

## Joint Academy of Medical Sciences & Royal Society Climate Change and Health Behavioural Change Roundtable - Summary

Virtual meeting, Tuesday 4 May (15.00 – 17.30)

Attendees:

**Project Co-Chairs:** Professor Sir Andy Haines FMedSci; Professor Joanna Haigh CBE FRS

**Panel Chair:** Prof. Lorraine Whitmarsh, University of Bath

Participants raised issues relating to several overarching themes, some of which have been introduced in previous roundtables.

### Cross-cutting themes that have been mentioned in previous roundtables:

- **Identifying potential negative impacts and spillovers from the outset** – to reveal the true costs of decarbonisation policies and to ensure safeguards are in place to mitigate these effects. Potential negative impacts related to behaviour include substitution behaviours and inequitable outcomes.
- **Local and regional initiatives are leading the way** – with regards to altering physical environments to encourage behaviour change.

### New cross-cutting themes:

- **The need for a multifaceted approach to achieve transformational change** – “We can’t nudge our way to Net Zero by 2050”. There is a need to focus on achieving transformational rather than incremental change. Policy action to change the systematic factors that control the ‘choice environment’ (upstream) should be implemented alongside efforts to change individuals’ behaviour to incentivise bold action. This will be facilitated by the identification of social tipping points.
- **A need for further research around behavioural change** – particularly with regards to voluntary vs compulsory actions, social tipping points and how to overcome strong commercial interests.
- **Co-benefits not just as a means to frame climate action but a necessity for policy** – Framing pro-environmental actions in terms of the outcomes and co-benefits allows different people with different motivations to engage. In an age of globalisation where many processes are interconnected (e.g. poverty, health and climate change), there is a need for *all* policies to have multiple benefits.
- **Reducing poverty and inequality is a powerful co-benefit** – the climate and inequality are inextricably linked, creating the possibility of harmful spillovers but also providing a powerful co-benefit that can be used to appeal to many people and policy makers.

## Session 1: Encouraging sustainable behavioural change at the level of the individual – co-benefits, framing and scale

- Climate-positive actions can be encouraged by framing climate change in relation to people’s motivations and concerns. The bonus of policies with multiple benefits is that it will encompass more of the public motivations and hopefully increase engagement.
- Climate, pollution and the environment consistently rank relatively low on people’s list of priorities, and therefore we must identify the co-benefits of climate mitigation that pertain to other priority issues.
- The most obvious co-benefits of decarbonisation are in health, but additionally energy security, poverty and inequality, the economy and unemployment.

### Opportunities

- **Opportunities for influencing individuals’ behaviour lie at the local level.** This is because local authorities:
  - Have other priorities that complement those of the public and are often related to climate change action through co-benefits.
  - Are well placed as they understand priorities of, and challenges faced by, local communities.
  - Are often a trusted source of information and advice.
- **Low traffic neighbourhoods and other local interventions** have had a positive impact on people’s behaviours, the environment, and have delivered co-benefits (e.g. [Waltham Forest](#)). These provide a positive example of where changing the physical environment can induce behaviour change (*Session 2*, below). It was recognised that early and substantive community engagement is key to eliciting community support.

- **COVID-19 - disrupting old behaviours offers an environment to make changes habitual.** It was noted that the COVID-19 pandemic has resulted in both climate-positive (e.g. reduced food waste) and negative (e.g. reduced public transport use) behaviour changes.
- **From a lens of employment,** there are three areas where influencing workplace behaviour change can have co-benefits on health:
  1. *Outsider initiatives (e.g., policies) to increase employee pro-environmental behaviour* work best when they appeal to individuals' priorities.
  2. *Organisations' initiatives to increase employee pro-environmental behaviour* offer co-benefits of psychological wellbeing and job satisfaction.
  3. *Organisational-level pro-environmental policies* may be most effective at the level of small and medium enterprises (SMEs).
- **Framing pro-environmental behaviours in terms of the co-benefits allows people to engage** for many different reasons, while avoiding the social barriers and stereotypes that might pertain to the 'green' label (*Challenges and trade-offs*, below). Co-benefits may also allow such behaviours to become normalised by society, therefore removing the stigma that is attached to climate-positive actions in certain communities and demographics. It is important to remember that reasons for why people engage vary widely and are not always predictable, and therefore using co-benefits is a way to engage a variety of people without making presumptions about their values or motivations.
- **The strong link between poverty, equality and climate change provides a powerful co-benefit,** which can appeal to people from both a moral and practical perspective (e.g. [DESERTEC](#)). Although public aversion to inequity is variable, there are many ways to frame inequality and its downstream effects to appeal to different people and policy makers.

### *Challenges and trade-offs*

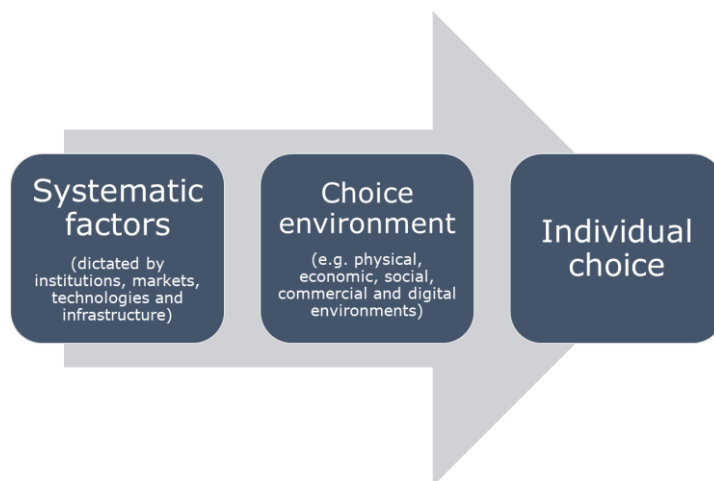
- **Difficulties associated with the role of local authorities in influencing behaviour change** include:
  - The possibility that local authorities may take advantage of the co-benefits of decarbonisation (e.g. using funding for climate change mitigation to advance other priorities).
  - Challenges around organisational structures.
  - Split incentives, meaning the directorates paying for the actions may not reap the benefits. Devolution could remove these barriers and promote cross-sector collaboration (e.g. Greater Manchester Authority), but level of devolution varies widely around the country.
  - The need for radical and fast action, which will often require brave leadership.
- **Many organisations regard decarbonisation policies as a 'nice to have but non-essential'** with no direct impact on the organisation itself, whereas others view pro-environmental activities as a unique selling point - an incentive which will not exist as more companies start to implement green policies. It was noted that transformational changes are unlikely to come from the commercial sector without appropriate incentives from government. Proposed solutions included disincentives to non-participation, incentives to participation, public scrutiny of corporate behaviour and close monitoring and independent evaluation.
- **Voluntary vs compulsory action.** There is evidence that behaviours that are framed as voluntary evoke positive impacts on wellbeing, whereas compulsory behaviours are often no longer associated with being pro-environmental and therefore no longer stimulate positive feelings. However, participants highlighted that there is still a role for enforcing non-voluntary behaviours.
- **Unintended consequences of labelling pro-environmental behaviours as 'green'.** It was highlighted that the 'green label' might be a motivation for some, but discouraging for others, while also failing to highlight the co-benefits of pro-environmental behaviours. Research is required to understand impacts of framing and labelling on behaviour. Participants emphasised that there should be a focus on the co-benefits and end products, rather than on framing of the action.
- **Can a focus on influencing individuals' behaviours lead to the transformational changes required to mitigate climate change?** At least 59% of future emission reductions will need to come from changes in people's behaviour. Participants indicated that while conversations around framing to influence individuals' behaviours might be important for garnering support for climate policy, it will not help change behaviours at the scale required, which instead require changes to the system and context (*Session 2*, below). On the other hand, it was noted that actions to influence individuals' behaviour might lead to positive feedback loops to create transformational change (e.g. SME's exerting pressure on global companies, public opinion influencing political will) and that framing behaviours in terms of co-benefits can allow a 'buy-in' with policy makers who don't have environmental concerns. It is likely that for transformational change to occur at scale and speed, changes in individuals' behaviours and opinions will be required to build support for bold upstream policy, to provide incentives for policy change and to ensure policy uptake and adherence.
- **The importance and impact of framing can vary between different types of behaviour.** For example, in relation to dietary change, there is evidence that health is a better incentive than the climate (although using both might be more effective than using either separately), and therefore it is important to consider framing as a means to encourage such behaviour changes. It was also noted that framing

around dietary changes should be focussed on giving a positive message, for example adding value, diversity or nutrition, rather than a focus on 'taking things away' (e.g. 'less meat').

- **Substitution behaviours.** A potential unintended consequence of attempts to influence behaviour change could be substitution of one kind of behaviour for another (e.g. the relationship between pro-environmentalism and air travel).
- **Different groups of people will require different strategies.** It was highlighted that strategies and messaging used to change public behaviour will need to be different to those used to change the behaviour of policy makers - there is a need to stratify the groups that are being targeted.

## Session 2: Manipulating the choice environment to achieve transformational change

- People make changes within the world we occupy. Choices can be influenced by individual factors (e.g., knowledge, attitudes, preferences etc.) and are constrained by the 'choice environment'.
- Changing behaviour at scale requires multiple interventions that change the different systems within which our behaviour occurs (e.g., the physical, economic, social, commercial and digital environments).
- Examples given in relation to the food system included carbon pricing to influence the economic environment and altering the physical environment by changing the availability of certain food groups.
- Systematic factors (upstream) influence the choice environment, within which we as individuals aim to make better choices for ourselves (downstream):
- Where in this pathway should we intervene? *'Redirecting the stream is more effective than persuading people to swim against the current.'* The aim should be to minimise the burden of action for the greatest number of people.



### *Challenges, trade-offs and questions*

- **Which changes in which systems will be most effective** at producing synergistic outcomes and co-benefits?
- **Transformational change at scale and speed requires action and clarity from central government.** Transformational change can happen, but history shows it tends to happen organically, rather than when orchestrated by governments. There is currently a lack of clarity surrounding government decision making (e.g., green homes grant), while there are concerns that some transformative actions are viewed as politically unviable (e.g., reducing aviation). It was mentioned that the Future Generations Act could force policy makers to consider the impact of all policies on the climate and future generations.
- **Opposition to policies by powerful commercial interest and lobbies.** Recent research and systematic reviews focus on description of the issue rather than interventions – this is an area that is under-theorised and under-evidenced. What can be learnt from previous policies implemented in the context of strong commercial interest (e.g., public spaces smoking ban)? Could co-benefits framing help overcome or enlist corporate interests?
- **Lack of demand for policy action.** This may be in part because often what the public perceive as the most effective interventions do not map onto the most effective actions in reality. For example, there is low public awareness that changing diets could mitigate climate change. However, the public are sensitive to information about policy effectiveness – how can this be harnessed to increase demand for policy action in the context of powerful commercial interests?

- **Impacts of climate policy and transformational change on equality.** Examples given included the impact of delaying changes to aviation policy, which is likely to benefit people with particular privileges, and the effects of consumption patterns on poverty globally (e.g., electric vehicles). Without dealing with poverty and equality alongside climate change, there is a risk that policies will be ineffective or have inequitable impacts. Perceived fairness of policies is also a key predictor of acceptability. Consideration and monitoring of spillovers is needed to reveal the true costs of climate interventions.

### Opportunities

- **Key principles for achieving behaviour change at scale:**
  - 1. Upstream:** Setting the system parameters to minimise the direct 'ask' of citizens.
    - a. *Targeting businesses or whole sectors responsible for setting the choice environment.*
      - Example: [sugar levy](#).
      - Opportunities for climate change mitigation include carbon-per-portion taxes or penalties on manufacturers who fail to meet climate emissions targets.
    - b. *Triggering positive feedback loops within markets*
      - e.g., inducing competition between firms by de-shrouding key attributes related to the environment.
    - c. *Leading by example to change norms*
    - d. *Combined with psychological value of climate policies needs to be considered within cost-benefit analyses.*
  - 2. Mid-stream:** Creating an enabling environment – how to make 'good' choices the default? It was noted that timing is crucially important – intervening during disruption or following a life transition is more effective.
  - 3. Motivating citizens to take action where they can** (*Session 1*, above). Builds public acceptability to make upstream changes more feasible.
  - 4. Addressing powerful commercial interests and lack of public demand through citizen engagement** (e.g. [Climate Assembly UK](#) and [Citizens Convention for Climate, France](#)). Such assemblies tend to show stronger support for climate change intervention policies than policy makers. However, there is some evidence that recommendations can still be diluted and impacted by powerful lobbying.
  - 5. The COVID-19 pandemic also offers opportunities for transformational policy change at the institutional level.** For example, remote working policies and low traffic neighbourhoods. However, it was emphasised that we should not assume that behaviours will become habitual once the environment goes back to normal. There are also opportunities to influence the choice environment to reverse climate-negative behaviours induced by the pandemic. For example, altering the economic environment to provide incentives for use of public transport.
  - 6. Public sector environments as a model and enabler of change.** It was highlighted that policy proposals must be based on sound evidence, and that the public sector may offer an opportunity for modelling.
  - 7. Widespread voluntary behaviour changes within the food system** are happening even though policy action on food is still viewed as politically unviable. It was recognised that innovation driven by business might have a role to play in influencing availability of climate-friendly foods and the physical environment.
  - 8. Identifying social tipping points that could provoke non-linear change,** for example through leveraging data and social contagion.
  - 9. Strategic opportunism** – preparing to grasp an opportunity when it comes.
  - 10. Tackling pervasive consumption patterns through design and implementation of a circular economy approach.** It was noted that this needs to be driven by upstream policy in order to achieve transformational change, for example through providing incentives.

### Resources and case studies mentioned by participants

#### Session 1

- Jennings, N., Fecht, D., & De Matteis, S. (2020). [Mapping the co-benefits of climate change action to issues of public concern in the UK: a narrative review](#). *The Lancet. Planetary health*, 4(9), e424–e433. [https://doi.org/10.1016/S2542-5196\(20\)30167-4](https://doi.org/10.1016/S2542-5196(20)30167-4)
- Bain, P., Milfont, T., Kashima, Y. *et al.* (2016) [Co-benefits of addressing climate change can motivate action around the world](#). *Nature Clim Change* **6**, 154–157. <https://doi.org/10.1038/nclimate2814>
- [Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them?](#) – Grantham Institute Briefing paper No 31 (March 2019)
- [Climate action co-benefits. A toolkit for city regions and local authorities](#) – Ashden (2020)
- [Islington Council Seasonal Health Intervention Network \(SHINE\) programme](#)
- [A blueprint for accelerating climate action and green recovery at the local level](#) – ADEPT (December 2020)
- [London hospital trust to pay £250k to install LTN for public health benefits](#)
- [Enjoy Waltham Forest Programme](#)

- Unsworth, K. L., & McNeill, I. M. (2017). [Increasing pro-environmental behaviors by increasing self-concordance: Testing an intervention](https://doi.org/10.1037/apl0000155). *The Journal of applied psychology*, 102(1), 88–103.
- <https://doi.org/10.1037/apl0000155>
- [How did we do that? The possibility of rapid transition](https://doi.org/10.1037/apl0000155) – Rapid Transition Alliance (2017)
- Bryden, A., Petticrew, M., Mays, N., Eastmure, E., & Knai, C. (2013). [Voluntary agreements between government and business - a scoping review of the literature with specific reference to the Public Health Responsibility Deal](https://doi.org/10.1016/j.healthpol.2013.02.009). *Health policy*, 110(2-3), 186–197. <https://doi.org/10.1016/j.healthpol.2013.02.009>
- Wolstenholme, E., Poortinga, W., & Whitmarsh, L. (2020). [Two Birds, One Stone: The Effectiveness of Health and Environmental Messages to Reduce Meat Consumption and Encourage Pro-environmental Behavioral Spillover](https://doi.org/10.3389/fpsyg.2020.577111). *Frontiers in psychology*, 11, 577111. <https://doi.org/10.3389/fpsyg.2020.577111>
- [Rapid Evidence Assessment: Liveable and Low Traffic Neighbourhoods](https://doi.org/10.3389/fpsyg.2020.577111) – Bristol Advisory Committee on Climate Change (March 2021)
- Alcock, I., White, M. P., Taylor, T., Coldwell, D. F., Gribble, M. O., Evans, K. L., Corner, A., Vardoulakis, S., & Fleming, L. E. (2017). ['Green' on the ground but not in the air: Pro-environmental attitudes are related to household behaviours but not discretionary air travel](https://doi.org/10.1016/j.gloenvcha.2016.11.005). *Global environmental change : human and policy dimensions*, 42, 136–147. <https://doi.org/10.1016/j.gloenvcha.2016.11.005>.
- Alcock, I., White, M. P., Pahl, S., Duarte-Davidson, R., & Fleming, L. E. (2020). [Associations between pro-environmental behaviour and neighbourhood nature, nature visit frequency and nature appreciation: Evidence from a nationally representative survey in England](https://doi.org/10.1016/j.envint.2019.105441). *Environment international*, 136, 105441. <https://doi.org/10.1016/j.envint.2019.105441>
- Whitmarsh, W. et al. (2020) [Use of aviation by climate change researchers: structural influences, personal attitudes, and information provision](https://doi.org/10.1016/j.gloenvcha.2020.102184). *Global Environmental Change* 65 , 102184. <https://doi.org/10.1016/j.gloenvcha.2020.102184>.
- Amelung, D. et al. (2019) [Human health as a motivator for climate change mitigation: results from four European high-income countries](https://doi.org/10.1016/j.gloenvcha.2019.05.002). *Global Environmental Change*, 57. p. 101918. <https://doi.org/10.1016/j.gloenvcha.2019.05.002>
- [How has Covid-19 affected low-carbon behaviours and climate attitudes?](https://doi.org/10.1016/j.gloenvcha.2019.05.002) – Centre for Climate Change and Social Transformations (Dec 2020)

#### Session 2

- Rutter, H., Horton, R., & Marteau, T. M. (2020). [The Lancet-Chatham House Commission on improving population health post COVID-19](https://doi.org/10.1016/S0140-6736(20)31184-3). *Lancet* 396(10245), 152–153. [https://doi.org/10.1016/S0140-6736\(20\)31184-3](https://doi.org/10.1016/S0140-6736(20)31184-3)
- Marteau T. M. (2018). [Changing minds about changing behaviour](https://doi.org/10.1016/S0140-6736(17)33324-X). *Lancet*, 391(10116), 116–117. [https://doi.org/10.1016/S0140-6736\(17\)33324-X](https://doi.org/10.1016/S0140-6736(17)33324-X)
- Marteau, T. M., White, M., Rutter, H., Petticrew, M., Mytton, O. T., McGowan, J. G., & Aldridge, R. W. (2019). [Increasing healthy life expectancy equitably in England by 5 years by 2035: could it be achieved?](https://doi.org/10.1016/S0140-6736(19)31510-7) *Lancet*, 393(10191), 2571–2573. [https://doi.org/10.1016/S0140-6736\(19\)31510-7](https://doi.org/10.1016/S0140-6736(19)31510-7)
- Garnett, E. E., Balmford, A., Sandbrook, C., Pilling, M. A., & Marteau, T. M. (2019). [Impact of increasing vegetarian availability on meal selection and sales in cafeterias](https://doi.org/10.1073/pnas.1907207116). *Proceedings of the National Academy of Sciences of the United States of America*, 116(42), 20923–20929. <https://doi.org/10.1073/pnas.1907207116>
- Bianchi, F., Garnett, E., Dorsel, C., Aveyard, P., & Jebb, S. A. (2018). [Restructuring physical micro-environments to reduce the demand for meat: a systematic review and qualitative comparative analysis](https://doi.org/10.1016/S2542-5196(18)30188-8). *The Lancet. Planetary health*, 2(9), e384–e397. [https://doi.org/10.1016/S2542-5196\(18\)30188-8](https://doi.org/10.1016/S2542-5196(18)30188-8)
- Hollands, G., Bignardi, G., Johnston, M. et al. (2017) [The TIPME intervention typology for changing environments to change behaviour](https://doi.org/10.1038/s41562-017-0140). *Nat Hum Behav* 1, 0140 <https://doi.org/10.1038/s41562-017-0140>
- Swinburn, B. A. et al. (2019). [The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission report](https://doi.org/10.1016/S0140-6736(18)32822-8). *Lancet*, 393(10173), 791–846. [https://doi.org/10.1016/S0140-6736\(18\)32822-8](https://doi.org/10.1016/S0140-6736(18)32822-8)
- de Lacy-Vawdon, C., Livingstone, C. (2020) [Defining the commercial determinants of health: a systematic review](https://doi.org/10.1186/s12889-020-09126-1). *BMC Public Health* 20, 1022. <https://doi.org/10.1186/s12889-020-09126-1>
- Reynolds, J. P., Stautz, K., Pilling, M., van der Linden, S., & Marteau, T. M. (2020). [Communicating the effectiveness and ineffectiveness of government policies and their impact on public support: a systematic review with meta-analysis](https://doi.org/10.1098/rsos.190522). *Royal Society open science*, 7(1), 190522. <https://doi.org/10.1098/rsos.190522>
- [Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberate Wave](https://doi.org/10.1098/rsos.190522) – OECD (June 2020)
- [THE CO-BENEFITS OF CLIMATE ACTION: Accelerating City-level Ambition](https://doi.org/10.1098/rsos.190522) – Tyndall Centre (2020)
- Scarborough, P. et al. (2020). [Impact of the announcement and implementation of the UK Soft Drinks Industry Levy on sugar content, price, product size and number of available soft drinks in the UK, 2015-19: A controlled interrupted time series analysis](https://doi.org/10.1371/journal.pmed.1003025). *PLoS medicine*, 17(2), e1003025. <https://doi.org/10.1371/journal.pmed.1003025>
- Pell, D. et al. (2021). [Changes in soft drinks purchased by British households associated with the UK soft drinks industry levy: controlled interrupted time series analysis](https://doi.org/10.1136/bmj.n254). *BMJ (Clinical research ed.)*, 372, n254. <https://doi.org/10.1136/bmj.n254>
- Craig P, Di Ruggiero E, Frohlich KL, et al.; on behalf of the Canadian Institutes of Health Research (CIHR)–National Institute for Health Research (NIHR) Context Guidance Authors Group (2018) [Taking account of context in population health intervention research: guidance for producers, users and funders of research](https://doi.org/10.3310/CIHR-NIHR-01). *NIHR Journals Library*; doi: 10.3310/CIHR-NIHR-01
- Verplanken B., Whitmarsh, L. (2021) [Habit and climate change](https://doi.org/10.1016/j.cobeha.2021.02.020). *Current Opinion in Behavioral Sciences*, 42, 42–46 <https://doi.org/10.1016/j.cobeha.2021.02.020>.
- Otto, I. M. et al. (2020). [Social tipping dynamics for stabilizing Earth's climate by 2050](https://doi.org/10.1073/pnas.1900577117). *Proceedings of the National Academy of Sciences of the United States of America*, 117(5), 2354–2365. <https://doi.org/10.1073/pnas.1900577117>
- [Space to move](https://doi.org/10.1073/pnas.1900577117) (tracking implementation of and response to active travel measures) – Sustrans (2021)
- [World's richest 1% cause double CO2 emissions of poorest 50%, says Oxfam](https://doi.org/10.1073/pnas.1900577117) – Guardian (Sep 2020)



- [Paying for UK Net Zero: principles for a cost-effective and fair transition](#) - Grantham Institute Briefing note No 14 (March 2021)
- [DESERTEC: Sustainable Wealth for Every Human on Earth](#)
- Lorenc, T., & Oliver, K. (2014). [Adverse effects of public health interventions: a conceptual framework](#). *Journal of epidemiology and community health*, 68(3), 288–290. <https://doi.org/10.1136/jech-2013-203118>
- White, M. et al. (2020). [What role should the commercial food system play in promoting health through better diet?](#). *BMJ (Clinical research ed.)*, 368, m545. <https://doi.org/10.1136/bmj.m545>
- White, M. (2009) [How and why do interventions that increase health overall widen inequalities within populations?](#) in *Social inequality and public health* DOI:10.1332/policypress/9781847423207.003.0005