Foreign & Commonwealth Office

Climate change: what are the security implications?

Frances Wood
Head of Climate Security
UK Foreign and Commonwealth Office

Overview

Foreign & Commonwealth Office

- What is climate security?
- How to tackle it?
- What is the UK doing?
- What is the EU, NATO and the UN doing?

What is climate security?

Foreign & Commonwealth Office

- Climate change will cause physical impacts such as flooding, temperature rises, shifts in precipitation.
- What happens to people?
- How do people and governments behave?

UK view

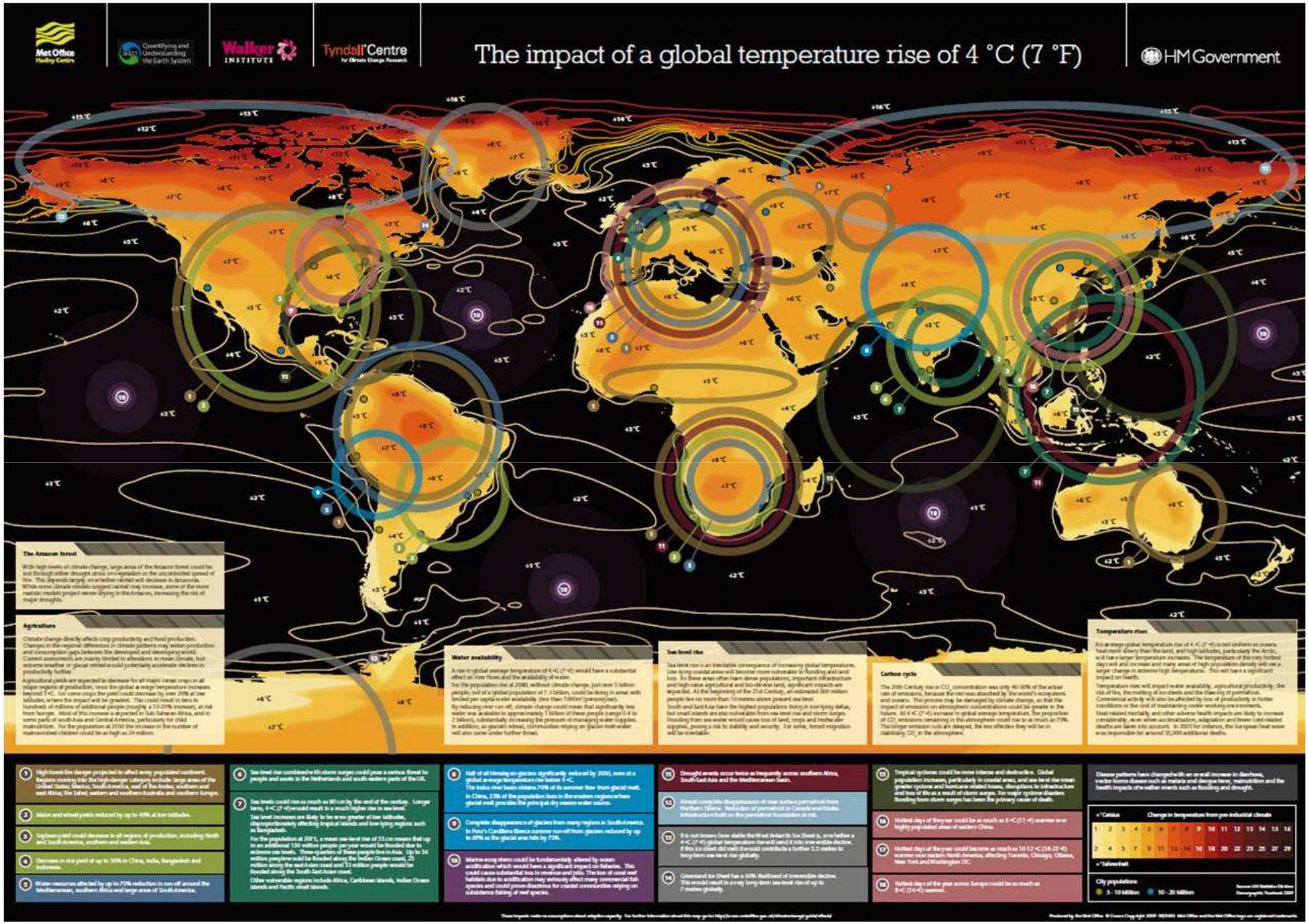
Foreign & Commonwealth Office

"Climate change is potentially the greatest threat to global stability and security, and therefore to national security" UK National Security Strategy 2009

Limit the security risks

Foreign & Commonwealth Office

- UK and EU see 2C maximum rise is needed to limit risks to global security
- Moving to low-carbon is the only way to limit the impacts from climate change
- 4C risks security implications we cannot contain


Met Office Hadley Centre
Quantifying and Understanding the Earth System
Walker Institute
Tyndall Centre for Climate Change Research
The impact of a global temperature rise of 4 °C (7 °F)
HM Government
The Amazon forest
Agriculture
Water availability
Sea-level rise
Carbon cycle
Temperature rises
1 High-level fire danger projected to affect every populated continent. Regions moving into the high-danger category include large areas of the United States, Siberia, South America, east of the Andes, southern and east Africa, the Sahel, eastern and southern Australia and southern Europe.
2 Maize and wheat yields reduced by up to 40% at low latitudes.
3 Soybean yield could decrease in all regions of production, including North and South America, southern and eastern Asia.
4 Decrease in rice yield of up to 30% in China, India, Bangladesh and Indonesia.
5 Water resources affected by up to 70% reduction in run-off around the Mediterranean, southern Africa and large areas of South America.
6 Sea-level rise combined with storm surges could pose a serious threat to people and assets in the Netherlands and south-eastern parts of the UK.
7 Sea levels could rise as much as 80 cm by the end of the century. Longer term, 4 °C (7 °F) would result in a much higher rise in sea level.
Sea level increases are likely to be even greater at low latitudes, disproportionately affecting tropical islands and low-lying regions such as Bangladesh.
For the population at 2015, a mean sea-level rise of 52 cm means that up to an additional 150 million people per year would be flooded due to extreme sea levels. Three-quarters of these people live in Asia. Up to 56 million people could be flooded along the Indian Ocean coast, 25 million along the east Asian coast and 31 million people would be flooded along the South-East Asian coast.
Other vulnerable regions include Africa, Caribbean islands, Indian Ocean islands and Pacific small islands.
8 Half of all Himalayan glaciers significantly reduced by 2050, even at a global average temperature rise below 2 °C.
The Indus river basin obtains 70% of its summer flow from glacial melt.
In China, 23% of the population lives in the western regions of how glacial melt provides the principal dry season water source.
9 Complete disappearance of glaciers from many regions in South America.
In Peru's Cordillera Blanca summer run-off from glaciers reduced by up to 30% as the glacial area falls by 75%.
10 Marine ecosystems could be fundamentally altered by ocean acidification which would have a significant impact on fisheries. This could cause substantial loss in revenue and jobs. The loss of coral reef habitats due to acidification may seriously affect many commercial fish species and could pose disastrous for coastal communities relying on subsistence fishing of reef species.
11 Drought events occur twice as frequently across southern Africa, South-East Asia and the Mediterranean basin.
12 Almost complete disappearance of near surface permafrost from northern Siberia. Reduction of permafrost in Canada and Alaska. Infrastructure built on the permafrost foundation at risk.
13 It is not known how stable the West Antarctic Ice Sheet is, so whether a 4 °C (7 °F) global temperature rise will send it into irreversible decline. If this ice sheet did melt it would contribute a further 5.3 metres to long-term sea-level rise globally.
14 Greenland Ice Sheet has a 60% likelihood of irreversible decline. This would result in a very long-term sea-level rise of up to 7 metres globally.
15 Tropical cyclones could become more intense and destructive. Global population increases, particularly in coastal areas, and sea-level rise mean greater cyclone and hurricane related losses, disruptions to infrastructure and loss of life as a result of storm surges. For major cyclone disasters flooding from storm surges has been the primary cause of death.
16 Hottest days of the year could be as much as 6 °C (11 °F) warmer over highly populated areas of eastern China.
17 Hottest days of the year could become as much as 10-12 °C (18-22 °F) warmer over eastern North America, affecting Toronto, Chicago, Ottawa, New York and Washington DC.
18 Hottest days of the year across Europe could be as much as 8 °C (14 °F) warmer.
Disease patterns have changed with an overall increase in diarrhoea, vector-borne diseases such as malaria and dengue fever, malnutrition and the health impacts of hot weather events such as flooding and drought.
°Celsius
Change in temperature from pre-industrial climate
°Fahrenheit
City populations
5 - 10 Million
10 - 20 Million

UK approach so far

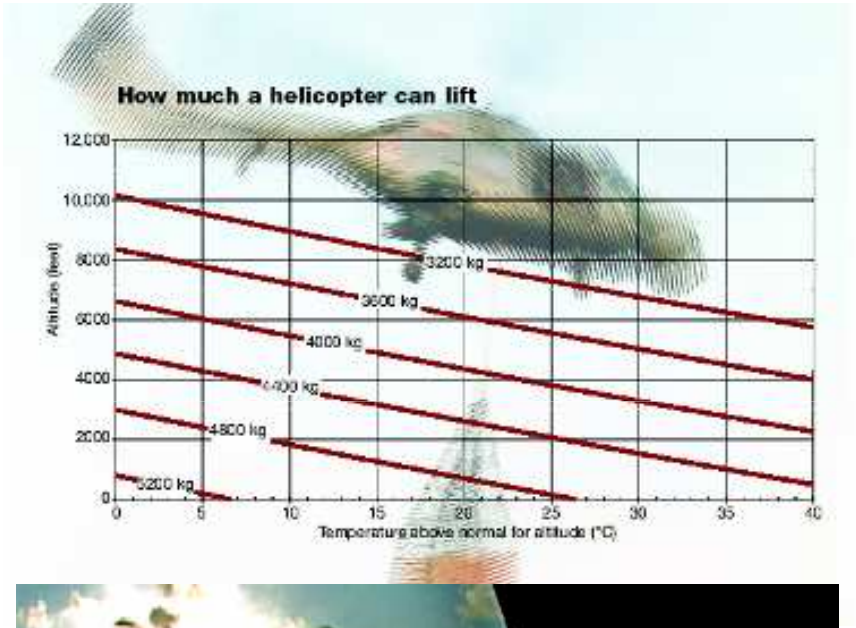
Foreign & Commonwealth Office

- Broaden and deepen the debate globally
  - UN Security Council debate in April 2007
- Limit emissions
  - Climate Change Act 2008
  - Carbon budgets
- Plan for the security implications already committed to
  - UK risk assessment
  - Departmental adaptation plans

Defence

Foreign & Commonwealth Office

- What will be required of defence in the future?
- What will defence need to change for future operations?
- What can defence do to reduce its own impact?
- What are the benefits to defence?



EU view and approach

Foreign & Commonwealth Office

- Climate change poses threat to EU security (similar to UK approach)
- Leading report published by High Rep in March 2008. Followed by most recent recommendations in December 2009
- Led by Germany, Denmark, Sweden, France, Spain and UK

NATO view and approach

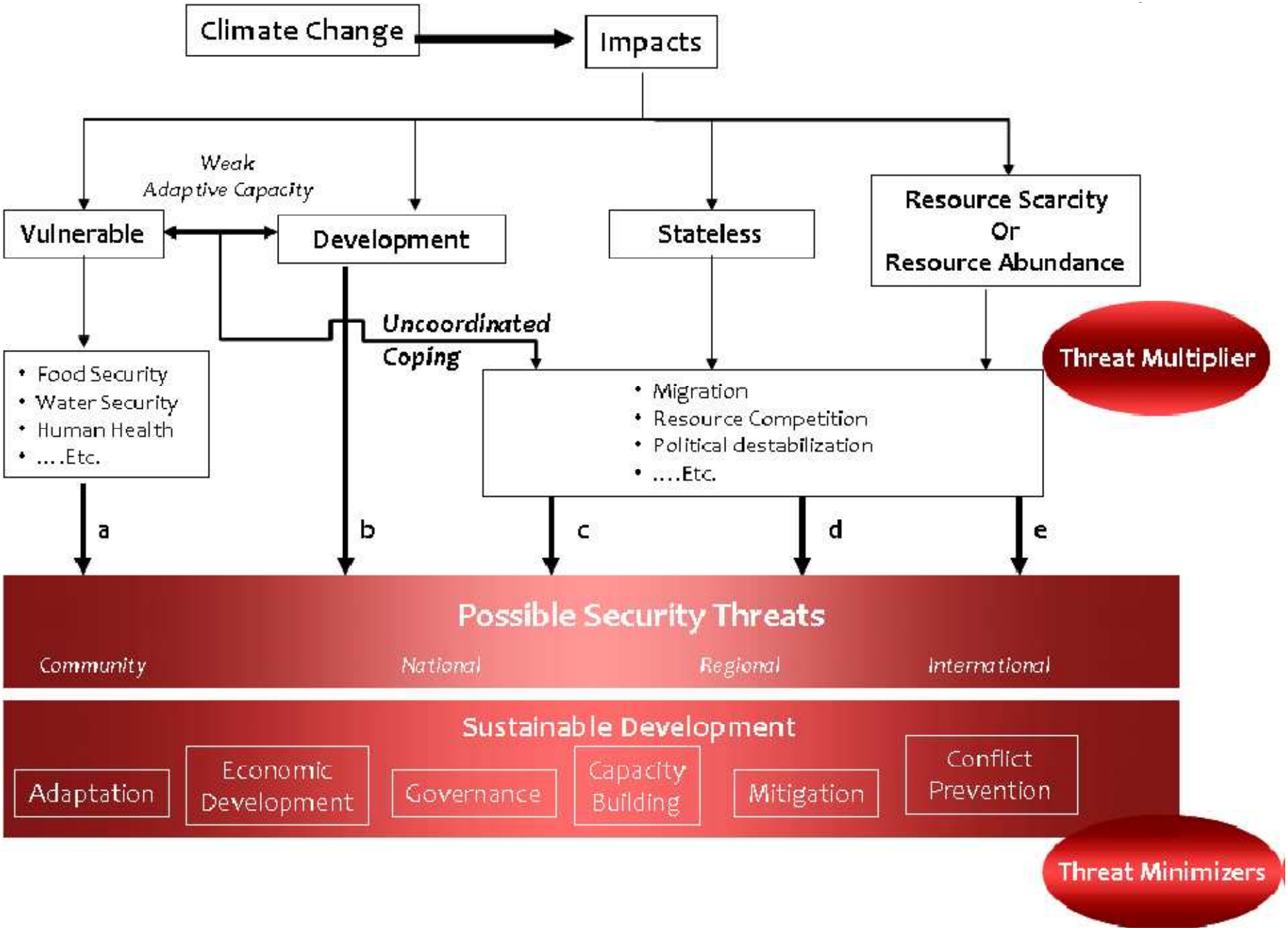
Foreign & Commonwealth Office

- “to my mind, the bottom line is clear. We may not yet know the precise effects, the exact costs or the definite dates of how climate change will affect security. But we already know enough to start taking action…the security implications of climate change need to be better integrated into national security and defence strategies…” Anders Fogh Rasmussen – NATO Secretary General: 1 Oct 09

UN

Foreign & Commonwealth Office

- Debate in Security Council in 2007
- Resolution passed by Small Island Developing States in 2009
- Secretary General's report in 2009


Climate Change
Impacts
Weak
Adaptive Capacity
Vulnerable
Development
Stateless
Resource Scarcity
Or
Resource Abundance
Uncoordinated
Coping
Threat Multiplier
• Food Security
• Water Security
• Human Health
• ….Etc.
• Migration
• Resource Competition
• Political destabilization
• ….Etc.
a
b
c
d
e
Possible Security Threats
Community
National
Regional
International
Sustainable Development
Adaptation
Economic Development
Governance
Capacity Building
Mitigation
Conflict Prevention
Threat Minimizers

Foreign & Commonwealth Office

Questions?