



CHINA: FLOOD MANAGEMENT

1. **Location of the study:** China
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3. **Brief description of flood management practice**

China has been frequently hit by large floods and suffered from flood disasters. The critical issue is that about 8% of the land area located in the mid- and down stream parts of the seven major rivers of the country are prone to floods. However, in these areas live 50% of the total population of the country, and they contribute over 2/3 of total agricultural and industrial product value. According to the historical records, large flood events occur once in every two years.

After a review of past flood management strategies, in 1990 the Government and the public came to realise that flood management has to be closely integrated with the land use plan while taking into full account the population issue in the flood prone areas; furthermore, that flood is a natural phenomenon which cannot be eliminated nor be totally controlled.

The flood mitigation strategies are grouped under three main areas: soil and water conservation, building of flood control systems and flood proofing.

The *Ministry of Water Resources (MWR)* discharges the responsibility of a unified management of water resources of the country. There are seven major River Basin Commissions, which are the arms of the MWR to perform the function of water administration in the river basins. They play an important role in a unified management of water resources of the basins, co-ordinating flood and drought protection, mediation of water disputes, etc.

China has heavily relied upon flood-proofing led by the "*Flood Proofing and Drought Defying Headquarters*" (FPDDHQ) at different levels; this mechanism has ensured the successful mobilisation of all the necessary resources and sound operation of the flood control systems throughout the country. During flood events, many governmental agencies are involved and share a responsibility in accordance to their mandate. The co-ordination of operations during the flood period is handled by the FPDDHQ.

A series of Laws and Regulations in the water sector have been enacted since the 1980s. The major ones include the "*Water Law*" (1988) that was revised in 2002, the "*Law of Flood Control*" (1997), the "*Law of Soil and Water Conservation*" (1991) and administrative regulations like the "*Regulation of Flood Proofing*", "*Regulation of River Course Management*" and "*Guide to Safety Building of Flood Storage and Detention Basins*" etc..

4. Key issues

The integrated approach to flood management in China is comprehensive and complex. The flood management strategies need to consider the densely populated limited flood prone areas in the mid- and downstream reaches of seven major rivers.

The urban expansion together with industrial and agricultural development has resulted in serious environment deterioration and water shortage.

The integrated planning and management of water resources has become a critical issue and therefore is being reinforced.

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There is need for an integrated strategy applied to cope with the inappropriate land use due to population growth.

Great importance is attached to the prevention of soil erosion in management of small catchments. The construction and management of the soil and water conservation works are contracted with individuals and communities of the basins to be protected.

Flood insurance was initiated and encouraged by the Chinese government, and several pilot projects were implemented. However these were not very successful, mainly due to the fact that the poor rural people in flood-prone areas were reluctant to pay the insurance premium (FEES?) since they traditionally rely on relief from the government after flood disasters.

A special management method needs to be promoted in order to optimise the use of flood storage and detention basins and multi-purpose use of reservoirs.

There is an on-going project for the development of a national flood plan which stresses the importance of flood risk management on the basis of delineated flood plains, flood storage and detention basins and flood protected areas.

5. Relevance to the concept of IFM

Water cycle as a whole

- Aspect 4 - Managing the whole water cycle (flood/drought management plans (marginally))
- Aspect 6 - Effective use of floodwater by maximizing positive aspects of floods

Integration of land and water management

- Aspect 2 - Land and water management
- Aspect 3 - Laws and regulations for flood and water management
- Integrated river basin management approach to flood

Best mix of strategies

- Aspect 10 - Best mix of structural and non-structural measures

Participatory approach

- Aspect 5 - Stakeholder involvement in decision making
- Aspect 7 - Community-based approach (marginally)
- Aspect 9 - Effective linkage between existing institutions

Integrated hazards impact mitigation

- Aspect 1 - Cross-sectoral integration of disaster management strategies
- Flood plain maps and zoning
- Early warnings and forecasts
- Aspect 11 - Free and open exchange of data



6. Comments

- (i) Potential strong points of the case study
 - A series of laws and regulations for the Water sector
 - Land and water conservation approaches
- (ii) Potential for practices mentioned to be transferred/applied to other regions with geophysical and socio-economic characteristics)
 - A number of concepts and approaches laid out in the various water laws described in the case study could be of interest to other countries. The same is valid for the soil and water conservation approaches described. The case study reflects a good example of IFM in practice.