

## Sustainable health equity: achieving a net-zero UK



Published Online  
November 5, 2020  
[https://doi.org/10.1016/S2542-5196\(20\)30270-9](https://doi.org/10.1016/S2542-5196(20)30270-9)

Tony Atkinson's 2015 book *Inequality* begins with the observation that, according to population surveys in the USA and Europe, the two biggest global problems are inequality and climate change.<sup>1</sup> These two big problems need to be tackled at the same time. In particular, combatting climate change and reducing avoidable health inequalities—promoting health equity—should be part of a common agenda. We label it sustainable health equity.

Sustainable health equity is the theme of a report produced by the UK Health Expert Advisory Group.<sup>2</sup> The advisory group was formed by the Climate Change Committee in 2020 to advise on the potential health impacts of the sixth carbon budget covering 2033–37.

In the decade between the first and second Marmot Reviews into health inequalities in England, the country had the weakest growth in life expectancy for more than a century—in some of the most deprived communities, it had actually gone into reverse. The difference in healthy life expectancy at birth was 18.9 years for males and 19.4 years for females between the most and least deprived areas in 2016–18.<sup>3</sup>

In the same decade, the UK government progressed its ambitions to reduce carbon emissions in line with the 2016 Paris Climate Agreement. The country now has a legally binding target to reach net-zero carbon emissions by 2050.

Existing models of the health effects of measures to reduce emissions from energy, transport, food, and buildings frequently emphasise their significant and well evidenced co-benefits to health.<sup>4</sup> The group considered the above areas for climate action through the lens of social determinants of health and health inequalities. They further considered the potential co-benefits of more systemic changes in work and consumption patterns. Importantly, adaptation to climate change is critical to future health inequalities, given the amount of warming that is locked in by existing carbon emissions. Adaptation measures cannot be siloed from mitigation, given that both require systemic, and not merely systematic, cross-departmental working across the same areas of government.<sup>5</sup> Where relevant, the trade-offs between adaptation and mitigation for health and health equity were discussed—eg, regarding the need to reduce exposure to indoor heat alongside reducing emissions from cooling systems.

The central message of the Chair's report is that a strategy to achieve net-zero emissions should have health equity—the fair distribution of health—as an explicit policy goal, and that a health equity in all policies approach be adopted. Action to improve health equity can be consistent with measures to reduce greenhouse gas emissions and adapt to climate change, but it is evident that this requires careful consideration of who benefits from and who pays for different policy measures.

The unequal distribution of illness and deaths from COVID-19 are a stark warning of the unequal resilience of different communities to external shocks: mortality rates from COVID-19 have shown a similar social gradient to those from all causes—the more deprived the area, the higher the mortality rate.<sup>6</sup> Moreover, COVID-19 has had a disproportionate impact on Black, Asian, and minority ethnic groups.<sup>7</sup>

Already extreme weather events affect communities with less capacity to adapt more severely, including people in poor inner city neighbourhoods who are more likely to experience the urban heat island effect, and people in deprived coastal communities who will be, in many areas, exposed to more frequent and intense storms and coastal flooding. Meanwhile, the resources to prepare for, adapt to, or move away from these impacts are also unequally distributed.

Some of the households most affected by climate change will be those that bear the least responsibility for its cause. In the UK, the highest 5% income households consume, on average, more than three times as many tonnes of oil equivalent annually, compared with the lowest 5% income households.<sup>8</sup>

The health benefits of mitigation and adaptation measures will be maximised if they are designed to reach the people facing the greatest disadvantage; however, this is not inevitable. For example, although all communities will benefit from reductions in absolute exposure to air pollution via decarbonisation of energy and transport, some sources of PM<sub>2.5</sub> might rise, including domestic wood burning and non-exhaust emissions from electric vehicles.<sup>9</sup> If roadside non-exhaust emissions of PM<sub>2.5</sub> increase, while other sources decline, inequalities in exposure between the least and most deprived fifth of wards are expected to

widen.<sup>9</sup> Home energy efficiency improvements are a further target of emissions reductions. Several home energy decarbonisation measures are funded through a levy on energy bills, averaging 13% of energy costs. A percentage of the levy subsidises schemes to reduce fuel poverty and improve home energy efficiency. However, in previous years, low-income households have more than self-funded schemes that exist to benefit people on low incomes; and, in 2016, the proportion of income spent on the levy was six times greater for the 5% of UK households in the lowest income group compared with those in the highest income group.<sup>8</sup>

The UK already has a highly unequal food system with respect to both consumption and production of food.<sup>10</sup> In 2018, roughly 20% of households in England, Wales, and Northern Ireland were food insecure or had marginal food security.<sup>11</sup> Although obesity and diet-related diseases affect all socioeconomic groups, the rates of disease are higher in more deprived areas. Fruit and vegetable consumption also follow a social gradient, with adults and children in the lowest income decile eating, on average, 42% less fruit and vegetables than recommended.<sup>12</sup> Interventions to promote lower carbon and healthy diets must be designed so that any fiscal or behavioural interventions to reduce consumption of foods with a large environmental impact, including meat and palm oil, are offset by support to access sustainably produced and healthy foods.

The full report describes these and key policy levers for health equity and climate change in more depth. In summary, the headline policy recommendations are: prioritise the health and wellbeing of citizens alongside environmental sustainability in economic recovery and growth policies, shifting from measuring economic success in terms of gross domestic product towards a wellbeing approach; involve all citizens in decision making on climate action that affects their communities; support a just energy transition that minimises air pollution from all sources; design and retrofit homes to be energy efficient, climate resilient, and healthy; build a sustainable, resilient, and healthy food system; and, develop a transport system that promotes active travel and road safety, and which minimises pollution.

Alongside a health equity in all policies objective, the above should be informed by four guiding principles:

(1) inclusion of citizens affected by—and whose support and cooperation is required to deliver on—policy decisions; (2) integration of policy making at national, regional, and local levels, and between departments across government; (3) transparency about decision making and trade-offs between adaptation and mitigation and their short and long-term effects on health; and (4) evidence-based policy making, informed by a public health intelligence function that can gather, analyse, and interpret qualitative and quantitative data.

Factoring health equity impacts into policies requires a more nuanced approach to mitigation and adaptation than might have been modelled to date. The government's green recovery presents a window of opportunity to implement actions that will improve health and wellbeing, reduce health inequalities, and mitigate climate change.

The UK Committee on Climate Change provided funding to TB for her contribution to the associated report on which this Comment is based. MM chaired the associated Health Advisory Group to the UK Committee on Climate Change. The authors thank the Committee on Climate Change for convening the Health Expert Advisory Group, and we are grateful to its members for their guidance and support; including, Sir Andy Haines (Centre on Climate Change and Planetary Health, London School of Hygiene and Tropical Medicine, London, UK), Ian Hamilton (UCL Energy Institute, London, UK), Susan Jebb (Nuffield Department of Primary Care Health Sciences, Oxford University, Oxford, UK), Nick Watts (*Lancet* Countdown on health and climate change, London, UK), Adrian Davis (Transport Research Unit, Edinburgh Napier University, Edinburgh, UK), and Helen ApSimon (Air Pollution Studies, Imperial College London, London, UK). A complete list of Advisory Group members is available in the Chair's report.

Copyright © 2020 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY 4.0 license.

Alice Munro, Tammy Boyce, \*Michael Marmot  
m.marmot@ucl.ac.uk

Institute of Health Equity, Department for Epidemiology and Public Health, University College London, London WC1E 7HB, UK (AM, TB, MM)

- 1 Tony Atkinson. *Inequality. What can be done?* Cambridge: Harvard University Press, 2015.
- 2 Munro A, Boyce T, Michael M. Sustainable health equity. Achieving a net-zero UK. Advisory Group Report for the UK Committee on Climate Change. 2020.
- 3 Office for National Statistics. Health State Life Expectancies, UK: 2016 to 2018. 2019. <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/healthstatelifeexpectanciesuk/2016to2018> (accessed April 1, 2020).
- 4 Milner J, Hamilton I, Woodcock J, et al. Health benefits of policies to reduce carbon emissions. *BMJ* 2020; **368**: 16758.
- 5 Ison R, Straw E. *The hidden power of systems thinking: governance in a climate emergency.* Abingdon: Routledge, 2020.
- 6 Office for National Statistics. Deaths involving COVID-19 by local area and socioeconomic deprivation: deaths occurring between 1 March and 30 June 2020. 2020. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsinvolvedwithcovid19bylocalareasanddeprivation/deathsoccurringbetween1marchand30june2020> (accessed Aug 3, 2020).
- 7 Public Health England. Disparities in the risk and outcomes of COVID-19. 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/908434/Disparities\\_in\\_the\\_risk\\_and\\_outcomes\\_of\\_COVID\\_August\\_2020\\_update.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf) (accessed Aug 31, 2020).

- 
- 8 Owen A, Barrett J. Reducing inequality resulting from UK low-carbon policy. *Climate Policy* 2020; **20**: 1193–208.
  - 9 Williams ML, Lott MC, Kitwiroon N, et al. The *Lancet* Countdown on health benefits from the UK Climate Change Act: a modelling study for Great Britain. *Lancet Planet Health* 2018; **2**: e202–13.
  - 10 House of Lords. Hungry for change: fixing the failures in food. Select committee. 2020. <https://committees.parliament.uk/publications/1762/documents/17092/default/> (accessed Sept 5, 2020).
  - 11 Food Standards Agency, NatCen Social Research. The food and you survey. Wave five. Combined report for England, Wales and Northern Ireland. 2019. <https://www.food.gov.uk/sites/default/files/media/document/food-and-you-wave-5-combined-report.pdf> (accessed Aug 3, 2020).
  - 12 Public Health England. National Diet and Nutrition Survey time-trend and income-analyses-for years1-to-9. 2019. <https://www.gov.uk/government/statistics/ndns-time-trend-and-income-analyses-for-years-1-to-9> (accessed Aug 3, 2020).