



# First Meeting of the WMO Expert Advisory Group on Financial Risk Transfer (EAG-FRT I)

13-14 December 2011  
WMO Headquarters, Room 8 Jura  
Geneva, Switzerland

[http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index\\_en.html](http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index_en.html)

## Final Report

28 February 2012

### 1. BACKGROUND

1. The Hyogo Framework for Action 2005-2015 (HFA) adopted by 168 countries at the Second United Nations World Conference on Disaster Risk Reduction (2005, Kobe, Japan), shifted the paradigm in disaster risk management from emergency response to a comprehensive and strategic approach that would include disaster risk reduction and transfer. As per HFA, a comprehensive disaster risk management framework requires: (i) scientifically sound risk assessment to quantify and understand the risks associated with natural hazards and their impacts; (ii) risk reduction through early warning systems and sectoral risk management, and, (iii) financial risk transfer mechanisms. These must be underpinned by appropriate policies, legal and organizational frameworks as well as allocation of resources at national to local levels.
2. The Thirteenth World Meteorological Organization (WMO) Congress, in May of 2003, established the WMO Disaster Risk Reduction (DRR) Programme. The main long-term objective of the DRR Programme is to “*Strengthen institutional capacities and partnerships for provision of meteorological, hydrological and climate services to support risk assessment, risk reduction and risk financing decision-making within socio-economic sectors for protection of lives, livelihoods and property and contributing to sustainable development.*” This is to be achieved through the crosscutting framework of the DRR Programme leveraging expertise, resources and capacities of 189 WMO Members, its technical programmes (sponsored and co-sponsored), constituent bodies, global operational network and building strategic alliances with partners.
3. Based on the outcomes of a number of consultations the sixteenth session of the World Meteorological Congress (May 2011) requested the WMO Secretary-General to facilitate the development of weather, hydrological and climate services for insurance and other financial risk transfer markets, under the crosscutting framework of WMO DRR Programme and as a contribution to the Global Framework for Climate Services (GFCS).<sup>1,2</sup>

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<sup>1</sup> These consultations and discussions included the: (i) 58<sup>th</sup>, 59<sup>th</sup> and 60<sup>th</sup> Executive Councils of the WMO (2008, 2009, 2010), (ii) “Expert Meeting on Requirements of the Catastrophe Insurance and Weather Risk Management Markets for National Meteorological and Hydrological Services’ Products and Services”, held on 5 - 7 December 2007, at the WMO Headquarters (final report and other related materials can be accessed at: <http://www.wmo.int/pages/prog/drr/events/cat-insurance-wrm-markets-2007>), (iii) Plenary Panel on “Climate Extremes, Early Warning and Disaster Risk Reduction” at WCC-III (31 August – 4 September 2009), (iv) Panel on “Climate Services, Catastrophe Risk and Capital Markets – How Climate Services are Set to Become Embedded with Insurance Regulation and Markets” at the Third Global Platform for Disaster Risk Reduction, 11 May 2011 (Geneva, Switzerland)

<sup>2</sup> Some Frequently Asked Questions: GFCS (2011), WMO Bulletin 60(1), Pp 5-8.

4. The WMO Expert Advisory Group on Financial Risk Transfer (EAG-FRT) was established to provide strategic guidance and to facilitate the development of concrete activities related to these areas.
5. The Members of the EAG-FRT include, internationally recognized experts from (re)insurance, sector and other financial institutions, international agencies that are facilitating these markets in the developing countries, as well as experts from academia and climate research community as well as number of National Meteorological and Hydrological Services (NMHS) with experience in serving these markets. A list of EAG-FRT members is provided in Annex I.

## 2. First Meeting of the EAG-FRT

6. The First Meeting of the EAG-FRT was held from 13 to 14 December 2011 at the WMO Headquarters in Geneva, Switzerland. The agenda for the meeting is provided in Annex II. The goals of the First Meeting of the EAG-FRT were to:
  - i. Scope out the activities of the EAG-FRT during the period 2012-2015;
  - ii. Finalize the EAG-FRT Terms of Reference (TOR); and,
  - iii. Develop a work plan with concrete activities and timeline for 2012-2015.
7. The presentations and documents for the meeting are available on the meeting's website [http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index\\_en.html](http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index_en.html)
8. WMO introduced the goals and activities of its Disaster Risk Reduction Programme for the development of meteorological, hydrological and climate services to support risk analysis, early warning systems, sectoral risk management and financial risk transfer markets. It was noted that to date four inter-linked thematic/sectoral user-platform mechanisms have been established to identify needs and requirements for services in these priority areas (Annex III). Specifically, it was discussed that disaster risk analysis and modelling underpins the development of disaster risk reduction and financing, as a component of climate change adaptation. In light of the fact that the (re) insurance sectors have significant experiences in catastrophe risk modelling, it was discussed that the activities of the Expert Advisory Group on Hazard/Risk Modeling (EAG-HRT) would be highly relevant to the work plan of the EAG-FRT and there should be close collaboration and alignment of activities between the two advisory groups.
9. The research and operational network of the WMO as well as the initiative for the development of the Global Framework for Climate Services, to provide operational climate services to various stakeholders at national, regional and global levels were presented.<sup>3</sup> It was discussed that DRR is one of the four priority areas of GFCS and that the work plan of the EAG-FRT would be highly relevant in providing guidance for the development of operational climate services for the DRR and risk financing communities. Discussions focused on the need for pilots for development of such climate services driven by users' needs and requirements in the risk financing and transfer communities.
10. The discussions of EAG-FRT were organized around two main topics, including:
  - i. Session 2: Disaster Risk Financing and Financial Risk Transfer Markets Related to Weather, Hydrological and Climate Extremes in a Changing Climate (User perspectives).
  - ii. Session 3: Provision of Research and Operational Meteorological, Hydrological and Climate Services to Support Target FRT Markets and Lessons Learned (Provider perspective).
11. In session 2, experts from the (re)insurance sector, academia, the World Bank, World Food Programme (WFP), International Fund for Agricultural Development (IFAD) and UNEP-FI presented their experiences. A number of topics such as importance of government budgeting, public-private partnerships linked to risk financing and transfer and building resilience through mechanisms such as government disaster financing, and traditional insurance and alternative risk transfer mechanisms (ART) for protection of physical assets (property) and agriculture and food security were explored. The session highlighted the importance of disaster risk financing and

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<sup>3</sup> Sources: Climate Knowledge for Action: A global Framework for Climate Services, The report of the high-level taskforce for the global framework for climate services, WMO-No 1065 (2011) and Abridged Final Report with Resolutions of the Sixteenth World Meteorological Congress (WMO-No. 1077).

related challenges and opportunities from policy to development aspects within a changing climate. In particular, it noted that;

- Financing of disaster risk management requires the engagement of government and public domains as well as the private sector utilizing different financial instruments.
- Within the work plan of EAG-FRT, consideration for provision of climate services should be broadened to disaster risk financing to ensure that the various stakeholders engaged in different aspects of disaster risk financing (which also includes risk transfer) have access to the relevant information to design a more balanced portfolio of risk financing tools. Specifically, range of stakeholders would include, governments, insurance and reinsurance sectors, larger investment banks that financing or backing instruments such as catastrophe bond, bi-lateral donors and international and regional development banks.
- Traditional insurance and alternative risk transfer mechanisms (ART) are subsets of the broader field of disaster risk financing. Over the last decades a number of weather-indexed and other CAT tools and mechanisms have been developed and piloted in developing and developed countries. There are challenges and opportunities with the development, scaling up and sustainability of the traditional insurance and ART mechanisms for protection of physical assets, agriculture and livelihoods, particularly in the developing and least developed countries. There have been numerous pilots and cases implemented around the world providing a dearth of experience and lessons learned for further development of these markets. Availability of, accessibility to and quality of climate data and services remain a major obstacle for the development of these capacities in many parts of the world.
- There is a need for training of the stakeholders in the financial sector (public and private) on the scientific understanding and technical developments with forecasting and analyzing changing patterns of extreme events linked to climate variability and change and related impacts.
- There is a need for historical meteorological and hydrological data extending to 30 years or greater. It was emphasized that in many countries especially Least Developed Countries (LDC) and developing countries there is a significant need for data rescue and quality management programmes.
- In addition to historical data and meta data needs, access to timely weather and water data and information during the contract period would be critical for portfolio management and contract settlement. It was expressed that in many countries the time to obtain meteorological data is often too long to manage portfolios and settle contracts.
- Historical data is the starting point for the analysis and development of disaster financing strategies and in that context insurance and ART tools and contracts. However, modeling, Meteorological forecasts (0 – 14 days) and climate model outputs (with up to one year timeframe) are fundamental for the design, development of insurance contracts, claims adjustments and settlements. This development portends a greater need for customized model outputs, further information on forecasting, analysis and various scenarios with confidence levels to service the insurance sector.

12. In Session 3, experts from the NMHS highlighted their experiences in operationally providing weather, hydrological and climate services for these markets. Specifically,

- It was emphasized that, especially in the LDCs and developing countries, NMHSs are not well equipped to deal with the increased demand for their services to support insurance and ART as well as the broader disaster risk financing mechanisms. It was emphasized that there is a critical need for sustainable capacity building of NMHS to support disaster risk financing such as training, data rescue, data management techniques and tools, maintenance of databases, modernization and installation of the tamper free weather stations and service delivery capacities. However, in a number of cases, it was noted that NMHS efforts to support these markets had resulted in increased resources for development of the core capacities of the NMHS (e.g., Malawi and Ethiopia).
- Experiences with respect to provision of climate services for newly established weather indexed regional insurance pools such as the Caribbean Catastrophe Risk Insurance

Facility (CCRIF) were presented and it was indicated that such regional facilities are being considered in other regions such as the Pacific. Issues pertaining to availability of data, need for data rescue and quality assurance, and other hazard analysis in the context of a regional insurance pool were discussed. Specifically, it was noted that availability of regional databases would be critical to the development of such risk transfer –tools. However, data availability and accessibility and exchange policies posed challenges to the development of such regional databases.

- There is a clear need for documentation of good practices and lessons learned from NMHS and regional centers that are servicing these markets (from both the user and provider perspectives). It was noted that documentation and synthesis of such good practices would provide critical foundation for the work of the EAG for development of, (i) the requirements for provision of climate services for different stakeholders in disaster risk financing, (ii) respective training programmes for providers and users of climate services; and, (iii) fostering of stronger partnerships across the user and provider communities. In this context, a number of examples were discussed and lessons learned from the 2010 floods in Australia, Ethiopia and Malawi experiences with serving these markets, and cooperation between the NMHS and climate services of Netherlands, United Kingdom, and United States with the insurance sectors were identified as good examples to be documented. Furthermore, challenges and opportunities from provision of information to regional insurance pools such as CCRIF could be documented.
13. Representatives from the research community highlighted a number of existing activities in research and development relevant to this area, particularly,
- Willis Research Network was considered as a unique example of a coordinated “user-driven” partnership that engages the climate research/modeling and operational services’ communities risk modeling companies and the insurance sector to develop targeted climate/risk information for the insurance/reinsurance markets. However, it was emphasized that the risk modeling outcomes of such partnerships, engaging the private sector and public science, could extend beyond the insurance markets, into broader risk reduction community, and that efforts need to be made to scale up such initiatives.
  - It was discussed that there were opportunities for further strengthening such cooperation that engages the international research programmes such as WWRP and WCPRP to facilitate (i) leveraging of relevant research and development initiatives under international research programmes such as WWRP and WRCP, and (ii) identification of new areas of research and development that would require to address in a coordinated fashion within the climate research community.

### **3. Conclusions and Next steps**

14. The major conclusions and recommendations that were reached at this meeting, include:
- i. The scope and work of the EAG-FRT should be expanded to provide guidance on the needs for climate services for the broader field of Disaster Risk Financing (DRF), spans, public and private mechanisms for disaster risk financing including a variety of tools (e.g., government budgeting in the form of ex ante investments and emergency trust funds, insurance and alternative financial risk transfer markets, bi lateral and development banks’ investments, etc) targeted at governments, institutions and individuals. Specifically, range of stakeholders would include, governments, insurance and reinsurance sectors, larger investment banks, bi-lateral donors, international and regional development banks
  - ii. It was decided that the Expert Advisory Group should be renamed to “Expert Advisory Group on Climate Services for Disaster Risk Financing” (EAG-CSDRF) with the Terms of Reference as provided in Annex VI. Furthermore, additional experts (two to three) from user sectors not currently represented in this advisory group (e.g., bi-lateral donors, regional development banks and investment banks) may be invited to join this advisory group.
  - iii. With consideration that hazard risk analysis and modeling underpins the development of disaster risk reduction and financing, as a component of climate adaptation, coupled with the significant experiences of the (re) insurance sectors in risk modeling, the EAG should

liaise through a clear mechanism with the WMO Expert Advisory Group on Hazard/Risk Analysis (EAG-HRA). The purpose would be to leverage the knowledge and experiences of EAG-CSDRF for EAG-HRA and to ensure that the needs and requirements for risk analysis to support disaster risk financing identified by EAG-CSDRF are addressed in the work plan of the EAG-HRA.

- iv. Outcomes of the EAG-CSDRF could feed into the first thematic area of the UNFCCC work programme on loss and damage associated with the adverse effects of climate change, in lead up to COP-18 (Nov/Dec 2012), “Assessing the Risk of Loss and Damage Associated with the Adverse Effect of Climate Change”. Furthermore, the work plan of EAG-CSDRF should leverage other international activities and initiatives. To this end, the WMO Secretariat will be compiling a list of activities, programmes and meetings where such opportunities could be realized.
- v. The meeting confirmed the benefits of maintaining its clear focus and deliverables on climate services for disaster risk financing. To this end, it considered its TOR and a two-year work plan (2012-2013) with concrete deliverables and requested the WMO Secretariat to circulate these documents for final comments by its members by February 2012.
- vi. The meeting established a work plan with concrete activities for the period 2012-2013 (Annex V and VI).
- vii. The second meeting of the EAG-CSDRF was proposed to be held in September 2012.

**Membership of the WMO Expert Advisory Group on  
Climate Services for Disaster Risk Financing (2012-2015)**

<b>Number</b>	<b>Name</b>	<b>Institutional Affiliation</b>
1	Mr Butch Bacani	Programme Leader <i>United Nations Environment Programme Principles for Sustainable Insurance Initiative and Insurance Commission (UNEP-FI)</i>
2	Mr Adams Chavula	Senior Meteorologist <i>Climate Change and Meteorological Services of Malawi</i>
3	Mr Richard Choularton	Senior Policy Officer Climate Change and Disaster Risk Reduction, Policy, Planning and Strategy Division <i>World Food Programme (WFP)</i>
4	Mr Rowan Douglas	CEO Global Analytics and Chairman <i>Willis Group and Willis Research Network</i>
5	Mr David Easterling	Chief Global Climate Application Division, NCDC <i>National Oceanic and Atmospheric Administration</i>
6	Dr David Farrell	Principal <i>Caribbean Institute for Meteorology and Hydrology</i>
7	Mr Remco Fischer	Programme Officer – Climate Change <i>United Nations Environment Programme Principles for Sustainable Insurance Initiative and Insurance Commission (UNEP-FI)</i>
8	Dr Don Gunasekera	Senior Economist <i>Australian commonwealth Scientific and Industrial Research Organisation (CSIRO)</i>
9	Mr John Harding *	Head, Policy and Practice Unit <i>United Nations International Strategy for Disaster Reduction (UN-ISDR)</i>
10	Prof. Dr. Peter Hoeppe *	Head of Geo Risks Research/Corporate Climate Centre GEO/CCC1 <i>Munich Re</i>
11	Ms Miwa Kato	Programme Officer <i>United Nations Framework Convention on Climate Change (UNFCCC)</i>
12	Dr Alexander Kleshchenko	Director of the Institute <i>All-Russian Scientific Research Institute for Agricultural Meteorology</i>
13	Mr Dula Shanco Lebeta	Deputy Director General <i>National Meteorological Agency of Ethiopia</i>
14	Mr Olivier Mahul	Program Coordinator, Disaster Risk Financing and Insurance, FCMNB and GFDRR Global Expert Team Leader <i>The World Bank</i>
15	Mr Neil McFarlane	Coordinator of the Global Platform for Disaster Risk Reduction <i>United Nations International Strategy for Disaster Reduction (UN-ISDR)</i>

<b>Number</b>	<b>Name</b>	<b>Institutional Affiliation</b>
16	<b>Dr Rebecca Mitchell</b>	Senor Business Analyst <b>UK Met Office</b>
17	<b>Mr Francesco Rispoli</b>	Technical Advisor <b>International Fund for Agricultural Development (IFAD)</b>
18	<b>Mr Rachid Sebbari</b>	Head of Climatological Center <b>Direction de la Météorologie Nationale</b>
19	<b>Dr Jerry Skees</b>	H.B. Price Profesor of Agricultural Policy and Risk Department of Agricultural Economics <b>University of Kentucky</b>
20	<b>Mr Walter Stahel *</b>	Vice-Secretary General <b>The Geneva Association</b>
21	<b>Mr Jurg Trueb **</b>	Head Environmental and Commodity Markets <b>Swiss Re</b>
22	<b>Dr Cunjie Zhang</b>	Director <b>China Meteorological Administration</b>

Note:

(\*) Member of the EAG-CSDRF but did not participate in the 1st meeting of EAG-FRT from 13-14 December 2011

(\*\*) To be confirmed.

<b>Agenda</b>	
<b>Day 1 – Tuesday December 13</b>	
<b>0830 – 0900</b>	<b>Registration (Please proceed to Room 8 Jura for registration)</b>
<b>Session 1: Opening and introduction</b>	
0900 – 1030	<ul style="list-style-type: none"> <li>• Opening statement and welcome address - Dr Elena Manaenkova, <i>WMO Assistant Secretary General</i></li> <li>• Introductions</li> <li>• Designation of the Chair of the EAG-FRT</li> <li>• Review and adoption of the agenda of the EAG-FRT 1 meeting</li> <li>• Background on the establishment of EAG-FRT and objectives– Dr Maryam Golnaraghi (WMO) (Doc 2)</li> <li>• Preliminary review of the draft Terms of Reference of the EAG-FRT (Doc 3)</li> </ul>
1030 – 1045	Group Photo
1045 – 1100	Coffee break
<b>Facilitators: Co-chairs of the EAG-FRT</b>	
<b>Session 2: Disaster Risk Financing and Financial Risk Transfer Markets Related to Weather, Hydrological and Climate Extremes in a Changing Climate (User Perspectives)</b>	
<i>This session will engage three overview presentations and two discussion segments</i>	
1100 – 1300	<ul style="list-style-type: none"> <li>• Advancing adaptation through climate information services – Results of a global survey on the information requirements of the financial sector – Mr Remco Fischer (UNEP FI)</li> <li>• Perspectives of insurers, re-insurers and insurance brokers – Mr Rowan Douglas (Willis Re)</li> <li>• Disaster risk financing in the agricultural sector – Dr Jerry Skees (University of Kentucky)</li> </ul>
1300 - 1400	Lunch
<b>Session 2: Continued</b>	
1400 – 1600	<p><b>Traditional and Alternative Risk Transfer Markets (Physical assets and property) and Needs for Meteorological, Hydrological and Climate Services</b></p> <ul style="list-style-type: none"> <li>• Challenges and opportunities for disaster risk financing from policy to development within a changing climate (traditional insurance and ART mechanisms) – Mr Olivier Mahul (World bank) (<i>Via Conference Call</i>)</li> <li>• Insurer perspectives on climate change adaptation - Results of a global survey – Mr Remco Fischer (UNEP FI)</li> </ul> <p><b>Discussion points:</b></p> <ol style="list-style-type: none"> <li>(1) <i>Drivers of these markets in developed and developing countries</i></li> <li>(2) <i>Identify and prioritize insurance and other alternative risk transfer schemes (CAT, weather-indexed, etc.) linked to weather, hydrological and climate information and services</i></li> <li>(3) <i>Status of penetration, opportunities and challenges of these (climate/weather related) schemes in developed and developing countries</i></li> <li>(4) <i>Types of decisions that could benefit from weather, hydrological and climate information input (policy, market development, partnerships, product design and settlement, etc)</i></li> <li>(5) <i>Identification of key stakeholders engaged and segmentation of users of weather and climate services in these markets</i></li> <li>(6) <i>Priority hazards and conditions impacting these markets.</i></li> <li>(7) <i>Examples of good practices (developed and developing countries)</i></li> </ol>
1600 - 1630	Coffee Break
<b>Day 2 – Wednesday December 14</b>	
0900 - 0930	Summary of the outcomes of the discussions from Day 1 – EAG-FRT co-chairs



<b>Session 3: Research and Operational Meteorological, Hydrological and Climate Services to Support Target FRT Markets and Lessons Learned</b>	
0930 - 1000	<ul style="list-style-type: none"> <li>Overview of WMO, its Coordinated Operational Network and the Global Framework for Climate Services (GFCS) - Dr. Geoffrey Love (WMO)</li> </ul>
1000 – 1300  With a coffee break	<p><b>Discussion on good practices, opportunities and challenges for delivery of operational weather, hydrological and climate services to support these markets -</b></p> <p><i>Format: Participants from the National Meteorological and Hydrological Services and related institutes are invited to make short interventions to highlight their experiences in operationally providing weather, hydrological and climate services for supporting these markets. (Discussion format)</i></p> <ul style="list-style-type: none"> <li>Dr Don Gunasekera (Australian commonwealth Scientific and Industrial Research Organisation)</li> <li>Dr David Easterling (National Oceanic and Atmospheric Administration, USA)</li> <li>Mr Rachid Sebbari (Direction de la Météorologie Nationale, Maroc)</li> <li>Dr Cunjie Zhang (China Meteorological Administration)</li> <li>Dr Rebecca Mitchell (UK Met Office)</li> <li>Dr Alexander Kleshchenko (All-Russian Scientific Research Institute for Agricultural Meteorology)</li> <li>Mr Dula Shanco Lebeta (National Meteorological Agency of Ethiopia)</li> <li>Mr Adams Chavula (Meteorological Services of Malawi)</li> <li>Dr David Farrel (Caribbean Institute for Meteorology and Hydrology)</li> </ul> <p><b>Discussion points:</b></p> <ol style="list-style-type: none"> <li>Identify a list of cases (national and regional around the world) where weather, hydrological and climate services are supporting these markets,</li> <li>Lessons learned from operational experiences with respect to the quality and delivery of these services</li> <li>Partnerships and cooperation mechanisms between operational service providers and target stakeholders in these markets</li> <li>Operational capacities, processes for identification of requirements, and types of products and services (data, forecasting, technical advisory)</li> <li>Service delivery models of NMHS</li> <li>Training and capacity development needs of the service providers (e.g., knowledge about the markets and their requirements, data and forecasting capacities, etc)</li> <li>Criteria for what constitutes a good practice for operational provision of weather, hydrological and climate products and services to serve these markets,</li> <li>Identification of a number of good practices around the world that could be documented in 2012.</li> </ol>
1300 - 1400	Lunch
<b>Session 3: Continued</b>	
1400 – 1500	<p><b>Discussion on Needs and Opportunities for Weather and Climate Research and Development related to Extreme events in a changing Climate -</b></p> <ul style="list-style-type: none"> <li>Highlight of the relevant research areas under the World Climate Research Programmes – Dr Michel Rixen (WCRP)</li> <li>Research on High Impact Weather – Dr Deon Terblanche (WWRP)</li> </ul> <p><i>Format: 10-15 minute presentations followed by discussions:</i></p> <p><b>Discussion points:</b></p> <ol style="list-style-type: none"> <li>Relevant research topics and activities under various international programmes and opportunities for leveraging</li> <li>Topics in need of more research</li> <li>Opportunities for strengthening collaboration of research community with operational service providers and the FRT communities;</li> </ol>
<b>Session4: Finalization of the Terms of Reference of ERG-FRT and the work plan</b>	
1500 – 1725	<ul style="list-style-type: none"> <li>Summary of discussions by the co-chairs</li> <li>Review and finalization of TOR of the EAG-FRT (Doc 3)</li> <li>Overall work plan, timeline and deliverables (2012 – 2015)</li> </ul>
1725 – 1730	<ul style="list-style-type: none"> <li>Concluding remarks and closing of the first meeting of the EAG-FRT</li> </ul>

Table 1: WMO DRR thematic “user-interface” Advisory Groups and Mechanisms				
User-Driven DRR Expert Advisory Group or Coordination Mechanism	Date established or held	Partners	Deliverables	
			2008-2011	2012-2015
<b>Expert Advisory Group on Climate Services for Hazard / Risk Analysis (EAG-HRA)</b>	- To be established in 2012	World Bank, UNDP-GRIP, WFP, Experts from Risk Modelling Sectors, UN-ISDR, UNFCCC, OECD, GEM, CRED, Munich Re, Swiss Re, WRN, NMHS, reps from RCCs, and WMO Technical Commissions and programmes (CBS, CHy, CCL, JCOMM, AgM, CIMO, CAS, TCP)	N/A	<ol style="list-style-type: none"> <li>1. First meeting to be held in 2012 to develop TOR, priorities and work plan for 2012-2015</li> <li>2. Documentation and synthesis of good practices</li> <li>3. Development of guidelines for standardization hazard data, metadata</li> <li>4. Development of guidelines for statistical analysis, climate forecasting and analysis tools to support disaster risk assessment</li> <li>5. Review of WMO/CRED Met/Hydro/climate risk reports</li> <li>6. etc.</li> </ol>
<b>International Expert Symposia on Multi-Hazard Early Warning Systems (MHEWS Symposia)</b>	- Geneva, May 2006 - Toulouse, May 2009 - China Q4 2013 (TBC)	NMHS, Disaster Risk Management Agencies, WMO, WHO, UNOCHA, WFP, FAO, UNHCR, UNDP, IFRC, UNESCO-IOC, World Bank, ITU, UNEP, UN-ISDR, UNICEF	<ol style="list-style-type: none"> <li>1. Documentation of good practices in governance and institutional aspects of MHEWS in 7 countries.</li> <li>2. Synthesis of lessons learnt from the good practices</li> </ol>	<ol style="list-style-type: none"> <li>3. “Institutional partnerships in MHEWS, forthcoming book (Springer Verlag 2012)</li> <li>4. Guidelines on governance and institutional partnerships in DRR and MHEWS (June 2012)</li> <li>5. Third International Experts’ Symposium on MHEWS (Q4 2013)</li> <li>6. Guidelines on operational aspects of MHEWS with TCs (2015)</li> </ol>
<b>Ad-hoc Task Team on Meteorological, Hydrological and Climate Services for Humanitarian Preparedness and Planning (Humanitarian TT)</b>	- March 2009	UNOCHA, UNHCR, IFRC, UNICEF, UNITAR-UNOSAT, WFP, WHO, UNDP and WMO Technical Commissions (CBS, CCL, Chy)	<ol style="list-style-type: none"> <li>1. Interface with Humanitarian Agencies established (April 2009)</li> <li>2. First meeting held in September 2010, TOR established, work plan finalized (<a href="http://www.wmo.int/pages/prog/drr/events/HumanitarianTT/index_en.html">http://www.wmo.int/pages/prog/drr/events/HumanitarianTT/index_en.html</a>)</li> <li>3. Consultants hired by DRR Division to support the chair and the task team for the development of requirements (2011).</li> </ol>	<ol style="list-style-type: none"> <li>4. Report on needs and requirements of Humanitarian Agencies (Q2 2012)</li> <li>5. Operational pilots (2012-2014)</li> <li>6. Evaluation and proposals for scaling-up (2015)</li> </ol>
<b>Expert Advisory Group on Climate Services for Disaster Risk Financing (EAG-CSDRF)</b>	- December 2011	NMHS, UNEP-FI, WFP, Willis Research Network, CIMH, CSIRO, UNISDR, Munich Re, UNFCCC, World Bank, IFADS, Swiss Re, University of Kentucky, Geneva Association and WMO Sponsored and co-sponsored Programmes (WWRP, WCRP), Commissions (AgM, CCL, CHy)	<ol style="list-style-type: none"> <li>1. First meeting held in December 2011, TOR established, work plan finalized (<a href="http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index_en.html">http://www.wmo.int/pages/prog/drr/events/EAG-FRT/FRT1/index_en.html</a>)</li> </ol>	<ol style="list-style-type: none"> <li>2. 2012: Document good practices and publish</li> <li>3. 2013: International Symposium to identify needs and requirements and build partnerships for implementation</li> <li>4. 2013-2015: Implement pilots in different regions</li> </ol>

**Terms of Reference of the WMO Expert Advisory Group on Climate Services for Disaster Risk Financing (EAG-CSDRF)**

1. With consideration that:
  - (i) Disaster Risk Financing (DRF) is a critical foundation for the development of comprehensive framework for disaster risk management;
  - (ii) 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);
  - (iii) Risk assessment, analysis and modelling underpin the development of disaster risk financing and management, as a critical component of climate change adaptation;
  - (iv) The (re)insurance sectors have extensive experience in risk modelling; and,
  - (v) 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,
  - (i) 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;
  - (ii) 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);
  - (iii) 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;
  - (iv) 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;
  - (v) 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;
  - (vi) 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,
  - (vii) Produce and evolve a road map of activities and deliverables during the period 2012-2015, with 24 month horizon, updated annually.

## Deliverables of the Expert Advisory Group – Climate Services for Disaster Risk Financing (EAG-CSDRF)

Deliverable Number	Deliverable	Year	Activity
1	Book: Climate Services for Disaster Risk Financing: Good Practices and lessons learned	2012	Document Good Practices and synthesize lessons learned
2	Plan for the First International Experts Symposium on Climate Services for Disaster Risk Financing	2012 (Sept)	Second meeting of EAG-CSDRF (September 2012)
3	Report of the analysis of segmentation of the stakeholders in disaster risk financing at national, regional and global levels		Segment, analyze and prioritize the stakeholders involved in disaster risk financing, for purposes of the prioritization of the work plan of the EAG-CSDRF
4	Document existing training programs on disaster risk financing (including FRT) and climate services	April 2013	Map existing training programmes on disaster risk financing, FRT, and climate services
5	Guidelines on requirements for climate services of various user segments in the disaster risk financing community (In 4 UN languages)	August 2013	First International Experts Symposium on Climate Services for Disaster Risk Financing ( 3 day meeting in may 2013)  Followed by third Meeting of EAG-CSDRF
6	Establish pilots and partnerships for implementation in 2013 – 2015		
7	Work plans for User/provider training programme developed 2013 – 2015 (engaging WMO training centres)		
8	Research and development priorities		
9		Q4 2013	Pilots initiated

## EAG-CSDRF Activities, Deliverables and Timeline (2012-2013)

	2011	2012											
ACTIVITIES	December	January	February	March	April	May	June	July	August	September	October	November	December
First meeting of EAG-CSDRF													
Second meeting of EAG-CSDRF													
Document good practices and lessons learned and publish as a book													1
Plan for the First International Expert Symposia on Climate Services for Disaster Risk Financing and planning													2
Segment, analyze and prioritize target stakeholders in disaster risk financing and prepare report													3
	2013												
ACTIVITIES	January	February	March	April	May	June	July	August	September	October	November	December	
Document existing training programmes													
First International Expert Symposia on Climate Services for Disaster Risk Financing													
Third meeting of EAG-CSDRF (in conjunction with the First International Expert Symposium on Climate Services for Disaster Risk Financing)													
Guidelines on requirements for climate services of various user segments in the disaster risk financing community (In 4 UN languages)													
Work plans for User/Provider training programme developed 2013 – 2015 (engaging WMO training centres)													
Initiation of pilots													



Meetings and Symposium



Activities



Deliverable Number

\*\* Pilot projects will start at the end of 2013 and continue through 2014 in conjunction with existing coordinated national/regional projects in the Caribbean, Southeast Europe and Southeast Asia.