

# Balancing Food Security and Climate Change Mitigation: Health and Societal considerations

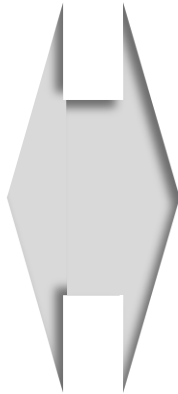
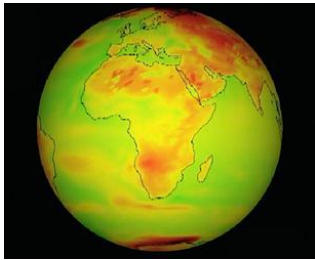
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# Food Security

Adaptation



Mitigation



**Food Security:** “People from all parts of society should be able to choose and eat a sustainable diet with reliable access to affordable, healthy and safe food”

# Access to affordable, healthy and safe food

Price (91%) is the second most important consideration after quality (96%) for European consumers when shopping for food.

The most common barrier to sustainable food consumption was that it was 'too expensive'.

*Department for Environment, Food & Rural Affairs. 2011. Attitudes and Behaviours around Sustainable Food Purchasing. Defra, London, UK.*

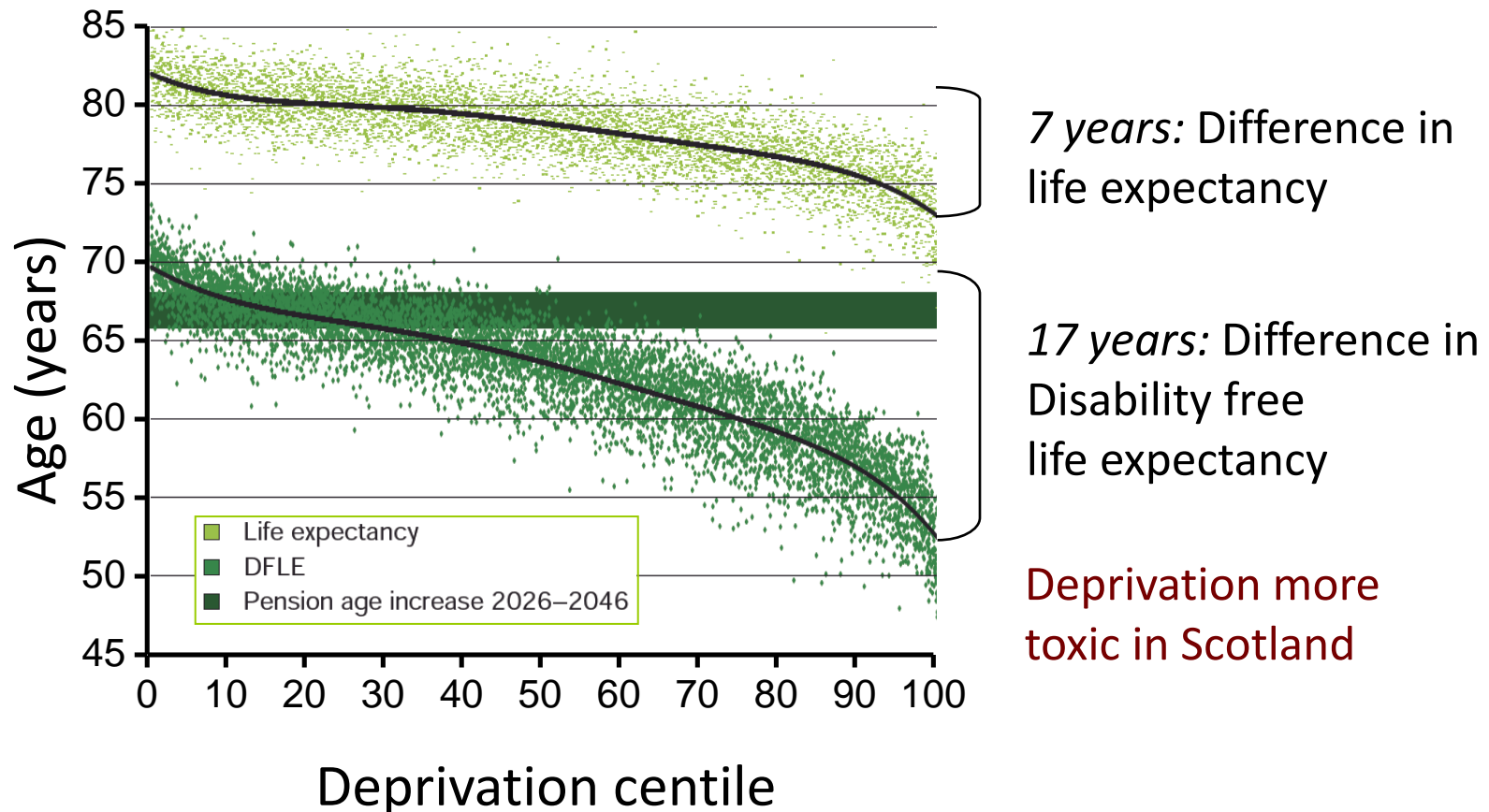
“Equalities impact assessments are part of the formal processes for implementing the principle of fairness.”

*Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027. (Draft report 2013)*

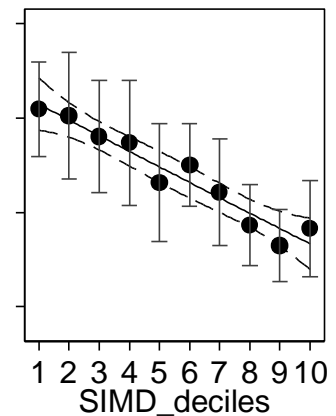
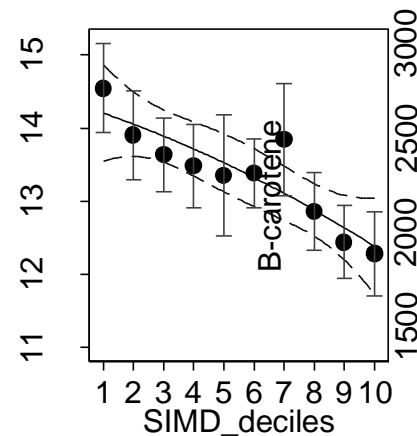
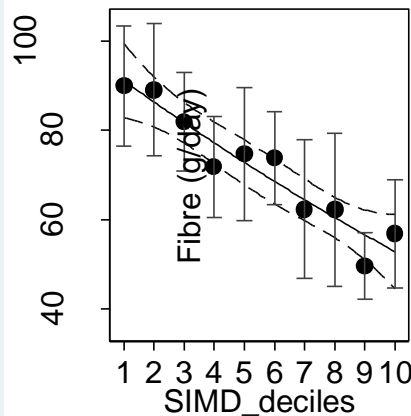
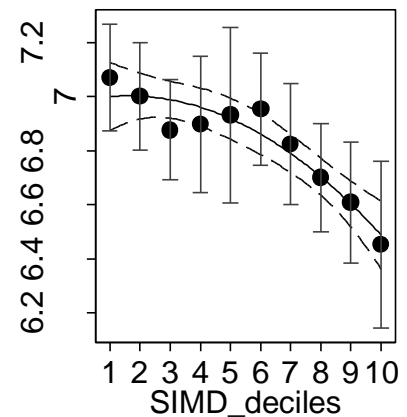
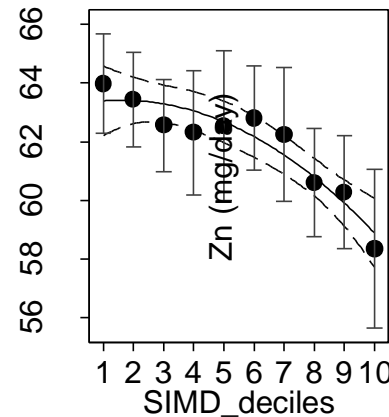
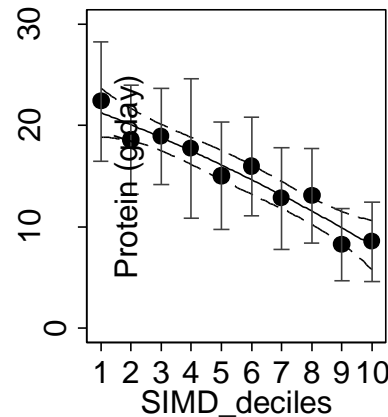
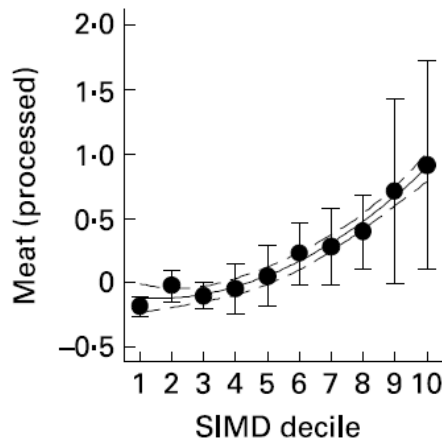
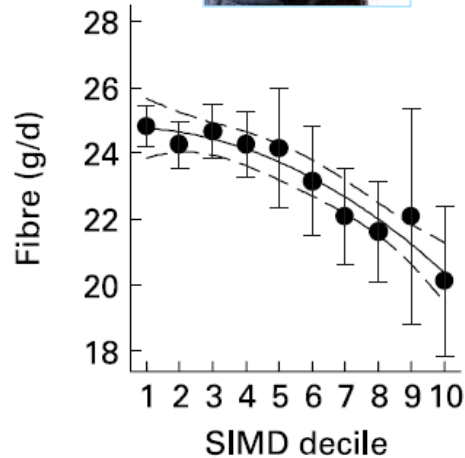
# Inequality and Health



“People in poorer areas not only die sooner, but they will also spend more of their shorter lives with a disability.”



# Inequality and Food



Haggarty et al (2009) Diet and deprivation in pregnancy. *Br J Nutr.* 102, 1487–1497

Craig et al (2010) Dietary patterns of school-age children in Scotland: *Br J Nutr.* 103, 319–34

# Trends in absolute and relative poverty

- “Relative poverty continues to fall, but only because the poverty line is also falling: the poor have undoubtedly been getting worse off in absolute terms.”
- “The number of children materially deprived has increased since its low point in 2006–07.”
- The Office for National Statistics estimates that in 2011, 14 million people in the UK were at risk of poverty or social exclusion.



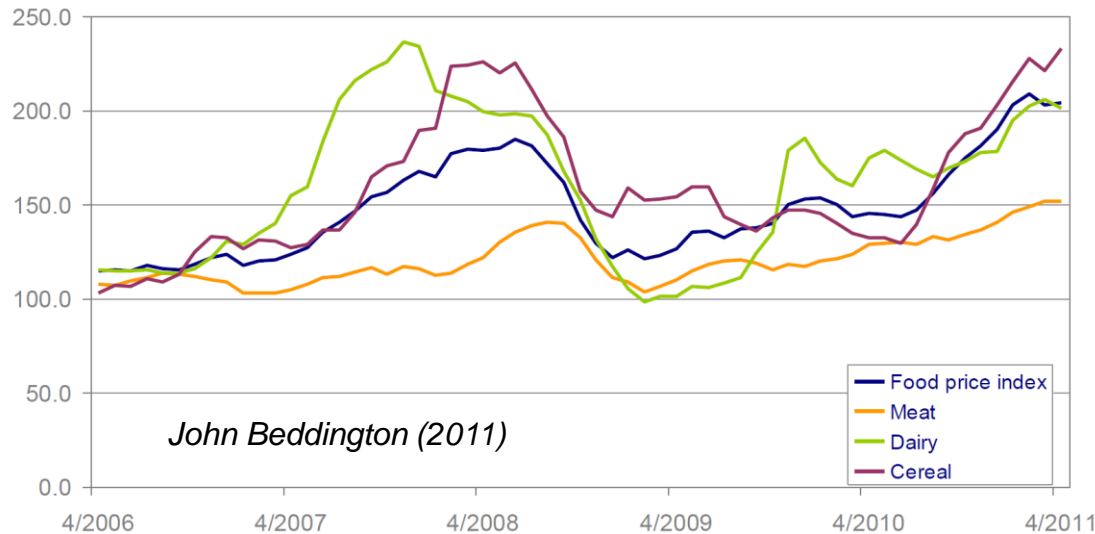
**1 in 5** mums skip  
meals to feed  
their children

Over **250**  
UK foodbanks  
launched



people fed in **2011-12**  
**128,697**

# How critical are short term fluctuations?



“Giving every child the best start in life is crucial to reducing health inequalities across the life course.”



“What happens during these early years (starting in the womb) has lifelong effects on many aspects of health and well-being – from obesity, heart disease and mental health, to educational achievement and economic status.”

# Policy consequences; local food

## Example of selenium

The main sources of selenium in the UK diet are breads, cereals, fish, poultry and meat.



Intakes of dietary selenium have decreased across Europe, including Britain.

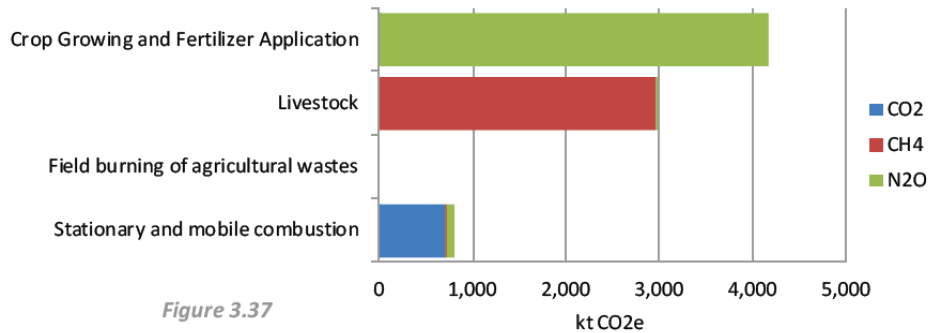
This is thought to be largely due to reduced use of US wheat for flour derived from grains that are high in selenium concentration and the increased use of European flours, which contain less selenium.

The selenium content of terrestrial derived foods depends on the geochemistry of the soil, as well as on its selenium content.

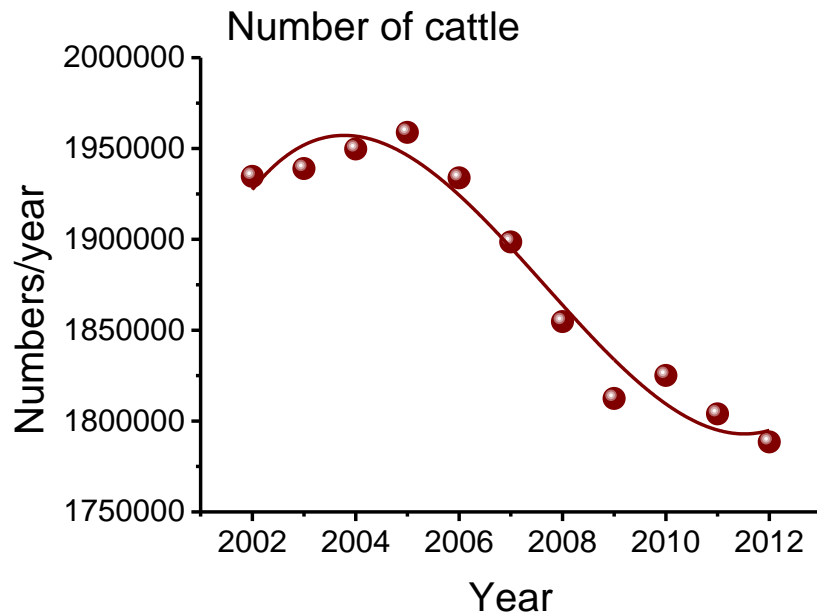


# Policy consequences; Cattle & mitigation

*Agriculture Emissions by category and pollutant, 2010*



*Figure 3.37*



“Decreasing the numbers of Scottish livestock would be unlikely to affect the amount of meat consumed in Scotland, and would therefore result in meat being imported with emissions overseas.”

*Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027. (Draft report 2013)*

# Advice on red meat

Higher consumers should consider a reduction in red and processed meat consumption.

Adults with relatively high intakes of red and processed meat (those above the 75th percentile consume over 90 g/day) should consider reducing their intakes.

Meat can be consumed as part of a healthy, balanced diet; that it is a good source of iron, zinc, B vitamins and protein



# Look beyond carbon



We live in an increasingly water insecure world. Under current trends, future demands for water will not be met

*(Ban Ki-moon, UN Secretary General)*

- Up to 90% of all managed water is used to grow food.
- It takes 1,790 litres of water to grow 1kg wheat; 9,680 litres for 1kg of beef.
- Meat-eaters consume the equivalent of 5,000 litres of water a day compared to the 1,000-2,000 litres used by people on vegetarian diets.

Countries with little water may choose not to grow crops but trade in "virtual water", importing food from countries which have large amounts of water to save their supplies for domestic or high-value uses."

# Health as a driver of sustainability

“Health is a motivator for behaviour change – more than any concern about the environment.”

UK government research into attitudes and behaviour around sustainable food found that;

- health is the most important factor for consumers (81%).
- environmental sustainability was the least important (26%).



# Health as a driver of sustainability

It is possible to develop dietary recommendations that meet national dietary guidelines and deliver a 25% reduction in greenhouse gas emissions from the EU food supply chain.

The LiveWell diet would not require a radical overhaul of current diets. It's easy to follow and costs no more than current food consumption.



# The importance of food waste

Within the EU, approximately one third of households' total environmental impact (including energy use, land use, water, soil pollution and emissions of greenhouse gases) is related to food and drink consumption.\*

Table 3.1. Ten Key Household Behaviours

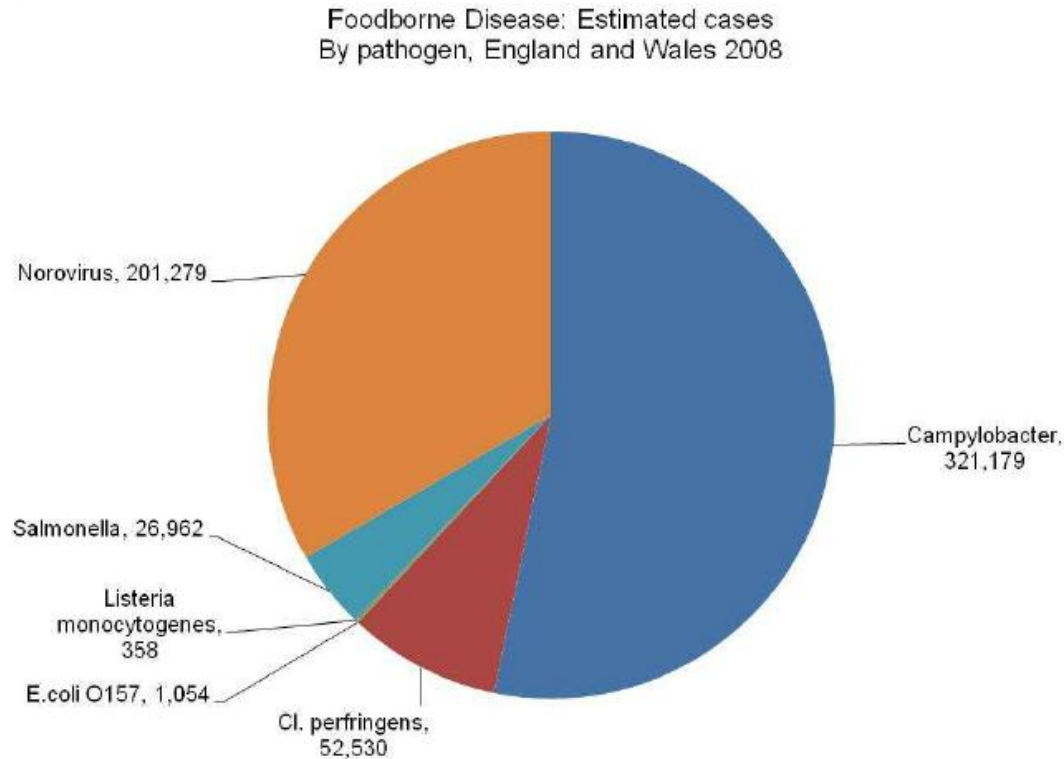
Home Energy	Installing a more efficient energy system
	Keeping the heat in (draught proofing & insulation)
	Better heating management
	Saving electricity
Travel	Walking, cycling, using public transport and/or car sharing instead of (solo) driving
	Using a low carbon vehicle, fuel efficient driving
	Using alternatives to flying where practical
Food	Avoiding food waste
	Eating a healthy diet high in fruit and vegetables, in season where we live
Consumption	Reducing and reusing, in addition to the efforts we already make on recycling

*Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027. (Draft report 2013)*

## Waste (Scotland) Regulations (May 2012)

*\*Tukker, A et al. 2009. Environmental impacts of diet changes in the EU. Joint Research Centre European Commission, Brussels, Belgium.*

# Foodborne pathogens

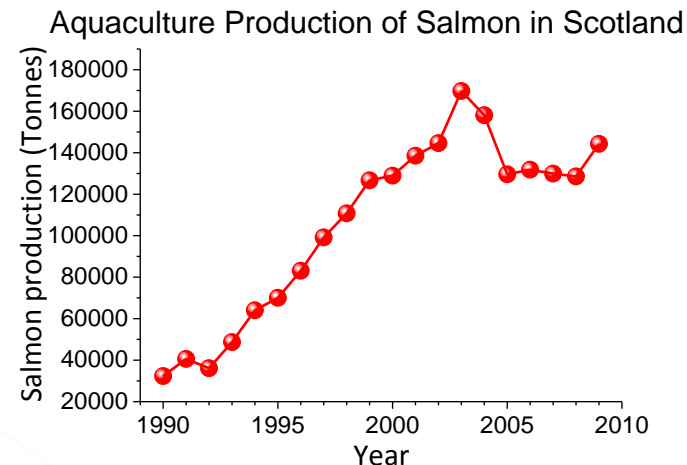
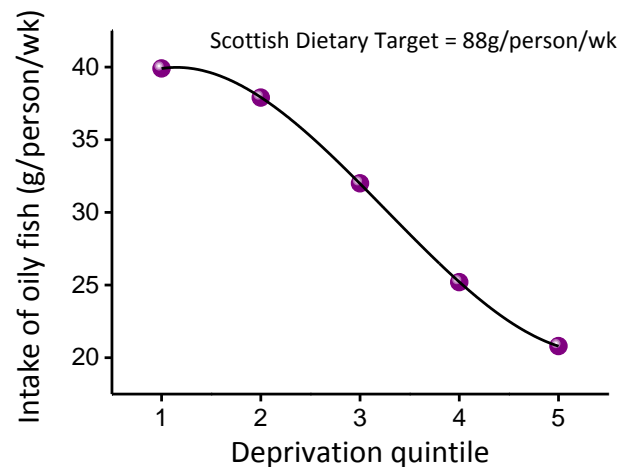


**Climate related effects:** temperature; humidity.

**Mitigation measures:** transportation; processing systems; energy use; waste; behaviour change.



# Complexity of the food chain & unforeseen effects





# Summary

- The importance of Food Security is underestimated.
- Modification of food production, distribution and consumer behaviour can make an important contribution to mitigation.
- Use 'Health' to promote change.
- Social stratification is key to understanding mitigation effects on Food Security.
- Absolute poverty is more important than relative poverty.
- Short term availability/price shocks can have lasting effects.
- Think beyond carbon.
- Question easy assumptions.
- Explore all the consequences of mitigation policies.

Climate change is an opportunity for those who best understand the complexity and are able to provide the appropriate innovation.