



Cabinet Office

UK approach assessing risk and responding to events

SECOND SCIENTIFIC SEMINAR ON DISASTER
RISK MANAGEMENT – BRUSSELS, 4-5 DEC 14

Ian Lisk, Chair UK NHP

Slides from: Chris Felton and Gavin Lofthouse
High Impact Hazards Team and Risk Team, CCS



The Civil Contingencies Secretariat

Improve the UK's resilience to **absorb**, **respond** to, and **recover** from potential disruptive challenges of all types.

- Short-term horizon scanning and medium term risk assessment
- building capability
- ensuring consistency
- critical infrastructure
- supporting community and corporate resilience
- planning for the big stuff
-and dealing with it when it goes wrong



National level risk assessment

Short term

CCS provides only cross government horizon scanning product covering all non malicious threats and hazards. Issued quarterly. Looks forward six months.

Medium term

National Risk Assessment (NRA) identifies, assesses and prioritises domestic risks that would have a major impact on all, or significant parts of, the UK if they were to occur.

Reflected in National Resilience Planning Assumptions.

Medium to long term

National Security Risk Assessment (NSRA) identifies, assesses and compares risks which seriously threaten UK national security interests.

Reflected in National Security Strategy.

These build on risk assessment/horizon scanning across Government and by Local Resilience Forums (LRFs) and responders.



National Risk Assessment (NRA)

To identify, assess and prioritise risk to develop a **common understanding of serious risks** enabling civil emergency contingency planning and wider resilience capability building

The NRA should be used for **context setting** by local planners

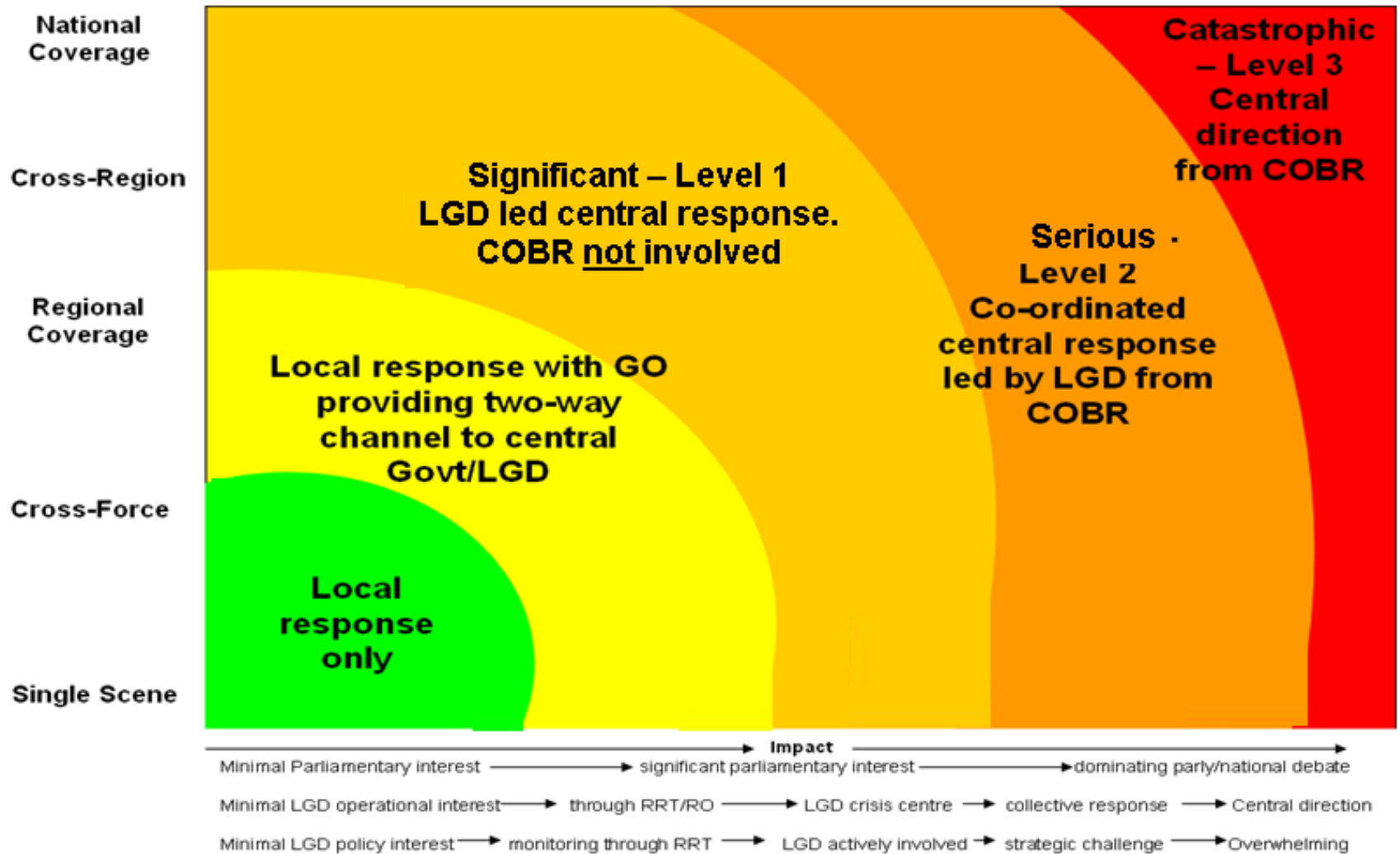
Supports National Resilience Planning Assumptions (NRPAs) – **how we plan to respond**

Publication

Aim to produce **2014 NRA and National Risk Register (NRR)** in December. Moving to two year cycle.



Flexible response





2013 NRA : Overview

| | | | | | |
|---------------------|------------|-------------------|---------------|--------------------|-------------|
| Catastrophic (5) | | | | | |
| Significant (4) | | | | | |
| Moderate (3) | | | | | |
| Minor (2) | | | | | |
| Limited (1) | | | | | |
| | Low (1) | Medium Low (2) | Medium (3) | Medium High (4) | High (5) |



Science input to Policy

Governments Chief Scientific Advisor (CSA) signs off the NRA

Individual Departmental CSAs sign off individual hazard risks

Risk Owners engage with experts / scientists, often through Scientific Advisory Groups or Subject matter Expert Groups

Two independent groups are asked to review the NRA: NHP (natural) and a CBRN group (man-made)



UKResilience @UKResilience 2d

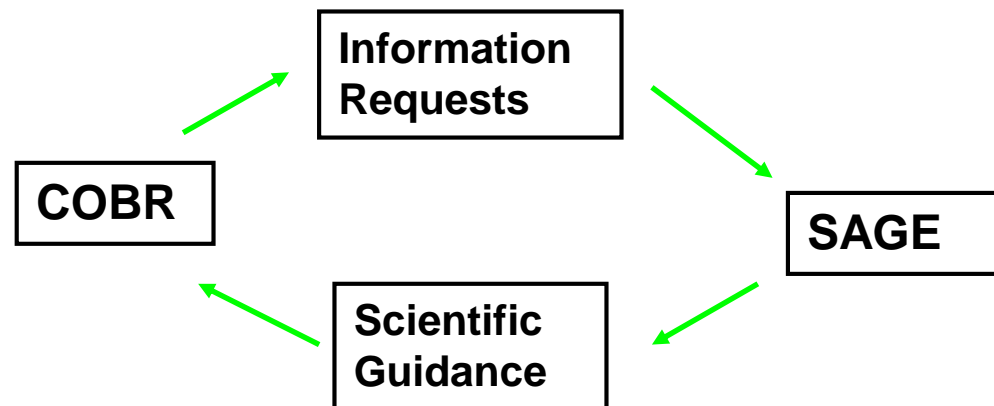
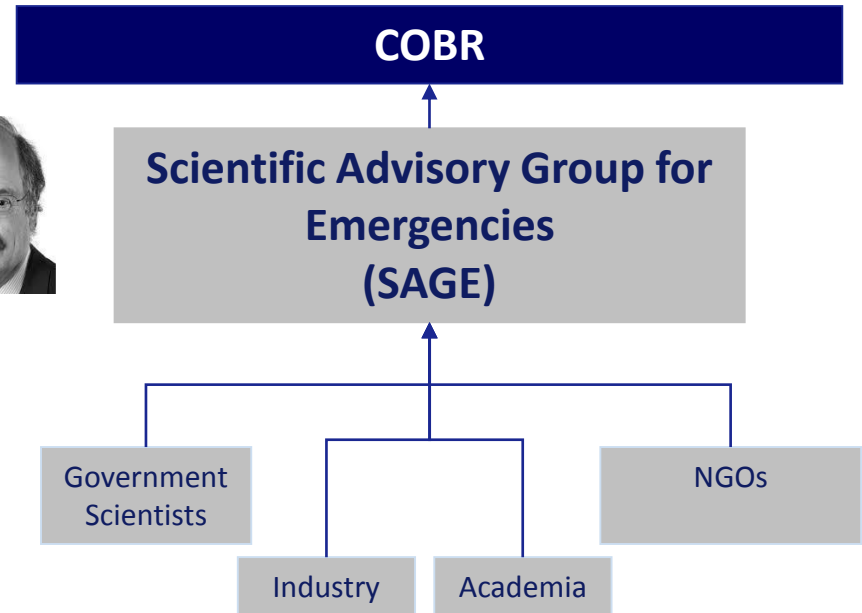
Great workshop over past two days with US colleagues on how to collaborate on the risk to aviation from space weather





Scientific input into the response

- COBR decides whether to call Scientific Advisory Group in Emergencies (SAGE)
- Aim of SAGE is to “ensure that coordinated, timely scientific and/or technical advice is made available to decision makers to support UK cross-government decisions in COBR”





UK Natural Hazard Partnership (NHP)

- Multi-agency public ‘good’
- UK Resilience to natural hazards
- Science to (relevant) Services and advice
- Many voices speaking as one



NHP Vision: Delivering coordinated assessments, research and advice on natural hazards for governments and resilience communities across the UK





- NRA scientific review and challenge
- Daily Hazard Assessment (DHA) – coordinated overview of natural hazard impacts likely to affect UK over next 5-days
- Hazard **Impact** Matrix and Hazard ‘Science Notes’
- Longer range multi-hazard outlook and horizon scanning (including climate change **impacts**) advice
- Hazard **Impact** Modelling R&D Framework
- NHP microsite at <http://www.metoffice.gov.uk/nhp/>

Natural Hazards Partnership
Daily Hazard Assessment

Working together

Daily Hazard Assessment

Issued 14:00 on Monday, 29th January 2013

The Daily Hazard Assessment for guidance only. You are advised to seek detailed information from the relevant Partner Organisation before taking any action.

Hazards Five Day Summary

FLOOD: AMBER - Significant rainfall over the next 5 days, with a medium risk of flooding for parts of England today and tomorrow.

LANDSLIDE - Heavy rainfall coupled with saturated ground in parts of southern England tomorrow. Strong winds also in some landmasses and slope failures.

SNOW - Snow showers are expected to affect parts of SE England tomorrow morning.

WIND - Strong winds are expected to affect northern parts of northern England tomorrow. Strong winds also in some landmasses and slope failures.

Hazards Five Day Summary Detail

FLOOD - The Met Office is forecasting a band of heavy rain across Wales and southwest England today and tomorrow. The Met Office has an Amber rainfall risk for Wales and the southwest of England today and tomorrow (see link below for further details). For England and Wales, the Flood Guidance statement Forecasting Centre (FC) states: 'There is a Medium Forecasting in parts of Wales and southwest England today and tomorrow with a Medium to High likelihood of significant flooding'. See link below for further details.

LANDSLIDE - Heavy rainfall coupled with saturated ground in parts of southern England tomorrow. Strong winds also in some landmasses and slope failures, especially in areas of steep landmasses.

Please refer to the BOS Landslide websites for further potential.

Pre-prepared Scientific Advice

Drought

What is drought?

A drought is a period of water shortage for people, the environment, agriculture or industry. A hot, dry summer is an example of a short, intense drought and dry winters can have a big impact on water resources. Droughts are different to other hazards in that they tend to develop slowly, over a large area, with the exact beginning and end often difficult to identify. Several factors play a part in including:

- an environment, soil or bedrock, which is poor at retaining water or lacks groundwater storage
- hot weather, which increases evaporation of water

Am I affected?

- The Environment Agency produces maps of drought affected areas and the management framework for drought in the UK.
- The new environment agency.gov.uk/home/section/drought/fault.aspx
- UK Water companies have more detailed local information and guidance <http://www.water.gov.uk/whom-to-ask/>
- The Natural Hydrological Monitoring Programme publishes every month a national drought summary report on current status of rivers, aquifers and reservoirs compared to the historical average <http://www.metoffice.gov.uk/data/whom-to-ask/>

How does drought affect the UK?

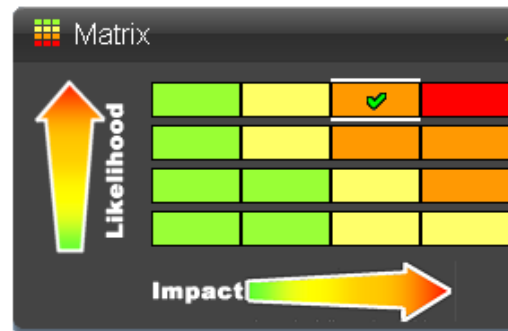
Drought occurs in a very wide range of sectors including agriculture, industry, water supply, fisheries, health, environment, wildlife, buildings. The impact of droughts is poorly documented in the scientific literature and it is often associated with potential risks, in particular on sectors such as health and water supply. Whether or not these become actual risks depends on severe factors including:

- Preparedness for drought: Drought forecasting is notoriously difficult to do because of the long time scales involved (months to years). Recent work has shown little skill in forecasting beyond about one month ahead of time. However, advance warning could be used for better planning and actions aimed at minimising the adverse effects of drought.
- Vulnerability to drought: The effects of drought on a water resource system, environment or population health can vary based on the context of where and when drought occurs. Water systems are more likely to be affected e.g. those whose systems depend on heavy water use and/or have little headroom or sufficient storage.

UK NHP Daily Hazard Assessment Colour State Matrix

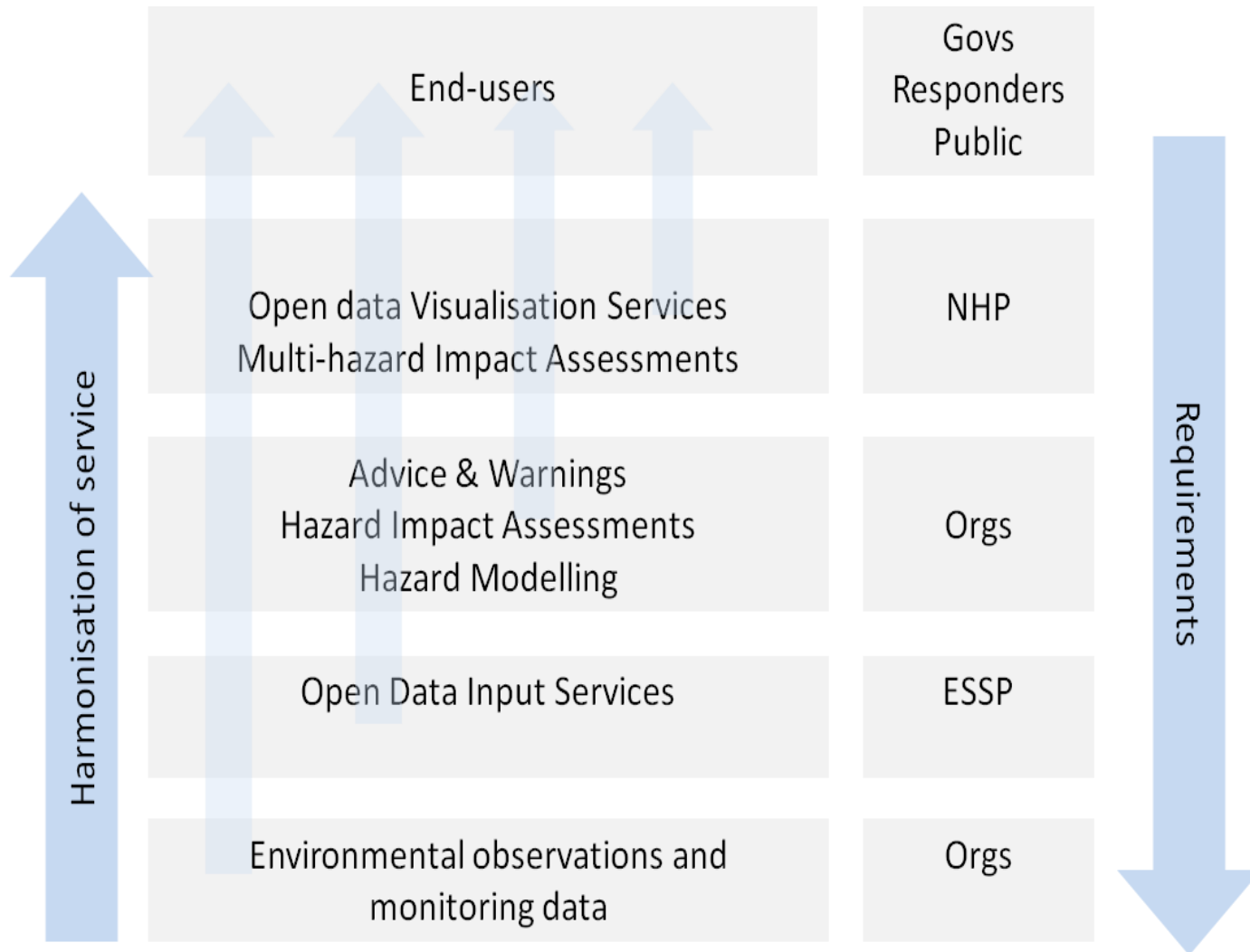
| Colour State | 5-day (unless otherwise stated) UK Hazard Impact Assessment | | | 5-day (unless otherwise stated) UK Hazard Forecast | | | | | | UK Reported only Hazards | | |
|--------------|--|--|---|--|---|---|---|--|--|--|-----------------------------------|--|
| | Weather (Rain, wind etc. other Pgs lightning, hail) | Flooding (River, coastal, surface water, groundwater (England, Wales & Scotland etc.)) | Volcanic Ash | Space weather (Solar storm forecast) | Landslides (UK forecast) | Wildfires (UK forecast) | Extreme temperature (PHE health England only) | Air Quality (UK forecast) | Aero Allergens | Earthquake (UK forecast) | Drought (UK forecast) | Space Object (UK forecast) |
| Green | Describe weather in the context of the hazard or risk description. | Describe flooding in the context of the hazard or risk description. | Describe volcanic ash in the context of the hazard or risk description. | No significant weather events expected. | Landslides are not expected in any of the forecast periods. | Eventual wildfire conditions (UK forecast). | Threatened conditions (UK forecast). | Low air pollution risk (UK forecast). | Low or moderate aero allergen levels forecast. | No reports of significant earthquakes. | No reports of drought conditions. | No reports of significant space objects. |
| Yellow | Low likelihood of significant weather events or disruption expected. | Low likelihood of significant flooding or major disruption expected. | Low likelihood of significant volcanic ash. | Strong space weather events expected. | Likelihood of increased reports of landslides. | Eventual wildfire conditions (UK forecast). | Moderate likelihood of threatened conditions being exceeded. | Worsened likelihood of air pollution risk (UK forecast). | High aero allergen levels forecast. | Reports of significant earthquakes. | Drought conditions forecast. | Reports of significant space objects. |
| Amber | Likelihood of significant weather events. | Likelihood of significant flooding or major disruption expected. | Likelihood of significant volcanic ash. | Severe space weather events expected. | Increased reports of landslides. | Extreme wildfire conditions (UK forecast). | High likelihood of threatened conditions being exceeded. | Worsened likelihood of air pollution risk (UK forecast). | Very high aero allergen levels forecast. | Reports of significant earthquakes. | ★ | ★ |
| Red | High likelihood of significant weather events. | High likelihood of significant flooding or major disruption expected. | High likelihood of significant volcanic ash. | High confidence of severe space weather events. | High confidence of reports of landslides. | High confidence of extreme wildfire conditions (UK forecast). | Severe or prolonged likelihood of threatened conditions being exceeded. | High likelihood of air pollution risk (UK forecast). | High aero allergen levels forecast. | Reports of significant earthquakes. | ★ | ★ |

★ Ongoing hazard assessment recorded under 'Ongoing Issues' or updated as appropriate.





UK Natural Hazard Services Landscape





Cabinet Office

Questions?