



2015 MEETING OF THE DISASTER RISK REDUCTION FOCAL POINTS OF REGIONAL ASSOCIATIONS, TECHNICAL COMMISSIONS AND PROGRAMMES (DRR FP RA-TC-TP)

**3-5 November 2015
WMO Headquarters
Geneva, Switzerland
Room: Salle C1**

Webpage:

https://www.wmo.int/pages/prog/drr/events/teccom015/workshop_en.html

Considerations on the Governance and Implementation Mechanisms for the WMO Disaster Risk Reduction Programme and Information on the Current Status

(as of 8 December 2015)

1. Background

Ultimate strategic direction of the WMO Disaster Risk Reduction (DRR) Programme is provided by the WMO Congress (Cg) and the Executive Council (EC). As a cross-cutting programme, specific guidance is given by the EC Working Group on DRR (EC WG on DRR) which replaced the EC Working Group on Service Delivery (EC WG on SD) following EC-67 in 2015 (see Section 2). Furthermore, DRR focal points of all WMO regional associations, technical commissions and other relevant programmes (DRR FP RA-TC-TP) ensure coordination among these constituent bodies, including with their presidents and DRR-related working groups (see Section 3).

As further detailed below, the establishment of four DRR User-Interface Expert Advisory Groups (UI-EAGs) was endorsed by EC-64 in 2012. Cg-17 encouraged the continuation of these user-engagement mechanisms to support the implementation of WMO's DRR priority, as laid out in its DRR Roadmap.

At the WMO headquarters, the DRR Services Division under the Weather and DRR Services (WDS) Department serves as the Secretariat to the Programme. Also at the Secretariat, a Steering Committee for Disaster Reduction was established in 2004, and several fixed-term teams and groups are established for specific tasks. Figure 1 shows an overview of these mechanisms.

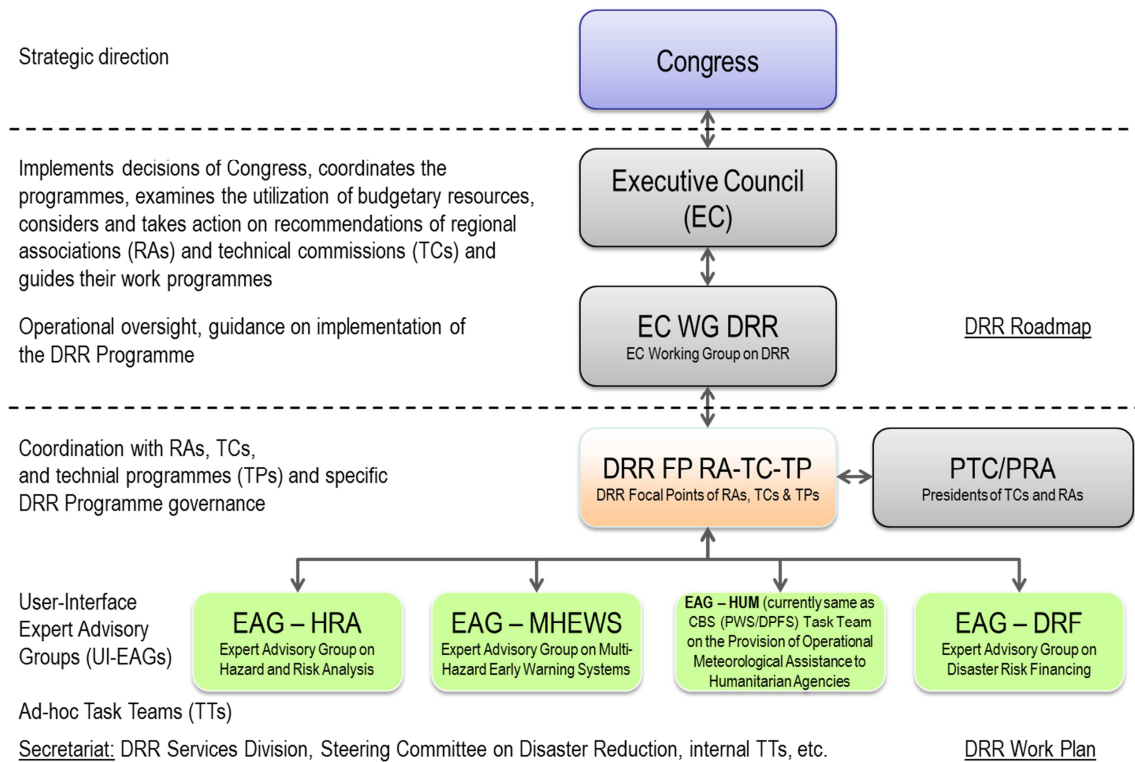


Figure 1: WMO DRR governance and implementation mechanisms

The sixteenth World Meteorological Congress (Cg-XVI) in 2011, through its Resolution 52 (Cg-XVI), laid out the strategic priorities and an implementation framework for the cross-cutting WMO DRR Programme (see Figure 2). Consequently, for consideration of EC-64, a WMO DRR Work Plan for 2012-2015 had been developed, consisting of

- (i) the development of knowledge products related to DRR such as guidelines and other thematic publications as well as training for National Meteorological and Hydrological Services (NMHSs) and external partners; and
- (ii) national DRR and climate adaptation capacity development and demonstration projects and regional cooperation projects. By applying the developed knowledge products, the national and regional projects and activities would assist NMHSs to deliver weather, climate and hydrological services within a comprehensive service delivery framework and underpinned by quality management principles and strong partnerships.

EC-64 supported the utilization of specific user-interface mechanisms such as expert advisory groups (EAGs), comprised of leading experts from the diverse DRR stakeholder community, including United Nations and other international agencies, academia, the private sector and the NMHSs. EC-64 endorsed the establishment of four DRR User-Interface Expert Advisory Groups (UI-EAGs) as coordinated platforms to:

- Guide documentation of good practices and development of user needs and requirements for products and services to support thematic areas in DRR decision making specifically:
 - Identify and prioritize user needs and requirements for weather, hydrological and climate products and services and as input to the TCs' activities pertaining to the development of related guidelines, manuals, and standards;
 - Facilitate engagement of the user community in the implementation of DRR and adaptation capacity development projects with WMO TCs, RAs and global

operational network (e.g., GDPFS, GTS/WIS, WIGOS) to demonstrate utilization of such products and services in DRR decision-making;

- Support development of and provide feedback on the WMO DRR knowledge products; and,
- Support the implementation of the DRR Work Plan

EC-64 endorsed specifically the establishment of the following user-interface mechanisms:

- The UI-EAG on Climate Services for Hazard/Risk Analysis (EAG-HRA);
- The UI-EAG on Multi-Hazard Early Warning Systems (EAG-MHEWS);
- The UI-EAG on Climate Services for Disaster Risk Financing (EAG-DRF); and,
- An Inter-commission ad-hoc Task Team on Meteorological, Hydrological and Climate Services for Improved Humanitarian Planning and Response, established under the Commission for Basic Systems (CBS) with the Commission for Climatology (CCI) and the Commission for Hydrology (CHy).

Over the past four years, many activities in these thematic areas and involving these groups took place, while the names, statuses and memberships of the groups have changed. For example, the EAG-HRA now reads as *EAG on Hazard and Risk Assessment* (which includes analysis, see Section 4). The Inter-commission ad-hoc Task Team on Meteorological, Hydrological and Climate Services for Improved Humanitarian Planning and Response has evolved into the *CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies* (see Section 6). The work and membership of this Task Team, complemented by representatives from international humanitarian agencies, can be a basis for the fourth UI-EAG, namely the *EAG on Humanitarian Planning and Response* (EAG-HUM). Finally, the EAG-DRF changed its name for a period of time to EAG on Financial Risk Transfer (EAG-FRT), but it is suggested to keep the original acronym which would then read as *EAG on Disaster Risk Financing* (see Section 7).

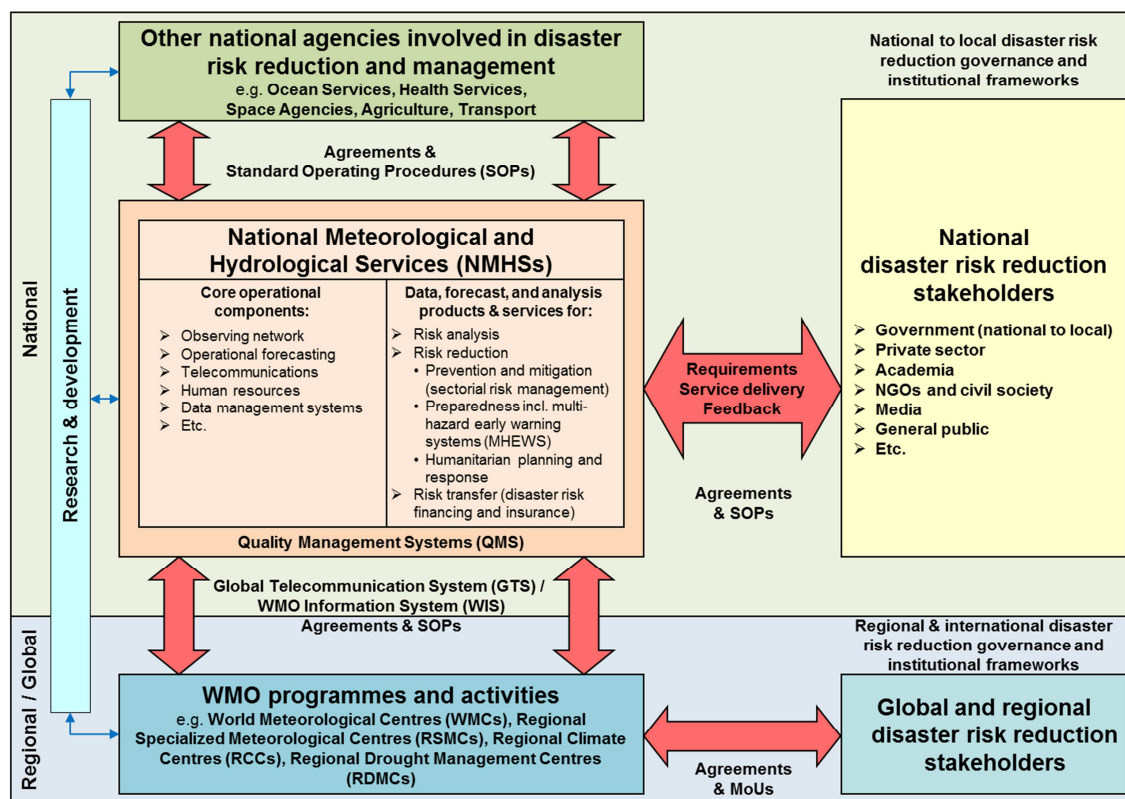


Figure 2: Weather, climate and hydrological services to support decision-making for DRR

2. The Executive Council Working Group on Disaster Risk Reduction (EC WG on DRR)

In consideration of the Cg-17 decisions, EC-67, through Resolution 5 (EC-67)¹, established the EC WG DRR, replacing the EC WG on SD which previously served as an oversight mechanism for the DRR Programme.

Description

- Develop recommendations for thematic priorities and priority activities for leveraging relevant activities of WMO RAs, TCs, and TPs to support the implementation of the WMO DRR Roadmap and the WMO Strategy for Service Delivery;
- Carry out consultations with the management groups and presidents of RAs and TCs as well as with other inter-commission/inter-programme mechanisms on their work planning, (project) implementation, and related issues;
- Propose multi-disciplinary working groups with relevant expertise from the RAs, TCs, and TPs to support the implementation of concrete projects; and,
- Support the development of a monitoring and reporting mechanism for the inter-commission and inter-programme activities under the WMO DRR Roadmap, supporting its implementation

Membership

- Ostojski (Second Vice-president (Co-chairperson), PR of Poland)
- Mokssit (Third Vice-president (Co-chairperson), PR of Morocco)
- Eka Sakya (President RA V, PR of Indonesia)
- Ivan Cacic (President RA VI, PR of Croatia)
- Agnes Kijazi (PR of Tanzania)
- Konate (PR of Côte d'Ivoire)
- Nishide (PR of Japan)
- Guoguang (PR of China)
- Julian Baez (President RA III, PR of Paraguay) -TBC
- Saulo (PR of Argentina) - TBC
- Juan-Carlos Fallas (President RA IV, PR of Costa Rica) - TBC
- Laura Furgione (PR of the USA)
- Kumar (PR of Fiji)
- Gunes (PR of Turkey)
- Musmanno (PR of Italy)

Meetings / Planned activities:

- First meeting planned for early April 2016

Terms of References – EC WG on DRR

(EC-67) Decides to establish an Executive Council Working Group on Disaster Risk Reduction with the following terms of reference:

1. To provide guidance on implementation of the DRR Programme, in particular with respect to:
 - a) Aligning the DRR Programme with the Sendai Framework for Disaster Risk Reduction;
 - b) Developing the WMO DRR Roadmap and its subsequent updates as required;
 - c) Strengthening coordination mechanisms among WMO Programmes, technical commissions, regional associations, the Secretariat and relevant partners and co-sponsored programmes;

¹ This resolution replaces Resolution 6 (EC-LXIII), which is no longer in force.

- d) Reviewing the implementation approaches and outcomes of the regional/national cooperation projects and programmes in DRR, and assessing their effectiveness; developing new projects and/or expanding existing ones;
 - e) Documenting good practices and developing guidelines in the thematic areas of the DRR Programme;
 - f) Standardization of hazard information for loss and damage assessment;
 - g) Capacity development approaches for WMO DRR activities;
 - h) Engaging NMHSs to fully support, as an important contributor to disaster risk management, national reconstruction and DRR planning following a major disaster;
 - i) Coordinating emergency response activities, such as those related to air-borne hazards;
 - j) Strengthening cooperation and coordination between providers of weather, climate and hydrology-related products and services and users (customers) in the public and private sectors, including the media, academia, social and economic sciences, international and intergovernmental agencies and non-governmental organizations, at national and international levels;
 - k) Strategies and priorities that can be applied by NMHSs in the implementation of the WMO Strategy for Service Delivery, in particular in early warning;
 - l) Participation of WMO in the International Network for Multi-hazard Early Warning Systems;
2. To provide advice, guidance and recommendations for more effective engagement of WMO Programmes involved in DRR and service delivery activities with the GFCS, in particular the User Interface Programme;
 3. To monitor progress made with the above-mentioned terms of reference and report back to the Executive Council;

Authorizes the working group to establish subgroups and task teams as and when required;

Requests the Secretary-General to support the work of the working group.

3. The Disaster Risk Reduction Focal Points of WMO Regional Associations, Technical Commissions and Technical Programmes (DRR FP RA-TC-TP)

EC-64 and EC-65 urged the WMO TCs and their presidents (PTC), with the support of the Secretariat, to engage actively in the DRR UI-EAGs and to identify and develop concrete intra- and inter-commission and programme mechanisms to support the implementation of the DRR Programme and its Work Plan.

Subsequently, Cg-17 noted the establishment of the DRR Focal Points of TCs and TPs (DRR FP TC-TP) through nominations of the PTC and relevant coordination mechanisms of selected TPs in 2013, and that a mapping of roles and relevant activities of TCs and TAs is underway. The final report of the 2013 DRR FP TC-TP Meeting is provided in Doc 5 and is also available on the following website: http://www.wmo.int/pages/prog/drr/projects/Thematic/HazardRisk/2013-10-TC-Prog-FP-Meeting/index_en.html.

Cg-17 requested the DRR FP TC-TP to include DRR focal points of the RAs to advance the coordination of RAs, TCs and TPs for the implementation of the DRR Programme activities.

Description

- Develop recommendations for thematic priorities and priority activities for leveraging relevant activities of WMO RAs, TCs, and TPs to support the implementation of the WMO DRR Roadmap and the WMO Strategy for Service Delivery;
- Carry out consultations with the management groups and presidents of RAs and TCs as well as with other inter-commission / inter-programme mechanisms on their work planning, (project) implementation, and related issues;

- Propose multi-disciplinary working groups with relevant expertise from the RAs, TCs, and TPs to support the implementation of concrete projects; and,
- Support the development of a monitoring and reporting mechanism for the inter-commission and inter-programme activities under the WMO DRR Roadmap, supporting its implementation

Membership

Formally designated WMO DRR FP RA-TC-TP are listed in Table 1 below.

Table 1: Designated DRR Focal Points of WMO Regional Associations, Technical Commissions, and Programmes

TC / RA / TP or project	Nominated focal point and affiliation
CAeM	Ian Lisk, Met Office, UK
CAGM	Roger Stone, Queensland Department of Primary Industries & Fisheries, University of Southern Queensland, Australia
CAS	Paul Kovacs, Institute for Catastrophic Loss Reduction (ICLR), Canada
CBS	Michel Jean, Meteorological Service of Canada (MSC), Canada (Co-Chair)
CCI	Sezin Tokar (on behalf of a DRR Focal Point of CCI that is still to be nominated), Office of U.S. Foreign Disaster Assistance (USAID), USA
CHy	Johnson Muturi Maina, Kenya Meteorological Department (KMD), Kenya Yury Simonov, Hydrological Centre of Russia, Russian Federation
CIMO	Jitze P. Van Der Meulen, Royal Netherlands Meteorological Institute (KNMI), The Netherlands
JCOMM	Kevin Horsburgh, National Oceanography Centre, UK (Co-Chair)
RA I	Richard Philippe, Direction de la météorologie nationale, Ministry of Transports, Cameroon
RA II	K.J. Ramesh, Ministry of Earth Sciences, India
RA III	Carlos Naranjo Jacome, Instituto Nacional de Meteorología e Hidrología (INAMHI), Ecuador
RA IV	Albert A.E. Martis, Meteorological Department Curaçao
RA V	Dodo Gunawan, Meteorological, Climatological and Geophysical Agency (BMKG), Indonesia
RA VI	Axel Thomalla, Deutscher Wetterdienst (DWD), Germany
TCP	Andrew Burton, Bureau of Meteorology (BoM), Australia
WIGOS	Jochen Dibbern, Deutscher Wetterdienst (DWD), Germany Luis Nunes, WMO Secretariat
WIS	n.n.
WCRP	Simon Mason, International Research Institute for Climate and Society (IRI), USA
WWRP	Paolo Ruti, WMO Secretariat
GFCS	n.n.
Others	n.n.

Meetings

The first meeting of the WMO DRR FP RA-TC-TP took place from 3 to 5 November 2015 in Geneva. The first meeting of the DRR FP TC-TP took place from 14 to 16 October 2013.

Planned activities:

Within available resources, the WMO DRR FP RA-TC-TP will meet on an annual basis face-to-face (next time in autumn 2016), with quarterly teleconferences in between. The group proposed to provide guidance and specific direction to the work plans and the TORs of the WMO DRR UI-EAGs as key implementation mechanisms of the DRR Programme.

Terms of Reference

The WMO disaster risk reduction focal points (FPs) of the regional associations (RAs), technical commissions (TCs), and technical programmes (TPs) (DRR FP RA-TC-TP) will serve under the direction of the Executive Council Working Group on Disaster Risk Reduction (EC WG on DRR) using the following Terms of Reference (ToR):

1. Serve as a point of contact for representation, coordination and promotion of RAs', TCs' and TPs' DRR-related activities and issues;
2. Conduct an ongoing review of the DRR Roadmap, proposing updates where necessary;
3. Propose and coordinate the development of priority initiatives (including suggestions for pilot projects) and plans that integrate the relevant activities of the RAs, TCs and TPs, necessary in supporting the ongoing implementation of the WMO DRR Roadmap and WMO Strategy for Service Delivery;
4. Gather and share information on DRR-related activities and best practices of the RAs, TCs, TPs and other agencies/initiatives in support of the implementation of the DRR Roadmap; and,
5. Report on progress to the EC WG on DRR and the presidents of Technical Commissions (PTC) and the Presidents of Regional Associations (PRA).

4. The User-Interface Expert Advisory Group on Hazard and Risk Assessment (EAG-HRA)

Description

This EAG focuses on issues related to standards and guidelines for hazard definition, classification and standardization of hazard databases, metadata and statistical and forecasting techniques for hazard analysis to support loss and damage data collection and risk modelling.

Membership

- *WMO Members:* Australia, Canada, China, France, Germany, Japan, Netherlands, Russian Federation, Switzerland, United Kingdom, United States of America
- *International organizations:* CRED, EC Joint Research Centre (JRC), GEO, OECD, UNDP, UNFCCC, UNISDR, World Bank (GFDRR) (UNECE, UNEP, UNESCAP)
- *Others/Private sector:* Munich Re, Swiss Re, OASIS Loss Modelling Framework Limited, Risk Management Solutions (RMS), Willis Research Network (WRN), CIMA Foundation, IRDR/University of Kentucky

The membership has been formally established through nominations by Permanent Representatives of Members with WMO and directors of relevant organizations in 2015. Core members will include participants from the meetings on hazard and risk assessment organized by the DRR Programme in 2013 and 2014 (see Table 2 below).

Table 2: Nominated experts for the EAG-HRA and participants in respective earlier meetings

NMHS / TC / Organization	Nominee/participant in 2013	Nominee/participant in 2014	Nominee/participant in 2015
Bureau of Meteorology, Australia	Dr Linda Anderson-Berry		Mr Russell Stringer
Public Safety Canada			Ms Renee Gobeil
Environment Canada	Ms Jacinthe Lacroix		
China Meteorological Agency (CMA)	Mr Guofu Wang		Dr Zhang Cunjie
Météo France, France	Mr Quoc-Phi Duong	Mr Cyrille Honoré	Mr Cyrille Honoré
Deutscher Wetterdienst (DWD), Germany	Mr Thomas Kratzsch	Mr Thomas Kratzsch	Mr Thomas Kratzsch
Japan Meteorological Agency (JMA)	Mr Nobuyuki Tanaka		invited

NMHS / TC / Organization	Nominee/participant in 2013	Nominee/participant in 2014	Nominee/participant in 2015
Royal Netherlands Meteorological Institute (KNMI), The Netherlands	Mr Frank Kroonenberg		Mr Frank Kroonenberg
All-Russian Research Institute of Hydrometeorological Information – World Data Center, Russian Federation	Ms Olga Bulygina		Mr Kirill Tudriy
MeteoSwiss, Switzerland	Dr Urs Germann		Dr Christoph Schmutz
Met Office, UK	Mr Graeme Forrester		Mr Gavin Iley
National Weather Service, USA	Mr Christopher Strager		invited
Austria			invited
Peru			Ms Grinia Avalos Roldan
Thailand			Dr Songkran Agsorn
Caribbean Institute for Meteorology & Hydrology (CIMH), Barbados			invited
CBS	Mr Paul Davies	Mr Paul Davies Mr Ken Mylne	Mr Paul Davies
TCP	Mr Andrew Burton	Mr Andrew Burton	
JCOMM	Prof Kevin Horsburgh	Prof Kevin Horsburgh	Prof Kevin Horsburgh
CIMO	Dr Jitze Van der Meulen		
CAGM	Dr Raymond Motha (USA)		
CCI	Dr Govindarajalu Srinivasan (Thailand)	Dr Roger Pulwarty	Mr K J Ramesh
CHy	Dr Ann Calver	Dr Yuri Simonov	Mr Jan Danhelka
WCRP		Simon Mason	
Integrated Research on Disaster Risk (IRDR) Data Working Group (University of South Carolina)		Prof Susan Cutter	Prof Susan Cutter
Joint Research Centre of the European Commission (JRC) Institute for the Protection and Security of the Citizen (IPSC)		Dr Tom De Groeve	Dr Tom De Groeve Daniele Ehrlich
WILLIS Research Network		Mr Rowan Douglas	invited
Munich Reinsurance Company AG	Ms Angelika Wirtz	Dr Jan Eichner	Dr Jan Eichner
Centre for Research on the Epidemiology of Disasters (CRED)	Mr Laurence McLean	Prof Deberati Guha Debarati	Prof Deberati Guha Debarati
Global Facility for Disaster Reduction and Recovery (GFDRR), The World Bank Group	invited	Ms Alanna Simpson Mr Vladimir Tsirkunov	Mr Daniel Kull
OASIS Loss Modelling Framework Ltd		Mr Richard Whitaker	invited
Risk Management Solutions (RMS)		Mr Robert Muir-Wood	Mr Robert Muir-Wood
CIMA Foundation		Robert Rudari	Robert Rudari
Group on Earth Observations (GEO)	Mr Francesco Gaetani		Dr Dominique D. Bérod
Swiss Re	invited	invited	invited
Organisation for Economic Co-operation and Development (OECD)		Mr Charles Baubion	invited
United Nations Development Programme (UNDP)	Mr Maxx Dilley	Mr Kamal Kishore	Mr Patrick Gremillet

NMHS / TC / Organization	Nominee/participant in 2013	Nominee/participant in 2014	Nominee/participant in 2015
United Nations Office for Disaster Risk Reduction (UNISDR)	Ms Manuela Di Mauro	Ms Sahar Safaie	Ms Sahar Safaie
United Nations Economic Commission for Europe (UNECE)			Mr Michael Nagy Ms Anu Peltola
United Nations Environment Programme (UNEP)			Invited
United Nations Educational, Scientific and Cultural Organization (UNESCO)			invited
United Nations Framework Convention on Climate Change (UNFCCC)		Mr Youssef Nassef Ms Miwa Kato	invited

Meetings

- First Technical Workshop on Standards for Hazard Monitoring, Data, Metadata and Analysis to Support Risk Assessment (10-14 June 2013)
- Side event at the Understanding Risk Forum (London, United Kingdom, 2 July 2014)
- Workshop on Requirements for Weather, Climate and Hydrological Services to Support Loss and Damage Data Collection and Risk Modelling (London, United Kingdom, 4 July 2014)
- First meeting of the EAG-HRA: 15 to 17 December 2015

Publications

- Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970–2012): <https://drive.google.com/a/wmo.int/file/d/0BwdvoC9AeWjUd1RwQW5Ld2hqTDQ/view>

Planned activities

Provision of advice on:

- Development of identifiers for cataloguing extreme weather, water and climate events
- Update of the Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (2016)

Draft Terms of References – UI-EAG-HRA (October 2015)

Risk assessment is an essential component of disaster risk management that aims to reduce the risks to lives and assets. It includes the identification, analysis and evaluation of risk and combines information about hazards with information on exposure and vulnerabilities of society and its assets across various economic sectors and communities. Hazard analysis must be augmented with socio-economic data that quantifies exposure and vulnerability (e.g., potential casualties, construction damages, crop yield reduction, and water shortages). Depending on the types and levels of decisions (local, national, regional, and global levels), this analysis requires data with different temporal and spatial resolutions. Equipped especially with quantitative risk information, countries can develop disaster risk reduction strategies using (i) preparedness measures such as early warning systems to reduce casualties; (ii) prevention and mitigation measures such as medium and long-term sectoral planning (e.g., land zoning, infrastructure development, water resource management, agricultural planning) to reduce economic losses and build livelihood resilience; and (iii) risk financing and transfer measures (e.g., insurance) to transfer and redistribute the financial impacts of disasters.

These draft Terms of Reference consider the following decisions by WMO constituent bodies and milestones with regards to the WMO Disaster Risk Reduction (DRR) Programme:

1. Item 11.5 and Resolution 52 (Cg-XVI) Disaster Risk Reduction Programme;
2. Item 3.2 Disaster Risk Reduction Services – Priority and Resolution 9 (Cg-17) Identifiers for Cataloguing Extreme Weather, Water and Climate Events;
3. Item 4.2 and Resolution 8 (EC-64) Enhanced Capabilities of Members to Reduce Risks and Potential Impacts of Hazards Caused by Weather, Climate, Water and Related Environmental Elements (including the endorsement to establish DRR User-Interface Expert Advisory Groups (DRR UI-EAGs)) and its Annex (WMO DRR Work Plan);
4. Item 4.2 of the Sixty-fifth session of the WMO Executive Council (EC-65);
5. Item 4.2 and Resolution 8 (EC-66) WMO Disaster Risk Reduction Roadmap.

The draft Terms of Reference further consider international agreements related to hazard and risk assessment, including:

- The Sendai Framework for Disaster Risk Reduction 2015-2030; and,
- Activities on climate (change) adaptation under the United Nations Framework Convention on Climate Change (UNFCCC), especially the work stream on loss and damage (as detailed in the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts established by the nineteenth session of the Conference of the Parties (COP19) at the Warsaw Climate Change Conference in 2013).

The WMO Disaster Risk Reduction User-Interface Expert Advisory Group on Hazard/Risk Analysis (UI-EAG HRA) has been established to serve the following Terms of Reference:

1. Review and consider international, regional and national agreements and latest developments related to needs for hazard information to conduct risk assessment (particularly related to cascading hazards) and for geo-referencing of damage and loss data as they relate to the services provided by the National Meteorological and Hydrological Services (NMHSs) of WMO Members;
2. Identify, review and document hazard definitions and approaches to defining natural and manmade hazards of WMO Members, regional and international bodies (e.g. the United Nations Office for Disaster Risk Reduction (UNISDR), the United Nations Development Programme (UNDP), the World Health Organization (WHO), and the Food and Agricultural Organization (FAO)) and document good practices including similarities and differences among their approaches;
3. Review and document the mandates and activities of WMO technical commissions related to the standardization of definitions, cataloguing, and mapping for different hazards;
4. Develop guidelines, manuals and standards, where appropriate and in coordination with the WMO Disaster Risk Reduction Focal Points of Regional Associations, Technical Commissions, and Technical Programmes (DRR FP RA-TC-TP), to help NMHSs support risk assessment and development of standardized hazard databases that allow for data on losses and damage to be cross-referenced to hazard phenomena;
5. Assist and provide guidance on the development of the regular issuance of the Atlas of Mortality and Economic Losses for Weather, Climate and Water Extremes;
6. Develop recommendations and priorities of action related to hazard and risk assessment for consideration of the Management Groups of the WMO technical commissions for integration in their work planning in this area; and,
7. Establish sub-task team(s) as necessary to support the work of the UI-EAG HRA.

5. The User-Interface Expert Advisory Group on Multi-Hazard Early Warning Systems (EAG-MHEWS)

Description

This EAG will focus on the operational aspects of MHEWS, building on the principles of QMS, as well as provide input to the International Network on MHEWS (IN-MHEWS). In the past this EAG

was comprised of a team of MHEWS experts (both NMHS and DRM agencies) from countries of good practice as well as from a number of international organizations.

Membership

- *WMO Members:* Bangladesh, Canada, China, Cuba, France, Germany, Japan, Italy, South Africa, United States of America
- *International organizations:* IFRC, UNESCAP, UNHCR, UNICEF, UNISDR, WHO, World Bank (GFDRR), (UNOCHA, WFP, FAO, UNHCR, UNDP, UNESCO-IOC, ITU, UNEP)

The membership has not yet been formally established by a PR or the head of an external organization through designation of an expert to the EAG-MHEWS. Representatives from the above-mentioned WMO Members and organizations were designated participate in several DRR Programme meetings on MHEWS and are suggested as members of the EAG-MHEWS through their significant contribution to the book “Institutional Partnerships in MHEWS (2012)” and active participation at the three expert symposia on MHEWS and other MHEWS meetings and training workshops (see Table 3 below).

Table 3: Experts (not exhaustive) engaged in MHEWS-related activities of the DRR Programme

NMHS / TC / Organization	Experts in 2013	MHEWS Symposium Sendai in 2015
Météo France	Jean-Noel Degrace (Martinique) Cyrille Honoré Catherine Borretti (international)	Mr Cyrille Honoré
Meteorological Service of Canada (MSC), Canada		Mr David Grimes
Shanghai Meteorological Bureau, China	Xu Tang	Dr Chen Zhenlin
Shanghai Typhoon Institute, China		Dr Chen Baode
China		Prof Meiyang Jiao
Meteorological Department, Bangladesh	Arjumand Habib	
Japan Meteorological Agency (JMA)	Naoyuki Haegawa	Mr Noritake Nishide Dr Masashi Nagata
International Research Institute of Disaster Science (IRIDeS), Tohoku University, Japan		Prof Makoto Okumura
National Weather Service (NWS), USA	Harold (Jim) Keeney Jr.	
National Integrated Drought Information System, National Oceanic and Atmospheric Administration (NOAA), USA		Dr Roger S. Pulwarty
Italian Civil Protection Agency	Paola Pagliara	
South African Weather Service	Eugene Poolman	
India		Dr Laxman Singh Rathore
Deutscher Wetterdienst (DWD), Germany	Axel Thomalla	
Zimbabwe		Dr Amos Makarau
Instituto de Meteorología, Cuba	José Maria Rubiera Torres	
L'Institut Royal Météorologique de Belgique	Sergio Pasquini	
British Caribbean Territories (BCT)		Mr Tyrone W. Sutherland
National Emergency Management Office (NEMO), Tonga		Mr Leveni Aho
Turkish State Meteorological Service, Turkey		Mr Hayreddin Bacanlı
Finland		Prof. Petteri Taalas
Croatia		Mr Ivan Čačić

NMHS / TC / Organization	Experts in 2013	MHEWS Symposium Sendai in 2015
Mozambique		Dr Atanásio João Manhique
PAGASA, Philippines		Dr Vicente B. Malano
Caribbean Institute for Meteorology and Hydrology (CIMH), Barbados		Dr David Farrell
Met Office, United Kingdom		Dr Phil Evans Mr Paul Davies
GEO		Dr Francesco Gaetani
GFDRR		Mr Francis Ghesquiere
ICSU		Prof Gordon McBean
IFRC	Marjorie Soto Franco Mohammed Omer Mukhier Bhupinder Tomar	
UNESCAP	Yuichi Ono	
WHO	Johnathan Abrahams	
UNISDR	John Harding Glenn Dolcemascolo Rahul Sengupta	
UNICEF	Michel Le Pechoux	
Willis Research Network, United Kingdom		Mr Rowan Douglas
Office of U.S. Foreign Disaster Assistance (USAID), USA		Dr A. Sezin Tokar

Meetings

- Second Expert Symposium on Multi-Hazard Early Warning Systems with Focus on the Role of National Meteorological and Hydrological Services (Toulouse, France, 5-7 May 2009)
- Training workshops in Costa Rica (10-12 December 2013, 22-26 March 2010), Barbados (2-5 November 2010), Jamaica (6 December 2010) and Croatia (1-3 October 2009)
- WMO International Symposium on MHEWS and Service Delivery (Public Forum at WCDRR, Sendai, Japan, 16 March 2015)

Publications

- Institutional Partnerships in Multi-Hazard Early Warning Systems: A Compilation of Seven National Good Practices and Guiding Principles (2012)
- Strengthening of Risk Assessment and Multi-Hazard Early Warning Systems for Meteorological, Hydrological and Climate Hazards in the Caribbean: Final Report (2012)
- Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey: Assessment of Capacities, Gaps and Needs (2012)

Planned activities

- First Meeting of the UI-EAG MHEWS: 9-11 February 2016 (tentative)
- Draft guidelines on MHEWS (to be published in 2016)
- Support the IN-MHEWS and International Conference on MHEWS (IC-MHEWS) in 2016
- Support to SOP development for MHEWS in Tanzania, Mauritius and others as requested

Draft Terms of References – UI-EAG-MHEWS

Not yet available.

6. The User-Interface Expert Advisory Group on Humanitarian Planning and Response (EAG-HUM) = CBS Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies

The needs of the humanitarian agencies have evolved and with the increasing availability of information via the Internet, the mechanism of appointing many different operational centres to provide information and data needed to be reviewed and aligned with the possibilities and opportunities provided by new technologies. This led to the establishment of a *Task Team on Meteorological Services for Improved Humanitarian Planning and Response*, by CBS, at its 14th Session in 2009, under the Open Programme Area Group (OPAG) on PWS, which worked in coordination with other CBS OPAGs as well as with representatives of CCI and CHy. While endorsing the actions identified by the Task Team, CBS, at its fifteenth session in 2012, decided to establish the *Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies*, incorporating the legacy of its former task team, for further operationalization².

Description

This EAG focuses on development of requirements of the humanitarian community for meteorological and climate services.

Membership

- *WMO Members*: Members of the CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies; selected WMO DRR Focal Points of RAs, TCs, and TPs; Chair: Michel Jean (Canada)
- *Specialized Centres*: ACMAD, CIIFEN, IRI
- *International organizations*: EC (ECHO, JRC), IFRC, UNDRI UNHCR, UNICEF, UNITAR-UNOSAT, UNOCHA, WFP, WHO

The membership is indicated in Table 4 below.

Table 4: Members of the CBS Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies and participants of respective meetings

NMHS / TC / Organization	Member/participant in 2013	Member/participant in 2014
Bureau of Meteorology (BoM), Australia	Mr James Fraser (Mr Andrew Tupper)	
Meteorological Service of Canada (MSC), Canada	Mr Michel Jean (Chair) / CBS Ms Jennifer Milton Mr Brian Mills / WWRP (Dr Alain Pietroniro)	Mr Michel Jean (Chair) Ms Jennifer Milton
Hydrological Services Namibia	(Mr Guido Van Langenhove)	
Irish Meteorological Service	Mr Gerald Fleming / CBS (Chair OPAG-PWS)	Mr Gerald Fleming / CBS (Chair OPAG-PWS)
Met Office, United Kingdom	Paul Davies (Vice-chair) / CBS Ms Anca Brookshaw Mr Richard Graham / CCI (TT GSCU)	Paul Davies (Vice-chair) /CBS
ECMWF	Ms Anna Ghelli	
UNOCHA	Thomas Peter (Michael Meier)	Mr Peter Muller
WFP	Ms Emily Niebuhr	

² From the final report of the First Meeting of the CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies (Geneva, Switzerland, 15-17 July 2013)

NMHS / TC / Organization	Member/participant in 2013	Member/participant in 2014
	(Anthony Craig) (Ms Marion Cezard) (Mr Kevin Wyjad)	
WHO	(Mr Jonathan Abrahams) (Mr Giuseppe Annunziata) (Ms Marina Maiero)	
UNICEF	Mr Michel Le Pechoux (Ms Heidi Peugeot) (Mr Fred Spielberg) (Mr Guillaume Simonian)	
UNHCR	(Mr Maoucher Lolach)	
IFRC	Frederic Zanetta (Flemming Nielsen) (Bhupinder Tomar)	
UNITAR	Einer Bjorgo	Einer Bjorgo
EC JRC	Tom De Groeve	Tom De Groeve
International Research Centre on El Niño (CIIFEN), Ecuador	(Mr Rodney Martinez Güingla)	
International Research Institute for Climate and Society (IRI), USA	(Dr Simon Mason / WCRP)	
Hong Kong	(TBD)	
South Africa	Mr Eugene Poolman	
Mozambique	Mr Sergio Buque (TBC)	

Meetings

- Working-Level Brainstorming Session on Meteorological Services to for Improved Humanitarian Contingency Planning and Response (Geneva, Switzerland, 17 April 2009)
- First Meeting of the Task Team on Meteorological Services for Improved Humanitarian Planning and Response (Geneva, Switzerland, 31 August - 2 September 2010)
- First Meeting of the CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies (Geneva, Switzerland, 15-17 July 2013)
- Second Meeting of the Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies (Geneva, Switzerland, 8-10 July 2014)

Publications

- Requirements for Humanitarian planning and response (draft)

Planned activities

- Through the CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies a demonstration project in alignment with SWFDP is being planned for East Africa.

Terms of Reference – CBS (DPFS-PWS) Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies (July 2013)

The CBS Task Team on the Provision of Operational Meteorological Assistance to Humanitarian Agencies is established under the joint leadership/responsibility of the OPAGs on DPFS and PWS, and in liaison with other relevant Technical Commissions and Programmes. The CBS Task Team is chaired by the CBS Coordinator on DRR (with no order of priority).

1. Based on the needs, requirements and capacities of humanitarian agencies, develop designation criteria and functions for existing GDPFS Centres that could specialize in the development and provision of operational meteorological³ products and services for mitigating the impacts of environmental hazards;
2. Develop, in consultation with NMHSs, global and regional operational arrangements that would assist humanitarian agencies and disaster managers in mitigating disasters, taking into consideration the WMO Strategy for Service Delivery and the success of ERA, and provide assistance and support to strengthen NMHSs in this regard;
3. Assist Members, with or without NMHSs, in developing their capacity for supporting their government and humanitarian agencies in emergency preparedness efforts, including identifying the gaps in current capabilities and the opportunities to realize the benefits of addressing these gaps through close cooperation at regional and national levels.
4. Coordinate with relevant United Nations and international organizations on collecting and responding to their requirements;
5. Promote and support two-way education, training and interaction between users and providers on the needs, use, interpretation and delivery of meteorological products and services, and their strengths and limitations.

Draft Terms of Reference – former Task Team on Meteorological Services for Improved Humanitarian Planning and Response (May 2010)

1. Review and document the needs and requirements of the international humanitarian agencies for:
 - a) Meteorological, hydrological and climate services for operational procedures for planning, coordination and response to potential disasters;
 - b) Dissemination mechanisms for exchange of these services and information; and,
 - c) Training with regards to the effective utilization of meteorological, hydrological and climate services;
2. Review the institutional mechanisms and the documented procedures established through PWS in 1995 and their outcomes to enable the UN Department of Humanitarian Assistance (DHA), the predecessor of United Nations Office for Coordination of Humanitarian Affairs (UN-OCHA) to request meteorological assistance and information from the National Meteorological Centres and Regional Specialized Meteorological Centres (RSMC) serving that region;
3. In light of the needs and requirements of the humanitarian agencies, lessons learnt from the experiences from the PWS initiative in 1990s, new institutional and operational mechanisms resulted from the humanitarian reform, new meteorological, hydrological and climate technologies and other relevant issues, to develop an implementation plan to facilitate the provision of meteorological, hydrological and climate Services to the international humanitarian agencies from National Meteorological and Hydrological Services (NMHSs), RSMCs, Global and Regional Climate Centres (RCCs).

7. The User-Interface Expert Advisory Group on Disaster Risk Financing (EAG-DRF)

This EAG was sometimes referred to as EAG on Climate Services for Disaster Risk Financing (EAG CSDRF) or as EAG on Financial Risk Transfer (EAG FRT).

Description

- This EAG focuses on develop requirements for climate services for disaster risk financing such as ex-ante and post-disaster government funding mechanisms, insurance and external development funding.

³ Meteorological – means weather and climate

Membership

- *WMO Members:* China, Ethiopia, Malawi, Morocco, Russian Federation, United Kingdom, United States of America
- *International organizations:* CIMH, CSIRO (Australia), IFAD, UNEP-FI, UNFCCC, UNISDR, WFP
- *Others/Private sector:* University of Kentucky, Geneva Association, Willis Research Network, World Bank (GFDRR), Munich Re, Swiss Re

The membership was established through official letters nominating experts to join the EAG-DRF and to participate in its first meeting on 13-14 December 2011 (see Table 5 below).

Table 5: Members of the EAG-DRF

NMHS / TC / Organization	Member in 2011 / 2012
United Nations Environment Programme Finance Initiative (UNEP FI) / Principles for Sustainable Insurance (PSI)	Mr Remco Fischer Mr Butch Bucani
Climate Change and Meteorological Services of Malawi	Mr Adams Chavula
World Food Programme (WFP)	Mr Richard Choularton
WILLIS Research Network	Mr Rowan Douglas
Global Climate Application Division, NCDC, National Oceanic and Atmospheric Administration (NOAA), United States of America	Mr David Easterling
Caribbean Institute for Meteorology and Hydrology (CIMH)	Dr David Farrell
Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Dr Don Gunasekera
United Nations Office for Disaster Risk Reduction (UNISDR)	Mr John Harding Mr Neil McFarlane
Munich Re	Prof Dr Peter Hoeppe
United Nations Framework Convention on Climate Change (UNFCCC)	Ms Miwa Kato
All-Russian Scientific Research Institute for Agricultural Meteorology, Russia	Dr Alexander Kleshchenko
National Meteorological Agency of Ethiopia	Mr Dula Shanco Lebeta
Global Facility for Disaster Reduction and Recovery (GFDRR) / The World Bank Group	Dr Olivier Mahul
Met Office, United Kingdom of Great Britain and Northern Ireland	Dr Rebecca Mitchell
International Fund for Agricultural Development (IFAD)	Mr Francesco Rispoli
Direction de la Météorologie Nationale, Morocco	Mr Rachid Sebbari
University of Kentucky, United States of America	Prof Jerry Skees
The Geneva Association, Switzerland	Mr Walter Stahel
Swiss Re, Switzerland	Mr Jurg Trueb (TBC)
China Meteorological Administration (CMA), China	Dr Cunjie Zhang

Meetings

- First Meeting of the WMO Expert Advisory Group on Financial Risk Transfer (EAG-FRT I) (Geneva, Switzerland, 13-14 December 2011)

Planned activities

- Book on good practices in disaster risk financing (to be published by Q4 2016/Q1 2017)
- Other activities to be identified in their next meeting (Q1 2016)

Terms of Reference – WMO Expert Advisory Group on Climate Services for Disaster Risk Financing (EAG-CSDRF) (December 2011/February 2012)

1. With consideration that:
 - a) Disaster Risk Financing (DRF) is a critical foundation for the development of comprehensive framework for disaster risk management;
 - b) Disaster risk financing spans public and private mechanisms targeted at governments, institutions and individuals engaging a wide range of public and private stakeholders (e.g., the government, insurance and reinsurance sectors, larger investment banks, bi-lateral donors, international and regional development banks,) and, a variety of decisions (e.g., government budgeting in form of ex ante investments, subsidies and emergency trust funds, insurance and alternative financial risk transfer markets);
 - c) Risk assessment, analysis and modelling underpin the development of disaster risk financing and management, as a critical component of climate change adaptation;
 - d) The (re)insurance sectors have extensive experience in risk modelling; and,
 - e) Weather, hydrological and climate services are needed for comprehensive disaster risk financing decision-making;
2. The WMO Expert Advisory Group on Climate Services for Disaster Risk Financing, will,
 - a) Develop fundamental knowledge base, based on documentation of good practices and lessons learned that demonstrates benefits, opportunities, challenges and needs for provision of weather, hydrological and climate services to support disaster risk financing;
 - b) Segment various user groups within the disaster risk financing community and identify and prioritize their needs and requirements for weather, hydrological and climate data, research, methodologies and analytical tools, models and applications, capacity development and training needs which form the necessary components for information supply chain to support a range of disaster risk financing interventions (e.g., insurance and financial risk transfer instruments);
 - c) Identify, facilitate and support as relevant the implementation of pilots for provision of weather, hydrological and climate services to support disaster risk financing within a comprehensive disaster risk management framework in a number of national/regional projects;
 - d) Identify data policy and exchange, service delivery and partnership models and financing mechanisms that would enable the sustainable provision of weather, hydrological and climate services to support disaster risk financing decision-making;
 - e) Cooperate with and provide input to the work plan of the WMO Expert Advisory Group on Climate Services on Hazard/Risk Analysis as relevant to the respective TORs;
 - f) Align activities and deliverables to contribute to other related international initiatives and groups involved in climate change adaptation, disaster risk management, financing and transfer programmes, especially with respect to other UN related mechanisms and work programmes; and,
 - g) Produce and evolve a road map of activities and deliverables during the period 2012-2015, with 24 month horizon, updated annually.

The membership will engage internationally recognized experts from the (re)insurance sectors and other financial risk transfer communities, international agencies that are facilitating these markets in the developing countries, experts from the weather and climate research communities as well as a number NMHS with experience in serving these markets. The latter are designated by the WMO Permanent Representatives. The term of membership is for a period of four years. The EAG-FRT will be chaired by two co-chairs, who will serve a two-year term. The EAG-FRT will meet face-to-face once a year for two days, during the period 2011-2015 at the WMO HQ. The EAG-FRT is established under the crosscutting Framework of the DRR Programme and will engage WMO technical sponsored and co-sponsored Programmes. The work of the EAG-FRT will be reported to

the WMO Executive Council Working Group on Service Delivery and subsequently to the WMO Executive Council and Congress.⁴

During the period 2012-2015, the EAG-FRT will:

- a) Define the scope of its work by clearly Identifying and prioritizing target sectors (e.g., insurance and reinsurance sectors, etc.), the risk transfer schemes within the Financial Risk Transfer Markets and other related issues to be addressed in this initiative;
- b) Map the diverse models of partnerships among the target FRT sectors and the Meteorological, Hydrological and Climate Services and identify and document good practices and lessons learned;
- c) Map existing activities and identify gaps, needs and priorities to address requirements of financial-sector user communities for weather, hydrological and climate services and
- d) Propose an overarching framework for strengthening the collaboration of the weather and climate research communities and operational service providers with the target sectors and identify relevant areas of cooperation;
- e) Facilitate the identification of needs and requirements of the target sectors for meteorological, hydrological and climate services;
- f) Provide guidance for the development of guidelines and training modules for the National Meteorological and Hydrological Services (NMHS) for provision of weather, hydrological and climate services based on the analyses of lessons learned from good practices and requirements of these markets;
- g) Identify and facilitate the implementation of (national and regional) capacity development projects for weather, hydrological and climate products and services to support financial risk transfer markets;
- h) Support the planning of the First International Experts' Symposium on Climate Services for Financial Risk Transfer in 2013 on Lessons learned and Needs for Weather, Hydrological and Climate Services in the Financial Risk Transfer Markets
- i) The EAR-FRT will achieve these terms by developing a work plan with clear deliverable and timelines.

⁴ From Doc 3 "Membership and Draft Terms of Reference of the WMO Expert Advisory Group on Financial Risk Transfer" of the First Meeting of the WMO Expert Advisory Group on Financial Risk Transfer (EAG-FRT I) (Geneva, Switzerland, 13-14 December 2011)