



World Meteorological Organization
Working together in weather, climate and water

Aims and Elements of Integrated Flood Management

WMO; Climate and Water Department

www.wmo.int



Integrated Flood Management

→ Flood Management in the context of **Integrated Water Resources Management**, aiming at:

- **Sustainable development**: balancing development needs and flood risks
- **Maximizing net benefits from floodplains**: ensure livelihood security and poverty alleviation thereby addressing vulnerability
- **Minimizing loss of life**: in particular through end-to-end FF&W Systems and preparedness planning for extreme events
- **Environmental preservation**: ecosystem health & services



Integrated Flood Management

In developing countries with primarily agricultural economies, food security is synonymous of livelihood security. (page 11 CP)

The perverse consequences of reducing losses produced by floods (or reducing flood risk “BY not OF”) is the reason for

“Maximizing net benefits from floodplains”

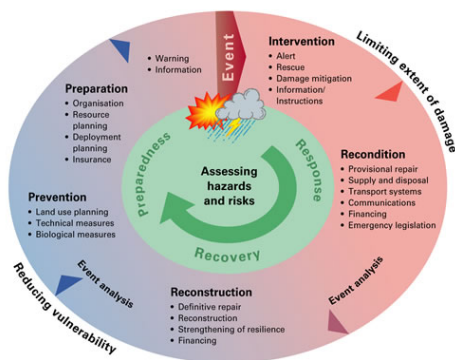
Extreme example “Non structural measure not allowing any economic activity in floodplains”

Example “100 50 and 20”



IFM: Principles

Risk Management



- Mitigation and Preparedness
- Response
- Recovery and rehabilitation
- Residual risks



IFM: Principles

Risk Management

Water Cycle as a whole

- **Flood and drought management**
 - **Effective use of flood waters**
 - **Ground water and surface water interaction in flood plains**
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IFM: Principles

Risk Management

Water Cycle as a whole

Multi-hazard approach

- **Particularly within a basin where there is interaction between various hazard development mechanisms**
 - **Cross-sectoral integration of disaster management strategies**
 - **Disaster risk assessment**
 - **Early warning and forecasts**
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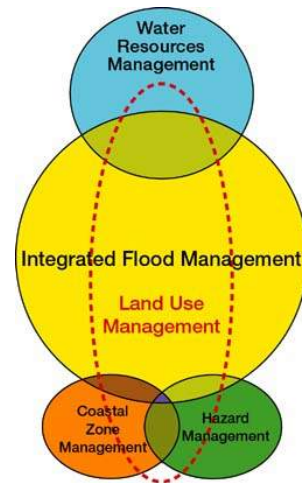
IFM: PRINCIPLES

Risk Management

Water Cycle as a whole

Multi-hazard approach

River basin as a planning unit



IFM: Principles

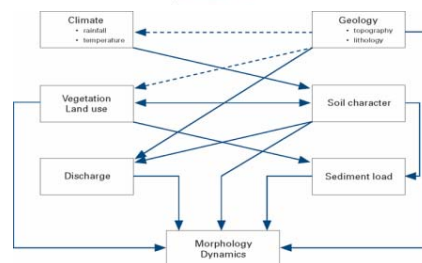
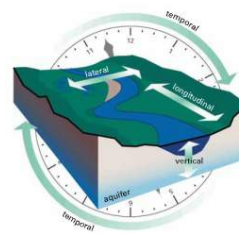
Risk Management

Water Cycle as a whole

Multi-hazard approach

River basin as a planning unit

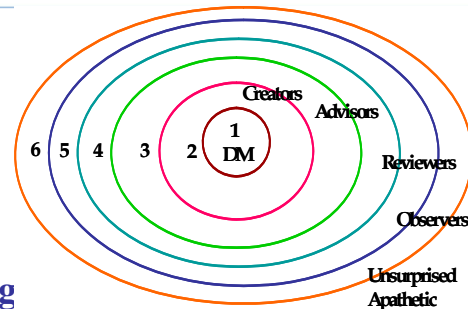
Inter-disciplinary





IFM: Principles

Risk Management
Water Cycle as a whole
Multi-hazard approach
River basin as a planning
Inter-disciplinary
Stakeholders participation

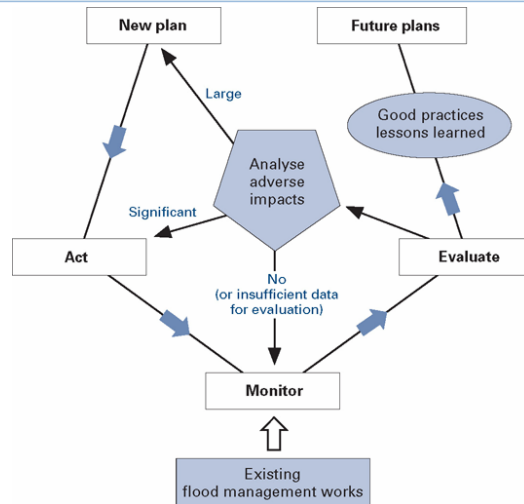


IFM: Towards a sustainable development

- **Integrates and mixes strategies**
 - Structural, Non-structural and Living with Floods
 - Short-term and Long-term
 - Local and basin level measures
- **Balances development needs and environmental concerns**
- **Addresses all aspects of Flood Management**
 - Scientific and Engineering
 - Social Aspects
 - Environmental Aspects
 - Economic Aspects
 - Legal and Institutional Aspects
- **Adaptive Management**



IFM: Adaptive Management



Requirements of IFM

Clear and objective policies

- Comprehensive assessment and understanding of development opportunities and flood risks;
- Multi-sectoral approach to reach the objectives;
- Appropriate legislation and regulations; and
- Innovative economic instruments.

with a multidisciplinary approach

- Appropriate Institutional structures for proper coordination and linkages;
- Enabling participatory processes; and
- Information management and exchange mechanisms.



Associated Programme on Flood Management

Mission: To support countries in the
integrated management of floods



APFM Background

Joint Initiative

World Meteorological Organization (WMO)

Global Water Partnership (GWP)

Secretariat

Technical Support Unit (TSU) embedded in the
Hydrology and Water Resources Programme Secretariat

Inception Phase: 2001- 2002

Implementation Phase I: 2002- 2006

Implementation Phase II: 2006-2010



APFM Background (continued)

Current APFM Trust Fund Contributors

Governments of Japan and Switzerland

→ Further contributors are encouraged in order to upscale the work of the programme

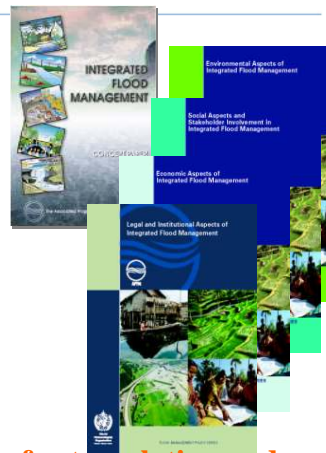
→ Activity based funding through Gov. of Spain

→ Phase I: Government of The Netherlands



Major outputs

- **Flood Management Policy Series**
- **Pilot Projects**
- **Reference Centre**
- **Flood Management Tools**



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Regional pilot projects

- **Pilot projects have been executed in**
 - **South Asia**, (Nepal, India, Bangladesh)
 - **Africa**, (Kenya, Zambia)
 - **South America**, (Brazil, Uruguay) **and**
 - **Central and Eastern Europe** (Poland, Romania, Slovakia)
 - **through GWP/ WMO regional and national networks**
 - **Aim of pilot projects: develop and implement IFM concept and its application through demonstration.**
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Flood Management Tools Series

- provide the **knowledge base** required for the implementation of IFM concepts in the field
 - make the decision makers and planners **aware of the related issues**
 - are **living documents** and **are updated** based on experiences sharing on the website
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International initiatives

- **International Flood Initiative (IFI)**
 - Adopted Integrated Flood Management as the central policy concept (WMO and UNESCO as key partners)
 - **Hyogo Framework for Action (HFA)**
 - Explicitly recognizes the need for integrated flood management strategies
 - **UN Water (24 UN Agencies)**
 - Adopted Integrated Flood Management as the central policy concept in the water hazards and risk area
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Concluding remarks

- **Advocacy for IFM in international and national fora has led to recognition in high-level policy initiatives**
 - **Required policy guidance and tools, pilot projects and trainings have been developed**
 - **Challenge ahead: Facilitate wide spread field application through a demand-driven and decentralized approach based on partnerships**
 - **Be prepared to defend the IFM concept (Water experts in the 90s, disaster community after, now climate community....)**
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Thank you
