



WMO Disaster Risk Reduction Work Plan (2012-2015)

Updated as 26 September 2013

Approved by 64th Session of WMO Executive Council (25 June – 3 July 2012, Geneva, Switzerland)

For more information, please contact:

Dr Maryam Golnaraghi
Chief of Disaster Risk Reduction Division
World Meteorological Organization
7 bis, Avenue de la Paix
P.O. Box 2300
CH-1211 Geneva, 2, Switzerland
Tel: (+41 –22) 730-8006
Email: mgolnaraghi@wmo.int

1. Disaster Risk Reduction (DRR) is a priority for WMO because protection of lives, property and livelihoods are at the core of the priorities of the WMO Members and the National Meteorological and Hydrological Services (NMHS). Furthermore, the implementation of the Hyogo Framework for Action (HFA) by national governments is leading to changes in national DRR policies, legal and institutional frameworks, with implications on the role, responsibilities and new working arrangements for the NMHSs. These changes provide opportunities such as increased recognition of the NMHSs by their governments and stakeholders, which could result in strengthened partnerships and increased resources. However, NMHSs face increasing demand and liabilities related to the provision of products and services to larger and more diverse group of DRR stakeholders (e.g., government authorities, public and private sectors, NGOs, general public and media, etc.) whom have direct responsibilities for DRR decision-making. To meet these new challenges, as illustrated in Figure 1, the crosscutting DRR Programme two-tier work plan (hereafter referred to as the DRR Work Plan) aims to facilitate better alignment of the activities of WMO constituent bodies and global operational network as well as strategic partners to assist NMHSs to:

- (a) (a) Engage effectively in the National DRR governance and institutional frameworks;
- (b) Identify, prioritize, establish partnerships and service delivery agreements with national DRR user community engaged in various DRR activities such as risk analysis, Multi-Hazard Early Warning Systems (MHEWS), sectoral risk management, disaster risk financing and transfer (DRR users);
- (c) Develop and deliver core and specialized products and services (e.g., data, forecasts, analysis, technical advices and a range of other value-added products and services) defined by the requirements of the “DRR users” for DRR decision support (e.g., hazard/risk analysis, multi-hazard EWS, sectoral risk management and disaster risk financing and risk transfer) in a cost-effective, systematic and sustainable manner;
- (d) Ensure that core operational capacities (e.g., observing networks, forecasting systems, telecommunication systems, data management systems, human resources, etc.) are built upon the principles of Quality Management Systems (QMS) to support product and service development and delivery;
- (e) Establish partnership agreements with other national technical agencies (e.g., hydrological services, ocean services, etc.) and with global and regional specialized centers (e.g. Global Producing Centres (GPC), Regional Specialized Meteorological Centres (RSMCs), Regional Climate Centres (RCC), Tsunami Watch Centers, etc.), with standard operating procedures;
- (f) Engage in regional and global efforts for development of risk information for large scale and trans-boundary hazards, through strengthened regional and global cooperation.

With its focus on developing the DRR capacities of countries, the HFA stresses the need for coordinated DRR systems at national through local levels. Consequently, it calls on all nations to “support the creation and strengthening of national integrated mechanisms such as multi-sectoral National Platforms” to ensure that DRR is a national and a local priority.

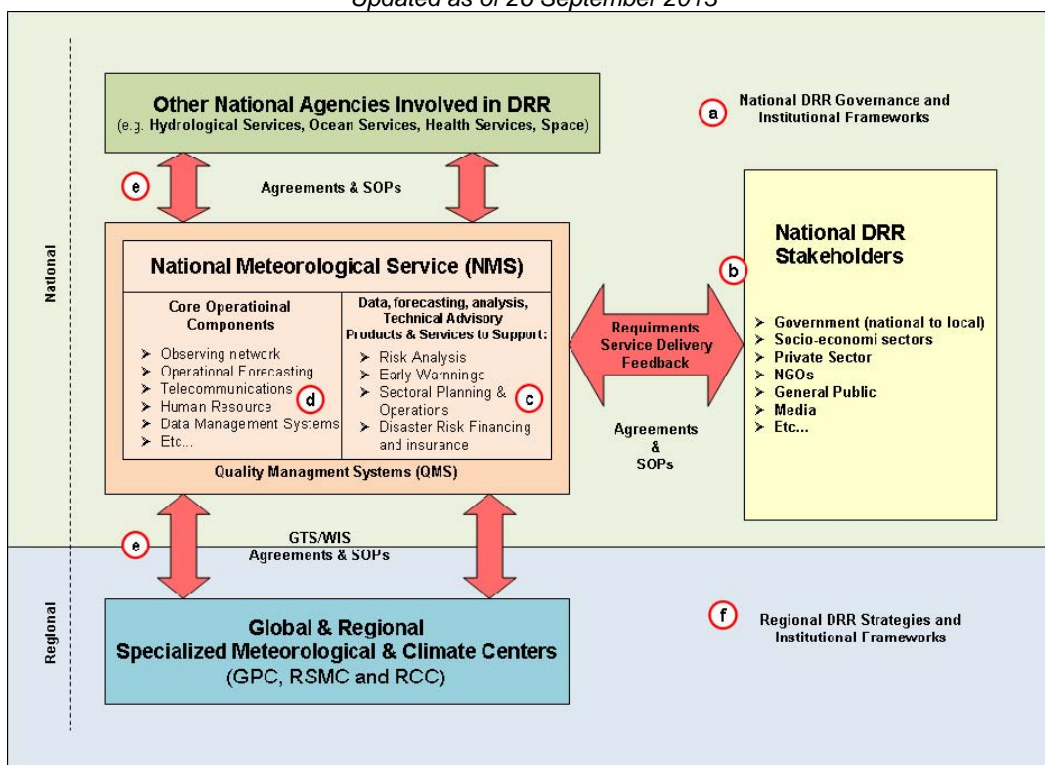


Figure 1: Overarching Framework of the WMO DRR Programme for Development and Delivery of Products and Services to support DRR decision-making and related partnerships.

2. The DRR Work Plan (see Figure 2) includes: (i) development of guidelines, standards and training modules for DRR thematic topics based on documentation and synthesis of good practices; and (ii) coordinated DRR and climate adaptation national/regional capacity development projects to support capacity development of NMHSs as per paragraph 1 (a-f). A critical aspect of the coordinated DRR national/regional projects is strengthening of cooperation of NMHSs, RSMCs, RCCs and DRR users for development of products and services based on user needs and requirements.

3. Making the implementation plan a reality would require substantial building of the operational capacities of many NMHSs in developing countries, an outcome that can only be achieved through a successful and well focused capacity development activities also engaging development partners such as the World Bank for the modernization of the NMHSs infrastructure, particularly in the developing and least developed countries. As one strategy for achieving this, significant efforts have been taken to engage Members, regional associations (RAs), technical commissions (TCs) and Programmes, to develop strategic alliances with key partners at regional and international levels to implement the DRR Work Plan.

WMO DRR Work Plan (2012-2015)
Updated as of 26 September 2013

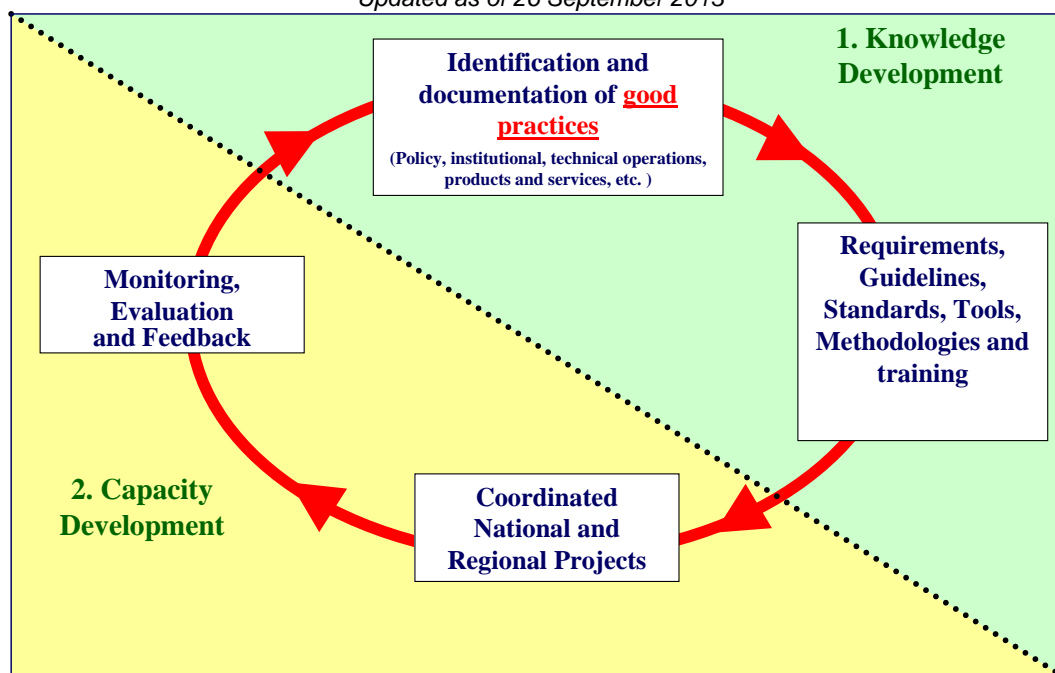


Figure 2: Two-Tier Schematic of the Implementation Approach of the DRR Programme

DRR thematic guidelines, standards and related training modules

4. Thematic areas of the DRR Programme include provision of meteorological, hydrological and climate services to support: (i) Hazard/Risk Analysis; (ii) Multi-Hazard Early Warning Systems (MHEWS); (iii) sectoral risk management through improved planning in land zoning, infrastructure and urban planning, agriculture, health, transport, water resource management, and, (iv) disaster risk financing, and financial risk transfer mechanisms such as weather-indexed insurance. Efforts are underway to develop guidelines, standards, and training modules spanning institutional, technical and operational aspects, consistent with QMS principles. Risk-based decision-making and disaster risk financing are critical for the development of national DRR and climate adaptation policies, institutional and financial planning, sectoral risk management and operations, for which access to meteorological, hydrological and climate services is essential. Therefore, development of these guidelines and requirements are critical in assisting the NMHSs for providing services for these areas.

5. A number of thematic DRR user-interface expert advisory groups have been established to guide and support implementation of the DRR Work Plan and related deliverables, WMO TCs and Programmes, RAs and WMO global operational network (Composition of the Disaster Risk Reduction User-Interface Expert Advisory Group and ad hoc Task teams are provided in Table 1). These user-interface expert advisory groups involve leading experts from the diverse DRR user community (public and private sectors), UN and international partner agencies, academia as well as NMHSs. These advisory groups are established to: (i) guide documentation of good practices and development of user needs and requirements for products and services to support thematic areas in DRR decision making; (ii) support development of and provide feedback on the WMO DRR knowledge products; and, (iii) support the implementation of the DRR Work Plan. These include:

- (a) Expert Advisory Group on Climate Services for Hazard/Risk Analysis (EAG-HRA) with focus on issues related to standards and guidelines for hazard definition,

*WMO DRR Work Plan (2012-2015)
Updated as of 26 September 2013*

standardization of hazard databases, metadata and statistical analysis and forecasting techniques of hazard analysis to support risk modeling;

- (b) Expert Advisory Group on Multi-Hazard Early Warning Systems (MHEWS) with focus on the operational aspects of MHEWS, building on the principles of QMS;
- (c) Expert Advisory Group on Climate Services for Disaster Risk Financing (EAG-CSDRF) with focus to develop requirements for climate services for disaster risk financing such as ex-ante and post-disaster government funding mechanisms, insurance and external development funding; ;
- (d) 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), with focus on development of requirements of the humanitarian community for meteorological and climate services.

6. Following the discussions at the 2012 Meeting of the Presidents of Technical Commissions, the WMO TCs and Programmes have been actively reviewing the DRR Programme Work Plan with a view to contribute to development of standards, guidelines and training modules, through their engagement in the relevant “DRR user-interface mechanisms” to leverage and align their relevant activities.

7. At its 65th Session, the WMO Executive Council considered critical role of the DRR UI-EAGs as coordinated user platforms to:

- (a) 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;
- (b) 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.

Table 1: DRR thematic “user-interface mechanisms” and associated deliverables during the 2012-2015 Inter-sessional Period		
User-Driven DRR Expert Advisory Group or Coordination Mechanism	Participating experts from partner agencies and WMO network	Deliverable (timeline)
Expert Advisory Group on Hazard/Risk Analysis (To be formally established in April 2014)	UN-ISDR, UNDP, CRED, Munich Re, World Bank, WFP, UNFCCC, UNEP, UNESCO-IOC, UNITAR/UNOSAT, OECD, Cima Foundation, JRC, GEM, Swiss Re, WRN, CEDIM, (wind and structural) Engineering Associations, Experts from Risk Modelling Sectors, ESRI, CIMH, RCCs, NMHS and DRM agencies DRR Focal Points of WMO Technical Commissions and Programmes	<ol style="list-style-type: none"> 1. “First Technical Workshop on Standards for Hazard Monitoring, Databases, Metadata and Analysis Techniques to Support Risk Assessment,” in WMO Headquarters, Geneva, Switzerland (10 to 14 June, 2013) 2. WMO/CRED Annual Publication: Socio-economic impacts of meteorological, hydrological and climate hazards (November 2013) 3. WMO DRR Guideline: Compilation of standards for meteorological, hydrological and climate hazard monitoring, data, metadata, hazard analysis, hazard mapping and forecasting tools (2013-2015)
Expert Advisory Group on Multi-Hazard Early Warning Systems (To be renewed in 2014)	WHO, UNOCHA, WFP, FAO, UNHCR, UNDP, IFRC, UNESCO-IOC, World Bank, ITU, UNEP, UN-ISDR, UNICEF, NMHSs, Disaster Risk Management Agencies. DRR Focal Points of WMO Technical Commissions and Programmes	<ol style="list-style-type: none"> 1. Book: “Institutional Partnerships in Multi-Hazard Early Warning Systems: A Compilation of Seven National Good Practices and Guiding Principles” Springer Verlag, pp 243 (April 2012) 2. WMO DRR Guidelines: Governance and Institutional Partnerships in MHEWS (March 2014) 3. Third International Experts’ Symposium on MHEWS (2015) 4. WMO DRR Operational Guidelines: Compilation of existing guidelines and standards by WMO TCs and development of new guidelines where gaps have been identified) (2013-2015)
Expert Advisory Group on Climate Services for Disaster Risk Financing (Formally established in December 2011)	UNEP-FI, WFP, Willis Research Network, CIMH, CSIRO, ISDR, Munich Re, UNFCCC, World Bank, IFAD, Swiss Re, University of Kentucky, Geneva Association (Insurance), NMHSs. WMO Technical Commissions and programmes engaged: CAgM, WWRP, WCRP.	<ol style="list-style-type: none"> 1. Report: Meteorological and Climate Services for Disaster Risk Financing: Documentation of Good Practices and Lessons Learned (Q1 2014) 2. Report: Requirements for meteorological and climate services for disaster risk financing (Government and commercial users) (2014) 3. First International Expert Symposium to identify needs and requirements and build partnerships for implementation (2014-2015) 4. Implement pilots as part of the DRR national/regional Projects (2014-2015)
Inter-commission ad-hoc Task Team on Meteorological, and Climate Services for Improved Humanitarian Planning and Response	UN-OCHA, UN-HCR, IFRC, UNICEF, UNITAR-UNOSAT, WFP, WHO, UNDP, JRC, EC-ECHO, IRI. WMO Technical Commissions and Programmes engaged: CBS, CCI <i>Chair: Mr. Michel Jean (Canada).</i>	<ol style="list-style-type: none"> 1. Report: Requirements of the International Humanitarian Sector for Meteorological, Hydrological and Climate Services to Support Preparedness, Planning and Response. (August 2012) 2. Operational demonstration pilots linked to DRR National/regional Projects (2013-2015) 3. Evaluation and scaling-up (2015)

Coordinated DRR and Adaptation national/regional capacity development projects

8. The Sixteenth WMO Congress endorsed the: (i) DRR and Adaptation DRR national/regional capacity development projects in South East Europe, the Caribbean, and Southeast Asia; and (ii) the national Costa Rica Early Warning System Project funded by the World Bank. These projects are designed to demonstrate the benefits of leveraging the WMO's Programmes, constituent bodies, global operational network and partners to address capacity development needs of NMHS to demonstrate the benefits of the DRR crosscutting framework. To date, efforts have been undertaken to strengthen coordination and cooperation among TCs and Programmes, RAs, and strategic partners at regional and international levels to support these projects.

9. These projects provide enabling environments for integrated planning, engaging the WMO TCs and Programmes with the RAs, Members and other partners for a more coordinated approach to assist Members. To this end, the project proposals and related implementation plans should ensure reflection of the specific contributions of the RAs and TCs, in particular with respect to the identification of needs and requirements, development of guidelines, norms and standards

10. The location and status of the DRR and Adaptation National/Regional projects are provided in Figure 3 and Table 2.

11. Engagement of RAs, TCs and various WMO operational networks of RSMCs and RCCs has been critical for the development of these projects. Specifically, RA Management Groups and related working groups are engaged in supporting the assessments and development of the requirements and prioritization of capacity development needs to be considered in these projects. This has been underpinned by multi-agency, multi-stakeholder user interface mechanisms, facilitated by the Secretariat engaging NMHSs and DRR stakeholders. Lessons learned from these interactions are critical to strengthening of the role of RAs and their working groups and their cooperation with DRR mechanisms in the Regions.

12. The expected outcomes of the project would include:

- (a) Engagement of the NMHS in the DRR policy and institutional mechanisms in the countries and regions
- (b) Increased clarity of the role of NMHSs in the national DRR institutional framework (planning, coordination, etc.) and linkage to the users who have direct responsibility with decision-making under the national DRR Institutional frameworks;
- (c) Increased coordination and cooperation at national and regional levels for provision of meteorological, hydrological, and climate information to the targeted socio-economic sectors in supporting risk analysis, multi-hazard early warning systems, sectoral risk management and disaster risk financing and insurance applications (public and private Sectors);
- (d) Increased utilization and demonstrated benefits of meteorological, hydrological, and climate knowledge in the decision-making processes of governments and targeted socio-economic sectors.

13. The development of the project had been based on the following considerations:

*WMO DRR Work Plan (2012-2015)
Updated as of 26 September 2013*

- (a) Demonstrated government interest in investing in DRR capacity development, alignment with national DRR and development planning and priorities, engagement and commitment to DRR and climate adaptation;
- (b) Development of strategic alliances with partners and donors from early stage (national, regional, global);
- (c) Engagement of WMO Members, RAs and WMO Operational Network and technical programmes;
- (e) Leverage exiting projects (WMO and partners) and their outcomes;
- (f) Multi-stakeholder and multi-sectoral engagement for a “user-driven assessment” of gaps, needs, prioritization and requirements;
- (g) National development and regional cooperation components:
 - National: DRR policies, institutional roles, partnerships, capacity development for strengthening of NMHSs, technical cooperation and development of meteorological, hydrological and climate products and services as per requirements of target users;
 - Regional: Strengthening of RSMCs and RCCs and their cooperation with NMHS in support of DRR applications;
- (h) Sustainability.

14. The main thrusts of the project included:

- (a) Prioritization of NMHSs national DRR users, establishment of agreements as per national DRR priorities and institutional frameworks (policy, legislation and legal frameworks);
- (b) Assessment of sectoral needs, requirements and agreements for meteorological, hydrological and climate products and services; assessment of capacities, gaps, needs of NMHS and development of priorities for their capacity development
- (c) Documentation of national policies and regulatory framework and roles of NMHSs (with partners such as UNDP and UN-ISDR);
- (d) Development of relevant partnership agreements and alliances (regional, global);
- (e) Modernization and/or core service strengthening of NMHSs as relevant (with partners such as the World Bank);
- (f) Development of “user-relevant” meteorological, hydrological and climate information products and services, underpinned by quality Management System (QMS) principles:
 - Severe Weather and Marine Services: Increased access to forecasting tools and severe weather warning services and utilization of related products by users;
 - Hydrological services: Increased access to national and regional flood management information systems;
 - Climate Services: Increased access to climate data, analysis tools, and climate forecast and other analytical products and services;
- (g) Optimal design of the national observing systems, data services and exchange: Increased regional dialogue and agreements for exchange

WMO DRR Work Plan (2012-2015)
 Updated as of 26 September 2013

of meteorological, hydrological and climate data and regional products (space, radar, etc.);

- (h) In-country technical support and feedback;
- (i) Evaluation and expansion to next phase.

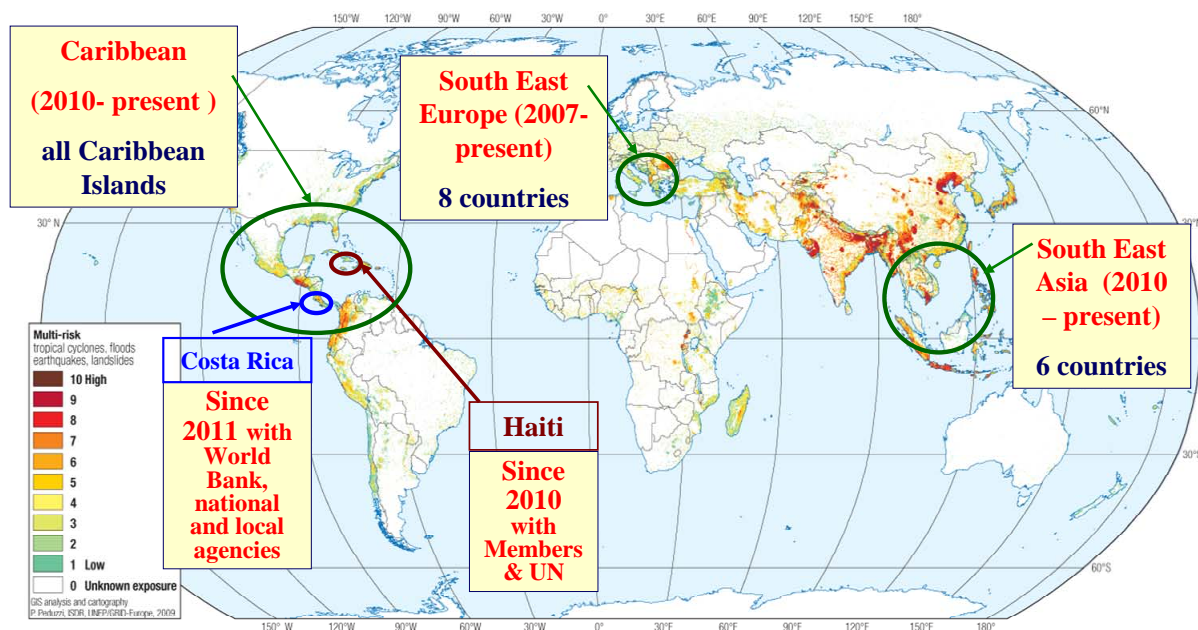


Figure 3: Location of the coordinated DRR and Climate Adaptation national/regional projects with partners

Strengthened and new DRR partnerships

15. Building on a number of existing partnerships including UN-ISDR, the World Bank, IASC and humanitarian agencies, and UNDP, a number of new partnerships and collaborative efforts have been undertaken by the DRR Programme since Cg-XVI to support the implementation of the DRR Work Plan. Specifically, these includes:

- (a) Partnership with The Centre for Research on the Epidemiology of Disasters (CRED) of the Université Catholique de Louvain (UCL), one of the custodians of the global disaster impact databases and plans for development of annual joint reports on the impacts of meteorological, hydrological and climate-related hazards, in linkage with CCI reports on “Annual Statement on the Status of Climate” and the WMO Global Seasonal Climate Updates, also as a key risk-based contribution to the GFCS;
- (b) Collaboration with the Conference of the Parties to the UNFCCC (COP) work programme on loss and damage through linking the work of the DRR Programme in hazard/risk analysis;

WMO DRR Work Plan (2012-2015)
Updated as of 26 September 2013

- (c) Partnership with UNEP-Finance Initiative, International Fund for Agricultural Development (IFAD) and Willis Research Network (WRN) in linkage to the work on services for Disaster Risk Financing;
- (d) Strengthened cooperation with UNESCO-IOC through linking the tropical cyclone committees and the ICGs for Tsunami and Coastal Hazard Warning Systems in the Caribbean and Indian Ocean, as well as designation of a WMO GTS/WIS focal point to the UNESCO-IOC.

Region	Beneficiary countries	International and Regional partners and centers	Project status
South East Europe	Eight (8) IPA beneficiaries: Albania, Bosnia & Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia, Kosovo (as defined by UNSCR 1244/99), Turkey	World Bank, UNDP, UNISDR European Commission DPPI, RCC, EUMETNET, EUMETSAT, ECMWF, Sava River Commission, Climate Center (Serbia), Regional Drought Center (Slovenia)	<ul style="list-style-type: none"> ✓ Assessment completed (SEEDRMAP, 2008) ✓ EC-funded Phase I project finalized http://www.wmo.int/pages/prog/drr/tranfer/SEEPPhaseI-FinalReport.pdf ✓ EC-funded Phase 2 project initiated
South East Asia	Lao PDR, Cambodia, Thailand, Vietnam, Indonesia, and the Philippines Note: Myanmar to be included in the SEA DRR and adaptation project	World Bank, UNISDR, UNDP ASEAN (Committee on Science and Technology and Sub-Committee on Meteorology and Geophysics (SCMG) and Agreement on Disaster Management and Emergency Response (ADMEER), Mekong River Commission, RCC Tokyo, RCC China, RSMC	<ul style="list-style-type: none"> ✓ Assessment completed with World Bank and UNISDR (to be published in 2012) ✓ Project proposal submitted to donors
Caribbean	All Caribbean island countries and territories	UNDP, World Bank, UNISDR, CDEMA, CMO, CIMH, RSMC-Hurricane Center	<ul style="list-style-type: none"> ✓ Assessment completed (Source: http://www.wmo.int/pages/prog/drr/transfer/1082-WMOCaribbeanReport-en.pdf) ✓ Project proposal development initiated
Costa Rica DRR EWS		World Bank (Funded through GFDRR)	<ul style="list-style-type: none"> ✓ Initiated in 2011, officially launched in 2012,

DRR Programme resource mobilization

16. Resource mobilization in support of DRR is coordinated through WMO's broader resource mobilization processes, leveraging emerging DRR funding opportunities.

Linkages to Global Framework for Climate Services (GFCS)

17. Through the aforementioned implementation approach, the DRR Programme is significantly contributing to the development of the Global Framework for Climate Services (GFCS), in particular related to the development of User Interface Mechanisms as a key contribution to the GFCS User Interface Platform (UIP), and the development climate products and services to support DRR decision-making, one of the four priority areas of GFCS. The outputs of the DRR user-interface expert advisory groups would identify the

WMO DRR Work Plan (2012-2015)

Updated as of 26 September 2013

needs for Climate Services Information Systems (CSIS), research, observation and monitoring and capacity development components of the GFCS. The DRR Work Plan is to be linked to the GFCS Implementation plan as per request of the 64th session of WMO Executive Council.

Reference(s):

1. Approved document 4.2 of the 65th session of the Executive Council General Summary and Resolution (May 2013)
2. Approved document 4.2 of the 64th session of the Executive Council General Summary and Resolution (July 2012)
3. *The Abridged Final Report with Resolutions of the Sixteenth World Meteorological Congress* (WMO-No. 1077), general summary, paragraphs 11.5.1 to 11.5.21, and Resolution 52 (Cg-XVI) – Disaster Risk Reduction Programme (WMO–No. 1077)
4. The Final Report of the 2012 Meeting of Presidents of Technical Commissions (PTC-2012), Geneva, 30 January -1 February 2012
5. The Final Report of the 2012 Meeting of Presidents of Regional Associations (PRA-2012) Geneva, Switzerland, 30-31 January 2012
6. Abridged Final Report with Resolutions of the Sixteenth World Meteorological Congress
7. Abridged Final Report with Resolutions of the Sixty-second Session of the Executive Council (WMO-No. 1059)
8. Abridged Final Report with Resolutions of the Sixty-first Session of the Executive Council (WMO-No. 1042)
9. Abridged Final Report with Resolutions of the Sixtieth Session of the Executive Council (WMO–No. 1032)
10. Abridged Final Report with Resolutions of the Fifty-ninth Session of the Executive Council (WMO-No. 1027)
11. Abridged Final Report with Resolutions of the Fifteenth World Meteorological Congress (WMO–No. 1026)
12. Hyogo Framework for Action 2005-2015.
13. WMO 2006 DRR Survey: http://www.wmo.int/pages/prog/drr/natRegCap_en.html
14. Golnaraghi, M. (ed.) "Institutional Partnerships in Multi-Hazard EWS," (2012), Springer Verlag, Pp 243.
15. WMO DRR Website: http://www.wmo.int/pages/prog/drr/index_en.html (This site will be undated by 7 June 2012)