The European Commission’s science and knowledge service

Joint Research Centre
4th DRMKC Annual Seminar

Alessandra Zampieri
Head of Unit Disaster Risk Management,
Joint Research Centre, European Commission

17 October 2019
Mission letters to the new Commissioners:
"To strengthen our culture of evidence-based policymaking", "to make full use of knowledge, information, and research within the Commission"

"As the nature of risks continues to evolve, our approach to crisis management must become more consistent and better integrated", "I want you to look at how Europe can better prevent and prepare for emergencies. This includes supporting Member States in developing national and local disaster risk strategies, if not already in place, and improving access to early warning systems."

RescEU:
Via the European Civil Protection Knowledge Network, the EU is developing a new platform for sharing knowledge, best practices and lessons learned by civil protection experts and emergency management personnel
The **HOW**:  
“To match this aspiration with action, we must rediscover our unity and inner strength”
JRC's Mission

"As the science and knowledge service of the Commission our mission is to support EU policies with independent evidence throughout the whole policy cycle"
The need to revisit evidence for policy

- Society is facing multi-faceted challenges
- Super-abundance of knowledge
- Complexity and interdependencies
- Relationship between science and policymaking is not linear
- Uncertainties (inherent in science)
- Polarisation of media and society
The aim of the knowledge centres is to collect, check, structure and make easily accessible and comparable all the relevant data, knowledge and intelligence in a specific policy field.

Specific knowledge and competence centres will be set up for issues that fall under the policy priorities of the Commission [...] The relevant DGs will form thematic networks to underpin the work of the knowledge centres.
The European Commission's Knowledge Centres: the Science-Policy Interface

Solid scientific evidence for policy making

- Map and gather knowledge
- Filter, verify and make sense
- Identify and fill gaps
- Tailored output
- Sharing
Existing Knowledge Centres

- Knowledge Centre for Disaster Risk Management
- Knowledge Centre for Territorial Policies
- Knowledge Centre for Bioeconomy
- Knowledge Centre for Food and Nutrition Security
- Knowledge Centre on Migration and Demography
- Knowledge Centre for Food Fraud and Quality
Horizontal Knowledge Management - Competence Centres

- Competence Centre on Composite Indicators and Scoreboards
- Competence Centre on Text Mining and Analysis
- Competence Centre on Microeconomic Evaluation
- Knowledge Centre on Modelling
- Competence Centre for Technology Transfer
- Competence Centre on Foresight
JRC knowledge ecosystem – optimise the knowledge flow

Enablers
KM organisation, methodology & tools, skills, culture, ...

Policy Makers
Citizens

Acquire and organise knowledge resources

Co-create knowledge products

Connect people and knowledge

Communicate knowledge

Knowledge Ecosystem
The **WHAT**: The contribution of the Disaster Risk Management Knowledge Centre - DRMKC
Disaster Risk Management Knowledge Centre (DRMKC)

DRMKC PROVIDES A NETWORK APPROACH TO THE SCIENCE POLICY INTERFACE IN DISASTER RISK MANAGEMENT

EC DIRECTORATES

DRMKC

SERVING

OUR ROLE

Support system
Scientific partnerships
Pooling of research results

INNOVATION

PARTNERSHIP

KNOWLEDGE

Networks of laboratories
Science policy interface
Identification of research needs and gaps

European Commission
Disaster Risk Management Knowledge Centre
DRMKC

The DRMKC gathers together different European Commission's services, European countries and the whole community dealing with disasters to manage disaster risk in a more coordinated way.

Enhanced effectiveness of better coordinated policies based on Knowledge transfer across sectors.

The DRMKC aims to integrate and consolidate existing scientific multi-disciplinary knowledge to co-develop innovative solutions for existing needs.
Covering all phases of the DRM Cycle

- Practitioners
- Decision makers
- Scientists

DRM Cycle
- Preparedness
  - EWS
- Response and Relief
- Mitigation and Prevention
- Recovery
- Restoration and Adaptation
- Impact Assessment (Damage and Loss Data Collection)

Scientific input Continuous Feedback
DRMKC – Developing Collective Knowledge to support the advance of Innovative Policies

**Science for DRM 2020**

The Science for DRM has mobilised the DRM community with the common aim of summarising the state-of-art, to learn from the past experiences and to contribute to the definition of the new challenges.

**PROJECT EXPLORER**
The DRMKC Projects Explorer is continuously updated with information regarding research projects and institutions. It is an essential tool to discover who knows what.

**Gaps Explorer**
The DRMKC Gaps Explorer offers science-based knowledge and targeted recommendations, tailored to different stakeholder profiles – scientists, practitioners and policy-makers, regarding the way forward.

**Risk Data Hub**
The DRMKC Risk Data Hub is a multi-hazard Geo-portal providing a common tool for scientists, practitioners and policy-makers to support bridging science and policy in the frame of DRM.

**INFORM**
The Index for Risk Management (INFORM GRI) provides a quantitative assessment of the risk of humanitarian crises in a multi-hazard context with a major focus on developing countries.
Developing Collective Knowledge
Science for DRM 2017: Knowing better and losing less

>6000 downloads and
>3000 copies distributed

It has been the base for CONRIS training on DRM at the University:

- Saxion UAS (the Netherlands) in April 2018
- Coventry University (UK) in November 2018.
- Autonomous University of Barcelona (Spain) in February 2019.
- Deventer UAS (the Netherlands) in March 2019.
- Coventry University (UK) in February 2020.
- Deventer UAS (the Netherlands) in March 2020.

Currently ~300 participants

Multi-hazard approach: from asset perspective
Identification of solutions through the analysis of case studies
Climate Change is one of the driving and cross-cutting topics
Focus on Impact Assessment
Science 4 Policy

Landscape of risks in the EU
(2017 EU risk overview SWD(2017)176)

The most frequently identified disaster risks among MS:
- Drought
- Extreme weather
- Forest fire
- Earthquake
- Pandemic
- Epizootic / Animal & Plant disease
- Industrial accident
- Critical infrastructure disruption
- Nuclear / Radioactive accident
- Terrorism
- Cybercrime

+NaTech

Volcanic activity
Forest/Wildfires
Extreme weather
Cyber security
Hybrid threat
Malicious CBRNe
Other emerging risks
(e.g. electromagnetic threats, G5 risks etc)
From what we Know towards discovering exiting Gaps
Database of DRM Research Projects, Institutions and Results

While knowledge is abundant, gaps do, of course, still exist. The DRMKC is actively contributing to map these gaps aiming at better design funding programmes at an EU level. The first step in this process is to know 'who knows what', which is the essence of knowledge management.

This effort is a twofold exercise: while it supports exploitation of already existing research results, the identification of remaining gaps promotes a more focused research, which facilitates the future transfer of research solutions or policy recommendations to users in a timely and relevant fashion.

The DRMKC has been working in close collaboration with the Community of Users on Secure, Safe and Resilient Societies (CoU) of DG HOME to develop the Projects Explorer: a common repository of relevant research and operational projects along with their results that is accessible through both, the DRMKC and the CoU web-platforms. The Projects Explorer allows identification and visualisation of networks and eases the discovery of synergies across different research funding instruments while promoting a cross-sectorial approach to the Risk Management research.

Community of Users
Explore by policy themes

- Horizontal issues
- Disaster Resilience and crisis management
- Border security and customs
- Crime and terrorism
- Food safety and security
- Societal resilience
- CBRNE threats
- Health threats
- Critical infrastructure protection
Database of DRM Research Projects, Institutions and Results

Contents: Who has been working on what and with whom?

Towards enhanced exploitation of research results
Gaps Explorer: Next steps towards a more Resilient future

In the scientific world, as the flood of knowledge increases, there is a greater need for systematic reviews to guarantee proper exploitation of results along with the definition of the way forward. While knowledge is abundant, gaps do still exist. DG Research and Innovation (RTD) contributes to mapping these gaps through their Projects for Policy series of reports.

Inspired by this initiative, the DRM4C has developed the Gaps Explorer to provide targeted recommendations, tailored to different stakeholder profiles - Policy-Makers, Practitioners and Scientists - based on thematic reviews. The first pilot has been co-developed by DG RTD and JRC on Forest Fires. We expect many other topics to come.

Science-Policy Interface: Needs and Gaps Assessment
From Data to Policy
Data for policy
Exploit data to generate policy relevant information

(Big) data
Cross-domain: public, Earth Observation, crowd sourcing, IoT, social sensing, ...

Data Management Lifecycle

Planning
Feedback management
Publication / sharing
Preservation
Data acquisition & cataloging
Analysis & Visualisation

Indicators
Decisions
Directives, legislations, communications, ...

Impacts on society
GIS based collaborative platform – Innovative solutions:
- Learning from the past to protect our future
- Reinforcing the science-policy interface (Data4policy)
- Linking local up to global dimensions
Linking research results and policies

Reinforcing Prevention and Adaptation

Linking Risk Assessment (future) with Impacts collection (past):
Learning from the past & Planning for the Future.

Supporting the development and monitoring of DRR strategies

All Hazards approach

RM Plans including Climate Change Adaptation Strategies
evidence-based.
..it has become a reference for global multihazard risk assessment
Anticipate future risk
Key messages

- We have to learn how to face a **new era of risks** and to jointly enhance our Resilience.
- **Knowledge transfer, co-development** of solutions, continuous uptake of **innovative solutions**: these are the ingredients of a more Resilient society.
- Risk awareness, communication, training and education are conditions *sine qua non*
- The **DRMKC** is an initiative aiming to support this process. Their driving force is collaboration because **together we are stronger**. Now is the time to continue with its expansion to fully cover CBRNe, Cybersecurity, Terrorism, ...
- To face the **new era of risks** we need to be able to link the dots: to **understand risk**, its components and the existing interconnections.
- New role of the Emergency Services Departments; could be used as targets or vectors
- We need a **reinforced Cohesion** of our societies under the same goal: **to protect our future**.
....because together we are stronger!

“The whole is greater than the sum of its parts.”

-Aristotle