The ESPREssO Project

www.espressoproject.eu

Newsletter June 2017

ESPREssO
Enhancing Synergies for disaster PRevention in the EurOpean Union

Table of Content

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Dear Colleagues,

the last couple of months have been fruitful and busy for the consortium of ESPREssO. Our first Stakeholder Forum took place in May and has revealed interesting opportunities regarding future collaboration with stakeholder. We have attended conferences, workshops, discussions and several meetings at EU level in order to promote our activities and to spread our work and word. All these networking activities brought up positive feedback regarding our work and particular with regard to the three main challenges of ESPREssO: Climate Change Adaptation and Disaster Risk Reduction, Policy-Science Interface and Transboundary Crisis Management. In this newsletter, we will give you an overview over the three challenges and the relation to other current activities on European level. Furthermore we will provide you with information regarding our first Stakeholder Forum, which took place on the 4th of May in Bonn, Germany and with further upcoming steps and work to do. We will introduce the action database (ADB) to you and ask you to be part of this exiting opportunity to share your experiences on actions regarding disaster risk reduction and recovery activities for a better approach on disaster reduction and climate change adapation across Europe.

Meetings and conferences attended:

- Meeting at DG-ECHO and DG-HOME – Bruxelles, 02/03/2017
- 2nd Scientific Seminar of the Disaster Risk Management Knowledge Centre – Rome, 09-10/03/2017
- 6th Plenary of the Community of Users on Secure, Safe and Resilient Societies – Bruxelles, 15/03/2017
- DRMKC workshop with FP7 and H2020 projects on critical infrastructure protection – Bruxelles, 16-17/03/2017
- UNISDR - European Forum for Disaster Risk Reduction (EFDRR) – Istanbul, 26-28/03/2017
- Personal meeting with Robert Glasser – Istanbul, 27/03/2017

Challenge 1: Bridging CCA and DRR

The links between Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) have become more important due to the increased awareness of the relation between the ongoing climate change and the increased occurrence of extreme weather events with more severe impacts affecting environment and society. The synergies between CCA and DRR are reflected within the main strategies and agreements at EU level e.g. the Paris Agreement, EU Adaptation Strategy, EU Cohesion policy and Macro-regional strategies (Danube, Baltic, Alpine). Such synergies reflect a common goal: reducing the impacts of extreme events and increasing resilience to disasters, particularly among vulnerable populations. Clear benefits of linking and integrating the knowledge base, as well as policies and practices, emerge in this perspective. DRR and CCA are cross-cutting fields across EU DGs, this implies the need to identify synergies and integration opportunities for example integrating resilience-based land use and emergency planning in urban development and social aspects.

International cooperation and links with global processes and their implementation, this implies the need to build coherence around risk-informed approaches promoted by the different documents and actions reflecting the position of the international community, amongst others the:

- Sendai framework for DRR
- Paris Agreement on Climate
- 2030 Agenda for Sustainable DevelopmentNY
- New Urban Agenda, Quito

UNISDR highlights the need to strengthen DRR and CCA integration through an inclusive, multi-stakeholder participation in risk assessment and DRR and CCA planning and implementation in order to identify cost-effective and sustainable solutions and foster effective partnerships between public authorities, private sector and civil society. Such an approach will allow to mitigate the currently observed "implementation gaps", due to the mismatch between a sufficient knowledge base and the insufficient take up by authorities. In this perspective, multi-hazard, multi-scale, multi-functional DRR and CCA measures should be implemented, by enabling bottom-up, inclusive approaches to DRR and CCA planning and implementation.

On top of such participatory strategies, a greater political commitment to catalyse investment and action on DRR and CCA plans is needed, also to improve legislation and regulations to underpin investments and ensure compliance.

Challenge 2: Bridging Science and Legal/Policy issues in DRR

Legislation and policy approaches in the EU reflect an evolving process at EU level in the field DRR. The Decision 1313/2013/EU (establishment of Union Civil Protection Mechanism) tackles the entire emergency cycle (Prevention - Preparedness - Response) and implies the update of supporting tools and operational procedures. This implies the need to interact with laws that are constantly evolving in order to meet the policy needs in terms of knowledge, partnerships and innovation.

In 2016, five priority areas for providing support have been identified, related to upcoming deliverables of UCPM's participating countries or areas where they have mature practice. In 2017-2018 the priority areas could be increased on the basis of specific needs of the national authorities.

Priority areas in the field of DRR (source: JRC/DRMKC)

A collective effort is needed to take advantage of advanced science-based hazard and impact assessment methods in policies and legislation implementation. Three key domains of research and implementation should drive the major advancements in terms of science-based regulation and policy which are listed following:

1. Build back better - Urban planning and Building design

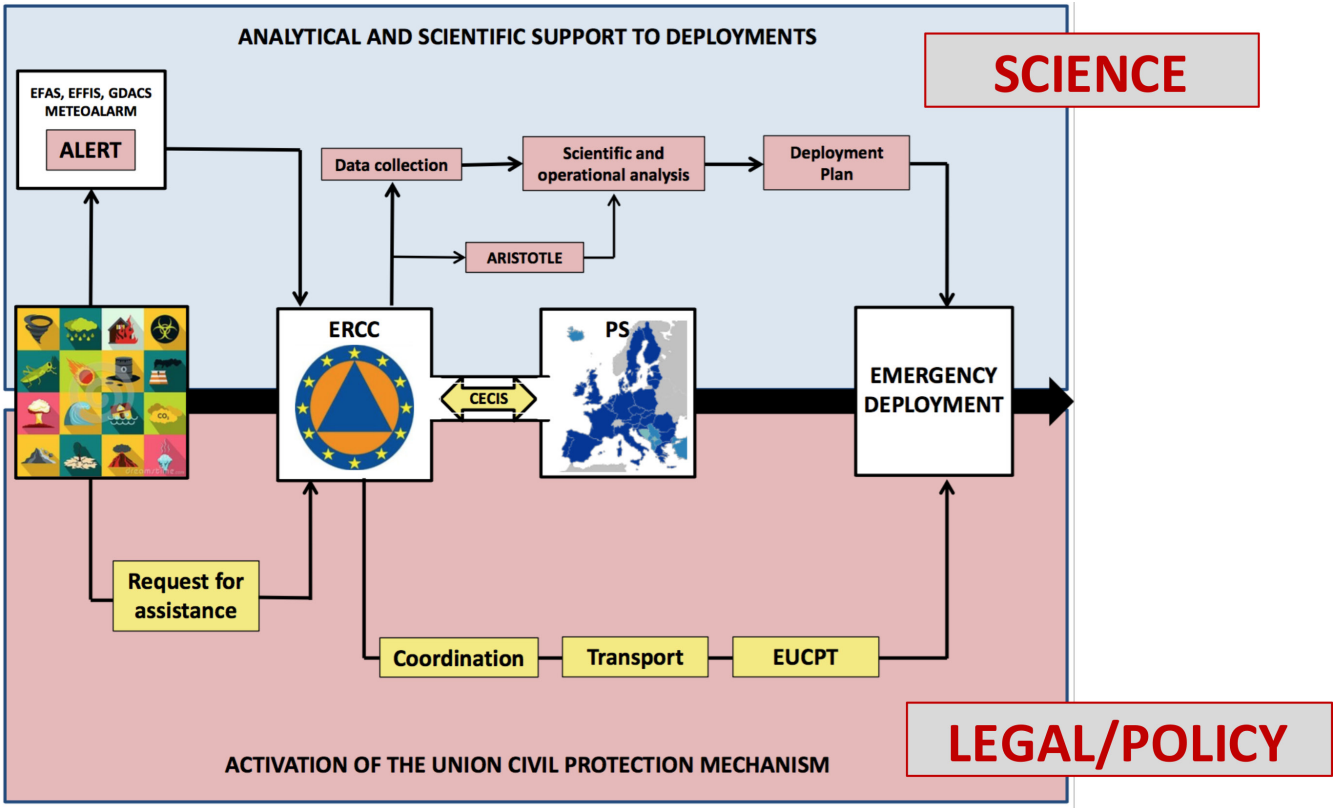
- Integrated planning and combined analysis of expected damages, energy savings and environmental impact across the whole lifecycle (Combining safety and energy efficiency through integrated DRR-energy-environmental analyses)
- Combining structural and environmental aspects and define synthetic economic indicators (Sustainable Structural Design Methodology)

2. Specific assessment and modelling needs

- Compare the threats posed by different hazard events (e.g. Multi Hazard and Risk assessment; ranking; priorities; conjoint probability); use a quantitative measure of hazard and define indicators
- Evaluate the multiple effects of one single hazard event

3. Natech and cascading effects

- Emerging domain to identify innovative modelling/assessment and regulatory/policy approaches
- 5 FP7 projects focusing on cascading effects (Snowball, Fortress, Casceff, Predict, Ciprnet shared their results in a joint conference with the participation of relevant EU DGs and DRMKC representatives)
- First report on Natech risk assessment and management recently published by JRC jointly with Kyoto University and Bologna University
- Natech accident database (eNatech) developed by JRC (http://enatech.jrc.ec.europa.eu/Natechs)
- Framework for Natech risk assessment and mapping (RAPID-N) developed by JRC (http://rapidn.jrc.ec.europa.eu/)



Flagship EU projects focusing on the development of shared tools and services (source: JRC/DRMKC)

The three domains above show a common field of research and implementation to be targeted. The common research field is based on four identified priorities:

1. Service oriented thinking
2. assessing service loss propagation in economic sectors
3. exploiting data from public economic databases; identifying criticalities in networks
4. improving their buffering and recovery capacity.

The benefits from applying these four principle include the identification of low-hazard areas for development planning, prioritizing the mitigation and adaptation action to maximize the output and making substantial economy in sharing data for diverse natural hazard assessments (e.g. topographical, geological, hydrogeological, geotechnical, climatological, meteorological).
As the issue of integrating science and legal principles arises mainly from gaps within the respective perspectives, these need to be overcome in order to tackle this challenge successfully. The main scientific gaps include the standardization of risk and impact modelling methodologies. Also the integration of methods and tools can be achieved through a risk model for Europe incorporating models and data. Operational and organisation modelling need to be addressed as critical infrastructure still remain black boxes. Main scientific gaps lie within the time-dependent multi hazard vulnerability of systems and their elements (physical, functional and socio-economic) e.g. cumulative damage, human action, maintenance and retrofitting effects, cascading, uncertainty evaluation, nonlinear numerical simulation, etc. Also methodologies regarding multi-sectoral resilience quantification should be developed. From the legal and policy perspective, legislation and regulation needs to be enabled in place. The engagement and accountability of the private sector could be enhanced and strengthened through collaborative agreements, voluntary standards and public-private-partnerships. Data acquisition and especially sharing those data should be promoted to maximize the benefits for all stakeholder and to avoid double efforts. In particular, about data acquisition and sharing, the EC emphasize the added value of a loss data-sharing standards, highlighting how an effective and sustainable loss data collection (and sharing) needs engagement of all actors and funding. The principle is "collect once, use many times", so to support with the loss data several policy areas at national level, EU level (Flood Directive, Solidarity Fund) and international level (Sendai, SDG, CC; OECD framework for expenditures).
Above all, a priority is given to the coherence with other statistical and scientific practices (INSPIRE, EUROSTAT nomenclature; handling uncertainty), building on the existing good practice at EU level. In this sense, opportunities for EU Member States can be identified:

- EU Guidance on recording and sharing loss data (update in preparation)
- INSPIRE (ISA2 ELISE action: European Location Interoperability Solutions for e-Government)
- DRMKC Support Service (shared models and data in a distributed service)
- Satellites and aerial imagery (collection and sharing of damage data via Copernicus EMS)

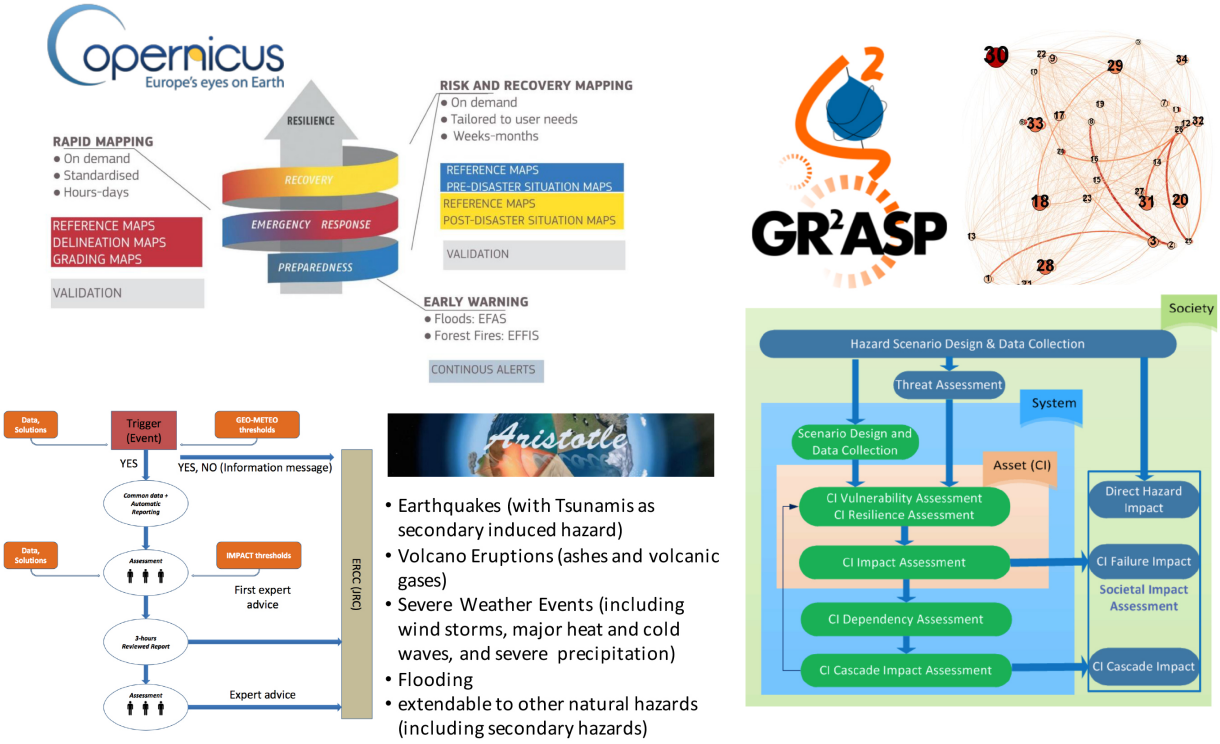
Common impact and resilience indicators should be adopted and used (Sendai Framework and metrics for Disaster Losses in EU) to increase a coherent approach in disaster risk reduction. To increase and strengthen cost-effective multi H&R resilience, common methods and policies should be utilized. In terms of resilience, the society needs to be looked at as a whole through risk communication to its citizens.

Challenge 3: Fostering National regulations to prepare for trans-boundary crises

There are several key issues related to transboundary crisis management which need to be tackled at different levels. Interregional disasters can occur in a single state (e.g. Centre Italy Earthquake 2016) and can also involve multiple states (e.g. international river basins flood). And disaster can occur and impact states on a transboundary level (e.g. volcanic eruptions and ashes). At the moment, large ongoing EU projects (s. fig.), aimed at developing shared tools and services among member states, can strengthen the data and knowledge transfer and the coordination capability especially in transboundary crises. A new legislation for the humanitarian aid in Europe is currently under discussion. The legislation is developed to answer issues relating to migration emergencies. The significant implication specifically relates to National Civil Protections coordination, humanitarian aid and NGOs cooperation, resilience and adaptation programs in neighbouring countries and the coordination of large investments across EU countries (e.g. ESF, Green Climate Fund, etc.). The aim is to tackle the aggravating impact factors of natural disasters due to specific context conditions. The context conditions are given for example because of war, pandemics and social inequities and injustice. This entails the improvement of international (extra-EU) cooperation, which is also addressed by H2020 projects aimed at improving the DRM capacity of EU (UPCM and member states), such as the project "Reaching Out - Demonstration of EU effective large scale threat and crisis management outside the EU (19M€)".

Flagship EU projects:

- Copernicus - Emergency Management & Climate Change Service à satellite data
- Aristotle - All Risk Integrated System TOwards Trans-boundary hoListic Early-warning à rapid impact assessment
- GR2ASP - Geospatial Risk and Resilience Assessment Platform à critical infrastructures



Flagship EU projects focusing on the development of shared tools and services (source: JRC/ DRMKC)

DRR and CCA between consolidated and emerging challenges: UNISDR-EFDRR 2017

The position of the UNISDR EU platform, expressed at the EFDRR 2017 in Istanbul, reflects the consolidated and emerging challenges related to Disaster Risk Reduction and Climate Change Adaptation, which connect the European science and policy innovation within a shared international perspective.

Following key recommendation have been recognized by UNISDR as most relevant to the three ESPREssO challenges:

- Include a participatory and human rights-based approach in national and local strategies for DRR. Groups such as refugees, migrants, asylum seekers and other vulnerable groups should be recognized as vital participants of disaster risk reduction work.
- Understand that societal and cultural diversity is a value and a resource for strengthening resilience to disasters and ensuring democratic governance.
- Recognize resilient local communities as the foundation of a resilient society and the importance of promoting inclusive coordinated and subsidiary multi-level governance across vertical and horizontal boundaries.
- Empower and build the capacities of local authorities, civil society actors and at-risk households through partnerships and access to resources and tools, delegated authorities and supportive enabling environments.
- Commit to ensure that national and local DRR strategies trigger the determination of specific roles, responsibilities and accountability to ensure that strategies are aligned with incentives, training and exercises to reduce disaster risk.
- Agree to promote solid risk management and disaster risk reduction through financial regulation, fiscal policies, public procurement, investments in disaster resilience including critical infrastructure and basic services and climate risk disclosure.
- Include the protection and enhancement of cultural heritage in disaster risk management policies and actions.
- Call for applied coherence and mutually reinforcing measures in their programmatic implementation between the Sendai Framework and other relevant international agreements, including the 2030 Agenda for Sustainable Development, the Paris Agreement on climate change and the New Urban Agenda.

Source: UNISDR

ESPREssO Stakeholder Forum

The first ESPREssO Stakeholder Forum (SF) took place in Bonn (Germany), Thursday 4th May 2017.
A total of 37 discussants participated to the activities of the SF, including Consortium partners, members of the ESPREssO Advisory Board and stakeholders from diverse European institutions in the field of research, public administration and the private sector. The objective of SF is to promote interaction, discussion, and a constructive feedback with stakeholders working on disaster risk management and climate adaptation, through dedicated workshops focusing on the three ESPREssO challenges.

An important input to the activities of the SF was provided by the several networking activities carried out by ESPREssO in the last months, presented by the Coordinator prof. Giulio Zuccaro at the plenary, which allowed to disseminate ESPREssO ongoing results and get feedback from relevant EC DGs within dedicated meetings, and promote a shared vision on key research and policy issues at CoUs on Secure, Safe and Resilient Societies, DRMKC workshops and EFDRR promoted by UNISDR.

The main outcomes of the parallel workshops have been discussed in a plenary session, gathering important inputs for the organisation and implementation of the three ESPREssO Think Tanks (TTs), planned between October 2017 and April 2018, each one focusing on one of the ESPREssO challenges, namely:

1. to propose ways to create more coherent national and European approaches on Disaster Risk Reduction, Climate Change Adaptation and resilience strengthening;
2. to enhance risk management capabilities by bridging the gap between science and legal/policy issues at local and national levels in six European countries;
3. to address the issue of efficient management of trans-boundary crises.

The first Stakeholder Forum has been an opportunity to further strengthen the synergies between ESPREssO and PLACARD projects, thanks to the active participation of PLACARD members to the activities of the forum, which included a presentation of the ongoing results of PLACARD at the introductive plenary.

Group picture of the participants of the Stakeholder Forum

Interviews, presentations and pictures of the Stakeholder Forum are online now!

During the Stakeholder Forum, stakeholder were interviewed and asked for their opinions. Watch the videos online on our website.

Website http://www.espressoproject.eu/events/stakeholder-forum.html
Twitter @ESPREssO_H2020
Facebook https://www.facebook.com/ESPREssOH2020/

Interviewees:

Daniela di Bucci
Seismic and Volcanic Risk Office, National Department of Civil Protection, Italy

Mário Pulquério
Coordinator of the HORIZON 2020 project PLACARD, Foundation of the Faculty of Science of the University of Lisboa, Portugal

Kristian Cedervall Lauta
Chairman, Copenhagen Center for Disaster Research, Denmark

Jakob Rhyner
Director of the United Nations University Institute of Environmental Risks and Human Security, Germany

Sukaina Bharwani
Senior Research Fellow, Member of PLACARD
Stockholm Environment Institute, UK

During the Stakeholder Forum, three different workshops were conducted each relating to one of the three challenges of the ESPREssO project. The goal was to identify and discuss important questions to be adressed and to promote fruitful discussions among the participants. The following chapter presents the summaries of the workshops.

1. Challenge workshop: Climate Change Adaptation and Disaster Risk Reduction
Challenge Leader: Dilanthi Amaratunga and Richard Haigh (HUD)

Challenge 1 deals withe the boundary between CCA and DRR. The gap is created through the almost independent development of both fields and to overcome the boundary, an integration and harmonization of both approaches is needed.

1. What are the barriers to effective DRR and CCA integration?

Structures and barriers vary greatly across Europe, but national and local perspectives are often not well aligned. Timescales are also very different. For example, in Greater Manchester in the UK, a 5 year risk register approach is used for DRR, whereas CCA is considered over a much longer time period. In France, the Ministry of Environment in France covers both DRR and CCA, which is atypical, but despite this they are handled by separate departments and their activities are diverging. DRR is seen as an operational function that has operated over many years, dating back to the 1970s. In contrast, CCA has a more scientific basis but has emerged only recently. Integration is further hindered by legislation and building codes that often takes a single perspective, for example earthquake resistance or energy usage.

A holistic approach may promote convergence. Joint projects between Ministries and/or departments would encouage common practice.

2. How can these barriers be overcome?

A catalyst is needed to overcome these barriers. The Civil Contingencies Act was a major catalyst in the UK after a series of flooding events – legislation made it mandatory. DKKV in Germany provided a 25 plan that promoted shared values. It became the National Platform for DRR. However, no such platform exists for CCA. The CCA community should be engaged in DRR plans from the beginning and having joint projects to work on is critical.

3. How can we increase the political will to tackle DRR and CCA?

Who are we trying to influence? It may be necessary to target politicians indirectly. The scientific community could focus on building awareness and understanding on the public, who will in turn influence policy makers. Alternatively, major global initiatives bring many leaders together. For example, the UN Global Platform in May 2017 is bringing a lot of Heads of State together but it is a long term process. There is also concern that the global agreements do not

translate to the local level. If politicians are to be convinced, they will need evidence to show a return on investment within a shorter timeframe, perhaps 5 years or within an electoral cycle. Developers and politicians will always be reluctant if the returns aren't demonstrable in the short-medium term. Resilience should be sold as an asset that can be exploited. For example, in the UK, the BBC was attracted to Salford Quays because of resilience factors.

4. Is there a difference between perceived and actual climate change issues and disaster risk adaption measures?

It is important to find positive messages that can be promoted through the media etc. rather focusing on the the negative after a disaster. For example, in Denmark, local municipalities promote 'how to make a city liveable' instead of 'how to reduce the disaster risk of a city'. 'Livability of cities' as part of quality of life could be used as a way of promoting the benefits or framing the issue. It is likely to be more attractive than focusing on costs or lives lost. It will also be important to capitalise on the post-2015 agendas, but convergence will be important to avoid fatigue or confusion.

5. What are the possible transitions pathways and hallmarks of a new and effective strategy?

Defining aspirations of the many stakeholders in the territory is an important step. It will be important to show the relative importance of disaster risk and climate change, compared with other concerns such as crime and migration. The timing will be important as the perception of people will change over time, for example immediately after a disaster or during an election period.

The forum concluded by considering suitable scenarios for disaster risk reduction and climate change that might be considered by the think tanks. Cascading scenarios were suggested, such as intense weather leading to electricity cut-off as valuable suggestion for the training exercise in the upcoming Tink Tank in October 2017.

2. Challenge workshop: Science-Policy Interface
Challenge Leader: Kristian Cedervall-Lauta (UCPH)

Challenge 2 deals with the existing boundaries between the production of knowledge and the institutional responses and implementation which are required for disaster management.

Media plays a central role in the science policy nexus. This regards both the potential dysfunctions of information overload and the opposite, namely lack of relevant information available to the public. In particular, in the mitigation and response phase, the so-called contradiction-principle or conflict principle applied by media was problematic.

In this context, it remains an important challenge to manage misinformation, and secure a lean, valid and direct information. Media accountability and ethics could play an important role in future governance of this.

Seen from the perspective of the scientist, there needs to be an increasing awareness of who the recipient of information is. There is also a need for scientists to make clear what they do not know, and what the limits of this knowledge are. In particular, the communication of uncertainty and residual risk was conceived as troublesome. So, convening to the public that the findings are based on models and not accurate predictions of the future. It seems overall, relevant to develop a scientific preparedness in addition to a general response preparedness. Such "preparedness" should include both communicative and legal knowledge in the scientific body.

The fear of liability seems in this regard to create a potential backlash into the willingness to communicate about risks in general, and seems to lead to increasing, and perhaps dysfunctional, precaution. It was pointed out that medias principle of contradiction also drives some scientists to take up controversial positions in order to get air-time or funding – this is a central issue for creating good, solid and trustworthy scientific communication to the political branch as well as to the public. Furthermore, classic scientific virtues as critical thinking and questioning existing conventions might be problematically abused to create unnecessary public unease in disaster situations – and should be addressed and discussed.

From the perspective of the general public, it was pointed out that trust is crucial for the success of the policy and science nexus. This entails both trust in the political branch ability to control the disaster event, and in the information made available by the scientific branch. The interplay between the scientific and political stakeholders in the run up to a disaster seems key to maintain this trust. Not least a steady and highly transparent flow of information could be crucial in this regard and more information on public information needs. On the balance, the issue of trust and mutual understanding is obviously a two-way process, and it was emphasised that increasing public understanding of risk and probability, enabled through general education, is crucial.

Clear roles between, and expectations to, scientists and politicians seems essential not only to avoid liability issues, but to ensure a coherent effort. In cases of scientists offering their assistance in DRR and response efforts, the issue of potential liability shielding were flagged (potentially including these in good Samaritan laws).

On the issue of integrating scientific knowledge into existing policies, a number of central themes were brought up. Obviously, knowledge on risks plays into a complex policy context, in which politicians and public officials are forced to make difficult ba-

lancing exercises with other public agendas. In this regard, not least the distribution of costs for longer term DRR-measures in general, and private-public partnerships in particular, are central. Overarching themes like responsibility and justice therefore become essential to the calculus of dealing with risks. Even with this in mind, it was pointed out there is still potential to stress the urgency and need to further addressing immanent disaster risks, and that the scientific branch has a central role in doing so.

In particular, the issue of future risks is problematic. Here the challenge of transforming uncertainties into clear policy choices or language could be particularly troublesome, and raised general issues of governance, communication and in general seemed emblematic for the gap between science and policy. In this regard, there seems to be an oversimplified treatment of risk scenarios in the public sphere. In particular there is a need to address multi-risk cases, even if these can only be reasonably addressed through scenarios. Such scenarios present a particular challenge when setting out to learn general lessons from previous disasters. Time scales and overlapping causalities often makes it difficult to pinpoint exactly which efforts were effective and which not. Scientific input could play a much larger role in this exercise.

Three potential themes for cases. One investigating the terror events in Bruxelles, in particular highlighting the cascading effects and the multiple stakeholders and orders involved in solving this. One theme focusing on scientific communication under the threat of liability, and finally a theme focusing on future risks – challenging both the scientific and political branch to deal with the uncertainties involved in this.

Based on a vivid discussion – a number of themes for further discussion in the think tank will follow.

3. Challenge workshop: Transboundary Crisis Management
Challenge Leader: Gilles Grandjean (BRGM)

Challenge 3 deals with issues relating to disaster affecting transboundary regions such as earthquakes. Different national regulations, increasing number of actors as well as the scale of operation require an even more cohorent approach for disaster management as well as string and effective collaborations.

The Workshop on Transboundary Crisis Management was very fruitful, with the stakeholders producing a number of strong statements but also raising a number of questions that will require further study within ESPRESSO:
The first point is a call to be proactive rather than reactive. Trans-boundary crisis management is not something that can be readily improvised. Structures and methods must be set in place in advance.
Communication, particularly in the presence of language barriers, was discussed in detail. Visualisation and mapping were identified as useful tools that could propose a solution to language barriers. However, even more important than how you say something is the question of who is going to listen:

Institutional channels of communication may not be symmetrical on both sides of a given border, making for mismatches in scope and delayed response. The scope of the messages in particular was noted as a key aspect: it is very important that the right stakeholders receive the information they need in a way that they can understand it and act upon it.
These issues can in part be mitigated by the emergent recognition of "border regions": cross-border areas with a shared history, close relations and

cultural values. In these areas, practitioners on either side of a border are more likely to interact regularly and have a better working knowledge of issues specific to their neighbours. This knowledge is very rarely shared upwards in the chain of command, resulting in the local institutions being much better prepared to handle trans-boundary issues than higher echelons of government. A more efficient management of large crises, which may be beyond the material scope of these local risk managers, could therefore emerge from an improved combination of bottom-up and top-down knowledge and processes. But how can we accomplish this?
Closer cooperation in border regions may also aid with other issues in trans-boundary DRR identified by the stakeholders: Keeping alive the memory of hazardous events when the records of previous disasters fall on different sides of a border, having access to all relevant risk information regardless of borders, and being able to foresee and prioritise cascading risk information at different scales.
Moving forward, we will be keeping an eye open for solutions to these problems.
A big thank you to all those who participated!

The Action Database

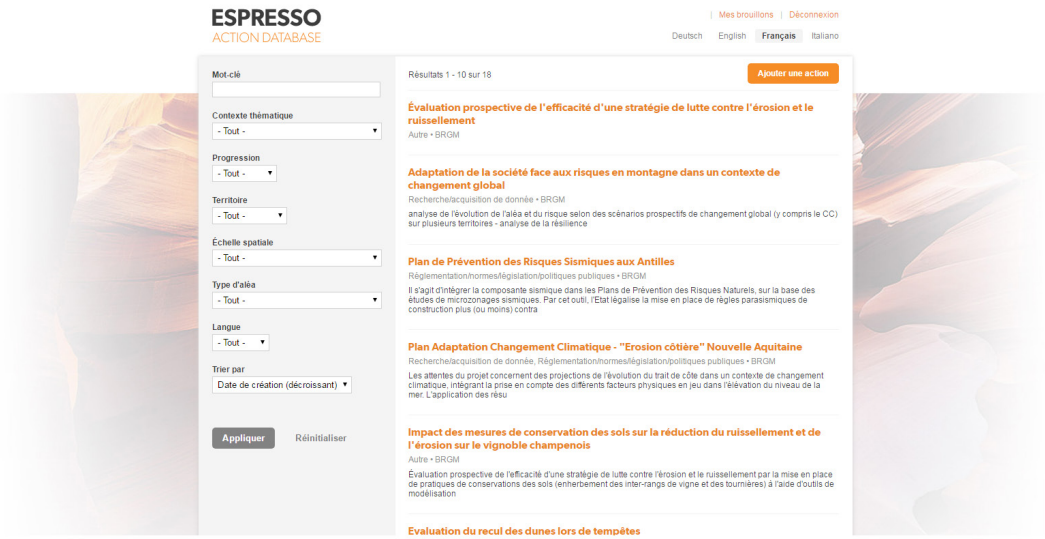
Chabrier Adrien (BRGM)

Dear colleagues,
we proudly present the ESPREssO-Action Database!
The database is accessible at http://adb-espresso.brgm.fr/
or via the official ESPREssO website at http://www.espressoproject.eu/action-database/introduction.html

We invite you to discover the ESPREssO-Action Database, or ESPREssO-ADB, a new tool to collect and evaluate feedback from stakeholders in disaster risk reduction, climate change adaptation and cross border crisis management.
The ESPREssO-ADB provides an opportunity to formalise discussions during workshops and to store their content in a synthetic format. The Stakeholder Forum meeting on 4th of May 2017 was the first occasion to use the ESPREssO-ADB for this objective, as well as to collect experiences and evaluate the impacts they had at their respective scales of implementation, on different parameters.
The database relies on a short questionnaire enabling you as a stakeholder to describe any project, program or initiative dealing with the topics of ESPREssO, regardless if the action is big or small, local or international, or even if it was considering a particular effort or the action as a whole.
An action can vary in nature, can refer to a research project, the implementation of a new legislative framework, an improved coordination strategy for first aid response, a risk education initiative . . .

The criteria described in the questionnaire are used to characterize the efficiency of an action in several fields, and allow quick searching and filtering.
Once this information is classified, the ESPREssO-ADB proposes a compilation of good ideas and effective practices which can be transposed to other scales or background, in order to help scientists and decision-makers develop efficient strategies.

The ESPREssO-ADB will be continuously improved aiming at becoming more and more performing with an increasing number of entries and users feedbacks. This will help to support decision makers, practitioners and scientist to learn from past actions and to constantly improve approaches dealing with Climate Change Adaptation and Disaster Risk Reduction.
Support us in creating a database of actions to help you in dealing with Climate Change Adaptation and Disaster Risk Reduction!



Screenshot of the website of the ESPREssO Actions Database

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Are you interested in getting involved? Do you want to join us for a workshop,
a stakeholder meeting or be part of the network?

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