World Meteorological Organization

Global Water Partnership

ASSOCIATED PROGRAMME ON FLOOD MANAGEMENT

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ACTIVITY PLAN (2006-2007)

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The Associated Programme on Flood Management (APFM) is a joint initiative of the World Meteorological Organization (WMO) and the Global Water Partnership (GWP). It promotes the concept of Integrated Flood Management (IFM) as a new approach to flood management. The programme is financially supported by the governments of Japan and the Netherlands.

The World Meteorological Organization is a Specialized Agency of the United Nations and represents the UN-System's authoritative voice on weather, climate and water. It co-ordinates the meteorological and hydrological services of 187 countries and territories.

The Global Water Partnership is an international network open to all organizations involved in water resources management. It was created in 1996 to foster Integrated Water Resources Management (IWRM).

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1. CAPACITY DEVELOPMENT FOR IFM

1.1 Tools to develop IFM strategy in the field

The phase II of the programme will consolidate the gains achieved through phase I and focus on implementation of the IFM concept on the ground. In phase I, "Concept of IFM" and various aspects of flood management policy such as "Legal and Institutional Aspects", "Environmental Aspects", "Social Aspects and Stakeholder Involvement" and "Economic Aspects" were compiled and published. During this process, requirement of several tools to realize the concept of IFM in the field were identified such as "Decision Making Process", "Flood Management Basin Planning", "Rapid Assessment of Flood Damages", "Urban Flood Management Issues", "Adaptive Management Techniques" "Flood reservoir operation and managed flows", "Environmental Assessment", etc.

(Decision Making Process)
In the process of *formulating strategy for IFM* involving various stakeholders, different opinions, which in some cases may be opposed to each other, have to be taken into account. The challenge is how to make decision at various levels recognizing and factoring these opinions in a convincing manner. It requires impartiality in the process and the decisions should be based on multidisciplinary approach to examine different perspectives and point of views. There are also various constraints in such decision making, which can be broadly categorized into: physical, financial, social, political legal, and environmental. There are several other issues in the process such as, what kind of factors should be considered, how to ensure the stakeholder involvement, how to facilitate mutual understanding and consensus building, how to promote dialogue in a pragmatic manner, etc. These will be listed and discussed in the tool to provide general guidance.

(Flood Management Basin Plan)
Basin Flood Management Plan should reflect the national development policy to realize social and economic development of the country and at the same time should develop strategies for alleviation of flood risks and maximizing the net benefits from flood plains within the context of overall objectives of IWRM. On the other hand, a number of public policies, not directly linked to flood management, also influence the flood risks, (e.g., land policies, environmental conservations) and therefore, they should be taken into account as an important input to the process of flood management policy formulation. Such a plan should be assessed in terms of its impacts on flood risk, environment, and socio-economic situation. This tool will factor all these aspects in the process of formulating Basin Flood Management Plan.

(Rapid Assessment of Flood Damages)
Rapid Assessment of Flood Damages and Emergency Needs: In flood emergency response, assessment of the immediate needs of the affected communities and the requirements at the time of evacuation from high risk areas is essential to activate the local search & rescue teams, and organize external help from provincial or federal authorities, NGOs and other international agencies if the scale of the disaster exceeds local capacities. In the recovery process from the disaster, assessment of damages such as impact of the disaster on infrastructure like hospitals, bridges and roads should be undertaken to formulate the recovery plan to mobilize national and international support mechanism. This should be reflected in the future flood emergency management plans. It also should be reflected in the basin management plans by reexamining the appropriateness of the current plans. This tool will give guidance to conduct such assessment during and after flood.

(Urban Flood Management Issues)
Urban Flood Management Issues: Rapid urbanization in many parts of the world has resulted in increase of the flood risks in the areas. Main cause of urban flooding is the water generated from within the city is as a result of paving of the ground and large building areas. This is sometimes aggravated by the land subsidence caused by excess extraction of ground water to meet the increased demand for water due to urbanization. To alleviate these risks, structural and non structural measures should be taken such as land use management to secure and revive retarding function in the area, drainage system improvement, flood proofing techniques to

improve the resilience of structures, maintaining hygiene condition by supporting people in providing antiseptic and safe water resources, etc. This tool will address such risks and introduce the methodology for urban flood management.

(Adaptive Management Techniques)
Adaptive Management Techniques: In order to account for the lack of scientific certainty such as existing condition of the ecosystems, the impacts of human interventions on ecosystems, and climate variability and change, precautionary principles have been recommended in international agreements. Adaptive management has been widely recognized as the appropriate approach to deal with such scientific uncertainties, wherein, decisions are made as part of an ongoing science-based process. In the publication on Environmental Aspects of IFM, an adaptive management approach has been discussed briefly. Despite the wider acceptance of adaptive management approaches in principle, however, how this approach can be used in practice is yet to be established in many countries. It requires behavioural change between different institutions and organizations, since it calls for a willingness to experiment and accept occasional failures and allows for mid-course correction during implementation and operation flood management measures through regular monitoring. This tool will address such aspects with reference to flood management.

(Flood Reservoir Operations and Managed Flows)
Flood reservoir operations and managed flows: A change in the timing, frequency and magnitude of natural floods due to dams and reservoirs can have negative impacts on both terrestrial and aquatic habitats. The managed flood releases can help maintain natural ecological and morphological processes in a river, downstream flood plain wetland ecosystems and their dependent livelihoods, etc. Understanding and modeling these relationships is arguably one of the great challenges for reservoir operations. The decision on reservoir operations, setting the duration of the flow releases and the shape of the artificial flood hydrograph should form part of the project design and should be based on ecological requirements. This tool will address not only technical aspects of managed floods releases, but also how consensus building in conflict situations can be attempted.

(Environmental Assessment)
Environmental Assessment: In the publication on Environmental Aspects of IFM, emphasis has been put on environmental assessment not only at the project design and implementation level, but also on up-streaming it at the strategic level. At the same time, it is realized that environmental assessment should be applied not only to large projects which are subjected to the EIA is subject to, but also to various plans and projects that are likely to cause adverse impacts on the environment. Efforts must be made to avoid, reduce or mitigate the adverse impacts of such plans and projects under a given hydro-climate, topographical, and socio-economic settings in a basin. It is aimed at exploring the possibility of developing a tool for environmental assessment both at the project and strategic level with special reference to flood management.

During the next reporting period of Phase II, three tools out of the above will be taken up by Technical Support Unit of APFM for development. In addition with support from the expert group of Commission of Hydrology of WMO, development of guiding material on "flood forecasting" and "flood hazard mapping" will be started and these will be compiled as tools during phase II.

1.2 Support national and regional effort for capacity development

It is recognized that, according to the target audience, the way of presenting the IFM concept becomes different, since the knowledge and level of information of different stakeholders is diverse and different, ranging from policy makers and flood managers, to the general public and media. In order to enable effective stakeholder participation to be put in place toward IFM, the presentation material will be developed. It is planned to develop the following material:

1) Introductory power point slides on IFM and various aspects of IFM in general (to be published on the APFM website);

2) one-hour presentation material about IFM and various aspects of IFM for specific audiences (i.e., policy makers, flood managers, and the general public and media respectively); and
3) IFM training material for flood managers (for one or two weeks training courses).

1) and 2) will be developed during the next reporting period. Work will also start on 3). APFM will also explore experts and institutions that can develop, in close collaboration with APFM, technical aspects of the training material adopting IFM in a practical term. I-CHARM, UNESCO-IHE, IWLRI, IAHR, etc., are expected to be partners in developing such material.

At the same time, efforts will be made to co-organize training courses to be taken up in phase II. Some of the collaborating partnerships, which have been initiated during phase I and proposed to be consolidated, and new ones to be developed for the IFM advocacy and training are:

- JICA, IDI
- ADB
- CapNet, IWLearn, WBI, UNITAR and UNESCO-IHE
- UNESCO, ISDR and other UN System Agencies and Programs active in Flood Management
- ADPC, ADRC, PWRI (I-CHARM)
- International Red Cross and INBO
- IAHS, IAHR, ICID and ICOLD
- IWLRI and International Law Association

2. FIELD DEMONSTRATION PROJECTS

As described in the APFM Activity Plan for the years 2006-2009, two types of pilot projects would be considered: new pilot project in areas previously not developed under the umbrella of the APFM and outreach processes in follow up of project achievements of the first phase of the APFM. Some activities will require further provision of budget to be sought in Phase II

2.1 Follow up of pilot projects in phase I

In Phase II, one main line of activity related to pilot projects will be on maximizing the effects of regional and national outreach activities based on the results of the four pilot projects undertaken in APFM Phase I. This will require immediate attention in order not to loose momentum on the side of respective project partners in the countries. This will be undertaken during the reporting period of the phase II.

Community Approach to Flood Management: South Asia
After successfully developing and field testing the community approach to flood management in India, Bangladesh and Nepal on pilot scales, these experiences will be propagated to be multiplied in other countries through APFM website. These lessons are also utilized in training material for capacity building which will be developed in Phase II. APFM also continuously support their outreach process in multiplying community approach to flood management in each country by introducing the achievements to call for international support..

Central and Eastern Europe
The pilot project in Central and Eastern Europe has yielded a number of good practices for addressing the issue of flash floods taking a perspective on the information requirements of the local communities at risk of imminent flooding. The phenomenon of flash floods is common in CEE Region. Due to the fact that only three out of seven countries initially involved in the pilot project could be selected for implementation of the pilot project in the CEE second phase, it is expected to disseminate the results of the pilot project back to the whole region. This will include the publication of a synthesis report with the preliminary title “Flash flood forecasting and warning - Moving local community needs into the centre of information policies”. The regional workshop will be organized in the region to share the experience gained through pilot project in three countries.

Flood Management Strategy for the Lake Victoria Basin in Kenya
After the Strategy for Flood Management in Lake Victoria Basin was developed, Ministry of Water and Irrigation has started implementation of the strategy and JICA and World Bank are now in the process of developing implementing plan in the area. WMO has been cooperating such activities and continuously support Kenyan Government by collaborating in this implementation phase.

Central America – Sixaola basin
During Phase I, development of the pilot project in the Sixaola basin, which is shared between Costa Rica and Panama, has taken more time than anticipated. It has proved to be a time consuming process to incorporate the concept of IFM into the pilot project proposal in a transboundary river basin shared between two countries. The agreement on the scope of activities and the mode of implementation for IFM has finally been reached in March 2006. The pilot project will be taken up in Phase II. The pilot project will essentially make a joint flood risk assessment in the basin and propose a IFM strategy. The project also envisages designing a flood forecasting system.

2.2 New Pilot projects

In APFM Phase II, the activities and especially new pilot projects will require increased effort in raising extra-budgetary funds. In 2006-2007 project proposals for at least two new pilot projects will

be developed with the partners in the respective country/basin and submitted for funding to partly already identified financial partners. The two pilot projects are in Mexico and Niger basin as described below.

Mexico (Extra Budgetary)
The south of Mexico is regularly affected by floods. WMO over the past 10 years has in collaboration with CONAGUA (Mexico's National Water Administration), developed basic inputs for a flood management system, especially in the area of upgrading the hydrometeorological network and flood forecasting and warning capacities in the country. To make most effective use of these instruments in a wider strategy for Integrated Flood Management, it is intended to work with a group of required stakeholders within one of the southern river basins of Mexico. The project is planned to be started in 2007.

The main partner for the development and implementation of the project would be CONAGUA, which would serve also as primary financial partner. It is intended to actively involve institutions, especially the ones dealing with wider environmental issues as well as civil defence and planning. Together with required civil society inputs and based on the needs of flood-affected communities, the project intends to maximize the net benefits from flood plains and to minimize the loss of life from flooding. A WMO project office within CONAGUA has been established since 2006 for other ongoing projects in Mexico, which could also serve as project implementation office in Mexico for the APFM project.

Niger/Niger Basin (Extra Budgetary)
The city of Niamey in Niger and its surroundings are regularly suffering from a number of flood phenomena that hamper the development process of the country, while flood waters also represents an important water resource. Integrated Flood Management offers the city and the wider basin an opportunity to develop and implement flood management strategies that support the countries efforts for sustainable development. This particularly counts in the sense of providing a livelihood perspective when assessing flood management options, and consequentially also a careful look at the ecosystems that support the livelihoods of the local community. Initial steps may be required to establish the basic data and information about the flood problems and existing management approach.

Main partners would include the Niger Basin Authority and AGRHYMET. Other partners include relevant governmental and non-governmental stakeholders in particular the affected communities. APFM will support the formulation of a proposal for extra-budgetary funding and provide technical inputs into the implementation process or as supervising agency (depending on the scope of the project).

Beside organizing new pilot projects of APFM, APFM will provide technical support to countries in implementing flood management project that is funded by external agencies. One project is already identified under this scope in Bolivia as described below.

La Paz/Bolivia
The city of La Paz in Bolivia and particularly its mayor have expressed their interest in developing a flood management project for the Urban environment of La Paz. The proposal was submitted to the Government of Germany for funding to the extent of one million Euro, which was accepted. Local stakeholders in the city of La Paz, including the mayors office, as well as relevant line agencies, esp. civil defence, planning and environment and hydro-meteorological institutions will be the partners in the project. The Bolivian authorities have requested for technical support to the project. APFM will provide the required technical back-up for the implementation of the projects.

3. INFORMATION SERVICES

During the first phase, the APFM website was established as the central access point for information on flood management in order to:

- promote the IFM concepts;
- disseminate APFM activities in adopting IFM, such as field demonstration projects (i.e. pilot projects) and compilation of good practices and lessons learned from various regions of the world;
- facilitate a dialogue through a virtual forum
- provide for reference center on flood management (i.e. a set of databases); etc.

The APFM website will be continuously maintained and developed further to fulfill these purposes. In the next reporting period, databases will be updated and virtual forum will start taking up two topics. These activities also will serve as a vital source for the HelpDesk service to be developed during Phase II. The HelpDesk service is "*information network of 1) various disciplines and organizations that are involved in flood management and 2) flood-prone basins: which enables a country and community to identify required tools and guidelines in adopting IFM and capture flood issues looking at the basin scale within the country*". The APFM publication and activities and the GWP Toolbox are also included in the information network within the IFM HelpDesk through the APFM website. Beyond these services, the IFM HelpDesk would also provide governmental and non-governmental entities with advice on flood management policy, strategy and project formulation, and training courses conformed with the principles of IFM, as and when required.

4 ESTABLISHMENT OF LINKAGES AND COOPERATION WITH OTHER INITIATIVES

In phase II, APFM will continuously make efforts on strengthening its linkage of various disciplines, networking of capacity building activities and promoting international collaborative work such as IFI and UN Water. Under this concept, APFM will actively join international conferences, workshops, and meetings to propagate our activities, share the ideas and create and strengthen networks. Some of them that are scheduled in the next reporting period are listed below.

3rd International Symposium on Integrated Water Resources Management - Reducing The Vulnerability of Societies Against Water Related Risks at the Basin Scale
26-28 September 2006 in Ruhr-University Bochum, Germany
In 2006, the third symposium of the series will be hosted by the Ruhr-University in Bochum, Germany. It will address the very important subject of how to cope with water-related vulnerability of societies. This vulnerability relates to many aspects of water resources: environmental risks, floods, droughts, pollution, water logging and options to create resilience against these risks.

Innovations in Coping With Water and Climate Related Risks
25-27 September 2006 in Amsterdam, The Netherlands
The conference will be organised in Amsterdam in the main exhibition building. It runs parallel to the bi-annual Aquatech exhibition. The conference will offer an attractive mix of lectures and discussions between stakeholders of water and climate disciplines.

World Water Week in Stockholm
20-26 August 2006 in Stockholm, Sweden
The World Water Week in Stockholm is the leading annual global meeting place for capacity-building, partnership-building and follow-up on the implementation of international processes and programmes in water and development.

International Disaster Reduction Conference, IDRC Davos 2006
27 August–1 September 2006 in Davos, Switzerland
IDRC Davos 2006 will push forward the vision of WCDR 2005 and will deepen the understanding of what is needed to mainstream and integrate risk management across fields. IDRC Davos 2006 will focus attention of WCDR's priorities, while involving a wider group of risk management experts, practitioners, decision makers, and scientists with a strong emphasis on implementation at "the last mile".