

Needs and priorities for improved forecasts and early warnings

Andreas Schaffhauser, ZAMG

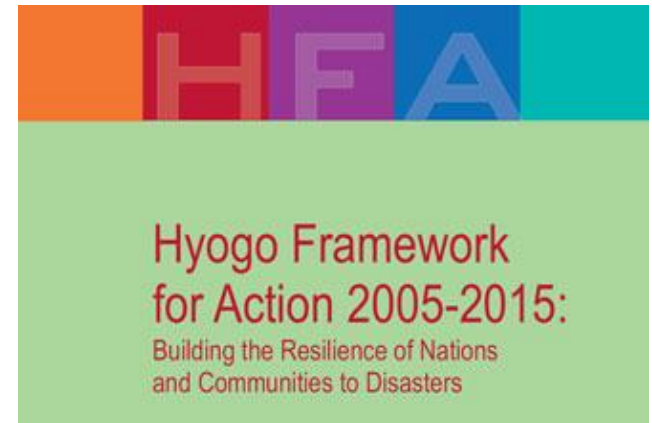


ZAMG
Zentralanstalt für
Meteorologie und
Geodynamik

Hyogo Framework for Action (HFA)

12.03.2015
Folie 2

- National Meteorological and Hydrological Services (NMHS) made **critical contributions** to the implementation of the HFA
- HFA highlighted the integral role of **early warning systems** (EWS) in disaster risk reduction
- The gains achieved through the HFA in reducing disaster risk need to be sustained and further strengthened through a **multi-hazard approach**
- Need to address the **rising exposure** and **vulnerability** to natural hazards caused by **extreme weather** and enhanced by **climate change**



- Shift from traditional forecasts/warnings to impact-based forecasts and risk-informed warnings
- Shift from single hazard EWS to multi-hazard EWS
- Shift from understanding hydro-meteorological hazards to understanding the risk in the impact of these hazards.
- How to enhance and extend effectively and efficiently the disaster risk reduction service delivery to the “last mile”

The New Climate Normal for Western Balkans

Warming hot spots, with more frequent heat waves, spanning as much as 80% of summer months in a 4°C warmer world

Droughts more prevalent, with 20% increase in number of Drought Days

Winter and Spring Flood Risk expected to increase, esp. for Danube, Sava, and Tisza

Crop Yields in Macedonia alone could drop by 50% by 2050 with climate change

Hydropower under threat, such as in Albania where by 2050 the annual average output from large hydropower plants could be reduced by 15%, and 20% for smaller plants

Health Risks could grow as climate warms, with 20% increase in heat-related mortality and the growing threats of vector-borne diseases

Capabilities of NHMS to be improved



12.03.2015
Folie 4

- maintenance, modernization, integration and further development of the **core capacities**
- operational weather, climate, hydrological and environmental **observations**
- **capacity building** (forecaster, scientists, operational staff)
- improve **modelling capacities** (nowcasting, weather, climate, hydrology)
- provision of **user orientated** weather, climate, water and environmental services
to meet the evolving needs of governments, decision makers and stakeholders
- reduction of the risks and adverse effects of severe weather and impacts of climate change in the society
- planning for **community resilience** in the context of climate change

Investing in disaster risk reduction for resilience and sustainable development



- **state of the art products** e.g. for renewable energy, agriculture or operators of critical infrastructure
- **international** integration/cooperation (WMO, EUMETNET, ECMWF)
- **participation** in international programs (e.g. EUMETNET EMMA or OPERA)
- access to the **European Meteorological infrastructure**

- Investments in **information and communication technology**
 - monitoring the environment
 - retrieving and processing vital data
 - disseminate and receive information before, during and after a disaster strike
 - more beyond hardware, ensure that human capital of the countries has capacities to (co-) develop, operate and maintain such systems

- Resources put into multi hazard early warning systems and improved forecasting are not expenditures, but rather **investments with very significant returns to society**

16.03.2015
Folie 5

- will provide the most relevant information needed to prepare for **extreme weather**, expected to occur somewhere over Europe
- **understandable** by all actors from the private and public sector
- 4 – level colour code seen as understandable „language“
- **harmonized** as far as possible
- is the website that integrates all important severe weather information originating from the official National Public Weather Services across a large number of European countries.
- This information is presented consistently to ensure coherent interpretation as widely as possible throughout Europe.
- **High acceptance** with public and professional institutions
Civil Protection, First responders (national level)
„European“ usage by tourists & professionals

12.03.2015

Folie 6

European Meteorological Services

english

Alerts issued for each

IE

UK

Caption:

awareness types: all awareness types

Display: today tomorrow



Enhancing disaster preparedness for effective response

12.03.2015
Folie 7

- Be prepared to act appropriately in **response** to warnings
- EWS for natural hazards work only if governments have appropriate systems and their stakeholders and public know how to respond
- Ensuring access to **timely environmental hazard information**
- Communicate impact-based forecasts and risk-informed hazard warnings to end-users in a manner that is **efficient, timely, understandable** and **actionable**
- Strengthening early warning systems and tailor them to **users needs**, including social and cultural requirements.
- Recognize multi-hazard EWS as an **integral part of disaster risk reduction**.
They provide integrated and seamless services for all components of disaster risk reduction for various hazard types and lead times, from the national level to local communities.