



**Training for Trainers
Integrated Flood Management for Sustainable
Development**

5 – 8 April 2011, Hanoi, Vietnam



**Social Aspects of IFM
- Community-based Flood Management -**

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Introduction

Flood management measures in the past have contributed to mitigate the adverse impacts of floods, but have often created inequalities and conflicts if policies are inappropriate and inadequate attentions are paid to social issues.

The need to deal with social concerns and involve stakeholders in the decision making process



Integrated Flood Management

The need for paradigm shift

“From flood control to flood management”

Integrated Flood Management

- Combination of structural and non-structural measures
 - Address both the negative and positive characteristics of floods
 - Focus on the physical, social, environmental and economic aspects of floods
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Social aspects and stakeholder involvement

Flood issues are influenced

- not only by the physical causes of flooding
- but by the social, economic and political setting

(Issues in flood management)

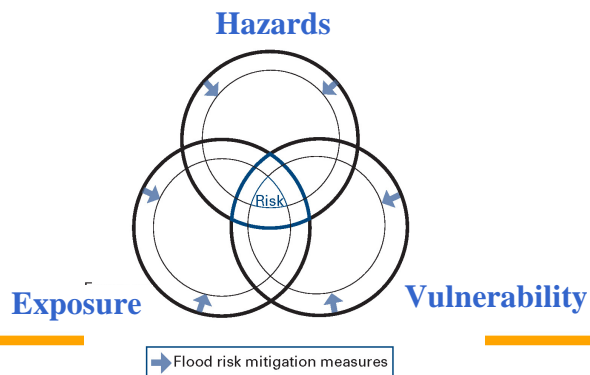
- Beneficial and negative effects of floods
 - Construct of risk and its reduction
 - Involvement of stakeholder
 - Enabling mechanism for stakeholder involvement
-



Understanding flood risks

Flood risk consists of

- The magnitude of the flood hazard expressed in terms of frequency and severity;
- The exposure of human activities to flooding;
- The vulnerability of the elements at risk.



Perception of flood risks

Unless the population is aware of the risks it faces, local energies cannot be mobilized to build resilience.

- Understanding of risks should be the first step
- Risk perception among people differs considerably
- Man-made factors can increase flood risks
- Large scale structural flood control measures may generate a false sense of security →

Recognize the limitations and level of the protection

Be aware of residual risk → Contingency plans



Vulnerability to flooding

- Community's proneness to be impacted adversely by flooding
- Represented by the inability or incapacity of a community or a group to anticipate, cope with, resist and/or recover from its impacts

Three major groups of vulnerability

- Physical or material
- Constitutional or organizational
- Motivational or attitudinal

Social factors contribute to vulnerability



Exposure to flooding

Exposure to flooding can be reduced through

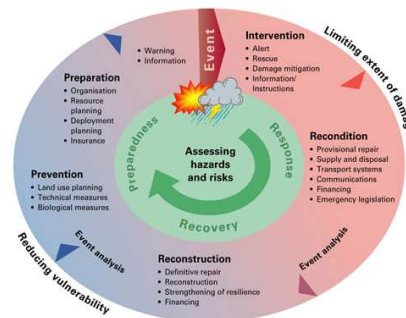
- Structural flood mitigation works**
reducing the probability or degree of exposure
 - Land-use planning and regulation**
keeping people away from flooded areas
 - Flood emergency measures**
moving people away from flooded areas
-



Flood emergency management

Avoid the exposure of critical activities from flooding and temporarily shift people and such activities

- **Preparedness:** to ensure effective response
- **Response:** to reduce adverse impacts during the flooding
- **Recovery:** to assist the affected community to rebuild itself



Preparedness

- **Raising public awareness**
 - Education and regular training
 - Flood hazard mapping
- **Emergency preparedness plans**
 - Preparedness begins at the community level
 - A common platform should be established for local communities
- **Coordination mechanisms**
 - Establish disaster response committees to exchange information and review experiences



Response

- **Early warning**

- Availability and reliability and certain lead time
- Unambiguous, easily understandable manner and in local language
- Through a legally designated single authority
- Through a medium that is accessible to poorer communities
- Message should be reached to all individuals

- **Protection of critical infrastructure**

- Mobilizing men and machinery from unaffected contiguous areas
 - Emergency flood-proofing measures
-



Response

- **Rapid needs assessment**

- A rapid assessment of the latest situation should be made
- Information should be shared with local, state and national authorities and volunteer organizations for timely and efficient coordination

- **Safe shelters**

- Three basic questions of relief distribution (who is responsible, how to get the relief items to the affected areas, and who is entitled to relief provided)
 - Secure the safety of women from sexual harassment through local community organization
-



Post-flood recovery and rebuilding

- Vital lifeline facilities have to be repaired as soon as possible
- Reconstruction should not repeat previous errors
- Use local labour and locally available materials

Documentation of lessons learned

- To update hazard map
 - To be used in the reconstruction phase
 - To optimize future emergency response
-



Stakeholder involvement in IFM

Objectives

- Provide all stakeholders, including the public, with full opportunities to share their views and influence the outcome
 - Build consensus and public support for the outcomes
 - Build stakeholders commitment
 - Ensure implementation of basin flood management plans with full public support
 - Ensure sustainability of plans and associated decisions
 - Build resilience of flood-prone communities
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Potential pitfalls

- High expectations leading disappointment
- Complexities of involving all stakeholders
- Insufficient involvement
- Time consuming process
- High costs
- No concern for economic viability

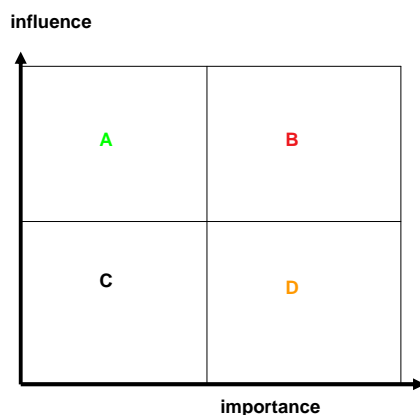


Stakeholder Analysis

	Influence	Importance
Principal question	To what extent the actor is likely to influence the project?	To what extent the interests and needs of the actor are affected positively or negatively by the project?
Criteria	<ul style="list-style-type: none">• Legal Standards: possibility of intervention with the authorities, legal recourse (protection of property, resource use)• Social Network: possibilities of mobilizing popular support• Knowledge: Expert knowledge, local knowledge	<ul style="list-style-type: none">• Consistency of project objectives and interests of the actor• solutions to the problems of the actor through the project• negative impacts of the project on the interests of the actor• Restriction of the rights and usages of the actor (land, exploitation of rivers)



Stakeholder analysis



- A** It is important to convince these actors of the usefulness of the project.
- B** These actors need to be integrated into project planning and preparations as early as possible as their collaboration is indispensable for the success of the project.
- C** These actors do not necessarily need to be integrated into the decision making process but may strengthen its base
- D** It is important to ensure the participation of these actors to take into account their interests. Their views may be easily overlooked, which is generating further conflict.

Based on Swiss Federal Office for the Environment, 2009



Participatory planning

National flood management policy

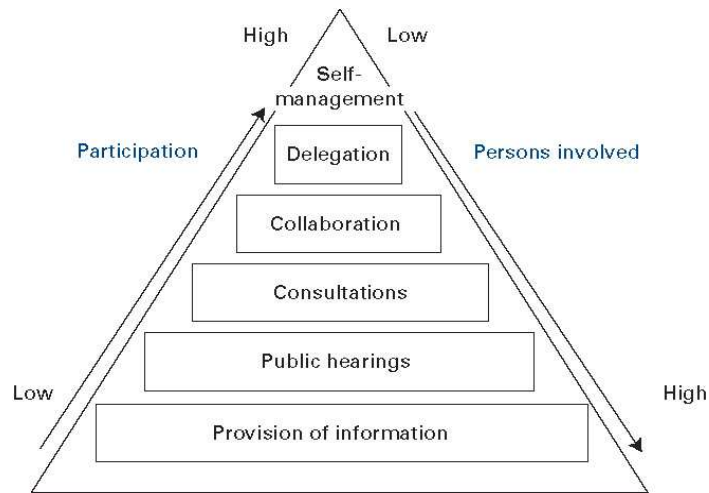
- Overall assessment of flood hazard
- Required degree of risk mitigation
- Equity principle
- Prioritization of pre- and post- event measures
- Types of incentives and disincentives
- Strategy for residual risks

Basin flood management plan

- Setting goals guided by regional development goals
- Designing the process for stakeholder participation
- Involve stakeholders' ethical consideration
- Decide the degree of risk
- Institutional arrangement
- Comprehensive multi-hazard risk assessment



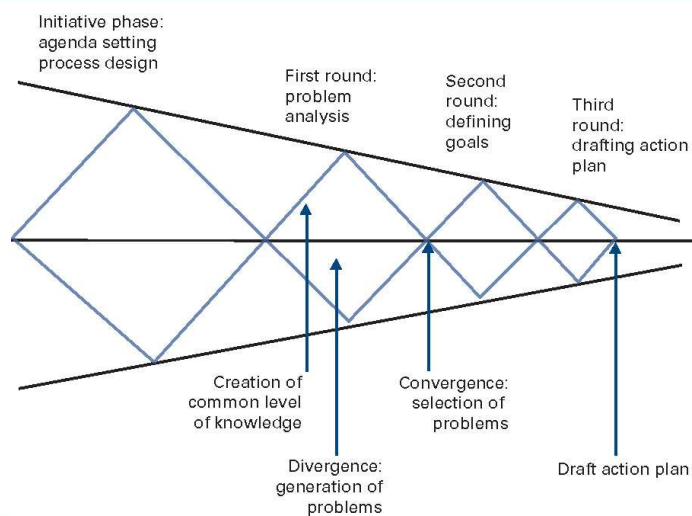
Participatory mechanism



Levels of stakeholder participation



Participatory process



Divergence and convergence in a participatory process



Project planning

Identify priority action areas

- Identification of lead organization
 - Employing various economic tools for making choice (multi-criteria analysis (MCA), cost benefit analysis (CBA))
 - Involve the stakeholder and beneficiaries from the beginning
 - Environmental impact assessment (EIA)
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Flood emergency planning

Coordination

- Between government agencies
- Between national, state, district and local levels of government agencies
- Among all emergency response agencies

Participatory planning

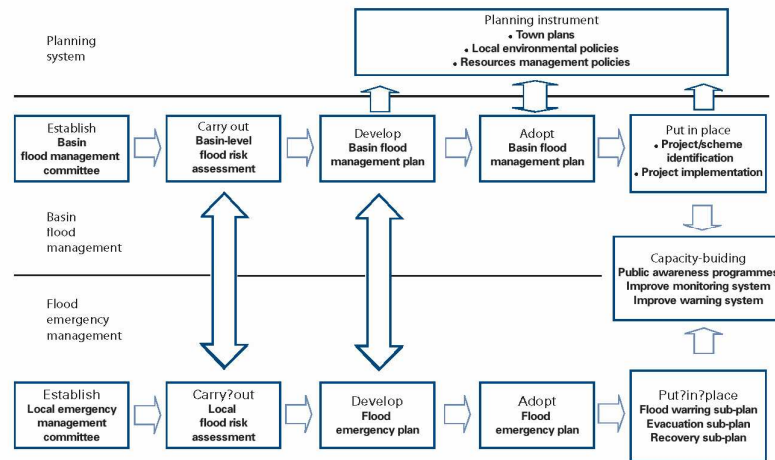
- Risk and vulnerability assessment
- Distribution of specific roles and responsibilities
- Resource analysis and mobilization

Clear identification of the responsibilities

- Dissemination of flood forecasts and warning
 - Organize evacuation
-



Basin flood management planning and flood emergency planning



Establish a mechanism ensuring constant interaction



Enabling mechanism

Facilitating dialogue

- River basin organizations (RBOs)
- Disaster management committees (DMCs)
(national, state and district levels)
- Community-based organizations (CBOs)
- Community flood management committees (CFMCs)
- Non-governmental organizations (NGOs)



Enhancing stakeholder involvement

Prerequisites

- Building trust through information sharing and repeated interaction

Challenges

(in launching the participatory process)

- Political will
 - Need for financial commitment and budget allocations
 - Attitude toward flood management
 - Risk perception
-



Enabling mechanism

Stakeholder capacity-building

Capacity-building needs at different levels

- Institutional capacity-building
 - Community capacity-building
 - Individual capacity-building
-



Challenges (in maintaining the participatory process)

- Harmonization of water management, spatial planning and environmental activities
 - Trans-boundary issues in international river basin
 - Level of competency of local authorities, RBOs and water users
 - Regional versus specific local needs
 - Time constraints
-



Capacity building

Areas

- Facilitating cooperation with other agencies as lead organization
- Participating as a stakeholder in the process led by someone else
- Undertaking planning
- Carrying out implementation

Mechanisms

- Training sessions and workshops
 - Information technology
 - Networking for information sharing
 - Internships
 - Public awareness rising
 - Learning by doing
 - Role playing
-



Legal and institutional framework

Key legal mechanism for public participation

- Right to information
- Right to participate
- Accountability
- Transparency

For extensive coordination between stakeholders

- Information sharing and networking
 - Enabling institutional framework
-



Conflict management

- **Understanding the underlying issues, perceptions and the values associated with the issues**
 - **Unbiased third-party involvement**
 - **Incentives and trade-offs**
-



Community-based Flood Management

From theory to practice

3-year project concluded in

Bangladesh

India

Nepal



Community Based Flood Management in India

Implementing institutions:

- Institute for Resource Management and Economic Development (IRMED), New Delhi (national NGO)
- World Meteorological Organization (WMO) through the Associated Programme on Flood Management (APFM)

Successfully
implemented and
tested over 3 years
since the 2004 floods



A view of the rehabilitated huts in village Purnahi on 22nd September, 2003.
(Bihar)



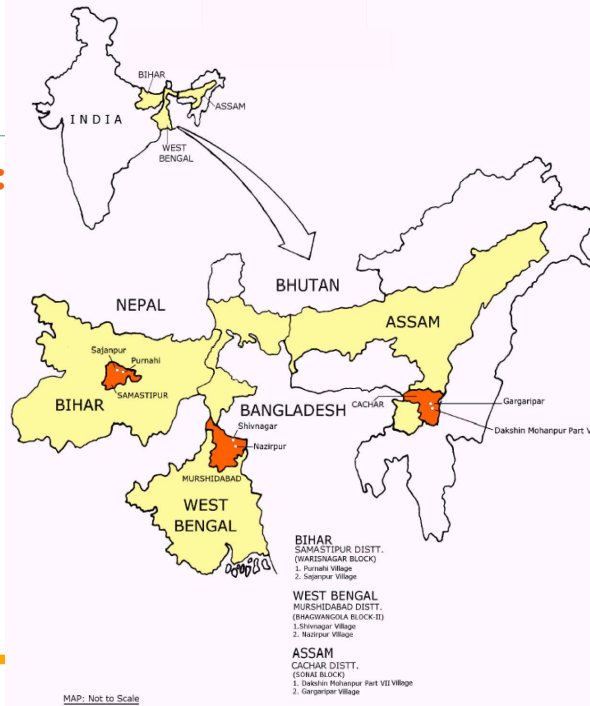
CBFM Pilot phase: Area of study

3 states/districts:

- Assam/Cachar
- Bihar/Samastipur
- West Bengal/Murshidabad

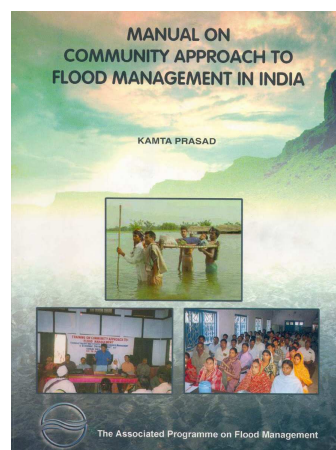
2 villages each district

Predominantly rural



CBFM Pilot phase: the purposes

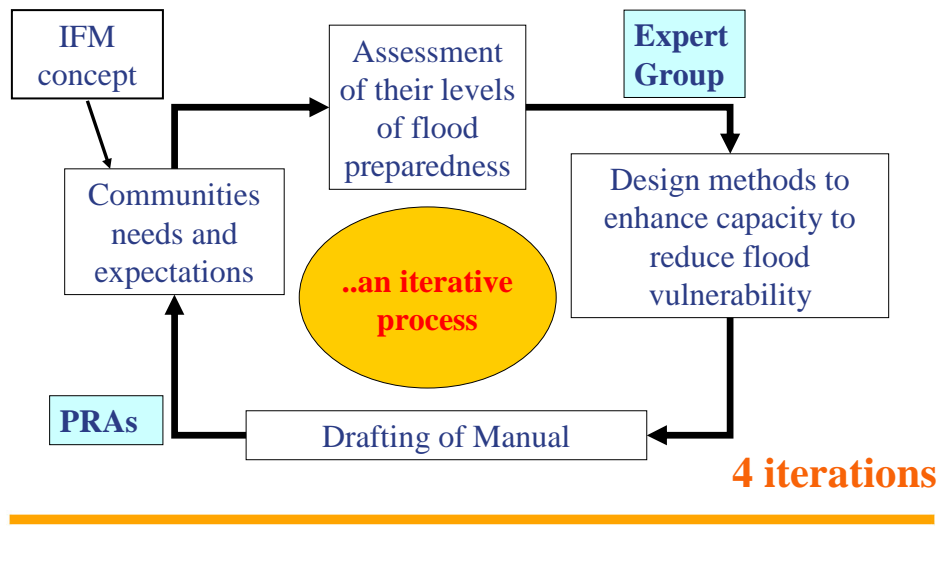
- Assess existing non-structural and structural measures
- Assess the community level of perception of flood as a risk
- Undertake appropriate activities to strengthen self-help capacity of communities for improved IFM practices.
- Indicate concrete steps for institutional strengthening to reduce flood risk
- Prepare a community flood management manual (English and Hindi)



http://www.apfm.info/pdf/pilot_projects/manual_india.pdf



CBFM Pilot phase: the process



CBFM – from concept to implementation

- Formation of Community Flood Management Committees (CFMCs)
- Assessment of needs and capabilities in community flood preparedness
- Organization of information dissemination and training for capacity building
- Monitoring and reporting
- Information management
- Provisions for emergencies
- Interface with Government
- Resource mobilization



Dr. N.M.P. Verma, Member of the Project Team having discussion with a group of villagers including the lady Chairperson (sitting on the chair) of village Panchayat, Purnahi on 22nd September, 2003. (Bihar)



Community Flood Management Committees

Composed by local authorities, teachers, medical staff, local officials, socially and economically disadvantaged groups (tot: 10-20 people). Gender issue was taken into account.

Moderated influence/activity area (Union Parishad level)



A female participant raising a question during the training on Health Care & Sanitation on 27th February, 2004. (West Bengal)



Population-level responses

Elevate houses

Repair damaged structures

Elevate cattle-sheds

Prepare elevated storage fuel, for val

Work with

portable es for rgency

Keep eyes and ears open for warnings!

Raise the level of latrines and connect them with houses

Keep handy emergency first-aid kits, water purifying tablets

Sareguard agricultural production, preserve seeds



Pre- and Post- flood responses

- Assign responsibilities for the emergency
- Establish a vigilance/whistle-blower Task Force
- Collect flood forecast information continuously from all possible sources
- Issue warnings with all possible means: cell phones, FM radio, mouth-to-mouth, flags, drums,
- Identify and prepare shelters: think of facilities!
- Return to normality
- Continuation of relief activities
- Inventory of damages/losses
- Assessing needs of community
- Prioritizing rehabilitation activities
- Rehabilitation of infrastructures
- Rehabilitation of emergency services



During flood responses

Enduring the flood

Better housing conditions,
Food and drinking storages,
Healthcare and hygiene,
Maintenance of mobility
Maintenance of communication

Escaping the flood

Provide shelters for population
Arrange for relocation of elderly, children, sick, pregnant women, etc.
Provide shelters for goods and livestock

**Ensure Support activities:
security, healthcare, food
distribution, etc.**



Conclusions

Budget: 110K US\$

- 3 countries
- 2 regional meetings
- 14 PRAs (Participatory Rural Assessments)
- 5 missions from WMO
- 14 trainings of villagers
- 3 local NGOs involvement
- 12 man months for social workers (Bangladesh only)

Impact:

Improvement of livelihoods, preparedness and food security

Bangladesh:

Before - 300 casualties per flood

After - 2/3 casualties per flood

India:

- Adopted the approach
- Implemented in all districts
- Translated manual in local languages

Outcomes

Bangladesh:

- Translated manual
- Included CBFM in FM measures

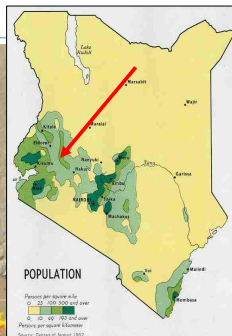
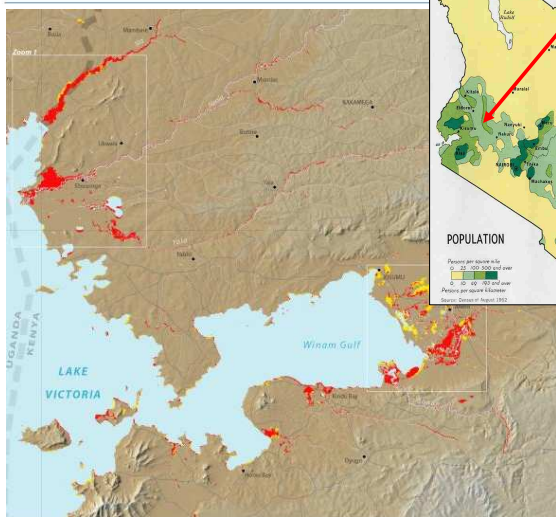


Case study:





Area of study



Lake Victoria Basin:
194,000 Km²
Kenyan part of the Basin:
46,229 Km²



Economic and social impacts of floods on the Nzoia-Nyando Basins

- Structural damage and land degradation
 - Deaths of people and animals
 - Displacement
 - Possible outbreaks of diseases
 - Contamination of wells and ground water



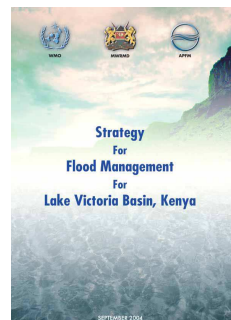
- Loss of harvests, food stocks, supplies and produce from farms.
- Nutrition problems/food insecurity
- Mental and physical stress
- Increased conflicts over water resources



Strategy Elements

It has 15 Elements focusing on six main issues:

1. Reducing Vulnerability (4 elements)
2. Reorientation of Approach to Development and Floods (2 elements)
3. Integrated Approach to Water Resources Development and Flood Management (3 elements)
4. Protecting and Conserving Environment (3 elements)
5. Addressing Weather and Climate Variability and Change (2 elements)
6. Coordination between Various Ministries and Agencies (1 element)



Flood Management Policy

Policy Principles

- Establish the basic principles of IFM
- Address the institutional issues dealing with IFM
- Consider various options for IFM based on the hydrological, meteorological, technical, financial, and other conditions
- Review principles as and when required, and at least once in ten years.
- Is based on the IFM concept with special emphasis on the following:
 1. Flood management and development
 2. Integrative approach
 3. Risk Management
 4. Appropriate mix of measures





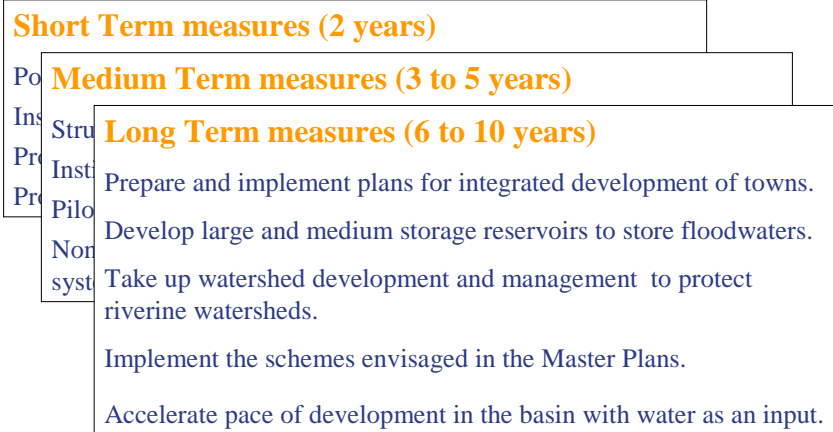
Flood Management Policy Elements



- Institutional Arrangements
- Organisation Structure
- Structural Measures
- Non-structural Measures
- Community Participation
- Capacity Building



Action Plan





Thank you...

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For more information please visit
<http://www.apfm.info>

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