



## Climate change impacts on food security - learning from past food shocks

The third in the first series of 'Reading Climate Forums' was on Wednesday 25th May 2016 in the Reading Quaker Meeting Rooms, 2 Church Street, Reading, Berkshire, RG1 2SB.

The speaker was Dr. Jacob Bishop of Reading University. He is a post-doctoral Research Assistant in the Department of Agri-Food Economics and Social Science at Reading University.

### **What is global food security?**

FAO definition: "food must be sufficiently affordable, safe, and appropriate, each with a level of certainty, for a healthy lifestyle."

Europe has 'surplus' food available but use of food banks show that it is not accessible to all. Addressing food security goes beyond food production – over a third of global adult population is either overweight or obese while many people face nutrient deficiencies.

### **How might global food security be impacted by climate change?**

Climate change is not the only factor – John Beddington used the phrase 'a perfect storm' to describe the combination of:

- Shortages in water, food, and energy.
- Rising population
- Climate change

Climate change impacts expected to be centred in areas with the highest undernourishment and highest population growth – mainly Africa.

Water shortages: By 2025, about 1 in 6 people will experience water scarcity of some kind.

Resource-intensive food: In 2009: richest 15 nations ate 750% more meat per person than the 24 poorest nations.

FAO projects a 'need' to increase food production by 70% by 2050 – but this will increase soil loss and salinity and will reduce water availability.

Climate change won't stop in 2050: it will bring more extreme weather (droughts, heatwaves, floods and frosts).

**Food shocks:**

1988 – Maize yield fell by 12%; 1988/9 – Soybean yield fell by 8.5%; 2003 – Wheat yield fell by 6%.

10% loss in grain production can lead to 200% increase in price, export and import restrictions, hoarding, speculation, political unrest.

Crop pests and pathogens will spread reducing yield, food production is moving away from the equator.

In the UK flooding in 2015 caused power shortages and dislocation of transport creating food price shocks.

In July 2012 670 million people were without power – loss of safe food storage and preparation

UK food security affected by rising prices and lower wages since 2006. People switched to nutritionally poor food. People on lowest incomes worst affected.

Pollinator populations are threatened by climate change – important for yield of insect-pollinated crops.

**Strategies being developed to reduce the impacts:**

Drought- and heat-resistant crop varieties are being developed.

Farming techniques are changing – irrigation, changing crops, switching back to mixed farms because intensive livestock is vulnerable to shocks in soybean prices.

Maintaining and promoting bee populations in agricultural habitats.

Providing better information to farmers to help them adapt to climate change.

Better climate information to predict food shocks before they happen, to trigger prior agreed strategies.

**What more can be done?**

Globally and at policy level -

- Improve resilience of power supply grids
- Improve resilience to flooding
- Build more diverse food supply chains – e.g. not from one food outlet via one supply route. Less efficient economically but more resilient

- Improve education about healthy eating choices – subsidise healthy foods?
- Reduce the use of biofuels when food prices are high or food is limiting. In effect biofuels become a food reserve.
- Regional stockpiling of rice in Asia – building resilience , rice emergency reserve. Encourage this elsewhere, reserves held globally, regionally, nationally, and households.

Locally in our lives –

- Reduce the pressure on food supplies by eating more vegetables and less meat, projects like meat free Mondays
- Minimise food waste – making better use of food that has been harvested
- Help insect pollinators by providing refuges and diverse gardens for them to feed in
- Community gardens to provide access to diverse food (fruits, vegetables)

**Food security is a global challenge that has impacts for everyone**

\*\*\*\*\*

See the [press release](#) on line in Get Reading.