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## Sustainable Agriculture: Findings of the Foresight Global Food and Farming Futures project and the Commission for Sustainable Agriculture and Climate Change

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### Grand challenge: Food security

By 2025, significantly more food production will be  
needed on less **land**, with less **water**, using less **energy**,  
**fertiliser** and **pesticide** ...

...whilst not increasing **greenhouse gas emissions**



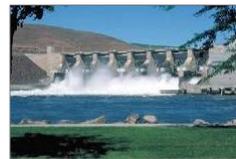
Increased energy  
demand 



Climate change



Increased food  
demand 

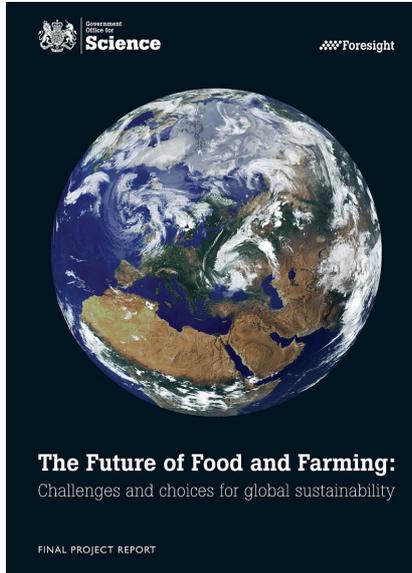


Increased water  
demand 



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## The report: Five key challenges



Balancing future demand and supply sustainably	A
Address the threat of future volatility in the food system	B
Ending Hunger	C
Meeting the challenges of a low emissions world	D
Maintaining biodiversity and ecosystem services while feeding the world	E

Report had global reach and influence.....



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## Global reach, influence and impact

Post-launch: Stakeholder engagement on the global stage. Examples include....



Impacts: Detail set out in the 'one-year on' report published today



## Balancing future demand and supply sustainably



### Actions needed throughout the food system

- Increase supply
- Moderate demand
- Improve efficiency and governance

### We need to produce more using existing knowledge

- New knowledge to maintain & increase yields
- Refocused research
- Invest in new tech

### Better Governance required

- Make globalisation work for food security
- Accelerate reduction of production subsidies
- Pro-poor and pro-sustainability international trade policy



## Examples: Achieving impact – Challenge A

### Report informed:

#### DEFRA Green Food Project

- To be published Summer 2012. Input to Defra Food and Farming policy.
- Focus on increasing food production, whilst simultaneously enhancing the environment.

### Embrapa research

- Focus on developing technologies and innovations for sustainable food production in the tropics.
- Will support Brazil's ambition to double wheat production.
  - Brazil currently 5 million tonnes per annum
  - UK produces 15million tonnes per annum.
- Research will inform policy on food production to 2050.

### Centre for Agriculture and Biosciences International

- GPS plots of crop diseases. Focus on reducing pre-harvest losses.
- Will create country dashboards of pests / provide treatment advice resources.



Source: DEFRA Natural Environment White Paper



Source: [www.rothamsted.ac.uk](http://www.rothamsted.ac.uk)



# Addressing the threat of future volatility in the food system



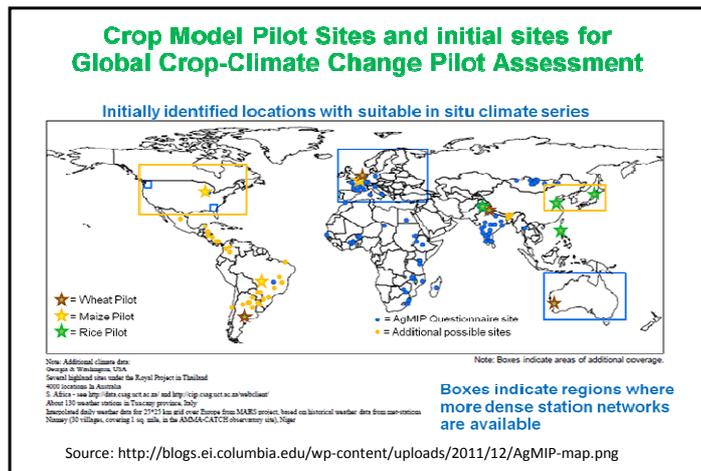
## Actions on volatility

- Requirement for reliable rules-based liberalised international trade
- Investigate modern commodity trading
- Caution on calls for a global system of grain reserves
- Appropriate insurance for poor farmers
- Targeted food reserves and safety nets



## Examples: Achieving Impact – Challenge B

June 2011: Commitment from G20 to increase food productivity and transparency in commodity markets to curb volatility in food prices



The report informed Food Price Modelling carried out by IFPRI, DEFRA and OECD



# Ending Hunger



### Need a new focus on food production

- Triple benefits of agriculture
- Rebuild infrastructure
- Reposition in government
- Better monitoring and evaluation

### Making agriculture work harder to reduce hunger

- Engage with producers
- Better evaluation & development of agriculture
- Help for small-holder farming
- Address land grabs and land rights issues
- Women – focus on their particular needs
- Nutrition and health - Biofortification

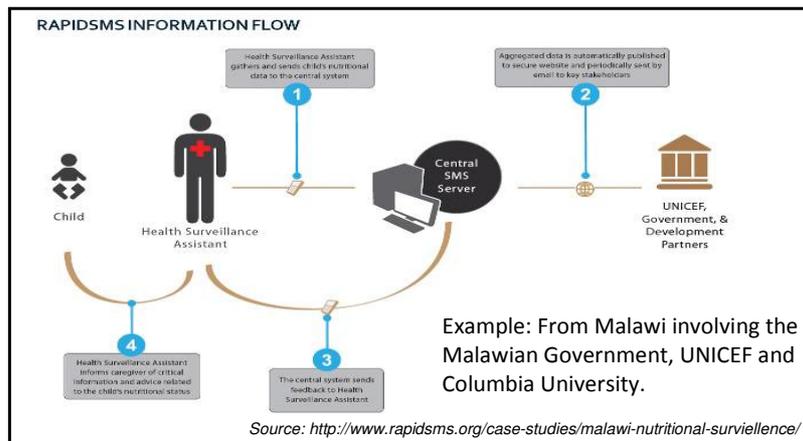
### Targeting hunger

- Revolutionise hunger mapping
- Innovation in social protection
- Build anti-hunger momentum
- Anti-hunger leaders



## Examples: Achieving Impact – Challenge C

Mobile technologies can be used for weekly recording of hunger.



Relaying information to a GPS map, and making it widely available, will allow for real-time hunger monitoring. Information to be used by policy-makers and civil society.



# Meeting the challenges of a low emissions world



## Actions

- Better metrics required
  - Carbon sequestration
  - Reduce GHG emissions
- Innovate for sustainability
- Bolster adaptation
- Improve resource efficiency



## Examples: Achieving Impact – Challenge D

### Report informed:

#### DEFRA

- **'Love Food Hate Waste'** campaign. Led to a 13 per cent reduction in UK domestic waste



#### European Commission – Joint Research Centre

- High level seminar on 'How Can Science Support Food Security'



#### National Farmer's Union (NFU)

- **'Greenhouse Gas Action Plan'**. Plan for agriculture to reduce GHG emissions by 3million tonnes of CO2 equivalents 2018-2022.

#### Technology Strategy Board

- Partnership with Defra, BBSRC and the Scottish Government.
- £15million competition as part of the Sustainable AgriFood Innovation Platform
- Fund projects on Food Processing and Manufacturing Efficiency.





## Maintaining biodiversity and ecosystem services while feeding the world



### Ecosystem services

- Address major knowledge gaps.
- Internalise environmental costs and benefits; align environmental and market incentives.
- Help needed for poorest.
- Need for national and supranational governance.
- Research and promote agro-ecological approaches

### Biodiversity

- Accelerate switch from production support to stewardship in rich countries
- Conservation needed in low-income countries.



## Examples: Achieving Impact – Challenge E

### Report informed:

#### FAO

- New **World Agricultural Watch Initiative**
- Recognises interdependence of policies on 'feeding the world' and 'conservation'.
- Focus on monitoring social, environmental and economic impacts of agricultural transformations

#### Global Food Security Programme

- Co-ordinated by BBSRC, government and third sector engagement
- Report shaped thinking on: resilience; resource efficiency and sustainable production.

#### and others....

- Conservation International '**Food Security Strategy**'
- Bill and Melinda Gates Foundation '**Agricultural Development strategy report**'





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## In key ways the next 20 years are already determined

The global community will have to contend with a number of significant challenges

Consumption will increase with prosperity

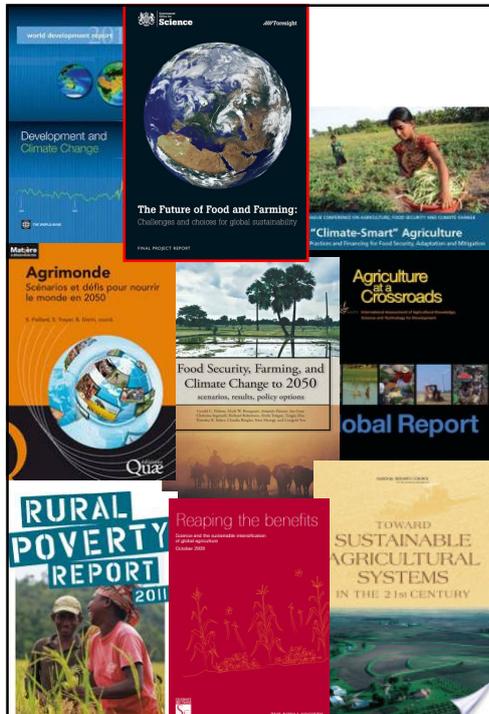
**Climate change:** GHG now in the atmosphere will drive changes up to 2030.

**Urbanisation** - 2010 first year urban population exceeded the rural population ~55% 2025

**Population increase** An extra billion people by 2025



## The Commission on Sustainable Agriculture and Climate Change



• **Aim:** identify and promote specific policy actions to achieve sustainable agriculture, food security and poverty reduction while delivering climate change adaptation and mitigation

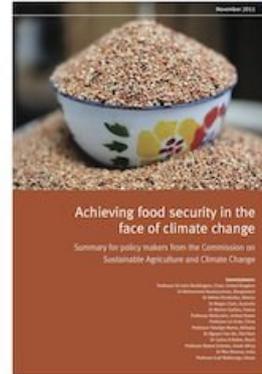
• **Rationale:** We need to take a long term, evidence based, holistic approach to reforming agriculture and the food system.

• **Input to:** Wageningen, Netherlands; African Rural Development day, Durban; COP18, Durban; Planet Under Pressure, London.

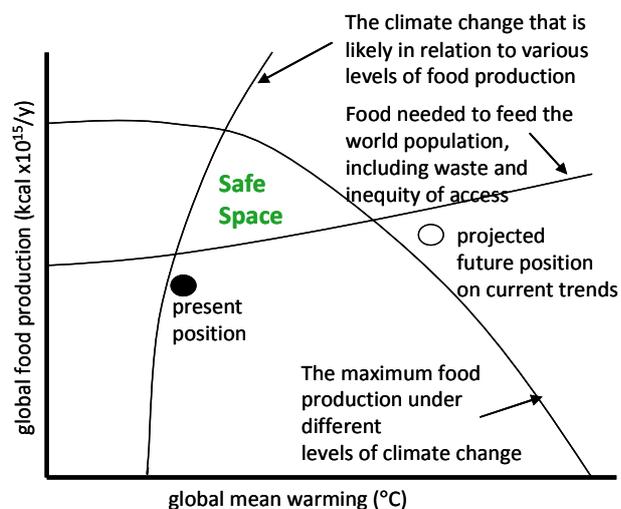


## Seven key recommendations

1. Integrate food security and sustainable agriculture into global and national policies
2. Significantly raise the level of global investment in sustainable agriculture and food systems in the next decade
3. Sustainably intensify agricultural production while reducing greenhouse gas emissions and other negative environmental impacts of agriculture
4. Target populations and sectors that are most vulnerable to climate change and food insecurity
5. Reshape food access and consumption patterns to ensure basic nutritional needs are met and to foster healthy and sustainable eating habits worldwide
6. Reduce loss and waste in food systems, particularly from infrastructure, farming practices, processing, distribution and household habits
7. Create comprehensive, shared, integrated information systems that encompass human and ecological dimensions



## Climate Smart Agriculture





## Challenges remain: The next 15 years

### Challenges

- Population – 1 billion more people
- Urbanisation – population increase concentrated in cities
- A more prosperous world, but also a further strain on resources
- Climate change will be happening – a risk multiplier

**Overall: an increased vulnerability to shocks and pressures**

### To address food security, we need to

- Raise the profile of hunger
- Focus on agriculture and food production
- Make the most of new and existing technologies
- Address consumption patterns

**Achieving food security is a constant agenda - a lot more needs to be done**



## Next steps.....

### Food security on the agenda:

- G20 – Mexico, June 2012
  - Sustainable small-holder agriculture
  - Innovation
- Rio+20 – Brazil, June 2012
  - Green economy central to sustainable development
  - Improved valuation of natural resources
  - Food security while providing access to sustainable energy
  - Commitment to Sustainable Development Goals (including food, water and energy security)
- COP 18 – Qatar, November 2012
  - Sustainable agriculture high on the agenda in Qatar

