



MINISTRY OF SECURITY
BOSNIA AND HERZEGOVINA



Regional Programme on Disaster Risk Reduction in South East Europe

Activity 2: Regional Cooperation in South Eastern Europe for Meteorological, Hydrological and Climate Data Management and Exchange to Support Disaster Risk Reduction (IPA/2009/199-922WMO)

Report of the Meeting on “Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management”

FINAL REPORT

**Hotel Hollywood, Sarajevo, Bosnia and Herzegovina
28 – 29 March 2011**

http://www.wmo.int/pages/prog/drr/SEE/SarajevoMeeting/index_en.html

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1 Background on the EC DG Enlargement Project and Outcomes

In 2007, the World Bank, the World Meteorological Organization (WMO) and the United Nations Strategy for Disaster Risk Reduction (UN-ISDR) initiated the South East Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP), aiming at developing or strengthening national capacities in this region along three components: (i) Disaster risk management institutional capacities and governance; (ii) Hydrometeorological Services and their cooperation with sectors; and (iii) Financial risk transfer mechanisms, to assist countries in reducing risks associated with natural hazards. During the first phase of the project, fact finding surveys and desk-top studies were performed as the basis for the development of relevant projects. Based on these results and further consultations with countries and the European Commission, WMO and UNDP developed, in parallel, two complementary proposals that were funded together as the “Regional Programme on Disaster Risk Reduction in South East Europe” by the European Commission (EC) Directorate General for Enlargement, through its Instrument for Pre-Accession Assistance (IPA). This programme is targeting the following eight IPA beneficiaries: Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo (as defined by UNSCR 1244/99) and Turkey and were initiated in March 2009. The components of the programme include:

1. Component 1: “Building Capacity in Disaster Risk Reduction through Regional Cooperation and Collaboration in South East Europe”, implemented under the UNDP coordination;
2. Component 2: “Regional Cooperation in SEE for meteorological, hydrological and climate data management and exchange to support Disaster Risk Reduction”, implemented under the WMO coordination.

One of the key outputs of this programme is the development of a regional cooperation roadmap laying out the areas in disaster risk reduction and hydro-meteorological issues that require regional cooperation. Development of Risk Assessment, MHEWS and other capacities to support national risk management could benefit from regional coordination and cooperation, leveraging expertise, capacities, resources and information across the region among IPA beneficiaries and with various regional centers in Europe. Building on the outcomes of the National Policy Dialogues (Activity 1.1), MHEWS Training Workshop (Activity 1.3) and Flood and Drought Risk Assessment National Capacities assessments (Activity 2), a regional cooperation roadmap for strengthening Meteorology, Hydrology and Climate Services for Disaster Risk Management is being developed through the following process:

1. Areas in Disaster Risk Reduction (DRR) and Meteorological, Hydrological and Climate-related issues that require regional cooperation have been identified based on outcomes of consultations with IPA beneficiaries during the national assessments and the National Policy Dialogues;
2. A workshop on “Regional cooperation in MHEWS and risk assessment in SEE” was held with (sub-)regional agencies and technical centres supporting DRR in Europe and South East Europe to identify opportunities for further strengthening regional cooperation projects and activities (16-17 February 2011, WMO Geneva);
3. A Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management, is held in Sarajevo, Bosnia and Herzegovina, 28-29 March 2011 (this meeting); and
4. A ministerial conference is to be organised by UNDP in September 2011 to endorse the regional road-map proposal prepared by UNDP and WMO in consultation with beneficiaries and regional partners. (TBC)

Progress on the implementation of the components of the programme and the results to date are provided in ANNEX 1.

2 About the meeting

2.1 Objectives

The main objective of this meeting is to review, discuss and finalize recommendations for a regional road map for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management in South East Europe based on the outcomes of national and regional consultations of the project. The concept note for the meeting is provided in ANNEX 2

2.2 Participants

Participants included:

1. Directors and experts of the National Meteorological and Hydrological Services (NMHS) and the Disaster Risk Management (DRM) Agencies, the project coordinators of the beneficiaries;
2. Representatives from Regional organisations and centres of SEE and the greater European Union, including the Disaster Preparedness and Prevention Initiative (DPPI), the Drought Management Center for SEE, the SEE Virtual Climate Change Center, WMO Regional Association for Europe, EUMETNET, ECMWF, Sava River Commission, European Commission Directorate General for Enlargement;
3. UN and international technical and development agencies, including the United Nations International Strategy for Disaster Risk Reduction (UN-ISDR) and the United Nations Development Programme (UNDP);

A detailed list of participants is provided in ANNEX 3.

2.3 Format and discussions

The meeting was organized in six sessions, as described in the Agenda of the meeting provided in ANNEX 4, including:

Session 1: Opening Session

In the opening, statements from Mr. Samir Agic, Assistant Minister of Security of Bosnia and Herzegovina, Dr. Maryam Golnaraghi, Representative from WMO Secretary General, Mr. Dimitar Ivanov, Representative from President of WMO Regional Association IV (Europe), Ms. Amna Berbic, Representative from UNDP in Bosnia-Herzegovina and Ms. Daniela Topirceanu, European Commission Directorate General for Enlargement highlighted the benefits of regional cooperation in the area of disaster risk reduction in South East Europe and encouraged to pursue the efforts engaged through the EC GG enlargement Programme on Disaster Risk Reduction in South East Europe. The background and achievements as well as the meeting's objectives and working arrangements were also presented.

Session 2: Review of the Assessment of the Institutional Capacities, Gaps and Needs in SEE for Provision of Meteorological, Hydrological and Climate Services for Disaster Risk Management

The objective of the session was to review the outcomes and recommendations of the national assessments and the National Policy Dialogues during the SEE DRR Programme, pertaining to the priorities in the national Disaster Risk Management priorities, areas of DRM requiring regional cooperation, with focus on the needs for meteorological, hydrological and climate information to support DRM from the perspective of the DRM agencies as the users of this information. During the discussions it was expressed that the field of Disaster Risk Management has significantly evolved in South East Europe over the last years. Specifically, statements from representatives of DRM Agencies of the beneficiaries highlighted that:

- In the SEE region, field of Disaster Risk Management is evolving from post-disaster response towards disaster preparedness and prevention underpinned by the Hyogo Framework for Action (HFA);

- New laws for DRM have been / are being elaborated, and more and more national planning and strategies are considering a more comprehensive disaster risk management framework
- Multi-stakeholders / multi-sectors / multi-agencies approaches in DRR are more and more applied in the region;
- DRM Agencies and other stakeholders are increasingly recognizing specialised agencies such as the Hydro-meteorological services as a key provider of information, products and services;
- DRM Agencies are committed to implement recommendations that have emerged from the National Policy Dialogues in cooperation with the National Technical Agencies, among which a critical partner is the National Meteorological and Hydrological Services;
- The EC DG Enlargement project has facilitated multi-stakeholder assessments and mechanisms for identification of national and regional capacities, gaps, needs and priorities;

In addition, regional and international agencies, including UNDP, DPPI and UN-ISDR expressed their engagement to continue their support to regional cooperation in the area of disaster risk reduction in SEE.

Session 3: Risk Analysis, Data Management and Exchange Issues to support DRM and EWS with Multi-Hazard Approach

The objective of the session was to identification of areas of cooperation in risk analysis, data management and exchanges. A good practice from Italy and Risk Modeling to support Early Warning Systems was presented as well as the outcomes of flood and drought risk assessment activities and needs for meteorological, hydrological and climate information to introduce the discussions. The discussions focused on (i) the development / harmonization of methodologies and tools for production of flood and drought hazard analysis as critical input to risk assessment at the national/regional levels; (ii) the need for standardized meteorological, hydrological and climate databases, metadata and hazard analysis tools and development of national and regional historical and real-time hazard data bases; and (iii) data exchange protocols at national, (sub-)regional and international levels and mechanisms for data exchange.

Session 4: Operational Cooperation of the NMHS and DRM Agencies and Service Delivery

The objective of the session was to identify areas of regional cooperation in operational cooperation. Two case-studies on operational cooperation between NMHSs and DRM Agencies during cross-border hazards were presented: (i): Flood Warning and risk management in Serbia, and (ii) Forest fires warning systems in Croatia. Follow-up discussions highlighted the need of policies, legislation and legal frameworks in support of DRR and Multi-Hazard Early Warning Systems, including priorities, roles and responsibilities of various agencies at national to local level, etc; the importance of Quality Management Systems, Standard Operational Procedures (SOP), and related inter-agency agreements; and the importance of cooperation and coordination of the national Multi-Hazard Early Warning Systems at the regional level.

Session 5: Monitoring, Forecasting and Watch and Warning Systems

The objective of the session was to identify areas of regional cooperation in monitoring, forecasting and watch and warning systems. A case-study on “Over 30 years of cooperation in Meteorology in Europe and potential opportunities for NMHS in SEE” highlighted the existing regional cooperation and mechanisms in Europe in these areas, including ECMWF, EUMETNET, EUMETSAT and MeteoAlarm. Regional mechanisms within South East Europe presented also their experience in drought monitoring and management (SEE Drought Management Center), climate products and services (SEE Virtual Climate Change Center) and watershed risk management (International Sava River Basin Commission). Follow-up discussions focused on (i) Modernisation and interoperability of the meteorological and hydrological networks; (ii) the benefits of cooperation with the European and global network of meteorology (observations, modeling, training, coherence and harmonization with European and international WMO standards); (iii) watershed risk management and benefits of basin-level hydrological modeling; and (iv) cross-border exchanges of real-time data, forecasts and warnings.

Session 6: Final Synthesis and Recommendations

The objective of this session was to review and discuss the overall outcomes and recommendations for the development of the regional cooperation roadmap. This final recommendations are listed in the next section of the report.

3 Outcomes and recommendations of the meeting

3.1 Development of a regional strategy for DRR

During the discussions, the need for a clear regional strategy in DRR highlighting the long-term priorities for capacity development and cooperation with corresponding regional action plan for implementation was highlighted. It was recommended by the participants that this strategy should include the following:

- The regional DRR strategy should be founded on a comprehensive framework for disaster risk management within a multi-stakeholder and multi-hazard approach and identify and prioritize concrete areas of regional cooperation;
- The regional DRR strategy should ensure that gaps, needs and priorities are addressed in a coordinated fashion and with a long-term capacity development perspective;
- The regional strategy would be underpinned with phased project proposals targeted at capacity development. Various projects in the region supported through bi-lateral and multi-lateral cooperation should be better integrated and aligned to avoid redundancies and address gaps;
- The strategic priorities for the development of meteorological, hydrological and climate services should be developed in context of the SEE regional strategy for DRR;
- The regional DRR strategy must be complemented with corresponding regional agreements and trans-boundary agreements and regional operational plan (Who, What, When, How and with whom). Specifically the Regional DRR Strategy and Regional Operational plans should considered the hazards posing risks across borders in the region, e.g., forest fires, floods, droughts, heat waves;
- There is need for multi-stakeholder regional mechanisms to develop regional strategy, identify areas of cooperation and develop, monitor and evaluate the regional implementation plan;
- The regional DRR strategy should address cooperation in a number of areas:
 - Harmonisation of risk assessment methodologies, tools and capacities;
 - Coordination and harmonization of EWS for cross border hazards;
 - Sharing of good practices in DRR;
 - Regional Trainings and workshops;
 - Development of regional project proposals and coordination with donors and funding agencies;
 - Establishment and/or utilization of Centres of excellence.

3.2 Risk analysis, data management and exchange to support DRM and EWS

Floods, droughts, forest fires are among highest priority hazards in the region, with severe impacts on safety of lives and economic losses across the whole region. As risk assessment at regional, national and local levels is the foundation for the development and implementation of any DRR strategy, the participants highlighted the following priorities in this area:

- Methodologies and tools for production of risk assessment and mapping at the national/regional level should be developed and harmonized in the region for the priority hazards, based on common standards. This would be particularly crucial for flood risk assessment in trans-boundary river basins, and forest fires;

- There is a need of integrated risk assessment and early warning decision tools (GIS platform based) that integrate hazard information (statistical and real-time) with exposure and vulnerability information from different sectors;
- Common meteorological, hydrological and climate databases, metadata, common GIS platforms need to be developed and adopted based on standards, as well as integrated, quality controlled and sustainable GIS databases;
- There is a need for data exchange mechanisms and protocols at national, (sub-) regional and international levels (EUMETNET) to facilitate exchange of data, and formalized agreements across agencies;
- The existing sub-regional technical cooperation centers such as the SEE Drought Management Center and SEE Virtual Climate Change Center should be strengthened, as well as their cooperation with the global and European centers of excellence to develop their capacity to deliver regional products and services to support risk assessment;
- SEE Climate Outlook Forum (SEECOF) should be utilized in a multi-stakeholder mode as a mechanism to identify user needs and requirements for provision of regional climate products and services to be provided through the Regional Climate Centers;
- There is a need of methodologies and capacities to produce regional-scale projections of climate change, including hazard trends analysis and capacity development and training for the beneficiaries for downscaling for the national needs.

3.3 Operational cooperation of the NMHS and DRM agencies and service delivery

As operational cooperation between the DRM agencies and the hydrometeorological services is fundamental for the development of an effective early warning system, the participants recommended the following:

- National and regional development of early warning systems should be carried out on the basis of a number of principles, that have emerged from the documentation and synthesis of good practices in developed and developing countries around the world, as outlined in ANNEX 5:
- Ongoing MHEWS stakeholders workshops and trainings at national or/and regional level should be enhanced for a better understanding of roles and capacities among Meteorological Services, DRM agencies and key EWS stakeholders with regards to MHEWS (e.g., workshop on forest fire EWS end-to-end);
- There is a need to develop Quality Management Systems in the hydrometeorological services and Standard Operating Procedures (SOP)s with their stakeholders as well as cooperation in the development of hydro-met products in support of 112
- For flood warnings in transboundary basins (eg Drina, Sava) cooperation should be enhanced at the river basin level
- Regional case-studies on multi-stakeholder, multi-country cooperation in EWS (2007 Dubrovnik fire, 2010 Serbia floods) supported by ECMWF products should be documented and published
- A harmonized regional Multi-Hazard Early Warning System composed of coordinated national Early Warning Systems could be designed through the regional DRR strategy. The various operational aspects (trans-boundary, sub-regional, and regional) need to be identified and reflected in formalized agreements and SOPs. In this regard, the interoperability of observing network, regional coverage and data exchange and policies need to be considered, for consistency of hydrometeorological information.

3.4 Harmonisation, exchange and real time coordination of hydro-meteorological networks, forecasting expertise and watch and warning systems

With respects to monitoring, forecasting and watch and warning systems, regional coordination and cooperation is a must. In these areas, the participants recommended the following:

- Regional cooperation and harmonization of the hydro-meteorological capacities need to be implemented in alignment with the regional DRR strategy for and engagement in the regional coordination mechanisms for DRR to ensure alignment with regional priorities and operating plans in DRR;
- Modernization and interoperability of the meteorological and hydrological networks should be planned at the sub-regional level to benefit from economies of scale and financing opportunities. The planning should include automation and optimization of monitoring networks as well as integration of national remote sensing capacities into a sub-regional network (e.g. radar, lightning detection network);
- To improve their forecasting capacities SEE countries should increase their cooperation with global, regional and specialized Centres (eg ECMWF) producing NWP, develop their NWP capacities and become members of NWP model consortiums. Linkages between NWP models and hydrological models should also be developed for a better flood forecasting;
- Strengthening of technical capacities of DMC SEE and the SEE Virtual Climate Change Center and their institutional capacities to support Members needs for products and training;
- A regional harmonisation of watch and warning systems should be promoted;
- Cross-border exchanges of real-time data, forecasts and warnings should be increased; in this regards the standards and data exchanges should be developed;

4 Conclusions

As conclusions of the meeting, the participants expressed the following:

- The reports produced by WMO under Activity 1.1 (National Policy Dialogues) and Activity 2 (Flood and Drought Risk Assessment) are to be compiled and linked with UNDP national DRR assessment report to be published as one coordinated report for each beneficiary.
- The roadmap for the strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management in South East Europe should be developed based on the recommendations of the meeting and follow-up consultations with the IPA beneficiaries:
- The case-studies developed for the meeting (2007 fires near Dubrovnik in Croatia and 2007 floods in Serbia) should be further developed with all relevant agencies of neighboring countries that were affected by these disasters and published
- DRR capacity development of IPA beneficiaries should continue through a phase 2 of the DRR programme for SEE

Annexes

Table 1: Progress to date on Activities of WMO-implemented component 2

ACTIVITY	OUTCOMES TO DATE
Activity 1: Convene Regional and National Policy Dialogues	
1.1: National Policy Dialogues on DRR (with UNDP)	Detailed assessment of the DRR policies and practices as well as the NMHS capacities, gaps and needs in the beneficiaries were completed and conducted to the development of policy recommendations, through National Policy Dialogues (NPD) organised in each beneficiary. Assessment reports and recommendations will be published in 2011. Regional cooperation was also discussed during the NPDs. The outcomes of this activity are also input to activity 1.4.
1.2: SEE Climate Outlook Forum (SEECOF)	Through this activity the sub-region has developed strong and sustainable working mechanism to prepare seasonal outlooks through collaboration among climate experts from all beneficiaries. Steps have been undertaken to involve economic sectors; identification of the needs of sectors like water management, energy, disaster risk management has been initiated and the awareness of the users in the benefits of the seasonal forecasting in tactical planning has been raised. The overall capacity of IPA beneficiaries in utilizing and downscaling of products provided by leading long-range forecasting centres has been significantly improved. The outcomes of this activity are also input to activity 1.4.
1.3: MHEWS Training Workshop (with UNDP)	During the “MH-EWS Training Workshop” (Pula, Croatia, Oct. 2009) (see reference) participants discussed good practices in EWS and identified priority areas for strengthening institutional cooperation and coordination in EWS among NMHS, DRM Agencies and other EWS stakeholders. The outcomes of this activity are also input to activity 1.4.
1.4: Regional Cooperation Roadmap (with UNDP)	Areas in DRR and hydro-meteorological issues that require regional cooperation have been identified based on consultations with the beneficiaries during the national assessments and the NPDs (Activity 1.1), discussions during the SEECOF (Activity 1.2) and MHEWS Training Workshop (Activity 1.3), and Flood and Drought Risk Assessment (Activity 2). During the workshop on “Regional cooperation in MHEWS and risk assessment in SEE” (16-17 February 2011, WMO Geneva) opportunities for further strengthening regional collaboration and interested regional partners and centers were identified. The regional cooperation roadmap will be finalized during the Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management, in Sarajevo, Bosnia and Herzegovina, 28 – 29 March 2011.
Activity 2: Flood and Drought Risk Assessment (with UNDP)	Two training workshops were conducted (i) on flood risk assessment (Oct. 2010, Istanbul, Turkey) and ii) on droughts risk assessment (Sept 2010, Ljubljana, Slovenia) to provide participating experts with self assessment capacities of their national system for flood and drought risk assessment (see reference). Detailed assessments of these capacities have been prepared with the support of an international consultant who visited all the beneficiaries. Based on these assessments, concrete project proposals for capacity development of the NMHS with other ministries and technical agencies have been developed, as well as a regional proposal. The outcomes of this activity are also input to activity 1.4.
Activity 3 Engage with the European Meteorological Infrastructure	The goal of better integration of the IPA beneficiaries in the European Meteorological Infrastructure as a major driving force in developing their capacities to produce improved products and services in support of DRR has been achieved. All targeted countries made significant progress in understanding the roles and functions of the regional organizations and several countries succeeded in their applications for membership in ECMWF and EUMETNET. The preparation for integration to the MeteoAlarm system has progressed and individual countries has applied the requirements for such integration at national level. The integration to the MeteoAlarm web service is forthcoming.
Activity 4 hydrometeorological data assimilation and management	All targeted beneficiaries acquired state-of-the-art software for processing hydrometeorological data (METVIEW-4 from ECMWF). This raises significantly their capacity to utilize data and products from leading forecasting centres and produce high quality local products leading to improvement of the accuracy and timelines of the warnings for hazardous events. This activity addresses the need for improvement of data quality through regular calibration and maintenance of the observing instruments and enhanced the cooperation with the WMO Regional Instrument Centre responsible for the sub-region. The secondment of experts from the IPA beneficiaries to the Regional Drought Management Centre contributed to strengthening its methodological and capacity building functions. The strong collaboration with EUMETSAT provided for filling a long-lasting gap in the capacity of some countries to receive and utilize satellite information in monitoring and forecasting hydrometeorological hazards.
Activity 5: Training and workshops	Building the capacity of the beneficiaries’ NMHSs to enhance their products and services for DRR was among the main objectives of DRR/SEE Projects. Through a strong programme of training, the project succeeded in providing ten high-quality training events on different subjects related to DRR. More than 220 experts and officials from the IPA beneficiaries actively participated in the training seminars and workshops organized by WMO in collaboration with UNDP, UN ISDR, ECMWF, EUMETNET, EUMETSAT, the Regional Drought Management Centre, the Regional Instrument Centre. Croatia, Turkey and Serbia were among the IPA beneficiaries that hosted training events and thus contributed to achieving the goals of the capacity building project components.



Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management

Hotel Hollywood, Sarajevo
Bosnia and Herzegovina
28 – 29 March 2011

http://www.wmo.int/pages/prog/drr/SEE/SarajevoMeeting/index_en.html

ABOUT THE MEETING

This meeting is organised by WMO and hosted by the Ministry of Security of Bosnia and Herzegovina, within the WMO Component of the Regional programme on Disaster Risk Reduction in South East Europe (SEE). It is an important step to develop a regional cooperation roadmap in support of Multi-Hazard Early Warning System (MHEWS) and risk assessment capacity development in the eight IPA beneficiaries of South East Europe. UNDP is supporting this event by providing financial support to Disaster Risk Management Agencies through the European Commission DG Enlargement funded Component 1 of the Programme and providing logistical support.

BACKGROUND ON THE REGIONAL PROGRAMME ON DRR IN SEE

In 2007, the World Bank, the World Meteorological Organisation (WMO) and the United Nations Strategy for Disaster Risk Reduction (UN-ISDR) initiated the South Eastern Europe Disaster Risk Mitigation and Adaptation Programme (SEEDRMAP), aiming at developing or strengthening national capacities in this region

along three components: (i) Disaster risk management institutional capacities and governance; (ii) Hydrometeorological Services and their cooperation with sectors; and (iii) Financial risk transfer mechanisms, to assist countries in reducing risks associated with natural hazards. During the first phase of the project, fact finding surveys and desk-top studies were performed as the basis for the development of relevant projects. Based on these results and further consultations with countries and the European Commission, WMO and UNDP developed, in parallel, two complementary proposals that were funded together as the “Regional Programme on Disaster Risk Reduction in South East Europe” by the European Commission (EC) Directorate General for Enlargement, through its Instrument for Pre-Accession Assistance (IPA). This programme is targeting the following eight IPA beneficiaries: Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo (as defined by UNSCR 1244/99) and Turkey and were initiated in March 2009. The components include:

3. Component 1: “Building Capacity in Disaster Risk Reduction through Regional Cooperation and Collaboration in South East Europe”, implemented under the UNDP coordination
4. Component 2: “Regional Cooperation in South Eastern Europe for meteorological, hydrological and climate data management and exchange to support Disaster Risk Reduction”, implemented under the WMO coordination.

Please note that a number of activities of WMO Component 2 are implemented in coordination with UNDP. Table 1 provides a list of activities and results achieved under WMO Component 2.

REGIONAL COOPERATION ROADMAP

Development of Risk Assessment, MHEWS and other capacities to support national risk management could benefit from regional coordination and cooperation, leveraging expertise, capacities, resources and information across the region among IPA beneficiaries and with various regional centers in Europe. Building

on the outcomes of the National Policy Dialogues (Activity 1.1), MHEWS Training Workshop (Activity 1.3) and Flood and Drought Risk Assessment National Capacities assessments (Activity 2), a regional cooperation roadmap for strengthening Meteorology, Hydrology and Climate Services for Disaster Risk Management is being developed through the following process:

5. Areas in Disaster Risk Reduction (DRR) and Meteorological, Hydrological and Climate-related issues that require regional cooperation have been identified based on outcomes of consultations with IPA beneficiaries during the national assessments and the National Policy Dialogues;
6. A workshop on “Regional cooperation in MHEWS and risk assessment in SEE” was held with (sub-)regional agencies and technical centres supporting DRR in Europe and South East Europe to identify opportunities for further strengthening regional cooperation projects and activities (16-17 February 2011, WMO Geneva);
7. A Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management, is held in Sarajevo, Bosnia and Herzegovina, 28-29 March 2011 (this meeting); and
8. A ministerial conference is to be organised by UNDP in September 2011 to endorse the regional road-map proposal prepared by UNDP and WMO in consultation with beneficiaries and regional partners. (TBC)

OVERALL OBJECTIVE

The main objective of this meeting is to review, discuss and finalize recommendations for a regional road map for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management in South East Europe based on the outcomes of national and regional consultations of the project

PARTICIPANTS

Expected participants include the Directors and experts of the National Meteorological and Hydrological Services (NMHS) and the Disaster Risk Management (DRM) Agencies, the project coordinators of the beneficiaries, European regional agencies and technical centres supporting NMHS and DRM, other regional, international and UN partners with activities relevant to this meetings, and representatives from the European Commission.

DESIGN OF THE MEETING

The workshop involves six sessions, as described in the Agenda of the Meeting (Doc. 1). These include:

Session 1: Opening Session

Session 2: Review of the Assessment of the Institutional Capacities, Gaps and Needs in SEE for Provision of Meteorological, Hydrological and Climate Services for Disaster Risk Management

Session 3: Risk Analysis, Data Management and Exchange Issues to support DRM and EWS with Multi-Hazard Approach

Session 4: Operational Cooperation of the NMHS and DRM Agencies and Service Delivery

Session 5: Monitoring, Forecasting and Watch and Warning Systems

Session 6: Final Synthesis and Recommendations

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MINISTRY OF SECURITY
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Activity 2: Regional Cooperation in South Eastern Europe for Meteorological, Hydrological and Climate Data Management and Exchange to Support Disaster Risk Reduction (IPA/2009/199-922WMO)

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28 – 29 March 2011*

http://www.wmo.int/pages/prog/drr/SEE/SarajevoMeeting/index_en.html

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MINISTRY OF SECURITY
BOSNIA AND HERZEGOVINA



Regional Programme on Disaster Risk Reduction in South East Europe

Activity 2: Regional Cooperation in South Eastern Europe for Meteorological, Hydrological and Climate Data Management and Exchange to Support Disaster Risk Reduction

Regional Meeting for Strengthening Regional Cooperation in Meteorology, Hydrology and Climate Services for Disaster Risk Management

*Hotel Hollywood, Sarajevo, Bosnia and Herzegovina
28 – 29 March 2011*

AGENDA

Early Registration: Sunday 27 March at Hotel Hollywood 6:00 – 7:30 PM	
Day 1: Monday 28 March 2011	
0800 – 0900	Registration
Session 1: Opening Session	
0900 – 0930	<ul style="list-style-type: none"> ➤ Opening session and welcome remarks <ul style="list-style-type: none"> - Mr. Samir Agic, Assistant Minister of Security of Bosnia and Herzegovina - Dr. Maryam Golnaraghi, Representative from WMO Secretary General - Mr. Dimitar Ivanov, Representative from President of WMO Regional Association IV (Europe) - Ms. Amna Berbic, Representative from UNDP in Bosnia-Herzegovina - Ms. Daniela Topirceanu, European Commission Directorate General for Enlargement
0930 - 0945	<ul style="list-style-type: none"> ➤ Overall background on the WMO Activity 2 of the Regional Programme on DRR in SEE, Mr. Dimitar Ivanov (WMO) ➤ Objectives, structure and working arrangements of the meeting, Dr. Maryam Golnaraghi, (WMO)
0945 – 1000	Group photo
1000 - 1015	Coffee break
Session 2: Review of the Assessment of the Institutional Capacities, Gaps and Needs in SEE for Provision of Meteorological, Hydrological and Climate Services for Disaster Risk Reduction	
<i>Chair: Mr. Samir Agic, Assistant Minister, Ministry of Security, Bosnia and Herzegovina</i>	
1015 - 1230	<ul style="list-style-type: none"> ➤ Review of the outcomes and recommendations from the WMO Activity 2 of the Regional Programme on DRR in SEE - Dr. Maryam Golnaraghi (WMO) ➤ Representative of Disaster Risk Management Agencies (DRM) from each of the eight IPA beneficiaries: are invited to deliver a short statement on the outcomes of their National Policy Dialogues and highlight areas requiring regional cooperation in disaster risk reduction (5-8 min statement each) ➤ Presentation of the outcomes of the UNDP Activity 1 of the Regional Programme on DRR in SEE – Areas within DRR Requiring Regional Cooperation – Ms. Amna Berbic (UNDP) (10 min) ➤ Statement by international and regional agencies engaged in the area of disaster risk reduction in SEE: <ul style="list-style-type: none"> > Mr. Orhan Topcu (DPPI) (5 min) > Mr. Demetrio Innocenti (UN- ISDR) (5 min) <p style="text-align: center;">Followed by discussions and Q&A</p>
1230 – 14:00	Lunch
13:45-14:00	First meeting of the Drafting Committee
Session 3: Risk Analysis, Data Management and Exchange Issues to support DRM and EWS with Multi-Hazard Approach (National and regional perspectives)	

<i>Facilitator: Maryam Golnaraghi</i>	
1400 – 1530	<ul style="list-style-type: none"> ➤ Role of National Meteorological and Hydrological Services in support of risk assessment, Dr. Maryam Golnaraghi (WMO) (5 min) ➤ Risk Modelling to support Early Warning Systems: example of good practice in Italy, Ms. Paola Pagliara, Italian Department of Civil Protection (15 min) ➤ Outcomes of flood and drought risk assessment activities and needs for meteorological, hydrological and climate information, Mr. Vieri Tarchiani (WMO consultant), (25 min) <p style="text-align: center;">Followed by discussions and Q&A</p>
1530 – 1600	Coffee break
Session 4: Operational Cooperation of the National Meteorological and Hydrological Services (NMHS) and Disaster Risk Management (DRM) Agencies and Service Delivery (National and regional perspectives)	
<i>Co-Chairs: Mr. Samir Agic, DPPI Chair in Office Mr Ivan Cacic, President of WMO Regional Association VI (Europe)</i>	
1600 - 1800	<ul style="list-style-type: none"> ➤ Challenges and opportunities in strengthening operational cooperation of NMHS and DRM agencies: Lessons learnt from eight good practices in EWS around the world - Maryam Golnaraghi (WMO) (10 min) ➤ Case study 1: Flood Warning and risk management in Serbia, Mr. Dejan Vladikovic (Republic of Serbia Hydrometeorological Service) (20 min) ➤ Case study 2: Forest fires warning systems in Croatia, Ms. Branka Ivancan Picek (Meteorological and Hydrological Service of Croatia) (20 min) <p style="text-align: center;">Followed by discussions and Q&A</p>
1800 - 1900	Second meeting of the Drafting Committee
1900	Social Event and Dinner
Day 2 – Tuesday 29 March 2011	
Session 5: Monitoring, Forecasting and Watch and Warning Systems (National and regional perspective)	
<i>Chair: Mr Ivan Cacic, President of WMO Regional Association VI (Europe)</i>	
0900 – 1100	<ul style="list-style-type: none"> ➤ Representative of the National Meteorological and Hydrological Services (NMHS) from each of the eight IPA beneficiaries: are invited to deliver a short statement on the outcomes of their National Policy Dialogues and highlight areas requiring regional cooperation in areas of meteorology, hydrology and climate to support disaster risk reduction (5-8 minute statement each) ➤ Case study 3: "Over 30 years of cooperation in Meteorology in Europe and potential opportunities for NMHS in SEE (ECMWF, EUMETNET, EUMETSAT), Mr Christophe Jacob (EUMETNET), Mr. Manfred Kloeppel (ECMWF), Mr. Michael Staudinger (MeteoAlarm-EUMETNET) (20 min) ➤ Regional Products and Services for Drought Monitoring and Management, Mr. Gregor Gregoric (Drought Management Centre in SEE) (10 min) ➤ Technical cooperation, products and services in climate forecasting, Mr. Milan Dacic (SEE Virtual Climate Change Centre) (10 min) ➤ Watershed risk management, Mr Samo Grošelj, Deputy Secretary of the International Sava River Basin Commission (10 min) <p style="text-align: center;">Followed by discussions and Q&A</p>
1100 - 1115	Third meeting of the Drafting Committee
1100-1130	Coffee Break
Session 6: Final Synthesis and Recommendations	
<i>Co-Chairs: - Mr. Samir Huseinbasic, Head of Department, Protection and Rescue Sector, Bosnia and Herzegovina - Mr Ivan Cacic, President of WMO Regional Association VI (Europe)</i>	
1130-1255	<p><u>Review and discussion of the overall outcomes and recommendations for the development of the regional Roadmap for cooperation within the region and with the rest of Europe</u></p> <ul style="list-style-type: none"> ➤ Review of the outcomes and recommendations prepared by the Drafting Committee
1255 - 1300	Official Closing of the event

Principles for the development of Early Warning Systems

1. Political recognition of the benefits of EWS reflected in harmonized national to local disaster risk management policies, planning, legislation and budgeting.
2. Policies, legislation and legal frameworks in support of Multi-Hazard Early Warning Systems should be reviewed and updated with consideration for lessons learnt from good practices in the sub-region, the European Union and other regions.
3. Development of Early warning systems and issuance of warnings should be risk-based and developed with multi-level, multi-sector and multi-hazard approach
4. Effective EWS are built upon four components: (1) hazard detection, monitoring and forecasting; (ii) analyzing risks and incorporation of risk information in emergency planning and warnings: (iii) disseminating timely and “authoritative” warnings, and, (iv) community planning and preparedness and the ability to activate emergency plans to prepare and respond, with coordination across agencies involved in EWS, at national to local levels.
5. EWS is a multi-stakeholder system engaging different agencies from various sectors and at national to local level, engaging DRM and civil protection agencies, technical agencies (e.g., National Meteorological and Hydrological Services), other sectors and ministries (e.g., health, transportation, energy, and agriculture and food security). In development of EWS, these stakeholder should be identified and EWS coordination mechanisms need to be strengthened, including the roles and responsibilities of agencies at the national to local levels should be clearly identified and reflected in legislation, institutional agreements and Standard Operating Procedure across agencies at national to local levels across agencies.
6. EWS capacities are supported by adequate resources (e.g., human, financial, equipment, etc.) across national to local levels and the system is designed and implemented accounting for long-term sustainability factors.
7. Hazard, exposure and vulnerability information are used to carry-out risk assessments at different levels, as critical input into emergency planning and development of warning messages
8. Warning messages should be clear, consistent and include risk information, (ii) designed with consideration for linking threat levels to emergency preparedness and response actions (e.g., using color, flags, etc) and understood by authorities and the population, (iii) issued from a single (or unified), recognized and “authoritative” source.
9. Warning dissemination mechanisms are able to reach the authorities, other EWS stakeholders and the population at risk in a timely and reliable fashion, and in this regard utilization of common alert protocol formats help
10. Emergency response plans are developed with consideration for hazard/risk levels, characteristics of the exposed communities (e.g., urban, rural, ethnic populations, tourists, and particularly vulnerable groups such as children, the elderly and the hospitalized), coordination mechanisms and various EWS stakeholders.
11. Training on risk awareness, hazard recognition and related emergency response actions is integrated in various formal and informal educational programmes and linked to regularly conducted drills and tests across the system to ensure operational readiness at any time.
12. Effective feedback and improvement mechanisms are in place at all levels of EWS to provide systematic evaluation and ensure system improvement over time.