

## Workshop on Multi-Hazard Early Warning Systems for Urban Areas

10 – 12 December 2013  
San Jose, Costa Rica

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

### INTRODUCTION

Between 1970 and 2009, there have been 385 disasters reported<sup>1</sup> in Central America caused by weather-, water- and climate-related hazards, with floods accounting for 44% and storms 36% (Figure 1). Over 40,000 people were killed by such disasters (Table 1), mainly due to severe storms such as hurricanes Mitch (18,800 deaths in 1998) and Fifi (8,000 deaths in 1974). Storms also accounted for more than 75% of total economic losses in Central America (which exceeded US\$ 47 billion).

Early Warning Systems (EWS) have increasingly been recognized at the highest political level as a critical tool for saving of lives. Effective early warning systems (EWS) have four components including: (1) detecting, monitoring and forecasting hazards; (2) analysing risks; (3) disseminating timely warnings, which should carry the authority of government; (4) activating emergency plans to prepare and respond. These four components need to be coordinated across many agencies at national to community levels for the system to work. Failure in one component or lack of coordination across them would lead to the failure of the whole system.

The promise of jobs and prosperity, among other factors, pulls people to cities. Half of the global population already lives in cities, and by 2050 two-thirds of the world's people are expected to live in urban areas.<sup>2</sup> In Central America and Mexico, the challenges faced by a growing urban population are compounded by increasing vulnerability and exposure to weather-, climate-

and water-related hazards (e.g., tropical cyclones, storm surges, floods and heat waves). These increasing risks denote the need for effective Multi-Hazard Early Warning Systems (MHEWS) as well as other risk reduction strategies engaging national agencies with local governments.

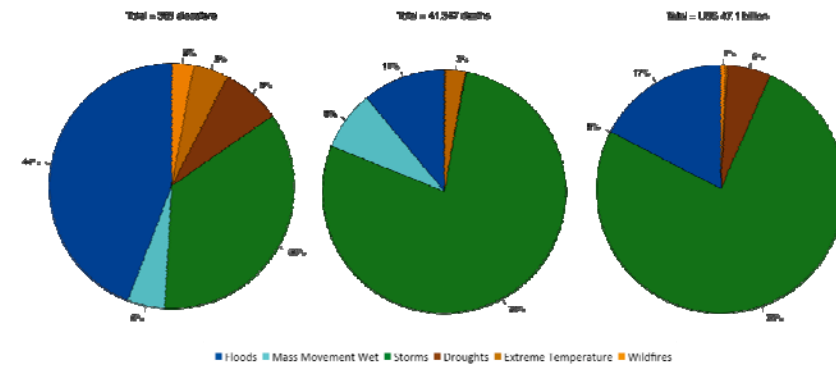


Figure 1: Distribution of (a) number of disasters, (b) deaths and (c) economic losses.

### FOCUS

The focus of the workshop is on the development of MHEWS for weather-climate- and water-related hazards (e.g., tropical cyclones, storm surges, floods, heat waves) for medium- to large-size cities. Within this context, the workshop among other issues highlights the importance of a strong partnership between the National Disaster Risk Management Agencies and the National Meteorological and Hydrological Services (NMHS) with the local governments and the civil society.

<sup>1</sup> Source: EM-DAT: The OFDA/CRED International Disaster Database - [www.em-dat.org](http://www.em-dat.org). All costs expressed in US\$ billion, adjusted to 2011.

<sup>2</sup> The Interplay between Urban Development, Vulnerability, and Risk Management - A Case Study of the Istanbul Metropolitan Area, Ebru A. Gencer, Springer, 2013 (<http://link.springer.com/book/10.1007%2F978-3-642-29470-9>)

Disaster Type	Year	Country	Number of Deaths
Storm (Mitch)	1998	Honduras	14'600
Storm (Fifi)	1974	Honduras	8'000
Storm (Mitch)	1998	Nicaragua	3'332
Mass Movement Wet	1973	Honduras	2'800
Storm (Stan)	2005	Guatemala	1'513
Disaster Type	Year	Country	Economic Losses (US\$ billion)
Storm (Wilma)	2005	Mexico	5.66
Storm (Mitch)	1998	Honduras	5.15
Flood	2007	Mexico	3.2
Storm (Stan)	2005	Mexico	2.83
Storm (Arlene, Beatriz)	1993	Mexico	2.56

**Table 1: Five costliest disasters from 1970 to 2009 according to deaths and economic losses (in US\$ billion)**

### TARGET AUDIENCE

The workshop is targeted at Directors of the National Disaster Risk Management Agencies (NDRMA), directors of the NMHS and representatives from municipal governments of medium and large cities. In addition, representatives from a number of countries in South America, the Caribbean and other regions are invited to share their experiences in implementing MHEWS in the urban context. A number of other regional and international institutions as well as development and funding agencies will also be participating in and contributing to the workshop.

### SPECIFIC OBJECTIVES

The goals of the workshop are to:

1. Share experiences with the development of MHEWS in urban areas;
2. Take a stock of risks and MHEWS capacities in the urban areas in Central America and Mexico;
3. Discuss policy, institutional, operational, technical needs, challenges and opportunities for strengthening and sustainability of MHEWS in urban areas.

### EXPECTED OUTCOMES

1. Participants would benefit from exchanging experiences with experts from other countries in MHEWS in the urban areas;
2. A document will be developed highlighting needs for development and/or strengthening of MHEWS in urban areas in Central America and identifying opportunities for cooperation and coordination. Among various stakeholders

**For more information on this workshop please contact:**

**For Programmatic issues:**

Dr Maryam Golnaraghi

Chief , Disaster Risk Reduction

World Meteorological Organization

**Tel:** 41.22.730.8006; **Fax:** 41.22.730.8128

**Email:** mgolnaraghi@wmo.int

**For administrative issues:**

Maud Allegrini

Senior Secretary, Disaster Risk Reduction

**Tel:** 41.22.730.8375;

**Email:** mallegrini@wmo.int