CITY
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Centre for Food Policy
Shaping an effective food system

Status, barriers and access routes to healthy sustainable diets.

The British Nutrition Foundation Annual Conference.
7 November 2023 11:15 AM - 11:45 AM
Royal College of Physicians
11 St Andrews Place
London, NW1 4LE

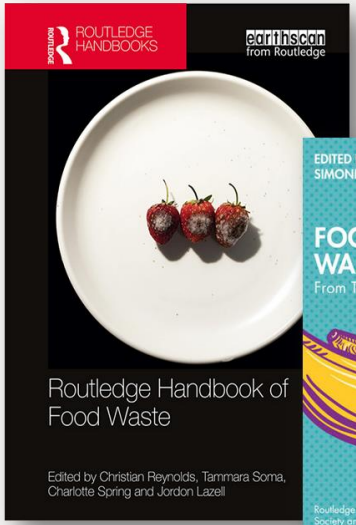
Dr Christian Reynolds
Centre for Food Policy,
City, University of London
@sartorialfoodie @FoodPolicyCity
christian.reynolds@city.ac.uk

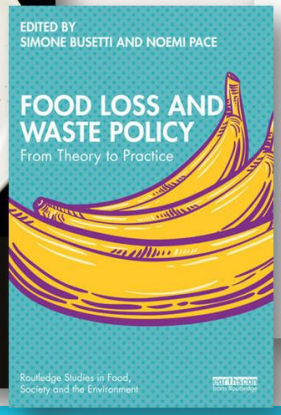
British Nutrition Foundation

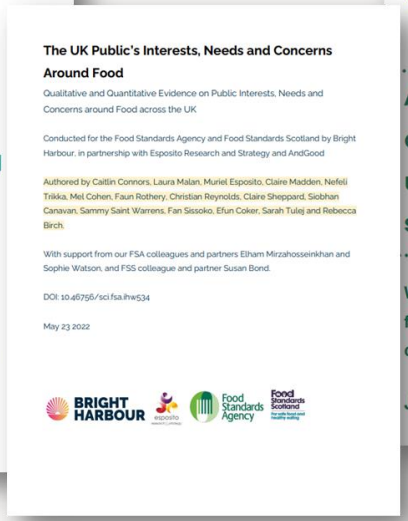
Who am I?

Reader at the Centre for Food Policy.

- Focus on sustainable food systems and food waste.
- Supporting the FSA/Defra through research projects. Scottish food systems research (ZWScotland). Household Simulation modelling (WRAP). Local food strategy development.
- Nutrition Society Food Systems theme lead. IFST Sustainability working group.
- Recent publications







THE NUTRITION SOCIETY
Advancing Nutritional Science

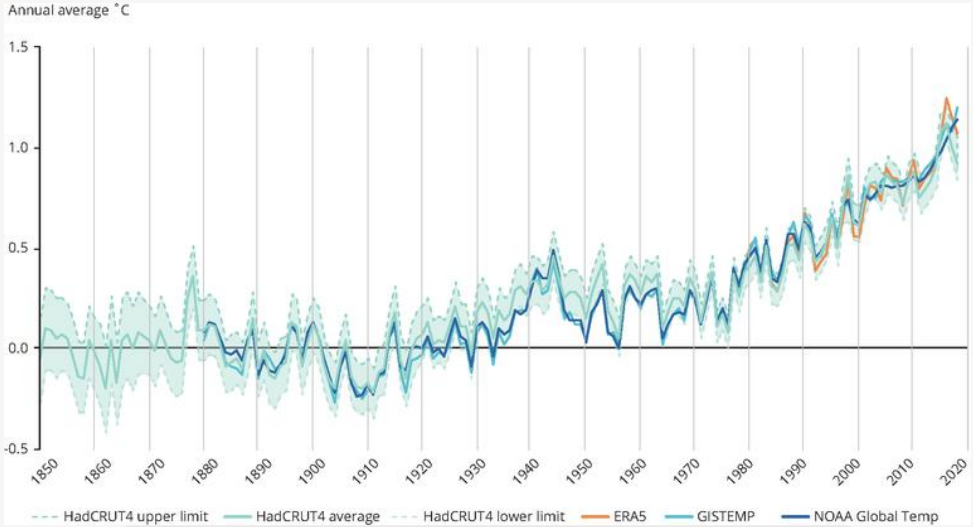
Institute of Food Science + Technology
ifst

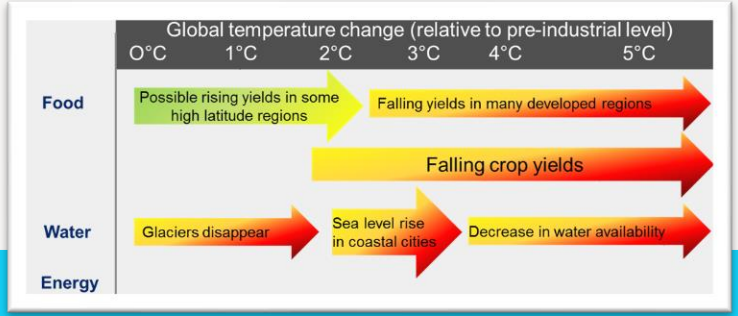
TAKE A BITE OUT OF CLIMATE CHANGE

The climate is changing…

Global average near surface temperature since the pre-industrial period

Source [European Environment Agency (EEA)]





New Zealand

As the climate warms, New Zealand winemakers grapple with a changing landscape

Winemakers worry the heat could make wine too sweet, while others are starting to plant grapes in areas previously considered too cool

A vineyard in Otago, New Zealand. The planet's southernmost wine growing region was previously considered too cold chardonnay. Photograph: Eddy Dalimore/Getty Images/iStockphoto

Nick Stringer in Central Otago

Fri 14 Apr 2023 21.00 BST

Our unequal earth Environment

The summer food went weird: searing heat reshapes US food production

From wilting wheat to stressed pollinators, US farmers and fishermen see unexpected climate effects

Camilo Martin picks blueberries at the Cooperativa Tierra y Libertad farm in July in Everson, Washington. Farms and workers must adapt to changing climate conditions. Photograph: John Froschauer/AP

Supported by

11th Hour Project

About this content

Cecilia Nowell

Sat 2 Sep 2023 12.00 BST

Rampant heatwaves threaten food security of entire planet, scientists warn

After hottest day ever, researchers say global heating may mean future of crop failures on land and 'silent dying' in the oceans

A stag takes a drink at Dülmen wildlife reserve in Münsterland, Germany, on a sweltering day this summer. Photograph: Imageplotter/Alamy

The age of extinction is supported by

the guardian .org

About this content

Phoebe Weston

@phoeb0

Fri 21 Jul 2023 06.00 BST

UK runs short of salad crops and citrus fruits after cold spell in Med

Supermarkets say they are working with farmers to ensure wide range of produce is available

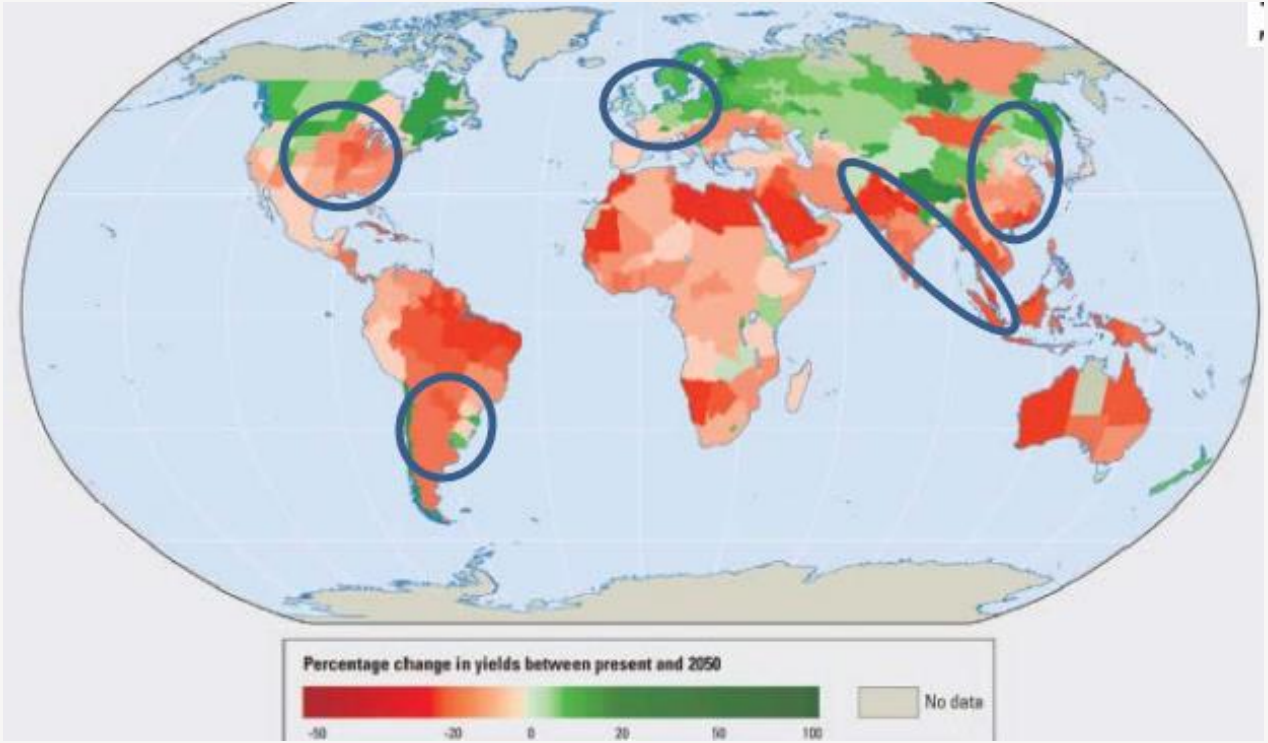
Industry insiders say availability of produce is down 30%-40% on some crops. Photograph: Marek Slusarczyk/Alamy

Sarah Butler

@whatbutlersaw

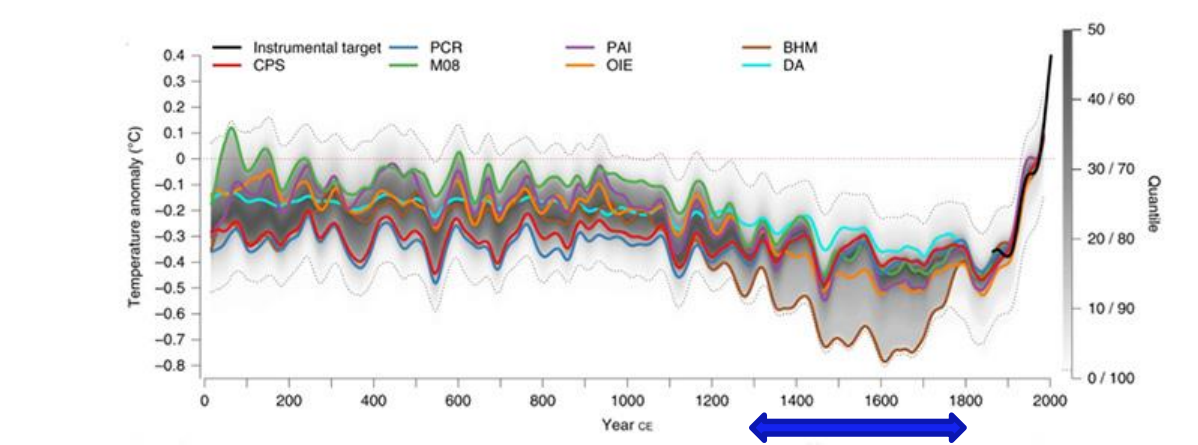
Mon 20 Feb 2023 19.01 GMT

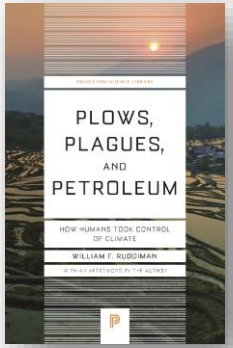
Food production and climatic change are linked



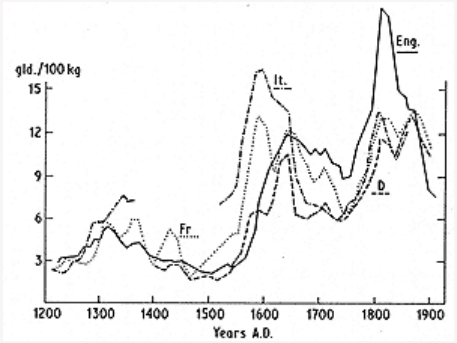
Wheeler, Tim, and Joachim Von Braun. "Climate change impacts on global food security." *Science* 341.6145 (2013): 508-513.

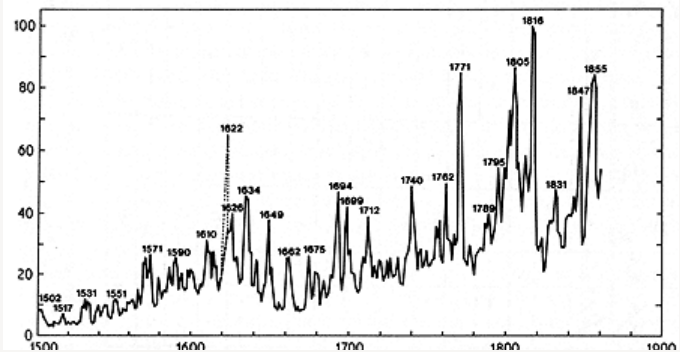
Food and climate have always been linked!

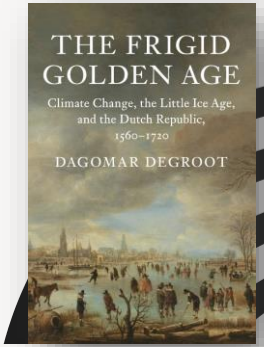




Global temperatures over the past 2,000 years, according to different statistical methods. The black line represents modern warming, as measured by meteorological instruments. Global cooling in even the chilliest decades probably did not exceed 0.5 degrees Celsius. https://aeon.co/essays/the-little-ice-age-is-a-history-of-resilience-and-surprises



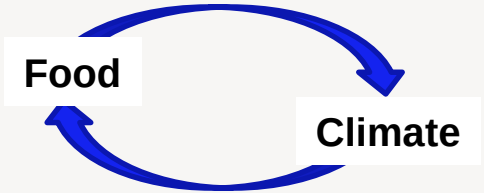




Prices of **wheat** expressed in Dutch guilders per 100 kg. in various countries vs. time. Price of **rye** in Germany vs. time expressed as an index.(Source: Lamb, 1995) https://www.sunysuffolk.edu/explore-academics/faculty-and-staff/faculty-websites/scott-

Feedback loops of food and climate change

Food production and consumption impacts upon **climate**



Climate impacts upon **food** production and consumption

- The "little ice age" of 1500-1700, or “age of extremes” of 1310s-1810s, changed what Europeans (etc.) farmed, ate, cooked, modes of production, consumption etc.
- Created resilient societies. (Lots of war, famine etc. !)
- Led to the start of the current European (and global) dietary patterns, and food regimes.

These (cool) food systems, crops, modes of production, and dietary patterns are foundational for the modern food system and diets.

Probably only ever a max 0.5˚ C cooling!

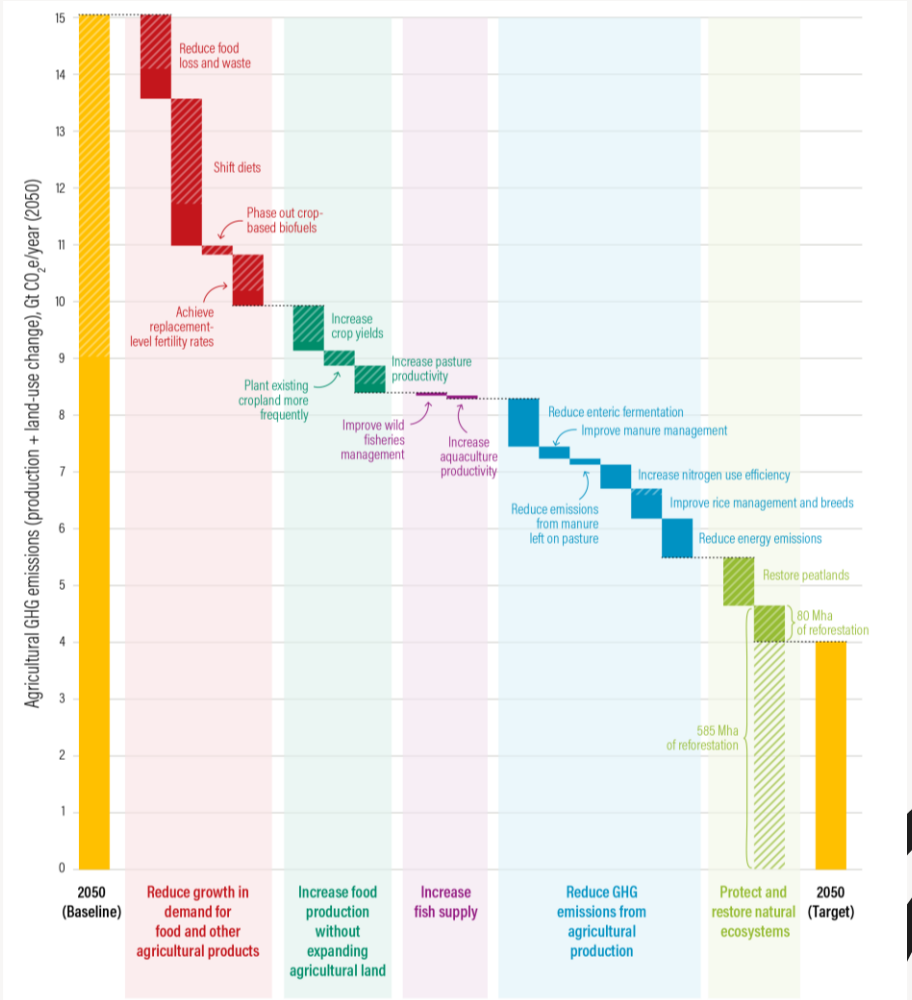
We now ~1.1c warmer than preindustrial levels

https://doi.org/10.1038/d41586-021-02179-1

The emissions reduction challenge – A warming food system

The two biggest reductions we can make to agricultural GHGE to achieve a **2˚ C** warming target (4 Gt/year) or **1.5˚ C** warming target (0 Gt/year) are through:

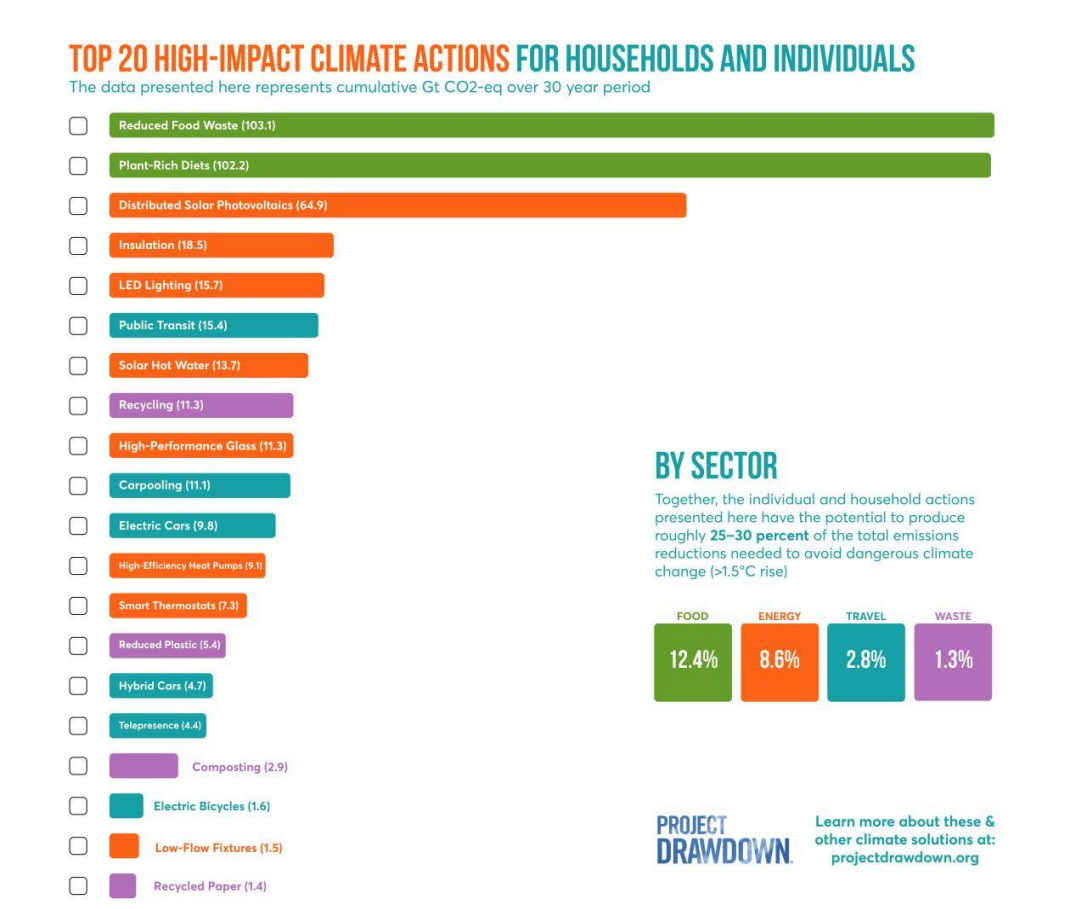
1. **Shifting to sustainable diets**
2. Reducing Food Loss and Waste



Note: Solid areas represent agricultural production emissions. Hatched areas represent emissions from land-use change.
Source: GlobAgri-WRR model.

Source WRI, [World Resources Report: Creating a Sustainable Food Future]

Individualized impact change: 12.4% food



Sustainable diets and The EAT–Lancet report

Published in 2019

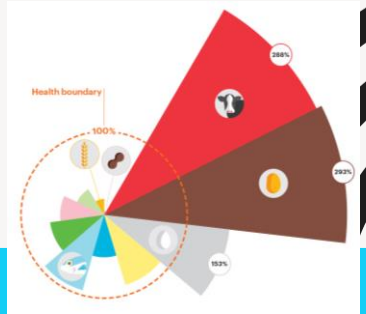
Setting Scientific Targets for Healthy Diets and Sustainable Food Production

↑ consumption of fruit (100 -300g/day) & vegetables (200-600g/day)

↓consumption of animal products

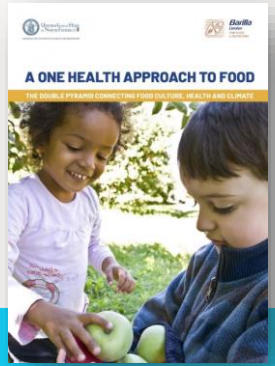
Per day requirements: 2500 kcal, and protein 56g, for a max of 1780g of CO2e

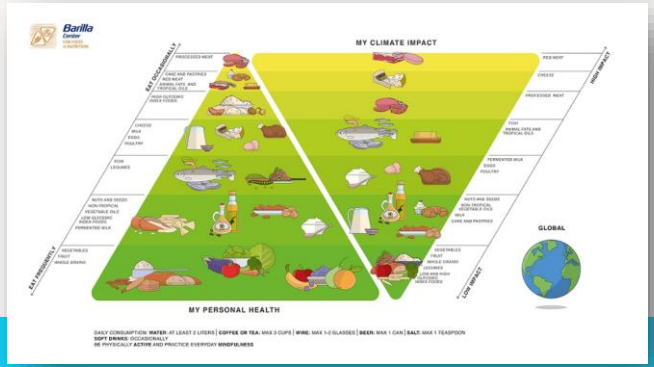
	Macronutrient intake grams per day (possible range)	Caloric intake kcal per day
Whole grains		
Rice, wheat, corn and other	232	811
Tubers or starchy vegetables		
Potatoes and cassava	50 (0–100)	39
Vegetables		
All vegetables	300 (200–600)	78
Fruits		
All fruits	200 (100–300)	126
Dairy foods		
Whole milk or equivalents	250 (0–500)	153
Protein sources		
Beef, lamb and pork	14 (0–28)	30
Chicken and other poultry	29 (0–58)	62
Eggs	13 (0–25)	19
Fish	28 (0–100)	40
Legumes	75 (0–100)	284
Nuts	50 (0–75)	291
Added fats		
Unsaturated oils	40 (20–80)	354
Saturated oils	11.8 (0-11.8)	96
Added sugars		
All sugars	31 (0–31)	120



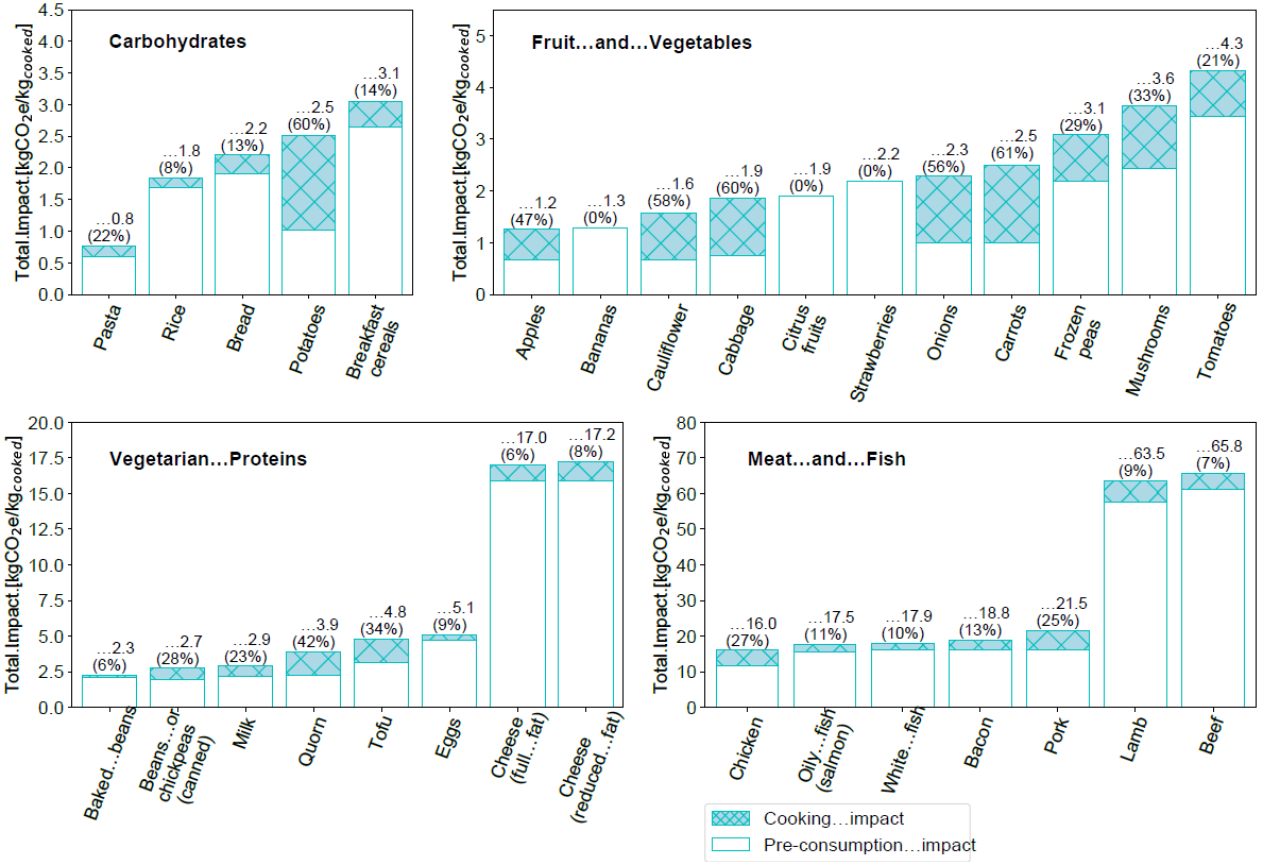
The EAT–Lancet report - A Critique

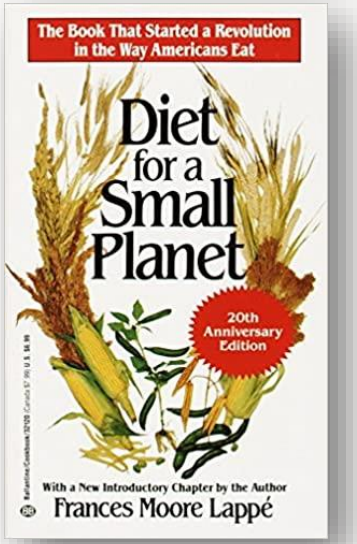
- Lack of consideration of local and traditional diets, food ways or systems of production.
- Limited suggestions on how to implement the ‘global healthy sustainable diet’ (only photos).
- Minimal discussion of cooking and real life examples (e.g. no recipes)
- Current sustainable dietary guidance is given as ingredients
- We have only just started to see translation into sustainable gastronomy – see Barilla foundation reports (2021)

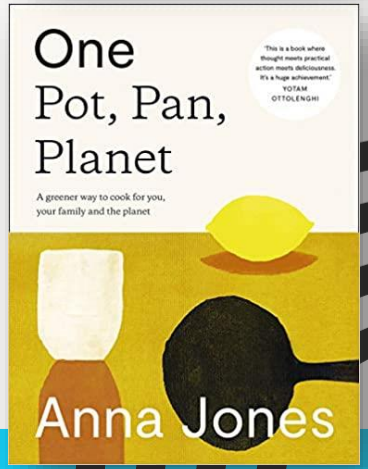




How we cook matters!







Frankowska, A., Rivera, X.S., Bridle, S. *et al.* Impacts of home cooking methods and appliances on the GHG emissions of food. *Nat Food* **1,** 787–791 (2020). https://doi.org/10.1038/s43016-020-00200-w

But we are still a long way from even the Eatwell diet...

- UK population overall continues to consume **too much sugar and saturated fat** and **not enough fruit and vegetables** and **fibre.**

- **Fruit and vegetables** Adults aged 19 to 64 years consumed on average 4.3 portions per day, 33% of adults, 12% of 11 to 18 year olds met the 5 A Day recommendation.

- **Red and processed meat** in all age or sex groups met the recommendation of no more than **70g per day,** Mean consumption. (EAT-Lancet 28g per day MAX)

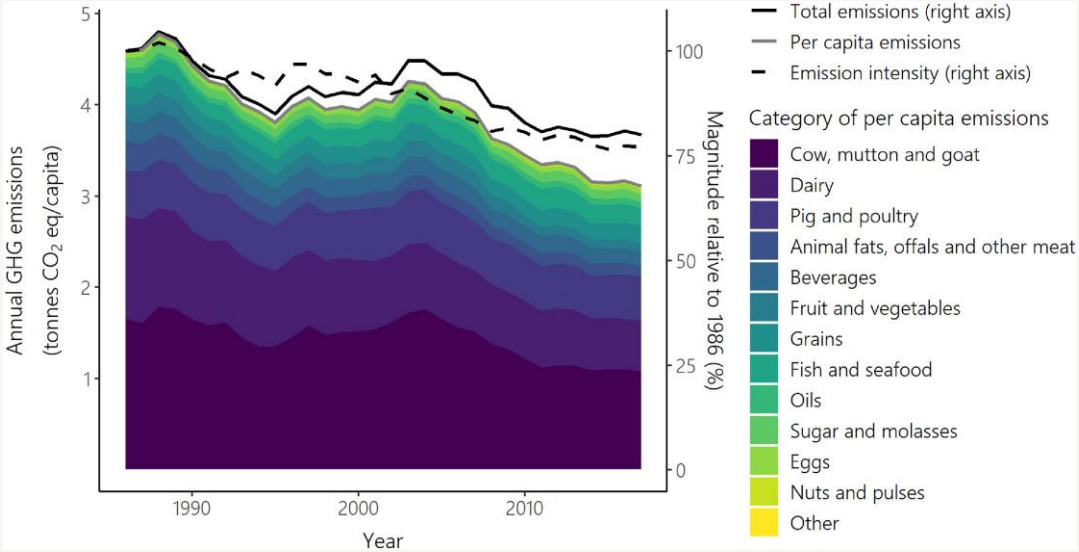
- **Oily fish** was equivalent to 56g per week in adults aged 19 to 64 years and 86g per week in adults aged 65 years and over, well below the recommended one portion (140g) per week in all age groups. (EAT-Lancet 196g per week MAX)

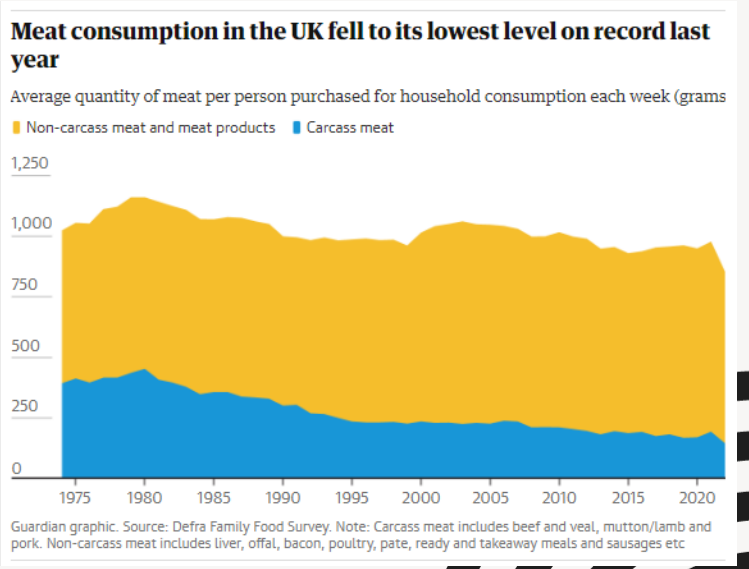
- **Fibre** below recommendations in all age groups. 9% of the 19 to 64 met the recommendation. 19.7g per day mean consumption.

https://www.gov.uk/government/statistics/ndns-results-from-years-9-to-11-2016-to-2017-and-2018-to-2019/ndns-results-from-years-9-to-11-combined-statistical-summary

The dietary patterns of each generation are changing… we are currently more sustainable in the 2010s+ than ever before.

- Per capita greenhouse gas emissions (left axis, tonnes CO_2eq/capita) by food category between 1986 and 2017, also showing changes in total emissions and emission intensity (right axis, % relative to 1986). As the impact of trade is dependent on the composition of the UK diet, a separate line for trade is not shown.



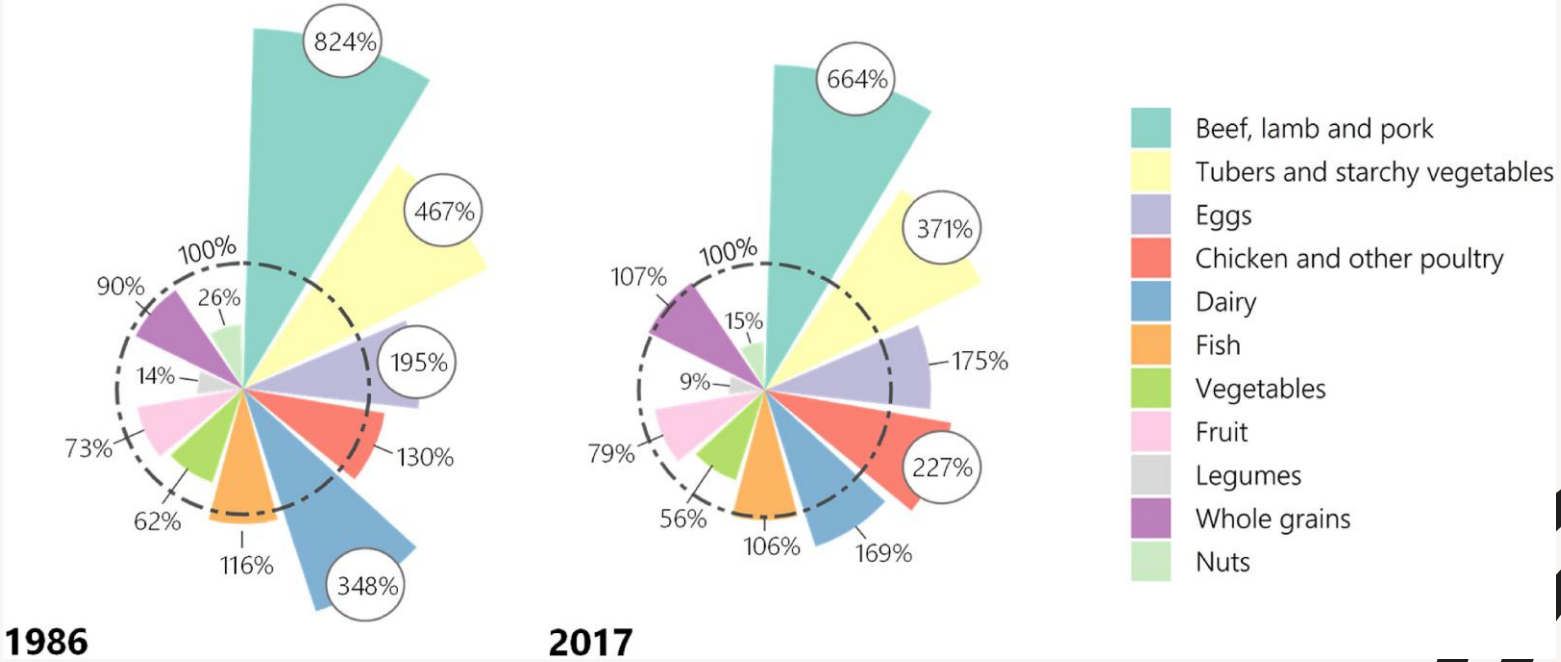


https://doi.org/10.1016/j.jclepro.2023.137273

https://www.theguardian.com/environment/2023/oct/24/uk-meat-consumption-lowest-level-since-record-began-data-reveal

The dietary patterns of each generation are changing… we are currently more sustainable in the 2010s+ than ever before.

- Comparison of the composition of the UK diet to the PHD (EAT-Lancet Commission, 2019) in 1986 and 2017, where 100% (dashed line) indicates that daily consumption in the UK is equal to the PHD. Normalised to a 2500 calorie diet.

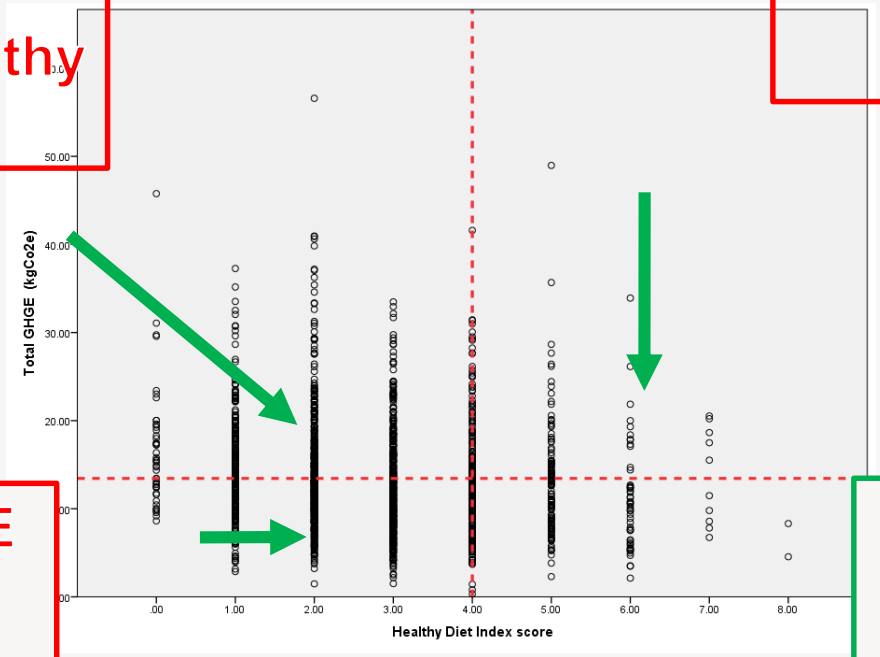


https://doi.org/10.1016/j.jclepro.2023.137273

Lots of different paths to a sustainable diet…

High GHGE Unhealthy diet

High GHGE Healthy diet



Low GHGE Unhealthy diet

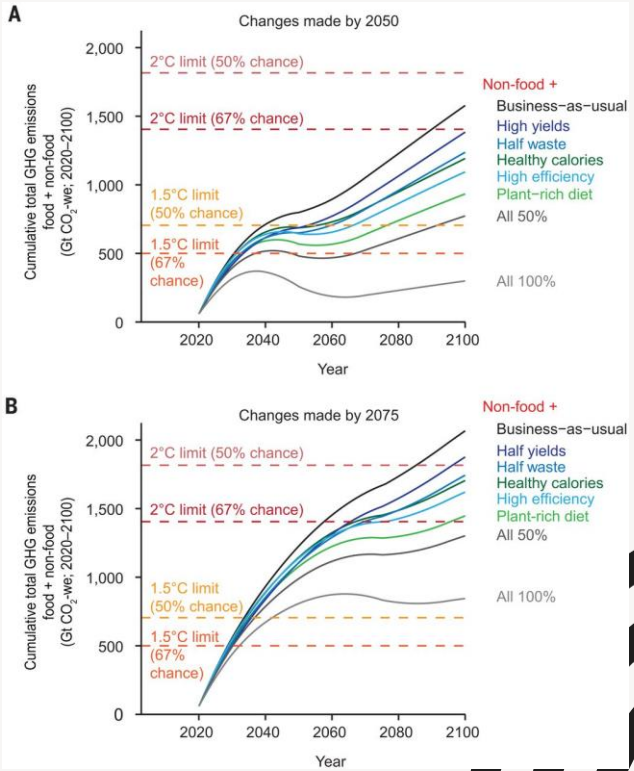
Low GHGE Healthy diet

Source: NDNS translated to HDI score matched with GHGE from Audsley 2010 (modifications by Horgan, Whybrow, and Macdiarmid 2016)

We need to continue engaging with existing trends to identify coherent solutions.

What policies and trends help our (cool) food system to become a resilient (warm) food system?

How long do we have to implement these policies?



Global food system emissions could preclude achieving the 1.5° and 2° C climate change targets
SCIENCE 06 NOV 2020 : 705-708

Disrupting eating (and cooking) for lower carbon emissions

Current focus on
1) Reducing consumption instances
2) Smaller portion sizes

0-28g per day for beef, lamb or pork

1) Typical beef portion in the UK 70-90g, once weekly

(Cooking in small batches inefficient)

2) Integrate 28g of beef into other dishes

(Cooking in fast/sustainable, Batch cooking)

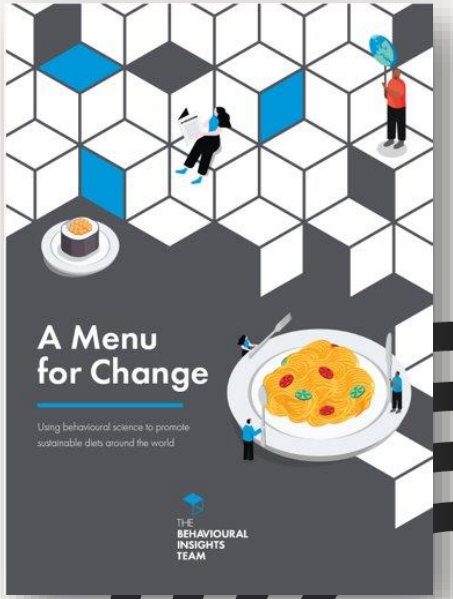
3) Adapt UPFs trends to be lower emissions. E.g. blend with sustainable protein.

(Encourage reheat?; Batch cooking, leftover (re)use)

Choice of fat also matters! (butter vs oil)

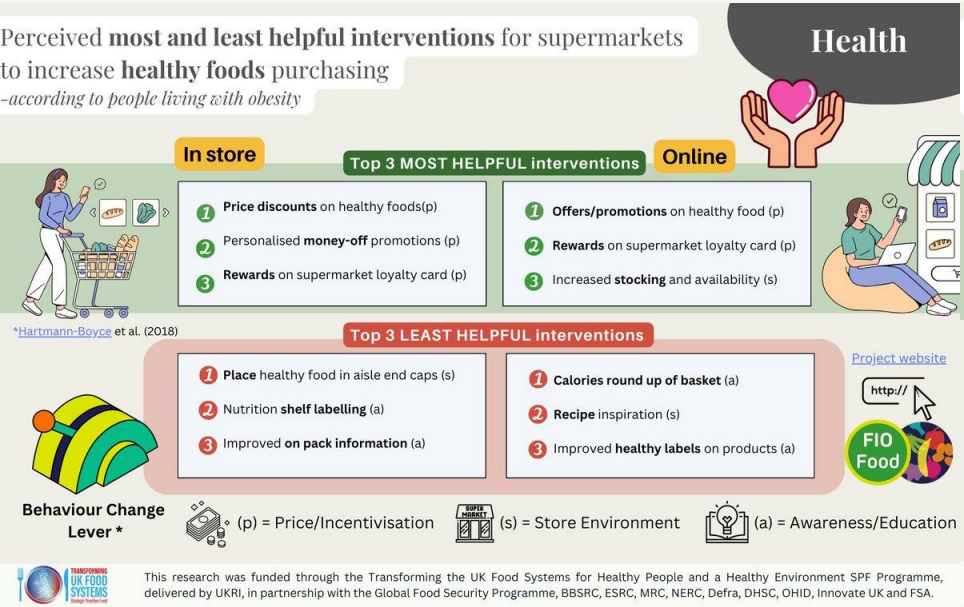
12 strategies for promoting sustainable diets.

1. **Incentivise** product innovation and reformulation (e.g. a carbon tax)
2. Market **plant-based food** as aspirational, delicious, and indulgent
3. Use novel in-store/in-app **promotions**, incentives and games
4. Campaign with pride, positivity, and pragmatism
5. Raise awareness, and build a mandate for strong policy
6. Publicise the **desirable norm**, and lead by example
7. ‘Re-brand’ plant-based food towards a mainstream identity, and promote more mainstream dishes
8. Integrate (don’t segregate) the plant-based produce
9. **Eco-labels and supermarket ratings**
10. Ease the change with ‘rules of thumb’, tips and **recipes**
11. Prompt sustainable choices at timely moments
12. Edit the **choice architecture**, to make sustainable options more prevalent, more prominent, and the default choice



https://www.bi.team/publications/a-menu-for-change/

Interventions need to fit the target community.



https://twitter.com/FIOFood/status/1710234000994845141

A wider systems perspective

https://twitter.com/Food_Foundation/status/1704423308865814952/photo/4

Lots of amazing people research this topic.

We cannot stop the climate crisis alone;

Shout out to a great community of researchers, please check out their research.

Rachel Pechey; Emma Garnett; Rosemary Green; Pauline Scheelbeek; Lindsay Jaacks; Clare Pettinger






LEAP
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SHEFS
Sustainable & Healthy Food Systems

TRANSFORMING UK FOOD SYSTEMS
Strategic Priorities Fund

School of Health & Psychological Sciences
City, University of London
Northampton Square
London
EC1V 0HB
United Kingdom

T: +44 (0)20 7040 5060
E: christian.reynolds@city.ac.uk
@sartorialfoodie

https://www.city.ac.uk/about/schools/health-sciences/research/centre-for-food-policy

The Centre for Food Policy, City, University of London offers the following courses

Nutrition and Food Policy BSc (Hons)
Undergraduate degree

Food Policy MSc/PGDip/PGCert/MSc Distance Learning
Postgraduate taught degree

PhD/MPhil Food Policy
Postgraduate research degree

https://www.city.ac.uk/prospective-students/courses/postgraduate/food-policy

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