





# The 2012 Understanding Risk Forum

At this second meeting of the Understanding Risk Community, we invite experts and practitioners in disaster risk assessment from around the globe to explore new ideas, share knowledge and build partnerships.

## Welcome to Cape Town!

### Sponsors



**GFDRR**  
Global Facility for Disaster Reduction and Recovery

With financial support from the European Union  
in the framework of the ACP-EU Natural Disaster Risk Reduction Program  
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Cooperative Governance  
Traditional Affairs



**UNISDR**  
The United Nations Office for Disaster Risk Reduction



**THE WORLD BANK**

# Agenda



DAY 1 – Monday, July 2, 2012	
08h00	<i>Registration</i>
10h00	<p><b>Inaugural Session - Open to media</b></p> <p>Welcome remarks by partner organizations - Highlight on Africa, including Government of South Africa, African Development Bank, European Union, United Nations International Strategy for Disaster Reduction and the World Bank</p> <p>(Room: Roof terrace)</p>
12h30	<p><i>Lunch</i></p> <p><b>Innovation Expo/Lightning Presentations</b></p>
14h00	Site visit: City of Cape Town Disaster Risk Management Center
17h00	<p><b>Opening Remarks and Ignite - Open to media</b></p> <p>Welcome remarks by Honourable Patricia de Lille, Mayor of Cape Town</p> <p>Opening Address: Rowan Douglas, Chairman of Willis Research Network &amp; CEO Willis Re Global Analytics; Alan Knott-Craig Jr., CEO, World of Avatar</p> <p>Ignite overview of the conference by Session Leads</p> <p>(Room: Roof terrace).</p>
19h00	<i>Reception</i>

DAY 2 – Tuesday, July 3, 2012			
08h00	<i>Registration</i>		
09h00	<table border="0"> <tr> <td style="vertical-align: top;"> <p><b>Session 1</b></p> <p>Drought Response and Resilience - Innovations in the Horn of Africa, and Beyond</p> <p><b>Lead:</b> World Bank &amp; IGAD Climate Prediction and Application Centre (ICPAC)</p> <p>(Room: 1.41)</p> </td> <td style="vertical-align: top;"> <p><b>Session 2</b></p> <p>Advancing Risk Assessments for Financial Applications</p> <p><b>Lead:</b> Government of South Africa &amp; World Bank</p> <p>(Room:1.43)</p> </td> </tr> </table>	<p><b>Session 1</b></p> <p>Drought Response and Resilience - Innovations in the Horn of Africa, and Beyond</p> <p><b>Lead:</b> World Bank &amp; IGAD Climate Prediction and Application Centre (ICPAC)</p> <p>(Room: 1.41)</p>	<p><b>Session 2</b></p> <p>Advancing Risk Assessments for Financial Applications</p> <p><b>Lead:</b> Government of South Africa &amp; World Bank</p> <p>(Room:1.43)</p>
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DAY 3 - Wednesday, July 4, 2012			
09h00	<b>Session 9</b> Assessing Risk in a Changing Climate <b>Lead:</b> Red Cross/Red Crescent Climate Centre & African Development Bank (Room: 1.41)	<b>Session 10</b> Satellite Earth Observation and Disaster Risks <b>Lead:</b> European Space Agency (ESA) & South African National Space Agency (SANSA) (Room: 1.43)	<b>Session 11</b> Landslide Risk Assessments for Decision Making <b>Lead:</b> World Bank & South Africa Council for Geoscience (Room: 1.6)
10h30	<i>Coffee Break</i>		
11h00	<b>Session 12</b> Community-based Risk Assessment <b>Lead:</b> Kenya Red Cross (Room: 1.41)	<b>Session 13</b> Thinking about the Unthinkable <b>Lead:</b> University of California, Davis (Room: 1.43)	<b>Session 14</b> Meteorological, Hydrological and Climate Services to Support Risk Analysis <b>Lead:</b> World Meteorological Organisation & World Bank (Room: 1.6)
12h30	<i>Lunch</i> Innovation Expo/ Lightning Session		
14h00	Mayors Roundtable on Urban Risk - Open to Media <b>Lead:</b> World Bank Institute, ICLEI and UN ISDR Featuring Mayors from Cape Town, Dar es Salaam, Port Louis, Temeke and Walvis Bay (Room: Roof terrace)		
16h00	Conference Closing		

Training Sessions			
DAY 4 - Thursday, July 5, 2012			
09h00	<b>Training A</b> GEM Technical Training Lead: Global Earthquake Model (Room: 1.41)	<b>Training B</b> CAPRA Lead: Evaluacion de Riesgos Naturales (ERN) & World Bank (Room: 1.43)	
12h30	<i>Working Lunch Session - Tulane University (Room: Roof terrace)</i>		
14h00	<b>Training A</b> GEM Technical Training Lead: Global Earthquake Model (Room: 1.41)	<b>Training B</b> CAPRA Lead: ERN & World Bank (Room: 1.43)	<b>Training C</b> OpenStreetMap Lead: Humanitarian OpenStreetMap Team (Room: 1.6)
17h30	<i>End of Day</i>		

DAY 5 - Friday, July 6, 2012			
09h00	<b>Training D</b> SAFE & GeoNode Lead: World Bank (Room: 1.41)	<b>Training E</b> Disaster Loss Accounting with DesInventar, Training and Community of Practice Meeting Lead: UNISDR (Room: 1.43)	
12h30	<i>Lunch</i>		
14h00	<b>Training D</b> SAFE & GeoNode Lead: World Bank (Room: 1.41)	<b>Training E</b> Disaster Loss Accounting with DesInventar, Training and Community of Practice Meeting Lead: UNISDR (Room: 1.43)	
17h30	<i>End of Day</i>		

# Speakers



## **Honorable Richard Masenyani Baloyi, Minister for Cooperative Governance and Traditional Affairs, Republic of South Africa**

Mr Richard Masenyani Baloyi was appointed Minister for Cooperative Governance and Traditional Affairs of the Republic of South Africa on 24th October 2011. Prior to this he was Minister of Public Service and Administration. Minister Baloyi has been a member of Parliament since 1999. Minister Baloyi is a member of the Member of African National Congress (ANC). He is driven by a passion to see the area of local government flourish and the phrase “Local government is everybody’s Business” typifies his cooperative approach to finding creative and sustainable solutions in this sphere.

The National Disaster Management Centre (NDMC) is a branch within CoGTA, of which Minister Baloyi is the political principle. The National Disaster Management Centre (NDMC) is tasked with the responsibility of developing national policy on disaster response management. As the Minister of Cooperative governance. As the Minister for Cooperative Governance and Traditional Affairs, he is at the forefront of the government’s effort to turn around municipalities. The acceleration of the Local Government Turnaround Strategy, the establishment of the Anti-Corruption Inspectorate and Operation Clean Audit are some of the key programmes Minister Baloyi has championed in CoGTA. Minister Baloyi has emphasised on several occasions that in the spirit of cooperative governance, nothing tangible can be achieved unless it is a collaborative effort between CoGTA, provinces and municipalities.

Minister Baloyi has served in the following capacity in government:

- Member of Parliamentary Committee on Public Service and Administration.
- Member of National Assembly Rules Committee.
- Member of Joint Rules Committee on Ethics and Members Interest.
- Member of the Ad Hoc Committee on African Peer Review Mechanism (APRW) on Democracy and Good Governance



## **Ebrima Faal, Regional Director, Southern Africa Regional Resource Center at the African Development Bank**

Mr. Ebrima Faal is the Regional Director for the Southern Africa Regional Resource Center at the African Development Bank. He is in charge of the Bank’s strategy, operations, and analytical work in the region. He was a staff member of the IMF for 17 years (1992-2009). During that time, his work focused mostly on economic issues facing Asia, Latin American and Caribbean economies. In 1997-98, he was Adviser to the Minister of Finance and later President of the Republic of Guyana.

He was also IMF resident representative to Guyana and the Pacific. His research work has focused on economic growth, political economy and fiscal policy, inflation, and other issues pertaining to emerging and developing economies.

Born in the Gambia, Mr. Faal obtained a commerce degree from Mount Allison University (Canada) and did his masters and doctoral studies at McGill University in Canada.



### **Francis Ghesquiere, Manager, World Bank's Disaster Risk Management Practice Group and Head of GFDRR Secretariat**

Francis Ghesquiere is Manager for the World Bank's Disaster Risk Management Practice Group and Head of GFDRR Secretariat. Prior, he was Program Manager for Disaster Risk Management (DRM) in the South Asia Region (SAR) where he supported the SAR DRM team on a fast growing portfolio. There he helped the team prepare several new initiatives, including a Strategic Seismic Risk Mitigation Program for Bangladesh, a Flood Recovery Program in the State of Bihar, and Strengthening of Emergency Response Capacity in the Province of Balochistan, Pakistan. Before his assignment in South Asia, Francis was a Regional Coordinator in the Latin America and Caribbean Region, where he led a number of flagship initiatives, including the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Central America Catastrophe Probabilistic Risk Assessment initiative (CAPRA). He was also the Lead Manager for the Understanding Risk Forum (UR), which brings together experts and practitioners to explore innovation in disaster risk assessment. Francis was a key actor in the design of new policy instruments to help accelerate the World Bank's response to disasters, including the new policy on emergency operations and innovative contingent financing instruments (CAT-DDO and IRM). He is a key member of the DRM Global Expert Team where he covers Disaster Risk Reduction, Risk Modeling, and Risk Financing. Francis holds a Master's degree from the Harvard Kennedy School of Government and an Engineering Degree from the University of Louvain. He also studied Finance and Economics at New York University, ESADE Barcelona, and HEC Paris.



### **Honorable Patricia de Lille, Mayor of Cape Town**

Patricia de Lille has fought injustice for the past 34 years through her involvement in politics. She is known for her role as a trade unionist in the struggle for equality and as the initial whistle-blower on the infamous Arms Deal in 1999. In 1988 Ms de Lille was elected Vice-President of the National Council of Trade Unions (NACTU) and served as the Regional Secretary of the Chemical Workers Union, the first woman to do so.

After leading the Pan Africanist Congress of Azania (PAC) delegation to the constitutional negotiations in Kempton Park, she became a Member of Parliament in 1994 and went on to chair the Parliamentary Committee on Transport until 1999. On 26 March 2003 she formed the Independent Democrats (ID), which won national, provincial and local government seats in the 2004 elections, becoming the first woman in a democratic South Africa to do so.

Following this success, Ms de Lille went on to serve on the Judicial Services Commission and has sat on numerous Parliamentary Portfolio Committees such as Communication, Rural Development and Ethics. She is also a member of the International Parliamentarians against Corruption organisation.

Ms de Lille has been given an HIV/Aids Activist award from a Canadian organisation and has sponsored an HIV-positive child, also named Patricia, for 13 years. She has been named one of the Top Five Women in Government and Government Agencies and won the Rapport City Press Woman of the Year Award in 2006. She is a former Chancellor of the Durban Institute of Technology, an Honorary Colonel in the SANDF and currently serves on the boards of the African Monitor and the Nelson Mandela Children's Fund. She recently retired from the board of the Helen Suzman Foundation.

Before her election as Mayor of Cape Town, she was the Western Cape Minister of Social Development following the merger of the Independent Democrats and the Democratic Alliance (DA).

Once described by Nelson Mandela as "a strong, principled woman" and his "favourite opposition politician," she is married with two children, and enjoys playing golf, listening to music and reading





### **Rowan Douglas, Chief Executive Officer, Global Analytics, Willis Re, United Kingdom**

A board member of Willis Re, Rowan leads the company's analytics team and resources to support risk modelling, risk management and reinsurance transactions. He is also Chairman of the Willis Research Network (WRN), the world's largest collaboration between public science and the re/insurance industry.

In 2008 Rowan was appointed by the UK Science Minister to Natural Environment Research Council (NERC) the public body which oversees public environmental science expenditure. He also sits on the Governing Board of the Global Earthquake Model Foundation, Pavia, Italy and the Advisory Committee of the US National Centre of Atmospheric Research Earth System Laboratory, Boulder, USA.

Rowan began his career underwriting reinsurance at Syndicate 1095 at Lloyd's before founding the international risk information company WIRE Ltd in 1994 which he sold to Willis in 2000.

Mr. Douglas was educated in geography with degrees from Durham and Bristol universities.



### **Alan Knott-Craig Jr., CEO, World of Avatar**

Alan is the founder and CEO of World of Avatar, a developer of mobile applications for Africans. Between 2003 and 2006 co-founded five companies in the mobile telecoms sector. In 2006 appointed managing director of iBurst, the third largest wireless broadband network in South Africa. In April 2008 published Don't Panic, persuading South Africans to come home. In June 2008 founded The Trust, an NGO focused on assisting charities access skills and capital. In 2009 nominated as a Young Global Leader by the World Economic Forum. Alan is a qualified Chartered Accountant (SA.)

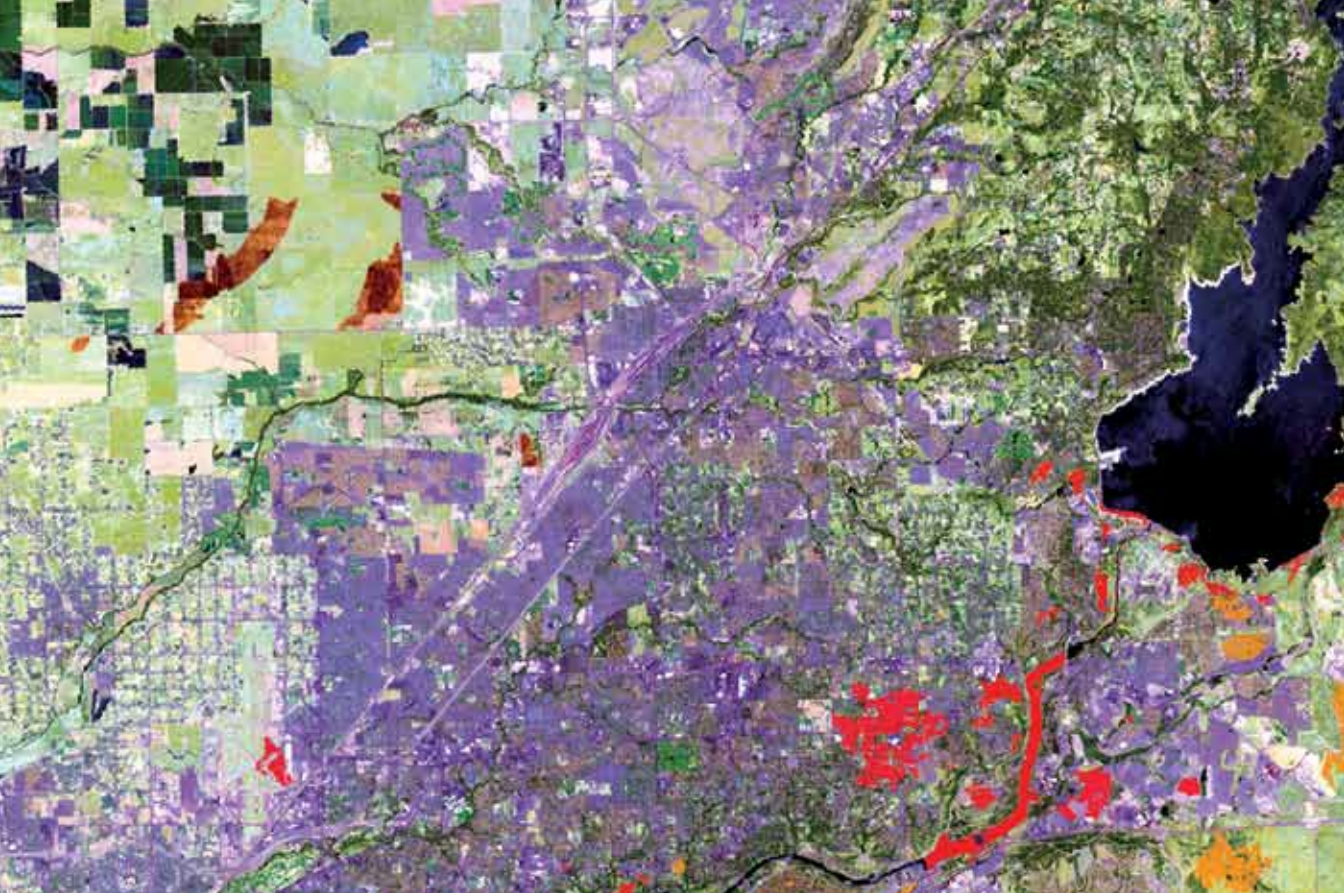


### **Ken Terry, Head of the National Disaster Management Centre, South Africa**

As the Head of the National Disaster Management Centre in South Africa, Ken leads a dynamic team to promote an integrated and coordinated system of disaster management, with special emphasis on prevention and mitigation, by national, provincial and municipal organs of state, statutory functionaries, other role players involved in disaster management and communities.

Ken is a career Public Servant who started his career in the Military in 1978. In 1990 he appointed to the then Public Service Commission before taking up a position in The Presidency in 1995. After a period of 15 years in The Presidency, having held the position of Deputy Director General: Strategy and Operations, he was transferred to the Department of Cooperative Governance as the Head of the National Disaster Management Centre in January 2012.

Mr Terry post school education included a course in Public Management at the University of Pretoria and a Senior Executive Programme at the Witwatersrand Business School in Johannesburg and Harvard Business School in Boston.



## Conference Sessions





## Session 1 - Drought Response and Resilience - Innovation in the Horn of Africa, and Beyond (Room: 1.41)

More than 20 million people in Africa are being directly affected by some form of drought at this very moment. Conditions remain stressed in the Horn of Africa following the 2011 drought and the Sahel Region of West Africa is currently experiencing the onset of a wide-spread drought crisis. In other regions, climate change is aggravating localized drought conditions outside of normal seasonal cycles. Vulnerable and at-risk populations are the most affected with drought often resulting in large migrations and displacement. Fortunately, there have been major innovations in hydro-meteorological forecasting and disaster risk management which has helped certain communities implement better drought response and resilience mechanisms. In this forum, we welcome an exchange on innovative ways Disaster Risk Managers are responding to drought (including geo-spatial mapping), combined with local cultural practices, to improve overall drought resilience.

**Lead:** Mr. Abdishakur Othowai, Associate Director, IGAD Climate Prediction and Applications Centre (ICPAC)

**Co-Lead:** Jonathan Kamkwala, Manager, World Bank

### Panelists and Presentation Titles:

#### Resilience Building and Landscapes in Fragile Lands

Dr. Carlo Scaramella, Coordinator, World Food Program Office for Climate Change, Environment and Disaster Risk Reduction

#### Community Level Innovations in Drought Prediction and Applications for Drought Management, Environmental Management, and Sustainable Development

Mr. Abdishakur Othowai, Associate Director, IGAD Climate Prediction and Applications Centre (ICPAC)

#### Case Study - Famine Early Warning during Somalia Drought

Abdullahi D Khalif, PhD., Director, FEWSNET (Somalia)

#### Mapping Transitions to Drought

Roger S. Pulwarty PhD., Chief, Climate and Societal Division and Director, National Integrated Drought Information System, National Oceanic and Atmospheric Administration (NOAA)



## Session 2 - Advancing Risk Assessments for Financial Applications (Room:1.43)

Robust disaster risk information and management systems are fundamental for effective financial protection against natural disasters. Disaster risk information enables the quantification of the expected cost of disasters at the macro-level (e.g., economic losses to society and fiscal losses to the government) and at the micro-level (e.g., losses to homeowners, firms, and agricultural producers). Risk assessment empowers decision-makers at all levels to understand and own their exposure to natural hazards. This understanding can help them to design financial protection strategies and conduct cost-benefit analysis of investments in risk mitigation. Furthermore, during and

following a disaster, data on the event's parameters and inflicted damage and losses are essential to determine funding requirements and prioritization for disaster response.

Advancements in assessment of disaster risk data and their financial applications are fostering new and more cost- and time-efficient disaster risk financing and insurance solutions. Natural disasters represent a growing challenge to financial and fiscal risk management in developing countries; particularly in emerging economies, significant increases in people and assets at risk translate into exponential increases in disaster losses. Financial and fiscal risk assessment, relying on robust disaster risk information, allows the design of a disaster risk financing strategies at all levels and helps lower the costs of risk financing products. The development of risk financing strategies can ensure that catastrophic risks are transferred to the private sector and that post-disaster funding needs are matched.

This UR session will explore how the public and private sectors are pursuing disaster risk assessment with applications for disaster risk financing. The session will set out to understand the opportunities and challenges in this space and how these efforts fit in to the broader disaster risk management context. Presentations and a panel discussion will cover numerous approaches and contexts for advancing risk assessment for disaster risk financing; the roles of the public and private sectors, including collaborative public-private partnerships, will be examined.

**Lead:** Mr. Ken Terry, Head, National Disaster Management Centre, Government of South Africa

**Moderator:** Olivier Mahul, Coordinator, Disaster Risk Financing and Insurance Program, The World Bank & the Global Facility for Disaster Reduction & Recovery (GFDRR)

#### **Panelists and Presentation Titles:**

##### **A Programmatic Approach to Fiscal Disaster Risk Assessment and Management**

Markus Schrader, Counselor, Swiss Economic Cooperation & Development, South Africa

##### **Developing a Sovereign Disaster Risk Financing Strategy in The Context of Disaster Risk Management: The Mexican Experience**

Manuel Lobato, Former Head, Insurance, Pension, and Social Security, Ministry of Finance, Mexico

##### **Public-Private Partnership for Disaster Risk Assessment and Financing: The South African Experience**

Debbie Donaldson, General Manager of Strategy and Planning, South Africa Insurance Association (SAIA)

##### **Malawi's Experience with Disaster Risk Management and Financing for Agriculture**

Daisi Kachingwe, Risk Management Unit, Malawi Ministry of Agriculture

##### **Africa Risk Capacity**

Neil Cole, Chief Director, African Economic Integration, National Treasury, Government of South Africa

##### **Session Closing**

Anthony Julies, Chief Director, Strategy and Risk Management, National Treasury, Government of South Africa



### Session 3 - Open Data (Room: 1.41)

In order to build resilient societies, policy-makers and the public must have access to the right data and information to inform good decisions – decisions such as where and how to build safer schools, how to ensure farmers against drought, and how to protect coast cities against future climate impacts. Too often, this data and information is fragmented across government ministries and the private sector and unavailable to decision-makers and at-risk populations. Sharing data and creating open systems promotes transparency, accountability, and ensures a wide range of actors are able to participate in the challenge of building resilience.

The joint UN/World Bank flagship publication, “Natural Hazards, Unnatural Disasters: the Economics of Effective Prevention,” highlights the importance of data sharing to reducing vulnerability to natural disasters. Likewise, the Hyogo Framework for Action calls for governments to create and “widely disseminate risk maps and related information to decision-makers, the general public, and communities at risk.”

What are the specific challenges that the open data movement are facing in the disaster risk management context? What have we learned from early attempts at building open data initiatives around hazard, exposure, and risk information? What partnerships can be built at the international level to help countries open their own data? What challenges and opportunities will these efforts face in years to come?

**Lead:** Robert Soden, World Bank

**Co-Lead:** Dr. D.G Clarke, Chief Director, National Geo-spatial Information, South Africa

**Panelists and Presentation Title:**

#### Open Data for Africa Platform

Beejaye Kokil, Division Manager, Economic & Social Statistics Division, African Development Bank

Dr. Jacob Opadeyi, Head of the Geoinformatics Department at University of West Indies, Trinidad

Mr. Ir. Dodi Sukmayadi, Head of Center of Networking System and GeoSpatial Data Standardization, Indonesian National Information and Geospatial Agency (Badan Informasi Geospasial)



### Session 4 - Working Together to Advance Earthquake Risk Assessment and Understanding (Room: 1.43)

Global challenges are best met united; but how? Despite the well-known damage that earthquakes can cause, risk assessment tools and data are out of reach in many areas of the world. This session discusses how we can collaborate and make use of existing initiatives, knowledge and data, for analysing and understanding seismic risk anywhere in the world. With a special focus on activities in the African continent, the session features a few thought-provoking presentations on how science is being leveraged for the benefit of society, and the challenges that lie ahead. We count on your input and participation for the discussion on best practices and how we can all work together to strengthen technical capacity and build resilience to earthquakes.

**Lead:** Rui Pinho, Secretary General, GEM Foundation

**Panelists and Presentation Titles:**

**Earthquake hazard and risk in Africa: assessment and mitigation needs**

Atalay Ayele, IGSSA, Addis Ababa University / GEM-SSA Operations Manager

**Challenges in developing and maintaining capacity for seismic hazard monitoring in Africa**

John Dumisani Hlatywayo, National University of Science and Technology Bulawayo

**Leveraging on GEM to advance seismic hazard and risk assessment**

Helen Crowley - GEM Foundation

**GEM-SSA: an envisaged collaborative project in sub-Saharan Africa**

Ray Durrheim, Africay Array, Council for Scientific and Industrial Research (CSIR)

**Discussion Panel:**

Atalay Ayele, IGSSA, Addis Ababa University / GEM-SSA Operations Manager

Helen Crowley, GEM Foundation

Ray Durrheim, Africay Array, CSIR

Mohamed ElGabry, EOST, Université de Strasbourg / GEM-NAF Operations Manager

Dumisani John Hlatywayo, National University of Science and Technology Bulawayo

Nicole Keller, GEM Foundation



**Session 5 - The Global Assessment Report on Disaster Risk 2013** (Room: 1.41)

The United Nations Global Assessment Report on Disaster Risk Reduction is a resource for understanding and analysing global disaster risk today and in the future.

Drawing on new and enhanced data, the report explores trends in disaster risk for each region and for countries with different socioeconomic development. At the same time, over 130 governments are engaged in self-assessments of their progress towards the Hyogo Framework for Action (HFA), contributing to what is now the most complete global overview of national efforts to reduce disaster risk.

The 2011 Global Assessment Report on Disaster Risk Reduction (GAR11) highlights the political and economic imperative to reduce disaster risks, and the benefits to be gained from doing so. Importantly, it offers guidance and suggestions to governments and nongovernmental actors alike on how they can, together, reduce disaster risks.

For the 2013 edition, UNISDR is actively working on a number of fronts, among them an enhanced, state-of-the-art global probabilistic risk assessment of major hazards, ground-breaking work on

global and regional drought models, new perspectives from the private sector on its role on risk reduction and innovative methodologies to help countries producing hybrid risk models.

The GAR session will present the main findings of the previous editions of the GAR and some highlights of the work that will be published in 2013 and 2015.

**Lead:** Andrew Maskrey, UNISDR

### Panelists and Presentation Titles:

#### Perspectives on Global Risk 2009-2013

Andrew Maskrey, GAR Coordinator, UNISDR

#### Estimating agricultural drought exposure in Africa and the Mediterranean

Wadid Erian, Arab Center for the Study of Arid Zones and Dry Lands

#### A Probabilistic Approach to estimation of Drought risk

Harikishan Jayanthi, FEWS-NET

#### Use of disaster loss data in hybrid risk models

Julio Serje, GAR team, UNISDR



### Session 6 - New Tools and Methodologies for Building Disaster Resilience: Moving from Risk Assessment to Mitigation (Room: 1.43)

The ultimate goal of almost all disaster risk reduction efforts is to build the resilience of our communities. This resiliency requires communities and government actors at all levels from local to national and across different sectors such as finance, planning and infrastructure to own and share a common and robust understanding of their risks and to take responsibility for trying to manage and, where possible, mitigate these risks.

One of the major challenges faced across the world is how do we bridge the gap between our scientists, our policy makers and our communities to ensure that we are truly making evidence based decisions across a range of disaster risk reduction and climate change adaptation actions? Can technology make this easier or do we run the risk of having a more rigorous understanding of risk without community ownership and subsequent action? How do we take advantage of the emerging culture of open data and open source software and leverage off new ways to encourage participatory mapping to ensure that communities and all levels of government are effectively:

- using new science to guide their actions; and
- advocating for increased disaster risk reduction?

Ultimately, how do we get the full value from our scientific efforts and ensure that better knowledge is reaching communities and governments in a way that is easily understood, believed and, above all, actioned?

**Lead:** Trevor Dhu, Risk and Vulnerability Manager, Australia-Indonesia Facility for Disaster Reduction, AusAID

### Panelists and Presentation Titles:

Dr. Agus Wibowo, Head of Data Division from National Agency for Disaster Management (BNPB), Indonesia

Mr. Michael Bonte, (formerly of Secretariat of the Pacific Community's Applied Geoscience and Technology Division) Disaster Risk Management and Climate Change Adaptation Specialist from the World Bank, Pacific Department for Sustainable Development

### Seismic Risk Assessment for the Metropolitan Region of San Salvador: Educational, Public Health and Governmental Agencies

Celina Kattan Jokisch, Seismologist, Ministry of the Environment and Natural Resources (MARN), El Salvador

Mr. Abdullah Mohamed Ali Motafi, Ministry of Public Works, Yemen



### Session 7 - Flood Risks across Spatial Scales (Room: 1.41)

Flooding of river systems and deltas is the most frequent and costly natural hazard, affecting the majority of the world's countries on a regular basis. To minimize the impact of floods, adaptation measures, mitigation strategies and financing schemes are developed at spatial scales ranging from local to global. The information needed for risk analysis and decision making varies with the scale. At a local scale, high-resolution risk assessment using specific inundation patterns is required to decide upon evacuation and mitigation plans. At a river basin scale, a more generic basin-wide assessment may be used to assist land-use planning and formulate adaptation pathways. At the global scale, international re-insurance and development organizations require a consistent risk framework for cross-continental resource allocation.

In this session, we seek to clarify what information needs on flood risks may arise at different spatial scales and what solutions are available. In particular we focus on applications in the African context. On this forum we are looking forward to contributions about for instance

Information needs:

- Flood risk assessment requirements
- Flood forecasting requirements
- Temporal and spatial resolution

Solutions:

- Methodologies to provide flood risk assessments (hazard, exposure, vulnerability)
- Flood forecasting tools / examples
- Software solutions for flood forecasting / risk assessments

**Lead:** Dr. Jaap Kwadijk, Director of Sciences/Chair Scientific board , Deltares

**Co-Lead:** Mr. Rosauge Guale, Director, Environmental lab, hidroelectrica de Cahora Bassa

### Panelists and Presentation Titles:

### Flood Risk Estimation: Requirements at Different Spatial Scales

Mr. Hessel Winsemius, Deltares



## Integrated Urban Flood Risk Management for the 21<sup>st</sup> Century: Key Principles and Tools

Zuzana Stanton-Geddes, World Bank

## Floods in African Perspective and Cahora Bassa

Mr. Rosaugue Guale, Director, Environmental lab, Hidroelectrica de Cahora Bassa

## The Benefits of Rapid Flood Modeling

Mr. Hamish Hall, Royal Haskoning

## Dynamic Flood Modeling Using Globally Available Data: An African Example

Mr. Brenden Jongman, Institute for Environmental Studies



## Session 8 - Applications of Crowdsourcing for Development and Disaster Response (Room: 1.43)

Crowdsourcing is a process where distributed groups of people work together to complete a task. Examples of large crowdsourcing related platforms and projects include Amazon Mechanical Turk and Wikipedia. These methods of distributing and sharing tasks can also be strong methods for more detailed reporting for development projects, mapping vulnerable areas for disaster risk reduction, and helping direct aid in the response phase of a crisis.

This panel includes experts and practitioners of varied crowdsourcing platforms and projects. During the panel the group will explore both successes and difficulties with the application of crowdsourcing. This panel will be designed as a discussion around what possibilities exist. Attendees will have a better understanding of how crowdsourcing might apply to their own projects and considerations to think about before applying these techniques.

**Lead:** Kate Chapman, Acting Executive Director, Humanitarian OpenStreetMap Team (HOT)

**Co-Lead:** Emmanuel Kala, Software Developer, Ushahidi

### Panelists:

Abby Baca, Disaster Risk Management Specialist, World Bank

Shannon Dosemagen, Director of Community Engagement, Education and Outreach, Public Laboratory for Open Technology and Science (PLOTS)

Helena Puig Larrauri, Co-founder, Standby Task Force

Rob Munro, Chief Executive Officer, Idibon



## Session 9 - Assessing Risk in Changing Climate (Room: 1.41)

Science, policy and practice all demonstrate that disaster risk management and climate change adaptation are intimately connected. This session will present the scientific consensus and lessons learned from practice to explore the implications of our knowledge about changing climate risks for risk management. How do we avoid managing the risks of the past? How can policy and practice bridge short and longer timescales?

The session will start with a brief presentation of the conclusions of the recent IPCC Special

Report on Managing the Risk of Extremes and Disasters to advance Climate Change Adaptation (SREX). Signed off by all governments, this report presents the best scientific knowledge on how extremes are changing, but also how changing risks can best be managed.

Those messages are then put in the context of current practice. Alhamndou Dorsouma (African Development Bank) will reflect on the African Development Bank experience in developing safeguards for climate risk management. Sofia Bettencourt (World Bank) will then discuss the role of instruments, institutions and incentives, building on experience in the Pacific as well as in several African countries.

These three brief presentations will be followed by a panel discussion on three key themes, which all link to aspects of the three presentations above: (i) the role of climate information, (ii) national planning, and (iii) local implementation.

The panel discussion will draw experience from the presenters and panelists as well as the audience. Participants will be asked to present concrete recommendations that can be challenged and/or endorsed by others, and will then be recorded as outcomes of the session.

**Lead:** Ebrima Faal, Regional Director, African Development Bank

**Presentations:** Balgis Osman-Elasha, African Development Bank/IPCC

Maarten Van Aalst, RCCC/IPCC

### **Panelists and Presentation Titles:**

#### **Safeguards for Climate Risk Management**

Mr. Alhamndou Dorsouma, African Development Bank

#### **Addressing Changing Risks – Instruments, Institutions and Incentives**

Sofia Bettencourt, World Bank

#### **Moderated discussions**

(Moderated by Tony Nyong, African Development Bank & Maarten van Aalst, RCCC)

#### **The role of Climate Information including Capacity Building for its Use**

Laban Ogallo, ICPAC; Ahassane Diallo, ACMAD; Bruce Hewitson/Mark New, UCT

#### **National planning**

Ebrima Faal/AfDB, South African government

#### **Local Implementation and Links to National and International Planning**

James Kisia, Kenya Red Cross; Youcef Ait-Chellouche, ISDR



### **Session 10 - Satellite Earth Observation and Disaster Risk Management** (Room: 1.43)

Reducing the vulnerability of our societies and the risk of natural disasters can be supported by understanding our environment and the fundamental mechanisms that drive changes to the environment. The field of Earth Observation (EO) is an important element for improved knowledge of hazards, risks and potential disasters as a basis for efficient decision making, better mitigation, and preparedness for disasters. Satellite EO

can support scientists and operational users for a range of applications. This is the case for risk assessment for prevention & preparedness and the immediate response phase, two areas where information needs are different. Recent achievements and reflections in user communities involved with satellite imagery and hazard risk have focused on how EO based response and EO based risk mapping can be linked. A broad range of themes are concerned from hydro-meteorological hazards to geohazards. For instance this is the case for flood hazards in Africa.

**Leads:** Philippe Bally, European Space Agency (ESA)

Jane Olwoch, South African Space Agency (SANSA)

**Introduction:** Jane Olwoch, South African Space Agency (SANSA)

### Panelists and Presentation Titles:

#### ESA's overview of EO capabilities for DRM

Philippe Bally, ESA

#### Urban Risk Assessments with the use of Earth Observation; WB-ESA collaboration

Anthony G. Bigio, World Bank

#### Earth Observation technologies for flood mapping and hydrological modeling in Namibia

Guido Van Langenhove, Head of the National Hydrological Services in Namibia

#### SANSA's contributions towards disaster monitoring and assessment

Dr. Paida Mangara, South African Space Agency (SANSA)

#### Applications of Earth Observation data for disaster risk management

Hicham EZZINE, Regional Centre for Disaster Risk Reduction (RCDRR), Egypt

#### Disaster Early Warning and Response activities by RCMRD in Eastern and Southern African Regions

Dr. Tesfaye Korme, Regional Centre for Mapping of Resources for Development (RCMRD), Kenya



### Session 11 - Landslide Risk Assessments for Decision Making

(Room: 1.6)

Landslides pose an increasing risk to many countries, closely related to both demographic pressures and territory mismanagement, such as illegal settlements, deforestation and lack of appropriate waste water management (c.f. UNISDR 2011)<sup>1</sup>. Sound landslide risk management is based on landslide risk assessments which provide critical information required to identify suitable strategies and mitigation measures. Such strategies, including but not limited to, the integration of landslide hazard zones into land use planning, structural measures to stabilize slopes, development of drainage systems or establishment of early-warning systems, are all critically dependent on reliable information. However, the complexities associated with gathering this information, that is the characterization of slope instabilities, or the prediction of potential slope failures, for instance, present broad challenges.

This session will present several cases in which landslide risk assessments have been carried out to inform risk management strategies, and the associated challenges throughout the risk analysis,

interpretation and decision-making process.

**Lead:** Dr. Cees van Westen, Associate Professor, Faculty of Geo- Information Science and Earth Observation, University of Twente

**Co-Lead:** Dr. Souleymane Diop, Engineering Geologist, Engineering Geoscience Unit, Council for Geoscience

## An Overview of Landslide Occurrence, Inventorization and Susceptibility Mapping in South Africa

### Panelists and presentation titles:

#### Community-based Landslide Risk Reduction: Evidence and Challenges

Professor Malcolm G. Andersen, Visiting Professor of Hydrology, University of Oxford; Professor of Hydrology, University of Bristol

#### Providing Landslide Information for Decision-Making in Regional Planning

Mr. Jerome V. De Graff, Geologist, Adjunct Faculty, California State University, Fresno

#### Challenges of Integrating Landslide Risk Information in Land-Use Management in Medellin, Colombia

Cynthia Linero Molina, Senior Geotechnical Engineer, World Bank



### Session 12 -Community-based Risk Assessment (Room: 1.41)

Risk and risk reduction has increasingly established itself in the rhetoric of government and non-government actors in Africa. As risk reduction activities have proliferated, we are increasingly held to account, has risk been reduced?

It is a difficult question to answer. What is the evidence risk has been reduced or not?

Part of the difficulty is simply the confusion around the terminology. Risk and risk reduction have a precise technical definition which is often confused with more general notions of the word. This lack of clarity is reflected in the often asked question, what is the difference between community development work and risk reduction activities?

Distinguishing risk from general needs is important. Communities, removed from the cumbersome lexicon of the development sector, are clear on the risks they face. They are also clear on what must be done to reduce their exposure or vulnerability to those risks. Community risk assessment is a process intended to systematically identify those risks and actions to reduce risk. Our experience suggests that whilst community assessments comply with outlined methodologies, they do not in fact identify risk, but rather prioritise community development needs. In part, our difficulty in proving that risk has been reduced begins at this point.

This Panel discussion will distinguish between needs and risk as well as innovations that make community risk assessments a key starting point in work which delivers reduced risk.

**Lead:** James Kisia, Kenya Red Cross

**Panelists and Presentation Titles:****Integrating climate change aspects into community risk assessment**

Dr. Pablo Suarez

**Strengthening community risk assessment in urban slums: Key challenges**

Ameen Benjamin

**The Somali Famine: The case of community risk assessment in famine early warning system**

Stephen McDowell

**Linking community risk assessment to resilience programming**

Gurrudut Prasad

**Session 13 -Thinking about the Unthinkable** (Room: 1.43)

In the British television series, Monty Python's Flying Circus, three actors dressed in red as Roman Catholic cardinals burst in on an unsuspecting (modern) English couple. The husband exclaims, "I didn't expect a kind of Spanish Inquisition", to which one of the cardinals (Michael Palin) replies, "Nobody ever expects the Spanish Inquisition!".

Maybe in these days nobody expects the Spanish Inquisition, but at least a few people understood natural disasters well enough to expect events like the Japanese tsunami and nuclear disaster of 2011, the Pakistani floods of 2010 and the Indonesian earthquake and tsunami of 2004. Other recent "unthinkable" events are the shutdown of all European air travel due to a relatively minor volcanic eruption in Iceland and the massive oil spill in the Gulf of Mexico, both of which had been predicted and discussed beforehand, admittedly by only a small group of interested individuals. In these cases, as in many others, the problem is not that nobody understands the processes well enough to predict what might happen, but rather that organizations and individuals are not willing to take these predictions seriously and consider the actions that are needed to mitigate them, even when the entire exercise can be shown to be highly cost-effective.

The goal of this forum is to discuss why it is so difficult to get individuals and organizations to think about the unthinkable and how it might be possible to change this paradigm.

**Lead:** Kenneth L. Verosub, Distinguished Professor, University of California, Davis California

**Panelists and Presentation Titles:****Why We Have A Problem Thinking About The Unthinkable**

Carl Taylor, Executive Director, Fraser Institute for Health Research, Princeton NJ

**Resilience and the Unthinkable**

Gavin Macgregor-Skinner, Assistant Professor, Department of Public Health Sciences, College of Medicine, The Pennsylvania State University

**Can New Technologies Save Us from the Unthinkable?**

Kenneth Verosub, Distinguished Professor, University of California, Davis California



## **Session 14 -Meteorological, Hydrological and Climate Services to Support Risk Analysis** (Room: 1.6)

Risk analysis requires partnerships across disciplines and boundaries. Meteorological, hydrological and climate services routinely develop hazard products and services. A number of challenges still remain for their optimal utilization and accessibility to support risk analysis and mapping. This session will present examples and ways forward for enhancing the participation of meteorological, hydrological and climate services in the development of risk analysis products. In relation with the intensive work being carried out to improve hazard data as the baseline for the Global Assessment Report since 2007, three examples will be presented, with highly variable coordination and harmonization models from local to global scale: (i) TROPICAL CYCLONES hazard information being monitored, archived, analyzed by six specialized centers with strong regional coordination, with the example of La Reunion regional specialized center; (ii) successful cross-sector and transboundary collaboration across agencies for FLOODING hazard and risk assessment in the Zambezi watershed; however development of a global flood hazard dataset remains a challenge; (iii) DROUGHT hazard and risk assessment present even more complex challenges at the global scale.

The South Africa Weather Service, co-chairing this session on behalf of WMO, will present a number of application developed with the national disaster risk management agency and with various sectors for risk assessment and planning at local, national and SADC level.

WMO is engaging its member meteorological, hydrological and climate services in a standardization process for hazard databases, metadata and statistical analysis and forecasting techniques, as well as in improving access to hazard data through the WMO Information System (WIS) and the Global Framework for Climate Services (GFCS). The session will discuss these initiatives and will identify perspectives for specific collaborations that could be engaged between WMO and the World Bank to support open data for resilience, and promote transparency, accountability and improved decision making.

**Lead:** Eugene Poolman, Chief Forecaster, Disaster Risk Reduction, South African Weather Service, representing WMO

**Co-Lead:** Jean-Baptiste Migraine, Disaster Risk Management Specialist, Global Facility for Disaster Reduction and Recovery, World Bank

### **Panelists and Presentation Titles:**

#### **Overview of WMO Initiatives in Strengthening Meteorological, Hydrological and Climate Hazard Information to Support Risk Assessment**

Maryam Golnaraghi, Chief of Disaster Risk Reduction Programme, World Meteorological Organisation (WMO)

#### **Challenges with Collection of Hazard Information Related to Tropical Cyclones, Drought and Flooding at the Global Level (GAR 2007, 2009, 2011 and 2013)**

Andrew Maskrey, Coordinator of the Global Assessment Report (GAR), United Nations International Strategy for Disaster Risk Reduction (UN/ISDR)

**Availability of Tropical Cyclone Hazard Information at National, Regional and Global Scales; Example of Usage in La Réunion for Risk Modeling**

Philippe Caroff, Chief Forecaster, La Météo-France La Réunion Tropical Cyclone Regional Specialised Meteorological Center

**Flood Hazard Information for Flood Risk Assessment and Management: Example from Zambezi River Basin**

Osborne Shela, Water resources specialist in trans-boundary river basin management, water resources management, institutional development and Managing Director of Majiatua Engineering Services and Geoscope Consultancy Services Associate

**Drought Monitoring and Analysis and Complexities of Developing Drought Hazard Databases from Local to Global Levels**

Roger Pulwarty - Chief, Climate and Societal Interactions Division and Director, National Integrated Drought Information System, National Oceanic and Atmospheric Administration (NOAA)

**South African Meteorological Service Experiences for Provision of Hazard for Risk Analysis (With Multi-Hazard and Multi-Sector Approach)**

**Accessing Information to Support Risk Analysis and Mapping through NMHSS, WMO Global Telecommunication System (GTS), WMO Information System (WIS) and the Global Framework for Climate Services (GFCS) and other Specialized Networks**

Eugene Poolman - Chief Forecaster: Disaster Risk Reduction, South African Weather Service, representing WMO

# Mayors Roundtable on Urban Risk

**Time and location:** Wednesday, July 4, 2012 (14:00 – 16:00) (Room: Roof terrace)

Cities are at particularly high risk from the impacts of climate change and natural disasters due to where they are located, and due to exposure related to the high concentration of people and economic assets. Increasingly cities are carrying out risk assessments and developing resilience plans that ideally are integrated with urban planning and management. During this session, mayors from several cities will present their views on risk, what they are doing to address it and what they see as the main challenges. The session is being co-lead by ICLEI-Africa, the World Bank Institute, and UNISDR-Africa.

14:00	Welcome and Introduction by Chair	Maputo, Mozambique: Mayor David Simango
14:10	Addressing Urban Risk: Mayor's Perspective	
	Cape Town, South Africa: Mayor Alderman Patricia de Lille	15:10 Regional and Global Perspective on Urban Risk
	Dar es Salaam, Tanzania: Mayor Didas Massaburi	World Bank: Judy Baker, Lead Economist
	Temeke Municipal Council, Tanzania, Mayor Maabad Hoja	ICLEI-Africa: Jenny Clover, Program Manager
	Port Louis, Mauritius: Lord Mayor Mahmud Kodabaccus	UNISDR-Africa: Yousef Ait-Chellouche
	Walvis Bay, Namibia: Mayor Derek Klazen	15:25 Open Discussion
		15:55 Wrap Up and Closing by Chair

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## Working Lunch Session – Tulane University

**Time and location:** Thursday, July 5, 2012 (12h30) (Room: Roof terrace)

### Understanding Risk and the role of Leadership to promote Resilience

In this session, regional partners (East Africa, West Africa, and Asia/Pacific) within Tulane University's Disaster Resilience Leadership Academy's global partnership project, Strengthening Leadership in Disaster Resilience Program (SLDRP), will provide their perspectives regarding risk, and the role of leadership to promote resilience outcomes. This global network of experts and practitioners will elaborate on their collaborative experiences and roles in the SLDR program as well as their institutional efforts with regard to building resilience. In attendance will be the following:

Tulane University, Disaster Resilience Leadership Academy: Mr. Ky Luu (Executive Director) and Ms. Deborah Elzie (Instructional Designer)

Makerere University, School of Public Health: Dr. Christopher G. Orach (Vice Dean, Chair - Dept. of Community Health & Behavioral Sciences) and/or Dr. William Bazeyo (Dean) from Makerere University, School of Public Health

University of Ghana, School of Public: Dr. Ishmael Norman (Ag. Head: Dept of Biological, Environmental & Occupational Health Sciences)

Asian Disaster Preparedness Center: Mr. Sisira Kumara (Head of Training Services)



# Training Sessions

## Training Session A: GEM Technical Training (closed)

**Time and location:** Thursday July 5th, 2012 (0900 - 1730), (Room 1.41)

**Lead:** Global Earthquake Model

**Trainers:** Atalay Ayele, Helen Crowley, Macro Pagani, Graeme Weatherill

**Description:** GEM is a global effort to collaboratively develop and enhance global databases, methodologies, tools and resources for earthquake risk assessment across the globe. Some 25 scientists from around Africa are participating in a technology transfer exercise. The training focuses on use of GEM's open-source tools for the building of seismic hazard models for the region, and for carrying out seismic hazard and risk assessment. The training features a number of hands-on exercises to ease working with the tools, among which the *OpenQuake* engine for earthquake hazard and risk assessment at any scale.

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## Training Session B: CAPRA

**Time and location:** Thursday July 5th , 2012 (0900-1730), (Room 1.43)

**Lead:** Evaluacion de Riesgos Naturales (ERN) & World Bank

**Trainers:** Fernando Ramirez, Oscar Ishizawa, Eduardo Reinoso, Carolina Rogelis, Erika Vargas

**Description:** Probabilistic Risk Assessment, CAPRA Initiative

The CAPRA software suite is a free, modular, open-source, and multi-hazard tool for risk assessment. CAPRA provides a risk calculation platform (CAPRA-GIS) integrating exposure databases and physical vulnerability functions under a probabilistic approach.

CAPRA evaluates risk in terms of physical damage and estimates direct economic and human losses. CAPRA uses a display platform geographical information system (GIS) to estimate the disaster risk of earthquakes, tsunamis, hurricanes, floods,, and volcanoes. CAPRA uses a multi-hazard risk approach allowing users to determine the risk accumulated from more than one hazard and analyzing several exposure portfolios of infrastructure.

This training session introduces CAPRA as a tool for probabilistic risk assessment, followed by examples of applications derived from probabilistic risk assessments and two presentations related to flood and seismic risk assessment modules.

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## Training Session C: OpenStreetMap (OSM)

**Time and location:** Thursday July 5th, 2012 (1400-1730), (Room 1.6)

**Lead:** Humanitarian OpenStreetMap Team

**Trainers:** Kate Chapman & Pierre Beland

**Description:** OpenStreetMap is an Internet project with the goal of creating a free map of the entire world. It has been used in many contexts around the world including disaster response and disaster risk reduction. By having a community around mapping information the data becomes more up to date and more detailed. This workshop teach participants how to join this community around free and open map data, as well as how they can begin using it in their own projects.

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## Training Session D: SAFE & GeoNode

**Time and location:** Friday July 6th, 2012 (0900-1730), (Room 1.41)

**Lead:** World Bank

**Trainers:** Robert Soden, Ariel Nunez, and Abigail Baca

**Description:**

**GeoNode:** GeoNode is an open-source platform that facilitates the creation, sharing and collaborative use of geospatial data. The tool is build upon mature and free open-source software and is designed to allow non-technical users to easily share their data and use it to create interactive maps. GeoNode surpasses existing spatial data infrastructure solutions by integrating robust social and cartographic tools.

This training will cover the basics of GeoNode and show how it works in tandem to support CAPRA and SAFE. GeoNode provides the data management for CAPRA, and SAFE is built within the GeoNode tool framework.

**SAFE:** To effectively prepare for future floods or earthquakes you must first understand the likely impacts that need to be managed. Scenario Assessment For Emergencies (SAFE) provides a simple but rigorous way to combine data from scientists, local governments and communities to provide insights into the likely impacts of future disaster events.

SAFE is a suite of innovative and simple web-based open-source tools aimed at helping decision makers understand the risk of natural hazards and build resilience. The vision is to be able to rapidly customize for a given stakeholder the presentation of risk information with an interactive, decision oriented tool. The tool promotes the enhanced capacity to manage and use geospatial data. The tool can be used for rapid post-disaster impact estimation, contingency planning, infrastructure / spatial planning and multi-hazard impact assessment.

Anyone with basic computer skills can quickly learn to use SAFE to explore the potential impacts of a disaster event and to produce maps and reports of these impacts. The software leads a user through the process and has tools to estimate the likely damage that a hazard will cause to people and critical infrastructure such as schools, hospitals, roads, etc. SAFE enables the more advanced users to add data from new sectors.

GeoNode and SAFE are part of the Open Data for Resilience Initiative (OpenDRI), a GFDRR initiative that promotes the sharing of hazard and risk data.

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## Training Session E: Disaster Loss Accounting with DesInventar, Training and Community of Practice Meeting

**Time and location:** July 6th, 2012 (0900 - 1730), (Room 1.43)

**Lead:** UNISDR

**Trainers:** Julio Serje

**Description:** Reducing the risks associated with geological, climate-related and other physical hazards is increasingly being seen by governments as key to development, sustainability and competitiveness. As indicated by global risk modelling, existing countries' national disaster loss data and insurance industry estimates, loss and damage to public and private assets is rapidly increasing, as economic growth translates into growing exposure to hazards.

GAR09, GAR11 and the IPCC SREX provide evidence to show that weather-related hazards account for the majority of disaster damage and losses—and that in many countries economic losses are growing exponentially. It is foreseeable that disaster risk and associated losses and impacts in all regions will be increasingly mediated by global climate change.

However, few countries are systematically accounting for disaster loss. Without credible loss and damage estimates it is difficult to generate the political momentum for increasing investment in risk reduction and climate change adaptation.

On another hand, while a large number of specific risk assessments are carried out by both public and private sector organizations, few governments have modelled their full spectrum of disaster risks in a comprehensive way. Even fewer are using these assessments and loss and damage estimates to design strategies for risk reduction and financial protection.

Properly accounting and analyzing disaster losses through the development of national disaster databases represents a low-cost, high-impact strategy to fill this gap, and is the crucial first step to generate the information necessary for accurate risk assessments and to inform public policy in CCA and DRR. Later on the physical losses recorded in the databases can be translated into monetary/economic losses enabling an initial evidence-based estimate of recurrent losses.

This Training session of Understanding Risk will show participants practical, proven and simple tools to build disaster loss databases and methods to analyze and use its information to help designing effective strategies for Disaster Risk Reduction and Climate Change Adaptation.

## The 2012 Forum Agenda

July 2: Opening Ceremony

July 3-4: Conference Sessions

July 4: Mayors Roundtable on Urban Risk

July 5-6: Technical Training and Community-of-Practice Meetings