

# World Meteorological Organization

First Expert Group Meeting on Flood Mapping

## Overview and Objectives

by

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With support from  
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## DRR Strategic Foundation

**Hyogo Framework  
for Action**

2005-2015

(World Conference on  
Disaster Reduction)

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**Strategic Plan**

2008-2011

(Top Level Objectives and  
Five Strategic Thrusts)

Consultations with regional  
associations, technical commissions,  
programmes and partner agencies

**DRR Strategic Goals  
in Disaster Risk Reduction**

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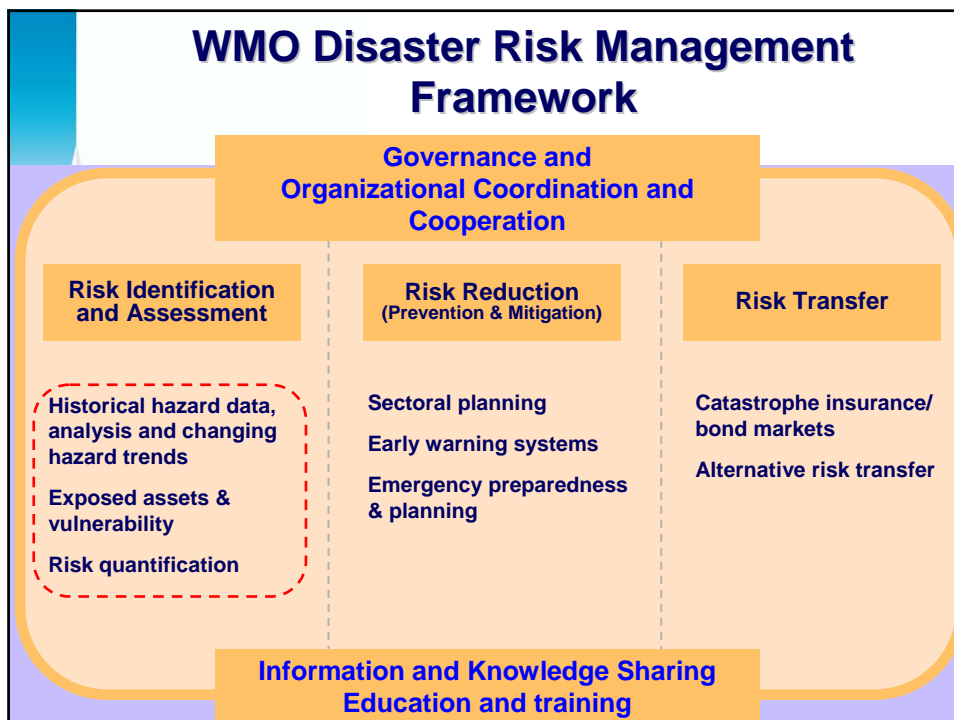
## DRR Strategic Goals

1. Analyzing and providing **hazard information** for risk assessment
2. Strengthening and sustainability of multi-hazard **early warning systems**
3. Delivery of timely and understandable warnings and specialized forecasts -- **driven by user requirements**
4. Strengthening WMO/NMHS **cooperation and partnerships** with disaster risk reduction organizations
5. **Public outreach** campaigns

Implemented through national and regional development projects leveraging WMO and partners' resources/expertise.

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## WMO Disaster Risk Management Framework



## Floods need immediate attention...

Outcome of the WMO Country-Level Disaster Prevention and Mitigation Survey

Hazard	Global 139 /187	Developing Countries 85 / 137	LDC 25 / 50	RA I 28 / 52	RA II 25 / 34	RA III 10 / 12	RA IV 18 / 22	RA V 14 / 19	RA VI 44 / 48
Strong winds	119	70	20	23	19	9	11	14	43
Flash flood	105	67	16	21	15	9	15	12	33
Thunderstorm or lightning	103	68	20	23	17	8	14	11	30
Drought	101	70	20	24	16	8	16	10	27
River flooding	101	59	18	20	13	10	13	9	36
Forest or wild land fire	81	52	13	21	10	8	10	7	25
Earthquakes	75	48	13	13	14	6	13	7	22
Heatwave	72	37	12	12	15	3	7	4	31
Landslide or mudslide	70	44	10	10	11	6	14	8	21
Hailstorm	69	38	9	11	12	7	5	5	29
Aviation hazards	67	42	11	14	14	5	7	5	22
Dense fog	62	35	7	13	12	5	3	2	27
Coastal flooding	56	39	9	10	7	5	12	10	12

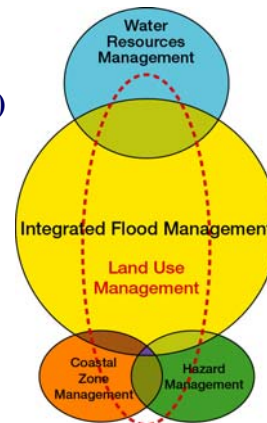
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In the Survey, 92% of NMHSs indicated the need for guidance from WMO for hazard mapping as an input for risk assessment

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# Integrated Flood Management (IFM)

**Integrated Flood Management (IFM) refers to the integration of land and water management in a river basin within the context of Integrated Water Resources Management (IWRM)**



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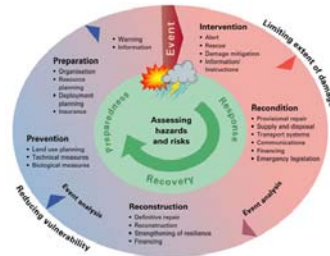
## Integrated Flood Management Objectives

- Sustainable development: balancing development needs and flood risks
- Maximising benefits: ensure livelihood security and poverty alleviation thereby reducing vulnerability
- Minimising loss of life
- Environmental preservation

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# Integrated Flood Management Principles

1. Risk Management
2. Water Cycle as a whole
3. River Basin as a unit
4. Multi-hazard approach
5. Public Participation



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## GUIDELINES on FLOOD MAPPING

Mainstreaming flood risks into development planning

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## Motivation

- Flood mapping forms an essential element of managing flood risks
- There are few publications that provide guidance on the developing a program for flood mapping and flood risk assessment.
- These publications fail to address the needs of developing countries with limited resources, lack of know how and inadequate data availability
- Acceptable common methodologies of risk assessment in transboundary basins

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## OBJECTIVE

*to provide guidance to undertake flood mapping*

- **Planning:** Impacts of urbanisation, other land uses and climate change
- **Regulatory:** Land use regulation and building codes
- **Emergency response:** Location for building shelters and earmarking escape routes
- **Vulnerability Index:** spatial characterization of flood vulnerability of the population
- **Asset management**
- **Flood Insurance**
- **Public awareness**
- **Informational/Educational:** record of flood magnitudes in an area

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## SCOPE

- Development of the flood mapping strategy
- Describe various approaches for developing flood maps in brief (e.g., Geo-morphological, Historical, Remote Sensing, Hydraulic)
- Methodologies/technology of Hydraulic approach
- Development of different types of maps
- Social, economic, legal and other issues related to development and dissemination, including communication of flood maps with the user communities

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## STAKEHOLDERS

Stakeholder	Interest
Flood Management Agencies	Asset Management – targeting investment to manage flood risks Emergency Planning
Spatial Planning Agencies	Development Plans: avoidance of development in the floodplain through regulations Building Regulations: building codes for flood proofing
Disaster Management Agencies	Emergency preparedness, planning and rescue and relief
Environment Agencies	Flood risk & impact on pollution control; the promotion of biodiversity and landscape.
Local Government	Numerous, Emergency Planning / Coordination
The Insurance Industry	Data Providers, Insurers – added value products for calculating premiums, insurability
Developers	Flood risk awareness
Consultants	Development of flood maps of consistent quality and specification
The Public	Flood risk awareness, insurance premiums / property values etc

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## PROPOSED CONTENTS

1. Introduction
  2. Typology of floods
  3. Role of flood maps in development of flood management strategies
  4. Approaches for developing flood maps
  5. Methodologies for modelling approach
  6. Products of Flood Mapping
  7. Planning for flood mapping
  8. Dissemination and Communication with the stakeholders
- References
  - Annexes

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# WELCOME

## *Thank You*

*For more information:*

<http://www.wmo.int/>

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