European Commission

Disaster Risk Management Knowledge Centre

Pooling knowledge and networks in disaster risk management

NEWSLETTER #9

In this issue

http://drmkc.jrc.ec.europa.eu

Editorial

J. Luchner at the UN Conference on DRR in Cancun.

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At the end of May, we gathered in Cancun for the Fifth United Nations Global Platform for Disaster Risk Reduction; the first to take place since the adoption of the Sendai Framework for Disaster Risk Reduction.

I am pleased that the European Union Delegation represented, under the leadership of the European Commissioner for Humanitarian Aid and Crisis Management, Christos Stylianides, a particularly strong voice among the 4000 participants from 180 countries. Since Sendai's adoption in 2015, **the European Commissions has been one of the main players in advocating for disaster risk reduction.** We met in Cancun to share our experience and knowledge, and to drive commitments to implement the global disaster risk reduction agenda.

Many are aware that in the past years the European Union and its Member States have made great progress in implementing the Sendai Framework. The Sendai Framework has been an opportunity to develop a disaster-risk informed approach for EU policies. At EU level, since 2016 we have been working on the basis of a Sendai Action Plan. Within the EU, our EU civil protection legislation has a strong focus on prevention and preparedness policy. As part of our international cooperation, the European Union and its Member States remain collectively the world's largest donor of development and humanitarian aid. We are taking concrete measures to strengthen national and local disaster risk reduction capacities in our partners' countries. **Our collective work on disaster risk reduction is based on cutting-edge science and research**.

These experiences and achievements were presented in Cancun at different events and sessions, which you can read about in this Issue. We also reiterated our priorities at high-level meetings, the Leaders Forum and the Ministerial Roundtable.

I would like to share with you several important messages that emerged from these discussions. The global disaster risk reduction community reaffirmed the need to continue making the economic case for disaster risk reduction. Indeed, disaster risk reduction should be part of economic planning, as an opportunity to foster innovation, job creation and socio-economic progress. We agreed to strengthen our work on disaster risk reduction strategies, the Sendai Framework target to be reached by 2020. We looked at the Sendai Framework monitoring, with an aim to avoid duplications and explore synergies with existing data collection efforts at different levels.

The deliberations also called for **more anticipatory and pre-emptive action** in disaster risk reduction; gender-sensitive and inclusive disaster risk reduction; coherence with the sustainable development and climate change agendas; and support to international cooperation initiatives such as public-private partnership and private-private cooperation. The latter was in in particular encouraged in cross-country sharing of disaster risk data, information and lessons-learned as well as technology and knowledge.

Never so far has there been a stronger call for sound policies and scientific know-how to achieving our commitments. We have to further **bridge the gap between science and policy**, to ensure that our aspirations are reached. The Disaster Risk Management Knowledge Centre is providing an important interface in this endeavour.

The 2017 Global Platform was an occasion to assess and mobilise global action to implement the Sendai Framework. **The EU's presence and advocacy during the conference were highly appreciated by the United Nations and other partners** - we joined together in Cancun to reinforce our efforts to make our world more disaster resilient.

Now, it is up to us, the disaster risk reduction community and partners to move even further to implement Sendai; to develop, strengthen and apply concrete solutions to preventing and reducing disaster risks world-wide. The EU will continue engaging with science and others to deliver on these common responsibilities.

Johannes Luchner

Director of Crisis Management in the European Commission's Directorate-General for European Civil Protection and Humanitarian Aid Operations (ECHO)

Survey Report on Flood Risk Management in the EU, and the Floods Directive's first cycle of implementation

The purpose of Directive 2007/60/EC, known as the Floods Directive (FD), is to establish a framework for the assessment and management of flood risks in the EU, aimed at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods.

The end of the first cycle of implementation of the FD (2009-2015) presented an opportunity to share successes and difficulties, within the Floods Working Group (WGF) of the Common Implementation Strategy (CIS) process for the Water Framework Directive (2000/60/EC) and the FD, to learn from the information exchange - and to improve on the implementation during the second cycle (2016-2021).

To this end a questionnaire was devised, to spark a reflection of the past six years and contemplation for the next six years. The questionnaire was sent to the EU Member States (MS) in January 2016. By mid-2016, all 28 MS had responded. A copy of the questionnaire is included in the appendix of an extensive survey report entitled "Flood Risk Management in the EU and the Floods Directive's First Cycle of Implementation (2009-15)": https://circabc.europa.eu/w/browse/ec110327-9521-468f-b6b8-cc32b1245c3c

Preliminary results of the questionnaire served to organise and facilitate a workshop in April 2016 in Vienna, where relevant topics of implementation were discussed. Depending on the area, between half and up to almost all Member States indicated the following:

- Their historic floods database was created or significantly updated after 2007;
- Guidance on how to collect and record flood event data was developed after 2007;
- A suitably accurate Digital Terrain Model was created or significantly updated after 2007;
- Digital inundation maps covering the affected areas of the country were created or significantly updated after 2007;
- Knowledge of the hydrological characteristics of water bodies with the potential to flood, improved post 2007;
- There was enhancement of information on the location and size of flood defence infrastructure;
- Research was carried out specifically on climate change and its influence on the occurrence of significant floods and there was a feeling that cooperation at cross-border basins/coasts has improved.

At the same time, it was recognised that there are challenges too, for example regarding:

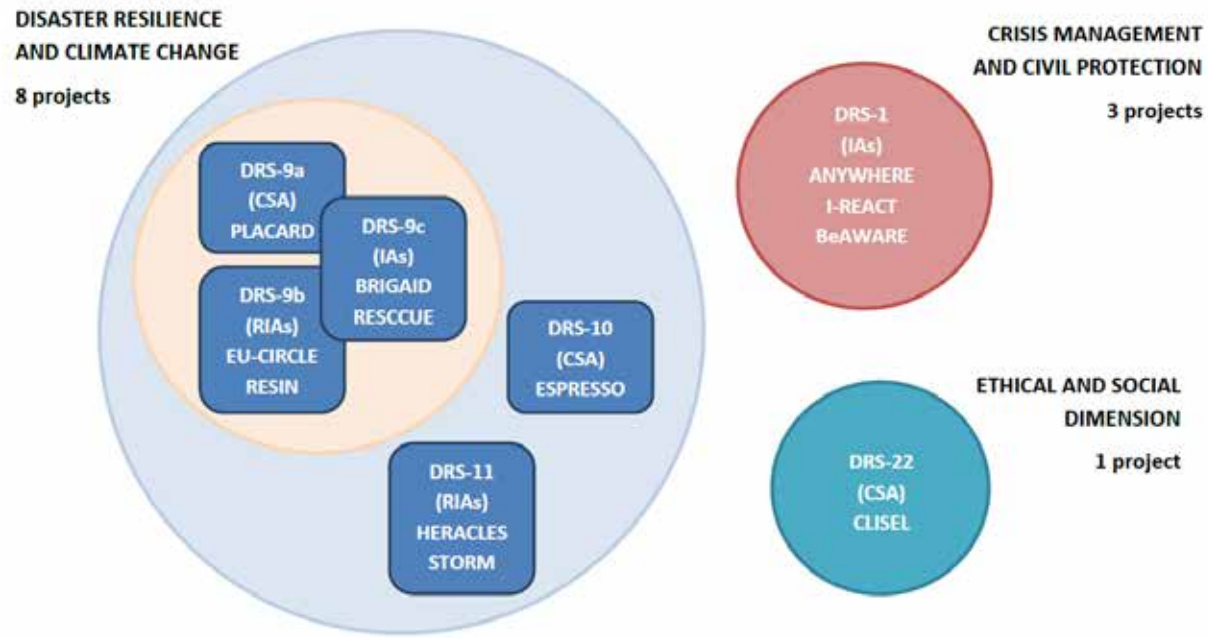
- Stimulating public participation and communicating risk successfully;
- Meeting the expectations of the public and other stakeholders;
- Effective involvement and coordination of national, regional and local authorities;
- Further research on flooding not resulting from rivers or the coast – and a methodology to deal with these other sources;
- Requirement for less uncertainty in the return periods (due to short length of observed time series);
- Better quality of hydrological data and better hydraulic modelling of flooding;
- More data on receptors and their vulnerability and more research on the assessment of non-monetary damages (e.g. on culture, environment, human health);
- Development of web-GIS systems and better modelling of flood conveyance routes.

This article was prepared by the co-chairs of the **Working Group on Floods (WGF)** under the Common Implementation Strategy (CIS) for the Water Framework Directive and the Floods Directive. Further information on the WGF and the CIS for the Water Framework and the Floods Directives, at:

http://ec.europa.eu/environment/water/water-framework/objectives/implementation_en.htm

Flooding outside Kristinehamn, Sweden (main European road, E18, between Oslo and Stockholm), on 20 August 2014.

7th Event of "Community of Users on Secure, Safe and Resilient Societies" (CoU), in Brussels



Twelve projects identified as potentially having synergies, ten of which attended the CoU Workshop on Climate Clustering. (PLACARD and ESPRESSO projects were not present).

The Community of Users on Secure, Safe and Resilient Societies (CoU) held its seventh meeting at the BAO Congress Centre in Brussels on 15-17 May 2017. The three-day meeting, comprising a High-Level Security Practioners Event on the first day, followed by two days of related Thematic Workshops, was convened by Mr. Philippe Quevauviller (European Commission, DG Migration and Home Affairs). Below are short summaries of the High-Level Security Practitioners' Event, and the two Workshops "Climate Clustering" and "CoU Website". Further information about the 7th CoU event are available at: https://www.securityresearch-cou.eu/

7th CoU meeting - High-Level Security Practitioners Event:

A High-Level Security Practitioners Event took place on the first day of the 7th CoU meeting, bringing together some 50 participants from all over Europe. The event, which was also web-streamed for parties interested in joining the meeting remotely, started with a welcome address by Matthias Oel (DG HOME). The keynote speech was given by Commissioner Julian King, followed by a speech of Gilles de Kerchove, the EU Counter-Terrorism Coordinator. Finally two high-level round-table discussions took place, focusing respectively on market uptake of research outcomes and enhancing the market for security innovation.

Commissioner King stated that it is important to promote effective synergies between practitioners, users, policy-makers and researchers. The Commissioner encouraged an active debate on how to promote better uptake of security research results adding that scientific research is about co-operation and developing solutions together. Mr de Kerchove proposed some key elements of the way forward, including development of EU strategy, common procurement, certification and standardisation, EU clouds and flagship projects, such as Galileo.

A question-and-answer session followed, hosted by Patricia Compard (Ministry of the Interior, France) including contributions from Alberto de Benedectis (PASAG), Jean-Luc Gala (UCL Belgium), Olga Vybornova (UCL Belgium) and Igor Linkov (US Army Engineer Research and Development Center).

Jerome Hocquet gave a presentation on anticipating cyber threats and a question-and-answer session followed by comments from Steven Wilson (Europol), Gilles de Kerchove, Annabela Gago (DG HOME) and Alberto de Benedictis.

The second part of the first day consisted of two round-table discussions. The first, entitled "From research to end users", was chaired by Anabela Gago, with panellists Steven Wilson (Europol), Patrick Padding (ENLETS), Peter Berkowitz (DG REGIO), Albrecht Broemme (TWV), and Ivan Zavadsky (ICPDR), and was followed by a demonstration by the Horizon 2020 project TOXITRIAGE from Paul Thomas (Loughborough University).

The second round-table discussion, entitled "How to industrialise successful processes?", was chaired by Olivier Onidi (DG HOME), with panellists Luigi Rebuffi (EOS), Ramón Darder Colom (Lieutenant Colonel, Guardia Civil Spain), Alberto de Benedictis (PASAG), Ashok Ganesh (CEN-CENELEC) and Fabrice Leggeri (FRONTEX).

The meeting ended with a wrap-up from Olivier Onidi and a final message from Anabela Gago. Further details about the meeting can be accessed at this link: https://www.securityresearch-cou.eu/

As mentioned above, the second and third days of the 7th CoU meeting covered a number of workshops and meetings in parallel addressing different subjects of interest including:

- CBRN-E Synergy building
- Workshop "CBRN-E Forensics"
- Workshop "CBRN-E Networking"
- Workshop on "Climate clustering"
- Workshop "Exploring On-going National CoU actions"
- Workshop "Chemical Hazards (CBRN)"
- Workshop "Common Information Space"
- Standardisation Event
- Workshop "CoU Website"

Two of the workshops (i.e. "Climate clustering and "CoU Website") are summarized below.

7th CoU meeting - Workshop on "Climate Clustering"

EU-funded projects in the field of climate hazard do not yet collaborate in an optimal manner. There is a need for an informal network to improve information exchange, develop a shared strategy, and find common grounds for collaboration. The workshop on "Climate Clustering", held during the 7th CoU meeting, brought together project coordinators and policy-makers to boost possible synergies among projects and different actors. The twelve projects invited to the workshop are projects awarded under the Horizon 2020 DRS-2014-2015 call (i.e. Disaster-resilience: safeguarding and securing society, including adapting to climate change) and initially identified as projects with potential synergies. Identified collaboration opportunities are focused around sharing and learning from each other's processes, developing common tools to measure efficiency, developing a shared message towards policy makers and exploring joint actions, such as workshops and case studies.

The next step would be to set up a follow-up meeting, in order to: (1) discuss how to organise collaboration and keep the cluster members involved; (2) identify shared goals; (3) discuss key actions for sharing knowledge; (4) identify opportunities for joint case studies, joint workshops and bringing solutions on the market together.

See web-site:

https://www.securityresearch-cou.eu/sites/default/files/adaptivetheme/CoU%20Brief%20201705_03_Climate%20Clustering.pdf

7th CoU meeting - Workshop on "CoU Website":

The landscape of security and crisis management research The landscape of security and crisis management research is regularly referred to as fragmented. As with many communities, the virtual world echoes the physical world and the online presence is equally disjointed. There is an abundance of online information available, but it can be difficult to locate and a structure is needed for the online presence that echoes that required by the users in the "real" world. There is a wide range of users interested in accessing the valuable information being generated by the community, including Policy-makers, Scientists, Industry (including SMEs), Training and Operational Units, NGOs, and the general public. The CoU web portal aims to provide a gateway to the information available in the security research landscape, and to communicate to the wide range of users in languages they understand. A temporary web platform was built in 2016 to provide information on the CoU events and a brief background of the initiative. Version 2.0 of the web platform will be launched by the end of 2017 and will be a comprehensive resource developed based on the feedback from the CoU members themselves. The CoU website will link to and work closely with the DRMKC website, in order to give users the best possible access to information and services.

See web-site:

https://www.securityresearch-cou.eu/sites/default/files/adaptivetheme/CoU%20Brief%20201705_05_The%20CoU%20Website.pdf

This article was prepared by **Mr. Brian Doherty** (DG JRC), and **Mr. Philippe Quevauviller** (DG HOME).

Tentative agenda for meetings in 2018

10th CoU Meeting (5-9 March 2018)

- THEME 1: ***Sendai Framework for actions, links to the Union Civil Protection Mechanism***
- THEME 2: ***Chemical hazards, focus on SevesoIII Directive, CIP and UNECE TEIA***
- THEME 3: ***CBRN-E action plan and networking developments***
- THEME 4: ***Health related threats***
- THEME 5: ***Critical Infrastructure Protection***
- THEME 6: ***Standardisation***

11th CoU Meeting (4-8 June 2018)

- THEME 7: ***National CoUs***
- THEME 8: ***Geological disasters***
- THEME 9: ***Climate extremes***
- THEME 10: ***Water safety & security***
- THEME 11: ***Resilient cities***
- THEME 12: ***External security***

12th CoU Meeting (19-23 November 2018)

- THEME 13: ***Cyber security and crime***
- THEME 14: ***Human factors***
- THEME 15: ***Border security***
- THEME 16: ***Radicalisation***
- THEME 17: ***Fight against crime and terrorism***
- THEME 18: ***Communication, interoperability***

2nd GEO Data Providers Workshop, in Florence

The 2nd Group on Earth Observations (GEO) Data Providers Workshop took place on 20-21 April 2017, in Florence, Italy. GEO is a partnership of over a hundred national governments and over a hundred participating organizations that envisions a future where decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth observations. Together, the GEO community is creating a Global Earth Observation System of Systems (GEOSS) to better integrate observing systems and share data, by connecting existing infrastructures using common standards.

There are more than 200 million Open Data resources in GEOSS from more than 150 national and regional providers such as NASA and ESA, international organizations such as the World Meteorological Organization (WMO), and the commercial sector such as Digital Globe. Through the GEOSS Common Infrastructure (GCI), GEOSS proactively links together existing and planned observing systems around the world, and supports the need for the development of new systems where gaps currently exist. It will promote common technical standards so that data from thousands of different instruments can be combined into coherent data sets.

The GEOSS Portal (http://www.geoportal.org/) offers a single access point for users seeking data, imagery and analytical software packages relevant to all parts of the globe. It connects users to existing databases and portals, and provides reliable, up-to-date and user-friendly information - vital for the work of decision-makers, planners and emergency managers.

The JRC is contributing to the GEOSS Portal through the JRC Data Catalogue (https://data.jrc.ec.europa.eu/). In particular the Copernicus Emergency Management Service (EMS) Team is finalizing the publication of all service products (i.e. Rapid Mapping; Risk and Recovery Mapping; EFAS; GLOFAS; EFFIS; GWIS) on the JRC Data Catalogue, and subsequently on the GEOSS Portal.

Further evolution is planned to allow a more tight integration of the data with the GEOSS Portal through the publication of Web Mapping Services (WMS) that will enable the direct visualization of the spatial data on its interactive map.

This article was prepared by **Mr. Simone Dalmasso,** of the JRC's Directorate "Space, Security, and Migration".

Participants at the 2nd GEO Data Providers Workshop

EU and Affiliated Countries Learning Together about Chemical Accidents and Natech Risks

A landmark event to support exchange on emerging risks in chemical accident and "Natech" (i.e. natural hazards triggering technological disasters) risk reduction between the EU and its affiliated countries, was organized by the Joint Research Centre (JRC) of the European Commision, on 14-16 June 2017, in Ispra, Italy.

This combined Seminar and Training Event represented the first time that all EU and EU-affiliated Competent Authorities have all met together, in order to share perspectives on Seveso Directive (and equivalent) implementation, to identify areas of common concern and to seek opportunities for mutual support. With common borders and shared industrial hazards, and in many cases, historical relationships and cultural similarities, the EU and its neighbours to the east and south have a natural interest in helping each other to work more closely on reducing chemical accident and Natech risks. The event was jointly funded by the DG-ECHO / JRC project, Seveso Capacity Building in EU Neighbourhood Countries, under the Civil Protection Mechanism, and the JRC Enlargement and Integration activity.

Over 80 participants from 33 countries participated in the Seminar and training on the JRC's ADAM (chemical accident) and Rapid-N (Natech) risk assessment tools, which took place across two and a half days.

ADAM is a tool intended to estimate potential consequences of industrial accidents by calculating the physical effects of an accident that may result from the loss of containment of a flammable or toxic substance. It will shortly be available to competent authorities online.

Web-site: https://minerva.jrc.ec.europa.eu/en/ADAM/content

RAPID-N is a unique,web-based assessment and mapping framework that unites a natural-hazards module, an industrial plants and units module, and a risk-assessment module to perform a site risk assessment. It is currently implemented for assessing earthquake impacts at fixed chemical installations and work is ongoing to extend assessment of flood impacts.

Web-site: http://rapidn.jrc.ec.europa.eu

A Final Report on the Seminar will be produced by JRC later in 2017, with observations and findings designed to stimulate future EU level and multilateral collaboration and exchange. JRC will also follow-up several requests for bilateral ADAM and Rapid-N training, as well as offers of country-to-country bilateral support.

This article was prepared by **Ms. Maureen Wood,** of the JRC's Directorate "Space, Security, and Migration".

Contribute to the 2nd Anniversary edition of the DRMKC Newletter!
Visit the website or write to drmkc@jrc.ec.europa.eu

European Commission launches overview of natural and man-made risks the EU may face

DG ECHO © European Commission

The European Commission (EC) has drawn up a landscape of the main disaster risks Europe faces today. Flooding, extreme weather and critical infrastructure disruption are among the top five risks across the EU, as identified by Member States. Interdependencies are growing in a risk landscape that is increasingly influenced by climate change.

Improving the understanding of disaster risks in Europe is an important step towards effective disaster risk reduction, and constitutes the basis for planning emergency preparedness and response to emergencies and disasters in Europe.

The Overview of Risks (see link below) is one of the disaster prevention measures foreseen under the Union Civil Protection Mechanism. At the same time, it represents one of the EC's main commitments set out in the Action Plan for the implementation of the Sendai Framework for Disaster Risk Reduction. Its launch coincided with the participation of the EC at the Global Platform for Disaster Risk Reduction, held on 22-26 May 2017, in Cancun, Mexico.

Web-link: http://ec.europa.eu/echo/sites/echo-site/files/swd_2017_176_overview_of_risks_2.pdf

The Overview of Risks compiles outcomes of disaster risk assessments undertaken at national levels across Europe and cross-references them with scientific and other data. The analysis highlights the predominant attention given to disaster risks such as flood, extreme weather, forest fire, industrial accidents and the disruption of critical infrastructure.

Other disaster risks such as pandemics, radiological accidents, terrorism, cybercrime, earthquakes and animal diseases are also of particular importance to emergency management authorities across Europe.

Key observations:

Through this exercise, two key observations have been identified in which more work could be undertaken to strengthen national disaster management capabilities and enhance cooperation at European level:

At a policy level, a regionalised approach to risk assessment could be further explored, addressing the common risks to which Europe is exposed. The overview of risks provides a landscape identifying common risks on which further cooperation could be relevant. Both small-scale events localised in border regions, as well as large-scale events across different countries can be better addressed through a common assessment of their risks.

At a technical level, strengthening risk assessment capacities could focus on integrating into the assessment process:

➔ Cascading (or domino) effects of successive or combined hazards, which may through accumulation of impacts put under strain emergency services and other vital societal functions. Developing performance-based approaches to the risk assessment processes could strengthen the contribution of risk assessment outputs to disaster preparedness and response planning.

➔ The impacts of climate change on disaster management: risk assessments could reflect the climate dimensions associated with certain risks (e.g. more extreme weather events, severity of droughts). This approach could help capturing broad risk trends, emerging risks and potential climate impacts on natural events.

➔ A foresight approach to cover new and emerging risks, building on fast-evolving science and research: the overview of risks concentrates on the emerging threats of anti-microbial resistance, space weather and the loss of biodiversity. It also points to growing disaster risks associated with sudden influx of refugee movements and climate-induced migration.

This article was prepared by **Mr. Andrew Bower**, Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO), European Commission.

DRMKC at the 2017 Global Platform for Disaster Risk Reduction, in Cancun

EU Delegation © European Commission

The 5th Global Platform for Disaster Risk Reduction (DRR), which took place in Cancun, Mexico on 24-26 May 2017, was an opportunity for the Disaster Risk Management Knowledge Centre (DRMKC) of the the European Commission (EC) to show its leading role in research and knowledge management in the foremost gathering of governments, civil society and the private sector to reduce disaster risk and building resilience of communities and nations. The DRMKC was represented by the Joint Research Centre (JRC), ECHO and DEVCO.

At the conference, the DRMKC launched a flagship book "Science for Disaster Risk Management 2017: Knowing Better and Losing Less", a first of its kind summarizing inter- and trans-disciplinary knowledge for a broad audience. The book, which is a collaborative effort of 272 scientists, practitioners and government officials in the EU and beyond, is a major outcome of the DRMKC. At the launch, the importance of science was stressed, in order to ensure coherence among the international frameworks on DRR (Sendai), Sustainable Development Goals (SDGs), climate change (Paris) and urbanisation.

The JRC, as the European Commission's in-house science service, emphasized the role of science through various events. JRC launched the report "Atlas of the Human Planet 2017: Global Exposure to Natural Hazards", documenting growing global exposure to six major natural hazards: earthquakes, volcanos, tsunamis, tropical cyclone winds, tropical cyclone storm surge, and floods. Other JRC research featured prominently, including the Global Human Settlement Layer, the INFORM Index for Risk Management, technological risk and Natech. JRC's global hazard models (floods, droughts, wildfires, tsunamis, GDACS), partnerships (Global Flood Partnership, GEO networks), space activities (Copernicus EMS) were widely mentioned at the Global Platform (and at the preceding Multi-Hazard Early Warning Conference). All of these involve networks of scientists under the DRMKC.

JRC also contributed to the Working Session on Risk Information and Loss Data. JRC, ECHO and EU Member States (MS) work jointly to develop concrete, efficient and practical solutions for measuring disaster losses, including through the development of guidelines, software (the Risk Data Hub), and support to Member States (through the DRMKC Support Service). Improving the knowledge base is part of the 2013 Civil Protection Mechanism legislation and the 2015 Sendai Framework. Loss data are also used in other frameworks, including the climate change agreement and Sustainable Development Goals.

The Sendai Framework clearly recognizes the strong role that the scientific community can play in improved understanding of risk and communicating on new knowledge and innovation. The Global Platform reiterated this message, and confirms that the European Commission's initiative to establish the Disaster Risk Management Knowledge Centre is a step in the right direction.

This article was prepared by **Mr. Tom Dr Groeve**, of the JRC's Directorate for Space, Security and Migration.

Web-sites for downloading the two JRC reports:

DRMKC flagship science report: http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

Atlas of the Human Planet 2017: http://ghsl.jrc.ec.europa.eu/atlas2017Overview.php

Launched! “Science for Disaster Risk Management 2017: Knowing Better and Losing Less”

Consultation at the European Commission exhibition booth at Global Platform for DRR in Cancun. Left to right: Spanish MEP and rapporteur for Humanitarian Aid, Enrique Guerrero Salom, Tom De Groeve (DG JRC), and European Commissioner Christos Stylianides (DG ECHO).

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On 24 May 2017, DRMKC launched its first flagship science report, “Science for Disaster Risk Management 2017: Knowing Better and Losing Less”, at the Global Platform for Disaster Risk Reduction in Cancun, organized by UNISDR. The report is a first of its kind, summarizing inter- and transdisciplinary knowledge for a broad audience of the disaster risk management (DRM) community.

The report was well received by the Special Representative of the Secretary-General for Disaster Risk Reduction, Mr. Robert Glasser, as well as Commissioner Stylianides of DG ECHO and Spanish MEP Enrique Guerrero Salom. More than 200 copies of the report were distributed at the booth of the European Commission (EC).

Distribution of the DRMKC flagship report has also started in Europe, at the 3rd World Reconstruction Conference (WRC3) and the 3rd European Climate Change Adaptation Conference (ECCA 2017).

At WRC3, Charlina Vitcheva, Deputy Director General of the JRC, when opening the session “Building Regulations and Standards for Long-Term Resilience” organized by JRC and World Bank, referred to the DRMKC flagship science report as state-of-the-art scientific knowledge identifying crucial issues in this field and gaps to be addressed collectively by scientists, policy-makers and practitioners. At ECCA 2017, JRC had the opportunity to present the report also to the climate change adaptation community, in the session organized by European Environmental Agency, on “Increasing Resilience: Integrating climate change adaptation and disaster risk reduction in planning. European and national level policy approaches and practices”.

The DRMKC flagship science report is the result of an 18-month process that pulled together a network of 273 contributors from 26 (mostly European) countries and 172 organizations. It was run by the JRC Editorial Board of four members, with strong support from the EC Advisory group of 79 experts in specific topics. The report has been written by 160 scientists and formally reviewed by 123 scientific experts, policy-makers and practitioners from many fields relevant to DRM. The report has been endorsed by eleven EC Services.

The report is available online (see link below), and we consider it as the start of a continuous process to summarize science periodically, and to make it available to the DRM community.

Download the DRMKC flagship science report:

http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

This article was prepared by **Ms. Karmen Poljansek**, of the JRC’s Directorate ‘Space, Security, and Migration”, Editor in Chief of the report, “Science for Disaster Risk Management 2017: Knowing Better and Losing Less”.

Delivery of the DRMKC flagship science report to Mr. Robert Glasser, Special Representative of the Secretary-General for Disaster Risk Reduction, UNISDR at the Global Platform for DRR in Cancun. Left to right: Tom De Groeve (DG JRC) and Robert Glasser.

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Global spatial datasets to address disaster risk and to monitor Sendai targets

Daniele Ehrlich during an Ignite Stage at the 2017 Global Platform for DRR in Cancun.

The 2017 Global Platform for Disaster Risk Reduction in Cancun, Mexico, provided a forum for learning about the data, procedures and methodologies used to address the objectives of the Sendai Framework for Disaster Risk Reduction. The European Commission's Joint Research Centre (JRC) organized the Side Event "Global open data for monitoring the Sendai targets", which took place on 25 May 2017. At the Side Event, four institutions discussed their experiences in producing and using Open Source data for Monitoring of the Sendai Framework.

A further aim of the Side Event was to understand the new opportunities provided by the global spatial datasets that are now becoming available as Open Source data, and especially those derived from Earth Observation (EO) image archives. In fact, for many parts of the world these datasets may be the only source of information for compiling indicators used to monitoring targets set by International framework agreements.

The first speaker, Mr. Bapon Fakhruddin, representing the Integrated Research on Disaster Risk (IRDR) programme, addressed Gap Analysis on Open Data Interconnectivity for Global Disaster Risk Research. The second speaker, Mr. Julio Cesar Castillo Urdapilleta, representing the Global Partnership using Space-Based Technology Applications for Disaster Risk Reduction (GP-STAR), addressed the use of EO data for generating hazard, exposure and vulnerability information. The third speaker, Richard Sliuzas, of the Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, addressed Spatial planning for DRR: the contribution of open data. Finally, Mr. Daniele Ehrlich, of the European Commission's Joint Research Centre (JRC), introduced the Global Human Settlement information to support the implementation of the Sendai Framework.

Two reports were launched at the Side Event: the "Atlas of the Human Planet 2017: Global Exposure to Natural Hazards", authored by the JRC; and "Gap Analysis on Open Data Interconnectivity for Disaster Risk Research", co-authored by IRDR and the Committee on Data of the International Council for Science (ICSU CODATA).

Some of the comments from the floor addressed the following topics. Satellite data need to be processed into information products before they can be used in disaster management as hazard, exposure or vulnerability. For many countries there is a scarcity of exposure data and a lack of understanding of the increase in exposure as a main driver or risk especially in low-income countries. Data may be available but not with the right characteristics for use by crisis managers. There is no policy and guidelines for interoperability of open data. National governments have typically less capacity in understanding and using open data for planning, and that should be addressed with capacity building.

This article was prepared by **Mr. Daniele Ehrlich**, of the JRC's Directorate for Space, Security and Migration.

Global Platform on DRR: Side Event on technological hazards

Elisabeth Krausmann (DG JRC) speaking at the technological hazards panel, at the 2017 Global Platform for DRR in Cancun

The JRC, in collaboration with OECD, different departments within UN Environment, and the Disaster Prevention Research Institute (DPRI), organized a Side Event on technological hazards, during the 2017 Global Platform for Disaster Risk Reduction (DRR) in Cancun. The Side Event aimed to raise awareness of technological hazards and to engage the DRR community in the reduction of technological risks. The Side Event also saw the launch of the UN's "Words into Action: Sendai Implementation Guide on Technological / Man-Made Hazards".

Four panelists from the JRC's Natech (i.e. natural hazard triggering a technological disaster) team, the OECD High Level Risk Forum, the Asian Disaster Preparedness Centre (ADPC), and the government of Georgia, discussed risks due to hazardous waste, Natech, chemical hazards and critical infrastructure disruption. The key messages of the panel were:

→ The profile of technological hazards within the DRR agenda must be raised and the interaction between all communities improved.

→ Cooperation among all stakeholders is essential and is most important at local level. The prevention and preparedness planning stages are crucial.

→ Further research is needed to determine how natural disasters can cause technological accidents, and how Natech accidents can be avoided.

→ Accidents often have recurring causes. It is essential to learn from past events and invest in implementing and monitoring the lessons learned.

→ Natech and environmental emergency risk reduction often falls outside both environmental and humanitarian funding streams. Low-income countries in particular struggle to access financial support to reduce Natech and environmental emergency risks.

→ Technological risks should be properly assessed. In many countries, this requires awareness raising, knowledge transfer and capacity building efforts.

→ Risk assessment criteria for hazardous waste disposal including historical waste sites should be developed. This includes support to the assessment of infrastructure development for the safe disposal of hazardous waste, in particular in areas at risk of natural disasters.

→ Potential single points of failure should be identified to understand the market forces that led to them. Public policy can reduce the stock of risk by creating investment incentives that reduce single points of failure.

→ Risk information should be made available to those potentially affected by the risk.

This article was prepared by **Ms. Elisabeth Krausmann**, of the JRC's Directorate for Space, Security and Migration.

INFORM at the 2017 Global Platform for Disaster Risk Reduction, in Cancun

Image from the INFORM Side Event at the 2017 Global Plaform for DRR, in Cancun

The 5th edition of the Global Platform for Disaster Risk Reduction, which was held on 22-26 May 2017 in Cancun, Mexico, convened more than 5000 participants from 173 Member States, including policy-makers and disaster risk managers. At the 2017 Global Platform, the INFORM (Index for Risk Management) project had a Side Event, co-organised by ECHO, OCHA, UNICEF and an Ignite talk.

The event was moderated by Mr. Johannes Luchner, Director of 'Emergency Management' Directorate, European Commission's Department for European Civil Protection and Humanitarian Aid Operations ECHO. The speakers were: Wendy Cue, Head of Regional Office for Latin America and the Caribbean, UN Office for the Coordination of Humanitarian Affairs (OCHA); Sergio García Cabañas, Secretario Ejecutivo, and Hardany Navarro, Coordinadora Nacional Para La Reducción De Desastres (CONRED), Guatemala; Ronald Jackson, Executive Director, Caribbean Disaster Emergency Management Agency (CDEMA)

The Side Event, which focused on risk analysis in Latin America and the Caribbean (LAC) in the context of Sendai implementation, gained a high turnout of around 100 persons. Priorities linked to strengthening evidence for building resilience within the context of sustainable development and poverty eradication, were also addressed.

The Side Event brought together representatives of national governments, regional organisations, donors and international organisations. It looked at examples from the region of how shared risk analysis can support decision-making and development. It examined how different risk analysis frameworks and methods can be integrated and what kind of resources and capacity are needed by different stakeholders to make risk analysis credible and sustainable.

By its nature, the INFORM approach involves a wide range of actors, contributing the perspective of multiple sectors. This participatory process enables true partnerships with a myriad of government entities, organizations, and agencies, which are brought together to solve a common problem, namely to manage the risk of crises and disasters and to ensure resilient development (by bridging the divide between development and humanitarian assistance).

Summary of outcomes:

- An improved understanding of the different frameworks for risk analysis being used in the LAC region, and how these can be integrated.
- Demonstration of how shared risk analysis initiatives have supported decision-making regarding risk reduction and preparedness in the region.
- A better understanding of what resources and capacity are required for shared risk analysis and in particular how governments can be supported to undertake it.

Summary of recommendations:

The Side Event looked at the concept of open and shared risk analysis and how it can support planning and other processes, which can help prevent and reduce disaster risks. The main recommendations are that a shared disaster risk analysis can:

- Help overcome institutional barriers between governments, development, DRR, humanitarian and other multilateral actors.
- Support collaborative and coordinated action between all those working on disaster and crisis risk management.
- Strengthen and reinforce implementation of Sendai Framework at national and regional levels.

INFORM web-site: http://www.inform-index.org/

This article was prepared by **Mr. Luca Vernaccini**, Consultant with ARHS Developments, at the JRC's Directorate for Space, Security and Migration.

The European Commission at the 3rd World Reconstruction Conference (WRC), in Brussels

The 3rd World Reconstruction Conference (WRC) was held on 6-8 June 2017 in Brussels. Building on the success of the first two WRCs held in 2011 in Geneva and 2014 in Washington, the 3rd WRC, which was held in conjunction with European Development Days 2017, aimed to promote resilience through post-crisis recovery.

More than 800 participants from civil society, national and local governments, academia, the private sector and international organisations from around the world took part in this global event. They addressed the role of post-crisis recovery and reconstruction for resilience building and disaster risk reduction and shared experience with a view to advance the implementation of the 2015 Sendai Framework for Disaster Risk Reduction. The conference was jointly organised by the European Commission, the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR), the United Nations Development Programme (UNDP) and the African, Caribbean and Pacific Group of States (ACP).

Among the many contributions made to the event, the European Commission, through the Joint Research Centre (Ms. Silvia Dimova, Directorate for Space, Security and Migration), co-organized together with the World Bank's GFDRR, the session on "Building Regulations and Standards for Long-Term Resilience".

The session was opened by Ms. Charlina Vitcheva, Deputy Director General of the JRC, who stressed the importance of building codes and standards as a valuable mechanism for capturing experience, and effectively transferring scientific and technical knowledge to construction practice and community resilience. Ms. Vitcheva also referred to the recent DRMKC flagship science report ("Science for Disaster Risk Management 2017: Knowing Better and Losing Less"), as state-of-the-art scientific knowledge identifying crucial issues in this field, and the gaps to be addressed collectively by scientists, policy-makers and practitioners.

The session highlighted the opportunities arising from post-disaster reforming processes and improvements in building regulations and standards, to achieve a wide range of health, safety and civil rights objectives, and to reduce cost and losses in future disaster events. India and Jamaica were demonstrated as successful instances of implementing effectively building codes and standards for long-term resilience.

The example of the EN Eurocodes - i.e. the state-of-the-art European Standards providing a common approach for the design of buildings - was discussed by Mr. Ashok Ganesh, Director of Innovation at CEN (European Committee for Standardization) – CENELEC (European Committee for Electrotechnical Standardization), who noted that they are already used in different regulatory systems due to their flexibility to adapt to each country's specific conditions and practice.

The discussion, moderated by Artur Pinto, Head of the Unit "Safety and Security of Buildings" at the JRC's Directorate for Space, Security and Migration, revealed that science has an important role to play in better prevention and preparedness. The session attracted a full and diverse audience, comprising officials, experts and practitioners from governments, international organizations, NGOs and the private sector from all around the world.

Also highly visited, particularly by participants from developing countries, were the two JRC exhibition booths organized by JRC organized during the exhibition, namely (1) "Eurocodes: long-term resilience for buildings and infrastructure", and (2) "Science for Disaster Risk Management 2017: Knowing better and losing less", represented respectively by Ms. Adamantia Athanasopoulou and Ms. Luisa Sousa, both of the JRC's Unit "Safety and Security of Buildings". The former booth hosted also material from JRC's Knowledge Centre for Territorial Policies, while the latter booth was held under the auspices of the DRMKC.

Related web-sites:

https://www.gfdrr.org/wrc3

http://eurocodes.jrc.ec.europa.eu/

http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

https://ec.europa.eu/jrc/en/territorial-policies

This article was prepared by **Ms. Adamantia Athanasopoulou** (DG JRC) with additional input from **Mr. Andrew Bower** (DG ECHO) and **Ms. Joanna Olechnowicz** (DG ECHO).

Ms. Charlina Vitcheva, Deputy Director-General of JRC, visited the JRC exhibition booths at the 3rd World Reconstruction Conference. Left to right: Stephen Davies, Adamantia Athanasopoulou, Charlina Vitcheva, Luisa Sousa.

4th World Landslide Forum (WLF), in Ljubljana

Opening of the 4th World Landslide Forum.

© 4th WLF

The 4th World Landslide Forum (WLF), entitled "Landslide Research and Risk Reduction for Advancing Culture of Living with Natural Hazards", was organised in Ljubljana, Slovenia, on 29 May - 2 June 2017, by the International Consortium of Landslides (ICL), the International Programme on Landslides (IPL), the University of Ljubljana and the Geological Survey of Slovenia. Competent global, regional, national entities participating in the WLF recognised and welcomed, in particular, the International Strategy for Disaster Risk Reduction (ISDR) - ICL Sendai Partnerships 2015-2025; the Sendai Framework for Disaster Risk Reduction, 2015-2030; and the Sustainable Development Goals (SDGs) of the UN's 2030 Agenda for Sustainable Development, which were adopted as a voluntary commitment to promoting of understanding and reducing landslide disaster risk.

The 4th WLF was developed as a contribution to the above mentioned Frameworks for Disaster Risk Reduction (DRR). During the presentation sessions, the causes that create landslide risk and their cumulative effects were reviewed. Steps to address the principal drivers of vulnerability and exposure and to support hazard and risk assessment were suggested. In addition, the improvements and technological developments for monitoring, testing, analysing, simulating and effective early warning systems for landslides, were presented. Referenced developments of hazard, vulnerability and disaster risk mapping were addressed during the WLF. It was agreed that climate change would intensify the risk in some landslide-prone areas, through an increase in the frequency and / or magnitude of heavy rainfall, and shifts in the location and periodicity of heavy rainfall. The greater impact of disastrous landslides, resulting from the combined effects of triggering factors, including rainfall, earthquakes, forest fires, volcanic eruptions etc., suggested a multi-hazard approach for landslides disaster risk assessment. With regard to the need for a common European inventory of landslides, guidelines and a common legislative framework, the Earth Observation and Geohazards Expert Group (EOEG) of EuroGeoSurveys, suggested that a legislative Directive similar to the EU Floods Directive (2007/60/EC), is required.

It was agreed that, within the context of the 5th World Landslide Forum, to be held on 2-6 November 2020 in Kyoto, Japan, a medium- and long-term global alliance must be committed in order to accelerate and motivate actions for DRR of landslides. It is intended that this voluntary commitment to promote global landslide DRR will be signed by all parties attending the 5th WLF.

Web-site of the 4th World Landslide Forum:

https://www.wlf4.org/

This article was prepared by **Mr. Tiberiu Eugen Antofie**, of the JRC's Directorate for Space, Security and Migration.

International Conference on Climate Risk Management, in Nairobi, Kenya

Participants at the 2017 International Conference on Climate Risk Management in Nairobi.

The International Conference on Climate Risk Management, which was organized by the Red Cross Red Crescent Climate Centre, took place on 5-7 April 2017, in Nairobi, Kenya. Participants included practitioners, scientists and policy-makers from all over the world. The aim of the conference was to develop recommendations for the IPCC Sixth Assessment Report (AR6) scoping meeting in May 2017, on the IPCC risk-framing, required metrics, related research topics and a better integration of practitioners' knowledge into IPCC reports.

This International Conference on Climate Risk Management, which was supported by the project PLACARD (Platform for Climate Adaptation and Risk Reduction / www.placard-network.eu), played an important role in bringing together Climate Change Adaptation and Disaster Risk Reduction Community. The Conference offered an excellent opportunity to validate and generate a common understanding of climate risk management, which has resulted in some recommendations.

The group has recommended the risk-framing of the IPCC Fifth Assessment Report (AR5), as a good entry point to find solutions to address the risks, but acknowledges that terminology and definitions differences make discussions difficult. Improvements to the risk-framing included showing the dynamic nature of risk, threshold effects and references to governance and capacities to manage the risks.

Climate risk management metrics are required to inform the management process, in order to compare and communicate risk to different people. Integration of these climate risk metrics with climate adaptation metrics and emissions pathways metrics is recommended. These metrics should be able to capture vulnerability, exposure, adaptation options and uncertainties.

The relevant research questions to bring further understanding and actions on climate risk management were collected. Research funding agencies are encouraged to integrate them in research programmes, to ensure a broader knowledge base for future IPCC reports.

Acknowledging the challenges of IPCC reports to reach local practices, the participants developed entry points to engage policy-makers and practitioners more strongly in the IPCC process, and many participants have elaborated ways in which they can assist the IPCC to better reach out to the climate-related practices.

For more information:

http://www.climatecentre.org/news/845/nairobi-conference-hosted-at-kenya-red-cross-heralds-a-new-eraa-for-global-climate-assessment

This article was prepared by **Ms. Ingrid Coninx**, Researcher at Wageningen Environmental Research (Alterra) - Wageningen University and Research (WUR).

Innovation

RISC-KIT: Resilience-increasing strategies for coasts

Recent and historic high-impact storm events have demonstrated the vulnerability of coastal zones in Europe. This coastal vulnerability is likely to increase due to two effects:

➔ As a result of predicted climate change, the hazards of sea-level rise and coastal flooding (due to marine storms and fluvial run-off) may increase.

➔ As a result of on-going coastal development, the impact (or consequences) will increase.

Without adaptation, flood damage on European coasts will increase up to 17 billion Euros per year (IPCC, AR 2015). With this view of the future, coastal authorities need to assess the level of impact and the risk of their coastal zones, and implement Disaster Risk Reduction (DRR) measures to prevent or mitigate coastal disasters. Therefore, as part of the FP7 project RISC-KIT project, methods to identify high-risk coastal areas and to assess the effectiveness of DRR measures in coastal zones, have been developed, in order to guide effective disaster risk prevention and management. RISC-KIT is an EU-funded project, with 18 partners across Europe and coordinated by Deltares, The Netherlands.

The RISC-KIT toolkit, which is publicly available as freeware or Open Source, comprises five tools that have been validated for ten case study sites around Europe. The tools can be plotted on the Disaster Management Cycle (see Figure below). This cycle describes the stages of action that take place after a disaster has occurred. The Storm Impact Database records the impacts of previous disasters. The Coastal Risk Assessment Framework (CRAF) determines where the areas of highest risk are. Potential solutions have been aggregated in the web-based Management Guide. These solutions are tested for effectiveness using the Hotspot Tool, while the Multi-Criteria Analysis (MCA) Tool helps determine what solutions are suitable and acceptable in consultations with end users and stakeholders.

For further information about RISC-KIT:

RISC-KIT web-site:

www.risckit.eu

Explainer animation:

https://www.youtube.com/watch?v=rvALgkgszLM

International Workshop with end-users and advisors:

https://www.youtube.com/watch?v=FllGqL8aloc

For information about more EU FP7 projects in the field of natural hazards:

http://emergency.copernicus.eu/mapping/sites/default/files/files/00c_y24062013-Natural%20Hazards%20Catalogue%20on%20FP7rev.pdf

This article was prepared by **Mr. Ap van Dongeren,** Deltares, Delft, The Netherlands.

RISC-KIT members discussing CRAF tool.

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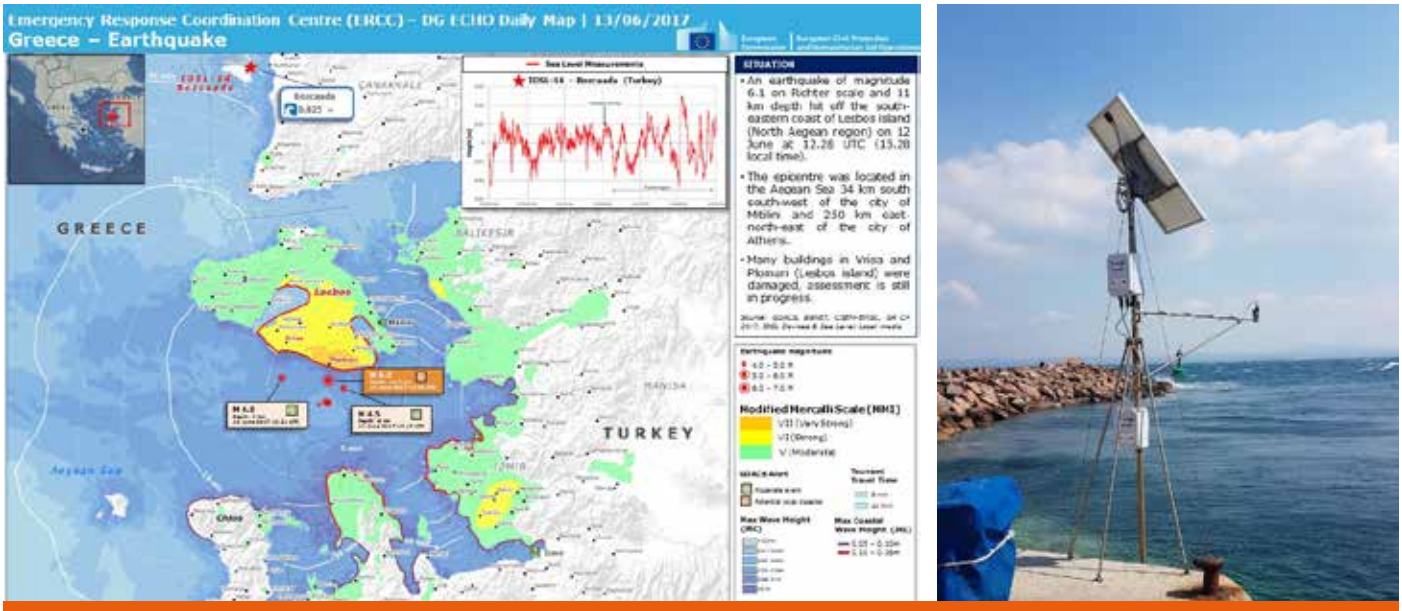
Storm Impact Database Map interface.

© RISC-KIT

Summer School in Faro, Portugal, January 2017.

© RISC-KIT

First tsunami signal measured by JRC IDSL instrument, in Boczaada (Turkey)



Location of the 12 June earthquake and the location of the Bozcaada IDSL (left) and the IDSL device installed on Boczaada Island (Turkey) (right)

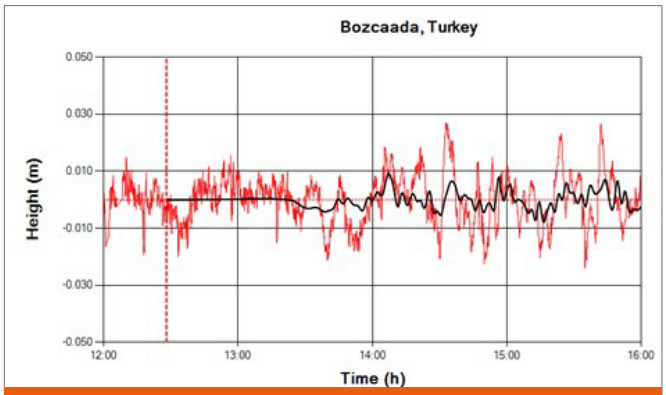
On 12 June 2017, at 12:28 UTC, a strong earthquake (of moment magnitude 6.3) occurred in the Aegean Sea, offshore from the Greek island of Lezbos. The epicentre was located 34 km south-west of the city of Mitilini. The event caused destruction, and one person died and there were several injuries, mainly on the city of Plomari and Vrisa on Lezbos island.

As a secondary effect of the earthquake, a local tsunami was generated, which was witnessed on Lezbos island and several other nearby locations in Greece and Turkey. The event triggered the activation of the Tsunami Warning System by the three Tsunami Watch Providers for this area (i.e. KOERI, NOA, INGV) so that, following the rules established in the frame of the UNESCO Intergovernmental Oceanographic Commission (IOC), an Advisory statement was issued for Greece and Turkey.

The JRC's IDSL (Inexpensive Device for Sea Level) measurement instrument on Boczaada Island, located more than 100 km from the epicentre, detected the arrival of the waves about one hour after the event, enabling the estimation of a few centimetres of sea-level change. The measurements made by the instrument provided the data for excluding a destructive tsunami, and therefore the Advisory statement was lifted by the Tsunami Watch Providers. The IDSL instrument in Bozcaada was the only one that detected this event; other devices were either much farther away or behind islands, and therefore could not provide a useful measurement for this event.

The IDSL instrument is a low-cost sea level measurement device, developed by JRC and specifically devoted to detect tsunami waves. Its main characteristics are the quick time response and low time latency (a few seconds to have measurements available online) and the low cost. To date fifteen instruments have been installed in the Mediterranean Sea and North Atlantic Ocean, and a further sixteen devices will be installed during the coming year. The installations have been performed in collaboration with the local Institutions. After about two years from the start of the installations, this is the first occasion that an IDSL device has detected and measured a real Tsunami event.

This article was prepared by **Mr. Alessandro Annunziato**, of the JRC's Directorate for Space, Security and Migration.



The red curve represents the sea-level measured in Boczaada while the black curve is the expected sea-level measurement calculated using GDACS tsunami procedures.

Upcoming events

PARTNERSHIP

5th Conference on Global Insurance Supervision. The Future (Re)Insurance Landscape: Different Perspectives, Inspiring Dialogue

06-07 September, Frankfurt (Germany)

Top representatives from major (re) insurance groups, regulatory and supervisory authorities as well as renowned academics will focus on global trends in risk-based supervision and the challenges linked to the implementation of global standards. This year's GIS conference will explore developments that shape the future of the global insurance and reinsurance sector including the effects of climate change on the (re)insurance sector. The event is upon invitation only and will include presentations, panel debates, break-out sessions and networking opportunities.

Plenary Community of Users and Thematic Workshops

12-14 September, Brussels (Belgium)

The Community of Users on Safe, Secure and Resilient societies includes policy-makers, scientists, industry and other stakeholders. The theme of the 8th meeting will be resilience.

World Bosai Forum / International Disaster Risk Conference

25-28 November, Sendai (Japan)

As a part of the commitments of Sendai Framework, the World Bosai Forum will be held in Sendai City every two years, in partnership with the International Disaster and Risk Conference (IDRC) in Davos, Switzerland.
Officials and experts from domestic and overseas industries, governments, academia and private sectors as well as local citizens will gather at the Forum. Findings and lessons from the Great East Japan Earthquake will be shared with the world.
The Forum also aims to create practical solutions for disaster risk reduction, instilling the term "Bosai" that encompasses a comprehensive concept from disaster risk reduction to reconstruction and recovery, and share it with the world.

KNOWLEDGE

Good Hope for Earth Sciences

28 August-01 September, Cape Town (South Africa)

The IAPSO-IAMAS-IAGA 2017 Joint Assembly is endorsed by the University of Cape Town and the South African Department of Science and Technology, The wide range of ocean environments in South Africa, influencing both the biota and climate conditions of the region, provides an ideal scientific backdrop.

The Impact of Hazard, Risk and Disasters on Societies

19-21 September, Durham (United Kingdom)

To celebrate the 10 year anniversary of the Institute of Hazard, Risk & Resilience (IHRR) based at Durham University, the IHRR has come together with the 11th Dealing with Disasters (DwD) Conference, Disaster and Development Network (DDN) based in Northumbria University, to organise this international conference.
The aim is to bring together practitioners, researchers, humanitarian agencies and hazard managers to present and discuss the latest understanding and challenges around managing hazards and surviving disasters. For this event, broad interpretations of hazard, risk and resilience will be considered in keeping with demands for new strategic developments in this field globally, regionally and more locally.

2nd International Workshop on Resilience

03-06 November, Nanjing and Shanghai (China)

This workshop is the second of the series that was initiated in Turin and Ispra in 2016. Worldwide senior and young researchers will present their latest achievements on resilience-based earthquake engineering and debate how these may be implemented in codes and engineering practice.

The 2nd International workshop on Modelling of Physical, Economic and Social Systems for Resilience Assessment

14-16 December, Brussels (Belgium)

The JRC in close collaboration with NIST (National Institute of Standards and Technology, US Department of Commerce) and Colorado State University is organizing this 2nd Workshop. It aims at bringing together the most up-to-date knowledge in the field of resilience across different disciplines, establishing a dialogue between policy and research. It will also contribute towards establishing a coherent resilience assessment framework for communities and societies and identify the constituents for measuring the resilience at various scales.
Selected papers will be published in the form of an edited, open access book.

INNOVATION

Common Alerting Protocol (CAP) Training Session and 2017 CAP Implementation Workshop

19-21 September, Rome (Italy)

A one-day Common Alerting Protocol (CAP) Training Session and a two-day CAP Implementation Workshop will be hosted by the Fire Corps Academy of Italy, Istituto Superiore Antincendi.

Everyone interested in emergency alerting is welcome: managers, technical staff, media, etc., including those in government, non-governmental organizations (NGOs), and commercial organizations.

The CAP Training Session will provide hands-on instruction on installing a free tool for creating and publishing CAP alerts. There are likely to be about 30 presentations at the Workshop, on a wide range of topics (e.g. CAP "alert hubs") and presented by experts from every part of the world.

EDXL Workshop on OASIS Standards

22 September, Rome (Italy)

The half-day workshop (hosed by the Fire Corps Academy of Italy, Istituto Superiore Antincendi) will present the OASIS Standards that support the emergency management mission, focusing on Emergency Management Emergency Data Exchange Language (EDXL) standards along with the reference information model and tools available for use. There will be also presentations of how EDXL is being used in operational systems.

Facilitating the uptake of science in policy formulation and its implementation

PARTNERSHIP

Improving science based advice through networks and partnership

Where knowledge begins

Fostering EU-level **disaster science networks** in support to the European Response Coordination Centre (**ERCC**) and Member States.

Where knowledge applies

Improving the science-policy interface by providing science-based advice to **policy development** services and support to Member States for **policy implementation**.

KNOWLEDGE

Improving the use and uptake of research and operational knowledge

Where knowledge meets

Pooling of information and granting access to scientific results and expertise **transfer of research** to end-users.

Where needs are identified

Disseminating knowledge research results and information looking for **identification** of research **needs and gaps** in disaster risk and crisis management.

INNOVATION

Advancing technologies and capacities in disaster risk and crisis management

Where gaps are filled

Implementing a System for Member States providing **scientific technical advice harmonized development**

Where innovation is tested

Developing dedicated **technologies** and to support different types of emergency management operations and disaster recovery processes.

The 1st DRMKC Flagship Report "*Science for Disaster Risk Management 2017: Knowing better and losing less*" is available at
http://drmkc.jrc.ec.europa.eu/knowledge/Challenges-Sharing

Newsletter Issue IX - 2017. Edited by **Niall McCormick**, **Luigi Spagnolo**, **Ainara Casajus Valles** from DG JRC, Directorate Space, Security and Migration.