



MOBILISE: Multi-agency Collaboration Platform for Building Resilient Communities

www.mobilise-project.org.uk



Project Funders

Global Challenges Research Funds – Initiative led by Department for Business, Energy and Industrial Strategy (BEIS)

- ❖ 5-year £1.5Bn fund to deliver the UK Aid Strategy: tackling global challenges in the national interest.
- ❖ Encourage UK researchers to take a leading role in addressing the problems faced by developing countries (LMIC) through:
 - Challenge-led disciplinary and interdisciplinary research
 - Strengthening capacity for research and innovation within both the UK and developing countries
 - Providing an agile response to emergencies where there is an urgent research need.
- ❖ Special Call - Tackling global development challenges through engineering and digital research



Project MOBILISE (£1.2M)

Tackling global development challenges through digital research

- ❖ **Aim :** to develop a digital infrastructure that can offer intelligence to a range of agencies to work together to reduce the impact of disasters such as floods and landslides on communities.

- ❖ **Scientific Objectives**

- Digitally enhanced multi-agency collaboration models
- Resilience frameworks that can measure resilience
- Modelling community & infrastructure vulnerability
- Model cascading effect of disasters
- Social media and real-time intelligence gathered through Space technology for real-time monitoring
- 3D visualisation of real-time satellite data for supporting disaster response



Targeted Impact

- ❖ **Focus** : Disaster risk reduction (pre-disaster phase) and disaster response
- ❖ **Chosen countries** : Sri Lanka, Malaysia, Pakistan (+ UK)



Ref: *Disasters in Asia and the Pacific: 2015 Year in Review*, the United Nations Economics and Social Commission for Asia and the Pacific (UN/ESCAP, 2015)

Global Team

Building on our long term R&D work with national and international partners



THINKlab : Technology
Competent Centre



Technology Enhanced
Collaboration



Centre for Disaster
Resilience

- Risk management and sustainability
- Community engagement and participation in reconstruction
- Disaster risk reduction and culture
- Improved disaster resilience through social media interaction



GREATER MANCHESTER



UK Partners

- ✧ University of Moratuwa
- ✧ University of Colombo
- ✧ University of Peshawar
- ✧ Universiti Tun Hussein Onn Malaysia
- ✧ Asian Disaster Preparedness Centre

Global Team

Scientific Partners

UK Team



Prof. Terrence
Fernando



Dr. Chaminda
Pathirage



Dr. Udayangani
Kulatunge

Sri Lankan Team



Prof. Sam
Hettiarachchi



Prof. Siri
Hettige

Pakistan Team



Dr. Mushtaq
Jan



Prof. Noor
Jehan



Dr. Noralfishah
Sulaiman

Global Team

Steering Committee



UK Steering Committee

- **Chair: Luana Avagliano**, Head of ResilienceDirect, Cabinet Office
- Kathy Oldham, Chief Resilience Officer, GMCA.
- Asma Jhina (Associate Director, 100 Resilience Cities)
- Gwen Scott (Operation Manager, Environment Agency)
- Dan Wicks (Senior Earth Observation Specialist, Satellite Applications Catapult)
- Geraint Cooksley (Principal Earth Observation Consultant, Telespazio)
- Martin Knapp (Managing Director, Secure Information Assurance Ltd)

Sri Lankan Steering Committee

- **Chair: Hemanthi Goonasekara**, Federation of Sri Lankan Government Authorities
- Srimal Samansiri, Assistant Director R&D, Disaster Management Centre
- Dr. Senaka Basnayake, Department Head, Climate Change and Risk Management Division, Asian Disaster Preparedness Cen.
- Arumaithurai Subakaran, Executive Director, Centre for Governance Innovations
- Ananda Mallawatantri, Country Representative, International Union for Conservation of Nature (IUCN).
- Chief Secretaries of Sabaragamuwa and Central Province.

Pakistan Steering Committee

- **Chair: Mr. Muhammad Khalid**, Director General, Provincial Disaster Management Authority, Government of Khyber Pakhtunkhwa-Pakistan
- Mr. Imdadullah Khan, Jehanghira Union Council, District Nowshera
- Mr. Rahat Jan, Managing Director, Inaratech-Pakistan
- Mr. Rafatullah, Director, Nowshera Rural Development Foundation-Pakistan

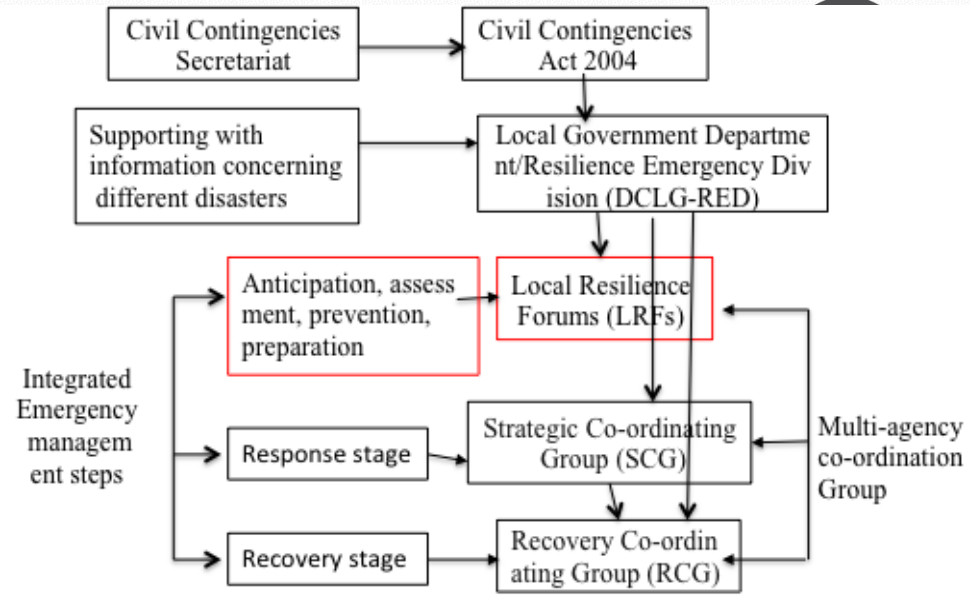
Malaysian Steering Committee

- **Chair : Mohd Ariff Baharom**, Deputy Director General, Planning & Preparedness Sector of the National Disaster Management Agency
- Datuk Zainal Bin Hussin, Mayor, Melaka Historic City Council
- Dr. Zuhairi Abdul Hamid, Executive Director, Construction Research Institute of Malaysia

Multi-agency Collaboration

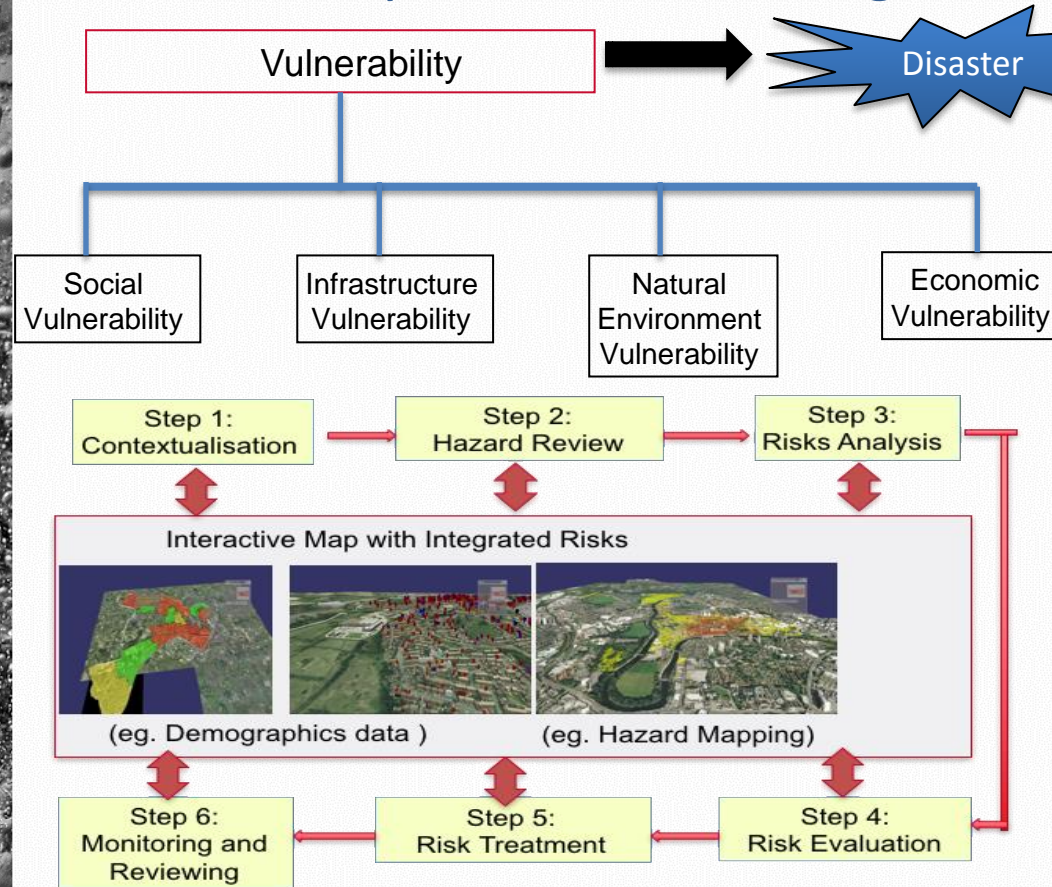


Multi-agency Collaboration in UK



- ❖ How can we strengthen multi-agency collaboration in Sri Lanka, Pakistan and Malaysia through advanced digital technology?
 - Different political and administrative systems
 - Digital Strategy

Vulnerability Assessment, Mitigation and Resilience



- ❖ Use Six-step risk assessment process (Contextualisation, hazard review, risk analysis, risk evaluation, risk treatment, monitoring & reviewing)
- ❖ Develop a web-based collaboration platform that can support collective vulnerability assessment, mitigation and resilience.
- ❖ Resilience framework that can compute dynamic resilience capacity

Resilience Framework that can Measure Resilience



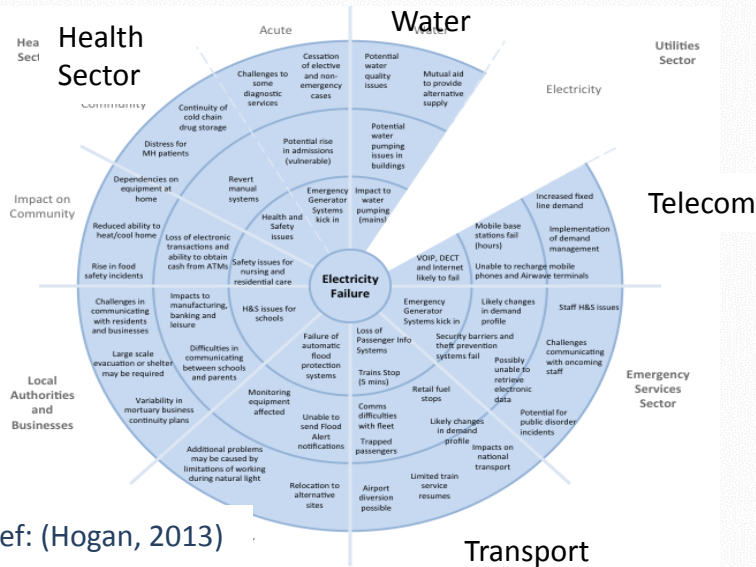
Current Approaches for Measuring Resilience

- Uscore 2 (<http://uscore2.eu/>)
 - Developing Self-assessment tool-box to assess resilience
- 100 Resilience City Self Assessment Tool

Recommended Resilience Framework in Sri Lanka
(Source : Disaster Management Centre, 2015)

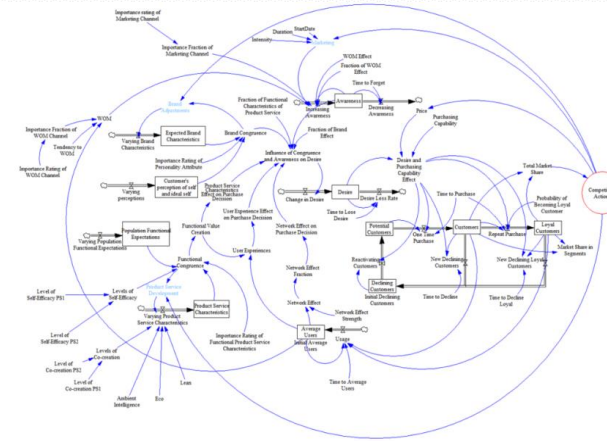
- ❖ How can we measure community resilience ?
- ❖ To explore quantitative measures

Modelling Disaster Cascading

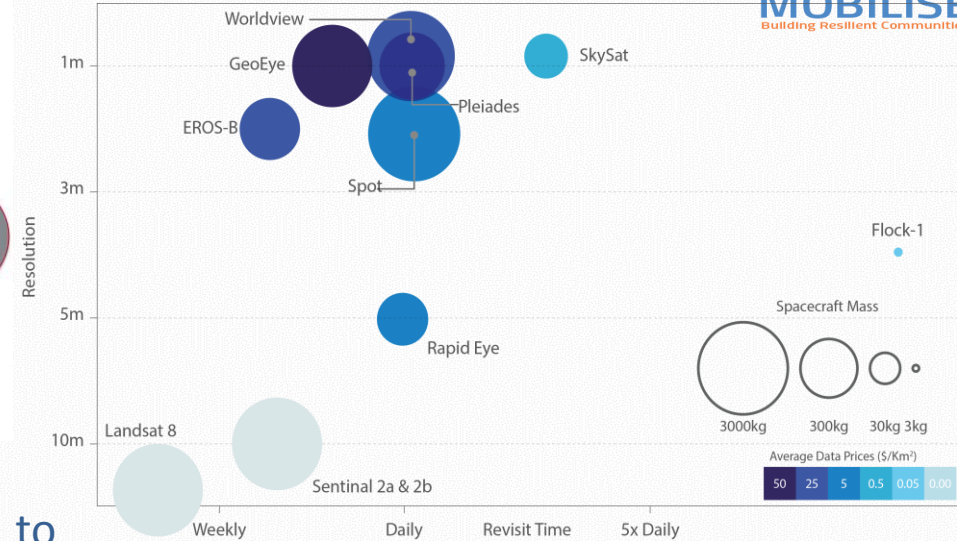
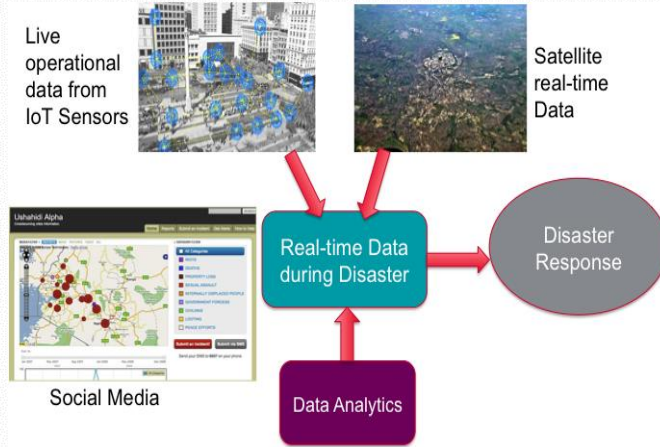


Ref: (Hogan, 2013)

- ❖ Develop a decision support system, based on **spatial system dynamics** that can be used by multi-agencies to assess the vulnerabilities, risks and consequences of hazards on critical infrastructure



Real-time Intelligence During Disasters



Source: Satellite Application Centre

- ❖ Extend risk assessment platform to be used during **disaster response phases** by integrating real-time data (weather, 2D satellite data, crowdsourcing)

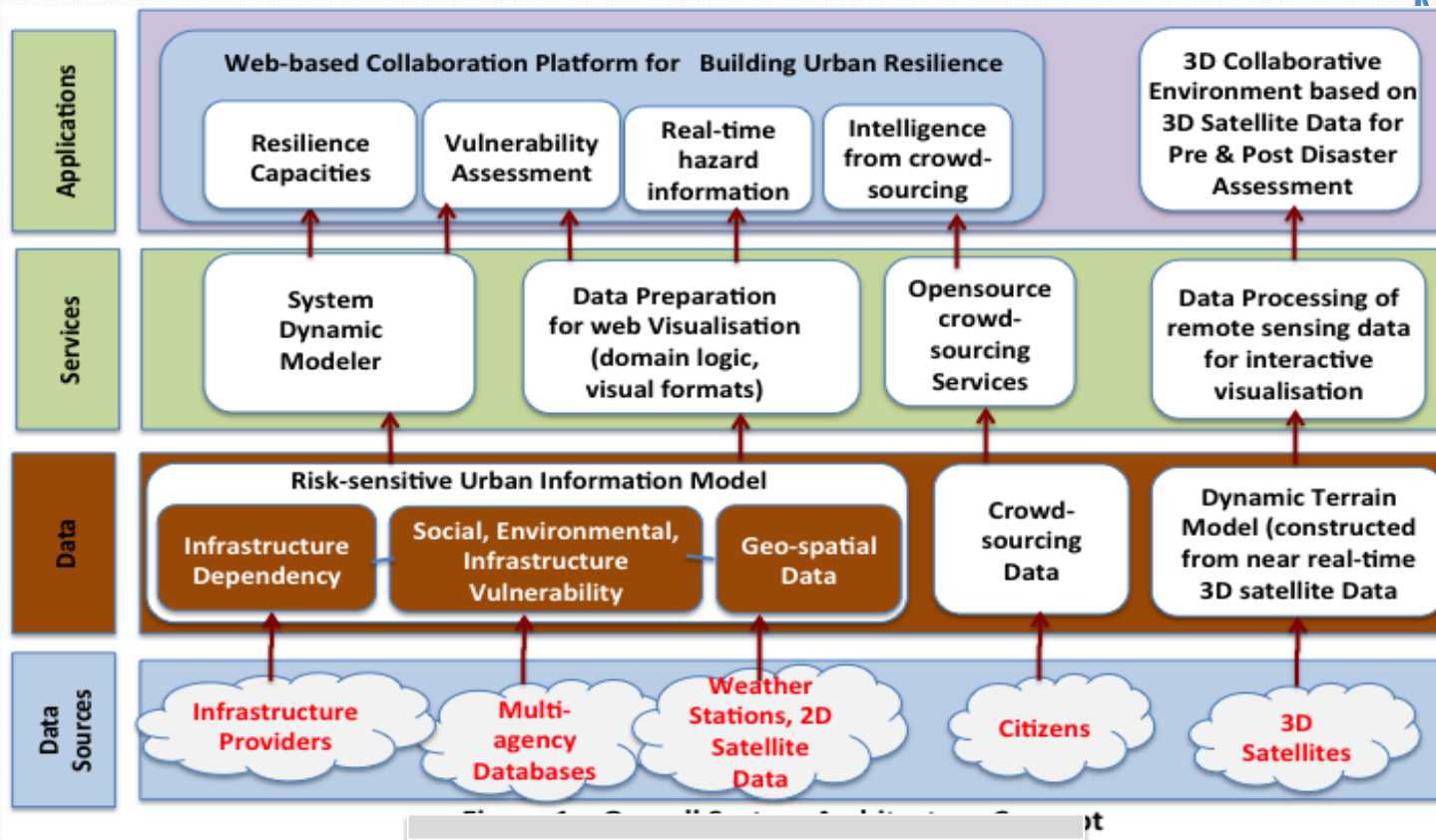


Near real-time 3D VR Environment of live disaster events



- ❖ Real-time data from satellites (+ drones)
- ❖ Implement a **novel 3D collaborative environment** that allows remote teams to get an accurate picture of a disaster event through near real-time **3D satellite data and analytics**

MOBILISE Technology Architecture



Summary : Key Implementation in Sri Lanka

- ❖ Establish a resilience Framework that has the following elements (dynamic resilience framework that can evolve over time, toolkit for measuring resilience)
- ❖ Computer simulation model that can capture cascading affect of disaster that will allow the team to understand dependencies of vulnerabilities and decide how best to reduce them.
- ❖ Assess the current multi-agency collaboration approaches and propose a collaboration model / approach that can promote better collaboration using digital technologies and co-ordination processes.
- ❖ Establish a digital platform that can combine both remote sensing data and in-situ data to assess vulnerabilities and build disaster resilience
- ❖ Establish a community engagement platform
- ❖ Use of real-time satellite data for disaster response (3D)

Technical Workpackages

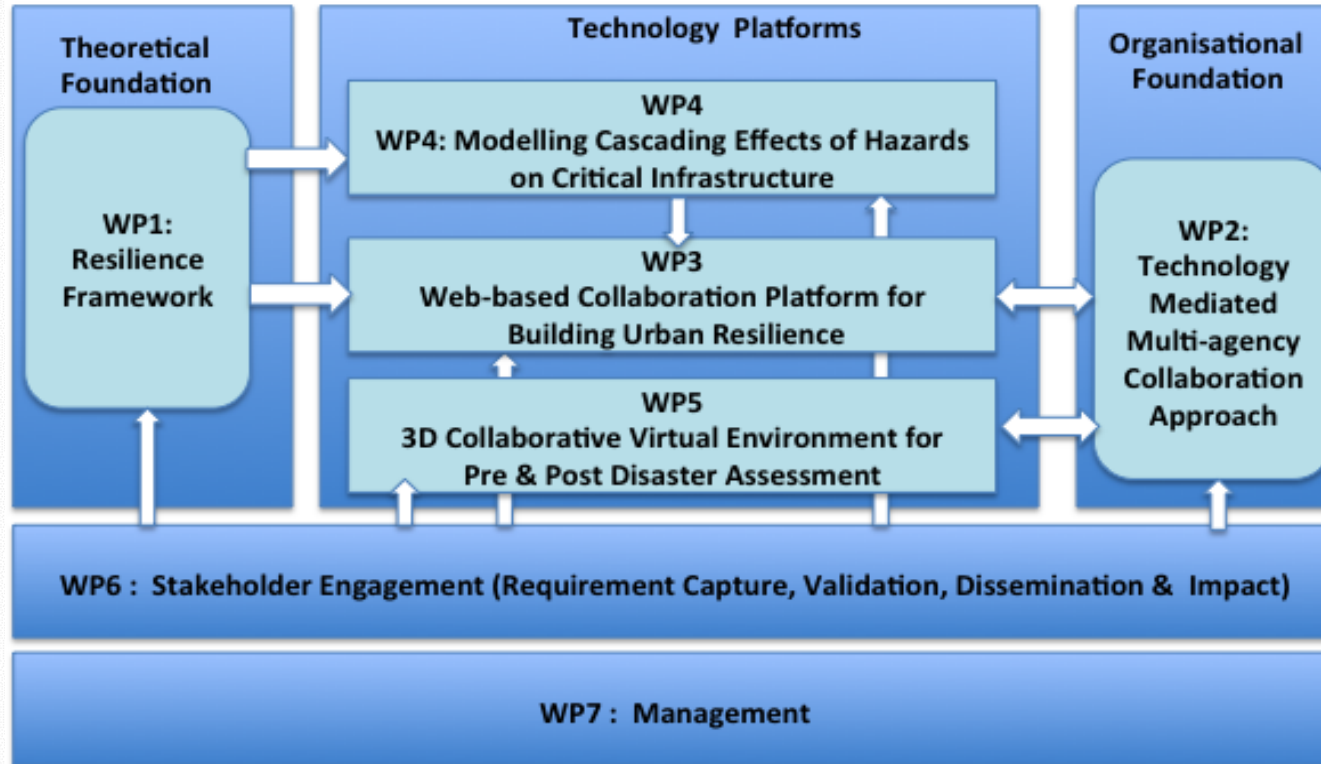


Figure 2 : Workpackage Structure

Workshop Objectives:

- ❖ The purpose of this workshop is to present and refine the current outcome of the MOBILISE project.
 - Assess existing resilience frameworks; discuss the nature of a suitable resilience framework for Sri Lanka.
 - Discuss good examples of multi-agency collaboration models; assess current strengths and weaknesses of multi-agency collaboration in Sri Lanka; discuss new possibilities.
 - Discuss technical platforms used for disaster risk reduction and response in Sri Lanka ; assess MOBILISE approach for a creating a digital platform for DRR in Sri Lanka.
 - State-of-the-art in technology for community engagement during disaster response; possible approach for Sri Lanka.

| | |
|------------------|---|
| 8.00am-08.30am | Registration and Coffee |
| 8.30am – 8.40am | Welcome Speech, Hon. Sarath Ekanayake, Chief Minister, Central Provincial Council |
| 8.40am-9.00am | Introduction to MOBILISE and Workshop Objectives (Prof. Terrence Fernando, University of Salford) |
| 9.00am- 11.00am | Session 1 : Towards Operationalising a Resilience Framework (Chair: Dr. Chaminda Pathirage, University of Salford) <ul style="list-style-type: none"> ✧ Sendai Framework and expected measurable outputs, Mr. Chandradasa Wijesekara – (15 mins) ✧ Towards a working definition of resilience, Dr. Komal Aryal– (10 mins) ✧ Participatory Activity 1 – Discussion and agreement on a working definition (30 mins) ✧ Current resilience frameworks, Dr. Komal Aryal– (10 mins) ✧ Participatory Activity 2 : Discussion on categories and components of a resilience framework (40 mins) ✧ Reporting and way forward (15 mins) |
| 11.00 am–11.30am | Coffee Break & Group Photo |
| 11.30am-1.00pm | Session 2 : Multi-agency Collaboration Models (Chair: Brigadier W.A. Ariyaratne, Director of the Emergency Collaboration Centre) <ul style="list-style-type: none"> ✧ Lessons learned during the 2015 Nepal Gorkha Twin Earthquakes and the 2017 Terai Flood (Dr. Gangalal Tuladhar, Coordinator for the National Campaign for Disaster Risk Reduction Nepal (NCDRR) – 20min ✧ Stakeholder Collaboration for Knowledge Management in Preparedness, Dr. Buddhi Weerasinghe. – 20 min ✧ Current collaboration models in Sri Lanka (Mr. Pradeep Kodippili, DMC) - 20min ✧ Discussion – 30 mins |
| 1.00pm – 2.00pm | Lunch |

| | |
|-----------------|--|
| 2.00pm – 3.30pm | <p>Session 3 : Digital Platforms for Supporting Disaster Risk Reduction and Resilience (Chair: Mr Juan Carlos Villagrán de León, UN-SPIDER, Germany)</p> <ul style="list-style-type: none"> ✧ Current use of digital technology in DRR in Sri Lanka (Srimal Samansiri) – 20 mins ✧ Towards a digital platform for supporting disaster resilience : MOBILISE Approach (Prof. Terrence Fernando) – 30 mins ✧ Interactive Idea Capture Session & Discussion - 40 mins |
| 3.30pm | Coffee Break |
| 4.00pm – 5.15pm | <p>Session 4 : Community Engagement Platforms (Chair: Prof. Siri Hettige, University of Colombo)</p> <ul style="list-style-type: none"> ✧ Brief introduction to open platforms (Mr. Hisham Tariq) - 20mins ✧ Sri Lanka Red Cross Society (Mr. Sudath Madugalle) – 20mins ✧ Municipal Commissioner of Matara, Mr. Senaka Palliyaguruge – 15 mins <p>Discussion (20mins)</p> |
| 5.15pm –5.30pm | Emerging National Disaster Management Plan - Prof Krishan Deheragoda/ Nuwan Madawan Arachchi |
| 5.30pm | Close |
| 6.30pm | Dinner |

Thank You !