



**Training Workshop on Integrated Flood Management  
for countries in Western Asia and the Arab region**

*11-14 May 2009, Esfghat Hotel, Tehran, Iran*

**SOCIAL DIMENSION OF  
FLOOD MANAGEMENT**

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## INTRODUCTION

### **Integrated flood management aims at**

- **Maximizing net benefits from flood plains**
- **Minimizing loss of life and property in a basin**
- **Flood protection often creates inequalities and conflicts**
  - ❖ **IFM aims at re-orientation of social perception of floods from “Need to Control” to “ Need to Manage”**

## INTEGRATED FLOOD MANAGEMENT

**From Flood Management perspective there is 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 aspects of floods**
- **Focus on the physical, social, environmental and economic aspects of floods**

## **SOCIAL ASPECTS AND STAKEHOLDER INVOLVEMENT**

### **Flood issues are influenced**

- **Not only by the physical causes of flooding**
- **But also social, economic and political setting**

### **(Issues in flood management)**

- **Beneficial and negative effects of floods**
- **Understanding flood risk and its reduction**
- **Involvement of stakeholders**
- **Enabling mechanism for stakeholder involvement**

## **BENEFICIAL ASPECTS OF FLOODS**

- **Provide water sources (recharge groundwater, restock man-made reservoirs)**
- **Agriculture (Provide nutrients and sediments)**
- **Fishery (provide and ecological trigger for spawning and migration)**
- **Rejuvenation of the river ecosystem**
  - **Variable water and sediment discharge**
  - **Wash down pollutants – municipal and industrial effluents, solid waste**

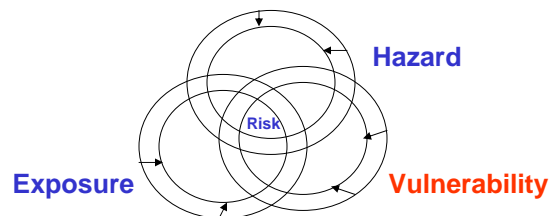
## NEGATIVE SOCIO-ECONOMIC IMPACTS

- Loss of lives and property
- Hindering economic growth and development
- Loss of livelihoods
- Decreased purchasing and production power
- Mass migration
- Psychological effects
- Political implications
  - Public discontent
  - Loss of trust in authorities

## UNDERSTANDING FLOOD RISKS

### Flood risk consists of

- Magnitude of the flood hazard
  - ❖ Frequency
  - ❖ Depth and duration of flooding
  - ❖ Associated problems of river instability and erosion
- Exposure of human activities to floods
- Vulnerability of the elements at risk



## PERCEPTION OF FLOOD RISKS

### Public Awareness of the risks necessary to build resilience

- **Understanding of risks -- 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

- **Proneness of the community to be adversely affected by flooding**
  - Inability to anticipate the impact of floods
  - Inability to cope with, resist and/or recover from the impact
- **Three major groups of vulnerability**
  - Physical or material
  - Constitutional or organizational
  - Motivational or attitudinal
- **Social and economic factors contribute to vulnerability**

## VULNERABILITY CONDITIONS

### Physical/Material

- **Initial well-being**
  - ❖ Economic/Financial
  - ❖ Health
  - ❖ Physical resilience
- **Weak Infrastructure**
  - ❖ Buildings
  - ❖ Roads/Transportation
  - ❖ Sanitation
  - ❖ Electricity supply
  - ❖ Flood protection works

## VULNERABILITY CONDITIONS (cont..)

- **Occupation in a risky area**
  - ❖ River bed cultivation
  - ❖ Fisheries
- **Habitation in a rain shadow area**
  - ❖ Immediately downstream of high rainfall area
- **Degradation of environment**
  - ❖ **Denuded/degraded catchment areas**
    - Land slides
    - Large debris flows

## VULNERABILITY CONDITIONS (cont..)

### **Constitutional/Organizational**

- **Lack of leadership, initiative, accountability**
- **Weak institutional set up**
  - ❖ **Lack of administrative/technical education and skills**
  - ❖ **Lack of resources**
  - ❖ **Lack of accountability**
- **Lack of social development**
  - ❖ **Ignorance and lack of education**
  - ❖ **Weak community based organizations**
  - ❖ **Weak or non-existent social support system**

## VULNERABILITY CONDITIONS (cont..)

### **Motivational/attitudinal**

- **Lack of awareness of developmental issues, rights and obligations**
- **Certain cultural beliefs, customs and fatalistic attitudes**
- **Heavy dependence on external support**

## 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 plain zoning
    - ❖ Control/regulation of activities in different flood zones
- **Flood emergency measures**
  - Moving people away from flooded areas
    - ❖ Rescue and relief measures

## STRUCTURAL MEASURES

- **Review of development in the basin**
  - ❖ Existing
  - ❖ Proposed
- **Review of flood problem in the basin**
- **Objective and scope of protection required**
- **Priority for protection**
- **Level of protection required**
- **Understanding of residual risk**
- **Roles responsibilities**
  - ❖ During project formulation
  - ❖ Project construction
  - ❖ Operation and maintenance

## LAND USE PLANNING AND REGULATION

- Socio-economic profile of population in flood prone areas
- Their interests and concerns
- Risk assessment (based on flood risk maps)
- Decision on land use in different risk zones
- Decision on regulatory mechanism

## 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



## PREPAREDNESS

- **Raising public awareness**
  - ❖ **Education and regular training**
    - Flood prone areas
    - Awareness of the risk
    - Flood warning system
    - Evacuation routes
    - Location of shelters
  - ❖ **Flood hazard mapping**
- **Emergency preparedness plans**
  - ❖ **Individual/household level**
  - ❖ **Community/village level**
  - ❖ **Municipality/district/province/national level**
  - ❖ **Duties, roles, responsibility**
  - ❖ **Accountability**
  - ❖ **Enabling arrangements**
- **Coordination mechanism**
  - ❖ **Establishing disaster response committees to exchange information and share 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 proper communities**
  - ❖ **Message should be reached to all individuals**
- **Protection of critical infrastructure**
  - ❖ **Flood embankments**
  - ❖ **Anti-erosion works like spurs/dykes**
  - ❖ **Rural roads/bridges on evaluation routes**
  - ❖ **Hospitals, schools etc.**
    - **Mobilizing men and machinery from unaffected contiguous areas**
    - **Emergency flood-proofing measures**

## RESPONSE

- **Rapid needs assessment**
  - ❖ **Assessment of the latest situation**
  - ❖ **Sharing of information with local, state and national authorities and voluntary organizations for timely and efficient coordination**
- **Safe shelters**
  - ❖ **Well defined and easy approach**
  - ❖ **Provision of food, water and sanitation**
  - ❖ **Specific needs of infants, elderly disabled people, pregnant women**
  - ❖ **Security of women/girls against sexual harassment**
  - ❖ **Well organized system of distribution of relief items**

## POST-FLOOD RECOVERY AND REBUILDING

- **Repair of vital lifeline facilities**
- **Reconstruction should not repeat previous errors**
- **Use of local labor and locally available materials**
- **Documentation of lessons learned**
  - ❖ **To update hazard map**
  - ❖ **To be used in the reconstruction phase**
  - ❖ **To optimize future emergency response**

## STAKE HOLDER INVOLVEMENT IN IFM

### Objectives

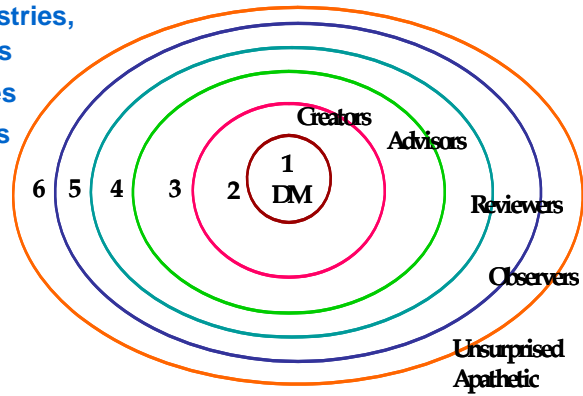
- Provide opportunity to all stakeholders, including the public, to share their views and influence the outcome
- Build consensus and public support for the outcomes
- Build stakeholders commitment
- Ensure implementation of basin flood management plans with full public support
- Ensure sustainability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

## POTENTIAL PITFALLS

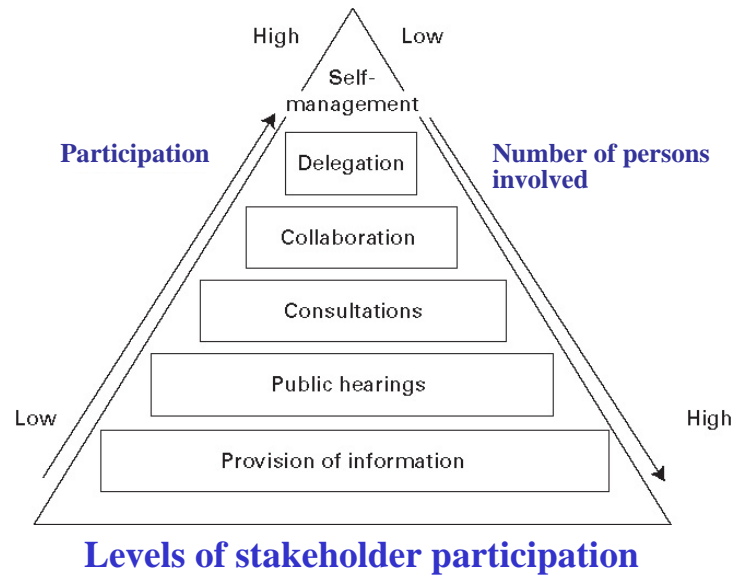
- High expectations leading to disappointment
- Complexities of involving all stakeholders
- Insufficient involvement
- Time consuming process
- High costs
- No concern for economic viability

## STAKEHOLDERS

- Government ministries, departments and agencies
- Flood prone communities
- Other basin communities
- Scientific institutions
- Registered NGOs
- Voluntary organizations
- The private sector



## Participatory mechanism



## AREAS FOR PARTICIPATORY PLANNING

### National flood management policy

- Overall assessment of flood hazard
- Degree of risk mitigation required
- Equity principle
- Prioritization of pre-and post-event measures
- Types of incentives and disincentives
- Strategy to deal with residual risks

### Basin flood management plan

- Setting goals based on regional development goals
- Designing the process for stakeholder participation
- Decide the degree of risk
- Institutional arrangement
- Comprehensive multi-hazard risk assessment

## PARTICIPATORY PLANNING

### Project Planning

- Identify priority action areas
- Identify lead organization
- Employ various economic tools for making multi-criteria analysis, cost-benefit analysis
- Environmental Impact Assessment

## PARTICIPATORY PLANNING

### Flood Emergency Planning

#### Coordination

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

#### Participatory

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

#### Clear identification of the responsibilities

- Dissemination of flood forecast and warning
- Organize evacuation and relief

## 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

## **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**

## **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 organization (NGOs)**

## ENABLING MECHANISM

### Stakeholder capacity-building

#### Capacity building needs at different levels

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

#### 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

#### Capacity-building mechanism

- Training sessions and workshops
- Information technology
- Networking for information sharing
- Internships of key personnel in other organizations
- Raising public awareness
- Learning by doing

# LEGAL AND INSTITUTIONAL FRAMEWORK

## Key legal mechanism for public participation

- Right to information
- Right of participate
- Accountability
- Transparency
- Conflict resolution

## For extensive coordination between stakeholders

- Information sharing and networking
- Enabling institutional framework

## Harmonized Legal Framework

- Relevant laws and by laws

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**THANK YOU**

A number of case studies on flood management were, and are being, collected from various regions of the world, based on the experiences of organizations active in flood management. The main objectives in collecting these case studies are to: