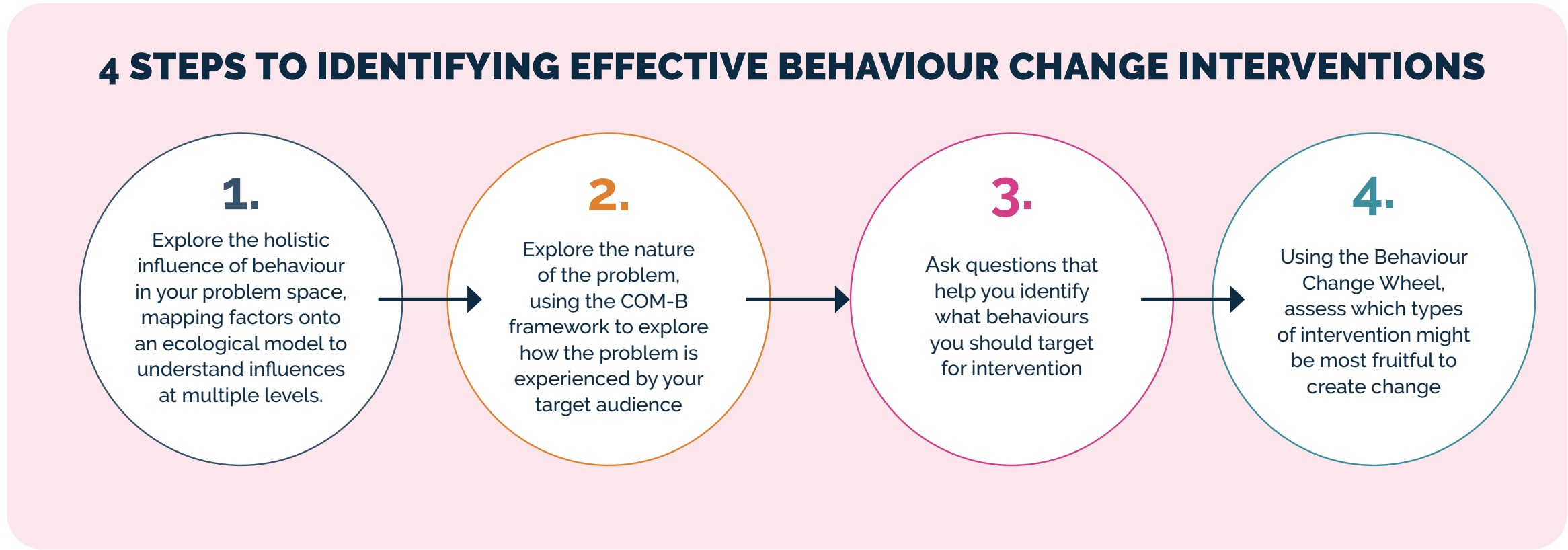
The question now is how to capitalise on this groundswell of momentum, and disruption to business as usual. Food businesses play an absolutely critical part within the food economy, far 'closer' to consumer behaviour than downstream.

1.4 Our summary approach to behaviourally informed planning

As the National Food Strategy points out, to create meaningful change in the food system requires shifts in practice at every level: structural, cultural, local and individual. And yet, the systems in which these changes must be enacted are mind-bogglingly complex.

In the sections to follow, we first make the case for taking a more holistic, contextual approach to behaviour change in food systems that honours this complexity, before then setting out a 4 step process for how to use established behavioural frameworks to achieve change without getting lost in the weeds.

The overall process that we set out is as follows.



37 GOV.UK. [Legally binding targets to help "build back greener."](#) 2020
HM Treasury. [Build Back Better: our plan for growth.](#) 2021
GOV.UK. [£134 million boost to help UK businesses build back greener.](#) 2020.
38 Dimpleby H. et al. [National Food Strategy: Part One.](#) 2020.

02

A STRUCTURED APPROACH TO MAPPING BEHAVIOUR



A STRUCTURED APPROACH TO MAPPING BEHAVIOUR

Simple is beautiful, but effective change-making often demands that we grapple with complexity. Though some of the highest-profile behaviour change studies focus on simple interventions to achieve change, silver bullet solutions are rare, and prone to failure. This is particularly true in areas of complex, interconnected and multilayered drivers of behaviour - like food systems, and food business behaviours

In this section we argue that those that seek to shape effective change in food business behaviour, creating the conditions that enable better environmental and human health, need to grapple with complexity. We also suggest that visually mapping behavioural drivers, and using behaviour change frameworks, can help them do so in a way that leads to more clarity and effective action. Visualising and condensing complexity converts it into something more tractable, able to be discussed, explored and collaborated on, in ways that better highlight pathways to change.

We begin by highlighting the kinds of thorny behaviour change questions that we aim to support in this piece.

2.1 We aim to support change-makers challenged by these four questions:

Often, we speak about behaviour in simple terms, as if shaping it should be equally simple. Our policies and mission statements set out big ambitious outcomes that we hope to achieve while being less clear about exactly what behaviours we need to change to achieve them, and how we might actually effectively go about doing it.

Yet, as anyone who has tried to put a manifesto into action is well aware, real world behaviour change is often challenging. Effective solutions require changing multiple behaviours that involve different people, groups and organisations - all interacting in complex ways.

Although this piece does not aim to tackle all of these questions and complexity in detail, we do hope that it offers an approach that helps readers navigate these four challenges when seeking to create change:

- **How do we best identify the behaviours that would most benefit from attention and investment to shift?** How might we avoid investing limited time, attention, and finance in the wrong places? How might we more easily identify tractable change avenues, and better avoid dead-ends?
- **How do we account for the fact that behaviour is contextual, layered, and driven by a multiplicity of factors?** How do we find the simplicity within this complexity?
- **How can we shape effective change within our increasingly VUCA³⁹ (Volatile, Uncertain, Complex, Ambiguous) world - in which the landscape we operate is rapidly, often unpredictably changing?** In this context, how do we identify when to change course, when to collaborate, when to act fast?
- **How do we know what's right for 'us' to do, and what's best tackled by others, or in collaboration?** How do we identify the types of partners that might best help us tackle the behaviour in question?

All of these questions become even more urgent in a context in which resource and

bandwidth are often limited -headspace, capacity, investible finance and funding, social capital, etc). They are however not the only questions this approach could potentially help answer.

2.2 How visualising behaviour holistically and using behavioural frameworks can help

One way to improve the chances of interventions succeeding is to take a more systematic approach by using behaviour change frameworks to guide our analysis and decision-making processes.

Doing so offers a wide range of benefits:

- **Behavioural mapping makes visible the complex context shaping behaviour** - whilst also condensing complexity into something simple enough to discuss and debate.
- **Structured processes add rigour and help us tackle bias.** Using our professional experience as input is always valuable but we are inevitably biased by our own experience, so models and frameworks add rigor to our thinking.
- **Using visualisations and frameworks provides stakeholders a shared narrative for change** - they allow us to speak the same 'language', helping more easily draw collective attention to the wide range of factors in play, and guide solution finding
- **Visualising behaviour challenges helps re-frame problems and open up different ways of addressing them** - drawing out possible approaches and targets for the design and implementation of effective interventions. Doing so in a structured way

also forces us to be more explicit and certain about the drivers shaping a given behaviour - and what exactly might be needed to spark change.

The benefits of taking a structured approach may seem obvious, but there are many examples of policies and interventions that were unsuccessful because they did not start with an understanding of the target behaviour and the factors influencing it.

When behaviour change goes wrong: 30 years of behavioural mis-fit in obesity policy

Theis & White's (2021)⁴⁰ recent review of almost 30 years of UK Government obesity policies concluded that most have been proposed in a way that 'do not readily lead to implementation'. Two of the top reasons for failure?

Policies weren't specific enough about which behaviours were going to be targeted and why; as discussed in 2.4, they focused on the outcomes the policies would aim to achieve without providing clarity about how they would influence the string of behaviours that would be needed to achieve them.

They didn't approach behaviour change holistically, or account for how difficult it is to shift behaviour. Most implicitly assumed that if you tackle individual-level factors like education, guidance or standards, that would be enough.

As the authors note, these kinds of interventions 'make a high demand on individual agency', assuming that people can change behaviour on their own - even when structural factors like incentives, environments, and choice architecture are all working against them.

³⁹ Kraaijenbrink J. [What Does VUCA Really Mean?](#) Forbes. 2018.

⁴⁰ Theis D, White M. Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992 - 2020. The Milbank Quarterly 2021; 99(1).

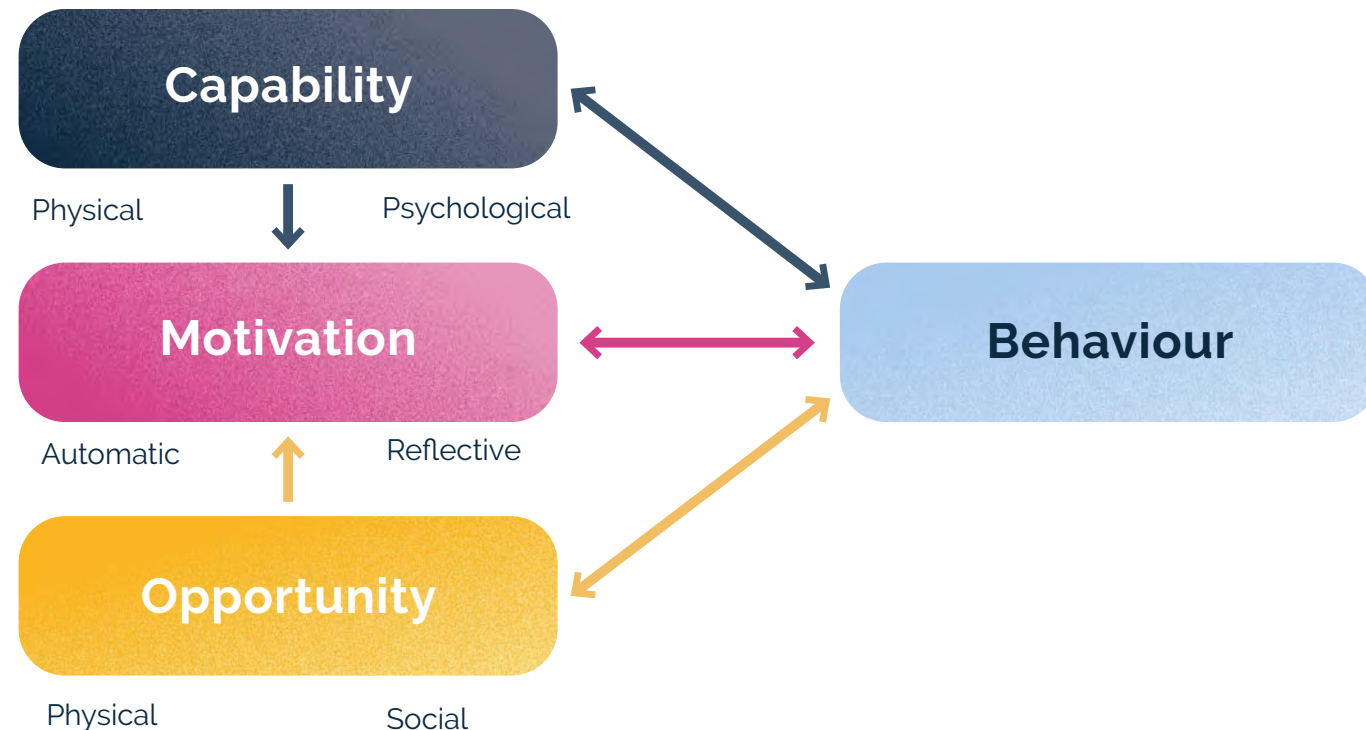
For example, telling a lower income consumer to 'eat more vegetables' isn't likely to be effective on its own for someone living in a food desert with low availability of fresh produce; and/or working 2 jobs and with minimal time for home-cooking; and/or whose media environment is saturated with junk-food advertising in ways that would feel alien to higher income consumers.

The BCW connects target behaviours to intervention types that are known to work best in a specific situation as well as the policy categories that they fall into.

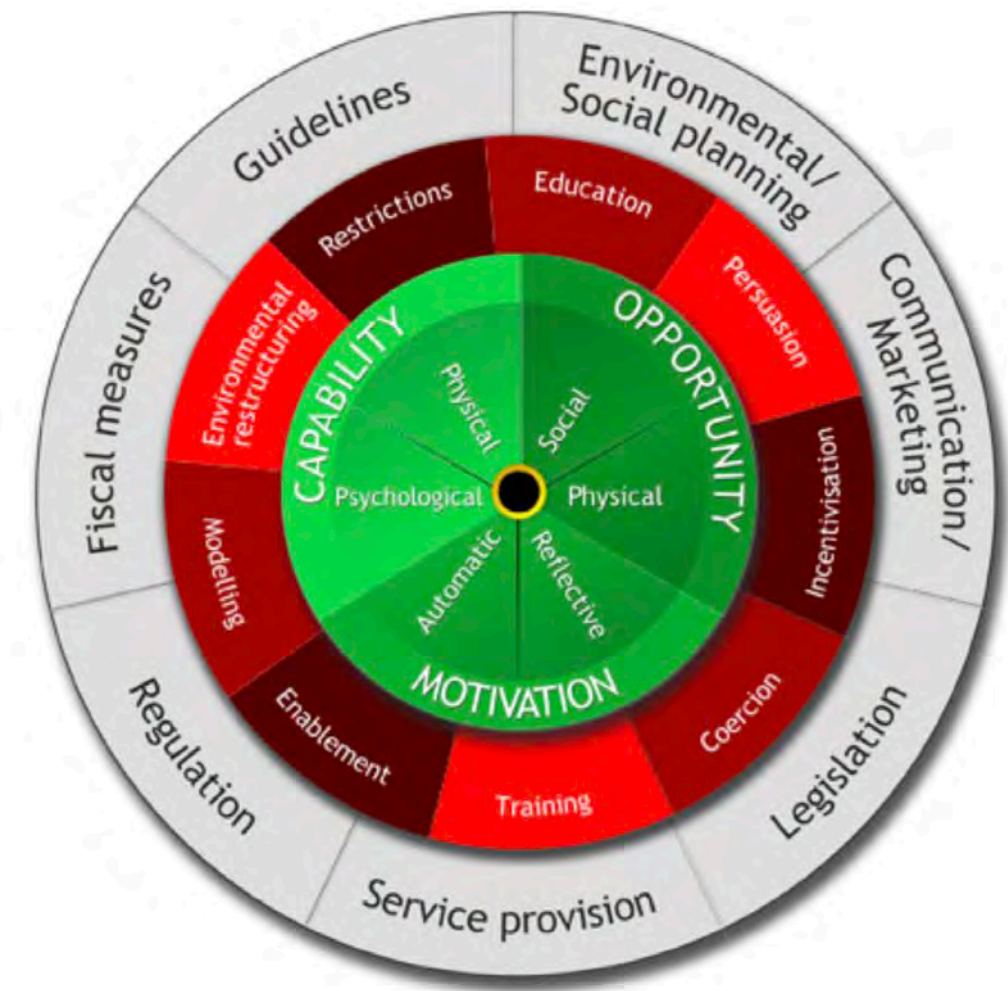
Since its launch, the Behaviour Change Wheel and its core model COM-B have been extensively validated and used in hundreds of academic studies and public health interventions⁴¹. COM-B is simple yet comprehensive, and flexible enough to be used in a range of sectors to characterize behaviours and factors that influence them. It's best used to diagnose barriers and drivers for specific target behaviours.

2.3 Introducing the COM-B framework and the Behaviour Change Wheel

The Behaviour Change Wheel (BCW) was developed by the UCL Behaviour Change Unit in 2011, based on evaluation of 19 existing behaviour change frameworks. The BCW is unique among behaviour change frameworks because it is a logic model – a simplified hypothesis about how an intervention will work.



⁴¹ <https://www.bct-taxonomy.com/interventions>



We will explore this framework and how to apply it in more detail in the sections to follow, guiding the reader through a real life example of its application in practice. The way that we will be applying the BCW is fairly novel, as we will be using it - alongside our holistic behavioural mapping - to help guide thinking about shifting *business* rather than *individual* behaviour.

However, the core conceptual foundations of the approach are transferable; after all, business decisions are at the end of the day made by individuals - and a similar range of barriers can get in the way of business action. As an individual, I may not take action to change my diet if I don't feel I have the skills to do so (capability), or don't think it will make much difference in my life (motivation). As a business, I may not take action to cut my supply chain complexity if accessing usable metrics of that complexity simply isn't technically possible

(capability), or I don't see any benefit to consumer perceptions in doing so (motivation).

We should note that the Behaviour Change Wheel is never a 'magic bullet' or a detailed blueprint that prescriptively tells us what works in which context. Subjective interpretation is always critical, as anyone who has applied within these kinds of frameworks knows - which is one of the reasons we advocate in this report for collaborative approaches that will minimise the impact of bias and blind spots.

However, it does give us a systematic and guided method for identifying the types of interventions that would be expected to be effective for a given behaviour, context and target population.

2.4 A note on differentiating outcomes v. behaviour - and identifying clear links between behaviours of interest, inputs and intended outcomes for change

It is important to distinguish between outcomes and behaviours; although they are sometimes used interchangeably, they refer to two very different things.

An **outcome** is a consequence or result that we seek to achieve. In behaviour change plans, outcomes tend to be broad, for example focusing on changing attitudes, enabling new scenarios, or achieving results. For example, an outcome like "healthy lifestyle" includes many decision points that occur over time. Or we may wish to promote an outcome that 'food businesses enable lower income consumers to eat healthily.' Outcomes look simple, and are easy to talk about in a mission statement.

In comparison, **behaviours** are specific actions that people or businesses take. For example, eating fruit instead of cake or taking the stairs instead of the lift; each are single decision points that, cumulatively, lead to a desirable outcome like a healthy lifestyle. Or, if we have a proposed outcome of enabling lower income consumers to eat healthily, we might tackle specific business behaviours like reducing marketing to low income consumers of highly processed or unhealthy foods, or reformulating lower-price items to include healthier ingredients.

However, often we need a multiplicity of behaviours to achieve the outcome we're after - and each of these behaviours may be impacted by a wide range of drivers, operating at multiple levels. This can of course make planning difficult - and unfortunately, in response many 'change programmes' or interventions simply focus on the outcomes that they seek to achieve rather than the specific behaviours they seek to enable (or reduce) to achieve those outcomes, and how best to do this⁴².

This raises some challenges for those seeking to create change. Focusing only on outcomes raises the risk that involved stakeholders will have different assumptions about 'what should be done' to achieve the overall aim, often diluting both action and impact. There may be no theory of change or logical model of how what is being proposed will actually lead to the outcomes specified - and how the activities planned would actually achieve the impact desired. Or policies, practices, services or communications may be developed that assume huge behavioural change from interventions unlikely to achieve them - often at substantial cost.

Note that UKRI's Transforming the Food System Programme's Theory of Change attempts to avoid this common planning error, and also provides a wealth of research to support those seeking to shape effective change. For example, rather than simply outlining food system outcomes it hopes projects will help it achieve, it outlines the specific activities that it has evidence to lead to the impact desired. (Note that the National Food Strategy also outlines a range of helpful common 'system traps' for those seeking to make change (p.38 - 'Systems traps') which readers may find useful.)

Structuring more effective theories of change and paths to intended outcomes

1. Vague theory of change lacking specificity about links between inputs and outcomes: We will research common drivers of UK emissions, promote collaboration around sustainability in the food sector, and invest in conferences and knowledge advancement in environmental issues to achieve a substantial reduction in emissions by 2025.

2. More solid theory of change identifying specific behaviours, drivers of behaviours, and interventions that are likely to create change: Our research shows that UK farmers are interested in supporting reduced GHG emissions, but do not have access to approaches that enable them to do so in a low burden way. This project will enable dissemination and outreach of existing, evidenced methods of low-burden GHG emissions within the UK farming community, aiming for a 20% reduction in GHG emissions from involved UK farmers over the course of the pilot.

We will explore how to avoid this in the sections to follow. For now, we assume that the reader would be starting this process with an established intent and broad target in terms of the outcomes that they seek to achieve - ideally, something more specific than just 'improving environmental and human health'.

2.5 A 4 step approach to using visual behavioural factor mapping and the Behaviour Change Wheel to create more strategic behaviour change

We find that although behavioural frameworks like the Behaviour Change Wheel are simple in design, it can be challenging to apply them in practice.

One of the reasons for this is that often, people interested in achieving behaviour change outcomes are unclear when they start out about exactly what behaviours they aim to tackle. One might be starting at the level of overall objectives and outcomes (e.g., achieving the aims of the National Food Strategy) but not yet have decided exactly what behaviours are best to target for maximum impact.

In this case, thinking about the range of factors shaping a problem of interest (e.g. problems like food waste; sale of ultra-processed foods versus produce; marketing to low-income groups) is needed before we can identify the exact behaviour to target, and use the Behaviour Change Wheel to choose our intervention.

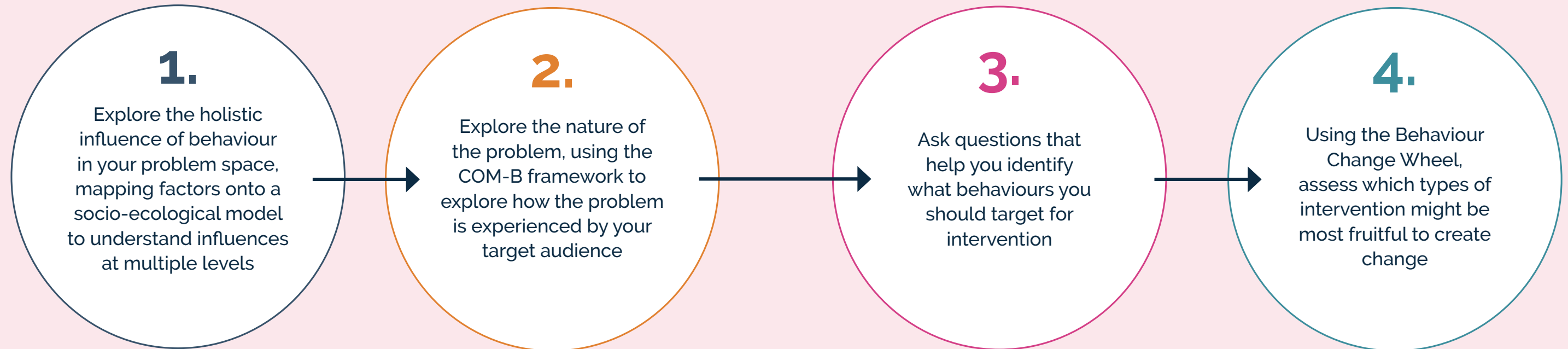
In practice, many behaviour change specialists conduct a phase of behavioural 'mapping' before application of the Behavioural Change Wheel (or other behaviour change frameworks). They do some intelligence gathering on the factors shaping their behaviour of interest, putting it into context before they press forward. The 4 step process we lay out in this piece for identifying an effective behaviour change intervention takes exactly this approach.

In the sections to follow, we will walk through each step in practice - using examples from food systems and food business behaviour change throughout.

We are not focusing on one specific example behaviour or problem space of interest; the overall process applies to a wide range of potential problem areas within the overall umbrella of shifting food behaviour to support environmental and human health.

⁴² Theis D, White M. Is Obesity Policy in England Fit for Purpose? Analysis of Government Strategies and Policies, 1992 - 2020. The Millbank Quarterly 2021; 99(1).

4 STEPS TO IDENTIFYING EFFECTIVE BEHAVIOUR CHANGE INTERVENTIONS



1) Explore the holistic influence of behaviour in your problem space, mapping factors onto a socio-ecological model to understand influences at multiple levels.

Thinking holistically, explore the range of factors that may influence the behaviour you'd like to promote and identify the ones that you think are most important. We find it helpful to use an adapted socio-ecological model to structure this process. It provides an easy visual framework to structure thinking about complex problems, also ensuring attention to multiple 'layers' or 'levels' of the problem. (Chapter 3)

2) Explore the nature of the problem, using the COM-B model to explore how the problem is experienced by your target audience.

Once you have summarised some of the key drivers of behaviour for your problem and behaviour of interest, you can visually code which of these are key drivers and barriers, what's working for and against the behaviour you seek to promote in each, and what 'nature' of barrier it is (Capability, Opportunity or Motivation). (Chapter 4)

3) Ask questions that help you identify what behaviours you should target for intervention:

When you can visually assess the 'level' and 'nature' of the problem it opens up new questions and reflections for those seeking to shape behaviour. Is the intervention you'd like to introduce, or the change you seek to create, a good match with your own resources, opportunities and expertise? Is it really the most urgent part of the problem to tackle? Will it be changed effectively if tackled in isolation? What could be done by you, and what might others need to do? (Chapter 5)

4) Using the Behaviour Change Wheel, assess which types of intervention might be most fruitful to create change.

Once you've made a decision about which behaviour to target, and understood the level and nature that the problem operates at, you're in a better position to pick an effective intervention. Using the behaviour wheel will help orient your decision making about interventions, ensuring good fit between what you hope to change and how you aim to change it. (Chapter 6).

In the sections to follow, we will walk through each step in practice - using examples from food systems and food business behaviour change throughout.

We are not focusing on one specific example behaviour or problem space of interest; the overall process applies to a wide range of potential problem areas within the overall umbrella of shifting food behaviour to support environmental and human health.

03

EXPLORING BEHAVIOUR HOLISTICALLY



EXPLORING BEHAVIOUR HOLISTICALLY

Mapping key behavioural factors working at multiple levels using an ecological model

In this section we'll explore how to visually contextualise the problem space for a behaviour you're trying to influence, or an outcome that you're ultimately trying to achieve. We will show you how to use an adapted ecological model to map out the range of drivers and barriers surrounding your behaviour of interest, at multiple 'levels' of operation.

As an example, we'll briefly explore and map some of the factors that we noted in our own desk review, interviews and conference discussions around shaping food business behaviour. We've focused on factors which may play a role in shaping food business behaviour regardless of whether your specific area of interest - e.g., those that would be fairly equally meaningful whether your target problem is food waste, plastics reduction, shifting marketing strategies for lower-income consumers - or any other food business behaviour problem.

Should any of these mapped factors from our review, interviewing and discussions prove interesting or useful to you in their own right, we have provided more detail in Appendix B

3.1 Why take a contextual, holistic approach to behaviour?

Behaviour and choices, whether of people or businesses, are influenced by their context and environment. When we think only about some of the key factors shaping behaviour, we often create interventions that are unlikely to have good impact.

This makes it important to systematically evaluate the broader environment in which decisions are made if we seek to be effective in changing it. Thinking about wider environmental factors influencing behaviour is a crucial starting point for understanding how that behaviour comes to be, and how to shift it - and in identifying potential interventions. In order to change behaviours successfully, we need to find a good fit between the behaviours we seek to shift; the interventions or changes we introduce to shift them; and the environment in which both operate.

When we don't think this way, we are far more likely to create interventions that don't work in practice, because we haven't actually understood the range of drivers influencing the behaviour in the first place, and the ones that are most important to tackle to shift it. This is a common planning error in UK obesity policy, as discussed previously, but obesity planning is no special case; it's the kind of error that pops up frequently in public behaviour change.

For example, in 2010 the UK government's alcohol strategy was initially based on communicating that drinking responsibly is a good thing which is focused on changing attitudes and beliefs (*reflective motivation*) even though evidence⁴³ shows that the approach is

ineffective. That is, they focused on trying to make people not want to over-drink. Instead, changing the opportunity to consume and drinking habits (*automatic motivation*) through higher prices and reduced availability would have been more effective.

3.2 Using a socio-ecological model to structure thinking and map factors holistically

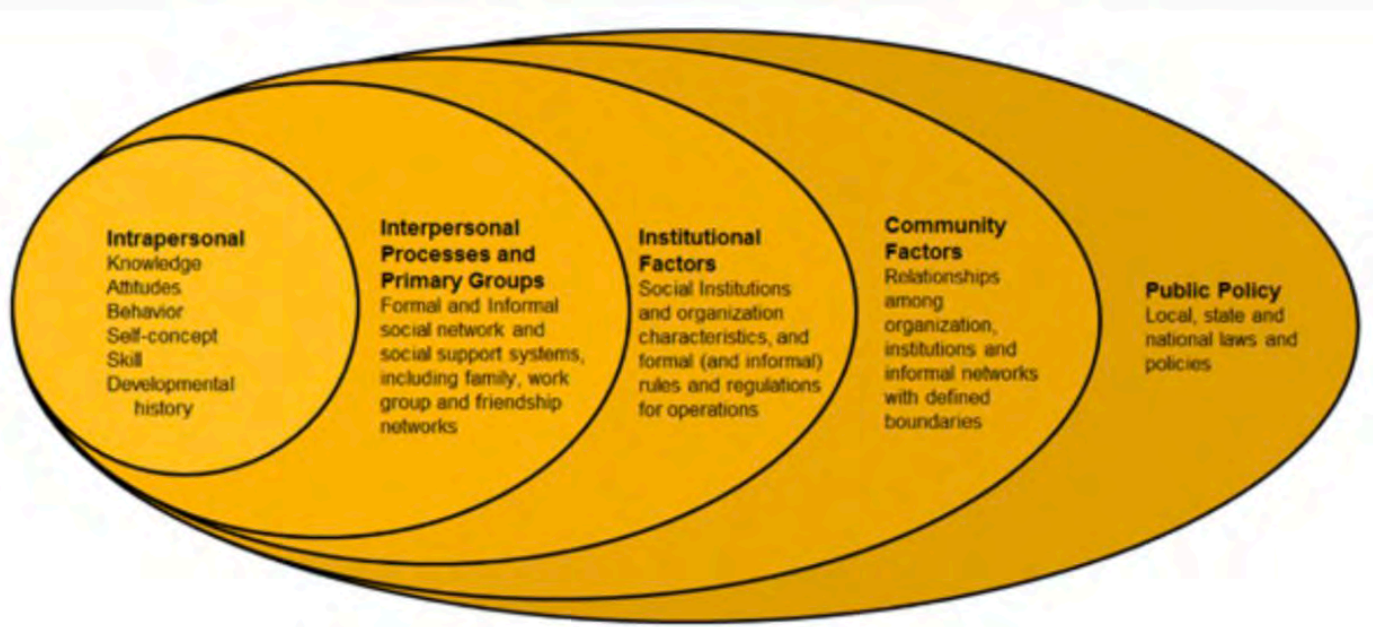
A socio-ecological model, which moves in nested layers from individual factors to more structural factors, can provide a very useful

framework for understanding and assessing the varied and interconnected influences that shape behaviour. See some examples below and overleaf.

There are many versions of socio-ecological models and there is no one that is necessarily 'perfect' or 'best'; it's all about using a model that helps you make sense of the factors that are most important in your area of interest or problem space. The important thing is that a nested model like this helps you think about the multiple 'layers' of factors shaping behaviour - from the individual all the way up to the structural and environmental.

EXAMPLES OF SOCIO-ECOLOGICAL MODELS IN PRACTICE

The social ecology of health promotion interventions⁴⁴

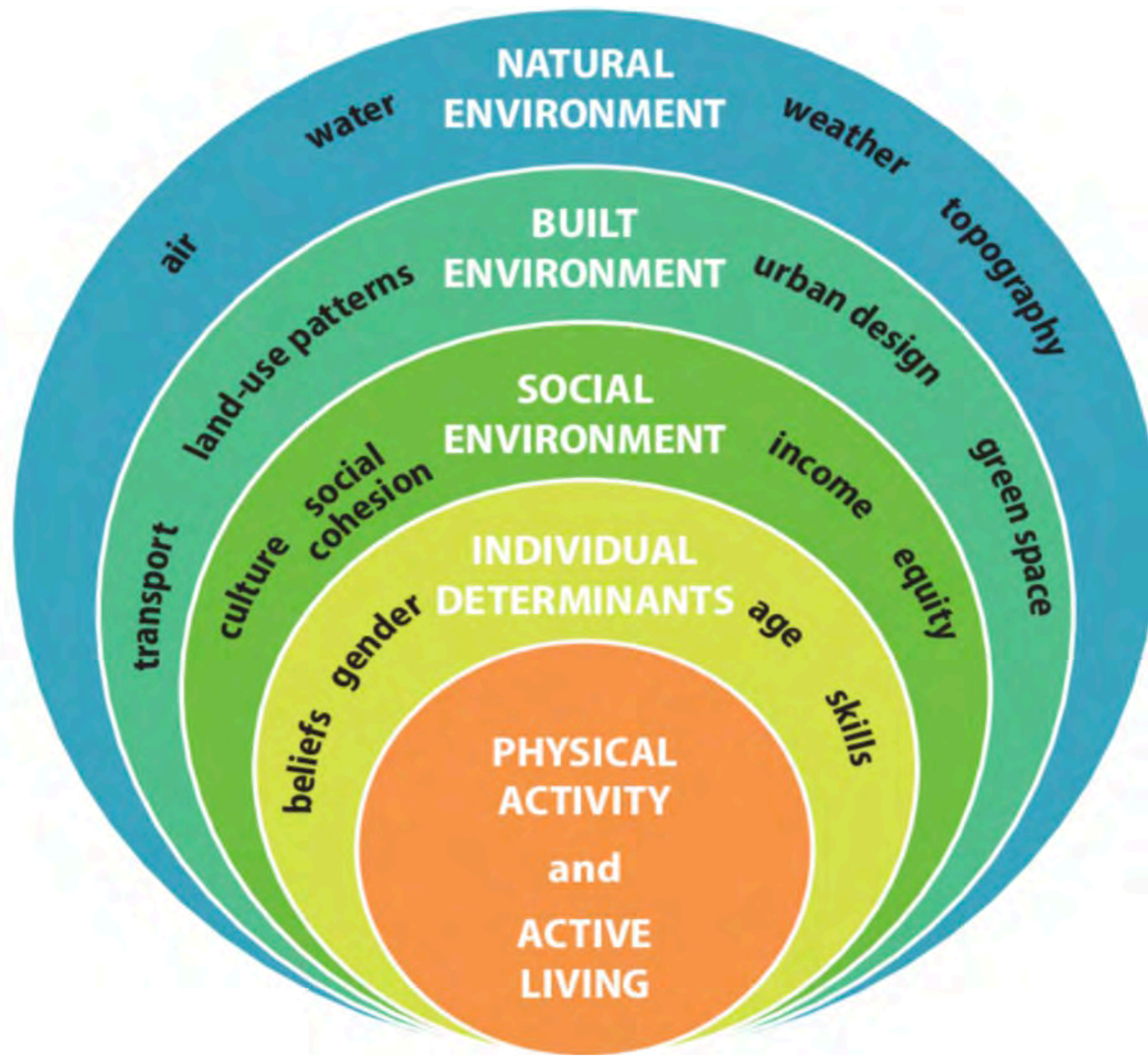


⁴³ Babor T. Alcohol: No Ordinary Commodity - a summary of the second edition. Alcohol and Public Policy Group 2010; 105(5): 769-779.

⁴⁴ Adapted from McLeroy K, R Steckler, A, Bibeau, D.. The social ecology of health promotion interventions. Health Education Quarterly 1988; 15(4): 351-377. http://tamhsc.academia.edu/KennethMcLeroy/Papers/81901/An_Ecological_Perspective_on_Health_Promotion_Programs.

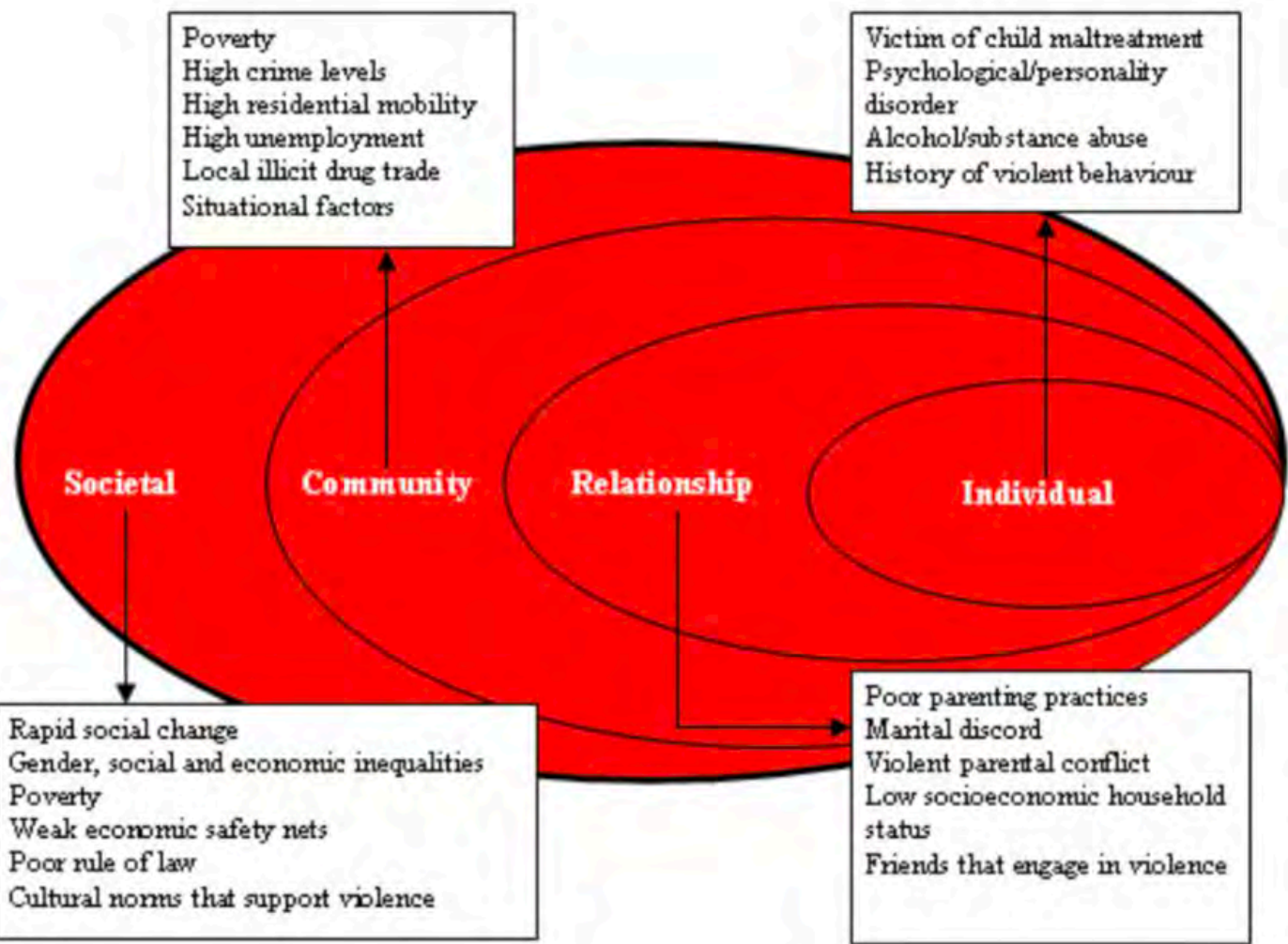
EXAMPLES OF SOCIO-ECOLOGICAL MODELS IN PRACTICE

The Transportation Profession's Role in Improving Public Health⁴⁵



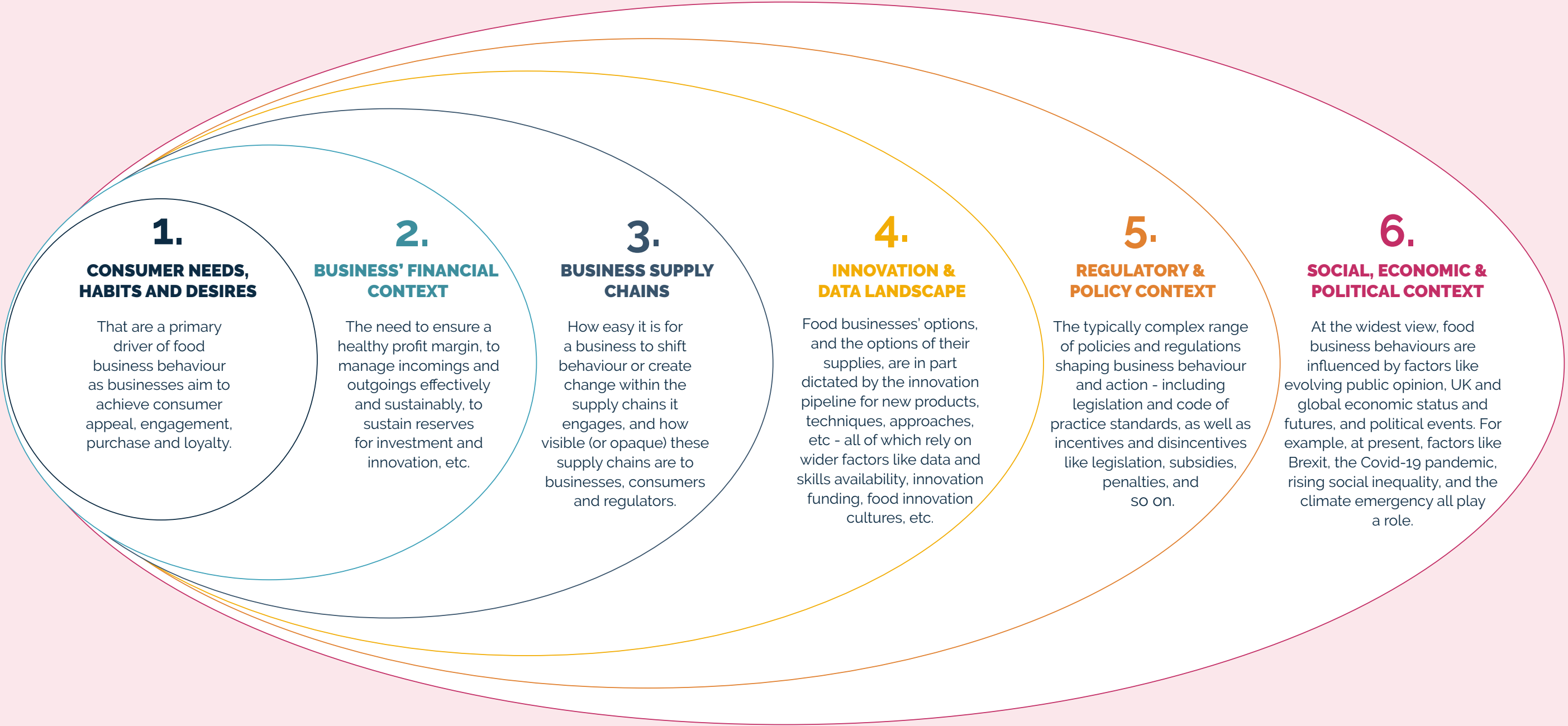
45 Adapted from Bornstein D, David W. The Transportation Profession's Role in Improving Public Health. Institution of Transportation Engineers Journal. 2014; 84(7): 19-24.

The ecological framework⁴⁶



46 World Health Organisation. The ecological framework. Violence Prevention Alliance. 2014.

A SOCIO-ECOLOGICAL MODEL OF FACTORS SHAPING FOOD BUSINESS BEHAVIOUR



For the purposes of mapping out some of the factors that came up again and again in our own desk review, interviewing and conversations, we adopted the above 6-level model - choosing 'levels' that helped us make sense of some of the patterns and themes we were seeing in the data.

As you can see, this model helps us think about:

- **Consumer needs, habits and desires** that are a primary driver of food business behaviour as businesses aim to achieve consumer appeal, engagement, purchase and loyalty.
- **Business' financial context** - the need to ensure a healthy profit margin, to manage incomings and outgoings effectively and sustainably, to sustain reserves for investment and innovation, etc.
- **Business supply chains:** How easy it is for a business to shift behaviour or create change within the supply chains it engages, and how visible (or opaque) these supply chains are to businesses, consumers and regulators
- **Innovation and data landscape:** Food businesses' options, and the options of their supplies, are in part dictated by the innovation pipeline for new products, techniques, approaches, etc - all of which rely on wider factors like data and skills availability, innovation funding, food innovation cultures, etc.
- **Regulatory and policy context:** The typically complex range of policies and regulations shaping business behaviour and action - including legislation and code of practice standards, as well as incentives and disincentives like legislation, subsidies, penalties, and so on.
- **Social, economic and political context:** At the widest view, food business behaviours are influenced by factors like evolving public opinion, UK and global economic status and futures, and political events. For example, at present, factors like Brexit, the Covid-19 pandemic, rising social inequality, and the climate emergency all play a role.

Why think contextually when we can just 'nudge' it?

'Nudging' has become an increasingly popular tool in public policy to change behaviour in situations where people do not necessarily make the decisions that are in their own long-term interest. Nudge techniques include things like using default opt-in as a way of overcoming inertia or inaction for situations like the well-known case study of using automatic enrolment to improve organ donation rates.

At first glance it appeared a success story, but on closer inspection it has turned out to be a good example of an intervention that focused on one part of the problem. Later analysis has revealed that, in many cases, although the number of registered donors might increase, it is proxy measure that does not always result in more organ donations⁴⁷.

That is probably because it is a single-intervention approach that, whilst helpful, doesn't address other potential behavioural drivers. Like the obesity policies explored in Section 3.1, it only influenced the individual or micro level of decision making - but not the structural or macro influences.

Looking at the wider environment would include considering the political and economic backdrop, cultural norms, legal systems, family veto rates as well as black market economies. Furthermore, focusing on a simple change in choice architecture for individuals ignores structural and institutional constraints such as sufficient numbers of organ donation specialists, collaborative hospital cultures of donation and necessary investment in perfusion technologies⁴⁸

3.3 Some of the key factors shaping food business behaviour in our review

Below we have outlined some of the key drivers which emerged in our own brief review of factors shaping business behaviour, many of which emerged or were exacerbated under the extreme change and disruption of 2020. We then provide an example of how you might map these for a particular behaviour space or problem of interest.

This is of course by no means an exhaustive list; in our review, we focused on exploring high-level drivers that were likely to shape food behaviours across a range of problem spaces and behaviours of interest. The below thus does not deep dive into any one 'level' of interest (e.g., food business regulation and policy), nor cover all the factors for any one particular problem space (e.g., food waste, processed food marketing, etc). How relevant each of the below factors will vary highly depending on your problem space or behaviour(s) of interest.

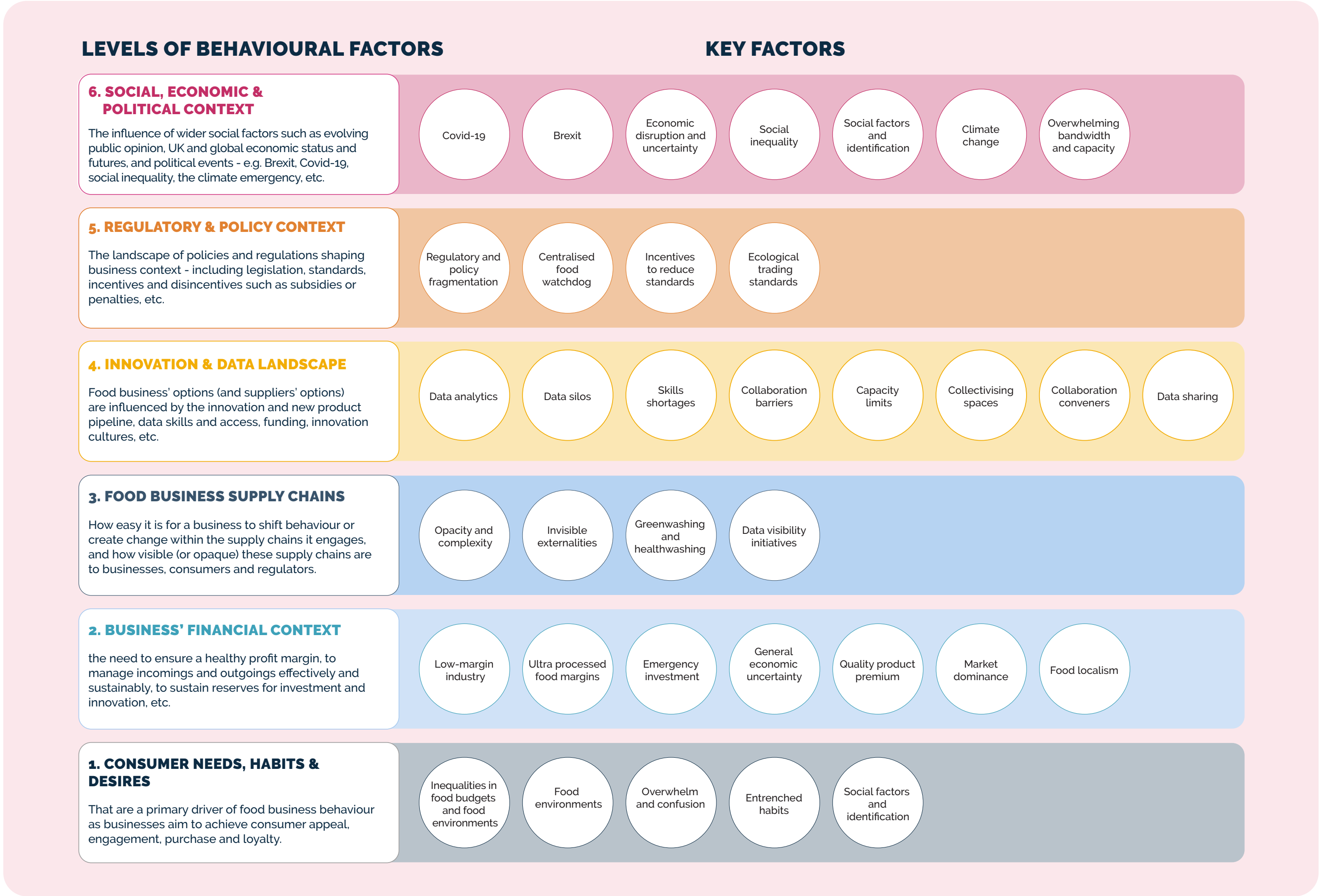
However, we have included our summary factors list as:

- they may be a useful **reference point** to prompt thinking about wider behavioural factors, outside of 'usual suspects' that you would already likely map from your own field of expertise, and because
- In some places, our review highlighted **new or emergent factors** that may be of interest to the reader.

These are summarised in the visual and textual summary overleaf; each 'bubble' represents a key behavioural driver in play within that particular layer of our ecological model. Fuller detail is contained in Appendix B in case of interest. In the next section, we then walk through how to visually map these for a given behaviour of interest.

⁴⁷ Arshad A, Anderson B, Sharif, A. Comparison of organ donation and transplantation rates between opt-out and opt-in systems. *Kidney International* 2019; 95(6): 1453-1460.

⁴⁸ Bea S. Opt-out policy and the organ shortage problem: Critical insights and practical considerations. *Transplantation Reviews* 2021; 35(1): 100589.



Consumer context, habits and desires

As discussed briefly in our introduction, the most prominent consumer behavioural driver to emerge in our review was **inequalities in food budgets⁴⁹ and food environments** - and the deeply divided financial contexts and food lives of higher and lower income consumers. These differences reflect wider social inequalities in terms of ethnicity, gender, age, disability, and generational poverty.

To follow healthy eating advice, people in the bottom 20% would have to spend 74% of their income on food. "They aren't eating unhealthily because they can't cook or follow advice - they are eating unhealthily because they can't afford food."⁵⁰

In Northumbria in the UK's first lockdown, over half of pupils who would have received free school meals at school stated they had eaten no fresh vegetables across a three-day period following the UK's COVID-19 lockdown. Almost half reported having eaten no fruit in the same period. Many reported a large increase in consumption of sugary drinks and snacks.⁵¹

Lower income consumers are far more reliant on convenience and processed foods which tend to have detrimental impact on both human and environmental health, and often experience little agency in purchasing foods which align with their **deeper value and needs**.⁵² There are also deep - and deepening - inequalities present in **food environments**, with lower income consumers far more likely to live within 'food deserts'; in environments saturated with unhealthy food advertisements; and less availability of local produce.⁵³ These inequalities starkly align with rates of child obesity, adult obesity, and food related preventable illness in low-income groups. Notably, poorer young people as a group have increasing awareness of these financial inequalities in their food lives - and are eager for more fairly marketed food products, and more equally accessible healthy choices⁵⁴. And in general, the UK public - including those who are worse off - support measures to tax unhealthy foods.⁵⁵

It is critical that those seeking to shift food business behaviour take account of the different consumer power and food environments of different consumer groups. If healthier or more environmentally sustainable options are only available to consumers with higher purchasing power, this will only magnify

rather than ameliorate existing inequalities - with direct impact on both public agency and public health.

More broadly, it is important to remember that consumer decisions around food often take place within a context that makes rational, healthy and sustainable choices difficult. Many experience **overwhelm** and **confusion** about what is healthy, environmentally friendly, and so on.⁵⁶ **Entrenched habits** play a far more influential role than 'rational choices', and are often difficult to shift - although moments of disruption such as the Covid-19 pandemic have provided a disruptive opportunity for habit shift.⁵⁷ **Social factors and identification** also come into play, again intersecting with social inequalities; lower income consumers are far less likely to see healthy products as 'for them', in part because of how these are marketed.

Business financial context

One of the most challenging behavioural drivers in this space is that the food industry, and particularly food retail, is a fairly **low-margin industry** with high competitions - and relatively low margin 'wiggle room' at the many points along the supply chain. **Profit margins for ultra- processed foods** are typically much higher than for fresh products, as well as more resistant to supply

chain challenges due to increased shelf life, and thus an important source of profit and steady trade for food businesses and supermarkets.⁵⁸ Businesses are also feeling the effects of the need for **emergency investment** under pandemic, **general economic uncertainty** in the UK and globally, and profit hits related to Brexit disruption.⁵⁹ All of this might make reliance on margins from ultra processed food more critical for financial sustainability. However, food businesses are also fully aware that offering healthier and more environmentally sustainable products makes good financial sense for at least part of their **consumer base**; many customers are willing and able to pay a quality product premium - though the financial incentive of ensuring these are accessible by lower income consumers is unclear.⁶⁰ Retailers currently enjoy **market dominance**⁶¹, albeit with high competition particularly within the supermarket retail category - although that has been (gently) challenged by the rise of **food localism** during lockdown.⁶²

"It's critical that food businesses can be assured of a fair playing field in terms of making healthier food available. If this is more expensive for retailers, and doing so has a knock on effect on margins, they can't put their heads above the parapet as the only ones absorbing these costs."
- UKRI Conference Attendee

49 [GSTC & Big Society Capital \(2021\): Healthy Returns: Opportunities for market-based solutions to childhood obesity](#); [FSA & Demos \(2021\): Renew Normal - Food in a Pandemic](#); [Kantar \(2020\): How will lockdown and economic downturn affect our behaviour when it comes to nutrition?](#); [BiteBack 2030: Hungry for Change](#); [FSA & Bright Harbour \(2020\): Lived experience of food insecurity under Covid-19](#); [FSA & Ipsos \(2020\): Covid-19 Consumer Tracker Report Waves 9,10,11](#); [Food Foundation \(2021\): A crisis within a crisis: the impact of Covid-19 on household food security](#); [UK Parliament 2018: Hunger, food insecurity and malnutrition in the UK](#); [Hannah Ritchie, Our World in Data \(2021\): Three billion people cannot afford a healthy diet](#).

50 Michael Marmot, We Are New Local Conference, 2021

51 [Northumbria University Healthy Living Lab \(2020\): Massive decrease in fruit and vegetables intake reported by children receiving free school meals following lockdown](#).

52 [FSA & Kantar \(2013\) FSA Strategy 2015-2020](#); [FSA & Kantar \(2016\): Our Food Future](#).

53 [Power, M., Doherty, B., Pybus, K., & Pickett, K. \(2020\). How Covid-19 has exposed inequalities in the UK food system: the case of UK food and poverty](#); [Food Foundation \(2021\): The Broken Plate report](#).

54 [BiteBack 2030: Hungry for Change](#); [Social Market Foundation and Kellogs \(2018\): What are the barriers to eating healthily in the UK?](#)

55 [The Health Foundation and Ipsos \(2020\): Public perceptions of health and social care in light of Covid-19](#); [Nesta \(2021\): Changing minds about changing behaviors: obesity in focus](#).

56 [British Nutrition Foundation and YouGov \(2021\). Consumer survey on ultra-processed foods](#); [Khaleel, I. Wimmer, B.C., Peterson, G.M., Zaidi, S. T. R., Roehrer, E., Cummings, E. and Lee, K. \(2020\). Health information overload among health consumers: a scoping review. Patient Education and Counseling, vol 103, pages 15-32](#); [Social Market Foundation \(2018\): What are the barriers to eating healthily in the UK?](#)

57 [Vandenbroele, J., Vermeir, I., Geuens, M., Slabbinck, H. and Kerckhove, A. V. \(2019\). Nudging to get our food choices on a sustainable track. Proceedings of the Nutrition Society, vol 79](#); [FSA and Cardiff University \(2020\) Rapid review of moments of change and food related behaviours](#).

58 [Soil Association: Ultra Processed Planet](#); [Insider Monkey \(2014\). 10 High Margin Food Products to Build a Business Around](#).

59 Raised within interviews with a range of business representatives in this research.

60 [Food Standards Agency, Ipsos Mori and Bright Harbour \(2020\): The Covid-19 consumer research: Future Thinking \(2019\) Grocery Eye](#); [Dunne, C. & Siettou, C. \(2020\). UK Consumers' willingness to pay for laying hen welfare. British Food Journal vol 122](#); [Katt, F. & Meixner, O. \(2020\). A systematic review of drivers influencing consumer willingness to pay for organic food](#).

61 [Kantar World Panel \(2021\). Grocery Market Share Tracker](#).

62 [FSA and Demos \(2021\): Renew Normal - Food in a Pandemic](#).

Food business supply chains

Overall, food system **opacity and complexity** poses many challenges for businesses potentially eager in shifting towards more sustainable and healthy models of working.⁶³ For example, there are no standardised and widely agreed ways of tracking or visualising things like the overall environmental impact of a given supply chain or step within it, and understanding the impact of particular business decisions within the wider food system is exceedingly difficult.

Invisible externalities are thus a known and present problem in the system; there is no real way of tracking and holding businesses to account over supply-chain-wide issues like food wastage.⁶⁴ In this context, **greenwashing and healthwashing** are easy ways out for businesses to invest in or talk about better practices in small ways, whilst continuing more destructive practices in the ways that matter most.⁶⁵ This invisibility of negative impacts also flows into consumer behaviour and action; consumers can also only demand what they can see and readily understand.

However, there has recently been the emergence of a wide range of **data visibility initiatives**, spearheaded both by business and Government, that could potentially help reduce opacity. Among others, these include 'digital twin' and other digitally enabled models, such as the Food Standards Agency's 'Food Data Trusts',⁶⁶ or the 'Feed UK' initiative which aim to provide overview of national food system infrastructure

for all stakeholders in the system. Likewise, proposals around simple measures of nutritional quality per calorie (such as 'Nutri-Score' front of pack labelling⁶⁷) could enable more 'like for like' comparisons for business decision making, and increased consumer engagement.

"We know that the shorter the value chain, the better that supply chain tends to work, and the more environmentally friendly it is likely to be. But we rarely see calls for action at this level - for example, what would it do to food business behaviour if we were to review and make visible the actual supply chains used?" - UKRI Conference Attendee

Innovation and data landscape

Data analytics offers promise for those seeking to cut through the above-discussed complexity inherent in the food system, though current **data silos** make this difficult; everyone owns a different piece of the data puzzle, and there are often no agreed practices that enable cross sharing.⁶⁸ However, **skills shortages** can be a problem; food science and food systems don't always attract top talent as compared to more lucrative industries.⁶⁹ Many of our interviewees also noted that there can be **collaboration barriers** to cross-industry innovation: many faced **capacity limits** whilst juggling twinned challenges from Brexit and COVID-19, for example.⁷⁰

However, some interviewees noted that innovation and collaboration barriers were temporarily suspended under Covid-19, via **collectivising spaces** hosted by **collaboration conveners** within Government to enable cross-industry collaborations to meet the pandemic's challenges.⁷¹ These also enabled innovation supportive **data sharing** - for example, to enable NHS sharing of patient data to ensure grocery provision for vulnerable consumers. Interviewees were eager for Government to play a continued convening role to provide permission, space and encouragement for collaboration of willing food businesses across the food system landscape.

"Covid is closing down spaces for conversation between industry, NGOs, academia, technologists, Government. But these are dynamic systems. There is a need for collectivising spaces."
- UKRI conference attendees

"We have masses of data sitting in silos, but we have the potential to have much more well informed insights, more evidenced decisions, and longer term decisions and strategies that support sustainability and human health. But there is a lack of digital skills in the sector to support that change."
- UK Supermarket Representative

Regulatory and policy context

We do not aim to detail the range of complex and interlocking regulations that influence food business behaviour here; where to focus will depend entirely on your problem area and behaviours of interest.

However, most interviewees and much of our desk review pointed out the general challenge of **regulatory and policy fragmentation** within the UK food system. 16 separate bodies in the UK hold responsibility for elements of food regulation - making system-wide change difficult.⁷² Some of our business representative interviewees were themselves eager for more coherence, noting that even where willing, businesses have little financial incentive to push hard on sustainability or human health initiatives in absence of clear regulatory demand and a fair playing field. This may yet change eventually, given ongoing calls for a **centralised food watchdog** from NGOs like Action on Salt and Action on Sugar (among others), campaigning with renewed urgency in light of the connection between obesity and Covid-19.⁷³

The impact of Brexit on food business behaviour is still very much an issue in play, but several interviewees noted concern that **global competition** increasingly acts as a commercial incentive to reduce standards in order to compete with other exporting countries around the world as we re-draw our trade agreements and processes. However, more positively, several interviewees also noted that as social norms and public expectations change around food business' responsibilities to support human and

⁶³ Raised within interviews with a range of business, academic and food innovation representatives in this research.

⁶⁴ [Nature \(2019\): Counting the hidden \\$12-trillion cost of a broken food system](#); [Sustainable Food Trust \(2017\): The hidden cost of UK food](#).

⁶⁵ [Morrison, O. for Food Navigator \(2021\). Greenwashing: competition watchdog puts UK businesses on notice](#).

⁶⁶ [FSA \(2021\). Food Data Trust: a framework for information sharing](#); [UK Authority \(2020\): European Space Agency plans food system twin](#); [Institute of Food Science and Technology \(2020\): FeedUK - building resilience by digitising the food system](#).

⁶⁷ <https://nutriscore.colruytgroup.com/colruytgroup/en/about-nutri-score/>

⁶⁸ [Nature Food Editorial \(2020\). From silos to systems](#).

⁶⁹ Raised within interviews with a range of business and food innovation representatives in this research.

⁷⁰ Raised within interviews with a wide range of participants in this research.

⁷¹ [Gov UK Press Release \(March 2020\). Supermarkets to join forces to feed the nation: competition laws relaxed to allow supermarkets to work together on coronavirus response](#); [Prosser, L., Lane, E. T., Jones, R. \(2020\). Collaboration for innovative routes to market: Covid-19 and the food system. Agricultural Systems, vol. 188](#).

⁷² [Parsons, K., Sharpe, R. and Hawkes, C. \(2020\). Who makes food policy in England? A map of Government actors and activities](#).

⁷³ [Food Navigator \(2020\): Demands for government intervention on obesity to help cut 'increased but preventable' Covid-19 death risk](#).

planetary health, this will also begin to be reflected in global regulation and trade agreements - for example, with **ecological trading** standards beginning to be part of discussions in the same way as modern slavery requirements or other 'basic' trading agreements.

"Broadly, there is a desire across the food system to move to more sustainable practices. But there is a need for a more cohesive national food strategy which sets out a vision, sets out shared targets, sets out a plan for how to invest in sustainability, etc. The food system is just as important as the energy industry, or finance, etc. But there's no national structure for oversight at a systems level: import substitution policies, land use policies, etc. And we certainly have need, and examples of industries in other areas of public industries that do have this firmer regulation and requirements around transparency."

- Henry Dimbleby, National Food Strategy

Social, economic and political context

Finally, wider social, economic and political trends - including shifts in public opinion - of course have an enormous impact on food business behaviour.

We outlined many of the key factors shaping the landscape, albeit in ways that remain unstable and evolving, in Section 1.2. At a high level, all of our interviewees and desk research highlighted the same key factors: **Covid-19; Brexit; Economic disruption** and **uncertainty**; rising **social inequality**; and **climate change**.

How these factors play out in your particular area of interest of course varies - for example - all of these factors involve pressures that both encourage and discourage positive change and action. But one discouraging factor which appeared again and again in our interviewees with food system experts was the ways in which stacking crises have a way of overwhelming bandwidth and capacity.

"The same people in a business that would be involved in sustainability and human health strategies are often the same people that would be working on Brexit transition, are the same people who have been in crisis mode under pandemic. There are limits to human and staff capacity, and we have been there for a long time in the sector."

- UK Supermarket Representatives

However, in addition to the shifts discussed previously, interviewees also highlighted that the challenges of 2020 and beyond had also had many positives. The urgency of action in the food system under pandemic **proved the ability** to work at speed when supported to do so, and there was a widespread sense of increased system-wide **belief in need for change**, from our interviewees and the UK public alike.⁷⁴ As of April 2020, even in the midst of profound shock and crisis, only 9% of the UK public wanted a total return to 'normal' after lockdown - with changes to food habits and systems a key driver of desire for change.⁷⁵ Increasingly, younger generations' interest in change is unequivocal, even as decision-makers in older generations lag behind.⁷⁶

3.4 Map the key factors shaping your behaviour of interest at each level of your socio-ecological model.

Of course, when you are making your own behavior change plans there is no need to include such a wide set of factors; you should map the factors at each level of the socio-ecological model those that most clearly shape your own area of practice. In doing so, sorting factors into 'enabling' and 'discouraging' factors is a helpful next step, as it helps you see what the biggest drivers and barriers might be at each level in the system.

You may find as you go through this process that some high level factors, once you are sorting and mapping them into 'enabling' and 'discouraging' factors, actually function in multiple ways. Feel free to tweak or 'split' factors as needed, focusing on ensuring that the visual you create is practicable and meaningful for your problem area of interest. Likewise, if you find that your map has far too many factors to make it meaningful and useful, that may be a sign that you need to further focus the behaviour or interest area that you are targeting. As an example, in the below graphic we've mapped some of the factors that change-makers might have mapped in their socio-ecological model in the hypothetical example of: considering how to support businesses to reduce marketing of highly processed foods, particularly to low-income consumers. The graphic provides a visual overview of some of the behavioural drivers that change-makers might need to consider when shaping food business behaviour in this area.

74 [Rand Europe \(2020\): Food consumption in the UK - trends, attitudes and drivers; House of Lords Select Committee on Food, Poverty, Health and the Environment \(2020\): Hungry for change - fixing the failures in food.](#)

75 [RSA Press Release \(April 2020\). Brits see cleaner air, stronger social bonds and changing food habits amid lockdown.](#)

76 [Food Ethics Council: Generations split on fairness in the food system.](#)

LEVELS OF BEHAVIOURAL FACTORS

KEY FACTORS

6. SOCIAL, ECONOMIC & POLITICAL CONTEXT

The influence of wider social factors such as evolving public opinion, UK and global economic status and futures, and political events - e.g. Brexit, Covid-19, social inequality, the climate emergency, etc.

Covid-19

Brexit

Economic disruption and uncertainty

Social inequality

Social factors and identification

Climate change

Overwhelming bandwidth and capacity

5. REGULATORY & POLICY CONTEXT

The landscape of policies and regulations shaping business context - including legislation, standards, incentives and disincentives such as subsidies or penalties, etc.

Regulatory and policy fragmentation

Centralised food watchdog

Incentives to reduce standards

Ecological trading standards

4. INNOVATION & DATA LANDSCAPE

Food business' options (and suppliers' options) are influenced by the innovation and new product pipeline, data skills and access, funding, innovation cultures, etc.

Data analytics

Data silos

Skills shortages

Collaboration barriers

Capacity limits

Collectivising spaces

Collaboration conveners

Data sharing

3. FOOD BUSINESS SUPPLY CHAINS

How easy it is for a business to shift behaviour or create change within the supply chains it engages, and how visible (or opaque) these supply chains are to businesses, consumers and regulators.

Opacity and complexity

Invisible externalities

Greenwashing and healthwashing

Data visibility initiatives

2. BUSINESS' FINANCIAL CONTEXT

the need to ensure a healthy profit margin, to manage incomings and outgoings effectively and sustainably, to sustain reserves for investment and innovation, etc.

Low-margin industry

Ultra processed food margins

Emergency investment

General economic uncertainty

Quality product premium

Market dominance

Food localism

1. CONSUMER NEEDS, HABITS & DESIRES

That are a primary driver of food business behaviour as businesses aim to achieve consumer appeal, engagement, purchase and loyalty.

Inequalities in food budgets and food environments

Food environments

Overwhelm and confusion

Entrenched habits

Social factors and identification



04

ASSESSING THE NATURE OF THE PROBLEM USING THE COM-B MODEL

ASSESSING THE NATURE OF THE PROBLEM USING THE COM-B MODEL

Once you have mapped out the key factors, at each level, that are shaping your problem space or behaviour or interest, you can then use the COM-B model to explore the nature of the problem.

Doing this can help you assess how daunting the challenges to shifting this behaviour might be, at each level. You may not have the same number of overall factors in each levels, and some levels might have far more

Below, we briefly introduce the COM-B model and how to decide whether a particular behavioural factor is an issue of capability, opportunity or motivation and two ways to map your factors using the COM-B model.

4.1 Introducing the COM-B model.

As noted previously, the COM-B model is an embedded part of the Behaviour Change Wheel. The COM-B model proposes that for a behaviour to occur, a person needs to have the capability, opportunity and motivation - each of which come in two forms:

- 1. **Capability** involves the physical skills, strength or stamina to do a behaviour and the psychological ability, including the knowledge or other psychological skills.
- 2. **Opportunity** is about what the physical environment facilitates in terms of time, resources, location, and what the social environment enables through social influence and cultural norms.
- 3. **Motivation** includes any influences that energise and direct behaviour - in other words, reflective processes such as

planning and beliefs about what is good or bad, and automatic processes such as needs, desires, habits and emotions.

Originally the Behaviour Change Wheel and the COM-B model was developed for changing individual human behaviour, but we can also use it more figuratively as a checklist for analysing business behaviours to help structure our thinking and organise our findings.

For example:

- **Capability:** a business might be interested in reducing the environmental impact of its home delivery scheme - but engaging might be challenging on a basic staff capacity level under pandemic response, or be unable to invest further in home delivery infrastructure so soon after the major expense incursion under pandemic.
- **Opportunity:** a food business might be theoretically interested in exploring how complex its suppliers' supply chains are in relation to its competitors - as a proxy measure of overall environmental impact - but be unable to do so because there are no internal or shared data systems that would actually enable this to happen.
- **Motivation:** a business may not be interested in investing the time and effort it would take to change something because they don't think it will have customer appeal; because it might threaten their bottom line or profit forecasts; because they don't think other businesses will follow suit and it would result in an unlevel playing field, etc.

COM-B Dimension	Potential business behaviour equivalents
Physical Capability The internal, human side of a business from a practical, tangible perspective (human infrastructure)	Enough employees in specific roles/functions Staff and leadership understanding of the options available to take
Psychological Capability The internal, human side of a business from an intangible perspective - more complex to address (human infrastructure)	Skilled workforce (e.g. skills shortages in innovation) Lack of bandwidth on the business level because of other stressors (e.g. recession, Brexit) Information moving slowly in a large organization
Physical Opportunity The internal and external tangible constraints and facilitators for the human behaviour inside organisations	Brexit disruptions on customs and logistics Recession (lack of financial resources to invest) Built infrastructure like IT-systems, logistics etc.
Social Opportunity The external, intangible constraints and facilitators for the human behaviour inside organisations	Pressure of the times changing and needing to be seen to do something about X Fears of bad PR Consumer demand putting pressure on businesses
Reflective Motivation The human side of a business that drives or hinders decision making	Beliefs about whether taking action will positively affect consumer engagement, demand and loyalty Optimism about consumer behaviour in economic downturn
Automatic Motivation The human side of a business that drives or hinders decision making	Reinforcement – this could be reinforcement (or punishment/sanction) history when they've done something in the past

4.2 Mapping your factors in the ecological model using the COM-B framework

Once you have mapped out your key behaviour change factors against the ecological model, as a next step for understanding how these factors come into play, it may be useful to apply the COM-B categories to your visual summary. This enables deeper thinking about the ways in which each factor contributes to behaviours of interest, the importance of various factors that you have mapped, and how challenging (or supportive) each may be as you attempt to intervene to shift behaviour.

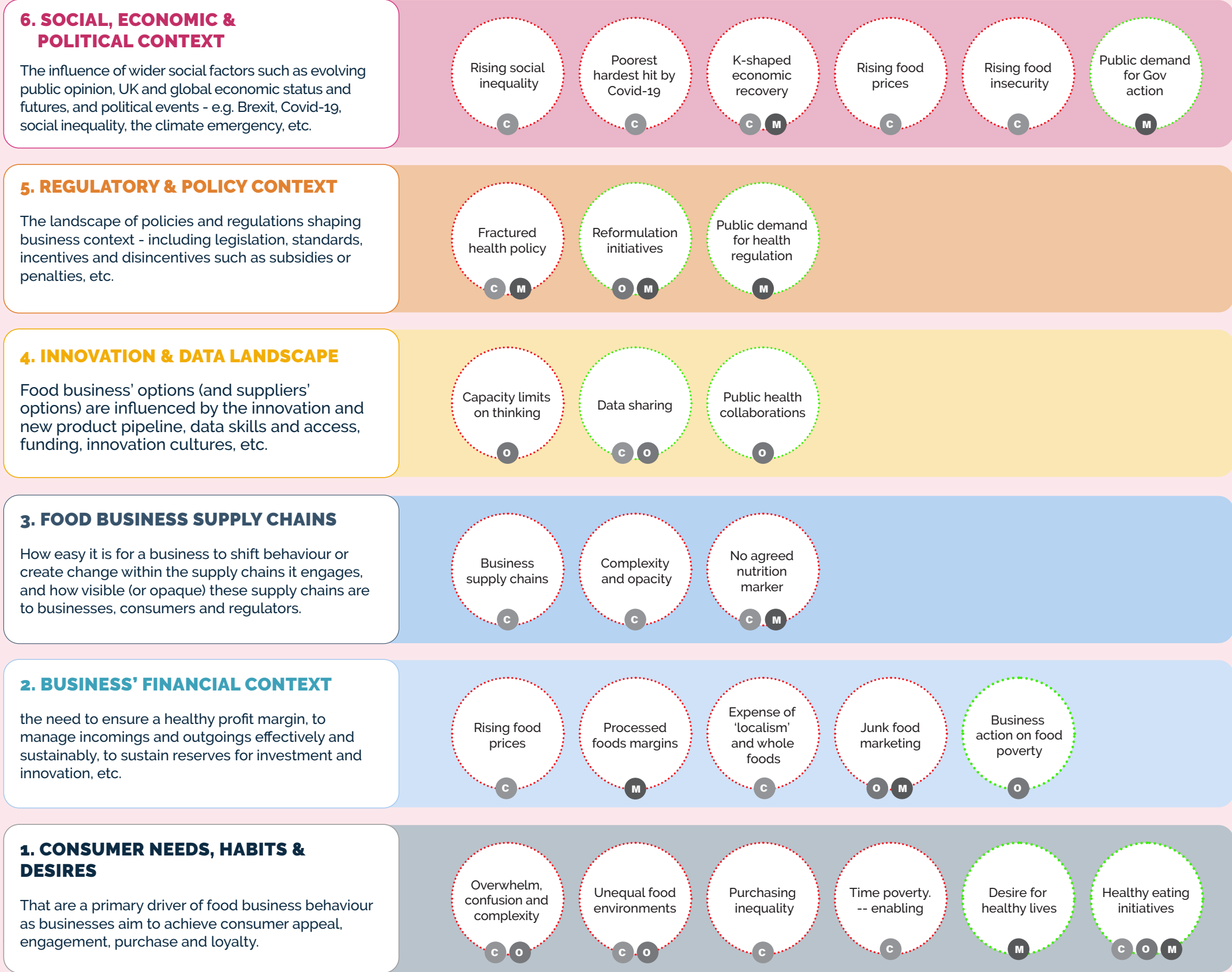
Below, we've provided an illustrative mapped visual for our 'reducing the sale of highly processed foods' example used previously in Section 3.4. Templates are available for use in Appendix B.

You'll note that sometimes, a particular factor can influence behaviour in multiple ways - for example, impacting both the capacity, opportunity AND motivation to engage.

That is ok; sometimes, identifying that a single factor is acting in this multiplicity of ways is a really great way to indicate how powerful it is in shaping behaviour. It means that that factor is one you need to be particularly mindful of in your behaviour change planning - for example, one that you might particularly want to make sure your intervention helps target. Or, if it is not the direct target of action for you, you'll need to think about how your intervention is likely to be influenced by it.

LEVELS OF BEHAVIOURAL FACTORS

KEY FACTORS



..... Discouraging factors Encouraging factors

4.3 Visualising COM-B mapping from the target audience’s perspective.

If you're struggling to find clarity at this point about the nature of the problem, it can sometimes be helpful to reformat your mapped behavioural factors in a way that helps you see the problem from the point of view of your target audience. For example, simply re-formatting some of the factors you have mapped against the COM-B model can be particularly useful.

Ultimately, if a food business is to change its behaviour, whether they feel able to (capable), have a space and chance to do so (opportunity), or even want to in the first place (motivation), will shape how easy, hard, or even feasible the change feels. And seeing how the factors you mapped out will look and feel from that business' perspective is illuminating.

For example, you might put your organisation at the centre of the frame, then summarise the range of enabling or discouraging factors at play - across capability, opportunity and motivation. Factors which play an enabling role go in green, factors which play a discouraging role go in red.

If this feels potentially helpful in your own behavioural mapping process, you can again find editable templates in Appendix C.



Capability	Opportunity	Motivation
Rising social inequality	Capacity limits on thinking	K-shaped economic recovery
Poorest hardest hit by Covid-19	Data sharing	Public demand for Gov action
K-shaped economic recovery	Public health collaborations	Fractured health policy
Rising food prices	Junk food marketing	Reformulation initiatives
Rising food insecurity	Business action on food poverty	Public demand for health regulation
Fractured health policy	Overwhelm, confusion and complexity	No agreed nutrition marker
Data sharing	Unequal food environments	Processed foods margins
Business supply chains	Healthy eating initiatives	Junk food marketing
Complexity and opacity		Desire for healthy lives
No agreed nutrition marker		Healthy eating initiatives
Rising food prices		
Expense of 'localism' and whole foods		
Overwhelm, confusion and complexity		
Unequal food environments		
Purchasing inequality		
Time poverty - enabling		
Healthy eating initiatives		



05

ASK QUESTIONS TO IDENTIFY BEHAVIOURS FOR INTERVENTION

ASK QUESTIONS TO IDENTIFY BEHAVIOURS FOR INTERVENTION

Ask questions that will help you identify which behaviours you should target for intervention, avoiding common errors

Reflection is an essential part of a systematic approach to behaviour change.

In this section, we briefly explore how to use your mapped behaviour change factors to understand the level and nature of the problem you're dealing with, and begin to ask questions that help you define the best target behaviour to tackle.

Below we first outline how you can use your overview maps to understand what kind of problem you're dealing with, before outlining some most fruitful questions to explore and challenge yourself with before moving into designing interventions.

5.1 Assessing the level of the problem

Once you have mapped out the key factors influencing your behaviour of interest, and also coded each factor against the COM-B model (Capability, Opportunity and Motivation), it becomes much easier to 'see' the level and nature of the problem you are dealing with.

First, notice what **level** the problem is operating at - challenging yourself to ensure that you are considering factors across the range of levels of influence. Consider what this means for your own plans for behaviour change, and what kinds of behaviours may be more feasible to support changing, from your position in the landscape.

For example, from the evidence you have gathered so far, does it seem like there are huge financial challenges around making change? For example, would tackling the problem at hand centrally challenge a food retailer's mandate to sustain profitability - within what is notoriously a low-margin industry? Would it require up-front investment that may not be feasible within the current uncertainty of the economic environment, thus potentially requiring financial incentives or subsidy?

Or potentially, mapping in this way helps you notice some of the ways in which the innovation and data landscape may make change more difficult. Maybe, for example, the behaviour you'd like to shift would be easier to change if the overall supply chain sustainability for a product or product line were more visible, but the current data fragmentation and information silos make this difficult. What would this mean for your behaviour of interest?

And so on. Use your understanding and visualisation about the levels at which your problem is operating to think about what kinds of behaviours might be most effective and most feasible to target. Below, in section 5.2, we have provided some example questions that you might want to ask at this stage below to guide more effective and strategic thinking.

In our illustrative mapped example above, one of the most striking conclusions is how multi-layered the challenges are: there seem to be quite a range of influential barriers at both the consumer (level 1) and business level (level 2), both of which are influenced heavily by the wider social, economic and political context (level 6). This should tell us that we cannot simply build solutions that operate at the level of supply chain, data or regulatory/policy

innovation and expect them to work. We'll need to ensure that our interventions help mitigate or at least account for challenges facing consumers and businesses - or risk them being rejected out of hand.

Examples of how the wider context might influence intervention success

The environment needs to have the right facilities or preconditions to support the desired behaviour - otherwise interventions might fail. For example, the enthusiasm for cycling to work is overshadowed in many cities by fears for road safety and bike theft which addressing the lack of infrastructure is the primary challenge and educational campaigns will fall short of their goal. There can also be environmental factors that counteract the intervention's impact even if it might otherwise be effective - for example, if companies counteract an industry regulator's efforts.

On the other hand, intervention success can be hampered more subtly if people compensate for the desirable target behaviour with something undesirable. For example, an intervention that directs people's attention towards healthier food options can lead to compensating by choosing other items that are unhealthy, resulting in the same overall calories. To counter this, policy tools like taxes might be needed to remove the compensatory elements.

Finally, behavioural interventions often aim to achieve outcomes for as many people as possible, which is understandable but can be predictably problematic. A focus on reach and numbers can often come at the expense of considering who needs the intervention most to support their desires, and needs - and the varying backgrounds, values and preferences of different populations within the whole.

For example, we might need to consider if a food business would be able to act on or respond to our proposed intervention at an 'all consumers level', in ways that might have a detrimental impact on consumers with fewer choices or more pressures (e.g. lower income).

5.2 Assessing the nature of the problem

Notice also at this point what you've learned about the nature of the problem - using your COM-B mapped factors to think beyond the level of individual choices to help you avoid the common pitfall of focusing on the wrong thing. Is this a problem of Capability, Opportunity, or Motivation? Potentially, likely, a mix of all three?

In our mapped illustrative example above, you'll note that often, some of the key factors affect multiple domains (capability, opportunity and/or motivation). As above, this tells us that highly processed food purchasing is a space where behavioural drivers are complex and intertwined. Whilst this makes the challenge quite difficult in some ways, it is also exciting in others: initiatives that help tackle some of these key drivers will help 'smooth the path' in multiple directions at once. And it gives us an early warning system for initiative ideas that are more likely to fail.

Often, looking at a mapped problem in this way both shows us the initiatives that are more/less likely to succeed. For example, perhaps you wish to encourage businesses to focus on selling less processed products with shorter supply chains, and maybe you even have a financial proposal for why this will be economically feasible or desirable for the business. However, you might have mapped out capability issues around the current visibility

of supply chain complexity because of data silos and analytic gaps; or business motivation may be limited because of a lack of evidence about how consumers would view such a move; there may be a lack of regulatory or policy opportunity to be rewarded for taking such bold action, because we don't have a shared language to communicate supply chain complexity. And so on.

Whilst this can be initially discouraging, this kind of mapping approach also helps us explore in a systematic way the issues we must tackle in our solutions and innovations - and how we must invest in beyond the innovation itself. For example, drawing on the same mapped example above, rather than think that we can simply provide a financial proposal for change to help persuade businesses, or develop some new technology that might tackle highly processed foods, it is clear that to achieve real change we'll need to do more than just hand these innovations to business and expect real results.

We might need to partner with others who can help shift capability barriers and ensure that those businesses who do want to make a change actually have access to the technical skills that they need to understand the impact of the proposals within their own business. We might write into our project plan time to gather consumer voice data, or commission research that provides a more robust picture of the consumer view, to further persuade business and partners. There may be a need for collaboration with regulatory partners who can help pilot new approaches with businesses, providing a more permissive and enabling environment for businesses to make change without fear of falling afoul of regulatory constraints. Each mapped barrier becomes a prompt for a more cohesive and effective programme of intervention.

Beware confusing infrastructure and psychological problems

Our example of the problem space of complex food supply chains raises an important red flag: the risk of confusing complex problems that require (in part) infrastructure solutions (capability) with problems that can be involved at the level of psychology (motivation).

In consumer behaviour change, this often takes the form of providing education: for example, we might want to promote more sustainable supply chains by raising the visibility of the issue, creating a campaign, and generating demand for change.

This is a very tempting approach to food business behaviour change issues too: surely if we get consumers more interested in simpler, less processed foods created via simpler, more environmentally ethical supply chains, businesses will be motivated to respond? Or if we can just impress upon businesses the urgency of the situation, those in charge will be motivated to take action?

But a quick look at any map of the issue would probably show that without the infrastructure to enable this - the data sharing, the agreed language for talking about communicating, the regulatory standards, etc - psychological motivation will not be sufficient. Just tackling one of these elements is likely to mean your plan is tokenistic or lacking, unlikely to succeed in real world context, and probably burning up good will from food businesses unless they are also supported to take action.

5.3 Dealing with complexity and finding your space for change

It is, unfortunately, rare that problems are operating at only one 'level', or present only one 'nature' of challenge in terms of capability, opportunity or motivation. That is a frustrating truth reflecting the complexity of behaviour, and proof of why taking a more structured approach to exploring behavioural factors is so critical.

So if it feels that way with your problem of interest, don't get up; you're not doing it wrong. However, more often than not, you'll see that a few enablers or discouraging factors in your map come out particularly strongly. You'll find more discouraging factors centred around motivation, for example - in which case, creating the perfect technological solution is very unlikely to make food businesses pick it up and use it. Or, alternatively, you'll see that there's a huge amount of motivation in place, coming from all levels of your map, but capability is a big limiting factor.

If you are struggling to find clarity at this point, it can be helpful to focus in on your particular space for change, and what could feasibly be achieved from your position in the landscape - alone or in partnership.

For example - if you are attacking a problem that when you map it out, seems really unlikely to be shifted without action at the regulatory or policy level, and you do not have the gift of shifting the context in this space, you have two options: 1) explore collaborations with partners who do, or 2) refocus on another piece of the puzzle within your behaviour of interest that is more tractable and within your gift of change.

Regardless of whether or how you choose to focus down at this point, it's still important to keep the big picture of wider factors shaping the landscape in mind. They'll likely need to inform your business planning, your logic model of why your proposed intervention will be needed and how it might work, and/ or your partnership planning.

06

USE THE BEHAVIOUR CHANGE WHEEL TO SHAPE YOUR INTERVENTION

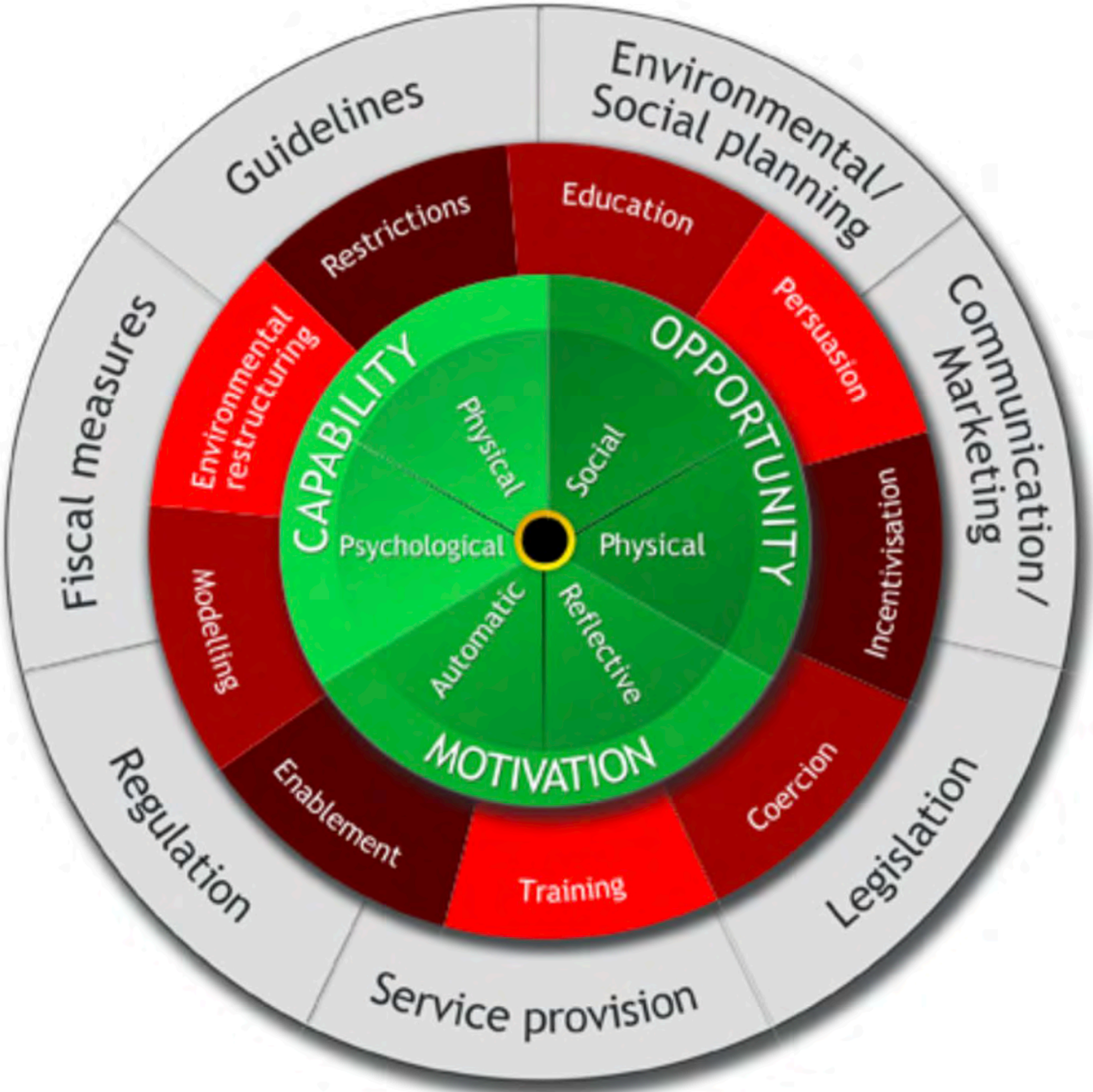


USE THE BEHAVIOUR CHANGE WHEEL TO SHAPE YOUR INTERVENTION

In this section, we return to the Behaviour Change Wheel to explain how it can help us decide on the type of intervention that will be most successful for the problem that we have mapped out up to this point.⁷⁷ We have already defined the behaviour and understood the problem in behavioural terms - including applying the COM-B model (Capability, Opportunity, Motivation) from the middle of the wheel.

Now, we:

- Identify the potentially successful interventions for the problem area of interest by using the second layer of the wheel which guidance on which intervention functions are likely to be best suited to address different types of barriers.
- Match potential intervention functions to suitable policy categories and delivery modes.



⁷⁷ Note that there are of course other behavioural frameworks available that may be useful. In particular, once you have identified a specific behaviour of interest that you would like to focus on, the Fogg Behavioural Model is often useful in terms of providing a structure for thinking about how to trigger the action of interest - for example, once developing a specific intervention in more depth. <https://behaviormodel.org/> The Policy Lab's table of potential interventions is also a particularly helpful resource, focusing primarily on Government bodies, but applicable to audiences beyond Government departments. <https://openpolicy.blog.gov.uk/2017/09/22/designing-policy/>

	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental Restructuring	Modelling	Enablement
Physical Capability	X					X	X		
Psychological Capability	X				X				X
Physical Opportunity					X	X	X		
Social Opportunity						X	X	X	X
Automatic Motivation		X	X	X	X		X	X	X
Reflective Motivation	X	X	X	X					

6.1 Identifying intervention functions and assessing their feasibility

Once you have identified the target behaviour and the factors influencing it, the Behaviour Change Wheel offers guidance on which types of interventions are best suited to address specific barriers (table x below). Typically, a solution can and will address multiple barriers and, conversely, a barrier often needs to be addressed with more than one intervention type (a glossary of intervention types can be found in Appendix D).

For example, education can increase someone's knowledge which can also increase how they feel about the behaviour or their beliefs about their own competence. Similarly, environmental restructuring can improve physical opportunity of doing a behaviour which makes it easier for new habits to form.

Once you have identified most suitable intervention types, you should assess and prioritise them with **APEASE** criteria:

- **Acceptability:** how acceptable is the intervention to key stakeholders? (incl. the target group, potential funders, practitioners delivering the interventions

and relevant community and commercial groups)

- **Practicality:** can the intervention be implemented at scale within the context, material and human resources available?
- **Effectiveness and cost-effectiveness:** how effective is the intervention likely to be in terms of achieving policy objectives and how well will it reach the target audience?
- **Affordability:** can the required budget be found and will it provide a good return on investment?
- **Side-effects/safety:** what is the likelihood that the intervention might lead to unintended adverse or beneficial outcomes?

- **Equity:** to what extent might the intervention increase or decrease differences between advantaged and disadvantaged sectors of society?

Assessing APEASE criteria is partly subjective even if there is a lot of evidence to support effectiveness - for example, it might not be suitable for the particular context you are focused on or it might be difficult to assess the impact on equity.

	Education	Persuasion	Incentivisation	Coercion	Training	Restriction	Environmental Restructuring	Modelling	Enablement
Communication/ marketing	X	X	X	X				X	
Guidelines	X	X	X	X	X	X	X		X
Fiscal measures			X	X	X		X		X
Regulation	X	X	X	X	X	X	X	X	X
Legislation	X	X	X	X	X	X	X	X	X
Environmental/ social planning							X		X

6.2 Matching intervention functions to policy categories

The Behaviour Change Wheel also includes suggestions about which policy categories are most likely to be appropriate and effective for each intervention type (as in the table above). As before, intervention types can be delivered in different ways and a multifaceted approach is often most likely to succeed.

Finally, you can also use the APEASE criteria to evaluate the selected policy categories. (A glossary of policy types can be found in Appendix D).

6.3 Quick checklist when thinking about behaviour change

The Behaviour Change Wheel and COM-B offer a logical, coherent framework for behaviour change and intervention development but we recognise that they are quite complex. To help with that, we can use a simpler mnemonic when designing interventions: NEAR-AFAR.

In short, if we want to get people to do things, we need to make the behaviour Normal, Easy, Attractive and/or Routine and, conversely, to stop people doing things, we should make Abnormal, Fraught, Aversive and Reflective:

NEAR promotes behaviour:

- **Normal:** We are more likely to do things that we see being done by people with whom we identify
- **Easy:** We are more likely to do things if they are simple, within our capabilities and require little by way of resources, time or effort
- **Attractive:** We are more likely to do things if we think they will be enjoyable, serve a purpose or avoid something bad happening
- **Routine:** We are more likely to do things if they are part of our routine so we don't have to think about them

AFAR prevents behaviour:

Abnormal: We are less likely to do things if they are not seen as part of normal behaviour or no-one with whom we identify is doing them

Fraught: We are less likely to do things if we don't have the capability or confidence or if barriers are put in the way

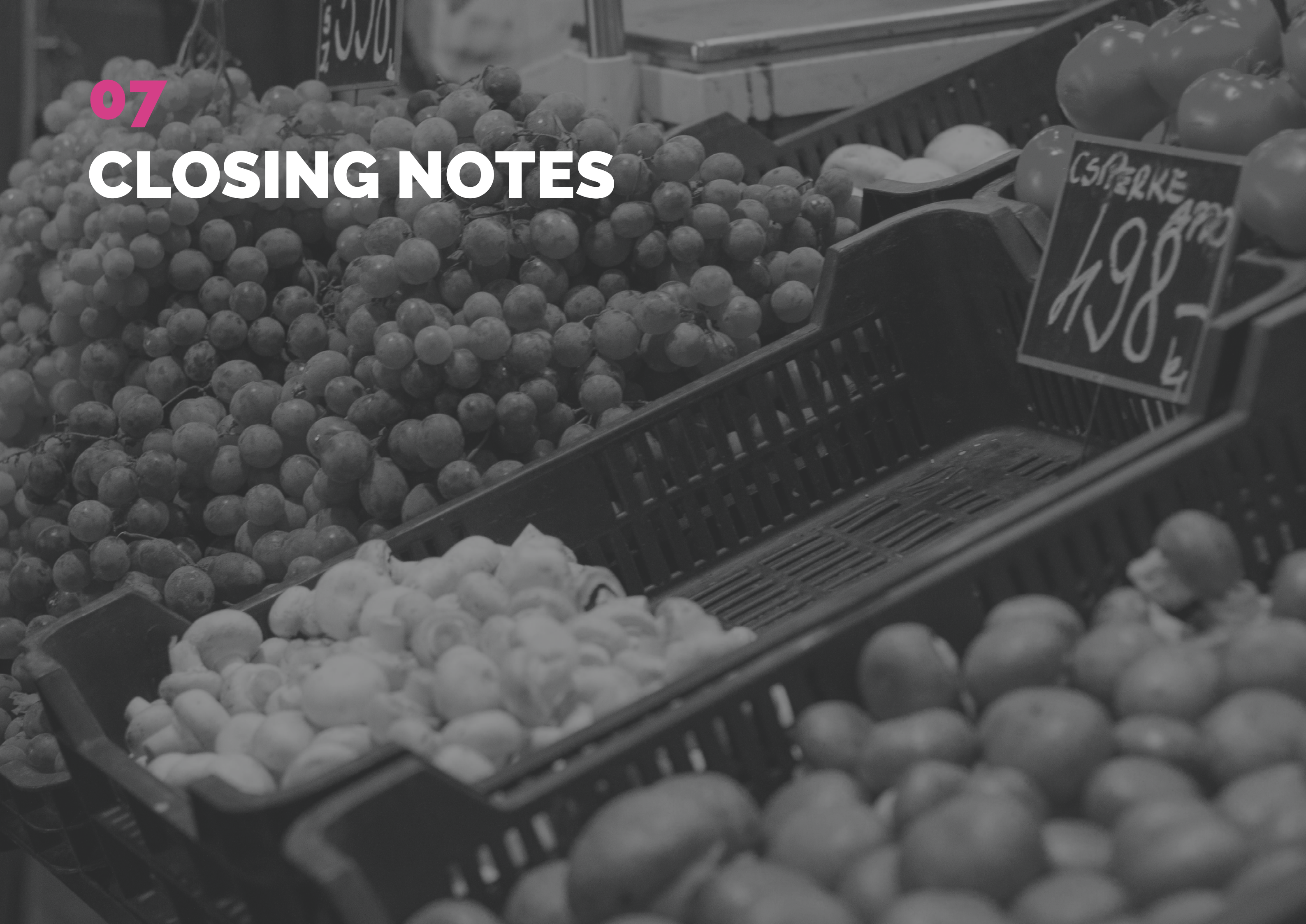
Aversive: We are less likely to do things that we expect to be unpleasant, or lead to outcomes that we don't like

Reflective: We are less likely to follow habitual behaviour patterns if we can be led to stop and think to disrupt the routine or automatic flow of behaviour

Using this acronym can work well as a sense check when designing interventions.

07

CLOSING NOTES



CLOSING NOTES

The importance of tackling behavioural change in collaboration

The kind of holistic, strategic thinking and decision making around behaviour change that we promote in this report is typically done best in collaboration.

We all operate with bias, horizon limits and blind spots, and there is no better way to challenge our thinking, perspectives and framings than working intentionally with others who bring a different point of view. And as is hopefully clear from the examples we've worked out in the sections previous, it is rare that meaningful change is achieved from one simple intervention at one layer of a problem, or to tackle one type of problem or barrier; barriers and opportunities alike often operate at multiple levels at once.

Collaborations make it easier to rapidly identify and map a wider range of behavioural drivers, and enable us to think more holistically about potential challenges, opportunities and solutions. Interventions that feel 'obvious' may be shown, in conversations with others, to be more intractable, complex or even counter productive than expected. Conversely, interventions that may not be within our own gift become more feasible when tackled in partnership.

Within food behaviour change, the reality is that the issues, practices and partnerships in question are also often matters of political, financial, or social risk - particularly if the intervention is to be brave enough to be meaningful.

"The reality is that questions about enabling healthier choices, shaping the food environment, tackling food

inequality and so on - these are all political questions, which can be a barrier. For example, academics ... can't always be only voices in these conversations, the risk takers. It needs groups of people acting collectively to help de-risk action."
- Sue Pritchard, Food, Farming and Countryside Commission

In particular, partnerships between different actors in the food system - retail and industry; Government and regulatory bodies; NGOs, charities or public advocacy groups; academia; technical and scientific experts - may be particularly fruitful in shaping or challenging behaviour change plans. Each can provide context and challenge that can help partners understand constraints and opportunities that might otherwise be missed. Each can find ways to talk about interventions in ways that are more likely to be accepted or supported in their sphere of influence.

Many of our interviewees acknowledged that the most pressing issues facing the industry could be solved only in open collaboration. Representatives of industry, academic, food technology and advocacy alike were all eager for more cross-aisle communication and co-working. Several interviewees said that everyone in the system is eager to 'do the right thing' and ensure we are all doing our part to create a future that is more sustainable and nourishing for people and the planet alike.

However, 2021 finds us facing new barriers to collaboration that change-makers need to overcome if they want to have the impact they aim for. We noted that many of our interviewees found that remote working, capacity limits, and disrupted industry events had reduced the number and quality of conversations they were having with colleagues outside of their immediate work context. Brexit disruption continues, with deep impacts on international

supply chains and delivery. Covid disruption continues, and those trying to navigate it are doing so after almost two years of stress at best, potentially serious life disruption or ill health at worse. Change is driven by people, and people are sometimes at their limit - psychologically, emotionally, logistically, and in terms of calendar space.

"There are limits in terms of time capacity and cognitive bandwidth. Often, the people in a business who would be engaging with partners around issues like health or environment initiatives are the same people who have been tasked to help us think strategically about adaptations under Brexit - and who have then been working flat out on Covid response work. These are small worlds full of people who are working at capacity."
- UK Supermarket Representative

"It's tempting to reduce all this to simple questions like 'How can we make food cheaper' - but we know that realistically the challenges we are facing are more like, 'How can we ensure people can eat healthy food, within the challenges and barriers that we have. Those are more complex questions - and they need a wider range of kinds of people tackling them.'" - Hannah Lambie Mumford, University of Sheffield

When times are hard, we get more done together: pooling capacity, knowledge, contacts and willpower: collaboration gives us a competitive edge. This is a time for exactly this spirit of collaboration when tackling food systems issues. We encourage readers interested in taking a more strategic approach to behaviour change around food systems issues to avoid doing so in silos, and to think at the outset about who might help them see,

think and act better to create change. In doing so, particularly in times of disconnection, one of the most powerful influences for change is often simply the ability to hold the space required for conversation. As one interviewee put it, there's no shortage of good ideas out there - there's a shortage of good partnerships to actually get good ideas done. We encourage readers to think, when planning for behaviour change, where they might achieve great impact simply by acting as a convener who can bring actors together for open collaboration - and to do so with intention and thought, in a way that creates comfort and minimises risk.

"There is a real need for and power in having anchor institutions that can simply hold conversations."
- Bob Doherty, University of York

As a closing challenge, we suggest that when planning your change initiatives and partnerships, you ensure that collaborations include an often-forgotten but critical population: everyday people and communities. Initiatives that combine the strengths of professional partnerships and expertise with the knowledge, voices and authority of the people and communities affected by food system issues is a powerful way to ensure that drivers and barriers affecting them are adequately surfaced and integrated - and that interventions developed actually meet community need. Whether via fully power-sharing co-design, or even simply community inclusion at the stage of evidence gathering, including real people in change initiatives is a vital way to give yourself a better chance of getting things right.

Overleaf, we leave the reader with a range of inspirational examples of change programmes that put the collaborative competitive edge into practice - many of which also powerfully incorporate citizens and communities.

INSPIRATIONAL EXAMPLES OF COLLABORATIVE, SYSTEMIC CHANGE PROGRAMMES

Some of the most powerful examples change initiatives - whether in relation to food systems, or other complex challenges like health, education, WASH (water, sanitation and hygiene) - are those which have engaged actors across the issue space to work together in partnership. Here are just a few examples to serve as inspiration:

Examples	
Shaping Places for Healthier Lives ¹	The UK's Shaping Places for Healthier Lives programme combines the expertise of the Local Government Association and The Health Foundation to support local government-led partnerships to tackle wider determinants of health. The partnership is mobilising cross-sector action through sustainable systems change, enabling cross-learning but also local adaptation and tailoring within 5 local councils.
UN's Green Commodities Programme ²	The UN's Green Commodities Programme uses a collaboration-first approach to fuel collective and targeted efforts to support food systems dialogue across international partners - offering coordinated 'matchmaking' for countries to connect with expertise that provides the HOW for change, and support for ongoing, multi-stakeholder innovation, learning and experimentation.

1 <https://www.local.gov.uk/shaping-places-healthier-lives>
2 <https://www.greencommodities.org/content/gcp/en/home.html>

Examples	
Minnisota SuperShelf ³	The Minnisota SuperShelf initiative, recognising that nutrition initiatives are most likely to be successful when they offer access to health, culturally appropriate foods in a dignified and easy way, has worked with a wide range of community partners to deliver a nutrition-focused sustainable food ecosystem for local communities.
Fundación Alternativas ⁴	Fundación Alternativas is a Bolivian non-profit organization dedicated to promoting sustainable alternatives to guarantee food security in the cities of Bolivia. In doing so, it invests not in 'driving innovation' but in uniting disparate civil, public and private efforts to design policies, programmes and initiatives in a cohesive and collaborative way to better communally meet citizen needs.
Wisconsin Obesity Prevention Initiative ⁵	The Wisconsin Obesity Prevention Initiative convenes a wide range of partners across academia, local government, business, community group and health bodies for coalition action and community organising, building local community solutions for systemic change around obesity.

3 <https://www.supershelfmn.org/>
4 <https://alternativascc.org>
5 <https://wmjonline.org/wp-content/uploads/2016/115/5/259.pdf>



The £47.5M 'Transforming the UK Food System for Healthy People and a Healthy Environment SPF Programme' is delivered by UKRI, in partnership with the Global Food Security Programme, BBSRC, ESRC, MRC, NERC, Defra, DHSC, PHE, Innovate UK and FSA. It aims to fundamentally transform the UK food system by placing healthy people and a healthy natural environment at its centre, addressing questions around what we should eat, produce and manufacture and what we should import, taking into account the complex interactions between health, environment and socioeconomic factors. By co-designing research and training across disciplines and stakeholders, and joining up healthy and accessible consumption with sustainable food production and supply, this Programme will deliver coherent evidence to enable concerted action from policy, business and civil society.