Training Workshop on Drought Risk Assessment

Regional Programme on Disaster Risk Reduction in South Eastern Europe

Background and objectives

Ljubljana, 20-24 September 2010
Outline

1. Disaster Risk Reduction in a Changing Climate: Benefits from National Meteorological and Hydrological Services
2. Regional Programme in Disaster Risk Reduction in South Eastern Europe
3. Objectives of the Training Workshop on Drought Risk Assessment
Socio-economic Impacts of Climate-Related Extremes are on the Rise!

Disasters impact many sectors!

Intensity

Frequency

Strong Wind
Heavy rainfall / Flood
Drought
Heatwaves

IPCC 4AR

Energy
Water Resource Management
Transportation
People
Agriculture
Urban areas

Hazard, vulnerability and exposure on the rise!

Need for risk management
Simplified Schematic of Linkages

Climate Adaptation
- Multi-sectoral planning and risk management
- Incremental cumulative risk

Climate Mitigation
- Emission reduction

Disaster Risk Management
- Geological
- Meteorological, hydrological and climate extremes
National Disaster Risk Reduction Framework: Role of the Hydro-Meteorological Services

1. Alignment of clear policies, legislation, planning, resources at national to local Levels (Multi-sectoral, Multi-agency)

2. Risk Assessment
   - Historical Hazard databases
   - Hazard statistics
   - Climate forecasting and forward looking hazard trend analysis
   - Exposed assets & vulnerability

3. Risk Reduction
   - Preparedness (saving lives): early warning systems, emergency planning and response

4. Risk Reduction
   - Prevention (Reduction of economic losses): Medium to long term sectoral planning (e.g. zoning, infrastructure, agriculture)

5. Risk Transfer
   - CATastrophe insurance & bonds
   - Weather-indexed insurance and derivatives

6. Information and Knowledge Sharing
   - Education and training across agencies
Understanding the Risks Provides the Foundation for Preventing Disaster Risks!

Hazard Analysis and Mapping

Exposure and Vulnerability

Potential Loss Estimates

This information is critical for decision-making and development of strategies to reduce the risks

Heavy Precipitation and flood mapping

Impacts:
- Population density
- Agricultural land
- Urban grid
- Infrastructure
- Businesses

Number of lives at risk

$ at risk

- Destruction of buildings and infrastructure
- Reduction in crop yields
- Business interruption

Need for historical and real time data
Statistical analysis tools
Climate forecasts and trend analysis

Need for socio-economic impacts data and analysis tools

Need for risk assessment tools combining hazard, asset and exposure information
While economic losses are on the way up!

Loss of life from hydro-meteorological disasters are decreasing!

Source: EM-DAT: The OFDA/CRED International Disaster Database
Early Warning Systems Require Coordination Across Many Levels and Agencies

National to local disaster risk reduction plans, legislation and coordination mechanisms
There is need for investments in all Components of Early Warning Systems!

1. Aligned policies, plans, resources, coordination
2. Capacity Development and Coordinated National Technical Agencies
3. Local Government responsible for emergency preparedness and response
4. Feedback
5. Community Prepared

There is need for investments in all Components of Early Warning Systems!
Guiding Principals from Examples of Good Practices Multi-Hazard Early Warning Systems

Guidelines on Institutional Aspects EWS with Multi-Hazard Approach
Planning, legislative, financing, Institutional Coordination and Roles of NMHS

Synthesis of First set of 7 Good Practices (4 more in the pipeline)
Role of National Metrological and Hydrological Services

Japan Multi-Hazard Early Warning System
Bangladesh Cyclone Preparedness Programme
Cuba Tropical Cyclone Early Warning System
France Vigilance System
Shanghai Multi-Hazard Emergency Preparedness Programme
USA Multi-Hazard Early Warning System
Germany The Warning Management of the DWD

First EWS Publication of a series being published in 2010 and
together with a technical WMO guidelines.
Next Phase: Concept of Operations and Service Delivery Issues
Climate forecasting and trend analysis tools provide unprecedented opportunities

…. to support sectoral risk assessment and management!

- Energy
- Infrastructure and Urban planning
- Land zoning
- Insurance / Finance
- Agricultural productivity and food security
- Tourism
- Health epidemics
- Water resource management
Advancements in climate modelling and forecasting provide unprecedented opportunities for Climate and Disaster Risk Management

- **Short to medium term weather forecasts**
  - Next hour to 10 days
  - Short-term planning
  - Emergency Preparedness

- **Seasonal to inter-annual climate forecasts**
  - Season to year
  - Medium-term operational sectoral planning
  - Risk assessment and management

- **Decadal climate trend analysis**
  - Decade
  - Long-term strategic planning
  - Infrastructures planning, retrofitting
  - Land zoning

- **Climate change scenarios**
  - Long term climate change
  - International negotiations with national policy implications

Decision-making Timelines
Building a Global Framework for Climate Services linking latest technologies and know-how to the National Meteorological Services

- Gobal Producing Centres of Long Range Forecasts (GPCs)
- Regional Climate Centres (RCCs)
- RCC Network Nodes (Pilot)
- Regional Specialized Meteorological Centres with Activity Specialization
- Regional Specialized Meteorological Centres with Geographical Specialization
- Regional climate institutions with strong WMO support
- Sand & Dust Storm Warning & Assessment System Centres
- Monsoon Activity Centres

LC-SVSLRF: Lead Centre for Standardized Verification System for Long Range Forecasts
LC-LRFMME: Lead Centre for Long Range Forecast Multi-Model Ensemble
Key Messages: Provisions of Meteorological, Hydrological and Climate Services is critical

- Good DRM planning, founded on understanding the risks with multi-Hazard approach
- Improving citizen’s safety and security through Multi-Hazard EWS and Emergency Preparedness
- Preventive economic losses through crosscutting sectoral planning
  - Development of climate services
    - (e.g., Agriculture, Water resource management, energy, infrastructure, health, transportation, fisheries, tourisms, etc)
- Development and penetration of insurance markets
- Development and sustainability of DRM capacities through strong regional cooperation
  - Sharing expertise and know-how
  - Standards
  - Leveraging resources
South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP) (Initiated in 2007)

- **Three Components:**
  - Risk Management Planning and Capacities
  - Strengthening of the National Hydro-meteorological Services
  - Catastrophe Insurance facility and financial risk transfer

- **11 beneficiaries:** Albania, Bosnia & Herzegovina, Bulgaria, Croatia, FYR Macedonia, Moldova, Montenegro, Romania, Serbia, Kosovo (as defined by UNSCR 1244/99), Slovenia, Turkey

**Phase I: Assessments completed (in 2008)**
- Detailed national assessment reports
- Funded by World Bank - GFDRR
Major Outcomes of SEEDRMAP to date:

- Establishment of insurance and financial risk transfer markets
- World Bank National Institutional Capacity development
  - Croatia: 14 millions US $
  - Albania: 10 millions US$
  - Moldova: 4 millions US$

Modernization of the Hydro Met Services
Follow up Phase I: Regional Programme in Disaster Risk Reduction in South Eastern Europe
(Funded by EC DG Enlargement)

• **WMO Component:** Regional Cooperation in South East Europe for meteorological, hydrological and climate data management and information exchange to support Disaster Risk Reduction

• **UNDP Component:** Building Capacity in Disaster Risk Reduction through Regional Cooperation and Collaboration in South East Europe

• **Eight (8) IPA beneficiaries:** Albania, Bosnia & Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia, Kosovo (as defined by UNSCR 1244/99), Turkey
Follow up Phase I: Regional Programme in Disaster Risk Reduction in South Eastern Europe (WMO Activities)

- Activity 1 - Regional and National Policy Dialogues
- Activity 2 – Multi-Hazard Early Warning Systems
- Activity 3 – Development of Flood and Drought risk assessment Capacities
- Activity 4 - Integration into European Meteorological Infrastructure
- Activity 5 - Upgrade institutional and technical capacity
- Activity 6 – Trainings and workshops in Meteorology
- Activity 7 - Manage, monitor and evaluate
## Results to date:

<table>
<thead>
<tr>
<th>Establishment of Country Project Teams</th>
<th>Dates of National Policy Dialogues</th>
<th>National Assessment reports</th>
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<tbody>
<tr>
<td>9-11 February 2010: Teleconferences with Country Project teams (NMHS, DRM, UNDP, National Consultant)</td>
<td><strong>Albania</strong></td>
<td>(including input from NMHS) Being developed and finalized</td>
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<td>April – August 2010</td>
<td><strong>Bosnia &amp; Herzegovina</strong></td>
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<td><strong>Croatia</strong></td>
<td><strong>FYR of Macedonia</strong></td>
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<td><strong>Montenegro</strong></td>
<td><strong>Serbia</strong></td>
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<td><strong>Kosovo</strong> (UNSC 1244/99)</td>
<td><strong>Turkey</strong></td>
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Policy recommendations of the National Policy Dialogues on Risk Assessment:

Example from Albania NPD: (Similar policy recommendations in all NPD)

- To establish and invest in fully operational 24/7 hydro-meteorological services to support risk assessment and promote operational monitoring, warning, forecasting and mapping of hydrometeorological hazards

- In the context of reducing overall risks, and with consideration for increasing climate associated risks, to develop national capacities for climate (hydrological and meteorological) services to support medium and long-term sectoral planning, as a critical aspect of disaster risk reduction

High level political support for the development of risk assessment capacities
Activity 1.3: MHEWS workshop (completed)

• Training on Multi-Hazard Early Warning Systems (October 2009 - Pula, Croatia) – development of MH-EWS programme development (for phase II)

Activity 1.4: Regional Consultations for regional approach to DRR

• Consultations for regional cooperation priorities through the National Policy Dialogues

• Development of a regional roadmap Draft (Q4 2010)
  —Regional brainstorming workshop with regional partners (Geneva, December 2010)

• Regional Policy Dialogue Forum and finalization of the Roadmap (2011)
Regional Programme in Disaster Risk Reduction in South Eastern Europe
Activity 2: Flood and Drought Risk Assessments

• Training in Drought Risk Assessment and Capacity Development (20-24 Sept 2010, Slovenia Drought Management Centre) (AgM programme)
  Target experts: - NMHS, Agricultural Sector

• Training in Flood Risk Assessment and Capacity Development (27 Sept -1 Oct 2010, Istanbul, Turkey) (HWR programme)
  Target experts: - NMHS and Water Resource Management

• Followed by National Capacity Assessment and proposal development
  - A consultant will be hired to assist countries for the development of national proposals for phase 2
Regional Programme DRR/SEE
Participation of experts from Kosovo (under UNSCR 1244/99) in capacity development events organised within the project

- Training in Maintenance and Calibration of Hydrometeorological Instruments (10 – 14 May 2010, Slovenia, Regional Instrument Centre)
  - 2 experts from Hydrometeorological Institute

- Training in Drought Risk Assessment and Capacity Development (20 – 24 Sept 2010, Slovenia, Drought Management Centre)
  - 2 experts from Hydrometeorological Institute and Ministry of Agriculture

- Training in Flood Risk Assessment and Capacity Development (27 Sept - 1 Oct 2010, Istanbul, Turkey)
  - 2 experts from Hydrometeorological Institute

- Training in the Use of Meteorological Products from METEOSAT (18 – 22 Oct 2010, EUMETSAT, Germany)
  - 1 expert
Regional Programme DRR/SEE
Participation of Kosovo (under UNSCR 1244/99) in capacity development

• Delivery of a system for reception of meteorological information from METEOSAT
  • EUMETCast system provided by EUMETSAT including receiver, two PCs and processing software
  • Expected delivery – Oct-Nov 2010
Training Workshop in Drought Risk Assessment
20-24 Sept 2010 - Slovenia Drought Management Centre

SCOPE

• to assess capacities, provide training, and promote dialogue concerning drought risk assessment as a component of multi-hazard risk assessment and disaster risk management.
• to gain an improved knowledge and understanding of data, metadata, and mapping and analysis tools for drought risk assessment including methodologies, tools, and infrastructures for
  – drought hazard data collection, analysis and management
  – drought risk mapping
  – drought risk assessment in the agricultural sector.

TARGET AUDIENCE

Technical experts from NMHS and from the Ministries of Agriculture
SPECIFIC OBJECTIVES

• To train the participants on drought data, databases and metadata, mapping and analysis tools, and effective drought risk assessment.

• To guide participants in the first steps towards developing an effective national drought risk management involving risk assessment, risk reduction, risk transfer to reduce the impacts of natural hazards on lives and livelihoods.
EXPECTED OUTCOMES

- Back in their country, the participants will have the capacities to conduct a self assessment of their national system for drought risk assessment including monitoring, data repository, mapping and analysis tools.

- This assessment will serve as a basis for the preparation of a comprehensive project proposal on drought risk assessment to be developed with the support of an international consultant, and in collaboration with UNDP.
Training Workshop in Drought Risk Assessment
20-24 Sept 2010 - Slovenia Drought Management Centre

FORMAT

Session 1: Background and objectives of the workshop will be presented.
Session 2: Drought Data, Analysis, and Mapping: Perspectives from North America
Session 3: Drought Data, Analysis, and Mapping: Perspectives from Europe
Session 4: Training on developing an effective drought risk assessment in the agricultural sector
Session 5: Training on Vulnerability Assessment and mapping for drought risk assessment (UNDP)
Session 6: Working Group Discussions on the development of drought risk assessment capacities at the national and possibly regional level
Session 7: Conclusions and Recommendations
Thank You

For more information please contact:
Robert Stefanski
Chief, Agricultural Meteorology Programme
World Meteorological Organization
Tel: 41.22.730.8305;
Email: rstefanski@wmo.int