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JOINT RESEARCH CENTRE

Directorate E - Space, Security and Migration (Ispra)
Disaster Risk Management

Summary Report of the 4th DRMKC Annual Seminar

Acting today, protecting tomorrow

Summary of the main outcomes of the 4th DRMKC Annual Seminar (Bucharest, 17th and 18th of October 2019)

The DRMKC Annual Seminar is the occasion in which the different actors engaged in Disaster Risk Management are invited to sit at the same table to exchange views, identify emerging challenges and to define all together the way forward to effectively approach the changing landscape of risks to be faced. The 4th Annual Seminar was co-organised with the Department for Emergency Situations (DSU) and hosted in Bucharest, Romania.

The goal of this year's edition was to discuss about how to develop Integrated Disaster Risk Management: capitalising on existing research results and from synergies across policies. The sub-title of the seminar has been **Acting today, protecting tomorrow** to emphasise the need to react now to prevent and mitigate the impacts of future events.

The welcome and opening were done respectively by **Dr. Arafat** (Secretary of State, Chief of Romanian Department for Emergency Situations) and by **Director Chirondojan** (Director of Space, Security and Migration Directorate of the European Commission Joint Research Centre).

In his speech Dr. Arafat praised the tools developed by the JRC. A part from the three ones presented on the Workshop held on 16th of October on Decision Making Improvement for Disaster Risk Management (DRM) through technological support – Rapid-N, GRRASP and the DRMKC Risk Data Hub - other training sessions have been organised in Romania over the last months on POSEIDON (September 2019) and ADAM (October 2019). Dr. Arafat mentioned his personal appreciation to JRC staff's openness and to the fact that the tools are available for everyone, facilitating in that way a soft harmonisation process of approaches across countries willing to use the same tools.

Director Chirondojan highlighted in his opening speech the fact that a comprehensive approach is needed to face the new era of risks and introduced the scope of the Annual Seminar.

The increasing relevance of appropriated Knowledge Management at EC level was introduced by **Alessandra Zampieri** (Head of the Disaster Risk Management Unit of the JRC). There is a clear mandate for the whole Commission to develop evidence-based policies and a clear example of this renovated effort is the updated version of the Union of Civil Protection Mechanism (UCPM), in which there is explicit mention to the need to integrate science into policy. For doing that new skills and tools have to be developed to allow bridging science and policy. The work done by the DRMKC was presented as example of the new way of working of the EC.

The Knowledge Centres are “instruments” to support the implementation of the KM strategy, which is focused on the establishment of strong partnerships to co-develop views that are more comprehensive. More effective and efficient DRM actions will result from the establishment of a sound link across policies. Their natural linkage point resides in their common need to rely on science-based evidences. In order to strengthen the links across Disaster Risk Reduction and Risk Management policies we need to smooth the path for scientific key findings and experiences from the field to be fully exploited in disaster risk management related policies and in its implementation.

Peter Billing, Head of Security and Situational Awareness Unit in DG ECHO, presented the recently adopted (March 2019) RescEU legislation (updated UCPM). The speech started with a quote from Commissioner Stylianides: *“No country is immune to natural disasters. To protect our citizens and support our MSs we are working on a better, faster and stronger mechanism of emergency response to better match more intense, complex and widespread disasters. We cannot afford more loss of lives and livelihood”* which summarises the main intentions and reasons for the reinforced legislation.

The update was done on the bases of the lessons learned after 18 years of implementation of the original UCPM, created in 2001 and activated for about 300 emergencies. Appreciation to the daily support received from JRC to support the efficient and timely management of this large number of crisis. The bases for the establishment of the UCPM and its further reinforcement through the new RescEU are Solidarity and Responsibility: no country is able to deal with all disasters alone.

The new RescEU provides a stronger role to prevention, in particular in views of the new climate conditions, that will led to new and more frequent crises to be faced. On the top of the solidarity, there is the EU capacity to face situations of extraordinary nature. Increasing Responsibility is another key pillar. The third line is the reduction of bureaucracy. One of the key topics to work on are the events classified as HILP (High Impact and Low Probability). Development of additional capacities for CBRNE related events will be crucial. Finally, the upgraded EU Civil Protection Mechanism also streamlines and simplifies administrative procedures in the long run in order to reduce the time needed to reach people in need of assistance.

DG Research and Innovation (DG RTD) was represented by **Philippe Tulkens**, Deputy Head of Climate and Planetary Boundaries Unit, who presented the role of the Research and Innovation in a changing Planet. In his presentation there was a nice overview of some of the key priorities of the new Commission, with special focus on the Green Deal and how R&I will contribute to this long term vision and investment for climate action. We need to understand what we have now that we can start implementing and what we need still to discover and for that the role of KM is of paramount relevance. Philippe highlighted the importance that science plays for the new Commission, contributing to better evidenced-based policymaking and implementation.

The session on **Hybrid Threats “A change of the security paradigm in Europe”** was chaired by **Adrian Tudose** (Ministry of Internal Affairs, Romania) and **Georgios Giannopoulos** (JRC E2). The session discussed about how to address challenges in the context of Disaster Risk Management that emerge from these new security threats, which aims to undermine our democratic values and the trust of citizen towards public entities (such as disaster risk management entities and first responders).

- **Marius-Haientz Patriche**, Romanian Ministry of Internal Affairs, General Directorate for Internal Protection (RO), talked about the concept of Hybrid interference, such as coercive and subversive activities, which can have long term debilitating effects on all aspects pertaining to the state’s ability to provide essential services to its citizens, hindering the capabilities of authorities to cope with a crisis situation. Security and crisis management effectiveness can be seriously hampered as a result of offensive action, protracting the time to mitigate the effects. In such scenarios, effective preventive measures need to be taken preventing hybrid actors from amplifying the effects of a crisis by building societal resilience to disinformation, creating robust cyber defense, ensuring efficient decision making and preparing authorities through exercises. It is very important to participate to international exercises to be able to exchange information, experiences and good practices. Networking is of paramount relevance to enhance trust and hence resilience.
- **Georgios Karagiannis** - Civil Protection (GR) presented the emergency management and hybrid threats. Between an increasing frequency and severity of weather-related hazards due to climate change, and a bubbling concentration of economic activity along the globe’s coastline and urban areas, the cost of natural disasters has been on the rise and is expected to continue to climb. This changing hazard environment presents a number of opportunities to a hybrid adversary. This presentation discusses the implications of hybrid threats and a rapidly changing threat environment in disaster management in Europe. It is an attempt to elucidate how disasters and emergencies contribute to creating the very opportunities that hybrid adversaries seek to leverage over several domains. In addition, it provides an overview of how emergency management capabilities may become a target of hybrid activities in the public administration domain.
- The Early Warning and Hybrid Threats: Civil-Military cooperation in a whole of government approach was presented by **Patrick Cullen**, Norwegian Institute of International Affairs (NUPI). Over the past five years hybrid warfare and hybrid threats have emerged as a considerable security concern worldwide. In a European context, efforts to understand and communicate the nature of this threat continue to evolve and mature, even as policy-makers and defence professionals at the national and multi-national level (including NATO and the EU) work on implementing strategies to respond to these challenges. In his talk, Dr Cullen addressed the challenges that hybrid threats pose to warning intelligence, and what this means for civil-military cooperation.

- The recurrent topic about Communication was presented by **Oana Popescu**, Global Focus Center (RO) as being a Critical Infrastructure in a Hybrid Context. Hybrid attacks are often accompanied by a corresponding attack on the communication infrastructure: whether through undermining public communication, or launching manipulative narratives, or otherwise targeting the communication chain. Even by itself, information manipulation is a form of hybrid threat, the impact of which is only exacerbated if carried out in the context of an ongoing crisis. How to prepare and boost resilience and how to respond and recover are essential elements of the overall crisis management was largely discussed.

- **Jukka Savolainen**, from the European Centre of Excellence for Countering Hybrid Threats (Hybrid CoE) made a presentation on a medical-based scenario. The Department for Emergency Situations of the Romanian Ministry of the Interior and the European Centre of Excellence for Countering Hybrid Threats organised together in February 2019, under the Romanian Presidency of the Council of the European Union, a dynamic workshop that took stock of the EU and NATO requirements and methods for civil protection, in a table top exercise with a hybrid threat scenario. Moreover, the scenario included requirements for national health care systems. Several Romanian doctors' expertise in microbiology and epidemiology enabled a realistic scenario which provided insights into the real-life, rigorous medical requirements that would need to be met in a hybrid threat environment. The main findings were that:
 - a) the assistance provided based on art1 42.7 of the Treaty on European Union and following the activation of the UCPM would help in the first instance, but - as the epidemic starts spreading out – there may not be sufficient help, due to the precedence of protecting the national interests.
 - b) the stocks of basic and specialized medical materials that would be needed in the case of an airborne pandemic are insufficient; therefore, there is the need to pool resources as soon as possible, especially by stockpiling the relevant materials,
 - c) Citizens will expect a community level response in situations where the national resources are no longer sufficient. Failing that, there will be political consequences that are negative to the unity of both organizations – NATO and the EU. There is a common interest and a chance for better success if parallel action are put in place.

The session on **Enhancing local resilience to global challenges** was chaired by **Francisc Senzaconi** (Romanian General Inspectorate for Emergency Situations) and **Alanna Simpson** (World Bank). This session focused on learning from global, regional and EU efforts to build resilience and opportunities – from early warning systems to ensure early action to safeguard lives and property, to opportunities embed resilience in infrastructure and the built environment through reduction of existing risks and avoiding the creation of new risks, to ensuring that resilience efforts consider all threats now and into the future. In this context, speakers in this session shared stories of success and how these could be scaled to other countries and also challenges faced and how these were overcome, or are still being overcome. We have to really understand risk. Targeted

information to the different audiences. We need to be able to compare risks. How to communicate risk uncertainties. The scientific results produced have to be usable for decision making, public awareness and more. If we cannot quantify the impact of our results we are not exploiting our results as we should. The topics addressed during the session were structured in two sub-sections, one focused on Early Warning systems and the second one on Emerging Risks and Technological Disasters:

- **Dr. Arafat**, Secretary of State, Chief of - Romanian Department for Emergency Situations (RO), talked about the importance of providing accurate and timely early warnings that can be understood by citizens and authorities, which is both a technological and a capacity issue. Which are the emerging good practices, through the harnessing of smart phone technology to clearer actionable information? How can these good practices be transferred and adapted to other countries? The RO alert system was presented as example: communication to the population in case of extreme emergencies for the people in the area of the disaster. It reaches the population to provide clear instructions to be followed before/during/after the event.

What are the threats we may not be so aware of, and what can we do to be better prepare for disasters such as technological and nuclear disasters, pandemics, terrorism and mass migration? Does our tool kit for managing natural disasters need to be adapted for these newer threats? What are the challenges we face regarding disaster risk assessment in the new context of global warming, climate changes, interdependencies of various industries, economic crisis, critical infrastructures, HILP? When the alert systems are hacked we loss any trust from the population. Cyber-security and redundant control systems are necessary. Collaboration with media is imperative to ensure a proper and timely distribution of the messages. To build trust on warning systems for the population it is important to clearly communicate them the limitations of the models.

Combination of traditional (sirens) and new alarm systems to ensure all population is reachable. Many citizens still fail to receive early warnings due to challenges with accessing and using technology (lack of internet, smart phones). Even if warnings have been received and understood, we still see situations where authorities and citizens were unable to take action – potentially due to age, disadvantage, fear, lack of understanding and knowledge. Are we doing enough to build public awareness and to put systems in place to support the most vulnerable groups when the disaster strikes? Virtual exercises are very good to train even kids about how to react under certain situations.

- **Christian Resch**, Disaster Competence Network Austria (DCNA) (AT) made a presentation on EW&Human factor: perception of risk is a very important factor to work on. In particular through education and, when necessary, training. Important to make sure that the messages to the population in case of emergencies are easily and clearly understood. For that it is necessary to work with the population to promote awareness and to build up trust in the institutions. Sendai was a very positive push for the paradigm shift since the implementation of MH-EWS is one of its main targets. The description about how the EWS should be developed includes considerations depending on the vulnerable social

group. The relevance of the technologies and the contribution of the scientific community are also clear in that field. Several redundancies are needed to make robust and trustable the systems. The need for collaboration across sectors to harmonise the approach is obvious.

- **Elena Mateescu**, National Meteorological Administration (RO) presented the observed changes and trends on climate in Romania and in the region. We have seen a rise in extreme weather across the Balkan region and in Europe in general – extreme heat, extreme cold, tornados, wildfires etc. Do we have the systems in place to ensure accurate and timely warnings of emerging threats? Which are the greatest challenge(s) in translation of hydro-meteorological data into information that triggers actions by authorities and citizens? Further, how can we, as society, move from early warning to early action?
- **Radu Văcăreanu**, Technical University of Civil Engineering of Bucharest (UTCB) (RO) presented a way to enhance resilience. When we talk about disaster risk management, one component of it is risk management capabilities (capability - the ability of an entity to reduce, adapt to or mitigate risks identified in the risk assessment, to levels that are acceptable), which take into consideration technical, financial and administrative capacity at an appropriate level. Which is in your opinion the most critical one and how should it be addressed in the framework of global challenges our society faces? A mixture of awareness, legislative and economic support are required to be able to implement the required preventive or mitigation measures. One example is the continuous development of the seismic design code for seismic proven buildings for Romania (or through the EUROCODES at EU level). The continuous and gradual implementation of these codes is certainly an essential means to increase resilience.
- **Mihai Micu**, Institute of Geography (IGAR) (RO), talked about the challenges and uncertainties of developing a landslide risk culture. While for seismic risk we seem to be in good track, do we have an appropriated landslide culture? These are punctual processes and are putting a lot of questions marks on the efficiency and possibilities of the modelling efforts. It is required an updated risk governance. More to be done on data sharing and transparency. To invest in the joint elaboration of inventories of previous events is crucial to try to predict (model) what could happen in the future. Multi-hazard assessments are desirable but still very challenging. Landslides are the result of several process natural or/and human intervention. Difficult to define the trigger factors.
- **Dan Șerbănescu**, National Nuclear Company (RO), presented activities in the risk management in the nuclear field in Romania. Transdisciplinary approach is required to properly address the risk assessment and hence the importance of risk knowledge management becomes a priority activity. There is a strong prevention culture in the nuclear field since once the accident happens, it is devastating. Redundancies/international relations/over controls are good practices to keep risk under control and to improve cross-border coordination. This prevention culture is something to be transferred to other fields. We need to implement a well-informed risk management based on the analysis of the risk to shift from the risk perception towards the real risk assessment.

The rescEU legislation and applied science for disaster risk management session was chaired **Alessandra Zampieri**. The updated rescEU legislation was adopted in March

2019. The European Commission is developing several initiatives to facilitate the delivery of applied scientific knowledge and support evidence-based policies, including the Applied Science for Disaster Risk Management (AS4DRM) concept and to certain extent the Union Civil Protection Knowledge Network (UCPKN). These initiatives are closely coordinated with the DRMKC, so as to ensure adequate complementarity and added-value.

- **Alberto Michelini**, National Institute of Geophysics and Volcanology (INGV) (IT), presented the project ARISTOTLE (All Risk Integrated System TOWards The hoListic Early-warning). The Emergency Response Coordination Centre (ERCC) is the EU coordination office for humanitarian aid and civil protection operations of DG ECHO (EU Humanitarian Aid and Civil Protection). ERCC needs authoritative multi-hazard scientific expertise and analysis on 24*7 basis very rapidly - when a disaster strikes, every minute counts for saving lives and immediate, coordinated and pre-planned response is essential. The ARISTOTLE consortium was awarded in 2016 the European Commission's DG ECHO "Pilot project in the area of Early Warning System for natural disasters" and in 2018 the ongoing "European Natural Hazard Scientific Partnership" (ENHSP) contracts. ARISTOTLE main aims are i.) to fill the gap in knowledge that exists in the first 3 hours immediately after an event that has the potential to require a country to call on international help, ii.) to provide longer term advice following an emergency and iii.) to provide advice when a potential hazardous event is starting to form (e.g., severe weather and flooding events and when possible to volcanic events).

ARISTOTLE (<http://aristotle.ingv.it>) is a multi-hazard partnership created by combining expertise from of total of 6 hazard groups [5 main hazard groups plus a sub-hazard - Severe Weather, Floods, Volcanos (only for ashes and gases hazard deriving from eruptions), Earthquakes and the related Tsunamis as a sub-hazard given its peculiarities and potential huge impact]. In 2018, the Forest Fires hazard has been added. Each Hazard Group brings together experts from the particular hazard domain to deliver a 'collective analysis' which is then fed into the partnership multi-hazard discussions. The hazards are very different and have very diverse timelines for phenomenological occurrence.

The ARISTOTLE consortium includes 15 partner institutions (12 from EU Countries; 1 from non-EU countries and 2 European organizations) operating in the Meteorological and Geophysical domains. During the "pilot project" (1-year), ARISTOTLE was activated 43 times with an almost even subdivision of events amongst meteo and geo hazards. A similar number of activations has occurred in the ENHSP project. The presentation will illustrate the different modes of operation envisaged and the status and the solutions found by the project consortium to respond to the ERCC requirements.

- **Peter Billing** closed the workshop with a presentation on the rescEU legislation and applied science for disaster risk management (Art. 13 to be implemented by October 2020). Training, research and innovation, as well as close cooperation between national civil protection authorities, universities and researchers are

essential elements for thorough prevention and preparedness activities across Europe. Via the newly proposed European Civil Protection Knowledge Network, the EU aims to reinforce its capacity for sharing knowledge, best practices and lessons learned by civil protection experts and emergency management personnel. Through the new Knowledge Network, the EU intends to strengthen its European Disaster Risk Management through scientific support across the whole DRM cycle.

The concrete structure of the KN is still under discussion with RescEU participant states but the aim is that the new KN will imply an evolution towards ALL hazards, towards a more Global coverage and towards enhanced technical and scientific support (uptake of innovative solutions).

Both ARISTOTLE and the EC DRMKC will become fundamental pillars for the new KN.

Main recurrent topics over the whole event:

- **Communication** with public is vital and it is urgent to develop specific skills and programs to tackle it properly.
- **Interdisciplinary approach**, networking, reinforced international collaboration are a must to be able to face the new landscape of risks.
- Since risk is dynamic, it is of paramount relevance to establish systems to **early identify which are the new capacities to be developed** to mitigate the impacts of new and emerging risks.