



Disaster Risk



Management



Knowledge Centre

Pooling knowledge and networks in disaster risk management

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Editorial



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*On 15th May 2019, the European Commission published its first major report **evaluating the functioning of the EU Solidarity Fund (EUSF)**, and providing recommendations for the future. The report (which can be downloaded at the web-links provided below) shows that since its creation in 2002, **the EUSF has been a tangible and effective expression of solidarity towards EU Member States and accession countries hit by severe natural disasters.***

From 2002 to 2019, the EU provided **more than €5.5 billion to assist twenty-four countries in the aftermath of some eighty-eight natural disasters**, such as floods, storms, forest fires, earthquakes and other natural disasters. The EUSF assistance was key to assisting the affected populations (in particular regarding provisional accommodation), restoring essential infrastructure, cleaning up, ensuring the continuity of public services, and protecting cultural heritage, amongst other actions.

The report is based on a comprehensive ex-post evaluation of the Fund's interventions in twenty-four countries, including twenty-three EU Member States and one accession country (Serbia), between 2002 and 2017. According to the findings of the evaluation, **the EUSF has effectively delivered on its objectives, bringing EU added value to the post-disaster response in Member States and accession countries**, and to the rapid restoration of living conditions for the local populations. The EUSF contributions are also **crucial in weathering the financial impact of the disasters**, especially for countries and regions facing budgetary difficulties in the aftermath of the catastrophic events.

While it would not be scientifically sound to say that the EUSF interventions over the past seventeen years reflect climate change, **it appears that extreme weather events have been on the rise in recent years**. Two thirds of all EUSF interventions so far relate to flooding, storms and related phenomena. On the other hand, earthquakes - albeit much less frequent - remain the disaster type causing by far the highest losses.

The evaluation shows that the EUSF has contributed primarily to post-disaster spending for temporary accommodation and basic services for the affected population, as well as restoration of key infrastructure. The evaluation also confirms that the **2014 reform of the EUSF has made the Fund and its functioning even more flexible and adaptable** to the specific situations.

Clearer eligibility criteria for regional disasters, as well as a simpler and streamlined decision-making process, have reduced the time needed for activation of the EUSF. In addition, the introduction

of advance payments enabled early deployment of part of the resources to help meet the very first needs. Whether advance payments should be increased is one of the resulting questions to be examined in the near future.

Thanks to the new mechanism introduced in the EU's Multiannual Financial Framework (MFF) 2014-2020 for allocating annual budget resources, the EUSF can now mobilise greater amounts to respond to particularly catastrophic events - as witnessed by **the record contribution of €1.2 billion approved in the case of the 2016 and 2017 earthquakes in Central Italy**.

The EUSF operates in complementarity with other EU instruments addressing disaster risk management (DRM), especially the **European Structural and Investment Funds**, and the DRM policies driven by the **Commission's Joint Research Centre (JRC)** and **DG ECHO**. In many cases, the combined use has ensured addressing short and medium term needs with longer-term investments in climate adaptation,

risk management, civil protection, and preventive infrastructure.

The use of the EUSF promotes **the exchange of good practices** at both national and international level and **the culture of disaster prevention, preparedness and resilience**. It also strengthens the capacity of the administrations to deal with natural disasters and provide the necessary relief to the people concerned.

Finally, the evaluation of the EUSF also invites further reflection on **how to improve its functioning and exploit the potential of the EUSF interventions**. Future activities will include, for instance, assistance to the Member States to improve and accelerate damage assessment (where the work on risk data by the JRC is of particular relevance), promote risk prevention in operations supported by the EUSF, and enhance the visibility of the interventions and overall people's awareness.

Johannes Wachter



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More information on the European Union Solidarity Fund (EUSF), including a list of all interventions, and the evaluation of the Fund's implementation and performance since its introduction in 2002 and until 2017, is provided at the web-links below:

- ➔ https://ec.europa.eu/regional_policy/en/funding/solidarity-fund/
- ➔ https://ec.europa.eu/regional_policy/sources/the-funds/doc/interventions_since_2002.pdf
- ➔ https://ec.europa.eu/regional_policy/en/policy/evaluations/ec/eusf2002_2017

References:

SWD (2019) 186 Final. Commission Staff Working Document: Evaluation of the European Union Solidarity Fund 2002-2017. (https://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eusf_2002_2016/eusf_2002_2016_swd_en.pdf)

SWD (2019) 187 Final. Commission Staff Working Document: Executive Summary of the Evaluation of the European Union Solidarity Fund 2002-2017. (https://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/eusf_2002_2016/eusf_2002_2016_exec_en.pdf)



Report on the 2019 Global Flood Partnership (GFP) Annual Meeting, in Guangzhou, China

The Global Flood Partnership (GFP) is a multi-disciplinary group of scientists, operational agencies and flood risk managers focused on developing efficient and effective global flood tools to improve operational global flood risk management. Its aim is to establish a partnership for global flood forecasting, monitoring and impact assessment to strengthen preparedness and response and to reduce global disaster losses.

Each year the GFP Annual Meeting is organized jointly by the European Commission's Joint Research Centre (JRC) - which prepares the scientific programme and handles registration of participants - and a local host, which provides the meeting venue and logistical arrangements. This year's GFP Annual Meeting took place on 11-13 June 2019, in the city of Guangzhou, in the province of Guangdong in southern China, hosted by the School of Atmospheric Sciences of the Sun-Yat Sen University (www.sysu.edu.cn).

Despite being the first GFP Annual Meeting to be held outside Europe or North America, the 2019 Annual Meeting attracted wide interest, with over 100 registered participants from five continents. Organizations represented at the meeting included universities, research institutions, emergency managers including Brazil's National Centre for Monitoring and Early Warning of Natural Disasters (CEMADEN) and Nepal's International Centre for Integrated Mountain Development (ICIMOD), international organizations such as the World Food Programme (WFP), the European Centre for Medium-Range Weather Forecasts (ECMWF) and the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER), as well as private companies including Google, "Cloud to Street" (a remote-sensing platform that maps floods in near real time), Aon India (www.aon.com/india/), African Risk Capacity (www.africanriskcapacity.org), among others.

As with all GFP events, the 2019 GFP Annual Meeting proposed various types of activities and interactive sessions, in-

cluding oral presentations, five-minute "ignite talks", poster sessions, on-line demonstration of flood risk management tools, a user panel, and a visit to Guangdong province's Emergency Management Agency. The meeting fostered scientific exchange on the latest developments regarding global flood risk management tools, as well as dialogue with users (i.e. emergency managers and policy-makers).

Recent severe flooding, such as that caused by tropical cyclones Idai and Kenneth in March and April 2019, which resulted in widespread fatalities and catastrophic damage in Mozambique, south-east Africa, highlight the urgent need for further improving tools for flood forecasting, monitoring, and risk management. These tools are particularly required in highly vulnerable developing countries, where coping capacity regarding large-scale disasters is often limited, and where the GFP can play a key role in driving and coordinating these efforts. In this context, the GFP needs to communicate clearly how it can support collaboration in the scientific development of global flood risk management tools, and how it can help to bridge the gap between scientists and users, with the GFP Support Service (see web-link below).

Details on the outcomes of the 2019 GFP Annual Meeting in Guangzhou, will be published shortly on the GFP web-site (see below). The report on the 2018 GFP Annual Meeting - which took place on 25-27 June 2018 in Delft, the Netherlands, and was hosted by Deltares (an independent institute for applied research in the field of water and sub-surface) - is available on-line at the web-link below.

Lorenzo Alfieri and Peter Salamon

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For more information:

<https://gfp.jrc.ec.europa.eu/>

<https://gfp.jrc.ec.europa.eu/support-service>

https://gfp.jrc.ec.europa.eu/sites/default/files/2018-10/JRC113100_gfp_2018_annual_meeting_report_final.pdf



Panel discussion at the 2019 Global Flood Partnership Annual Meeting, in Guangzhou, China © GFP

4th European Climate Change Adaptation conference in Lisbon: Working together to prepare for change



On 28-31 May 2019, the 4th European Climate Change Adaptation conference (ECCA2019) took place in Lisbon, bringing together researchers, policy-makers and practitioners to discuss recent advances in climate change adaptation (CCA) and disaster risk reduction (DRR), to find solutions, and to inspire collective action to increase Europe's resilience.

ECCA2019, which sold out with over 1,200 participants, was the first major conference focusing on harmonisation and collaboration between CCA and DRR, making it both uniquely suited to consider the goals and targets of the three landmark international agreements - the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals, and the Paris Agreement negotiated at COP21 (the 2015 UN Climate Change Conference) - and well timed, given that the next decade will be critical for achieving the agreements' 2030 goals and targets. This is underpinned by the Global Risks Report 2019 of the World Economic Forum (www.weforum.org), which ranks extreme weather events and failure of climate change mitigation and adaptation as the top two risks to society).

This urgent need has already been recognised by researchers, policy-makers and practitioners, and calls for effective collaboration of all sectors of society, across all governance levels, including public and private. Both the "Rome Declaration of Stakeholders" (from the 2018 European Forum for DRR) and the European Commission's recent report (SWD(2018)461) on the evaluation of the EU strategy on adaptation to climate change, also call for integration, coherence and collaboration between the two areas.

At ECCA2019, the first plenary session - "Europe is at risk: adapting to extremes" - focused on the urgency to take action, and presented what is being done in Lisbon, Portugal, and Europe. The second plenary session - "Adapting businesses to climate change: risks and opportunities" - focused on the role of the private sector, with speakers from international companies and organisations. The discussions centred on trying to identify specific challenges of this sector, what strategies have been used to deal with climate change and

what opportunities does climate change bring to businesses. The third plenary session - "The road ahead" - focused on discussing solutions, and setting the path for the next decade to achieve the 2030 goals and targets of the three international agreements. Additionally, 96 Science-Practice and Science parallel sessions were organised, to present the current state-of-the-art knowledge and inspire action.

The key messages from ECCA2019 will inform the European Commission's next framework programme for research and innovation (2021-2027, Horizon Europe), based on feedback from the conferences' six themes (see web-link below).

The main messages from the parallel sessions are: (1) Be inclusive in taking care of vulnerable groups (e.g. the elderly and frail), who are overlooked and are impacted stronger by climate risks; (2) Better link CCA and DRR, which play a major role in bringing together and enhancing cooperation between diverse levels of governance; (3) Act now - we already know a lot; (4) Work jointly on integrated solutions, and better understand the systems we work in, in order to develop effective adaptation actions and avoid "maladaptation", focusing on co-production of knowledge of adaptation and risk reduction.

The biennial ECCA conference is convened by projects that have received funding from the EU's Horizon 2020 research and innovation framework programme. ECCA 2019 - the fourth such conference - was organized by PLACARD (www.placard-network.eu) in collaboration with the projects BINGO (www.projectbingo.eu) and RESCCUE (www.resccue.eu).

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For more information:
<https://www.ecca2019.eu/>
<https://www.ecca2019.eu/conference/themes/>



A scene from the third plenary session "The road ahead". © European Commission



Report on the session on Extreme Wildfire Events at the European Climate Change Adaptation Conference 2019

A Science-Practice parallel session entitled “Extreme wildfire events: addressing the challenges faced by national governance and management systems across Europe”, was held on 29 May 2019, as part of the European Climate Change Adaptation Conference 2019 (ECCA2019) in Lisbon.

Extreme wildfire events call for integrated fire management (IFM) that tackles the socio-economic, climate and environmental roots of these “mega-fires”, through more balanced land use management, and considering the interaction among fire prevention and preparedness, fire detection and response, post-fire restoration and adaptation. The aim of the “Extreme wildfires” session at ECCA2019 was to take stock of innovative solutions and successful case studies across Europe that demonstrate how to prevent and recover from mega-fires, and to enable an exchange between the key actors and partners to address barriers in governance and management that often impede an IFM strategy.

Several key points were highlighted. Practitioners are calling for a better managed landscape, and integration of prevention and emergency response, requiring integrated fire, forest and landscape management. Engagement of people in preparedness and prevention is needed, for acceptance and ownership of solutions. Experience from developing countries, where fires have lower impacts, suggest that people need to maintain a close connection with the landscape.

Research gaps include how multiple fires (and mega-fires) interact and create their own weather systems, and how to use this knowledge in emergency response. Other topics are dynamic adaptation measures that take account of the evolving nature of fire risk in Europe (spatial and temporal trends), and how to incentivise people to return to the countryside, while ensuring joint fire management (from prevention and preparedness to restoration).

Four key factors lead to extreme wildfires: expansion of forests due to depopulation and land abandonment; increased fuel loads and fuel continuity; high number of anthropogenic fire ignitions; and higher temperatures and less rainfall. Long-term fire prevention strategies should make forests more resilient to climate change, while the vision needs to be economically viable, and consider forest multifunctionality. To tackle Mediterranean wildfires, for example, a forest-based bio-economy offers new opportunities, by ensuring ecosystem services while reducing fires.

Some key messages emerged. The social dimension of fire must be addressed, by involving people in prevention and preparedness. In Portugal, economic and social factors are a real issue with wildfires, with a lack of population in the country's interior. Land must be profitable for people to manage it. Simply imposing solutions creates resistance. Implementing an IFM approach is a long-term (decadal) work.

With climate change, the Mediterranean region will be affected by more intense, longer heatwaves and droughts, and more mega-fires. Creative approaches are needed to bring people and infrastructure (e.g. hospitals, public services) back to rural areas. During Portugal's economic cri-



The Science-Practice session on “Extreme wildfire events” at ECCA 2019 in Lisbon, was held under conference theme 6 - “Climate risk management and resilience”.

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sis, due to a lack of jobs in cities, and helped by EU funds, young people returned to rural areas. With economic growth that trend is reversing. The perception of rural areas must change. The frequency of disasters relative to the electoral cycle affects the likelihood of action on wildfires. Regarding spatial planning policy, fragmentation of land ownership is an issue, with many private landowners in Portugal and Spain, for example.

Speakers at the session were: Francisco Castro-Rego (Higher Institute of Agronomy, Technical University of Lisbon); Inazio Martinez de Arano (European Forest Institute); Peter Moore (FAO, Forestry Department); Marc Castellnou (Fire Service of Catalunya); Athanasios Sfetsos (National Centre of Scientific Research “Demokritos”, Greece); Fantina Tedim (University of Porto); Inês Vieira (University of Lisbon); Antonio Soares (National Association of Rural Owners, Portugal).

A 2018 science-policy report by the European Commission's Directorate-General for Research and Innovation (DG RTD), critically reviews EU-funded research on forest fires and explores policies adaptation to face the new challenges imposed by extreme wildfire events (see web-link below).

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European Commission, Directorates-General for
(*) Research and Innovation (RTD); (**) Climate Action
(CLIMA); (***) European Civil Protection and Humanitarian
Aid Operations (ECHO)

For more information:

www.ecca2019.eu/extreme-wildfire-events-addressing-the-challenges-faced-by-national-governance-and-management-systems-across-europe/
https://ec.europa.eu/info/files/forest-fires-sparking-firesmart-policies-eu_en

Report on the Workshop “Learning from Citizen Science after Fukushima”, on 27 February 2019 in Brussels



Can citizen-driven radiation monitoring strengthen nuclear safety governance? If so, how? Why do citizens measure radiation pollution in the environment in the first place?

These and related questions were put up for debate at a Stakeholder Workshop “Learning from Citizen Science after Fukushima”, which was held on 27 February 2019 at the Brussels Office of the Belgian Nuclear Research Centre (SCK - CEN), and which involved citizen scientists, Belgian and European radiological protection researchers, members of safety authorities, and policy professionals. The report on the Workshop, which is available at the web-link below, highlights the role and potential of citizen engagement in nuclear safety governance in Japan and Europe.

The 2011 Fukushima Daiichi nuclear disaster was a nuclear accident at the Fukushima Daiichi (or Fukushima I) nuclear power plant in Ōkuma, in Fukushima Prefecture, in north-east Japan, which was started by a 15-metre tsunami following the Tōhoku major earthquake, on 11 March 2011. The Fukushima Daiichi nuclear disaster was the most significant nuclear incident since the 26 April 1986 Chernobyl disaster, and the only other disaster since to be given the Level 7 (“Major Accident”) event classification of the International Nuclear and Radiological Event Scale (INES).

The Workshop at SCK - CEN marked the close of a two-year bilateral social science research project, “After and Beyond Fukushima: Probing the Role and Potential of Citizen Science in Nuclear Science and Technology Governance in Japan and Belgium”, funded by the Research Fund - Flanders (FWO) and the Japanese Society for the Promotion of Science (JSPS). The project was motivated by a concern to heed lessons from the Fukushima Daiichi nuclear disaster, and to hold a more fruitful dialogue between all concerned actors. In the opening session of the Workshop, Belgian and Japanese researchers presented key findings from their research project, providing responses to two inter-related questions:

1. How and why did the Fukushima disaster trigger the emergence of citizen science in Japan and other countries?
2. How do formal institutions, such as public authorities and scientific research communities, in Japan and Europe, respond to the rise of citizen science, particularly citizen-driven radiation monitoring?

Two Japanese citizen scientists shared their perspectives on these same questions based on their experiences. In the Workshop’s afternoon session, participants engaged with a list of recommendations for policy and practice proposed by the research team. This session incited debate about how citizen science concepts and approaches can strengthen science policy, safety governance, and public engagement strategies, taking into account the possible limitations of embedding citizen science in formal policies and practices. Among other issues, participants addressed the importance of contextual factors when engaging with citizen scientists, such as language and culture. They also pointed to the importance of science outreach to schools in order to raise



public awareness about radiological protection and nuclear safety, and to better prepare all stakeholders for a possible accident.

Other themes that emerged were the lack of a regulatory framework for citizen engagement in nuclear safety governance and the asymmetrical relations between formal institutions and citizen science groups, which could hinder joint problem solving.

Although the question of how to foster mutually fruitful exchanges between formal institutions and grassroots citizen science groups remains open, the issues and considerations raised in the Workshop can help to nurture the (sometimes fraught) relationships between citizen science and formal institutions, and to build institutional capacity for citizen engagement in science and its democratic governance.

Dr. Michiel van Oudheusden,
Belgian Nuclear Research Centre (SCK-CEN).

Ms. Joke Kenens,
SCK-CEN, KU Leuven.

Dr. Go Yoshizawa,
Osaka University and Oslo Metropolitan University.

Prof. Dr. Nozomi Mizushima,
Sokendai Graduate University for Advanced Studies.

For more information:
http://sckcen.be/en/News/20190517_CitizenScience



UNEP flagship report “Global Chemicals Outlook II” highlights JRC work on chemical and Natech accident risks

On 29 April 2019, the United Nations Environment Programme (UNEP) released the first update report – entitled “Global Chemicals Outlook II - From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development” – on the current situation surrounding the sound management of chemicals throughout the world.

This 700-page report (the first edition of which was published in February 2013) takes an unprecedented look at the manufacture and use of chemicals globally, their importance to national and global economies, and the costs and negative effects on human health and the environment of unsound chemicals management, with recommendations for future action.

At the World Summit on Sustainable Development in 2002 in Johannesburg, countries committed to minimizing the adverse effects of chemicals by 2020. This “2020 goal” is reiterated in Target 12.4, under Sustainable Development Goal 12 (Responsible Consumption and Production) of the UN’s 2030 Agenda for Sustainable Development, which was adopted by the UN in 2015.

The Global Chemicals Outlook II (GCO-II) is a wide-ranging report covering not only current challenges in traditional areas of chemicals risk management, such as substance identification and classification, waste management, pollution control, worker and community exposure, and process safety, but also linking current and future problems and solutions with economic development and trade, technological progress, population growth, climate change and other influential factors. The GCO-II has a five-part structure:

- I. The evolving chemicals economy: status and trends relevant for sustainability.
- II. Where do we stand in achieving the 2020 goal - assessing overall progress and gaps.
- III. Advancing and sharing chemicals management tools and approaches: taking stock, looking into the future.
- IV. Enabling policies and action to support innovative solutions.
- V. Scaling up collaborative action under the 2030 Agenda for Sustainable Development.

The GCO-II was prepared over the past three years, involving over 400 scientists and experts around the world, including the JRC’s Major Accident Hazards Bureau (MAHB) and Natech (natural hazard-triggered technological disasters) experts. In this regard, the JRC contributed substantially in Chapter 6 (“Chemical risk management in facilities and during production”) of Part III (see above), particularly in Section 6.1 (“Understanding and addressing the risks of chemical accidents”). Here, the JRC helped UNEP to shape the discussion on the challenges in analysing and sharing lessons learned, as well as the summary of the current status of efforts to understand and manage Natech accident risks.



Chapter 6 also makes several references to the JRC’s scientific work in chemical and Natech accident risk management, citing its studies of past accidents, and its contributions to developing hazard rating and capacity-building indices. Chapter 6 also cites a number of collaborative projects and studies on emerging issues – such as UNEP’s Flexible Framework for Chemical Accident Prevention Project and the UN Office for Disaster Risk Reduction (UNISDR) “Words into Action” guidelines to support national implementation of the Sendai Framework – in which the JRC’s MAHB and Natech team were leading contributors.

The GCO-II full report is complemented by the GCO-II Summary for Policymakers (which was tabled as a working document of the 4th session of the UN Environment Assembly) and the GCO-II Synthesis Report. The entire GCO-II publication can be found at the web-link below.

Maureen Wood and Elisabeth Krausmann
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For more information:
www.unenvironment.org/resources/report/global-chemicals-outlook-ii-legacies-innovative-solutions

JRC study shows that societies worldwide have become more resilient to climate disasters



A recent study by the the European Commission's Joint Research Centre (JRC) shows that over the last four decades, societies around the world have increased their capacity to cope with climate disasters (Formetta and Feyen, 2019). The findings indicate that adaptation represents an opportunity to make our societies more resilient and minimize future impacts of climate change in Europe.

To understand better the capacity of societies worldwide to cope with climate extremes, the JRC study investigated global trends in resilience since 1980, considering the impacts of seven weather-related hazards: floods, flash floods, coastal floods, cold-related hazards, heatwaves, droughts, and wind-related hazards. Over 16,000 loss records of human deaths and economic losses were analysed. From 1980 to 2016, the total number of reported fatalities amounted to 815,293 and overall damage to € 2,436 billion.

The researchers analysed all disasters worldwide for which these impacts have been reported. These range from major disasters such as Hurricane Katrina and the 2003 European heatwave, which amounted to economic losses of hundreds of billions of Euros, and / or thousands of fatalities, to smaller scale events such as the January 2013 floods in South Africa, for which the reported impacts in the regions of Limpopo and Mpumalanga totalled € 38 million of damages and 12 fatalities. The study then mapped exposure to these disasters using detailed snapshots in time of human presence and wealth based on the JRC's Global Human Settlements Layer (<https://ghsl.jrc.ec.europa.eu/>) and national accounts data.

The study shows that the number of people killed by extreme climate events – as a proportion of the population exposed to such events – dropped more than sixfold over the period. The economic loss rate - i.e. the damage caused by climate extremes as a proportion of the economic value exposed to these hazards - is now about a fifth compared to the 1980s.

The evidence also shows that when societies become wealthier they become more resilient. In countries with the lowest income levels as defined by the World Bank, the effect of increasing wealth on reducing disaster impacts was much stronger than in richer countries. Thus, the disparity in resilience between lower and higher income countries has decreased, though the gap remains considerable. The strong link between resilience and wealth suggests that poverty eradication, improved living conditions, better social protection and economic inclusiveness will further increase the capacity of countries to adapt to climate change impacts. As a country develops economically, investments in protection measures to natural hazards, early warning systems, and disaster risk management strategies improve. This also facilitate the response and recovery after a natural disaster.

The EU Adaptation Strategy of the European Commission aims to make Europe more resilient to extreme and slow-



The JRC study analysed impacts during 1980–2016 for general floods, flash floods, coastal floods, cold-related hazards, heatwaves, droughts, and wind-related hazards.

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onset climate hazards, promoting action by Member States, especially in key vulnerable sectors such as agriculture and cohesion policy, and better informed decision-making.

The Sendai Framework for Disaster Risk Reduction (DRR), the Paris Agreement on Climate Change and the Sustainable Development Goals have set the global agenda for DRR through sustainable and equitable economic, social, and environmental development.

Poorer countries remain particularly vulnerable to climate hazards and huge investments or changes may be needed to close the vulnerability gap with richer countries. With an ever increasing share of people living in urban centres, partnership initiatives such as the “Making Cities Sustainable and Resilient” Action - by the UN Office for Disaster Risk Reduction (UNDRR), UN Human Settlements Programme (UN-Habitat), and European Commission - could be pivotal in achieving this.

This report is based on a news article that was published on 10 July 2019, on the JRC's web-site (see web-link below).

Niall McCormick

European Commission, Joint Research Centre (JRC)

For more information:

<https://ec.europa.eu/jrc/en/news/societies-worldwide-have-become-more-resilient-climate-disasters>

Reference:

Formetta, G. and L. Feyen. 2019. Empirical evidence of declining global vulnerability to climate-related hazards. *Global Environmental Change*, Vol. 57, Article 101920. [www.doi.org/10.1016/j.gloenvcha.2019.05.004](https://doi.org/10.1016/j.gloenvcha.2019.05.004)



JRC study on the European droughts in 2018: a warning of things to come

A recent study, led by scientists of the European Commission's Joint Research Centre (JRC), warns that the extreme drought conditions that affected the 2018 spring / summer growing season in central and northern Europe, could become the norm within 25 years, and calls for innovative adaptation measures to deal with extremes (Toreti et al., 2019).

Climate change poses particular challenges for agricultural production systems as plant growth is affected by climate conditions. Besides heat stress, drought and water excess have been shown to trigger losses when occurring in critical phenological phases. Thus, to reduce the impacts associated with these extreme events at the local scale, agricultural management and planning need to consider them in the development and implementation of risk reduction strategies.

At the regional scale, the push / pull of droughts in one region and the absence of water stress elsewhere (i.e. the "water seesaw") can translate into crop yield differentials. Thus, it is key to estimate how often water seesaw conditions have occurred and will occur, and to understand if climate change adaptation strategies for agriculture can count on recurrent water seesaws.

All of these questions, which are addressed by the JRC study, have been triggered by the extreme climate conditions experienced by Europe in 2018, when the spring and summer months were marked by a unique combination of drought conditions in central and northern Europe, and unusually wet conditions in southern Europe.

For instance, Germany was affected by a six-month drought that lasted the whole spring and summer, while the spring was particularly wet in the Iberian Peninsula. Both extremes affected crop yields. The droughts resulted into total reductions in the main crop yields of up to 50%. This was partially offset by southern Europe's yield gains of up to 34%.

This juxtaposition of opposite climate anomalies - i.e. droughts in the northern part of Europe and unusually wet condition in the south - was a unique phenomenon of the last 500 years. Future climate projections, based on high resolution global models, show that southern Europe is less likely to experience such favourably wet conditions for crop growth in the future. On the other hand, droughts similar to those of 2018 could become common as early as 2043.

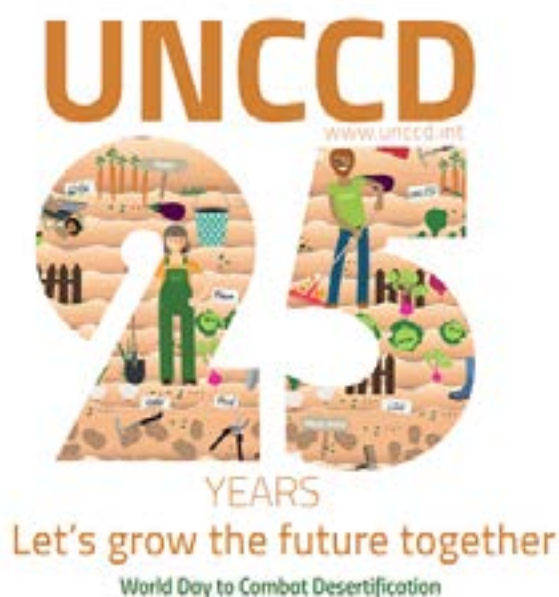
Innovative adaptation strategies for European agriculture are therefore urgently needed to cope with recurrent drought events that are unlikely to benefit from the unusual "water seesaw" pattern seen in 2018. Projections show that the climate is getting hotter and more extremes are going to occur.

Last year, Europe got lucky with unusually wet conditions in southern Europe that mitigated the drought effects on overall food production. However, we can't count on such anomalies to ensure food security in the future. Last year was a wake-up call. There is an urgent need scientifically to improve risk and impact assessment by considering these recurrent / concurrent events, and the shocks they can cause, and thus design new adaptation strategies to cope with them.

This report is based on a news article published on 17 June 2019 on the JRC's web-site (see web-link below).

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European Commission, Joint Research Centre (JRC)



For more information:

<https://ec.europa.eu/jrc/en/news/european-droughts-2018-warning-things-come>

For more information:

Toreti, A., A. Belward, I. Perez-Dominguez, G. Naumann, J. Luterbacher, O. Cronie, L. Seguini, G. Manfron, R. Lopez-Lozano, B. Baruth, M. van den Berg, F. Dentener, A. Ceglar, T. Chatzopoulos, and M. Zampieri. 2019. The exceptional 2018 European water seesaw calls for action on adaptation. *Earth's Future*, 7 (6): 652–663. [www.doi.org/10.1029/2019EF001170](https://doi.org/10.1029/2019EF001170)

Publication of the JRC study by Toreti et al. (2019) on the European droughts of 2018, coincided with the 25th anniversary of the United Nations Convention to Combat Desertification (UNCCD), and the World Day to Combat Desertification and Drought in 2019.

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2nd Workshop on preparing the DRMKC's new flagship report, "Science for Disaster Risk Management 2020"



On 6-7 June 2019, the 2nd Workshop on preparation of the flagship science report "Science for Disaster Risk Management 2020: Acting today, protecting tomorrow", was organized by the Disaster Risk Management Knowledge Centre (DRMKC), at the European Commission's Joint Research Centre (JRC) in Ispra, Italy.

The report - which will be the second in the DRMKC's flagship science report series - aims at broadening the understanding of current and future risks faced in Europe, and focusing on the consequences suffered by different assets, including populations, the environment, and economic sectors. The rationale for the new flagship report is that, by knowing the causes and drivers of risks, we can move forward from identifying needs to developing solutions and new approaches.

Similarly to the DRMKC's first flagship science report (entitled "Science for Disaster Risk Management 2017: Knowing Better and Losing Less"), which was published in May 2017, the new report is adopting a collaborative approach, and is being prepared thanks to the voluntary participation of a wide range of partners. More than 240 contributors are already engaged in the report's preparation, coming not only from academia, but also from governmental agencies and ministries, civil protection groups and civil society organizations. Participants have been organized into four teams - i.e. Lead Authors, Coordinating Lead Authors, Advisors, and External Reviewers - the first three of which were invited to the Workshop on 6-7 June. The Workshop was attended by over fifty participants from several countries, representing almost all of the planned Sections of the new report.

The Workshop was a good opportunity for the contributors to the new flagship science report to meet again and con-

sider the contributions that had already been produced by the teams of authors, and to discuss the topics covered as well as those that could potentially be included. Attendees mainly discussed improvements to the produced content that would optimise the usefulness of the final product for the four envisaged groups of target readers, namely policy-makers, practitioners, scientists and citizens.

Such a variety of target readers requires the effective communication of messages to non-technical audiences, and the proposal of actions and strategies that could be realistically engaged in and exploited, in order to achieve the ultimate goal of reducing disaster risk.

Clearly, the Chapters and Sub-Chapters of the new flagship report must be coherent and consistent, and to this end the joint discussions at the Workshop also provided the starting point for cross-referencing the report's different Sections, and avoiding conflicts and major overlapping.

The various teams of authors are currently preparing the second drafts of their contributions, which will be externally reviewed starting from September 2019. The DRMKC's second flagship science report is planned to be published by late December 2019, and officially launched in early 2020.

Ainara Casajús Valles

European Commission, Joint Research Centre (JRC)

For more information:

<https://drmkc.jrc.ec.europa.eu/knowledge/science-for-drm/science-for-disaster-risk-management-2020>



Participants at the Workshop on preparation of the DRMKC's "Science for Disaster Risk Management 2020" flagship report.



Open consultation on Recommendations for National Risk Assessment for Disaster Risk Management in the EU

An Open Consultation has been launched by the Disaster Risk Management Knowledge Centre (DRMKC) of the European Commission, in order to gather input from the disaster risk management (DRM) community, regarding recommendations for National Risk Assessment (NRA) for DRM in the EU. Stakeholders are invited to participate in the consultation, which is open until 30 September 2019, via the web-link below.

The resulting recommendations will help build a common understanding of how to quantify risks, how to compare potential impacts and what are the drivers of risks that can be addressed, for a wide range of natural and man-made hazards. The recommendations aim at providing scientific support to participating states in the Union Civil Protection Mechanism, and national authorities in charge of the preparation of the NRA process, through the development of comparable risk assessments based on solid scientific evidence, with the ultimate goal of better protecting EU citizens from potential threats.

Countries participating in the Union Civil Protection Mechanism already perform NRAs every three years. However, countries apply different methodologies for different hazards, and this hinders a comparison of potential impacts generated by different hazards and threats. There is a danger of risk management plans being based on perceptions and feelings, rather than on solid evidence.

The NRA process can be a challenging task for an individual country, in terms of resources, time and complexity. The multi-disciplinary nature of NRAs requires the involvement of many affected sectors and different communities, to consider the particular perspectives, information, experiences and knowledge. The process has the demanding objective of finding a common understanding with all relevant stakeholders, of the risks faced and their relative priority, in a transparent way, in order to make DRM planning efficient and to increase the country's resilience in a steady, sustainable and timely manner.

In the Science for Policy report (available at the web-link below) that is the subject of the Open Consultation, instructions for robust and usable approaches for the risk assessment process, have been collected based on the collaborative effort of nine Expert Groups at the JRC, initially covering risks of drought, earthquakes, floods, terrorist attacks, biological disasters, critical infrastructures, chemical accidents, nuclear accidents, and "Natech" (i.e. natural hazard-triggered technological disasters) accidents.

An important objective of this Open Consultation is to invite other Expert Groups, as well as those stakeholders involved in the NRA exercise, to join the process of co-developing scientific methods that better fit the users' needs. The responses to this consultation will help to improve and upgrade the current report from Version 0 to Version 1, which is planned to be published by the end of this year (2019).



Cover of the report on NRA for DRM in the EU, for which the Open Consultation has been launched.

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Anyone can contribute to this consultation by providing revision comments on the current report's different Chapters, or providing a Chapter (~ 5,000 words) of scientific guidance on risks not yet addressed in Version 0. Risks yet to be addressed include those related to forest fires, extreme weather, volcanic activity, tsunamis, malicious CBRN-E (i.e. Chemical, Biological, Radiological, Nuclear, and Explosive) acts, cyber-related attacks, hybrid threats, etc. All contributions included in Version 1 will be acknowledged.

Karmen Poljanšek
European Commission, Joint Research Centre (JRC)

For more information:

<https://drmkc.jrc.ec.europa.eu/knowledge/science-for-drm/recommendations-for-national-risk-assessment-for-disaster-risk-management-in-eu>
https://drmkc.jrc.ec.europa.eu/portals/0/knowledge/nra/jrc114650_nrarecommendations_updatedfinal_online1.pdf

African Union - EU Workshop: Preventing conflicts with evidence-based integrated risk management



Early warning systems are indispensable for alerting about potential violent conflicts and the resulting tremendous impact on individuals, societies and economies. Sharing common political priorities on this issue, the European Commission and the African Union Commission have a long-standing strategic partnership to set up and strengthen Africa's own capacity for conflict prevention.

Supported by the European Commission's Joint Research Centre (JRC), the collaboration is focused on developing a set of tools for conflict risk assessment for the African Union (AU) Continental Early Warning System (CEWS), from the early detection of potential signals to the reporting of verified and analysed information to AU policy-makers. Within this partnership, CEWS and JRC organized an "Expert Workshop on Structural Vulnerability and Resilience Assessment (SVRA) methodologies and practices", on 26-27 June 2019, in Varese, Italy.

SVRA is a particular component of the CEWS approach, aimed at profiling the political, economic, social, and security characteristics of societies, to determine if they are susceptible to tensions that could lead to violent outbreaks of conflict, turmoil or disruption. The underlying model includes an objective / target (dependent variable) to be prevented or realised, and structural indicators (independent variables) that influence or constrain progress away from or toward the target, thereby making a country more or less vulnerable. As a further step, the Country Structural Vulnerability and Resilience Assessment (CSVRA) expands on the results generated by the SVRA and complements the findings with country level assessments and reports.

Aimed at identifying best practices for CSVRA, and synergies between processes, systems and institutions, the Workshop gathered scientists, practitioners and policy-makers from African and European Institutions, the AU Regional Economic Communities (RECs), UN agencies, international financial bodies for cooperation and development, and academia.

Scientific presentations provided deeper understanding of the various structural vulnerability and resilience assessment models, and explored alternative sources of structural data, their reliability and relevance to policy goals and mandates. Other panel discussions were focused on sharing experiences on the use and impact of CSVRA on decision-making, including communicating risk and prescribed policy actions, and monitoring the implementation of vulnerability mitigation strategies.

In addition, the Workshop brainstormed ideas on how to incorporate the analysis of qualitative and quantitative data into the future version of the Conflict Alerting and Analysis System (CAAS), a web-based tool (under development in collaboration with the JRC) for enabling effective reporting. The ambition is to turn CAAS into an integrated dashboard that combines timeliness with a deeper understanding of the context to better support informed decisions.

The take-away message from the AU-EU Workshop was the need for further cross-fertilisation, integration and harmonisation of the existing tools, which could be also used in innovative ways (e.g. applying vulnerability / resilience indicators to facilitate media monitoring). Clearly, the integrated tools should be tailored to the specific knowledge and policy needs of the AU mandate, following a holistic and evidence-based approach to conflict management.

Finally, participants agreed on establishing a Community of Practice, under CEWS coordination, in order to continue collecting lessons learned and specific requirements.

Meretework Shawul, Shewit Hailu
and **Taye Abdulkadir**

African Union Commission, Peace and Security Department

Luigi Spagnolo, and Martin Atkinson

European Commission, Joint Research Centre (JRC)

For more information:

<http://www.peaceau.org/uploads/02-conflict-prevention-booklet-updated-13feb18-approved.pdf>



Group photo of the AU-EU Workshop participants. © African Union Commission



Latest developments of the JRC's INFORM Global Risk Index

Developed by the European Commission's Joint Research Centre (JRC), the Index for Risk Management (INFORM) Global Risk Index (GRI) is a widely recognised and valuable tool for multi-hazard risk assessment that identifies countries at risk of humanitarian crisis and disaster. At the request of INFORM partners, the JRC added an epidemic component (infectious disease outbreaks) to the natural hazard category of the INFORM GRI.

Although biological hazards are a significant source of risk that may result in emergency and disasters, risk of epidemics had not been considered in the INFORM model. Including epidemics risk with that of other natural hazards, in a single risk assessment framework, is a momentous development.

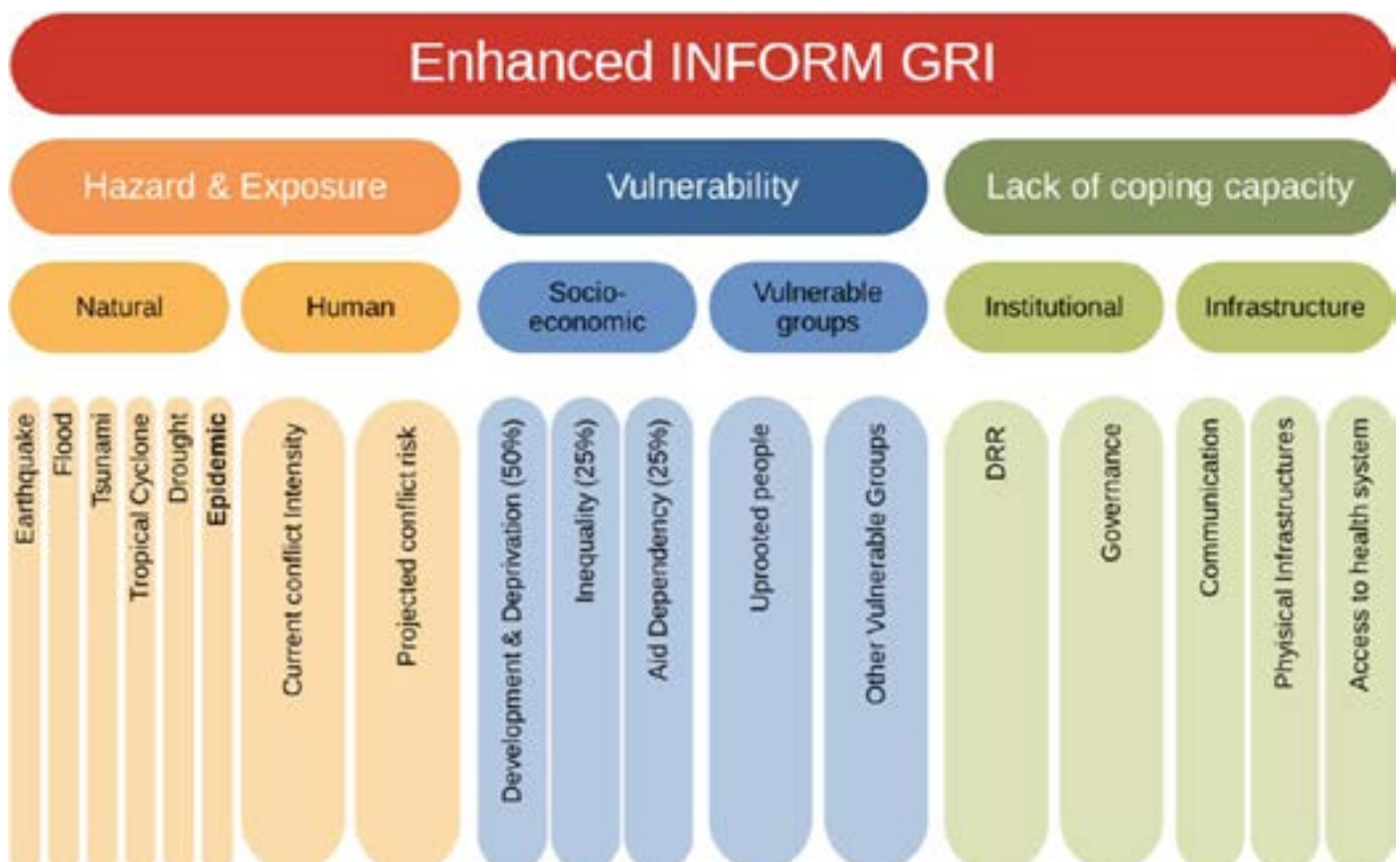
INFORM is thus even more closely aligned with the Sendai Framework for Disaster Risk Reduction 2015–2030, which contains a substantial emphasis on health, and which refers to the implementation of an all-hazards approach to managing disaster risk, including links to epidemics and pandemics.

Starting from the conceptual framework of the Epidemic Risk Index (ERI), developed jointly with the World Health Organisation (WHO), the JRC has implemented a quantitative

model of ERI. Integration of the epidemic aspect into the INFORM concept led to the development of a new version of the INFORM GRI which - as widely requested by INFORM partners - enables a more hazard-dependent overview of the Global Risk Index. Hence, two distinct developments were done:

- ➔ The INFORM Epidemic GRI is an adaptation of the INFORM GRI that, while preserving the integrity of the original model, adds the hazard- (i.e. epidemics-) specific components derived by the ERI conceptual framework.
- ➔ The content of the overall INFORM GRI 2019 has been enhanced, by adding the epidemic hazard component together to the other hazards.

The INFORM Epidemic GRI enables for the first time, in a single framework, the risk assessment for all types of epidemics, and also provides the contextual information on exposure, vulnerability and coping capacity required for rapid risk assessment for public health. Furthermore, with epidemics exposure included in its next release, the INFORM GRI is the first comprehensive multi-dimensional disaster risk assessment tool that is globally applicable to all types of risks.



Enhanced content of the INFORM GRI 2019, by inclusion of an epidemic hazard component together with the other hazards.

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In related work, and supported by the Commission's department for European Civil Protection and Humanitarian Aid Operations (DG ECHO), the JRC has reviewed new indicators from the Sustainable Development Goals (SDGs) and the Sendai Framework Monitor (SFM), to assess if and how these can be used in future releases of the INFORM GRI, especially for indicators related to a lack of coping capacity, and / or vulnerability (see report at web-link below).

The SDGs and SFM provide a unique set of reliable, consistent, and comparable indicators for understanding disaster risk drivers and underlying risk factors. The two monitoring frameworks collect a massive amount of data on disaster risk dimensions, vulnerability and coping capacity, introducing important indicators for weakly represented areas. This creates a unique opportunity to enhance the quality and coverage of the indicators used in the INFORM GRI.

The INFORM GRI can also provide many contributions to the post-2015 global frameworks. Among others, the adaptation of the INFORM GRI at a national scale (i.e. the INFORM Subnational Risk Index) contributes to Global Targets E ("national and local disaster risk reduction strategies") and G ("increased availability of and access to disaster risk in-

formation") of the Sendai Framework. The INFORM GRI can also be used as a tool to assess and monitor the progress towards risk reduction of the Sendai Framework and SDGs.

Karmen Poljanšek

European Commission, Joint Research Centre (JRC)

Luca Vernaccini

Fincons Group, Italy,

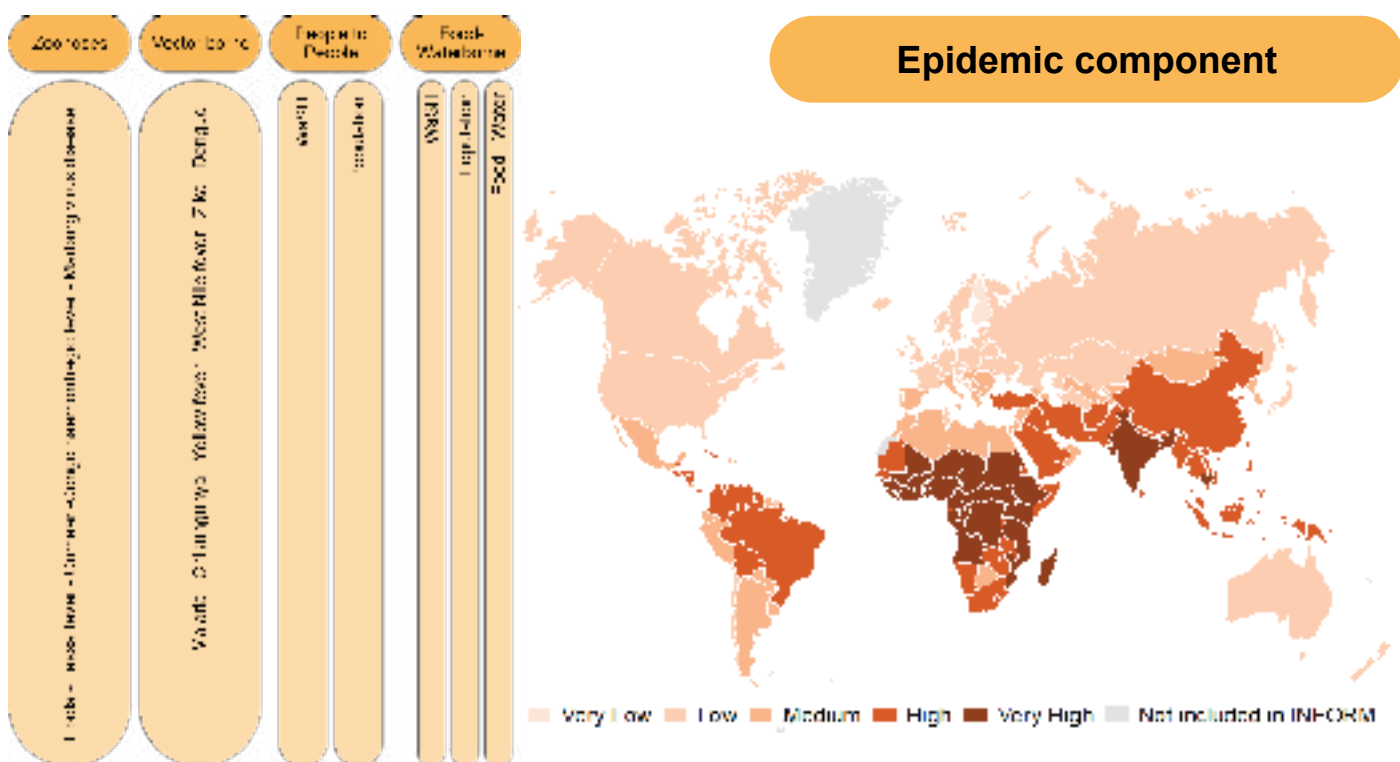
External Consultant for European Commission, JRC

For more information:

www.inform-index.org

Poljansek, K., Marin Ferrer, M., Vernaccini, L. and Messina, L. 2018. Incorporating epidemics risk in the INFORM Global Risk Index, EUR 29603 EN. [www.doi.org/10.2760/990429](https://doi.org/10.2760/990429)

Poljansek, K., Marin Ferrer, M., Vernaccini, L., Marzi, S. and Messina, L. 2019. Review of the Sendai Framework Monitor and Sustainable Development Goals indicators for their inclusion into INFORM Global Risk Index, EUR 29753 EN. [www.doi.org/10.2760/54937](https://doi.org/10.2760/54937)



Epidemic Risk Index (ERI) conceptual framework, and example of the INFORM Epidemic GRI 2019 risk map.

Upcoming events and calls for submissions

7th International Conference on Sustainable Development - ICSD 2019

04-05 September, Rome (Italy)

The Conference is organized by the European Center of Sustainable Development in collaboration with CIT University.

The 7th ICSD 2019 is inspired from the critical challenge of human, environmental, and economic sustainability concerning the present and future generations in a global-scale context. This theme emphasizes the strong foundation that is provided by using research to inform our everyday practices, policies, and analytical approaches.

The 2019 Conference will once again provide a forum for the sharing of ideas, presentation of research findings, and discussion of professional issues relevant to Sustainability Science. Disaster risk would be discussed as part of the environmental Sustainability sessions.

United Nations International Conference on Space-based Technologies for Disaster Risk Reduction – “A Policy Perspective”

11-12 September, Grand Gongda Hotel, Beijing (China)

Organised by the United Nations Office for Outer Space Affairs, the conference will also celebrate 10 years of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) in Beijing, China – the UN-SPIDER Beijing Office.

The occasion will be used for acknowledging the achievements of the countries and efforts of its partners in utilizing space-based and geospatial information in disaster management and emergency response.

6th International Conference on Disaster Management and Human Health Risk: Reducing Risk, Improving Outcomes

25-27 September, Ancona (Italy)

The International Conference on Disaster Management is being reconvened following the success of the previous biennial meetings, held since 2009. This series of conferences originated with the need for academia and prac-

tioners to exchange knowledge and experience on the way to handle the increasing risk of natural and human-made disasters.

The corresponding volume of WIT Transactions containing the papers presented at the meetings is made available at www.witpress.com/elibrary.

4th IFIP Conference on Information Technology in Disaster Risk Reduction - ITDRR-2019

09-10 October, Kyiv (Ukraine)

ITDRR-2019 provides an international forum for researchers and practitioners to present their latest R&D findings and innovations. The conference is especially focused on the various IT aspects and challenges of coping with disaster risk reduction.

ITDRR-2019 invites experts, researchers, academicians and all other who are interested to disseminate their work. The conference establishes an academic environment that fosters the dialogue and exchange of ideas between different levels of academic, research, business and public communities.

AGU Chapman Conference on “Large-scale Volcanism in the Arctic: The Role of the Mantle and Tectonics”

13-18 October, Selfoss (Iceland)

The Conference on “Large-scale Volcanism in the Arctic: The Role of the Mantle and Tectonics” will focus on the diversity of Arctic magmatism and tectonics from the Paleozoic to present-day. The conveners are Owen Anfinson, Bernard Coakley, Carmen Gaina, and Grace Shephard.

The program will focus on five themes including: pre-breakup and rifting; sea-floor spreading; mantle-derived heterogeneity (including plumes and large igneous provinces); subduction related volcanism, and HALIP and environmental effects.

10th Conference of the International Society for Integrated Disaster Risk Management (IDRiM)

16 October, Nice (France)

The IDRiM was officially launched on October 15, 2009 in Kyoto, Japan, at the 9th IASA-DPRI Forum on Integrat-

ed Disaster Risk Management (IDRiM Forum). The 2019 annual IDRiM conference will focus on the issues of “Knowledge-Based Disaster Risk Management – SMART Territories for Sustainable and Resilient Cities and Organizations”. The IDRiM2019 conference brings together researchers and scientists, regulators, risk, safety and security practitioners, media and NGOs to share expertise and practices on these two challenges: How to improve the common understanding of major extreme risks, man-made and natural disasters; How to foster individual, organizational and territorial abilities to manage and govern known and emerging risks and resiliencies.

4th Disaster Risk Reduction Conference in Warsaw

23-25 October, Warsaw (Poland)

**Call for abstracts:
Open until 31 August 2019**

The 4th DRR aims to bring together leading academic scientists, researchers and young researchers to share their experiences, research results and questions about all aspects of Disaster Risk Reduction. It also provides the premier interdisciplinary forum for researchers and practitioners to present the most recent trends, practical challenges and the solutions for disaster risk reduction connected with natural hazard. In the fourth edition, we would like to focus on local problems and solutions highlighted in the Sendai Framework.

Session topics will cover theoretical and practical issues of disaster risk reduction. There is a place for geographical physical and social issues as well as the risk reduction management in the context of natural hazards. Interdisciplinary approach is expected. We are looking forward to the discussion with your participation!

UN-SPIDER Bonn International Conference “Space-based Solutions for Disaster Management in Africa: Challenges, Applications, Partnerships”

06-08 November, UN Campus, Bonn (Germany)

The United Nations Office for Outer Space Affairs (UNOOSA), through its

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

UN-SPIDER Bonn office, and the University of Bonn's Centre for Remote Sensing of Land Surfaces (ZFL) are organizing the UN-SPIDER Bonn International Conference.

The event aims to share opportunities for strengthening local disaster management capacities in Africa using space-based information. This will be done in an interactive way, making use of technical solutions ranging from desktop packages to cloud computing tools. Additional discussions include exploring partnerships to facilitate access to space data, and evaluating the opportunities and challenges associated with using new approaches, such as big data, machine learning, and artificial intelligence, to assist the disaster management process in Africa.

The deadline for applicants seeking funding is 30 August 2019. The deadline for self-funded applicants is 18 October 2019.

9th International Conference on Building Resilience - ICBR 09

13-15 January 2020, Bali (Indonesia)

Call for abstracts:
Open until 30 April 2019

This annual conference explores resilience as a useful framework of analysis for how society and cities can cope with the threat of natural and human induced hazards. This year's theme is "Investing in Disaster Risk Reduction and Climate Change Adaptation for Building Resilient Cities". The event will bring together the full diversity of the science community, policy makers, practitioners and researchers from all geographical regions, at local, national, regional and international levels to share state of the art research, and discuss how the science community will best support convergence that integrates global goals emanating from the 2030 development agendas.

First International High Level Conference and Exhibition (IHLC2020)

13-15 January 2020, Bali (Indonesia)

Call for abstracts:
Open until 25 October 2019

"The Space Options for Africa: Knowledge Sharing, Partnerships, Exploitation, Space Solutions, Technologies

Development, Disaster Risk Reduction, and Integration". The conference will bring together over 1000 space pioneers and actors with endless opportunities for both space faring and non space counties. The knowledge sharing frontiers deals with capacity building, discovering, exploration, research and understanding natural phenomena in space and observe from space and into cosmos involving interstellar and interplanetary.

IV ISA Forum of Sociology

14-18 July 2020, Porto Alegre (Brazil)

Call for abstracts:
25 April - 30 September 2019

The 2020 International Sociology Association (ISA) Forum will provide sociological analyses of these four global challenges paying particular attention to their interconnections and to possible solutions. We will discuss how both progressive and conservative actors and movements tackle four challenges (Democracy, Environment, Inequalities, Intersectionality) and their conflictive perspectives. The forum will serve to ask how sociology has been meeting these four global challenges and it has been transformed by them.

4th European Conference on Flood Risk Management: Science and practice for an uncertain future

31 August - 4 September 2020, Budapest (Hungary)

Call for abstracts:
Open until 16 September 2019

This challenge of scientific innovation and practical adaptation is too big for the current generation of scientists and practitioners. FLOODrisk2020 is therefore committed to attract, coach and listen to the next generation of scientists and practitioners who will future-proof our research methods and help to improve our flood risk management practice in order to better cope with deep uncertainty.

5th World Landslide Forum

2-6 November 2020, Kyoto (Japan)

Call for papers:
Open until 31 March 2020

The Fifth World Landslide Forum will

be organized in Japan to achieve a mid-term review, and assess the progress made in the implementation of the Sendai Partnerships and to mobilize further commitment and actions to advance the implementation over the following five years.

General Assembly 2020 of the European Geosciences Union (EGU)

03-08 May, Vienna (Austria)

Calls for session proposals:
Open until 15 August (symposia and main debates) and **5 September 2019** (other programme groups)

Call for abstracts:
5 October 2019 - 15 January 2020

The EGU General Assembly 2020 will bring together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary and space sciences.

The EGU aims to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience.

14th INTERPRAEVENT Congress

11-14 May, Bergen (Norway)

Call for abstracts:
Open until 31 August 2019

The 14th INTERPRAEVENT Congress will be hosted in Bergen, Norway, in May 2020. We hope to span a wide spectrum of stakeholders within all fields of natural hazard risk reduction, and welcome a variety of contributions from research to practical applications, policy making, insurance and economic aspects. Focus will be on integrated management of natural hazards and risks, equally considering causes of disasters as well as measures of prevention, preparedness, response and recovery in the view of climate and social changes. The topics are varied: Risk Governance and Policies; Data Acquisition and Modelling; Hazard and Risk Assessment; and Hazard and Risk Mitigation.

4th DRMKC Annual Seminar Ice-Breaker Session

Decision Making Improvement for Disaster Risk Management through technological support Bucharest, Romania 16 October 2019

This half-day event will be an ice-breaker session for the 4th DRMKC Annual Seminar (see next page). It aims at understanding **how technological innovation could support the adoption of emerging methodologies for disaster risk management (DRM) at the national level.**

The session will focus on assessing the **usability** and **applicability** of three systems developed by the **European Commission's Joint Research Centre**: the **DRMKC Risk Data Hub**, **GR²ASP** (Geospatial Risk and Resilience Assessment Platform), and **RAPID-N** (Rapid Natech Risk Analysis and Mapping System).

The session brings together **technical and scientific experts developing the applications** and **end users** (national authorities and institutions) of the same tools. The presented case studies will provide valuable feedback about the interaction with the three systems.

The goal is **to increase further the collaboration** with national, regional, and local authorities and other institutions, aligning development of the tools to the needs and concerns at each level.

Tentative agenda

Welcome address from the Romanian Department for Emergency Situations

Panel 1: Presentation of the tools

Introducing the DRMKC Risk Data Hub
Tiberiu-Eugen Antofie (JRC)

Introducing GR²ASP
Luca Galbusera (JRC)

Introducing RAPID-N
Serkan Girgin (JRC)

Panel 2: Case studies of technological implementation at national/local level

Risk Data Hub implementation in Romania

Genoa municipality implementation of Risk Data hub
Stefania Manca (Genoa municipality)

Using Risk Data Hub: the Austrian experience
Christian Schubert

Using Risk Data Hub: the Polish experience
Jakub Ryzenko

GR²ASP: Milano case study

GR²ASP: Genoa case study

GR²ASP: Romanian case study

RAPID-N: Seismic Natech risk analysis case study in Romania

Wrap Up and Discussion of further actions

Closing Remarks

For more information:

<https://europa.eu/!Xv43Gc>

<https://drmkc.jrc.ec.europa.eu/risk-data-hub>

<https://ec.europa.eu/jrc/en/grasp>

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



DISASTER RISK MANAGEMENT KNOWLEDGE CENTRE

4th Annual Scientific Seminar

Acting today, protecting tomorrow

Bucharest, Romania 17-18 October 2019

Co-organised with the **Romanian Department for Emergency Situations (DSU)**, the **4th DRMKC Annual Seminar** is aimed at discussing **how to develop integrated disaster risk management (DRM), capitalising on existing research results and synergies across policies.**

The sub-title of this year's event - **"Acting Today, Protecting Tomorrow"** - emphasises the need to take action sooner rather than later, in order to prevent and mitigate the impacts of future events.

More effective and efficient actions in disaster risk management will result from a sound link across policies that relies on science-based evidence.

During the 4th DRMKC Annual Seminar, the emphasis will be on discussing how different policy sectors may contribute to integrated DRM, by providing new perspectives and solutions in order to prevent and / or prepare for disaster risk.

Tentative agenda

Day 1 Thursday 17th October

Welcoming and Opening Ceremony

Plenary Session A: **Science and Policy for Disaster Risk Management - latest developments.**

Parallel Session B: **Challenges for the future: integrating old (known), new (to be discovered) and diverse (think different) risks.**

B1: *Hybrid Threats: A change of the security paradigm in Europe!*

B2: *Climate Change Adaptation: from "should" to "must".*

Day 2 Friday 18th October

Parallel Session C: **Better exploitation of already existing sources of information - the Give and Take approach.**

C1: *Learning from global efforts: lessons learned from the other side of borders.*

C2: *Learning from diversities: towards multi-hazard early warning systems.*

Plenary Session D: **The rescEU legislation for civil protection and applied science for DRM.**

Plenary Session E: **Closing ceremony** (with Romanian authorities, possibly in collaboration with the Finnish Presidency and the European Commission)

For more information:

<https://europa.eu/!yP38Mr>



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

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