SCIENTIFIC ADVICE DURING CRISES:

FACILITATING TRANSNATIONAL CO-OPERATION AND EXCHANGE OF INFORMATION

- KEY ISSUES AND POLICY RECOMMENDATIONS -

GRIPS/GIST SEMINAR, TOKYO, NOVEMBER 2018

CARTHAGE SMITH AND TARO MATSUBARA

OECD
BETTER POLICIES FOR BETTER LIVES

Background

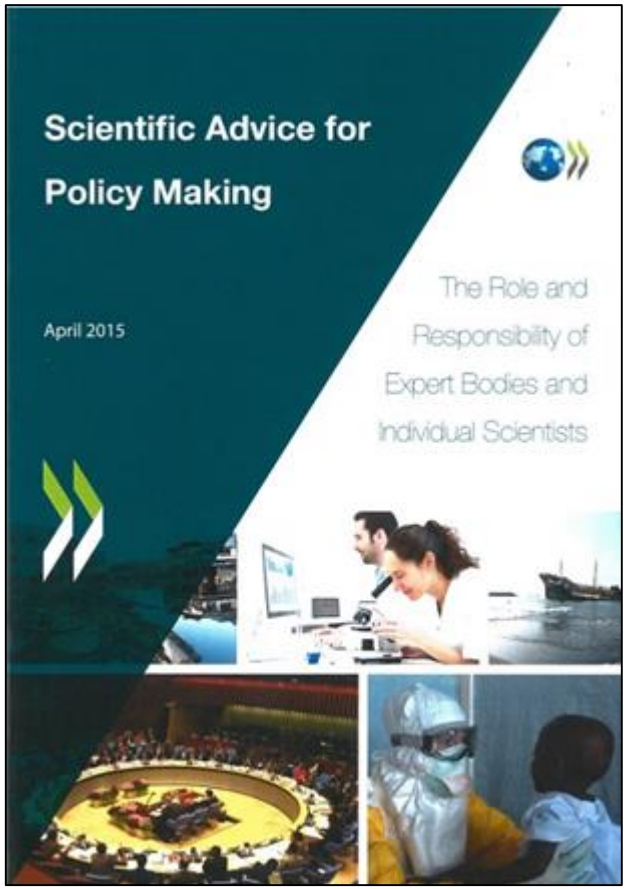
- GSF report on **Science Advice for Policy Making: the role and responsibility of expert bodies and individual scientists** (April, 2015)
- **CSTP Ministerial** in Daejeon gave remit for further work on science advice in crises and international exchange (October, 2015)
- GSF supported **proposal from UK** and nominated members for an Expert group (October, 2016)

GSF report 2015

- Motivated by **Fukushima** and **L'Aquila**
- Focuses mainly on deliberative processes

Includes:

- ✓ A review of **national science advisory (eco-) systems**
- ✓ An analysis of the different steps in an advisory process
- ✓ An analysis of legal responsibilities
- ✓ **Special challenges in crisis situations**
- ✓ Perspectives on public interest/engagement



https://www.oecd-ilibrary.org/science-and-technology/scientific-advice-for-policy-making_5js33l1jcpwb-en

The Advisory Processes

1. **Framing the question:**
   - Involve all key stakeholders; define output (assessments, recommendations, options…)
2. **Selecting the advisors:**
   - Minimize conflicts of interest
   - Open and transparent selection procedures
   - Independence of experts and of the advisory body ideally reinforced by appropriate statutes
   - Growing need for cooperation between multiple disciplines
3. **Producing the advice:**
   - Assessment and clear communication of uncertainties
   - Ensure quality assurance of the advice
4. **Communicating and using the advice:**
   - Clear processes and responsibilities for communication to decision-makers and to the public

Providing Advice in Crisis Situations

Challenges:

- **Trans-national nature** of major crises
- Scientific output and advice from **many different sources**
- Communicating to the decision-makers and to the public when uncertainties are high.
- Clarifying responsibilities (who is in charge of what ?).

Lesson learned:

The need for

- **Permanent authoritative structures and/or mechanisms**
- **A central contact point**
- Clear reporting processes
- A pre-defined public communication strategy
- **International co-ordination**

Recommendations

Governments (and responsible institutions) should:

1. Define clear and transparent frameworks and rules of procedure for their advisory processes and mechanisms.
2. Establish effective mechanisms for ensuring appropriate and timely scientific advice in crisis situations.
3. Work with international organisations to ensure coherence between national and international scientific advisory mechanisms related to complex global societal challenges.
4. Implement measures that build societal trust in science advice for policy-making.

SCIENTIFIC ADVICE DURING TRANSNATIONAL CRISES

Challenges and Project Aims

Challenges:

- **Novel**, large-scale and **complex** characteristics of several recent (cascading) crises
- Necessity to integrate rigorous **scientific information and expertise** with **decision-making and crisis management**
- **Transnational exchange** of data, information and scientific advice

Aims of the project:

- To develop an improved understanding of mechanisms and channels for **transnational scientific co-operation in crises**, how these mechanisms interact across constituencies, and the barriers that exist to the **transnational sharing of scientific information, data, and advice in crises**.
- To lay the foundations for more **effective transnational exchange by promoting mutual learning** among countries and stakeholders.

The Expert Group

Members:

- Co-chairs: Robin Grimes (UK) and Khotso Mokhele (South Africa)
- 15 members, representing 8 countries and EC
- Science advisors, crisis managers and academics
- Partnership with OECD High Level Risk Forum (HLRF)
- Support from the UK Government Office for Science

Activities:

- 3 EG meetings and 4 video meetings
- Questionnaire Survey of 18 (mainly OECD) countries and EC
- Workshop focusing on specific case studies, September 2017, Wilton Park, UK

Survey: Questionnaire

Aims to collect basic information on science advice in transnational crises, caused by environmental or health hazards, from different countries and fields

Questionnaire (8 questions) to explore issues related to science advice in major international crises:

- **Capacity and flexibility** of the system/processes
- **Quality assurance** and **accountability**
- **Communication** and **transparency**
- Accessibility and use of **international information sources**

Survey: Results (1)

Responses received form 18 countries and EU– from agencies and institutions:

- Argentina
- Australia
- Austria
- Canada
- Estonia
- Finland
- France
- Germany
- Japan
- Korea
- Luxemburg
- Netherlands
- New Zealand
- Norway
- South Africa
- Sweden
- United Kingdom
- United States
- EU Emergency Response Coordination Centre
- EC scientific Advisory Mechanism

Survey: Results (2)

Key results:

- **A breadth of science advice systems** to respond to crises: centralized, distributed, mixed or temporary centralization
- **Capability to scale and flex** with complexity, severity and scale
- **Lack of formal quality assurance**, except the use of international standards of data
- Working with overseas counterparts tends to be **ad hoc**
- Using **different international information/data sources**, depending on the characteristics of the crises

Challenges:

- **Lack of an identified** emergency management **contact point**
- **Data protection and classification**
- **Time delays** due to low prioritization of information exchange
- **Redundancy of information requests** due to lack of coordination

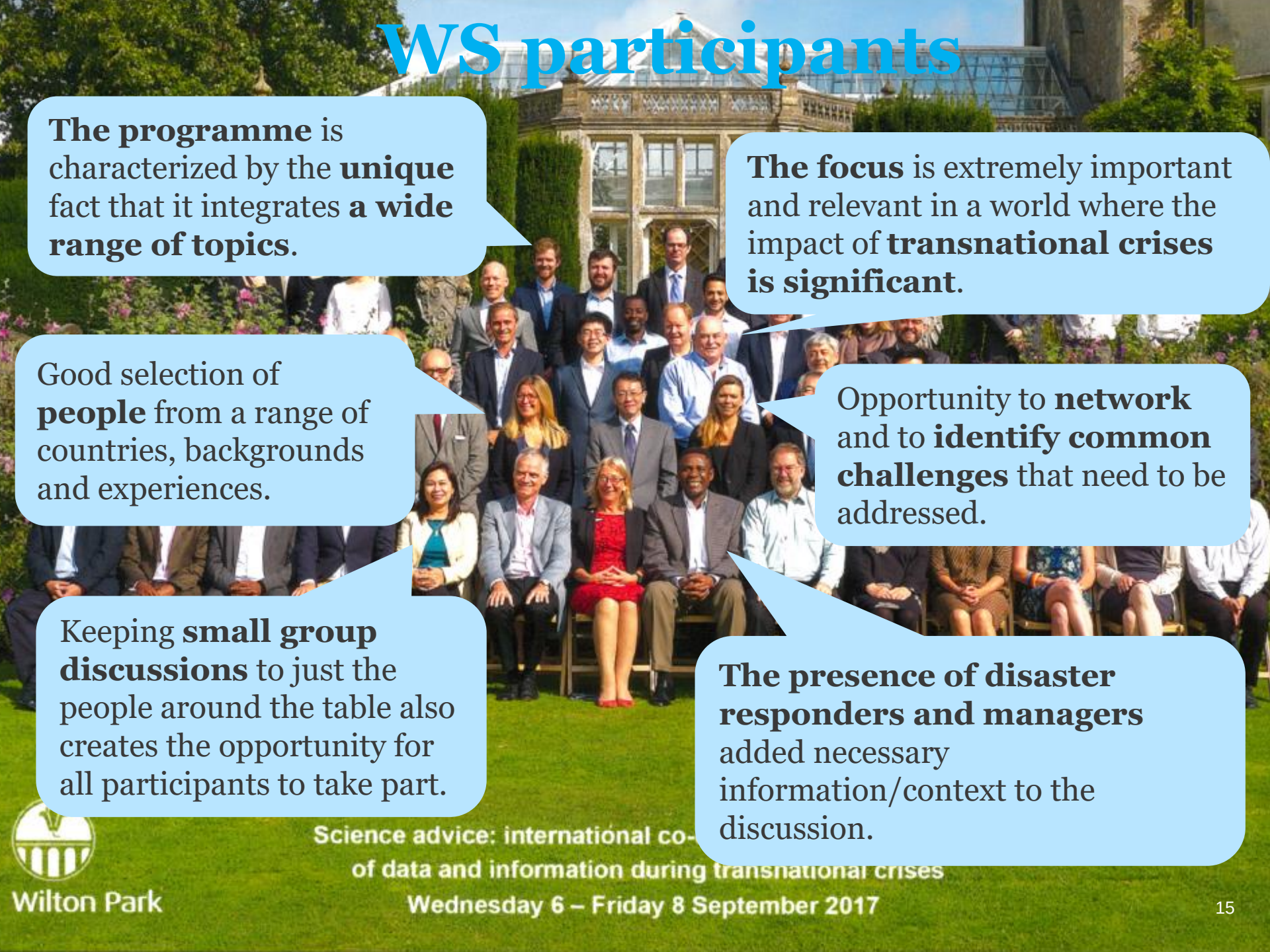
Workshop, 6-8 September, UK

- **Aim** to discuss policy actions to improve crisis response by using scientific evidence
- **6 case studies** of major international crises: Ebola, Zika, Icelandic Volcano, River flooding in Europe, Great East Japan earthquake and Space weather
- **>50 people** from all regions of the World: science advisors, academies, crisis management officers, medical doctors and policy makers

Key points of the Workshop

- **Scientists** providing advice to policy-makers require **a broad skillset** that goes **beyond their specialised scientific knowledge**.
- **A broad range of stakeholders**, including the private sector and civil society, need access to scientific advice in crises and can in turn provide valuable insight.
- **International frameworks** for collection and sharing of data and information provide **the necessary institutional basis for transnational cooperation** on scientific advice in crises.
- Transnational cooperation on scientific advice in crises requires **trust** and understanding of **different political, cultural and ethical perspectives**.
- Effective crisis management and use of scientific advice requires extensive **practice and exercises**.
- **Scientists can play multiple roles** in the preparation and response to crises.
- **Scientific insight** is important to **evaluate** crisis management and to ensure **cross-sectoral learning** of what has worked in different contexts.

WS participants



The programme is characterized by the **unique** fact that it integrates **a wide range of topics**.

The focus is extremely important and relevant in a world where the impact of **transnational crises is significant**.

Good selection of **people** from a range of countries, backgrounds and experiences.

Opportunity to **network** and to **identify common challenges** that need to be addressed.

Keeping **small group discussions** to just the people around the table also creates the opportunity for all participants to take part.

The presence of disaster responders and managers added necessary information/context to the discussion.

Science advice: international co-
of data and information during transnational crises
Wednesday 6 – Friday 8 September 2017

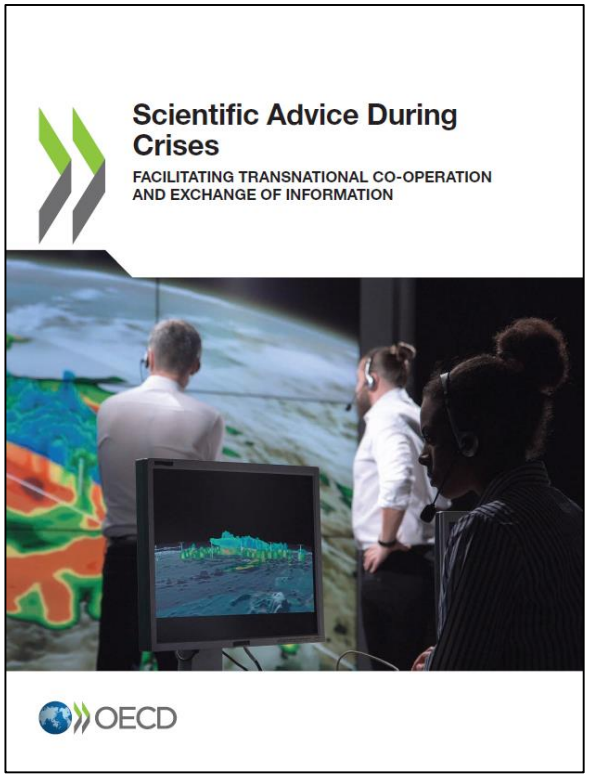
Wilton Park

FINAL REPORT

Outline of the Final Report 2018

Executive Summary

1. Improving the use of science advice in international crises: conclusions and recommendations
2. The current landscape and project design
3. Scientific advice in crises
4. Transnational scientific co-operation in crises
5. Barriers and challenges for transnational co-operation around scientific advice
6. From analysis to action: concluding comments

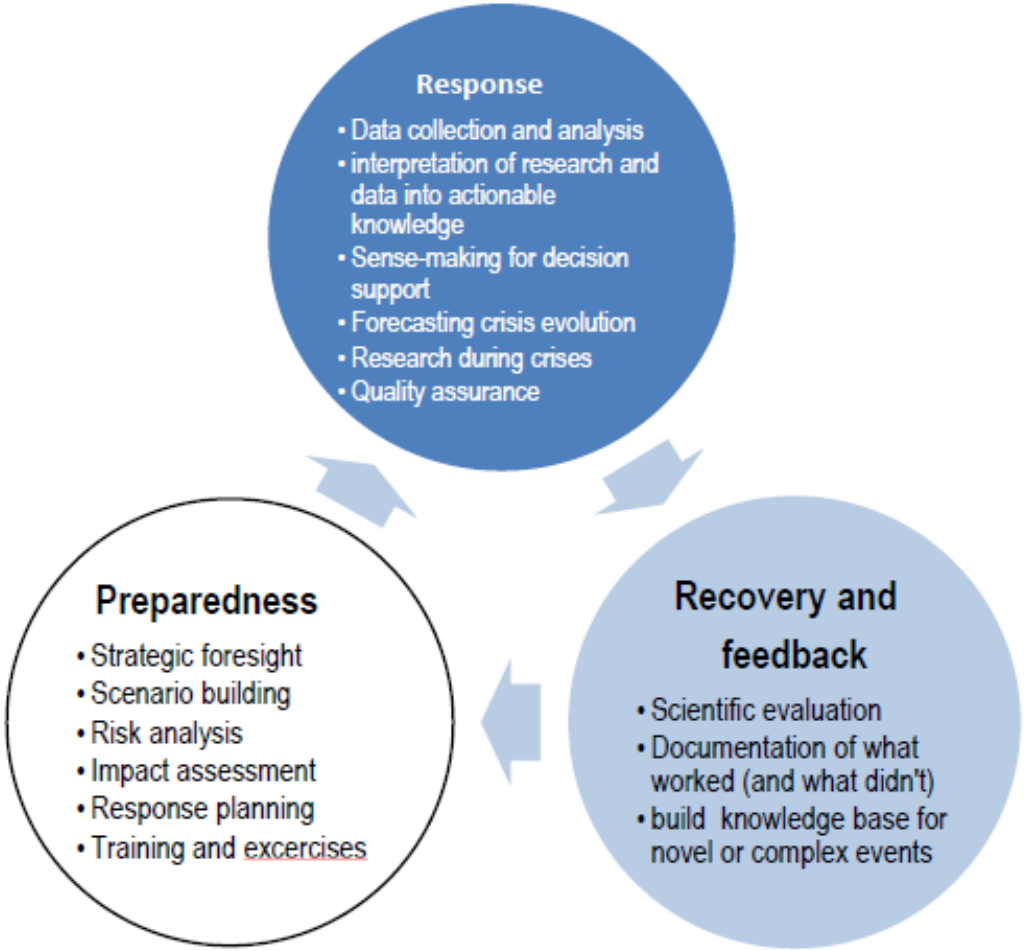


http://www.oecd.org/governance/scientific-advice-during-crises-9789264304413-en.htm

FINDINGS

Scientific advice in the crisis management cycle

- Scientific advice can play an important role in the **crisis management cycle: preparedness, response and recovery**



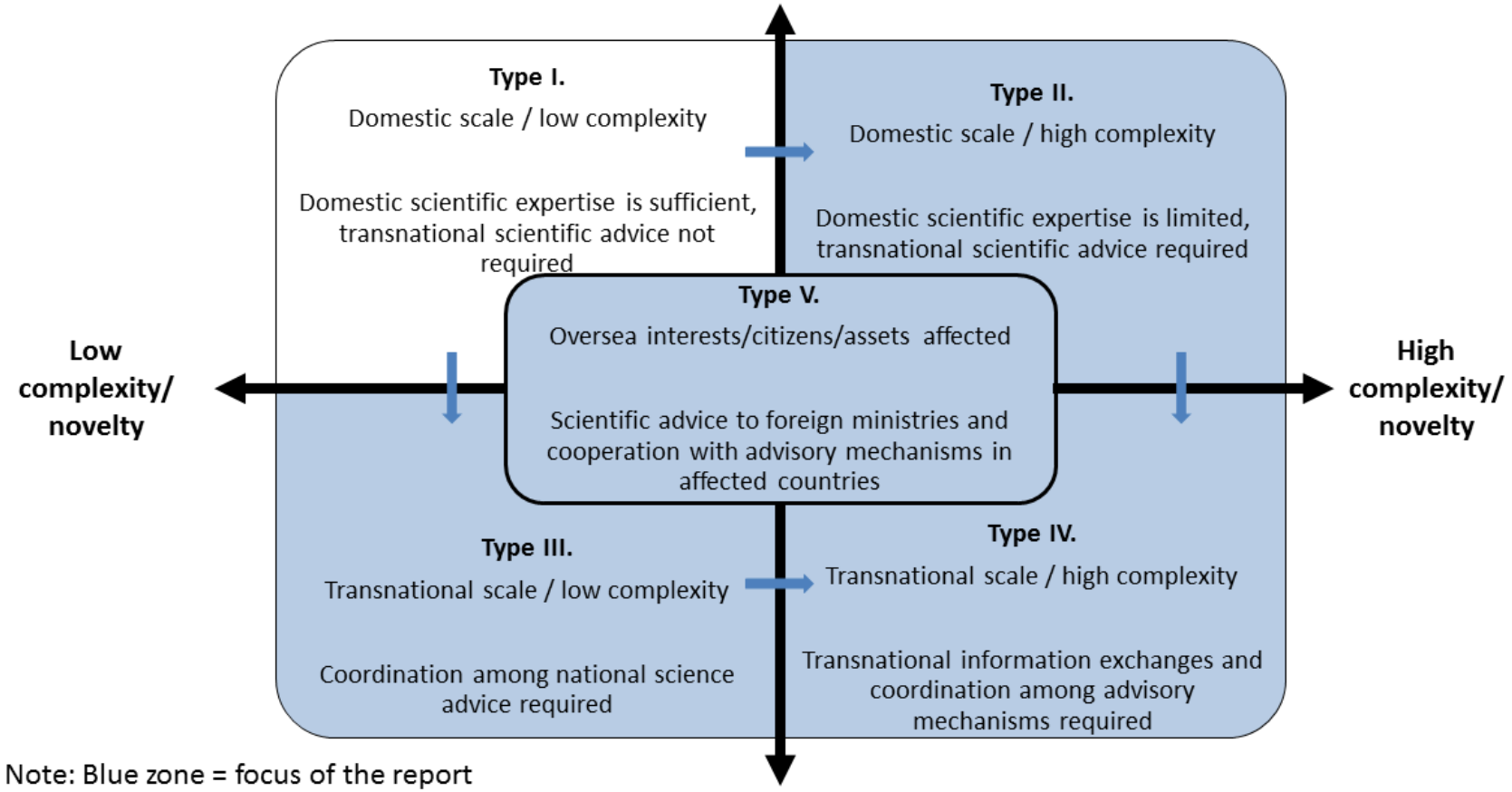
Institutional mechanisms for scientific advice in crises

- **A breadth of institutional mechanisms** for scientific advice: centralized, distributed, mixed or temporary centralization

Distributed	Centralised
Activated via local crisis responders	Top down activation via central Government
Well adapted to federal decision-making systems	Rapid response at central Government level
Local ownership and legitimacy	Clear interface with central decision-makers
Multiple contact points	Single contact point
Redundancy and resilience	Efficiency versus single point of vulnerability
Cross-checking and reproducibility comparison	Central (exclusive) quality control
Local familiarity with issues	National consensus
International contact complex	International contact straightforward
Customised to a specific type of crisis	Inter-disciplinary
Flexible and independent	Planned and coordinated

Crisis situations requiring transnational scientific co-operation

- **Different modes** of scientific co-operation are required, depending on the **characteristics of transnational crises**.



Frameworks and networks

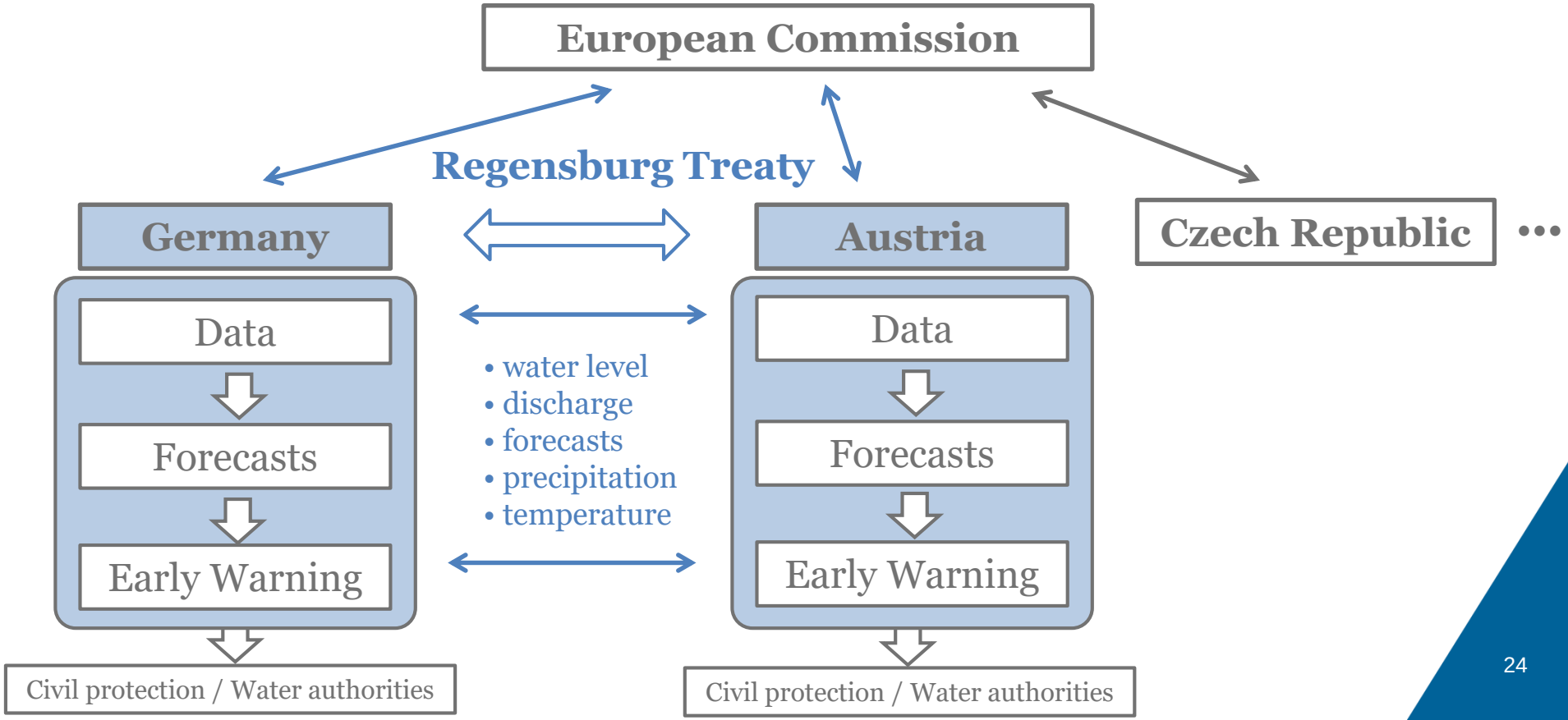
- **International frameworks** (bilateral, regional and global) are an important enabler for the **transnational exchange** of scientific data and information during crises.
- **Formal networks** often developed around frameworks.
- **Informal networks** can complement formal mechanisms, particularly in the early stages of a crisis.

Bilateral	Regional	Global
•Bilateral early notification treaties •Bilateral agreements for data exchange (e.g. Regensburg Treaty AT-DE on the exchange of hydrological data, joint water-commissions,...) •.....	•EU Early warning and information mechansims (EWS, ECURIE, RAS-BICHAT, CECIS) •ICPDR (Int. Commission for the Protection of the Danube) •ICG/PTWS (Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System). •.....	•Transnational Health Regulations •IAEA Early Notification Convention •WMO Health Regulations •Sendai Framework for Disaster Risk Reduction •International Charter - Space and Major Disasters

CASE STUDIES

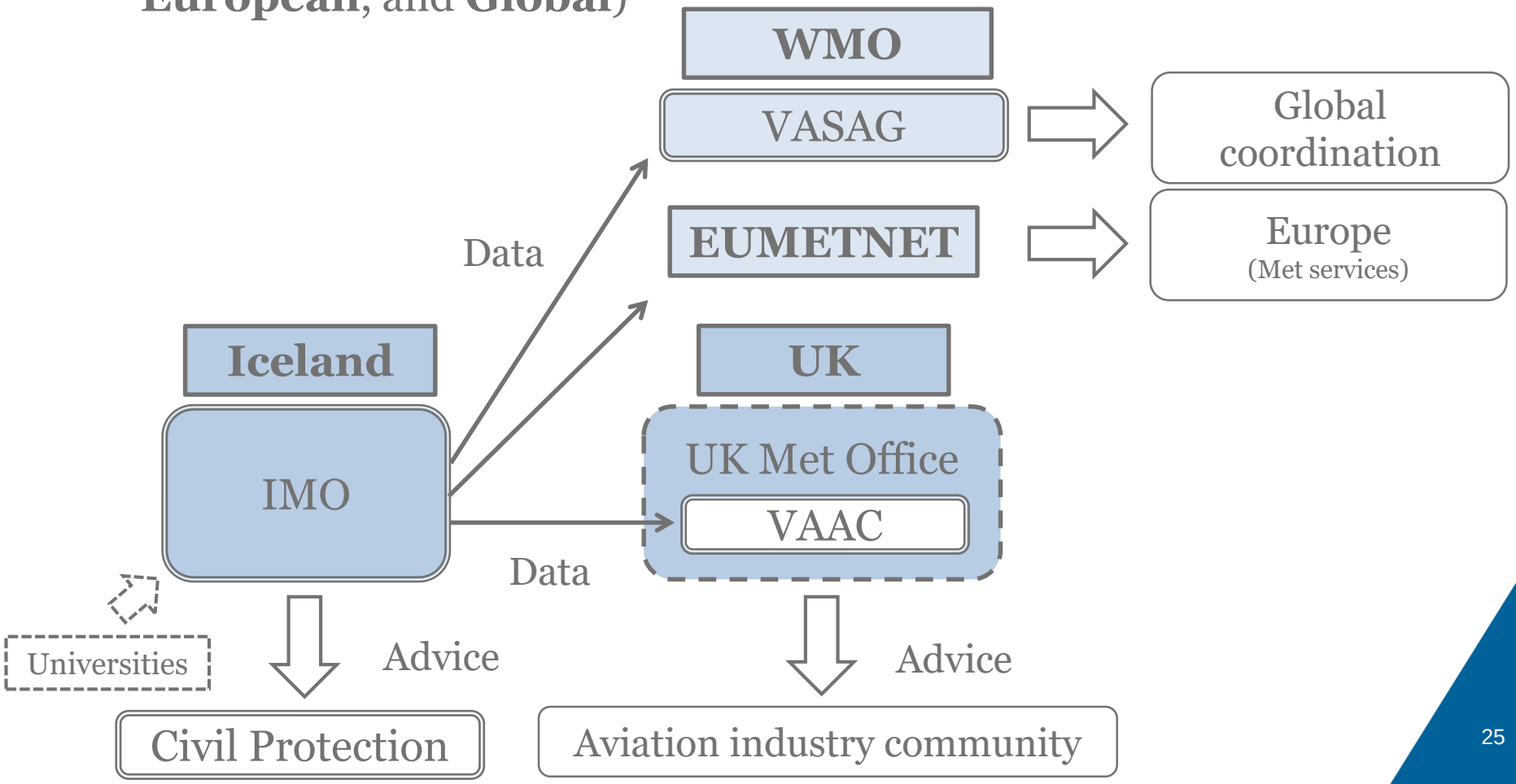
2013 Danube river flooding

- Under the **Regensburg Treaty**, **Germany and Austria** exchange information and data from each catchment area.
- The data are **integrated** and sent to German and Austrian **early warning and forecasting systems**.

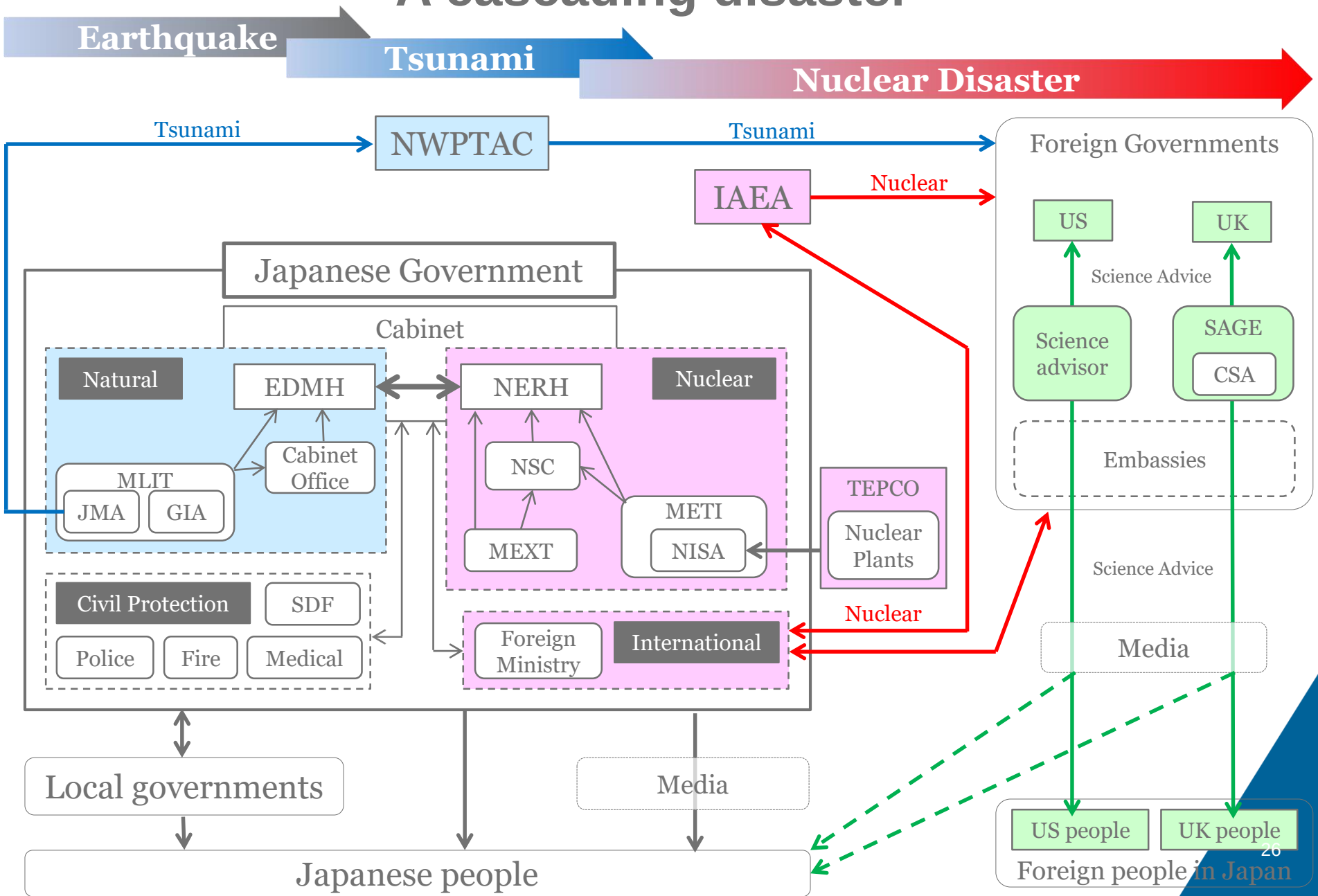


2010 Eyjafjallajökull volcano eruption in Iceland

- **Different organisations and networks** provided scientific advice to the **different stakeholders** (**National**, **Industrial**, **European**, and **Global**)



Great East Japan earthquake 2011: A cascading disaster



West African Ebola virus epidemic 2014

During 2014-2015, more than 28,600 people were infected with Ebola and **more than 11,300 lives were lost** in Guinea, Liberia, and Sierra Leone.

- The **national structures** of the seriously affected countries were **unable to examine and diagnose patients** immediately.
- Infected people were **reluctant to share their contact information** with the governments.
- **World Health Organization (WHO) failed to declare** a Public Health Emergency of Transnational Concern (**PHEIC**) in the early stage of the outbreak.

Zika virus epidemic in Brazil 2015-2016

There was a great deal of **uncertainty** around Zika, including transmission and prevalence of immunity.

- After **confirming Zika infection** in Brazil in May 2015, the **PAHO started to send epidemiological alerts**.
- **Brazil declared a National Public Health Emergency** in Nov 2015, and **WHO declared a PHEIC** in Feb 2016.
- There were several **challenges to sharing information and data** about Zika, including **legal issues** and **academic practice:**.
- Leading global health research organisations **committed to sharing data and results as openly as possible** in February 2016.

Space Weather: a Novel Crisis

- **A space weather event** can occur when solar activity generates emissions of electromagnetic radiation.
- This event can **disrupt critical infrastructure components.**
- How would decision-makers handle such a **complex, unpredictable crisis**?
  - Rehearsing **scenarios**
  - **Scientific advice** in the preparedness phase and during the event.
  - **Clear strategies** for **transnational communication and coordination of advice**

CONCLUSION AND RECOMMENDATIONS

Barriers and challenges

1. Building capacity to produce, absorb and use scientific advice
2. Identifying institutions and contact points for co-operation
3. Quality assurance
4. Incentives and liabilities
5. Legal and Cultural barriers
6. Cross-sector communication and brokerage
7. Public communication and social media
8. Trust and mutual understanding

Recommendations (1)

Fostering domestic capacity for scientific advice in crises:

1. Where not already present, **national mechanisms for the provision of scientific advice in crises should be established**, in particular for sense-making in complex and novel crises.
2. Knowledge generated and **lessons learned** regarding scientific advice, during crises, including novel and complex events, need to be structured, recorded, systemised, preserved and disseminated.
3. The international community should **assist interested countries in developing their domestic systems** for providing and utilising scientific advice in crises.

Recommendations (2)

Enabling transnational scientific cooperation in crises: structures and frameworks:

4. Countries should **identify**, and share details of, domestic and international **contact points**.

5. **Existing frameworks** for the exchange of data and information during crises should be strengthened and **new frameworks** developed as necessary.

Recommendations (3)

Promoting mutual understanding and trust: people and networks:

6. Regular interactions and **building of mutual understanding between providers of scientific advice** (government scientists, academics, science advisors) **and crisis managers** should be encouraged at the national level.
7. **International science networks**, operating in areas of relevance to actual or potential, trans-national crises should be considered as potentially **part of the infrastructure for crisis response**.
8. Mechanisms to enable the **exchange and mobility of interested individuals from different institutional settings** and countries should be used to promote mutual understanding and trust.

Recommendations (4)

Being prepared:

9. **Regular drills and exercises** that bring together both crisis managers and those involved in providing scientific advice, should be encouraged and supported.

10. **Mutual-learning and training scenarios**, for novel, complex trans-national crises **should be developed**.

Recommendations (5)

Communicating with the public:

11. **The public communication** of scientific advice during crises should normally be **embedded in a broader crisis communication strategy**.
12. **Responsibility** for public communication of scientific advice in crisis response situations needs to be **clearly defined**.
13. **Further experimentation with the use of social media and on-line tools** for gathering and communicating information from, and to, the public during crises is required.

THANK YOU

OECD
BETTER POLICIES FOR BETTER LIVES