IPCC Special Report: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)
Possible linkages between climate change and frequency of extreme events

- the IPCC Fourth Assessment Report (AR4 - 2007) stipulated possible linkages to the predicted increase in intensity and frequency of extreme events,
- The Report stated that “…the type, frequency and intensity of extreme events are expected to change as Earth’s climate changes, and these changes could occur even with relatively small mean climate changes. Changes in some types of extreme events have already been observed, for example, increases in the frequency and intensity of heat waves and heavy precipitation events” (Summary for Policy Makers, WG I, FAQ 10.1, p. 122).
The rationale for proposing a Special Report

• AR4. Increasing the need for adaptation.
  • At the same time, changes to ecosystems and natural resources, increasing urbanization and vulnerability further increase the consequences of extreme weather events.
  • The AR4 recognized that reducing vulnerability to current climatic variability can effectively reduce vulnerability to increased hazard risk associated with climate change.
  • However, the AR4 reviewed policies and measures that were specifically identified as adaptation and not the full range of activities undertaken to reduce the risks of extreme events and disasters.
Conceptual model of the topics to be assessed in the SREX and of the links among them. The focus will be on the part of the domain where all three spheres overlap.
Links between CC and DR to be assessed
Background: Key Dates

November 2008: 29th Session of the IPCC
   IPCC considers Norway’s submission of a proposal for a special report on managing risks of extreme events to advance climate change adaptation

March 2009: Scoping Meeting
   Experts develop a structure and annotated outline for the proposed Special Report using the Norwegian proposal as a starting point

April 2009: 30th Session of the IPCC
   IPCC agrees to prepare a Special Report on the proposed topic

May 2009: Call for Lead Author nominations
   IPCC convenes a steering group to consider nominations; selected Lead Authors were notified on 10 September 2009
European / Europe-Based Lead Authors

Maarten van Aalst — Red Cross/Red Crescent Climate Centre
Joern Birkmann — United Nations University Institute for Environment and Human Security
Maureen Fordham — Northumbria University
Lisa Schipper — Stockholm Environment Institute
Sonia Seneviratne — ETH Zurich
Clare Goodess — University of East Anglia
Markus Reichstein — Max Planck Institutute
Asgeir Sorteberg — Geophysical Institute, University of Bergen
Zbigniew Kundzewicz — Polish Academy of Science
Nigel Arnell — University of Reading
Gerardo Benito — Spanish Research Council
Pascal Peduzzi — UNEP-GRID/Europe
Boris Sherstyukov — All Russian Research Institute of Hydrometeorological Information
Tom Mitchell — Overseas Development Institute
Reinhard Mechler — IIASA
Andrew Dlugolecki — University of East Anglia
Diarmid Campbell-Lendrum — WHO
Ian Davis — Cranfield University
Richard Klein — Stockholm Environment Institute
Ferenc Toth — IAEA
Karen O’Brien — University of Oslo
Stephane Hallegatte — CIRED and Meteo-France
Andrew Maskrey — UNISDR
Mark Pelling — King’s College London

Virginia Murray — Health Protection Agency (UK)
Silvia Llosa — UNISDR
Sergey Borshch — Hydrometeorological Centre of Russia
Farrokh Nadim — International Centre for Geohazards (Norway)
Approved Chapter Outline

1. Climate change: new dimensions in disaster risk, exposure, vulnerability, and resilience
2. Determinants of risks: exposure and vulnerability
3. Changes in impacts of climate extremes: human systems and ecosystems
4. Managing the risks from climate extremes at the local level
5. National systems for managing the risk from climate extremes
6. Managing the risks: international level and integration across scales
7. Towards a resilient and sustainable future
8. Case studies
Special Report Production Schedule

**November 2009**: First Lead Authors Meeting (Panama City, Panama)

**February 2010**: Zero-Order Draft completed, circulated for informal peer review

**March 2010**: Second Lead Authors Meeting (Hanoi, Viet Nam)

**July 2010**: First-Order Draft completed, circulated for first expert and government review

**October 2010**: Third Lead Author’s Meeting (Geneva, Switzerland)

**February 2011**: “Second-Order Draft” to be completed, circulated for second expert and government review

**May 2011**: Fourth Lead Authors Meeting (Gold Coast, Australia)

**August 2011**: Distribution of Final Draft to Governments

**November 2011**: Session to approve the Summary for Policymakers and to accept underlying document
Objectives

The Special Report will help Governments learn to adapt to climate change by drawing upon the long experiences in managing and reducing the risk of extreme climate events such as floods, droughts, storms and extreme temperatures.

The Special Report will provide the first systematic assessment of Governments’ experience in risk reduction practices for climate change adaptation by reviewing the guides, frameworks and tools used by various institutions, organizations and communities to:

– build the institutional basis for reducing vulnerability and risk;
– develop early warning systems;
– strengthen community capacity and social resilience, particularly among the most vulnerable;
– improve construction practices; and
– establish preparedness to respond to inevitable climate impacts.
Main message 1/3

- Managing climate-related disaster risks is everyone’s business—from national and sub-national governments, private sector, research, civil society and community-based organizations and communities working in partnership to ultimately help individual households to reduce their risks and vulnerabilities. In an effective, efficient national system for managing climate-related disaster risks these actors would ideally play differential but complementary roles according to their accepted functions and effectiveness across geographical scales, time and levels of society, supported by relevant scientific and traditional knowledge.

- That said, national governments have the moral and legal responsibility to ensure economic and social well being, including safety and security, of their citizens from national disasters. It is the government’s responsibility to protect the poorest and most vulnerable citizens from disasters, and to implement disaster risk management that reach all, especially the most vulnerable.
Main message 2/3

• There is a strong prima facie case to be made for bringing disaster risk reduction and climate change adaptation closer together in a more integrated and synergistic approach. They have much to learn from each other. It is also the case that successful disaster risk reduction and climate change adaptation cannot be achieved in isolation from other institutions and management capacities and that much depends on development choices and pathways.

• A common key challenge to both disaster risk reduction and climate change adaptation is to strengthen institutions and governance arrangements (and create synergies across scales) and to increase access to information, technology, resources and capacity in countries and localities with the highest climate related risks and weak capacities to manage those risks.
Main message 3/3

• A key challenge is to address and incorporate uncertainty into planning and implementing response. Adaptive risk management strategies are helpful in responding in the presence of uncertainty and complexity.

• There is no single approach, framework or pathway to a sustainable and resilient future; a diversity of responses to extremes taken in the present can contribute to future resilience in situations of uncertainty.

• Disasters can be considered both a problem of development, and an opportunity for development. Disaster risk reduction and climate change adaptation strategies must address both underlying problems of development, and emerging implications for development.
Norwegian Climate Adaptation Programme

- Established 2007
- Interministerial committee
  - Headed by Ministry of the Environment
  - Secretariat: Directorate for Civil Protection and Emergency Planning (links DRR and CCA)
- Provide knowledge, exchange of experiences, competence building
- No changes in responsibilities – municipality/county levels
Climate changes in a Norwegian perspective

- Increased temperatures (2-4.5°C)
- More precipitation and more extreme rainfalls
  - Floods and slides
- Sea level rise
- Melting of ice and snow cover
- Ecosystems
  - New species, displacement of cold species
Et trygt og robust samfunn - der alle tar ansvar
A snap shot from the hurricane season 2005:

- 16th of Aug – 14th of Sept 2005
- White: clouds
- Pink: precipitation
Bergen 14th of September 2005
The storm Loke, 11th of November 2005
Activities

- Website launched March 2009
- ‘Future Cities’ project – 13 of the largest municipalities (50% of total population)
- 3-day course Adaptation to climate change in societal planning for development/emergency planners and decision-makers at local level
- Climate change maps
- Handbook (guidelines)
- Linking DRR and CCA
Adaptation to climate change in societal planning

- A separate 3-day course at the National Emergency Planning College
- Aims
  - To increase the knowledge and understanding of vulnerability to climate change and viable strategies for adaptation.
- Target groups
  1. Local leaders (political and administrative)
  2. Local and regional planners
  3. Other governmental officers
  4. Private actors and business
Course: Adaptation to climate change in societal planning

• Themes / issues
  – IPCC, AR4, natural vs. human induced climate change
  – Scenarios for regional climate change.
  – Impacts on ecology, health, society and economy.
  – Vulnerability to climate change.
  – Impacts for area planning.
  – Climate vulnerability analysis.
  – Climate change, flooding and landslides.
  – Adaptation, flood mapping and area planning.
  – Impacts on buildings and infrastructure.
Cities of the future

- Collaboration between the Government and 13 of the largest cities in Norway
- Runs from 2008-2014
- 4 areas of focus
  - Land use and transport
  - Consumption and waste
  - Energy and buildings
  - Climate change adaptation
Website – klimatilpasning.no

Information sharing:
- Experiences
- Best practices
- Research
- Specific issues
- Guidelines
- Climate maps

Target groups:
- Local/regional planners
- Decision-makers
Veileder: Klimatipasning

**Hva bør du vite?**
- Hva er klimatipasning
- Hvorfor er klimatipasning nødvendig?
- Hvem har ansvaret?

*Oversikt: Hva du bør vite*

**Slik kommer du i gang**
- Hva bør du gjøre, og når?
- Klimatipasning inn i planverk
- Klimaprojeksjoner og lokal kunnskap

*Oversikt: Hvordan du kommer i gang*

**Veien videre**
- Fagområder
- Plan- og lowerk
- Verktøy og ressurser

*Oversikt: Veien videre*
Principles for climate change adaptation

- Climate change affects all levels and all sectors – must be handled by all levels and sectors
- Not a sector on its own – must be integrated into existing organization
- Adaptation is about planning – those responsible for planning are responsible for adaptation to a changing climate
What is urgent – what can wait?

- Assess own climate vulnerability
- Avoid new vulnerability
- Preparedness for events
- Integration into plans
- Begin with the most urgent
- Adapt to current climate
Local institutional capacity and knowledge

“When it comes to institutional capacity, knowledge at the local level of governance is very important”

Rajendra Pachauri, Bergen, 12.05.09
Thank you