



# Disaster Risk Management Knowledge Centre

Pooling knowledge and networks in disaster risk management

NEWSLETTER

#8

## In this issue

**Editorial** by Dan Chirondojan (JRC Directorate for Space Security and Migration)..... 2

### PARTNERSHIPS

Science for Policy and Operations: 2nd Annual DRMKC Scientific Seminar..... 3  
Industrial accident prevention: Workshop for Eastern Europe and Caucasus..... 4  
Flood Risk Management: Working Group Meeting in the Republic of Moldova..... 4  
Citizen science for ecosystem-based disaster risk reduction in DR Congo ..... 5

### KNOWLEDGE

Enhancing learning and knowledge-sharing through exploring language..... 6  
World Reconstruction Conference: Building regulation and standards as a recovery opportunity for long-term resilience..... 7  
European Forum for Disaster Risk Reduction (EFDRR) Open Forum..... 8  
3rd Global Summit of Research Institutes for Disaster Risk Reduction..... 8  
Natech at the EU RICHTER CARAIBES 2017 exercises..... 9

### INNOVATION

I-REACT: A promising big data platform for disaster risk reduction ..... 9  
2017 Common Alerting Protocol (CAP) Implementation Workshop..... 10  
SPARTACUS: Satellite Based Asset Tracking for Supporting Emergency Management in Crisis Operations..... 11

### DRMKC Support Service

Understanding extreme events as catalysts for flood-risk management policy change..... 11  
Critical infrastructure protection: Workshop with FP7 and H2020 projects ..... 12  
Critical infrastructure protection – energy: Training Workshop ..... 12

Upcoming events..... 13

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

## Editorial



Mr. D. Chirondojan, Director of Space, Security and Migration, Directorate E, JRC and Mr. F. Curcio, Head of Italian Civil Protection Department at the signature of the agreement to collaborate on the Knowledge Centre

© European Commission

*Two key challenges in the scientific world are increased complexity and acceleration. Ever more science is produced and is available at a mouse-click. Ever more actors from different disciplines and policy areas are involved. For practitioners, policy makers and even for scientists themselves, the challenge now is to find the relevant science, from multiple disciplines, and make sense of it, for multiple policies. In the inherently interdisciplinary field of disaster risk management this is very evident. The science is complex due to the interaction of vast and varied communities on Earth sciences, and their interaction with the engineering communities, social and behavioural scientists and economists. Equally complex is the policy side. Disaster risk is linked to civil protection, climate change, environmental, health, humanitarian, and development policy, but also to fiscal and economic policy directly. A holistic approach is necessary.*

Since 2015, the Disaster Risk Management Knowledge Centre is tackling the challenge of bridging science and policy. The need for science was explicitly mentioned in the Sendai Framework for Disaster Risk Reduction. More recently, it was reiterated in the European Forum for Disaster Risk Reduction Open Forum, held in Istanbul in March, where participants pledged to “ensure science, evidence and knowledge underpin decision-making and strategies for disaster risk reduction at local, national and European regional levels”.

Our 2nd Annual Seminar, jointly hosted by Italy’s Department of Civil Protection in Rome, showed the huge progress that has been made since the Knowledge Centre started. The signature of a collaboration agreement between the Italian Civil Protection and the Joint Research Centre is concrete evidence of the added value the Knowledge Centre can bring.

I’m now very proud to pre-announce two key publications which will be released in May at the Global Platform for Disaster Risk Reduction in Cancun, Mexico.

A first flagship deliverable of the Knowledge Centre is titled “Science for Disaster Risk Management: Knowing better and losing less”. We have worked with over 250 top scientists, practitioners and policy makers from many fields to summarize the state of science, and make it accessible.

The aim is to break out of the silos, demystify work from other disciplines, and expose mature science ready for uptake, potential synergies across disciplines, but also gaps in scientific knowledge for future research. We consider this report as the start of a continuous process, in partnership with UNISDR and organisations worldwide, to summarize knowledge globally, and make it available to the disaster risk management community.

A second report, “The Atlas of the Human Planet 2017: Global Exposure to Natural Hazards”, is the second outcome of the GEO Human Planet Initiative. It summarizes global changes in exposure, as observed through satellite imagery, to six major hazards: earthquakes, volcanoes, tsunamis, floods, tropical cyclone winds, and storm surges.

I’m confident these reports will contribute to better understanding of disaster risk and more uptake of scientific evidence by policy makers and practitioners in Europe and globally.

**Dan Chirondojan**  
Director of Space, Security and Migration, Directorate E, JRC



## Partnership

### Science for Policy and Operations: 2nd Annual DRMKC Scientific Seminar hosted by the Italian Department of Civil Protection



Opening session of the 2nd Annual DRMKC Scientific Seminar (from left to right): P. Quevauviller (DG HOME), I. Clark (DG JRC), D. Chirondojan (DG. JRC), F. Curcio (Italian Dept. Civil Protection), K. Poljansek (DG JRC), A. Bower (DG ECHO), A. Michelini (INGV), L. D'Angelo (Italian Dept. Civil Protection).

© Italian Dept. Civil Protection

The 2nd Annual DRMKC Scientific Seminar, which was held in Rome on 9-10 March 2017, gathered around 100 inter-disciplinary experts on disaster management, early detection, forecasting, warning and risk assessment of natural and man-made disasters from science, public and private organisations, and was an opportunity to identify needs for scientific research as well as results ready to be applied.

Since its launch in autumn 2015, many actions have been developed by the DRMKC providing “services” to enhance disaster risk management, including: Network on loss data; the Aristotle Alert service; the Community of Users (a DG Home initiative); the specific Support Service for risk assessment and risk management capability. At the seminar more requests for additional services and support were expressed by participants, demonstrating the real need for a Knowledge Centre.

When developing its work programme for next year, the DRMKC will take into account the related policy developments at EU and global level, including the Union of Civil Protection Mechanism's potential evaluation, the Security Union frame, the outcomes of the Cancun Global Platform on disaster risk reduction (DRR), and the climate adaptation strategy evaluation.

Based on the existing work and discussions at the Seminar, the following issues should be of priority:

1. Services taking a Multi-hazard approach – for Early Warning systems, Risk assessment, data production and access as well as the Partnerships and networking.
2. Support for the development of risk management capability assessments and resilience assessments by Member States including also support for sub-national actions – link to the 2018 deadline for MS.
3. Increased efforts to digest the results of scientific research – a role for the Community of users as well as the Commission's priority of Knowledge Management.
4. Increased focus on the prevention of disasters – assess the contribution the DRMKC could make to help EU and developing countries to effectively implement DRR strategies by 2020.

Article prepared by Ms. Montserrat Marin Ferrer, Unit E.1 (Disaster Risk Management), JRC Directorate E (Space Security and Migration), Ispra.

For more information:  
<http://europa.eu/TK64gw>  
[www.protezionecivile.gov.it/jcms/it/view\\_new.wp?contentId=NEW63021](http://www.protezionecivile.gov.it/jcms/it/view_new.wp?contentId=NEW63021)



## Industrial accident prevention: Workshop for Eastern Europe and Caucasus



Participants at the industrial accident prevention workshop in Minsk, Belarus.

© European Commission

A sub-regional workshop on industrial accident prevention for Eastern Europe and the Caucasus, was organised in Minsk, Belarus on 11-13 April 2017, under the PPRD East (Prevention, Preparedness and Response to Natural and Man-made Disasters in the Eastern Partnership Countries) Programme. The PPRD East Programme is the EU-funded Flagship Initiative increasing disaster risk management capacities in Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. Phase 2 of the programme (PPRD East 2) runs from December 2014 to November 2018 (<http://pprdeast2.eu/en/>).

The European Commission's Joint Research Centre (JRC) collaborates with DG ECHO under an Administrative Arrangement on a Seveso capacity-building project in EU Neighbourhood Policy (ENPI) Countries. In the frame of this ENPI project, Zsuzsanna Gyenes from the JRC's Major Accident Hazards Bureau (MAHB) and Elisabeth Krausmann, head of the TechRisk sector at JRC Directorate E (Space, Security and Migration), contributed to the Workshop with invited presentations on the latest results of the JRC-ECHO Seveso ENPI project and on the JRC's work on Natech risk assessment and management.

Feedback on the presentations highlighted a great wish of the six participating countries to learn from other countries, engage in best practice exchange, and establish multi- or bilateral collaboration to increase industrial safety.

The Moldova delegation to the meeting publicly expressed their gratitude to the JRC for the continued good cooperation and the support to the Seveso implementation in Moldova, as the country wants to apply the EU approach to industrial accident prevention in its national regulatory framework.

The Georgia delegation expressed interest to act as panelist in the Side Event on Technological Hazards which the JRC is organising with OECD, UNEP and Japan at the Global Platform for DRR meeting in Cancun in May 2017.

Belarus, Georgia, Ukraine and Moldova expressed interest in participating in the Chemical Accident Risk Seminar organised by the JRC's MAHB in Ispra, on 14-16 June 2017.

For more information:

<https://www.unece.org/index.php?id=44839#/>

## Flood Risk Management: Working Group Meeting in the Republic of Moldova

The EU Floods Directive provides a unified attempt to outline the needs for action for all sectors involved in flood risk management. It takes into account the potential danger of floods to cause fatalities, displacement of people and damages to the environment. It also addresses the impact of floods on national economic development. Increasing conformity with the EU Floods Directive, also undertaken in the EU neighbouring countries, provides a holistic and integrated approach with the ultimate goal of reducing the damages and losses caused by floods.

The PPRD East 2 Programme assists Partner Countries in improving flood risk management and in advancing towards the achievements of two main objectives - transposition of the EU "acquis" through improvement of their national institutional flood risk management framework based on the EU Floods Directive 2007/60/EC as well as the enhancement of their institutional flood risk management framework in the context of national and transnational river basins.

The Republic of Moldova has already similar national legislation to the EU Floods Directive. The inaugural meeting of the national inter-institutional Flood Risk Management Working Group was held on 22 March 2017. The scope of the meeting was to enhance the institutional framework by clarifying the subdivision of roles and responsibilities of national authorities and agencies in flood risk management. In addition, inclusion of time limits for the implementation of the EU Floods Directive 2007/60/EC requirements has been also discussed. The meeting was chaired by the Ministry of Environment in close cooperation with the Civil Protection and Emergency Situations Service of the Ministry of Internal Affairs. Representatives of the Ministry of Regional Development and Construction, Ministry of Agriculture and Food Industry, Agency "Apele Moldova" and Institute of Ecology and Geography, as well as the PPRD East 2 experts, actively participated at the meeting.

For more information:

<http://pprdeast2.eu/en/approximation-to-eu/navodneniya/>





## Citizen science for ecosystem-based disaster risk reduction in DR Congo



Researchers and local community members measure river flow in the Lukaya River Basin.

© UNEP

The Lukaya River Basin Association, a local community-based organization in the Democratic Republic of the Congo (DRC), is collecting some of the most advanced flood monitoring measurements in the country. The Association has partnered with the National Agency for Meteorology and Remote Sensing (METTELSAT) through a project implemented by the European Commission and UN Environment (2013-2016) in DRC. The project promoted Ecosystem-based Disaster Risk Reduction (Eco-DRR) in the Lukaya River Basin, where local communities are exposed to flooding as a result of deforestation and excessive soil erosion.

As a first step, the River Basin Association convened upstream and downstream communities to conduct participatory risk mapping. They built 3D models of their landscape to identify areas of flood risk, highlight upstream-downstream linkages, and select areas for monitoring and Eco-DRR interventions such as reforestation. Given the absence of national data, local knowledge was indispensable in providing information where soil erosion and flooding was most acute. The final 3D model was then converted to GIS format for further analysis.

The project also established a local flood monitoring and early warning system, which is connected to the national monitoring system. Local hydro-meteorological stations, including pluviographs, meteorological stations and river flow gauges, were set up. A network of volunteers from the River Basin Association were trained and regularly collect data. To ensure best use of information collected, a hydro-climate advisory network was established between the River Basin Association, METTELSAT, and the Ministry of Environment.

Together with researchers from University of Kinshasa, the Association has also pioneered soil erosion monitoring in DRC. Simple erosion monitoring pins were built using local

material made of wood. Local residents track the movement of the pins over time, which indicates the level of soil loss.

Initial data has been used by researchers from the University and the Government for soil erosion and flood modeling.

As a result of these local surveillance efforts, the project helped raise awareness of the importance of national flood risk monitoring and early warning. Field data collection, which requires daily measurements, would not have been possible without the dedicated involvement of River Basin Association members. The capacity built within the Association can help support long-term flood monitoring and flood risk reduction measures.

Project report:

UNEP. (2016). River Partners: Applying Ecosystem-Based Disaster Risk Reduction (Eco-DRR) in Integrated Water Resource Management (IWRM) in the Lukaya Basin, Democratic Republic of the Congo.

[http://postconflict.unep.ch/publications/drcongo/dr\\_congo\\_eco\\_drr\\_case\\_study\\_2016.pdf](http://postconflict.unep.ch/publications/drcongo/dr_congo_eco_drr_case_study_2016.pdf)



Researchers and local community members measure river flow in the Lukaya River Basin.

© UNEP

This article was prepared by Ms. Marisol Estrella, Programme Coordinator - Disaster Risk Reduction, UN Environment Post-Conflict and Disaster Management Branch, Geneva.

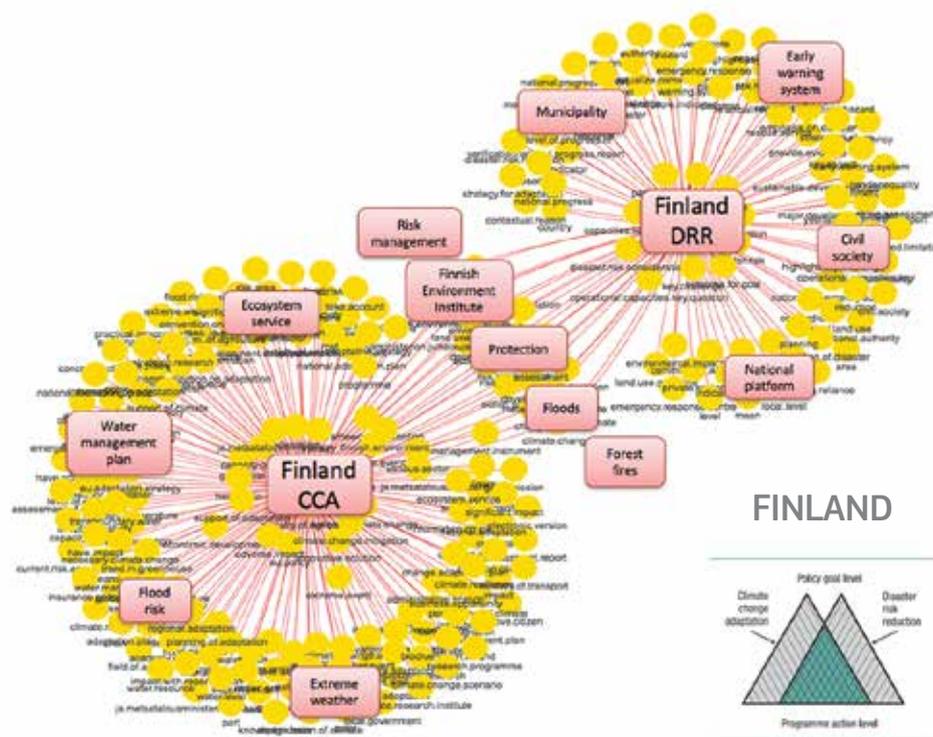
For more information:

<http://web.unep.org/disastersandconflicts/what-we-do/risk-reduction/ecosystem-based-disaster-risk-reduction/what-we-do/country-activities>



# Knowledge

## Enhancing learning and knowledge-sharing through exploring language



A way to visualise climate change adaptation and disaster risk reduction (DRR) terminologies – their divergences and their commonalities. It is based on analysis of Finland’s national strategies for both goals.

The triangle also depicts the relationship between climate change adaptation and DRR, as explained in at: [http://www.preventionweb.net/files/11775\\_UNISDRBriefingAdaptationtoClimateCh.pdf](http://www.preventionweb.net/files/11775_UNISDRBriefingAdaptationtoClimateCh.pdf)

© PLACARD project

The notion of two nations “divided by a common language,” a phrase coined to describe the profound differences between American and British English, provides an apt description of the situation faced by the climate change adaptation (CCA) and disaster risk reduction (DRR) communities. In these two worlds, the same words can mean very different things.

Research has shown that mutually understood language and terminologies are key to improving the effectiveness of climate communication and its uptake. At the same time, the huge amount of often fragmented and unstructured information – and misinformation – available today leads to limited learning about CCA and DRR successes and failures. The situation goes a long way toward explaining the gap between research and action.

As part of the PLACARD project ([www.placard-network.eu](http://www.placard-network.eu)), the Stockholm Environment Institute (SEI) Oxford Centre aims to connect the often siloed CCA and DRR communities through better institutional strengthening, knowledge management and sharing of information. This process aims to examine the way in which terms are used by each community and to understand how interpretations and framing differ – a crucial first step in enhancing communication, interaction and collaboration between the actors.

To this end, we have developed a way to visualise the commonalities and divergences between the two lexicons. Our method uses text analysis of country-level strategic planning reports in Europe to create a visual representation of how key terms are defined, and how they link to other key terms. User feedback will guide and further refine our work on it and related materials.

Consider, for example, the term, “protection” as used in national strategy documents for Finland. Our initial analysis shows that in disaster risk parlance, the term refers mainly to civil protection measures and mechanisms, such as emergency services; but in climate change adaptation, the term refers to ecosystem protection, with references either to laws and policies, or to longer-term risk reduction, such as flood and coastal protection.

Our work aims to enable actors to visualise how each community thinks, so that they can better understand each other’s language, and so that they can begin dialogues that can lead to more coordinated and effective action. To help us explore what a harmonized language could look like, take our short survey: <https://goo.gl/Lu0wzx>.

This article was prepared by Julia Barrott, knowledge manager of weADAPT ([www.weadapt.org](http://www.weadapt.org)) and a research fellow at SEI Oxford Centre



## World Reconstruction Conference: Building regulation and standards as a recovery opportunity for long-term resilience



The third World Reconstruction Conference (WRC3) will be held in Brussels on June 6-8, 2017, in partnership with the European Commission, the United Nations Development Program (UNDP), the Africa, Caribbean and Pacific (ACP) Group of States and the Global Facility for Disaster Reduction and Recovery (GFDRR)/World Bank.

© GFDRR

In the last decade, low- and middle-income countries have experienced 53% of all disasters globally - but have accounted for 93% of disaster-related fatalities. This disproportionate impact stems in large part from unsafe and unregulated urban development. Though life-saving and relief activities must be the focus in the immediate aftermath of a disaster, the post-disaster period offers a valuable opportunity for implementing reform for long-term resilient development. Reforming building regulatory processes and implementing improved building standards can help avoid unnecessary costs and losses in the event of the next disaster.

In this context, the European Commission's Joint Research Centre (JRC) co-leads with the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) a session on "Recovery Opportunity: Building Regulation and Standards for Long-term Resilience", at the third edition of the World Reconstruction Conference (WRC3). The session objective is to present the opportunities for using post-disaster recovery and reconstruction as an investment in effective and sustainable mechanisms for risk reduction in the built environment.

Developed countries have successfully developed effective codes and standards that are attainable for everyone and geared towards reducing risks in the built environment. As an example, the Eurocodes –a series of European Standards providing a common approach for the design of buildings- are state-of-the-art codes, already used in different regulatory systems due to their flexibility to adapt to each country's specific conditions (for example with regards to climate, seismic risk, traditions).

Invited speakers by JRC and GFDRR will discuss relevant resources available to low and middle-income countries to

initiate the desired reforms, while highlighting the experience of India and Jamaica in implementing and adapting more effective building codes and standards for long-term resilience.

The expected outcomes of the session are:

- Improved understanding of the strategic need to invest in quality assurance mechanisms and effective land use and building code/standards implementation after a disaster.
- Dissemination of technical and educational resources to support the introduction and adaptation of international building code systems (e.g. Eurocodes, ICC, NFPA) in low and middle-income countries impacted by disasters;
- Dissemination of relevant resources for low and middle-income countries to implement building regulation/standards for resilient reconstruction.

This article was prepared by Ms. Adamantia Athanasopoulou, Unit E.4 (Safety and Security of Buildings) of JRC Directorate E (Space, Security and Migration), Ispra.

For more information:

[www.gfdrr.org/wrc3](http://www.gfdrr.org/wrc3)

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



## European Forum for Disaster Risk Reduction (EFDRR) Open Forum



Commissioner Stylianides speaking at the opening ceremony

© EFDRR

The European Forum for Disaster Risk Reduction (EFDRR) Open Forum was held on 26-28 March 2017 in Istanbul, Turkey. EFDRR is the regional platform for disaster risk reduction (DRR) in Europe, and brings together governments, the UN, parliamentarians, mayors, intergovernmental organizations, scientific and academic institutions, private businesses, NGOs, community-based organizations and others. The Disaster Risk Management Knowledge Centre (DRMKC) was represented through DG ECHO.

The theme of the conference was about transforming the commitment of governments and stakeholders, which were made in Sendai during the World Conference for Disaster Risk Reduction (WCDRR) in 2015, into national and local action and setting the direction to accelerate regional implementation and monitoring of the Sendai Framework.

The role of science and technology within DRR featured strongly throughout the conference, starting with a pre-conference event entitled Science and Technology to support Disaster Risk Reduction in Europe, co-organized by Public Health England and European Commission. In the outcome document of the Forum, there is a pledge to “ensure science, evidence and knowledge underpin decision-making and strategies for disaster risk reduction at local, national and European regional levels” and to “initiate an EFDRR Science and Technology Alliance / Network to enable use of science in the implementation of the Sendai Framework.” The outcome document, together with the call for an EFDRR Science and Technology Alliance / Network will enable, by working with science and technology partners covering 47 European and six “near Asian” countries, the development of a better solution for facilitating access to science and technology to inform decision-making and strategies at local, country and regional level. The DRMKC, already a platform for EU Member States and Participating States to the Civil Protection Mechanism, will be strongly involved.

The next EFDRR Open Forum will be held in November 2018 in Italy. The focus is expected to be on local strategies and on cultural heritage.

For more information:  
<http://efdrsturkey.org>

## 3rd Global Summit of Research Institutes for Disaster Risk Reduction

The 3rd Global Summit of Research Institutes for Disaster Risk Reduction (GSRIDRR 2017) took place on 19-21 March 2017, at the Disaster Prevention Research Institute (DPRI), Kyoto University, Japan. The event was organized by the Global Alliance of Disaster Research Institutes (GADRI). The purpose of GADRI is to enhance disaster risk reduction (DRR) and disaster resilience through the collaboration of research organizations around the world.

The aim of the GSRIDRR 2017 summit was to expand the platform for bridging science and policy-making, by evaluating the evidence base needed to meet expected outcomes and actions of the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), and its Science and Technology Roadmap. The opening session and plenaries reflected the international nature of collaborative research and action. Indicative categorizations of 323 research projects collated through a pre-conference questionnaire were used to support seven parallel discussion sessions allied to the Sendai Framework priorities for action. Four of these discussion sessions focused on research deepening the understanding of disaster risk. These were followed by three cross-cutting sessions on the research for the other priorities for action on governance, resilience and recovery.

The participants drafted a resolution of the 3rd Global Summit to clarify the way forward for GADRI. Recognizing the need for continuing and improving international efforts in DRR, GADRI will strive to facilitate coordination among research institutes, improve communication and engagement among trans-disciplinary groups and different communities that include researchers, practitioners, educators, media and policy makers, and promote priorities and directions that will make disaster reduction efforts more effective.

For more information:  
<http://gadri.net/summit/>



summit attendees

© GADRI



## Natech at the EU RICHTER CARAIBES 2017 exercises



Participants at EU Richter Caraïbes 2017.

© European Commission

On 19-25 March 2017, the European Commission's Joint Research Centre (JRC) participated in three Union Civil Protection Mechanism exercises in the French Antilles. The exercises simulated an earthquake and tsunami causing widespread human losses and extensive damage across the Caribbean islands as part of the EU Richter Caraïbes 2017 project, which was co-funded by DG ECHO and involved an international consortium coordinated by the French Directorate-General for Civil Protection and Crisis Management (Direction Générale de la Sécurité Civile et la Gestion des Crises). The project included a full-scale exercise, conducted over a continuous five-day simulation.

The scenario played out in Martinique, Guadeloupe and Saint-Martin and was designed to test the plans, capabilities and response of Caribbean countries with respect to a widespread disaster. The damage was estimated by the French Geological Survey (BRGM). The JRC used its RAPID-N tool to estimate the consequences from accidents triggered by the earthquake. This Natech (natural hazard-triggered technological accidents) analysis was made available to support the design of the scenario and was also used to support dynamic exercise play.

Two members of the JRC's Natech team participated in the exercise as observers. They conducted additional Natech risk analyses at the request of the Zone Emergency Operations Center Advance Planning Unit to support decision-making. This was the first time that RAPID-N was used in real-time to support incident planning during a simulated emergency. RAPID-N is a web-based tool that can be freely accessed at <http://rapidn.jrc.ec.europa.eu>.

This article was prepared by Mr. Georgios Karagiannis of JRC Directorate E (Space, Security and Migration), Ispra. The contact person for the JRC's RAPID-N application is Ms. Elisabeth Krausmann ([elisabeth.krausmann@ec.europa.eu](mailto:elisabeth.krausmann@ec.europa.eu)), of JRC Directorate E.

For more information:  
<http://europa.eu/jR34Fx>



## Innovation

### I-REACT: A promising big data platform for disaster risk reduction

In the last decade extreme weather events have caused 700,000 deaths and cost up to 1.7 trillion dollars worldwide. Moreover, climate change is estimated to increase the likelihood of events such as floods, due to extreme rainfall and rapid snow melting, and also wildfires because of longer dry and hot seasons.

The innovation project, I-REACT, funded by the European Commission under the Secure Society work Programme (DRS-1-2015), is creating a big data system to improve emergency management during every phase.

I-REACT will integrate many different information sources, including Copernicus Emergency Management Service (EMS) maps, early warnings from the European Flood Awareness System (EFAS) and European Forest Fire Information System (EFFIS), satellite data (Sentinel), images from unmanned aerial vehicles (UAVs) and social media and crowdsourced information from emergency responders and citizens. All this information will be merged to provide added-value products, such as a decision-support system for authorities and an app for citizens. Wearable devices and smart glasses will be provided to first-responders, who will benefit from high-precision positioning thanks to Galileo and EGNOS and Augmented Reality to make hands-free reports.

Through I-REACT, the Istituto Superiore Mario Boella (Italy) has brought together 20 European partners, including research centres, IGOs, public entities and SMEs, a strong advisory board and end users to validate the system.

This article was prepared by Mr. Guzmán Sánchez, Science-ed, S.L., Madrid.

For more information:  
[www.i-react.eu](http://www.i-react.eu)

Explainer animation:  
<https://youtu.be/4t5ScCh6XU0>

International Workshop with end-users and advisors:  
<https://www.youtube.com/watch?v=jkHSGlki0Is>





## 2017 Common Alerting Protocol (CAP) Implementation Workshop 20-21 September 2017 in Rome, Italy



JRC at ISA workshop on Social Media (from left to right: S. Marsella, Director of the Italian Fire Brigade Academy, and A. Annunziato, Responsible of the European Crisis Management Laboratory).

© Italian National Fire Corps

The workshop is hosted by the Fire Corps Academy of Italy, Istituto Superiore Antincendi, Via del Commercio, 13, Rome. A CAP Training Session is offered in the same venue on 19 September. An EDXL Workshop is offered from 9 AM to noon in the same venue on 22 September.

Everyone interested in emergency alerting is welcome, including governments, non-governmental organizations, and commercial organizations. There is no charge to participate.

The Workshop is co-sponsored by the International Association of Emergency Managers (IAEM), the International Federation of Red Cross and Red Crescent Societies (IFRC), the International Telecommunication Union (ITU), the OASIS standards organization and the World Meteorological Organization (WMO).

These Workshops focus on emergency alerting as enabled by the CAP standard, ITU-T Recommendation X.1303; implementers and other associated organizations discuss common issues and how best to expand adoption of CAP. The Training Session covers: understanding of CAP and how it serves interoperability goals; getting and displaying CAP alerts from alerting authorities and aggregators; making and validating CAP alerts; and, disseminating CAP via traditional methods, the Internet, and new media. There will be about 30 presentations from all over the world. The Training Session will include hands-on instruction on installing a free tool for creating and publishing CAP alerts, not only on the participant's own laptop, but also on Internet hosts actually used by alerting authorities.

CAP "alert hubs" will be a major topic: when operated on a cloud infrastructure, they offer high levels of responsiveness, availability, reliability, authenticity, and security. There will be an update on the "Filtered Alert Hub" as well (see <http://alert-hub.org>). IFRC will present on the new 'What Now' service developed in partnership with Google.

Italy's National Fire Corps (host for this Workshop) will present its progress in implementing CAP in support of their mission throughout Italy. Users involved in Civil Protection for Italy will also present the successful expansion of CAP use. Other presentations will describe China's National Early Warning Release Center and the German Weather Service implementation. Sahana Software Foundation will present on the use of symbols in communicating emergency alerts.

A survey will present new CAP implementations, as well as new developments in existing ones. Participants will hear from the OASIS Emergency Management Technical Committee (EM TC) about efforts to seek consensus on common CAP "event" terms and criteria to distinguish those highest priority alerts to be sent immediately to all people in an affected area. On 22 September, the workshop will present the OASIS Standards that support the emergency management mission, their use in operational systems, and will focus on Emergency Management Emergency Data Exchange Language (EDXL) standards along with the reference information model and tools available for use.

The CAP Workshops are technical meetings in English without interpretation to share information among experts. Accordingly, participants represent themselves and need not be formally associated with organizations.

This article was prepared by Mr. Daniele Alberto Galliano, Unit E.1 (Disaster Risk Management) of JRC Directorate E (Space, Security and Migration), Ispra.

For information, refer to the 2017 CAP Implementation Workshop website:

<http://preparecenter.org/resources/cap-workshop-2017>

For the Program Committee, e-mail the Workshop Chair: [Eliot.J.Christian@gmail.com](mailto:Eliot.J.Christian@gmail.com)



## SPARTACUS: Satellite Based Asset Tracking for Supporting Emergency Management in Crisis Operations

The FP7-SECURITY project SPARTACUS (Satellite Based Asset Tracking for Supporting Emergency Management in Crisis Operations), which started in November 2013 and ended in October 2016, resulted in the design, implementation and validation, in simulated and real case scenarios, of a set of solutions for location awareness in the context of crisis management based on existing (e.g. GPS, EGNOS and its related services) and incoming (e.g. GALILEO) satellite services and technologies providing precise positioning and tracking of assets and persons, ensuring no lack of communication and no gaps of information in the coordination phase.

The SPARTACUS project results included the following products: three prototypes of Global Navigation Satellite System (GNSS) tracking units, contained in a new line of commercially available tracking devices (SBG Systems - Ellipse series); three smartphones apps and four web-based tools, two of which are available for download on Google Play Store (ASIGN Pro from AnsuR and FLARE from Institut Pupin); three prototypes of communication units addressing both assets tracking and emergency applications from TriaGnoSys.

As part of the project, SPARTACUS technologies were successfully deployed in several trials (both in controlled environment and operational conditions), and in two large scale exercises under the EU Module Exercises (EU ModEx) in the framework of Union Civil Protection Mechanism, including the EU ModEx for USAR (Urban Search And Rescue) and AMP-S (Advanced Medical Post with Surgery) which took place near Vienna, on 8-11 June 2016. A set of user training manuals for the SPARTACUS system, and a series of specific training sessions, have been developed.

SPARTACUS was carried out by an international consortium led by D'Appolonia S.p.A. (DAPP) and comprising 12 partners, including three end-users, namely DMAT (Disaster Management Advice and Training) Consulting KG, the Romanian Railway Authority (AFER), and Johanniter-Unfall-Hilfe e.V. (JUH), an NGO operating in Disaster Management and Civil Protection.

For more information:  
[www.spartacus-project.eu](http://www.spartacus-project.eu)



## DRMKC Support Service

### Understanding extreme events as catalysts for flood-risk management policy change



Flooded area around Carlisle (UK), from Copernicus EMS delineation map

© European Commission

During the winter of 2015, the UK experienced extreme weather events that led to floods across wide areas of the country, including Cumbria, which had also experienced two preceding major floods in 2005 and 2009.

Over the first weekend in December 2015, Cumbria witnessed the devastating effects of Storm Desmond, during which the county saw record levels of rainfall.

Structural defences (which had been built in response to past events) were overtopped and communities across the area were left without basic services for a period of time. Following the floods in Cumbria and elsewhere in the country, the UK Government conducted a review on how it assesses flood risk, reduces the likelihood of flooding, and makes the country as resilient as possible to flooding (<https://www.gov.uk/government/publications/national-flood-resilience-review>).

To complement this review, the UK activated the DRMKC Support System to conduct a case study on the Cumbria floods. This study sought to acquire sound evidence on how the impacts of residual flood risk (i.e. overtopping of newly-built structural defences) influenced flood risk management in Cumbria. The study also used a wide range of sources - including the findings from a previous EU research project ([www.embrace-eu.org](http://www.embrace-eu.org)) and the structured debrief from local responders - to examine the collective multi-stakeholder 'community of resilience practice' before and after the impact of Storm Desmond.

The study looks at the Cumbria Floods Partnership (an inclusive participatory process set up following the storm) and uses it to illustrate the importance of engaging and building robust relationships with key stakeholders when addressing questions about the management of future disaster risks in an area.

This case study showcases the principles of partnership, knowledge and innovation upon which the DRMKC is set-up and the deliverables are a worthy read for policy makers, researchers and practitioners alike.

This article has been provided by Ms. Emily Clarke, Assistant Director – National Risks Team, Civil Contingencies Secretariat (CCS), UK.

For more information:  
<http://drmkc.jrc.ec.europa.eu/innovation/SupportSystem>

## Critical infrastructure protection: Workshop with FP7 and H2020 projects



Workshop participants  
© European Commission

Within the FP7 and Horizon 2020 Framework Programmes for research and innovation, the European Union has provided significant funding for collaborative research projects dealing with the impact of extreme events (geophysical and hydro-meteorological hazards) and cascade effects on critical infrastructures. Building on the technical dialogue already established by the projects, and given that most of them ended recently it is timely to disseminate the results of the projects to stakeholders, collect their feedback and put forward common recommendations.

With this motivation, the Disaster Risk Management Knowledge Centre (DRMKC) organised a Workshop with FP7 and H2020 research projects on critical infrastructure protection in Brussels, on 16-17 March 2017. The workshop aimed to:

- Provide an overview of the progress made by the projects with focus on the results that may be used in practice,
- Collect feedback from stakeholders, and
- Identify knowledge gaps and research needs for better scientific support to policy implementation.

More than 60 participants from 13 Member States, Norway and Switzerland, attended the Workshop, representing critical infrastructure operators, research institutions and academia, practitioners/consultants, insurance companies and services of the European Commission. The participants expressed their appreciation for the opportunity to disseminate their work, liaise with other research groups, collect information on the available tools and knowledge, understand the needs of end-users and discuss concerns and ideas for future research.

This article was prepared by Mr. Georgios Tsionis, Unit E.4 (Safety and Security of Buildings) of JRC Directorate E (Space, Security and Migration), Ispra.

For more information:  
<http://europa.eu/!cp44rd>

## Critical infrastructure protection – energy: Training Workshop

In the framework of the Support Service of the DRMKC, the Greek authorities and more specifically the Centre of Security Studies ([www.kemea.gr/en](http://www.kemea.gr/en)) which is the national point of contact for critical infrastructures, organised a training workshop with a sectoral focus on energy, on 20-21 March 2017 in Athens.

This activity was jointly organised by several units of the JRC also with the participation of the OECD (Organisation for Economic Co-operation and Development) in order to provide a holistic approach on the topic “protection and resilience of energy sector critical infrastructure”. The workshop included a mixture of scientific presentations as well as presentations closer to policy support. Issues related to interdependencies, risk assessment and resilience were thoroughly covered by the various experts.

The second day of the workshop was focused on the table-top exercise on hybrid threats. This is a relatively new concept which embraces several disciplines towards destabilising critical functions of the society and finally the society itself using critical infrastructure disruptions (and not only) as the means to achieve it. The exercise started with an energy supply crisis due to environmental conditions, it was escalated due to additional security related events (physical, cyber) and it was further potentiated using the power of media and social media. The response of the operators was extremely positive and similar events should be also organised in the future.

This article was prepared by Mr. Georgios Giannopoulos, Unit E.2 (Technology Innovation in Security) of JRC Directorate E (Space, Security and Migration), Ispra.

For more information:  
<http://europa.eu/!fr87dH>



A moment of the training  
© European Commission

## Upcoming Events



### PARTNERSHIP

#### 15-17 May, Brussels (BE)

##### 7th meeting of the Community of Users

The 7th meeting of the CoU will consist on a series of plenary and parallel sessions covering the following topics:

- High-level Practitioners event
- Cyberattacks to CI
- CBRN-E Synergy building, Networking, SEVESO III and Forensics
- Exploring on-going National CoU actions
- WS on "Climate clustering"
- Standardisation
- Common Information Space
- WS CoU Website

#### 22-26 May, Cancun (MX)

##### 2017 Global Platform for Disaster Risk Reduction

The Global Platform is the most important international forum dedicated to disaster risk reduction (DRR). This will be the first time it has been staged outside Geneva, and will be the first opportunity for the international community to review global progress on the implementation of the Sendai Framework for DRR, adopted in Japan in 2015.

#### 06-08 June, Brussels (BE)

##### World Reconstruction Conference 3

The third WRC will bring over 500 practitioners from governments, civil society, development partners, academia, and the private sector to share best practices and lessons learned on a range of topics.

See page 6 for further information.

#### 07-08 June, Brussels (BE)

##### European Development Days (EDD)

The 11th EDD will have as its overarching theme "Investing in Development", building on the objectives of the 2030 Agenda and on the EC's proposal for a new European Consensus for Development.

#### 22-23 June, Rome (IT)

##### INFORM Annual Meeting 2017

The purpose of the annual meeting (hosted by FAO) will be to allow the INFORM partners to connect-up and take forward reflections on the INFORM partnership, methodology, ongoing and new initiative at global, regional and national level and other past and future work that the INFORM group has been engaged with.

#### 27-29 June, Tuscaloosa (US)

##### Global Flood Partnership 2017 Conference

The 2017 Global Flood Partnership meeting will take place on 27 - 29 June 2017 in Tuscaloosa (AL), USA, hosted by NOAA - Office of Water Prediction - National Water Center in collaboration with UCAR/COMET and the University of Alabama.

This year's theme is "From hazards to impacts" and participants will have the opportunity to showcase their latest relevant research and activities. As usual, we will review the advances and success stories of the Partnership and discuss the next steps to further strengthen the GFP.



### KNOWLEDGE

#### 29 May-02 June, Ljubljana (SI)

##### 4th World Landslide Forum

This event is jointly organised by the International Consortium on Landslides (Kyoto, Japan), the International Programme on Landslides (IPL), the University of Ljubljana and the Geological Survey of Slovenia, and is a contribution to the implementation of the Sendai Framework for DRR 2015-2030.

#### 05-09 June, Glasgow (GB)

##### 3rd European Climate Change Adaptation Conference (ECCA 2017)

The theme of ECCA 2017 is 'Our Climate Ready Future'. The conference will bring together the people who will deliver action on the ground – from business, industry, NGOs, local government and communities – to share knowledge, ideas and experience with researchers and policymakers.

#### 14 June, Ispra (IT)

##### Chemical Accident Risks Seminar

This seminar is a networking event for competent authorities and industry organisations in EU and affiliated countries funded by the DG-ECHO-JRC project, Seveso Capacity-Building in EU Neighbourhood Countries, under the Civil Protection Mechanism, and JRC Enlargement activity.

#### 21-22 June, Copenhagen (DK)

##### 2017 EIONET Workshop on 'Climate Change Impacts, Vulnerability and Adaptation'

The key objective of the workshop is to provide an update and discuss on-going and planned work by the European Environment Agency (EEA), European Commission, international organisations and member countries in the field of work of climate change impacts, vulnerability and adaptation.

#### 28-29 June, Varese (IT)

##### Improving the access and share of curated EU-wide Disaster risk information (data, methodology, tools)

The core objectives and missions of the proposed workshop on Improving the access and share of curated EU-wide disaster risk information are defined as:

- (1) Identifying good practices on risk data information, tools and methods that have the potential to promote research results that are relevant for Disaster Risk Reduction.
- (2) Ensuring that researchers' expertise is available, easily transferred and understood by the decision makers;
- (3) Support the risk data discovery by establishing a mechanism, which provide a better information flow;
- (4) Support the interaction of research and DRR services from regional to national and local level.
- (5) Support the implementation of national risk assessment (NRA) services

#### 03-14 July, Brussels (BE)

##### Assessing Public Health in Emergency Situations

This 2-week course aims to familiarize health professionals with epidemiological techniques to assess the health impact of disasters and conflicts on affected communities.

Registration:

<http://aphes.be/Registration>

## Upcoming Events

### 28 August-01 September, Cape Town (ZA)

#### Good Hope for Earth Sciences

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.



#### INNOVATION

### 11-12 May, Ispra (IT)

#### Seismic Risk Assessment Tools Workshop - Demonstration and Evaluation of Seismic Risk Assessment Tools for EUCPM member states

The overall purpose of the planned technological workshop is to promote the use of seismic risk assessment tools by the member states of the European Union Civil Protection Mechanism (EUCPM).

The aim of the DRMKC is bringing together developers (Private companies, Universities, Research Consortia, etc.) and the actual and potential users, with particular focus on national civil protection authorities of earthquake-prone EUCPM countries.

The relevant Commission directorates - JRC E1 and E4 Units and interested services of DG ECHO (A1 (ERCC), A2, A3, A4) will be also represented in the meeting.

### 05-09 June, Guayaquil (EC)

#### Third EUROCLIMA2 Workshop and training on Desertification Land Degradation and Drought

EUROCLIMA is a European Commission programme which aims to encourage cooperation between Latin America and the EU on climate change issues.

The programme facilitates the integration of climate change mitigation and adaptation strategies and measures

into Latin American public development policies and plans at national and (sub) regional levels. During the period of 2014 - 2016 the foreseen EU contribution reaches €11 450 000 in a total of €12 587 500.

The general objective is to contribute to poverty reduction of the Latin American population by reducing their environmental and social vulnerability to climate change and to reinforce resilience of the Latin American region to climate change and promote opportunities for green growth.

### 12-13 June, Podgorica (ME)

#### IPA DRAM // Regional workshop

The workshop will be aimed at devising approaches for (1) development/improvement of national disaster loss databases, risk assessments and mapping; (2) enhancing the coherence among the national systems and methodologies, making them consistent with existing EU legislative activities, guidelines and good practices.

The three main topics - disaster loss databases, risk assessment and risk mapping, represents an important tool for disaster risk management and should eventually become a key element in the development of risk management strategies across all relevant policies.

## DRMKC at the Global Platform

22-25  
May



**Science for Disaster Risk Management:**  
Knowing better and losing less



**The Atlas of the Human Planet 2017:**  
Global Exposure to Natural Hazards



Read more and submit your events

<http://drmkc.jrc.ec.europa.eu/overview/Events>