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# Finding coherent solutions for food security

**Centre for  
Food Policy**

Shaping an effective food system

Strengthening Food Security:  
Tackling Food Shortages & Food Poverty

Tuesday, November 7th 2023  
10:00 – 10:25am

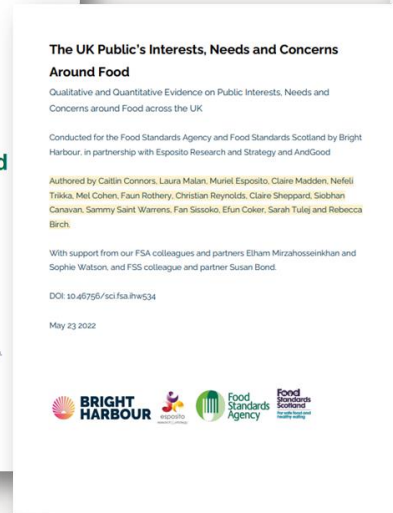
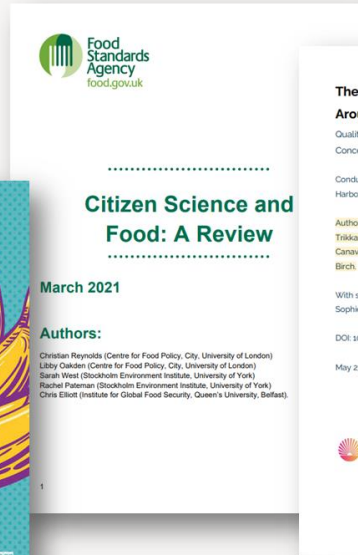
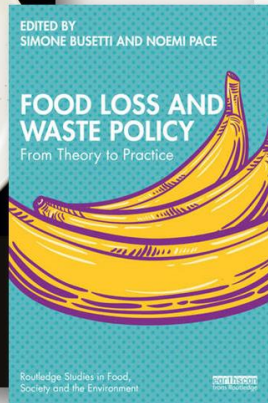
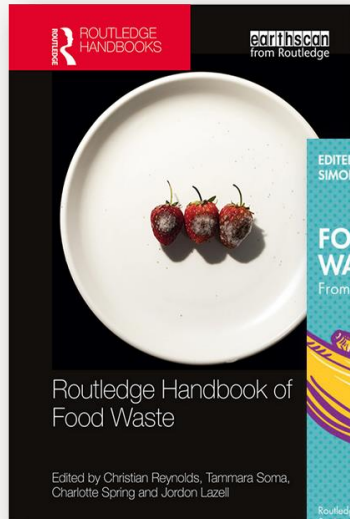
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City, University of London*  
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Public Policy  
exchange

# 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



Food system disruption is coming...

We don't know when.

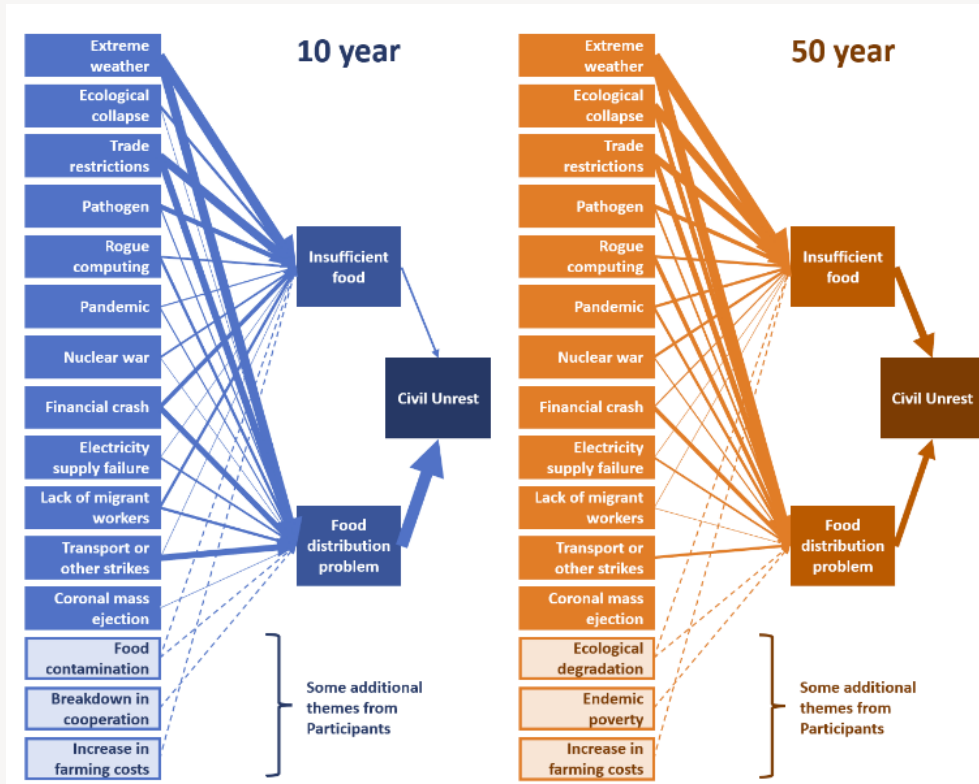
We can identify coherent solutions that improve resilience and food security.

# Food system disruption is coming...

Potential UK food system disruption scenarios leading to Civil unrest: (1 in 2000 people have been injured in the UK). 76 food system experts polled.

Timeframe of **10 years** (2033)  
**40%** of experts rated as “Possible”  
“More likely than not” or “Very likely”

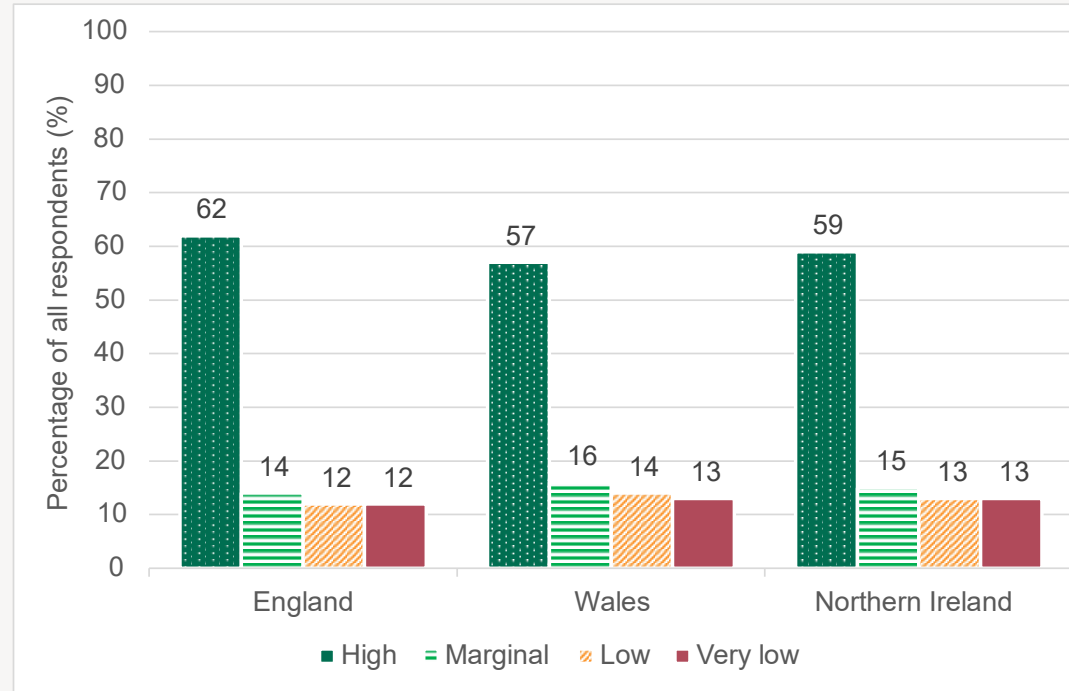
Timeframe of **50 years** (2073)  
to **80%** of experts



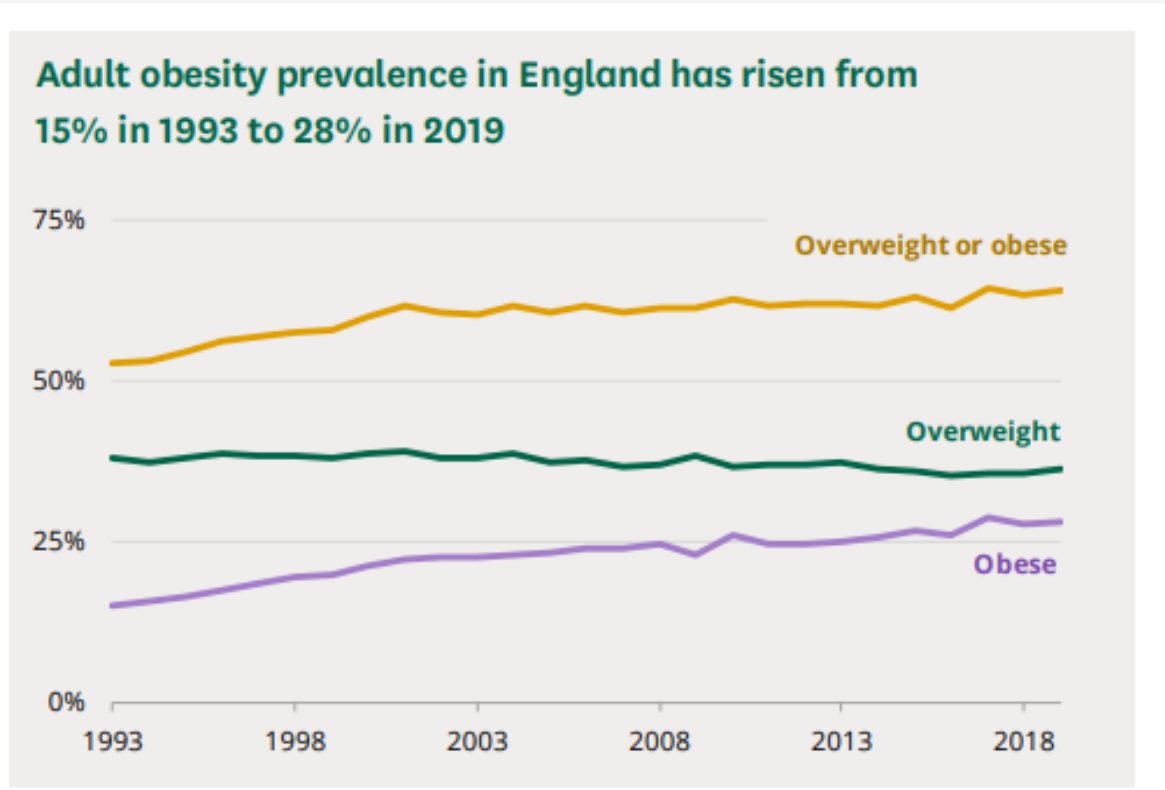
# Is the current food system failing?

## Food Insecurity

- 25% classified as food insecure.
- 44% aged 16-24 years were food insecure.
- 45% of households with children under 6 years reported that they were food insecure.



# Is the current food system failing? Obesity is increasing



2021 to 2022, **63.8% of adults** aged 18 years and over in England were estimated to be overweight or living with obesity

5% of NHS spending is on treating obesity related illness

~\$2 trillion in global healthcare costs due to obesity!

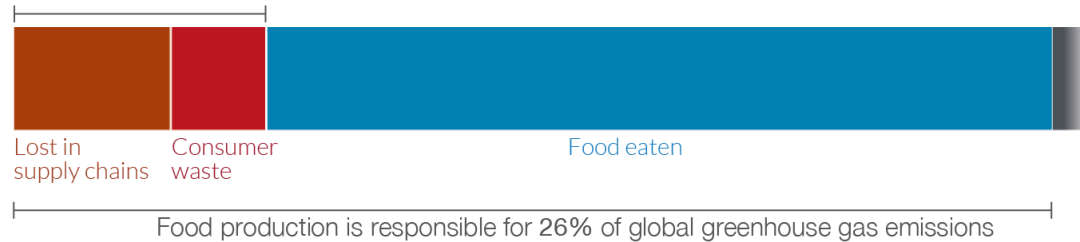


# Is the current food system failing? Food Loss and Waste (FLW)

6% of global greenhouse gas emissions come from food losses and waste

Our World  
in Data

Emissions from food that is never eaten accounts for 6% of total emissions



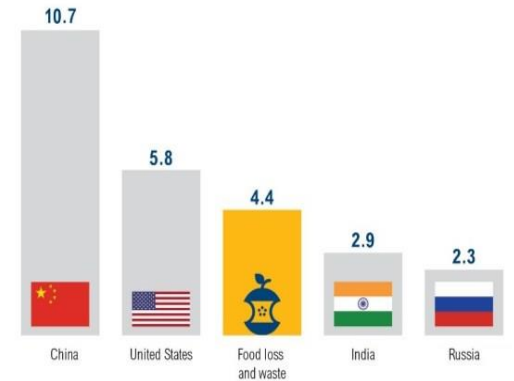
Note: One-quarter of food emissions comes from food that is never eaten: 15% of food emissions from food lost in supply chains; and 9% from consumer waste.

Data source: Joseph Poore & Thomas Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*.

OurWorldinData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Hannah Ritchie.

If Food Loss and Waste Were its own Country, it Would Be the Third-Largest Greenhouse Gas Emitter



GT CO<sub>2</sub>e (2011/12)\*

\* Figures reflect all six anthropogenic greenhouse gas emissions, including those from land use, land-use change, and forestry (LULUCF). Country data is for 2012 while the food loss and waste data is for 2011 (the most recent data available). To avoid double counting, the food loss and waste emissions figure should not be added to the country figures.

Source: CAIT, 2015; FAO, 2015. Food wastage footprint & climate change. Rome: FAO.



# Is the current food system failing?

## UK not eating a healthy (or affordable) 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.



- 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.



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



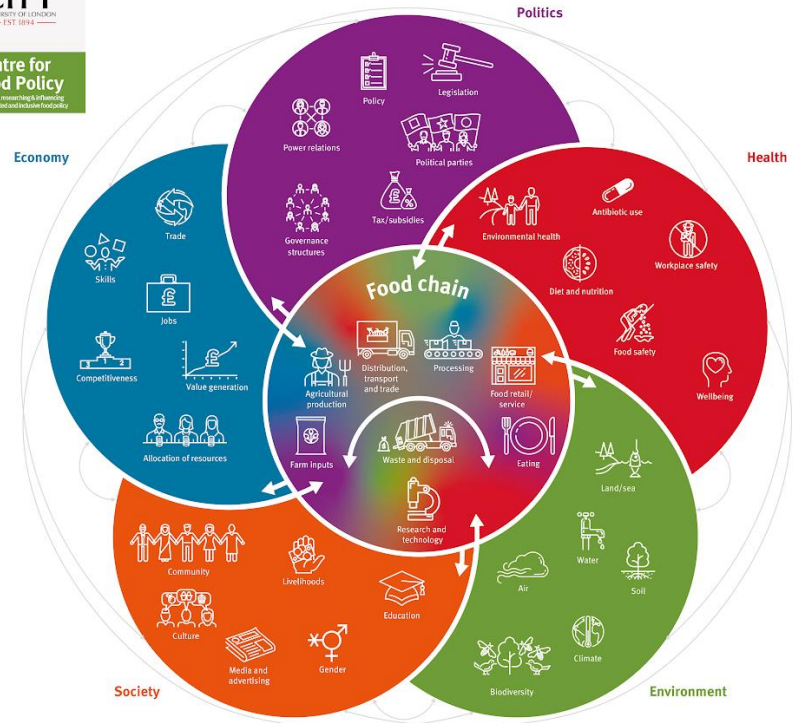
- Cost** of eating the Eatwell guide **\$41.93** one adult/week **£103.17** family of four/week

All of these challenges happen in an interconnected system...



Centre for Food Policy  
Building partnerships between  
the engaged and the unengaged

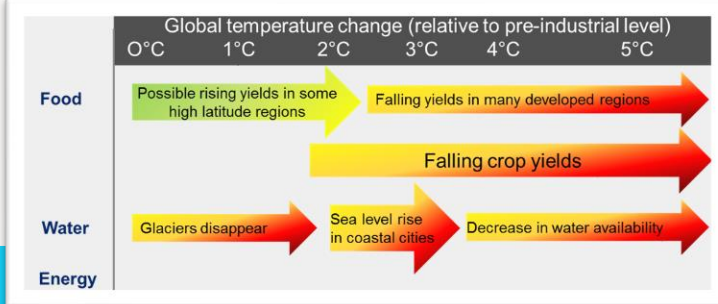
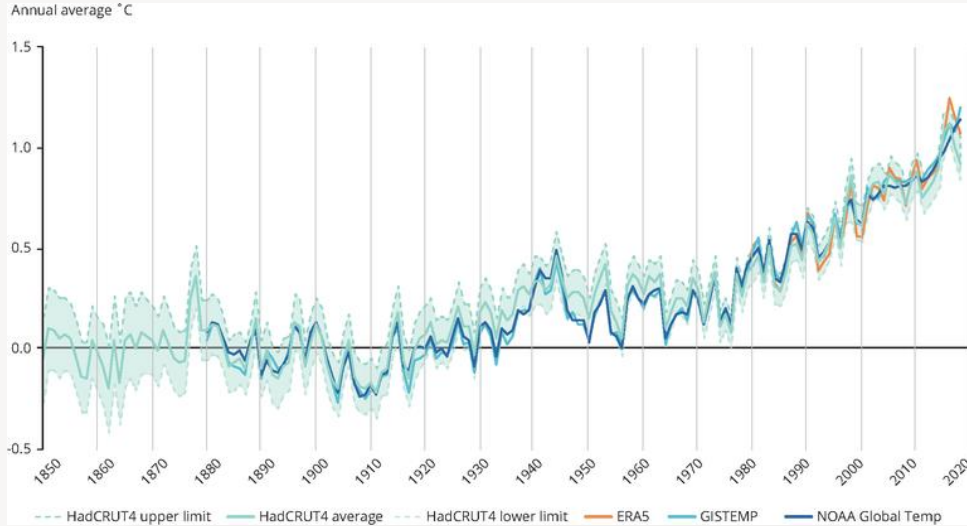
# The food system



# The climate is changing...

Global average near surface temperature since the pre-industrial period

Source [European Environment Agency \(EEA\)](https://www.eea.europa.eu/en/press-photos/2023/04/01)



## 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 for chardonnay. Photograph: Eddy Dallimore/Getty Images/Stockphoto

Nick Stringer in Central Otago  
Fri 14 Apr 2023 21:00 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 guardian.org  
About this content  
#guardian  
Fri 21 Jul 2023 04:00 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



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

Supported by  
Ithaka Ixter Project  
About this content  
Cecilia Nowell  
Sat 2 Sep 2023 12:00 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

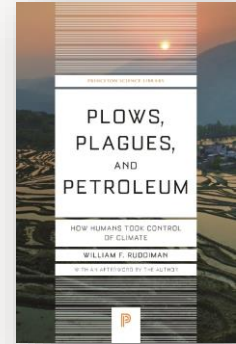
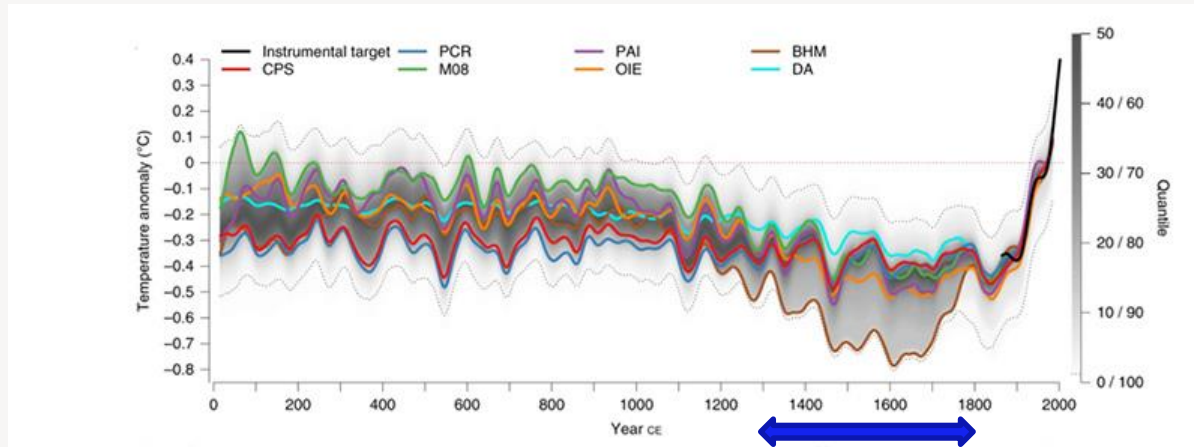


✎ Industry insiders say availability of produce is down 30%-40% on some crops. Photograph: Marek Staszczuk/Alamy

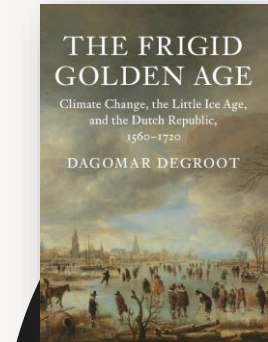
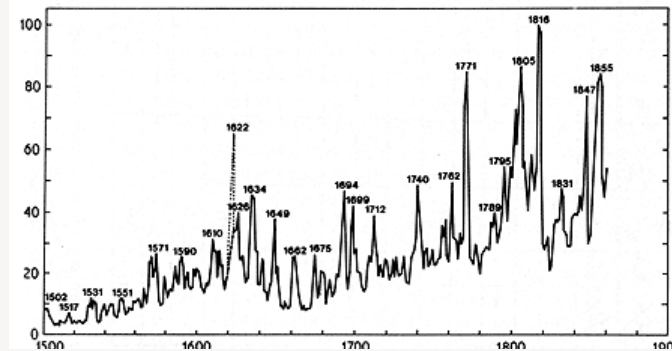
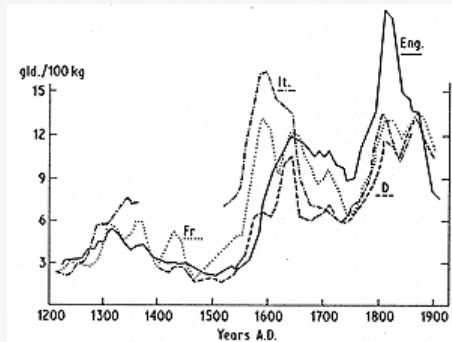
Sarah Butler  
#guardian  
Mon 20 Feb 2023 19:01 GMT



# Food and climate have always been linked!



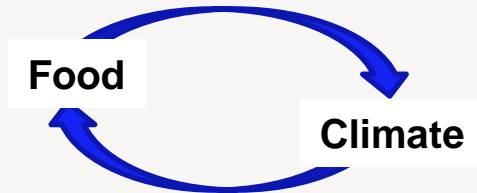
Global temperatures over the past 2,000 years, according to different statistical methods. The black line represents modern warming, as measured by meteorological instruments. Global cooling in even the chilliest decades probably did not exceed 0.5 degrees Celsius. <https://aeon.co/essays/the-little-ice-age-is-a-history-of-resilience-and-surprises>



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.

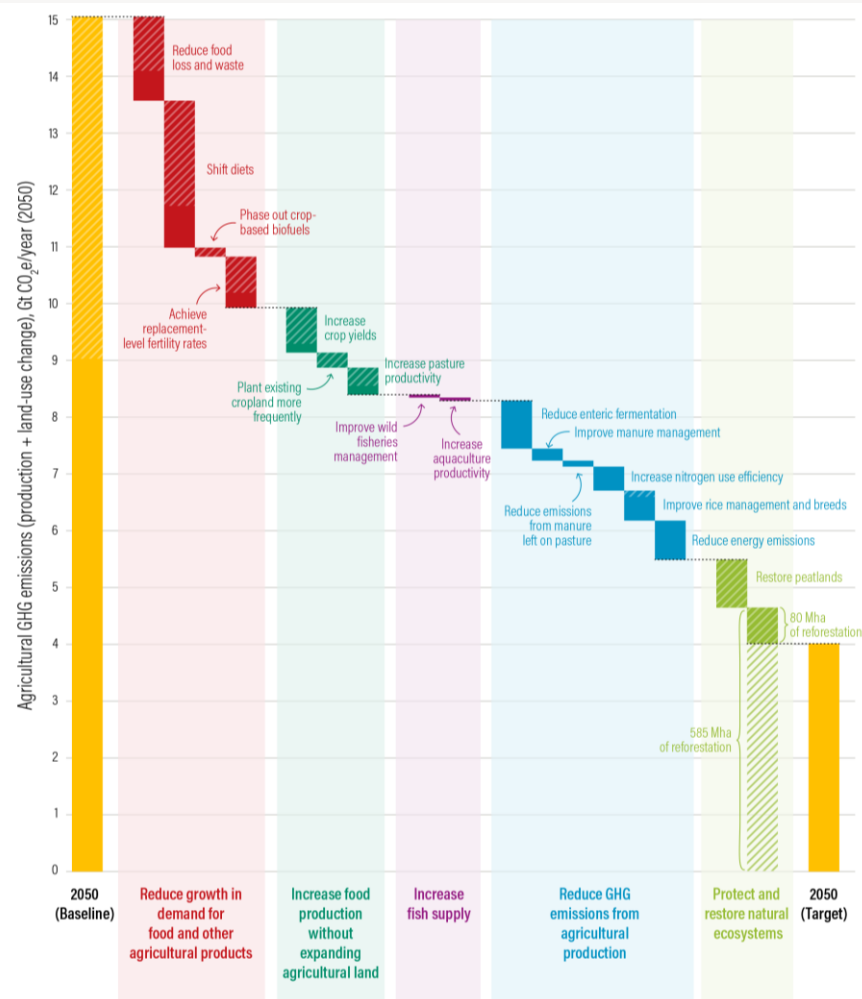
Probably only ever a max 0.5° C cooling!

We now ~1.1c warmer than preindustrial levels

# 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](#)



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

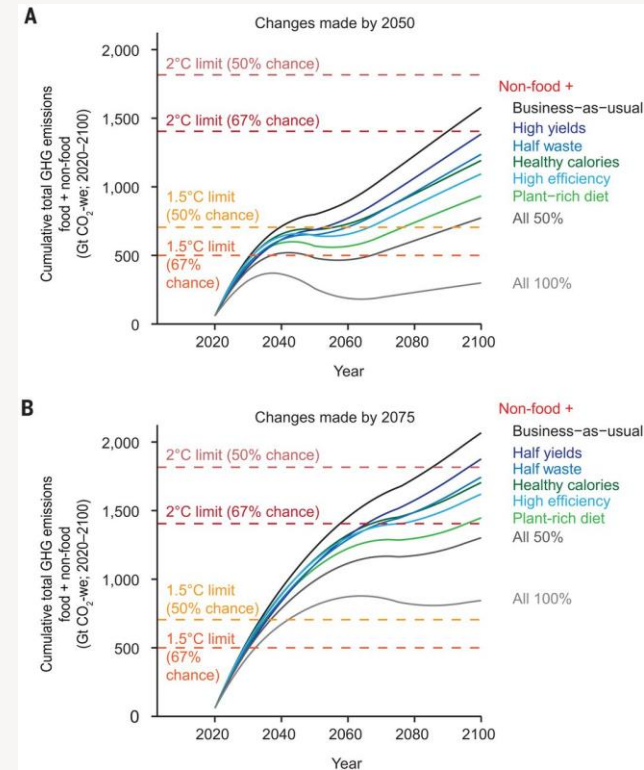
What policies and trends help our (cool) food system to become a resilient (warm) food system?

How long do we have to implement these policies?

## Food policy coherence

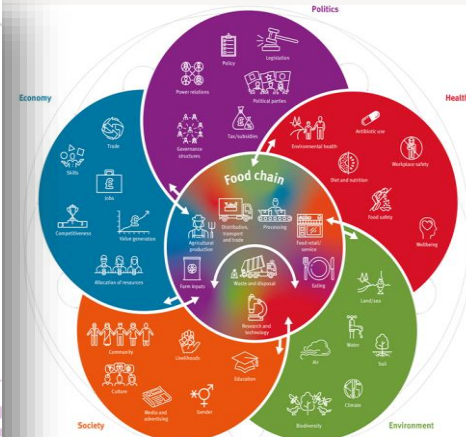
*The alignment of policies that affect the food system with the aim of achieving health, environmental, social and economic goals, to ensure that policies designed to improve one food system outcome do not undermine others.*

[https://www.city.ac.uk/\\_data/assets/pdf\\_file/0018/504621/7643\\_Brief-5\\_Policy\\_coherence\\_in\\_food\\_systems\\_WEB\\_SP.pdf](https://www.city.ac.uk/_data/assets/pdf_file/0018/504621/7643_Brief-5_Policy_coherence_in_food_systems_WEB_SP.pdf)



# Coherent solutions

- We need to change diets and FLW as part of creating a resilient food system.
- We have a wide menu of policy options to select from.
- Not all of these solutions are coherent to all food system goals, or right for every geography, culture etc.
- We can use existing trends as a basis to identify the solutions that work and are coherent, and can make a difference in the next 10 years.



# Embrace complexity of solutions across government

16 departments and bodies in England make decisions that affect food policy



Source: Parsons, K. (2020). Who makes Food Policy in England? A map of government actors and activities. Food Research Collaboration.

Similar levels of complexity in devolved nations and local government

# Complexity! 34 Local Govt. policy areas linked to food.

- Access to safe drinking water
- Accessible healthy food retail
- Affordable housing
- Agrobiodiversity and wild foods
- Animal husbandry
- Breastfeeding
- Dedicated food system policy/strategy
- Dietary guidelines for external settings
- Education on/enforce food safety regulations
- Education/events on food system issues
- Encourage existing retailers/caterers to sell healthy, sustainable and affordable food
- Encourage opening of new fresh food outlets; discourage unhealthy outlets
- Food losses and food waste
- Food production on LG land
- Food related job creation
- Food supply and food system resilience
- Healthy eating by LG staff
- Healthy/sustainable LG food procurement policies
- Home and community gardening
- Local food initiatives for economic development
- Local food producers
- Local, sustainable food processing
- Modify housing/property designs to ensure adequate food storage/preparation areas
- Nutrition in vulnerable populations
- Partner with sport clubs to provide healthy choices
- Pregnancy dietary advice
- Public food markets and distributors
- Restrict unhealthy food advertising; increase healthy food promotion
- Restrict unhealthy food in vending machines under LG control
- Strengthen food chain connections/distribution
- Sustainable local food production
- Sustainable water management in food production
- Traditional food cultures
- Use economic measures to encourage affordability/consumption of healthier foods; discourage less healthy foods

# Interventions need to fit the target community.

Perceived most and least helpful interventions for supermarkets to increase **healthy foods** purchasing –according to people living with obesity

## Health

Perceived most and least helpful interventions for supermarkets to increase **sustainable foods** purchasing –according to people living with obesity

## Sustainability

**In store**

**Top 3 MOST HELPFUL interventions**

- 1 Price discounts on healthy foods (p)
- 2 Personalised **money-off** promotions (p)
- 3 Rewards on supermarket loyalty card (p)

**Online**

- 1 Offers/promotions on healthy food (p)
- 2 Rewards on supermarket loyalty card (p)
- 3 Increased **stocking** and availability (s)

**In store**

**Top 3 MOST HELPFUL interventions**

- 1 Offers/promotions on sustainable food (p)
- 2 Rewards on supermarket loyalty card (p)
- 3 **Locally grown** produce (s)

**Online**

- 1 Availability of 'green delivery' slots (s)
- 2 Rewards on supermarket loyalty card (p)
- 3 Offers/promotions on sustainable food (p)

\*Hartmann-Boyce et al. (2018)

\*Hartmann-Boyce et al. (2018)

**Top 3 LEAST HELPFUL interventions**

- 1 Place healthy food in aisle end caps (s)
- 2 Nutrition **shelf labelling** (a)
- 3 Improved on **pack information** (a)

**Behaviour Change Lever\***

(p) = Price/Incentivisation

(s) = Store Environment

(a) = Awareness/Education

[Project website](#)

**Top 3 LEAST HELPFUL interventions**

- 1 Sustainability **education** information (a)
- 2 Has an **ethical trading** accreditation (a)
- 3 Sustainable **label/logo** (a)

**Behaviour Change Lever\***

(p) = Price/Incentivisation

(s) = Store Environment

(a) = Awareness/Education

[Project website](#)



This research was funded through the Transforming the UK Food Systems for Healthy People and a Healthy Environment SPF Programme, delivered by UKRI, in partnership with the Global Food Security Programme, BBSRC, ESRC, MRC, NERC, Defra, DHSC, OHID, Innovate UK and FSA.



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# Look to the solutions from civil society

Reducing UK meat consumption by 30% in the next decade needs:




Food system disruption is coming...



We don't know when.

We can identify coherent solutions that improve resilience and food security.



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<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>

