Building Resilience to Disasters in Western Balkans and Turkey

IPA PROJECT
BUILDING RESILIENCE TO DISASTERS IN WESTERN BALKANS AND TURKEY

TASK 6: Design a regional Multi-Hazard Early Warning System composed of harmonized national Early Warning Systems within a regional cooperation framework

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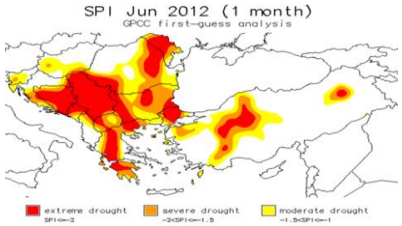

Outline

- Task 6 - Terms of Reference and Methodology
- Identified requirements in EWS - Common needs
- Benefit of the Regional Approach
- Conclusion or QA

Terms of Reference and Methodology of work

- The main deliverable of Task 6 is a **Regional Multi-Hazard Early Warning System (MHEWS) Concept and Design Document** developed through regional collaboration providing adequate technological and institutional solutions for building the business case for a regional MHEWS, composed of harmonized and inter-operable national MHEWS.

- **The Design Team** composed of experts from all IPA beneficiaries with the following profile: Technical Expert – a staff member of the respective NMHS with expertise in observing networks, data processing and procedures for the provision of warning services; Institutional Expert – a staff member from the respective Disaster Risk Management (e.g., civil protection, emergency management) agency, working in collaboration with the NMHS in the establishment of regulation and procedures for the national early warning system.

Terms of Reference and Methodology of work

- *A Concept and Design Document* will be developed utilizing regional collaboration in engaging the national Disaster Risk Management (DRM)/ Civil Protection Agencies and the National Meteorological and Hydrological Services (NMHSs) of the project beneficiaries. The document will describe and specify the necessary technological, operational and institutional arrangements for building the business case for a regional MHEWS composed of harmonized and inter-operable national EWSs.
- The above system design involves close cooperation and consultation with the main DRM stakeholders. A thorough study of user requirements is the basis of all system specifications, product definition and procedure design. Therefore, the *Task 6 Design Team*, which was established, engages both DRM and NMHS expertise.
- The work of the Design Team, supported by a team of experts from WMO, will build upon the capacity assessments that have been conducted for each beneficiary during the preceding DRR/SEE IPA Project (2010/2011), complemented with visits to the beneficiaries by two project consultants. Since the objective of the system design phase requires detailed analysis and specifications of the national needs, face-to-face consultations with the beneficiaries' stakeholders are of vital importance. Therefore, a coordinated action plan for the design was developed, followed by visits to each of the agencies for more in-depth discussions at expert level.

Identified requirements in EWS - Common needs

In most of the Beneficiaries of the IPA-2012 Project the **ENABLING ENVIRONMENT FOR DRR** is defined and the cooperation is regulated and in place, and there is a clear policy for disaster risk management. Nevertheless, the following common requirements were identified:

- Further refinement of the enabling environment, including the work on the National Platforms and Strategies on DRR
- Actions towards innovation of National Strategies on Emergency Situations emphasizing the importance of an integrated approach in DRR
- Strengthening capacities of relevant institutions in direction towards a comprehensive DRR
- Improving the coordination between the DRR stakeholders, and integration of DRR in development policies
- Continuing work on aligning the enabling environments to the European framework, and broadening the existing regional and international cooperation

Identified requirements in EWS - Common needs

In most of the Beneficiaries of the IPA-2012 Project with regard to the **RELATIONSHIP BETWEEN THE KEY STAKEHOLDERS AND DECISION MAKERS IN MHEWS**, the following common requirements were identified:

- Need to improve the cooperation and the real time data exchange between the Meteorological and Hydrological Services and Civil Protection and Water Agencies
- Need to adopt MoUs (Memorandums of Understanding) and to refine the existing or adopt new Standard Operating Procedures (SOPs), particularly at local level to fully benefit of the distributed operational structures of DRM Agencies and NMHSs.
- Need for further work on compliance with the international standards (WMO) within NMHSs
- Need to strengthening the efforts for the implementation of the 112 Integrated System
- Need for further upgrading/setting-up of data links for real time exchange.

Identified requirements in EWS - Common needs

In most of the Beneficiaries of the IPA-2012 Project with regard to the

OPERATIONAL COOPERATION BETWEEN THE DRM AND NMHS AGENCIES, the following common requirements were identified:

•Further enhancing of cooperation and international data exchange between NMHSs to better serve domestic DRM needs

•Development of Standard Operating Procedures for the work of NMHSs and DRM agencies

•Rapid enhancement of the meteorological, hydrological, agro-meteorological, weather radar, and lightning observing networks

•Concerted regional efforts to develop operational hydrological forecasting model(s) for both, wider scale SEE river catchment and small (national-subnational) size river catchments, including mastering of flash-flood guidance tools. Effort to implement oceanographic model is required where appropriate.

•Increase of technically skilled human resources is the highest priority for most of the Beneficiaries

•All Beneficiaries should be granted access to the outputs of operational hydrological and meteorological forecasting systems through a regional cooperative effort – related upgrade of the data links for real time data exchange (observations and forecasts) is required for some Beneficiaries

•Enhance capacity building activities aiming at the implementation of new methodologies for vulnerability and risk assessment for different natural disasters

•Enhance the link with the European Meteorological Infrastructure - EMI (ECMWF, EUMETSAT, EUMETNET), e.g. joining to specific EUMETNET Programmes like OPERA, EMMA, EMMA Hydrology, C-SRNWP and Climate Programme activities on operational meteorological (ECA&D) and phenological (PEP725) databases.

Identified requirements in EWS - Common needs

In most of the Beneficiaries of the IPA-2012 Project for the

TECHNICAL CAPACITIES OF NMHS IN SUPPORT TO MHEWS the following common needs were identified:

- Need to enhance the hydro-meteorological observation networks, including establishing the weather radar systems. Improved forecasting capabilities, in particular those focused on the identified small river catchments within the country, but also to the cross border river catchments is also highly recommended (in connection to cross-boundary hazards)
- Need to improve upper air observations, upgrade the existing forecasting system, and seek for new and additional expertise in NWP for meteorological department which could be either project-based or conceivably permanently hired by the NMHSs. Striving to become a member of ECMWF, and utilize other opportunities under the EUMETNET (OPERA, C-SRNWP, etc.) will contribute to developing capacities in NWP and other areas of NMHS mandate.
- Regarding the drought hazard, there is a need to further improve the climate watch system, and the agro-meteorological observation network and practice.
- The analysis stresses the need for further improvements in IT sector.

Identified requirements in EWS - Common needs

In most of the Beneficiaries of the IPA-2012 Project for the

TECHNICAL CAPACITIES OF NMHS IN SUPPORT TO MHEWS, the following common needs were identified:

•As an example, in order to better serve the needs of numerical weather prediction, it is required to improve upper air observations, upgrade the existing forecasting system, and seek for new and additional expertise in NWP for meteorological department which could be either project-based or conceivably permanently hired by the NMHSs.

•Regarding the drought hazard, it is recommended to further improve collaboration with the partners within the RA VI RCC-Network and implement fully the climate watch system which is in its pilot/pre-operational phase in RA VI. Establishing the agro-meteorological observation network is recommended to support decision making regarding the long term forecasts of drought onset.

•As an important contribution to the MHEWS, it is recommended to implement the road weather forecasting and warning system.

•Synergies with regional (ICPDR, ISRBC, RIC, DMCSEE, and SEEVCCC), and European meteorological structures and initiatives (EUMETSAT, ECMWF, EUMETNET, JRC, Copernicus, etc.), together with the overarching programs under the UN (e.g. WMO, UNISDR, UNFCCC, UNCDD) proved to be an effective means of cooperation in the perspective of MHEWS. It is recommended to further expand this collaboration, utilizing the opportunities under the EU framework – IPA, Horizon 2020 research program, and other.

Benefit of the Regional Approach

Regional MHEWS Cooperative Mechanism for South Eastern Europe - **SEEMHEWS**

•Design of observing networks – meteorological and hydrological. Could be optimized provided that effective data exchange is in place.

Regional MHEWS Cooperative Mechanism for South Eastern Europe - **SEEMHEWS**

- Hydrometeorological Services and DRM Agencies could benefit from improved information sharing and collaborative joint work in the region.
- “One stop shop” for diverse analyses, different models output data, and remote sensing observations on the benefit of **shift forecasters** throughout South Eastern Europe.
- Authorized Password protected access to the ICT platform. Data Policy Agreement.
- Warnings produced and issued at the level of NMHS/DRM. SEEMHEWS serves as **Advisory system for forecasters su**pported by EMI, Regional Centers, NMHSs

Cost/Benefit Analysis

The IPA MB 2011 action „ Building Resilience to Disasters in Western Balkans and Turkey“ implementing by UNISDR/WMO has created an enabling environment for coordination and partnership-building necessary for the development Plan of “end-to-end” and “people-centered” early warning systems in the SEE region.

However, the project activities are only the first step for establishing a fully operational MHEWS within a multi-hazard framework. The technical and economic feasibility study may prove crucial in gaining an understanding of the present technical resources of the beneficiaries and their gaps and applicability to the expected needs of the proposed system.

With the same study it would be possible to determine the positive economic benefits that the proposed system could provide. It includes quantification and identification of all the benefits expected (cost/ benefits analysis).

Conclusions & Recommendations

- Almost all MHSs stated that resources and infrastructure limited their ability to deliver critical products and services for disaster risk reduction.
- In addition, most of them identified financial resources and lack of professional staff as limiting factors.
- Furthermore, almost all beneficiaries MHSs/MS stated that better coordination with neighboring countries at a sub-regional level, with WMO Regional Specialized Meteorological Centers and with the European Meteorological Infrastructure (ECMWF, EUMETSAT and EUMETNET) would improve their contribution to their disaster risk reduction activities.

Conclusions & Recommendations

1. The international, regional and national efforts in response to the natural disaster provided a sound basis for planning early warning systems in the SEE region, including progress toward the development of human resources capacities and consultation processes.
2. Project “Building Resilience to Disasters in Western Balkans and Turkey“, which represent a continuation of the preceding IPA “Regional Cooperation in South Eastern Europe for meteorological, hydrological and climate data management and exchange to support disaster risk reduction” (2009/2011), **succeeded in achieving its original objectives and intended outcomes of defining core technical elements of the MHEWS for the SEE region.**

Conclusions & Recommendations

Substantial support is still needed to establish the SEEMHEWS in the SEE region within a multi-hazard framework. In order to realize the SEEMHEWS, the following actions are recommended:

1) The UN/ISDR, WMO, EU as well as other international and regional institutions working on early warning should continue their assistance to the SEE region countries in enhancing capacities and mobilizing resources necessary for establishment of the SEEMHEWS.

2) The UN/ISDR and WMO should also provide follow-up within its activities for the technical and economic feasibility study for the proposed multi hazard early warning system for SEE region.

3) The regional SEE coordination mechanism for the multi hazard early warning systems through the WMO should be established in order to coordinate follow up activities related to SEEMHEWS establishment in the near future.

4) To generate an enabling environment for SEEMHEWS in the SEE region, the WMO should continue to assist the countries in SEE to strengthen national EWS to effectively implement the Hyogo Framework for Action.

Thank you.

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