2017 EFDRR Open Forum
Istanbul, Turkey
26-28 March 2017

Concept Note of Technical Session

Event title	**Technical Session 3: Critical infrastructure for resilient communities**
Event code	TS 3
Date and Time	Monday, 27 March 2017, 16:00 – 18:00 hrs
Venue/ Room no.	Convention Center - First Floor
Organizers	**Lead:** Jeroen Mutsaers, Ministry of Security and Justice, the Netherlands **EFDRR Secretariat:** Maaria Parry, UNISDR Europe Office **Collaborators:** • Sergio Olivero, Higher Institute on Territorial Systems for Innovation, Italy • Giuseppe Guarino, Viggiano, Italy • Ebru Alarslan, The Ministry of Environment & Urbanization, Turkey • Gizem Altiparmak, Turkey Istanbul Governorship Istanbul Project (ISMEP), Turkey • Levent Gerdan, Programme Coordinator (ISMEP Component A), IPCU, Turkey • Lucy Fagan, UN Major Group for Children & Youth (UNMGCY), the UK • Corsmas L.P.M. Goemans, Ministry of Security and Justice, the Netherlands • Virginia Murray, Public Health England, the United Kingdom • Lea Appulo, Wetlands International

Session Objectives	• Highlight best practices on solutions to the challenges • Creating input for the UNISDR Words Into Action critical infrastructure guideline.
Background and context	**What is at stake**: • Critical infrastructure is essential for the efficient functioning, and delivery, of basic services provided to cities, regions and as for the country as a whole. Destruction, disruptions or interruptions in critical infrastructure could lead to cascading effects across sectors and sometimes across borders, leading to disruption of basic services to communities, causing significant harm to the population's well-being and significant direct and indirect economic impacts. The economic costs of damage to critical infrastructure is very high, resulting in delays in achievement of the development agenda and the SDGs (see Annex 1) • Critical infrastructure is under pressure from increasing populations, social change, changes in technology and in many cases has been unable to function even in disasters of relatively low magnitude. Hence, investing in new and upgrading existing infrastructure is imperative. At the same time, it is essential to ensure that the new public and private investments are risk sensitive. • Changes in human lifestyles and the impacts of technology means any disruptions in electrical supply can become critical for the current mode of living. For instance, damage in communication infrastructure may cripple information flow, especially affecting social media. Furthermore the dependence of IT infrastructures requires countries to interlink cyber security within the critical infrastructure. Similarly, with more adaptation to greener technologies (to reduce climate risk), infrastructure needs to adapt as well. This means paying attention e.g. to the dependence of electricity for electric cars. • Finally, it is important to link the various domains (e.g., civil protection, climate change adaptation, and critical infrastructure protection) by risk assessments, taking into account cascading effects within National Risk Assessments. There may be cascading effects and pressure on other infrastructure because of impact on one system – even a relatively small flooding in downtown can cripple the service industry significantly over the entire country or even have cross border effects.

	What is the opportunity: • Sendai Framework, the 2030 Agenda, and the Paris Agreement all explicitly highlight that protection and resilience of critical infrastructure should be a high priority of governments. The vulnerability of critical infrastructure is also of concern in the governments' national security agenda. Annual infrastructure spending requirements are estimated to increase from today's USD 2.6 trillion to around USD 4.3 trillion by 2030 (Swiss RE and IIF 2014). It is imperative that all critical infrastructures incorporate disaster and climate risk assessment and mitigation measures to understand risks, plan for safety interventions, ensure the continuity of operations and reduce losses. • The Sendai Framework refers to critical infrastructure in Priority for Action 4 as accounting for *"water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities".* Furthermore, critical infrastructure is generally defined as *"the physical structures, facilities, networks and other assets which provide services that are essential to the social and economic functioning of a community or society"* in the final report of the Open-ended Intergovernmental Expert Working Group on Indicators and Terminology Relating to Disaster Risk Reduction. The session will use the same definition. • The session will help to support the monitoring and reporting of Targets (d) and (e) of the Sendai Framework, and links directly with the Plenary session on National and Local DRR Strategies.

Session format and programme	1. Introduction and welcoming remarks by the Moderator **Corsmas L.P.M. Goemans** 2. Keynote address by **Paul Gelton:** Overview on the subject taking also into account what is achieved in the EU by putting Critical Infrastructure on the EU-agenda during the Dutch Chairmanship of the EU in 2016. 3. Short film on critical infrastructure and multi-stakeholder approach. 4. Presentations • **Virginia Murray**: Inputs on disaster risk reduction measured linked to the disruption of basic (health and educational) services. • **Levent Gerdan**: The example of close cooperation of many stakeholders with focus on the preventive and preparedness measures to mitigate the impact of an earthquake. • **Sirkku Juhola:** Critical infrastructure, green areas and climate change adaptation • **Elena Arefyeva**: The role of critical infrastructure in the implementation of the Making Cities Resilient campaign in Russia 5. Panel discussion Wrap up and conclusion by the moderator
Intended main outcome and Key messages	• Sharing of the current level of progress and success stories of resilient infrastructure. • Promoting the need for training and exercise modules, both face to face and online, to reach stakeholders. Conducting exercises and training is no longer an end in itself but rather a link in a larger chain, connecting prior education and training to subsequent testing, evaluating and learning, thus bringing the system full circle. • Promoting the important role of risk financing and risk transfer (including insurance) in building economic resilience. • Creating input for the UNISDR Words Into Action critical infrastructure guideline.

List of Speakers	**Paul Gelton** is the Director Resilience at the Ministry of Security and Justice, the Netherlands. Prior to this position Mr Gelton worked as the Director Rail and Road Transport, responsible for supervision on safety of the national rail network and commercial road transport at the Ministry of Traffic and Water Management. His previous duties within the same Ministry included the Director-Chief Inspector Marine and Fisheries and Head of Engineering. Mr Gelton has also worked as the Head of Maritime Meteorological Services at the Royal Netherlands Meterological Institute, responsible for maritime safety information. Before his civil career he served in the Royal Netherlands Navy. Mr Gelton holds degrees in management engineering, maritime management and air navigation. **Prof. Virginia Murray** was appointed as Consultant in Global Disaster Risk Reduction for Public Health England in April 2014. This appointment is to take forward her work as vice-chair of the UN International Strategy for Disaster Reduction (ISDR) Scientific and Technical Advisory Group and as the Chair of the Science & Technology Organising Committee for the UNISDR Science and Technology Conference on the implementation of the Sendai Framework. Prior to this she was appointed as Head of Extreme Events and Health Protection, Public Health England in January 2011. With the Extreme Events team, she helped to develop evidence base information and advice on flooding, heat, cold, volcanic ash, and other extreme weather and natural hazards events. Appointed as Visiting Professor in Health Protection, MRC-HPA Centre for Environment and Health, Imperial College and King's College, London (2004) and Honorary Professor at University College London (2013), she has published widely. **Levent Gerdan** is a Coordinator at Istanbul Seismic Risk Mitigation and Preparedness Project (ISMEP), run by Istanbul Project Coordination Unit (IPCU). The ISMEP is a comprehensive project which covers supportive and preventive practices directed towards preparedness, mitigation, response and recovery including the periods before, during and after the disaster. Mr Gerdan has been responsible e.g. for implementation of Command Control and Coordination Center, wide area of radio communication network deployments and equipping the public agencies with search-and-rescue and first aid equipment in Istanbul. Prior joining the IPCU he worked for private ICT companies in Turkey and abroad for more than 25 years. Mr Gerdan has focused in communications network design, resilience of critical infrastructure and capacity enhancement of disaster risk reduction and management projects. He holds degrees in Electronics and Telecommunications Engineering and Business Administration

	Dr Sirkku Juhola is an associate professor in urban environmental policy at the University of Helsinki, a visiting scholar at the Department of Built Environment at Aalto University and an adjunct professor of social and public policy at the University of Jyväskylä, Finland. Dr Juhola was the Deputy Chief Scientist of the Nordic Centre for Excellence on Nordic Strategic Adaptation (NORD-STAR) and spent four years (two as vice chair) in Finland's Climate Change Panel that was set up in 2011 to advice the Finnish Government on climate policy. She has published widely on urban governance, green infrastructure and climate change adaptation in Europe. **Dr Elena Arefyeva** is the Chief Researcher at the All-Russian Scientific Research Institute for Civil Defense and Emergencies, EMERCOM of Russia. Since 2012, Dr. Arefyeva has been an advocate of the UNISDR Global Campaign for Making Cities Resilient in Russia. She has extensive experience in managing of and participating in international UN projects. Arefyeva has been working for EMERCOM of Russia since 2004. Her main area of research interest covers disaster risk management and modeling of hazardous natural processes. Dr. Arefyeva has graduated from the Moscow State University, where she specialized in applied mathematics. She has wide experience of work in research and design institutes. Dr. Arefyeva has been awarded with the title of "Ecologist of the Year of the Moscow Region" and her message is "Unite to act against disasters: think globally, act locally".

Annex 1

Critical Infrastructure in the SDGs and in the Sendai Framework

SUSTAINABLE DEVELOPMENT GOAL 9
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

GOAL 9 TARGETS
9.1
Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
9.2
Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries
9.3
Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets
9.4
By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
9.5
Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
9.a
Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
9.b
Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
9.c
Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020

SUSTAINABLE DEVELOPMENT GOAL 11
Make cities and human settlements inclusive, safe, resilient and sustainable

GOAL 11 TARGETS
11.1
By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.2
By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
11.3
By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.4
Strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.5
By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
11.6
By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
11.7
By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
11.a
Support positive economic, social and environmental links between urban, per-urban and rural areas by strengthening national and regional development planning
11.b
By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015-2030, holistic disaster risk management at all levels
11.c
Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

SENDAI FRAMEWORK

The seven global targets are:
…
(d) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030.

Priority 2. Strengthening disaster risk governance to manage disaster risk
National and local levels
27. To achieve this, it is important to:
(a) Mainstream and integrate disaster risk reduction within and across all sectors. Review and promote the coherence and further development, as appropriate, of national and local frameworks of laws, regulations and public policies, which, by defining roles and responsibilities, guide the public and private sectors to: (i) address disaster risk in publically owned, managed or regulated services and infrastructures;

Priority 3. Investing in disaster risk reduction for resilience
…..
National and local levels
30. To achieve this, it is important to:
(c) Strengthen, as appropriate, disaster resilient public and private investments, particularly through: structural, non-structural and functional disaster risk prevention and reduction measures in critical facilities, in particular schools and hospitals and physical infrastructures; building better from the start to withstand hazards through proper design and construction, including the use of the principles of universal design and the standardization of building materials; retrofitting and rebuilding; nurturing a culture of maintenance; and taking into account economic, social, structural, technological and environmental impact assessments;

Priority 4. Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction

National and local levels
33. To achieve this, it is important to:

(c) Promote the resilience of new and existing critical infrastructure, including water, transportation and telecommunications infrastructure, educational facilities, hospitals and other health facilities, to ensure that they remain safe, effective and operational during and after disasters in order to provide live-saving and essential services;

….

(l) Consider the relocation of public facilities and infrastructures to areas outside the risk range, wherever possible, in the post-disaster reconstruction process, in consultation with the people concerned, as appropriate;