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ASSOCIATED PROGRAMME ON FLOOD MANAGEMENT



ANNUAL REPORT (2010-2011)

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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, Switzerland and Italy.



The World Meteorological Organization (WMO) is a specialized agency of the United Nations. It coordinates the activities of the meteorological and hydrological services of 189 countries and territories and such is the centre of knowledge about weather, climate and water.



The Global Water Partnership (GWP) 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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LIST OF SUB MATERIALS

- I. Flood Management Policy Series
 - (a) IFM Concept Paper 3rd Edition (English, French, Spanish)
 - (b) Legal and Institutional Aspects of IFM (English, French, Spanish)
 - (c) Environmental Aspects of IFM (English, French, Spanish)
 - (d) Social Aspects and Stakeholder Involvement in IFM (English, French, Spanish)
 - (e) Economic Aspects of IFM (English)

- II. IFM Tools
 - (a) Formulating a Basin flood management plan
 - (b) Applying Environmental assessment for flood management
 - (c) Conducting Flood loss assessments
 - (d) Organizing community participation for flood management
 - (e) Reservoir operations and managed flows
 - (f) Urban flood risk management
 - (g) The role of land-use planning in flood management
 - (h) Risk sharing in flood management
 - (i) IFM as an adaptation tool for climate change
 - (j) IFM as an adaptation tool for climate change (case studies)**
 - (k) Flood emergency planning**
 - (l) Management of Sediment-related risks**
 - (m) Flood Proofing**
 - (n) Conservation and Restoration of Rivers and Floodplains**
 - (o) Flash Flood Management**
 - (p) Guidelines on Flood Mapping**

- III. National and Regional support activities
 - (a) Concept Paper: Integrated Flood Management and Capacity Building for Pakistan**

- IV. Training activities - Partnerships for the delivery of a comprehensive portfolio of capacity building measures
 - (a) APFM & Cap-Net collaborative capacity building programme
 - (b) Training Manual for Integrated Flood Management Policy Course**
 - (c) Community flood management course**
 - (d) Urban Flood Management Training Manual**
 - (e) Guidance on Water Supply and Sanitation in Extreme Weather Events**

- V. Dissemination of information
 - (a) Flood Management Reference Centre
 - (b) Newsletters (No.23, No.24, No.25)**
 - (c) Inventory of publications**

- VI. Linkage to other activities
 - (a) MoU between WMO and JICE
 - (b) Agreement between the FOEN and WMO

- VII. IFM HelpDesk
 - (a) HelpDesk for Integrated Flood Management (Concept Note)

**Bold materials above indicate those newly added or updated in this report.*

1. INTRODUCTION

The Associated Programme on Flood Management (APFM), a joint initiative of the World Meteorological Organization (WMO) and the Global Water Partnership (GWP), was established in order to promote the concept of Integrated Flood Management (IFM) and to help demonstrate the practical steps for putting the concept into practice. An IFM approach aims at maximizing the net benefits from flood plains and reducing loss of life due to flooding, flood vulnerability and risks, and at the same time preserving ecosystems within the overall framework of Integrated Water Resources Management (IWRM). It conceptualizes integration of land and water resources development activities in a river basin.

With its basic aims of sustainable development, through comprehensiveness of measures and strategies employed and the involvement of various stakeholders and disciplines, the IFM concept provides the rationale and means to shift away from the traditional ‘flood control’ approach that focuses on engineering measures. The aim of IFM can be realized only if flood management activities are undertaken within well-defined river basin flood management plans. The key elements that should be considered while preparing such plans are:

- River basin should form the planning unit.
- Risk management principles should guide the planning process.
- Multi-disciplinary and multi-sectoral perspectives need to be considered.
- All stakeholders should be engaged.
- Floods should be considered as part of the water cycle; and
- Equity and fairness in the development process are ensured.

During Phase I (August 2001- July 2006) of the APFM, the principles of Integrated Flood Management have been established through the IFM Concept Paper supported by the Flood Management Policy Series. The programme has conducted various regional and country demonstration projects, has collected and synthesized flood management case studies and established a website to offer a variety of information including various products and a set of databases on flood management. The outcomes of Phase I have been widely appreciated at various international conferences, workshops and meetings, which facilitated dialogue and involvement of institutions and individuals and start a global network to create the required knowledge base to support countries in their efforts to adopt IFM.

Phase II of the programme (2006-2010) was intended to consolidate these gains. It sought to develop capacities in the countries by supporting local and regional actions that advocate, support or demonstrate the IFM principles. This was supported by a combination of training and awareness building at various levels addressing flood management issues within the integrated water resources management. The advocacy for IFM has been achieved through capacity development, and providing long-term support in the form of Help Desk and information services. Major outputs of the programme were:

- Network of institutions supporting multidisciplinary approach;
- Training, awareness building and advocacy material;
- Capacity building through Trainings of Trainers, Regional Workshops and Seminars;
- Information services in form of a Reference Centre on Flood Management;
- Decision making Tools in support of IFM; and
- Strategic advice on flood management projects in form of a HelpDesk.

This report is also the first Annual Report of APFM Phase III, which documents the activities undertaken during the reporting period from 1 April 2010 to 31 March 2011. Most of the output materials are attached as sub-material in a separate CD-Rom. Phase III of the APFM started in April 2010 on tacit consensus with the AC/MC that Phase II was considered to have ended. Proposed activities of Phase III are contained in document 4. This report is also the first after staff of the TSU has significantly changed with Mr Daisuke Yamashita leaving the programme without replacement, and Ms Nga Eichrodt was employed part-time as programme secretary. Altogether, the loss of one full-time professional staff exerted significant work pressure on the remaining staff of the TSU to maintain engagements in various programme activities.



2. ACTIVITIES

2.1 FLOOD MANAGEMENT POLICY SERIES AND IFM TOOLS SERIES

Third Edition of Integrated Flood Management Concept Paper

The ‘*IFM Concept Paper*’ (Sub-material I(a)) was revised in 2009 in consideration of emerging issues, such as risk management, urbanization, climate variability and change, and adaptive management. In addition to its English, French and Spanish editions, Russian translation is currently being prepared with the support of the Moscow State University of Environmental Engineering and scheduled to be published in 2012. The Moscow State University of Environmental Engineering has been in the past cooperating with APFM for the Russian translation of the 2nd edition of the Concept Paper. The editions of other languages, such as Japanese and Chinese, are also planned. Regarding the translation in Chinese, full use should be made of the GWP offer at last year’s AC/MC meeting to perform the translation through the GWP Chinese chapter.

Flood Management Policy Series

The ‘*Flood Management Policy Series*’ has been established within the framework of the APFM. The series comprises of publications on various aspects of flood management policy, including legal and institutional, environmental, social, as well as economic aspects to facilitate the implementation of IFM principles into the development planning practice of river basins (Sub-material I(b), I(c), I(d) and I(e)). The series of publications have been translated into various languages as shown below;

- Legal and Institutional Aspects of IFM (En, Fr, Sp)
- Environmental Aspects of IFM (En, Fr, Sp)
- Social Aspects and Stakeholder Involvement in IFM (En, Fr, Sp)
- Economic Aspects of IFM (En)

These publications have been translated into several additional languages, based on interest from partners. Those translations are generally undertaken through a License Agreement without resource inputs from the APFM. Currently the following translations are in progress or completed:

- Legal and Institutional Aspects of IFM → Japanese (complete), Serbian (complete)
- Environmental Aspects of IFM → Japanese (complete)
- Other Flood Management Policy Series volumes → Japanese (planned)

Revision of “Economic Aspects of IFM”, which has so far not been translated in any other languages, is currently being revised to possibly enrich it for a second edition. A first round of comments on the existing version has been provided, and will be considered for further action.

IFM Tools Series

During the process of compiling policy series papers, requirement of several tools to implement the concept of IFM in the field were identified. Along with the issued tools (Sub-material II(a) - II(i)), a new inventory of IFM Tools has been prepared (Sub-material II(j) - II(p)). IFM Tools are guiding materials for flood management practitioners for various specific purposes, e.g. flood mapping, basin flood management planning, floodplain zoning and land use planning, flood loss assessment, flood forecasting and warning, environmental assessment, flood insurance and other burden sharing schemes etc. Those tools are intended to provide substantive guidance to the practitioner and provide a clear perspective of how the different tools fit together for an integrated approach to flood management.



Different IFM Tools are being developed on a number of topics. Some of the tools provide an initial understanding of the issues while the others may provide detailed operational guidance. These would largely be based on outputs from the applied research undertaken in the field around the world and would help the reader attain the multidisciplinary perspective. The tools serve as a resource guide/material for practitioners and not as academic state of the art papers. Other discipline specific tools, already available, would also be included for completeness and comprehensiveness. These tools can be categorized as follows:

- Category A: Introductory notes that address the multi-disciplinary perspective to the tool
- Category B: Detailed notes, which provide the reader with basic understanding of the concepts and initial guidance on the issue to be able to participate in a multi-disciplinary discussion
- Category C: Detailed Methodologies and Guidance Materials

Three tools (Flood Emergency Planning, Management of Sediment-related risk, Case Studies on IFM as an adaptation to Climate Change) were finalized and published on the website during the reporting period (April 2010 to March 2011). Three other tools, which are “Flood Proofing,” “Conservation and Restoration of Rivers and Floodplains” and “Flash Flood Management” were developed in the same period. These were developed by TSU staff or by outside experts including universities and institutes. These tools are based on assessing readily available literature, and drawing findings from relevant works into the contents wherever possible. References used are mostly available on the Internet and hyperlinks are provided in the “References” section. This approach corresponds to the needs of practitioners that may be confronted with immediate tasks such as flood loss assessment for easy access to relevant guidance materials. All these tools are branded as the “IFM Tools Series”, and are disseminated on the APFM website. As the “Flood IFM Tools Series” is not planned to undergo extensive linguistic editing, it would be given a distinctive branding that distinguishes the tools series from the “Flood Management Policy Series”. These tools would be living documents and would be updated based on experience sharing.

2.1.1. Flood Proofing (being currently finalized)

Implementing large-scale flood control projects, such as dams, levees and diversions are getting difficult because of limited budget in public sectors and increasing environmental and social concerns about the negative impacts of those projects. Those flood control measures cannot perfectly prevent flood disasters if they do not perform to their design levels due to poor maintenance or if the actual flood exceeds the expected flood level. Furthermore climate change, especially change of rainfall patterns and intensity, is projected to increase vulnerabilities and chances of flood disasters in the future.

In order to overcome the above-mentioned challenges, comprehensive flood control measures based on the Integrated Flood Management (IFM) concept are necessary. The governments need to rely more on non-structural measures of regulations and incentive mechanisms in addition to conventional large-scale flood prevention measures, while residents and communities need to make more individual efforts on flood proofing of their properties.

This tool aims to provide various options of flood proofing measures that are not limited to structural measures of building protection with a target of practitioners responsible for flood management. The tool covers two purposes of flood management: flood resistance and flood resilience. The flood resistance keeps out flood water to prevent flood damages, and the flood resilience minimizes the impacts of flood once flood occurs.

The tool has been developed by TSU, and is currently being finalized for publication. The current version of the Tool is attached as Sub-material II (m).

2.1.2. Conservation and Restoration of Rivers and Floodplains (being currently finalized)

Traditional flood management has been concerned primarily with providing flood protection to farmers, urban dwellings and industry. The concept of draining water as quickly as possible downstream has been



ingrained in flood management policies for decades. The visible result of such policy are rivers that have been transformed into straight channels, without active floodplain, and without taking advantage of the natural morphology of rivers and the services that well functioning ecosystems provide for livelihood. The effects of such single purpose interventions in the river system include reduced ground water recharge, a loss of habitat for the species dependent on diversified aquatic environment, reduced in-stream storage and loss of ecosystem services. Social and economic values change in the course of development, so once the above effects become evident, e.g. after a phase of rapid growth, the floodplain communities demand not only flood control but also a healthy, livable, and scenic river environment. Reserving parts of the floodplain as active flood storage, as well as river restoration projects, has received a lot of local support in such situations.

While the value to biodiversity, scenery and local tourism of such projects is undisputed, flood management practitioners have been struggling to separate facts and fiction in the public debate about the particular type and magnitude of different ecosystem services, especially those pertaining to the effect of different river/wetland restoration options on flood peaks. Experience has shown that retaining or restoring at least some of the natural structure and function of rivers and floodplains, and the wetlands associated with them, can be of great value in flood management programs, offering cost-effective solutions to some of the flooding problems, and also generating significant environmental, social and aesthetic benefits. Successful conservation and restoration projects serving multiple objectives are planned and designed with a broad set of stakeholders. The tool would assist practitioners through:

- Reviewing and describing options for conservation and restoration of rivers and floodplains that can potentially assist flood management practitioners in addressing various flood management objectives, such as reduction in peak flows and/or volumes, detention of flood peaks, retention of floodwaters and recharge of groundwater;
- Providing an overview of current practices that could help flood management practitioners in identifying and establishing the values of ecosystem services generated under different conservation, restoration and flood management scenarios;
- Providing ample reference to successful river and floodplain conservation and restoration projects that have helped in achieving flood management objectives or vice versa, and
- Providing examples of structures for the successful decision making processes and the tools and information required for integrating solutions across different objectives.

The tool was developed by Dr Robert McInnes, task lead within the Ramsar Convention's Scientific and Technical Review Panel for the development of guidance related to management and restoration of urban wetlands. The tool is now in an advanced stage of drafting, and will just need minor additions before being finalized. According to the decisions taken at the last AC/MC meeting, once finalized the tool will be circulated for further comments and inputs to WWF and IUCN by GWP. The current version of the Tool is attached as Sub-material II (n).

2.1.3. Flash Flood Management (1st phase editing stage)

Flash floods are difficult to be managed only by traditional flood management measures because, compared with riverine floods, flash floods can cause rapid water level rise and high velocity flow sometimes combined with mudflow. In addition, flash floods occur at local scale, which makes flash flood forecasting difficult both in terms of location and magnitude of the event.

This tool introduces possibilities of non-structural measures which can reduce risks of flash floods. Flood forecasting and warning are expected to play an important role in flash flood management though there are difficulties to provide accurate and timely warnings. In order to deal with these difficulties an increased cooperation between National Meteorological and Hydrological Services (NMHSs) and local agencies and communities are essential. High resolution diagnostic tools such as the Flash Flood Guidance System developed by the Hydrologic Research Centre (HRC) in cooperation with US National Weather Service provides highly useful warning information.

Spatial planning and flood proofing can also reduce risk of exposures. These require flood hazard mapping to access the risk of flash floods and proper legal framework to integrate flood management planning and spatial planning.

In order to reduce damages caused by flash floods, reducing vulnerabilities is also important component of flash flood management. Participatory approach can identify areas at risk, facilitate the finding of acceptable solutions, increase the knowledge and awareness about flood risk and encourage the acceptance of the proposed solutions by the local populations. Measures to reach the target groups at local level determine the degree of effectiveness to minimize exposure and vulnerability towards flash floods. These include choosing most suitable, locally applicable methods to manage flash flood risks.

Removing difficulties in local participatory approach requires following steps in the planning. Before tackling on planning process, local preparedness should be evaluated and if it is not sufficient local community should be educated through appropriate materials. Flash flood management team should consist of all stakeholders in flood affected area and the team should be opened to all members to raise opinions. Relevant flash flood guidance and forecasts are essential to evoke efficient response. As response times are usually very short as compared to riverine floods, many of the flash flood management efforts are related to preparedness, minimizing exposure risks of damages and pre-determined actions - including evacuation drills – to quickly respond to a potentially dangerous situation. The current version of the Tool is attached as Sub-material II (o).

2.1.4. Guidelines on Flood Mapping (under finalization)

Flood Maps are tools to visually organize the flood information for decision makers and the public. They form the basis for developing flood risk scenarios based on various climate conditions, development alternatives, and social and economic conditions. In addition to the general objective of a flood map, special uses like tools for evacuation routes may be of utmost importance in case of tsunamis and floods in large flatlands. Some other functions of flood maps are (non-inclusive):

- Regulatory: Land use regulations and building codes
- Planning: Impacts of urbanization, other land uses and climate change
- Rescue Operations: Building shelters and earmarking escape routes
- Flood Insurance
- Vulnerability Index
- Informational/Educational: record of flood magnitudes in an area

The decision making process does not end with the preparation of flood maps, which constitutes only the first necessary step. The information regarding the risks needs to be communicated to the planners, flood managers and the public at large. Flood maps may be developed following various methodologies, but the final product should contain adequate information for decision-making.

Two “Expert Group Meeting on the preparation of Guidelines on Flood Mapping” were held, respectively in April 2008 and in December 2009. The meetings achieved their objectives in clarifying on the structure and major contents of the final product and agreeing on the finalization schedule.

Following the second expert group meeting and in the current reporting period, contributions were received from all experts and compiled in an unedited draft. An Editorial Board was setup to review the contributions and make the necessary adjustment before starting an external review process of the Guidelines. Once this done, an external technical editor, Dr Markus Zimmermann, has been contracted by FOEN to homogenize the different contributions and finalize the draft. At the date of reporting, 5 out of the 9 chapters of the Guidance can be considered finalized. Being this Manual also part of the WMO Quality Management Framework, it will undergo a process of peer-review. The Tool is scheduled to be completed and published by end of 2011. The current version of the Tool is attached as Sub-material II (p).



2.1.5. Transboundary aspects (in preparation)

As floods do not recognize borders, transboundary flood risk management is imperative in shared river basins, involving both Governments – as borders are involved – and their people – as risk is involved. However, transboundary flood management is not easy to implement, as joint monitoring, forecasting and early warning, coordinated risk assessment and joint planning of measures, and appropriate legal and institutional frameworks are all necessary. The tool on transboundary aspects of flood management will focus on common problems, objectives and approaches of flood management in transboundary basins, as well as a knowledge sharing in managing transboundary flood risks.

A large amount of materials has been collected for this tool in the reporting period, however compilation of the materials and drafting of the tools have not yet been undertaken. Preliminary discussions have taken place with SIWI to finalize this tool.

2.1.6. Update of existing tools (in process)

As the IFM Tool series is considered as a series of “living documents”, and considering the recommendation of the last AC/MC meeting, a process of review and update of existing tools published in the past years has been started. For this purpose, making use of available resources and expertises the TSU has started the revision of the tools “Conducting Flood loss assessments”, “Risk sharing in flood management”, “Applying Environmental Assessment for Flood Management”, and “Organizing Community Participation for Flood Management”. Moreover, the tool “Reservoir operations and managed flows” is being revised by the original author, who has submitted in April a Progress Report on the revision of the Tool.

2.2 NATIONAL AND REGIONAL SUPPORT ACTIVITIES

Supporting national and regional efforts in implementation of the IFM concept on the ground is one of the priorities of APFM. Such activities are categorized as;

1. Technical support activities to help initiating and promoting IFM in a country or region;
2. New field demonstration projects to show IFM on the ground; and
3. Continuous support for the pilot projects undertaken in APFM to enhance the outreach process of national and regional activities.

New field demonstration projects such as those undertaken in Phase I of the APFM were not conducted as the focus of Phase II had not been on demonstration projects but rather on support through capacity building, the tools series and the HelpDesk. This had been decided in light of the limited financial and human resources. However, one new activity was initiated at a preliminary stage in Pakistan, while at the same time seeking funds for its full implementation. Other field activities, for which further description is provided below, were explored in terms of feasibility in Ethiopia, Democratic People’s Republic of Korea, Democratic Republic of Congo, Moldova and Iowa State. Moreover, APFM provided technical support in other WMO ongoing projects, such as the ones going on in the Zambezi Basin, in Mauritania and in Mali.

2.2.1. Pakistan

Planning Commission of Pakistan jointly with Pakistan Water Partnership (PWP) and with support from APFM organized on 11 January 2011 in the Pak Secretariat a seminar titled "Integrated Flood Management and Integrated Drought Management for Pakistan". This seminar was attended by over 120 participants, including high representatives of the Planning Commission of Pakistan, PWP, Pakistan Meteorological Department (PMD), National Disaster Management Authority (NDMA), Federal Flood Commission, Water and Power Development Authority (WAPDA), Ministry of Security, provincial representatives of the



Planning Commission of Pakistan and regional Chief Engineers, as well as NGOs operating in Pakistan and donor agencies, such as Asian Development Bank and USAID.

Moreover, in addition to APFM Technical Support Unit staff, Dr Roberto Rudari from CIMA Research Foundation of Italy participated in his function as Support Base Partner to the HelpDesk on IFM. During this seminar consensus was reached on the need to face problems related to floods and droughts in the country, and the need to develop a strategy on Integrated Flood Management (IFM), as well as one on Integrated Drought Management (IDM), at the national level, under the overall coordination of the Planning Commission of Pakistan.

As a follow up of the seminar, a workshop was held from 12 to 16 January 2011 in Bhurban to discuss the main objectives of the strategies on IFM and IDM, and to draft two project documents at the national level (PC-I) and two concept notes for potential donors. The workshop was attended by a dozen of participants ranging from Planning Commission of Pakistan, PWP and PMD, as well as APFM and its Support Base Partner.

The draft documents produced have identified the various objectives to be covered in the framework of the development of IFM and IDM strategies for Pakistan, including the development of pilot projects on community based approach to flood management. The outcomes of the workshop were then recognized and endorsed by H.E. Nawab Mohammad Aslam Khan Raisani, Chief Minister Balochistan, who supported the findings of the workshop and offered to host the pilot projects in Beluchistan.

Funding is currently being sought from different institutional donors, including the Government of Germany and the Italian Ministry of Foreign Affairs.

The project document related to flood management, in the form used by the Planning Commission of Pakistan (PC-I), is attached as sub-material III (a)

2.2.2. Ethiopia

In the framework of the Regional Training Course on IFM in Bahir Dar (Amhara Region, Ethiopia), flood issues (mainly due to flash floods) in rural areas of the Tana Lake basin put into evidence the need for an integrated approach to flood management, especially involving community participation (both in the planning phase and in the response phase), the media and the health sector (for water supply and sanitation purposes), as often floods are the leading cause for outbreak of infectious diseases linked to pollution of groundwater and wells. At the same time, the Water Resource Development Bureau of the Amhara Region, in close collaboration with the Eastern Nile Technical Regional Office (ENTRO) and Addis Ababa University, has put in place a flood forecasting system for flash floods in the Tana Lake basin. This system utilizes the HEC-HMS model with input data on rainfall coming from weather forecasts. The reduced lag time of the basin (less than 3 hours) makes it impossible to have rainfall data transmitted manually from the upstream observing station, and in the absence of rainfall measures with real-time data transmission the forecasted rainfall data is the best possible solution to forecast flash floods. The results of the flood forecast are then transmitted to the Disaster Management and Food Security Sector, who, having established a network of trend-setters in the different villages and communities, will alert them to spread the message to the population to minimize loss of life. Development of low-cost options for rainfall measurement have been explored by APFM, while at the same providing support to the Ahmara Region authorities to seek WMO assistance.

2.2.3. Democratic People's Republic of Korea

Democratic People's Republic of Korea (DPRK) has suffered a number of floods and droughts in the recent year, which has resulted in food crisis in the country. As part of the Fact Finding Mission of WMO to the State Hydro-meteorological Administration, the flood management practices, particularly the flood forecasting and early warning system in the country was analyzed and a proposal prepared its improvement.



The concept of IFM was discussed with the Ministry of Land Environment Protection, who are responsible for flood management issues, who have shown interest in getting more exposure to the concept of IFM. A workshop at the planning level has been proposed.

2.2.4. Democratic Republic of Congo

A request from a local NGO received through the HelpDesk showed an important lack of organization in land use planning and community preparedness to flood issues in Kinshasa. A range of possible tools and solutions to fill the gaps were identified, ranging from community based flood management to activities aiming at increase flood awareness among the local population. However, lack of institutional support and limited availability of APFM materials in the French language didn't allow for the time being the implementation of any further activity.

2.2.5. Moldova

In October 2010 the APFM participated in a "Workshop on Disasters Risks: Learning from Flood Examples" held in Hincesti, Moldova. The Workshop was organized by the UNDP office in Moldova. Opening remarks and a presentation on "New Approach to flood Management" were made by the APFM representative. The UNDP started a project to help in the reconstruction of the hydraulic structures damaged during the flood of June 2010. In the framework of this project, it was recommended to organize a full course on IFM. Contacts need to be revived for the follow up of the project.

2.2.6. Iowa State

The Iowa State is currently adopting a holistic and comprehensive watershed approach to managing the water resources using principles that are similar to those of Integrated Water Resources Management (IWRM). From a request by the Cedar River Watershed Coalition received through the HelpDesk, it is evident that there is a need to upgrade and extend the IWRM principles to flood mitigation and preparedness strategies. A project proposal has been developed with the counterpart: this proposal aims at the development and implementation of an IFM strategic framework plan for Iowa, while at the same time it will constitute a pilot project for the implementation of IFM in a developed country.

2.2.7. Mali

In the framework of the ANADIA Mali project - flood component, a group of ten villages in the Segou region (central Mali) has been identified to conduct an analysis of the recent flood events and related damages (2007-2009 due to lack of usable data for a longer period). On the basis of the outcomes of the analysis, performed also using up-to-date maps obtained from satellite imagery, and in consultation with village dwellers and regional branches of state technical services (hydrology, meteorology, rural development,, forestry, civil protection, etc.), Village Plans for the Reduction of Flood Risk (PVRRI) are to be developed. As a result a diagnosis of risks and vulnerability is prepared and proposed interventions identified. Actions include those to be carried out directly by the community and those under the responsibility of state agencies. Among the most prominent causes of increased risk the lack of fallow period, the lack of maintenance of hydraulic works and unplanned urban and land development are identified.

On 3 May 2011 a workshop was organized in the premises of the Regional Hydrology Directorate in Segou to review the PVRRI so far developed in three of these villages, as well as the methodology for their development, and make recommendations for the follow up of the activities in the remaining seven villages and at a wider scale in Mali. The workshop was attended by about 30 representatives of the administration of the three villages involved in the PVRRI development, representatives of the regional and national technical services (hydrology, meteorology, agriculture, rural development, forestry, civil protection).

In light of the outcomes of the workshop, which endorsed the methodology for developing PVRRI, a revised work plan was established for the completion of the project. It includes the preparation of the remaining seven PVRRI, the inclusion of drought component in all PVRRI, the publication of the guidance on the preparation of base maps and the development of PVRRI, the launch of an analysis of the meteo-



climatological condition leading to flood events, the updating of the data bank containing flood and damages information and the extension of its coverage to the whole country, training at village level on PVRRI implementation, nation wide training events for sates services staff to promote the development of PVRRI in other areas, and the organization of a national workshop (tentatively in February or March 2012) to present the project outcomes to decision makers and donors.

2.2.8. Mauritania

On 1 and 2 July 2009 in Nouakchott (Mauritania) a national workshop was held on Integrated Flood Management (IFM) with the main goal to demonstrate the concept of IFM to the relevant state services, local administration and other stakeholders. The workshop had been organized following a request by the Permanent Representative of Mauritania with WMO as an element of a general strategy to improve national capacities to cope with flood events designed after extensive consultations between WMO and Mauritanian authorities. It also offered the opportunity to provide the first short course on IFM in French language as APFM capacity building activities. The workshop was attended by experts and officers of the Ministries of the Interior and of Infrastructure and Transport, members of the National Crisis Commissions, parliamentarian and local administrators of flood prone areas, representatives of the various relevant technical State services as well as of UN Systems and NGOs. As a follow up to the workshop, a project document has been developed to implement demonstration projects on IFM in selected areas in the countries, notably Tintâne and the catchments of Gorgol, Ghorfa and Niordé rivers. The focus will be on improved flood forecast through the integration of meteorological and climatological information and on strengthening the response capacity of the local communities. The project proposal for flood forecasting and management in Mauritania, developed by an external WMO consultant, has been reviewed by the TSU, keeping it in tracks with the IFM concept. APFM will provide technical supervision when requested. Once the project proposal will be accepted by local authorities, funding will have to be secured from external resources. During the reporting period, no further development of this project has to be reported.

2.2.9. Uganda

Following a request from the Directorate of Water Resources Management received in March 2010, APFM prepared a project digest to organize a national training course on IFM in Uganda. The training will be finalized to the development of a proposal for implementation of IFM at the national level, to be presented during a high level session to the local authorities. The project digest was proposed to the requesting counterpart, and discussed in order to determine the best time period to hold the training course. Due to the closure of the financial year the training has been postponed to 2011 (still to be confirmed). APFM is currently coordinating with the WMO Basic System in Hydrology Division to secure successful implementation of the activity.

2.2.10. Zambezi Basin

WMO in collaboration with USAID/OFDA developed a Strategy for Flood Forecasting and Early Warning in the Zambezi Basin. The proposed project is intended to assess the capacity for flood forecasting and early warning in the countries in the Zambezi River Basin and particularly in the Zambezi Basin area and to formulate a strategy for flood early warning. The project is to be implemented through five main activity areas including, 1) regional consultation meeting, 2) national consultations, 3) basin-wide meetings of riparian hydrometeorological and disaster management organizations, 4) implementation of a demonstration project on flood forecasting system, and 5) analysis, recommendation and proposal for Basin-wide Flood Early Warning Strategy. The regional consultation meeting was organized as the first activity of the project from 1 to 3 December 2009 at Maputo, Mozambique. The main objectives of the meeting were to bring together all interested parties to agree on a framework for flood forecasting and early warning system for the Zambezi Basin, to gather necessary information from the countries in the Zambezi Basin to support the development of the Flood Forecasting and Early Warning Strategy in the Zambezi basin and to agree on the implementation of the Demonstration Project. Based on the discussions at the meeting a regional consensus on development of a flood forecasting and early warning system for the Zambezi Basin was achieved. The



process for confidence building among countries in the Zambezi River Basin for real-time sharing of flood information was initiated. A road map for activities to be implemented under the project until December 2010 (and tentatively up to 2012) was established.

During the past one year, preparations for carrying out national consultations have been made. Project focal points and their alternates have been identified in each of the participating countries; three international consultants who will lead consultation teams, including the Team leader, have been appointed by USAID/OFDA in collaboration with WMO; and the work plan for activities to be undertaken up to December 2011 has been updated.

2.3 CAPACITY BUILDING

For the implementation of IFM in the field, capacity building of stakeholders is essential. Capacity building is undertaken at various levels and the contents and the applied methodologies differ accordingly. During the Phase I of APFM, policy series papers have been developed to enhance knowledge that will be required for flood management. In APFM Phase II major emphasis is placed on capacity building. Training courses and materials have been prepared for a *portfolio of capacity building measures on IFM*, and are then adapted on an ad-hoc basis to the specific needs of every training event. Progress during the reporting period is described in the section below:

2.3.1. Partnerships for the delivery of a comprehensive portfolio of capacity building measures

Extended vocational training (in-service) together with Cap-Net

It is recognized that the first line of action in matters of capacity building should be aimed at the professionals. These are water resources and flood managers (e.g. river engineers), planners and policy makers in the areas of water system management, land-use, infrastructure, and urban drainage and spatial planning. Therefore the first element of the portfolio of capacity building measures in the APFM is targeted towards extended vocational training of in-service policy makers as well as flood and water resources managers.

Cap-Net has been identified as one of natural partners for capacity building, for jointly developing and implementing training courses. The knowledge and experience gained in implementing the APFM combined with considerable experience and financial support capacity of Cap-Net in support of capacity building for Integrated Water Resources Management with its network of capacity building institutions have proven to be strong assets in pursuit of the joint work programme of both institutions since 2007. The document is attached as Sub-material IV (a). Development of Training Material in the framework of collaboration with Cap-Net is being undertaken on three topics for different target groups, namely

- Water/flood managers or policy makers at national level (*IFM Policy Course*)
A modular course of three to five days has been created, including the Lesson Plans, PowerPoint presentation, group exercises, and video material. The Flood Management Policy Series serves as the main background reading material. For each specific course a number of local case studies are being prepared. A team of experts in South East Asia has started to compile those materials in 2009 for a consolidated regional training package to be published jointly with Cap-Net and others. Based on this development the final consolidation of the global training materials is being prepared by the TSU and Cap-Net. The final draft, currently with Cap-Net, will soon be submitted to linguistic editing, layout and design.

The final draft of the Training Manual is attached as Sub-material IV (b).

- National NGOs active in community outreach projects in water or disaster management, and subsequently district/municipal level authorities as well as community leadership in flood prone areas, particularly rural areas. (*Community flood management course*). Under this component it is envisioned to develop training course and materials suitable for adaptation to varied community



realities related to the kind of water hazards occurring, as well as the local economic and social structure. Content of the material will focus on the establishment of local flood management cells or committees (CFMCs), responsible among others for community needs and capability assessment, flood awareness raising, flood management operations on the local level (flood preparedness, emergency response and rehabilitation), planning and interfacing with respective government institutions, etc. During the reporting period efforts were undertaken to engage the Bangladesh Centre for Advanced Studies (BCAS) to serve as a partner in reshaping the materials already available from the APFM Regional Pilot Project on the “Community Approach to Flood Management” and shape it into a baseline training material that could be adapted to local circumstances. BCAS has prepared a complete set of training materials, such as Manual for community based flood management, Operational guide for trainers, and Training illustrations. After reviewing and editing the drafts, the final training materials will be released during 2011.

The current version of the Manual is attached as Sub-material IV (c).

- Municipalities of urban agglomerations, in particular units responsible for urban drainage, spatial planning, as well as warning and emergency services (*Urban Flood Management course*): After translating the course materials on “Urban Flood Management” by Carlos Tucci from Spanish into English, a CD with the full contents was published jointly with Cap-Net. Moreover, a Training Manual similar to the one developed for the IFM Policy Course has been developed out of these course materials. The Manual, revised by the APFM TSU and edited by Cap-Net, is currently undergoing the design phase and should be ready in summer 2011.

The current version of the training manual is attached as Sub-material IV (d).

The advancement of collaboration with Cap-Net has further led to a request by Cap-Net for WMO/APFM to play an active role in a Cap-Net led capacity building initiative with the working title “IWRM as a tool for Adaptation to Climate Change- acting today; preparing for tomorrow”. APFM has responded positively in assisting Cap-Net to shape the contents particularly from a flood management point of view to promote IFM as an element of a climate change adaptation strategy, but also to serve as a hub to WMO climate-related divisions. As a result, a Training Manual and Facilitator’s Guide has been produced jointly. APFM is currently working with Cap-Net on the development of a self learning web-based tutorial on this publication; the tutorial’s contents are now almost finalized, and should soon undergo the editing and web-design phase. It is expected to have the tutorial finalized and operational by September 2011.

Revision of presentation materials

Following the different presentations held during trainings and workshops, and sharing experiences with former members of the TSU still active in advocating for IFM in their current positions, it was noted that the power point presentations of the modular course listed above are often too long, assembling under the same title many different sub-topics. This leads to an inevitable loss of attention from the audience after the first 20 minutes, with the risk of seriously compromising the effectiveness of the trainings.

It was therefore convened to start a revision and update of the available power point presentations, aiming at reducing their size by dividing them by sub-topic while, at the same time, respecting the original framework presented in the modular lesson plans developed with Cap-Net. The available power point presentations were therefore shared with Mr Makoto Hyodo, former TSU of the APFM, for a first assessment and exchange of views on how to maximize the impact of the presentation materials. This activity should be further followed up and finalized in the future months.

E-learning with Technical University of Hamburg-Harburg

While direct trainings through various mechanisms are considered the most effective means to build capacities for IFM in the field, the use of the Internet as a means of training dissemination is also considered an important component. It is recognized that providing the APFM’s outputs in a more accessible and didactically well-developed manner through web-based learning (or e-learning) options would greatly enhance the outreach of the programme. A list of available flood management e-learning offers is maintained



on the APFM website under “Capacity Building”. The E-Learning Systems for Flood Practitioners named “FLOWS – Living with Flood Risk in a Changing Climate” and “EU Flood Manager” developed at the Technical University of Hamburg-Harburg (TUHH) distinguish themselves from other projects as the philosophy is based on the IFM concepts. APFM and TUHH have been jointly upgrading the existing systems and incorporated the two systems into one, named “Flood Manager E-learning”. A section on the Integrated Flood Management Policy concept has been added and opened to the public in 2010. It was agreed that the e-learning platform would have been updated and strengthened on a regular basis, and a bulletin reporting the latest developments would have been issued by TUHH every six months. The hydrological part of the e-learning platform being possibly further developed, it was planned for APFM to revise and contribute to it in the next future (possible linking it with Comet activities). APFM will dedicate a page to the platform on its website, and the platform will also appear in the tools list in the HelpDesk. Regarding tool development, it was agreed to check the e-learning platform for consistency with the IFM Tools, and whenever possible the tools would be referenced in the platform (and vice-versa). Moreover, a long term plan for producing e-learning tutorials on the IFM tools was planned to be developed. It was also planned to revise an Urban Flood Management Manual developed by C22 Coast Group, edited by Taylor and Francis. Unfortunately, the untimely death of Prof. Pasche put on hold these activities until finalization of consultations with TUHH.

WHO/UNECE Guidance on Water Supply and Sanitation in Extreme Weather Events

In the framework of the activities of the Task Force on Extreme Weather Events (TFEWE), established under the Protocol on Water and Health to the UNECE Water Convention, and in cooperation with the WHO Office for Europe, it was decided to develop guidelines on water supply and sanitation in extreme weather events to support and assist Countries in developing adaptation and mitigation programmes. In extreme weather events protection of water supply and sanitation utilities and the continuity of health services appears to be crucial to protect population exposure to risks (direct impacts, infectious diseases) associated with climate change and variability. The development of guidelines aims to provide operational elements to support the management of administrative decisions, organization, operational skills and capacities to implement adaptation policies, strategies and coping capacities of the society and communities in this area. APFM was invited to join the drafting group, and contributed with a chapter on Basic Disaster Preparedness and Early Warning. The activities of the drafting group led to the finalization of the “Guidance on Water Supply and Sanitation in Extreme Weather Events”, which was endorsed by the Meeting of the Parties to the Protocol on Water and Health held in Bucharest in November 2010. The current version of the Guidance, which is currently undergoing editorial finalization in WHO Office for Europe, is attached as Sub-material IV (e)

World Bank Urban Flood Management Manual

APFM is collaborating with the World Bank in bringing out a Handbook on the Urban Flood Risk Management. D, CLW participates in the Advisory Board established for developing the Handbook along with other key experts to provide policy directions and provide guidance on refinements to make it more robust and usable. How APFM can further support the Urban Flood Risk initiative of WB is being discussed, and APFM is, at the time of reporting, revising the first draft of the Handbook.

2.3.2. Training activities

Training Course on Integrated Flood Management (IFM), Ethiopia, June 2010

The School of Civil and Water Resources Engineering of Bahir Dar University (based in the Amhara Region, near the Tana Lake) in association with WMO, Cap-Net and Nile IWRM-Net organized an international training on Integrated Flood Management (IFM) from 7 to 11 June 2010. This international training was held as a spin-off of the previous IFM training for the Nile Basin countries held in Nairobi from 23 to 27 November 2009.

The training was successfully held with the participation of both Ethiopian and 10 international participants from Burundi, Rwanda, Sudan, Tanzania, and Uganda. The Ethiopian participants included representatives of Bahir Dar and Addis Ababa Universities, as well as representatives of the Amhara Water Resource

Development Bureau, of the Disaster Management and Food Security Sector (MOARD), and of the Mass Media Agency.

Training workshop on Flood Risk Assessment, Istanbul, Turkey, September 2010

As part of the WMO European commission Directorate General for Enlargement funded programme on disaster risk reduction in South East Europe Activity 2, WMO organized this training workshop on hydrological data, databases, metadata, and mapping and analysis tools for flood risk assessment. The workshop, targeted at technical experts from the National Meteorological and Hydrological Services and from water resources management and land planning authority of the South Eastern European countries, had the purpose of familiarizing participants with different methodologies, tools, and infrastructures for flood hazard data collection, analysis and management and flood risk mapping policy to support flood risk assessment, in the broader context of Integrated Flood Management, multi-hazard risk assessment and disaster risk management. DHI and Euroaque Consortium assisted in the delivery of the workshop in their capacity of Support Based Partners.

The Fifth IFM Lecture at the JICA Training Course, Tokyo, October 2010

In the framework of the JICA Training Course on Comprehensive Management of River and Dam, an Integrated Flood Management (IFM) lecture was organized on 6 October 2010 at the JICA Tokyo Office in Japan. Six (6) participants from Asian countries, namely Indonesia, Iraq, Myanmar, Philippines, Syria and Vietnam, joined the lecture. The lecture covered the concept of IFM and the aspects presented under the Flood Management Policy Series, with an overlook on the latest outcomes of the APFM activities and the IFM HelpDesk.

The APFM has been making numerous efforts in capacity development activities and in the advocacy and dissemination of IFM principles through its pilot projects. During the lecture, it was highlighted that an IFM approach aims at maximizing the net benefits from the use of flood plains, therefore focusing not only on negative aspects of floods, but also on its positive aspects. To implement this approach, various aspects of IFM, such as legal and institutional, environmental, social, and economic ones should be taken into consideration, involving various stakeholders in decision-making processes. The participants of the lecture welcomed an IFM approach and expressed their interests in getting access to the IFM HelpDesk as the first step towards adopting IFM in their countries.

Training of Trainers' Workshop on Integrated Approach to Flash Flood and Flood Risk Management in the Himalayas, Kathmandu, October 2010

The International Centre for Integrated Mountain Development (ICIMOD, based in Kathmandu) in association with WMO (through its Associated Programme on Flood Management) organized an international training of trainers on integrated approach to flash flood and flood risk management in the Himalayan region. This training workshop has been developed as part of a collaborative capacity building programme "Integrated Flood Management for Sustainable Development" for flood-prone countries, river basins, and communities, with the aim of scaling-up action on integrated flood management to contribute to a minimization of losses of life from flooding and to an efficient use of flood plain resources.

The training was successfully held from 25 to 29 October 2010 with the participation of both Nepalese and international participants from Bangladesh, Bhutan, China, India and Pakistan. The Nepalese participants included representatives of ICIMOD, as well as representatives of Disaster Management Department, Universities and regional NGOs. The training workshop was instrumental in widening the network of experts on IFM in the Hindu Kush Himalayan Countries, while at the same time offering a first opportunity for the development of a strategic plan for the implementation of IFM in the region through national multi-stakeholder workshops in participating countries.

The workshop included a series of presentations from the participating countries. These presentations provided an overview on flood management issues (especially flash floods) in the different countries of the region, putting into evidence the need for an integrated approach to flood management, especially involving community participation (both in the planning phase and in the response phase), the media and the health



sector (for water supply and sanitation purposes), as often floods are the leading cause for outbreak of infectious diseases linked to pollution of groundwater and wells.

JICA Training on Capacity Development in Disaster Management in Thailand, Tokyo, November 2010

In the framework of a JICA project on Capacity Development in Disaster Management in Thailand, a presentation on Integrated Flood Management (IFM) was organized on 29 November 2010 in Tokyo, Japan. Twenty (20) high ranking governmental officials from Thailand participated in the IFM lecture. They belong to the Department of Disaster Prevention and Mitigation in Ministry of Interior, Ministry of Education, Royal Irrigation Department, and Thai Meteorological Department.

Because the participants were previously not directly involved in flood management activities, it was a new topic to understand the IFM concept and how to adopt IFM in Thailand. The importance of stakeholder involvement in decision making processes of flood management was recognized and the participants were informed how to access the IFM HelpDesk to get further information on IFM.

In the discussion, an important issue was raised by an official of the Department of Disaster Prevention, who has been in charge of water resources management. In Thailand, both flood and drought events occur in the same season. Even though an IFM approach is understandable in concept, from water resources management perspectives, it is not possible to keep the water storage level low in a reservoir. If the forecasted flood event does not occur, drought issues will become significant. It was understood in the discussion that this controversial situation has been making it difficult for flood managers and water resources managers to coordinate with each other in Thailand. The lecturer pointed out that under these circumstances flood and drought management has to be approached in an integrated manner. The participants agreed on the necessity for joint coordination on both flood and drought management issues.

JICA Training on Capacity Development in Disaster Management for Caribbean Islands, Tokyo, February 2011

In the framework of a JICA project on Caribbean Disaster Management, a presentation on IFM was organized by Makoto Hyodo, former TSU of the APFM, on 7 February 2011 at the headquarter of IDEA Consultants, Inc. in Tokyo, Japan. Three participants from Caribbean Islands joined the IFM lecture, from University of Guyana, Caribbean Institute for Meteorology & Hydrology in Barbados and Caribbean Disaster Emergency Management Agency (CDEMA) in Barbados.

The lecture introduced an IFM concept as a balanced approach to flood management, various aspects of IFM that should be addressed in decision-making processes, and activities of the APFM.

The participants recognized the importance of a balanced approach to flood management. Their interests among others are stakeholder involvement and institutional arrangements in decision-making processes in flood management.

Training for Trainers “Integrated Flood Management for Sustainable Development” in Mekong River Basin, Hanoi, April 2011

This training for trainers was developed by the World Meteorological Organization through its Associated Programme on Flood Management (APFM), Mekong River Commission (MRC) and Capacity Building for Integrated Water Resources Management (Cap-Net) as part of a collaborative capacity building programme “Integrated Flood Management for Sustainable Development” for flood-prone countries, river basins, cities and communities, with the aim of scaling-up action on integrated flood management to contribute to minimization of losses of life from flooding and to efficient use of flood plain resources.

The four-day course from 5 to 8 April 2011 in Hanoi, Vietnam was designed to familiarize participants with the concept of Integrated Flood Management and to prepare participants to identify possible paths of action towards implementation of the concept in their own field of work. The course aimed to provide participants an in-depth exposure to the social, economic, environmental and institutional dimensions of flood management and allow them to develop an integrated perspective on floods, floodplains and the development process in their own country.

The training was successfully held with the participation of policy makers, top and mid-level managers/professionals in water resources management, disaster management, land use management and spatial planning from Mekong River Basin countries, that is Cambodia, Lao PDR, Thailand and Vietnam. ADPC, Bangkok was also providing a lecture on community-based flood management. At the end of the training, participants reached the following conclusions of the training, such as to seek for ways to integrate Integrated Flood Management concept and practices in Flood Management and Mitigation Programme to create opportunities for training workshops at national levels making use of the national trainers, to establish knowledge network and platform on national levels and on the level of MRC in cooperation with WMO making use of the knowledge base of Cap-Net, and to establish National Flood Coordinators identified by MRC to become focal points for APFM-HelpDesk issues.

Uruguay

Following the several national training workshops on Integrated Flood Management for Uruguay, held up to May 2010 as a follow up of the workshop for Latin America organized in Lima, Peru, in 2008, the Faculty of Engineering of the Republic instituted in their syllabus a course on IFM. These courses are budget neutral to the APFM, being funded by the local University, and constitute an important first step in creating a solid scientific base for further development of IFM. Stronger contacts should be established to secure a continuous exchange of feedback and updates from and to the local University professors, to maximize the training opportunities offered by the creation of this training course tailored to the academic world, and to make full use of the available materials in Spanish language.

2.3.3. Alumni of APFM Workshop and Training

For the past four years, APFM organized or participated in 24 workshops and trainings on IFM-related topics. About 500 alumni were composed of different regions, such as Asia, Europe, South America, and Africa. The email addresses of those alumni were added to the list of APFM Newsletter subscription. A survey to assess the activities implemented by past alumni in the field of IFM after having received the training is under planning. It is also planned, in the framework of the communication strategy, to make use of social networks such as Facebook or LinkedIn to establish a platform where the alumni network could exchange information about their activities.



2.4 FLOOD MANAGEMENT REFERENCE CENTRE

Researchers, social scientists, hydrologists, engineers and development planners have been working over a number of years on various aspects of flood management. There is a wide number of research findings, good



practices and strategies. However, these activities have been carried out by the specialists in disciplinary isolation with little or no cross-disciplinary interactions. The result is that the available information tends to be confined to the realms of particular discipline without ready accessibility so essential for an interdisciplinary approach. The reference centre plays a vital role in establishing linkages among various disciplines, institutions, and actors involved in flood management. The Flood Management Reference Centre consists of three databases on Flood Management Institutions, Literature, Policy and Law. The databases are currently under a complete review to add additional materials especially in the light of the tools that had been developed. The number of entries and countries in each database, at the reporting time, is as follow:

	Number of countries	Number of entries
Institutions and Agencies involved in Flood Management	112 (112)	388 (388)
Literature on Flood Management	45 (45)	301 (263)
Flood Management Policy and Legislation	50 (50)	240 (232)

* The numbers in brackets are those reported for the annual report 2009-2010

Sub-material V (a) provides a detailed picture on the coverage of topics, regions and countries.

2.5 DISSEMINATION OF INFORMATION

2.5.1 Newsletter

APFM Newsletters have been published since June 2002 to disseminate APFM activities. The newsletter is disseminated both in PDF and html formats. The PDF version is loaded on the newsletters page of the APFM website. The HTML version is sent via email to subscribers of APFM newsletters (number of subscribers is approximately 1180 at the reporting time). The subscribers can also download the PDF version as a printable format. Detailed outcomes of events and conferences which APFM participates in or organizes can be obtained at the APFM website. During the reporting period three newsletters (No.23, 24, and 25) have been published (Sub-material V (b)).

2.5.2 Conferences

International Disaster and Risk Conference (IDRC), Davos, Switzerland, 30 May to 3 June 2010

APFM organized a special session on flash flood forecasting and management on 1st June 2010 during International Disaster and Risk Conference (IDRC) in Davos, Switzerland. IDRC Davos was convened to focus on the array of risks society is facing today and on effective strategies to manage and reduce these risks and disaster through knowledge and know-how exchange for the application of contemporary risk management strategies, tools and practical solutions. Flash floods are the most dangerous floods since they take a high toll on lives and have a high destructive potential. The Special Session provided an excellent platform for interaction and the exchange of good practices between decision makers and forecasters. The event was organized by APFM inviting the following speakers:

- Mr. Tokio Kusumi, the Mayor of Mitsuke-City, Japan for his keynote presentation on “Required duties for leaders at times of disaster”
- Mr. Rajesh Thapa from Nepal on “Integrated approach for flash flood prediction and management: A case study of Poiqu Bhotekosi Basin”
- Mr. Bruno Rudolf from Germany on “Flash floods: Current practice and new developments in quantitative precipitation forecasting”
- Mr. Konieczny Roman from Poland on “Flash flood management at the local level: to take control over the hazard”



- Mr. Wolfgang Grabs representing WMO on “Establishment of Flash Flood Guidance Systems – approach and implementation”

The discussion amongst speakers and the audience made it clear that effective decision making requires timely and accurate flash flood forecasting and guidance as well as local awareness of flash flood hazards. The participants recognized the existing gap between hydro-meteorological services issuing flash flood warnings and alerts and local decision makers who are expected to adequately respond to the warnings and alerts provided. The special session was well attended by a wide range of participants filling the session room almost to full capacity.

WaterAid strategic analysis workshop on Disaster Risk Reduction Sep 2010

APFM is supporting WaterAid in developing a Disaster Preparedness Strategy. Through intense discussions with WaterAid experts, a draft strategy was developed which was discussed in the internal brainstorming workshop in September 2010 in London where Director, CLW attended. The strategy is under finalization. Negotiations are on to provide support for regional training for staff and partner staff on DP issues, as well as providing technical input in the design of flood-proof watsan technologies.

JCOMM/CHY Coastal Inundation forecasting demonstration project (CIFDP) second steering group meeting, Geneva, Switzerland, 20-22 September 2010.

Recognizing the extreme vulnerability of coastal areas to storm surges and coastal inundation/flooding due to Tropical Cyclones, WMO has initiated, through the joint efforts of Tropical Cyclones Programme and the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) an integrated approach to storm surge, wave and flood forecasting that will underpin a strategy for building improved operational forecasts and warnings capability for coastal inundation that will be demonstrated in the JCOMM Coastal Inundation Forecasting Demonstration Project (CIFDP). During the meeting APFM presented good practices on flood mapping and on community flood management developed in Bangladesh. The CIFDP steering group discussed the necessary involvement of local institutions and communities in the CIFDP and agreed that the institutions should be involved in the Project at a national scale to ensure the long-term sustainability of the socio-economic benefits. The CIFDP steering group also noted the possibility to implement a series of pilot projects involving communities on the basis of the experience gained by APFM.

Flash Flood Risk Management Expert Group Meeting, Cairo, Egypt, 25-27 September 2010

UNESCO Cairo Office in joint Collaboration with UNESCO-HQ, ISESCO, ALECSO and G-WADI network organized the G-Wadi meeting on September 24, followed by an expert group meeting on Flash Flood Risk Management in Cairo Egypt during the period 25-27 September 2010. The meeting aimed at discussing and launching the G-Wadi Arabia, presenting case studies on Flash flood risk management in the Arab region with special focus on previous experience, problems, gaps and success stories, defining the structure of a training manual on Flash Flood Risk Management (curricula), to be applied in a Training of Trainers during 2011 with the involvement of partner institutions and experts and finally assigning tasks, responsibilities and timetable for the training manual preparation. APFM contributed via teleconference to the meeting, and channels were opened for further cooperation with UNESCO Cairo Office on the issue of flash floods.

16th Conference of the United Nations Framework Convention on Climate Change (COP 16), Cancun, Mexico. December 1 – 6, 2010

During the 16th Conference of the United Nations Framework Convention on Climate Change (COP 16), The National Water Commission of Mexico along with its partners organized Dialogs for Water and Climate Change in Cancun, Mexico. December 1 – 6, 2010. Director, CLW participated in the Panel on Floods and presented the role of Integrated Flood Management within climate change adaptation agenda, particularly under the given uncertainties associated with climate projections and their impacts on flood issues.



UNECE Core Group Meeting of the pilot projects on climate change adaptation in the water sector, Geneva, Switzerland, 15-16 February 2011

The programme of pilot projects on adaptation to climate change in transboundary basins under the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) started in 2010 with the aim to support countries (and specifically countries with economies in transition in Eastern Europe, Caucasus and Central Asia as well as in South-Eastern Europe) in their efforts to develop adaptation strategies and measures in transboundary basins, and to provide a forum for exchange of experience, good practices and lessons learnt regarding adaptation projects in different parts of the region. The pilot projects mainly focus on developing adaptation strategies which lay the ground for further action and only to a very limited extent, on the funding and implementation of the relevant measures. These pilot projects were planned to reflect the principles and implement the Guidance on Water and Adaptation to Climate Change, to the development of which APFM contributed in the past years. Having received an official request from UNECE to assist in the role of technical supervisors to the implementation of these pilot projects, APFM participated in the core group meeting to assess the progress made so far in the pilot projects, and to promote, in the framework of adaptation strategies to climate change, Integrated Flood Management as a no-regret measure of adaptation.

FLOODS 2010: A Dialogue to transform devastation to opportunity, Islamabad, Pakistan, 16-17 February 2011

Realizing the need of transforming the devastating flood of 2010 in Pakistan to an opportunity for development and mapping a strategy to manage future disasters, Higher Education Commission (HEC) of Pakistan in collaboration with National University of Sciences and Technology (NUST) held a conference entitled Flood-2010: A Dialogue to Transform Devastation to Opportunity from 16-17 February, 2011.

The Conference primary focus was on flood management practices, identification of problems of flood warning systems, land use control measures, rehabilitation of farm lands & livestock, improvement in infrastructure design practices, indigenous economic & financial models for rehabilitation, role of international cooperation and assistance and suggestions of remedial techniques. APFM was invited to present at the conference, and suggested Dr Faisal Nadeem Saher from Planning Commission of Pakistan, previously trained at the workshop in Kathmandu in October 2010, as a presenter for the conference on behalf of APFM, providing him with a presentation of IFM and APFM activities.

Expert meeting on modelling, scenarios and vulnerability assessment for the pilot project on the Dniester «Reducing vulnerability to extreme floods and climate change in the Dniester basin», Bratislava, Slovakia, 2-4 March 2011

A small experts meeting in the framework of the UNECE Dniester III floods and climate project took place in Bratislava at the International Water Assessment Centre (IWAC). The meeting discussed and agreed upon a proposal for the scope, objectives and content of the vulnerability assessment, including joint modeling and scenario development by the two countries for the entire Dniester basin. The experiences of Slovakia and the Slovak Hydrometeorological Institute in particular served as a basis for the decisions. The meeting also prepared a proposal for the meeting of the working group on flood management and climate change adaptation, scheduled for 18 April 2011 in Chisinau, Republic of Moldova, and agreed on steps and responsibilities for its finalization. APFM contributed to the expert meeting via teleconference, stressing on the need of flood risk mapping and suggesting the implementation of additional elements of IFM such as community based flood management.

Preparatory Workshop on Science and Technology for the Global Platform for Disaster Risk Reduction Third Session, Pavia, Italy 5-6 April 2011

Following recommendations made at the Second Session of the Global Platform for Disaster Risk Reduction, in June 2009 by the ISDR Science and Technical Committee, a workshop was organized by ISDR in Pavia.



The workshop provided an opportunity to discuss both what remain in coordination and coherence of action, as well as leveraging existing mechanisms and endeavours to develop specific science and technical support to the implementation of the Hyogo Framework on a biennium basis, in preparation for the Global Platform Third Session. Purpose of the meeting was to:

1. Review progress and gaps and innovations in science and technology under the ISDR, based on different hazard risk reviews.
2. Identify Science and Technology (S&T) needs such as those emerging from the Global Assessment Report (GAR) and the Mid-Term Review of the Hyogo Framework
3. Engage a scoping discussion on global risk assessment methods and applicability.
4. Discuss longer term modalities for effective mechanisms for S&T under the ISDR

The workshop produced a report of proceedings for the Global Platform Third Session, outlining major progresses in science and technology, emerging areas of science and technical needs, proposals for advancing in particular the global risk assessment work and recommendations for strengthening science and technical work under the ISDR. APFM, through Dr Ruberto Rudari of the CIMA Foundation, contributed to the workshop presenting the wider WMO activity of the International Flood Initiative (IFI).

FLOOD-WISE Political Expert Forum Mühlberg, Germany, 6 April 2011

FLOOD-WISE is a European project whose aim is to improve integrated flood risk management across borders, following a river basin approach. By focusing on border areas, the project stimulates intensive cooperation between water management authorities across national or administrative borders. The aim is to do more than the required minimum coordination between Member States in international river basins as prescribed in the EU Flood Directive, article 8.2. On Wednesday 6th of April 2011 the first political expert forum of the FLOOD-WISE project was held in Mühlberg (Germany). The subject will be cross border flood risk assessment. The results of the inventory studies in each of the river basins covered by the project (Elbe, Sava, Meuse, Western Bug, Somes and Rur) and the lessons learned through transfer activities between river basins were presented and discussed with politicians and external stakeholders. APFM gave a plenary contribution as a reflection on the panel discussion at the end of the Political Expert Forum, to widen the scope of the FLOOD-WISE project with a more global perspective on flood management. Particular focus was put on the transboundary flood management aspects and specifically what APFM could offer in terms of good practices, pilot projects and papers on cross border cooperation issues. A linkage between the Reference Centre Database and the FLOOD-WISE/WISE-RTD database was proposed.

UNECE second workshop on water and adaptation to climate change in transboundary basins: challenges, progress and lessons learnt, Geneva, Switzerland, 12-13 April 2011

The second workshop on water and adaptation to climate change in transboundary basins took place on 12 and 13 April 2011 in the Palais des Nations in Geneva, back-to-back with the fourth meeting of the Task Force on Water and Climate (14 April 2011). The workshop was the second one organized on this theme in the framework of the UNECE Water Convention, within its platform for exchanging experience on adaptation to climate change in the transboundary context. It was built on the results of last year's workshop and illustrated recent developments in this area.

The workshop aimed to exchange practical experience and share lessons-learned on the technical and strategic aspects of adapting to climate change; identify best practices, success factors and lessons learnt; share experience between the pilot projects on adaptation to climate change in transboundary basins under the Water Convention as well as other similar initiatives; and support governments, organizations and joint bodies engaged in the process of preparing national or regional adaptation strategies.

APFM presented to the audience its activities, particularly focusing on flood management in the context of climate change.

11th International Disaster and Emergency Resilience (IDER) 2011, Florence, Italy, 12-14 April 2011

International Disaster and Emergency Resilience (IDER) is a conference, with exhibits, where best practices and solutions to ensure readiness for, response to, recovery from and resilience for disasters and major



emergencies are identified, implemented and shown. After its launch in 1997, It has also become an international network of emergency responders. Covering both human and natural disasters, IDER has explored the role of the media during disasters, training for preparedness, planning initiatives, disaster responder/emergency services interoperability and international standards and certification. As such, participation was crucial in establishing new contacts in this sector. Moreover, APFM presented a case study on community based flood management based on the experience of Bangladesh and India.

Global Platform for Disaster Risk Reduction (GPDRR) Third Session, 8-13 May 2011

A side event was organized by the World Bank and the Global Facility for Disaster Risk Reduction in partnership with the World Meteorological Organization/APFM and the Japan International Cooperation Agency titled “Cities and Flooding in the 21st Century – Trends, Impacts and Policy Implications”. Urban flooding is among the top development challenges facing city managers and policy-makers in developing countries worldwide. Extensive unplanned or poorly planned urbanization is a key driver. Climate change further aggravates these risks. The side event introduced the main recommendations and findings from the Handbook on Integrated Urban Flood Risk Management produced by the session organizers. Particular attention was given to lessons in harmonizing frameworks for disaster risk reduction and climate change adaptation at the local level.

2.5.3. Articles and outreach materials

JICE article in January 2011

Following the HelpDesk meeting in October 2010 where the promotion of HelpDesk was widely discussed, Japan Institute of Construction Engineering (JICE) published an article to introduce HelpDesk activities on its periodical “JICE Report No.18” in December 2010. Although the Report is only available in Japanese, it is released every half a year aiming at disseminating the current topics and the latest technologies on river, road and urban infrastructures. This article described the outline of APFM and HelpDesk activities and JICE’s contribution to APFM as a HelpDesk Support Base Partner. In the article, JICE also emphasized its intention to keep providing various technical supports through HelpDesk, assisting development of IFM Tool series, and promoting APFM and HelpDesk to the public.

Article on “Droughts, floods, water supply and sanitation: new challenges and developments” in Current Opinion in Environmental Sustainability (COSUST) journal

Current Opinion in Environmental Sustainability (COSUST) is a new journal published by Elsevier that aims to stimulate scientifically grounded, interdisciplinary, multi-scale debate and exchange of ideas. It contains concise and timely peer reviewed synthesis papers and reviews. Each issue aims to cover the latest advances and trends on the environmental dimensions of sustainability and provides the views of experts on recent literature, with particular emphasis on articles published in the past 2-3 years. APFM contributed to this paper focusing on “Challenges for policy makers in extreme events management”.

WMO folder “Partnerships in Weather, Climate and Water for Development”

Following the publication from WMO of a folder presenting the various activities and programmes of WMO in the form of “one-pagers”, APFM developed a one-pager presenting the concept of IFM and the APFM activities, to be included in the WMO folder. The text is currently undergoing editing, graphic design and layout, and should be distributed at the next WMO Congress General.

2.5.4. Website

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

- promote the IFM concept;
- 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;
- provide for reference centre on flood management (i.e. a set of databases).

The APFM website has been continuously updated to meet these objectives. All publications and materials produced so far, as well as the flood management reference centre, are made available on the website. On the other hand, because of limitations in human resources and outdated technology of the website, information about latest events is somehow lacking updating. Since the launch of APFM website in December 2004, the number of visitors has shown the upward trend. Several peaks of hits have been observed after major events such as international conferences and issue of new APFM newsletters. Despite a slight downward trend in the second half of 2010, the monthly mean of visits to the APFM website is again increasing. It has to be noted that the website management, together with the update of entries in the reference centre database, is the field of activity which has most suffered from the staff shortage. Moreover, it is planned to migrate the website to a new server for better performance. The migration will be coupled by a general restructuring and redesign of the website.

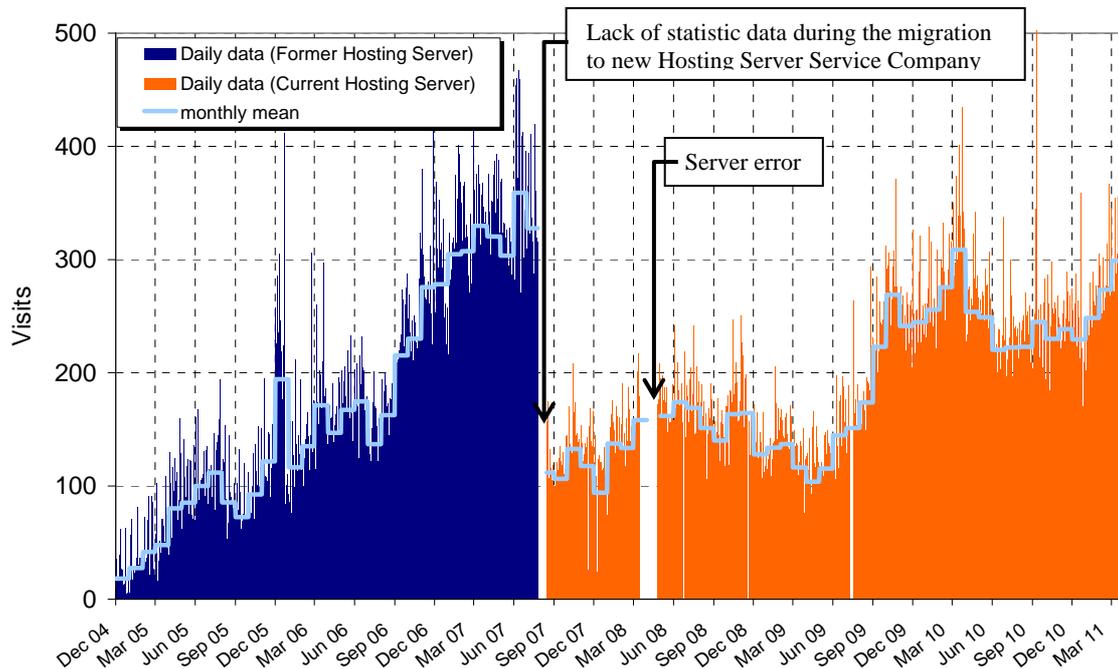


Figure 1: APFM Web Visits (from 1 December 2004 to 31 March 2011)

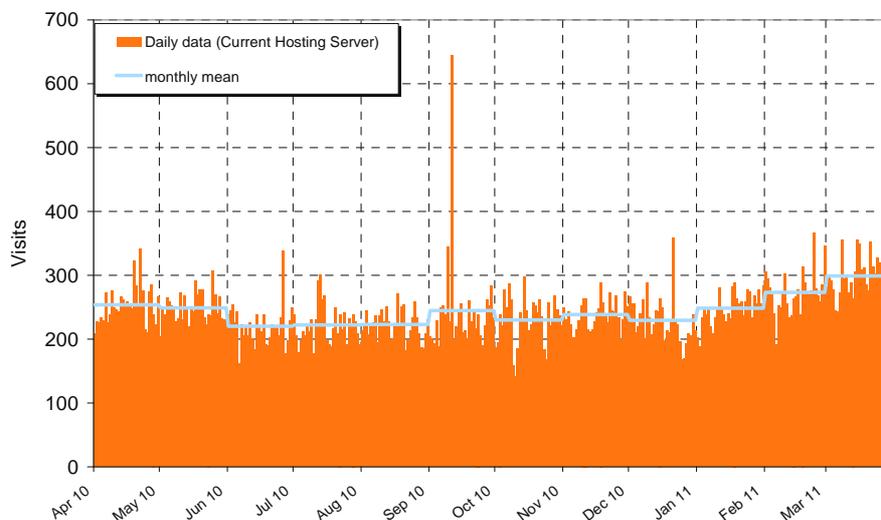
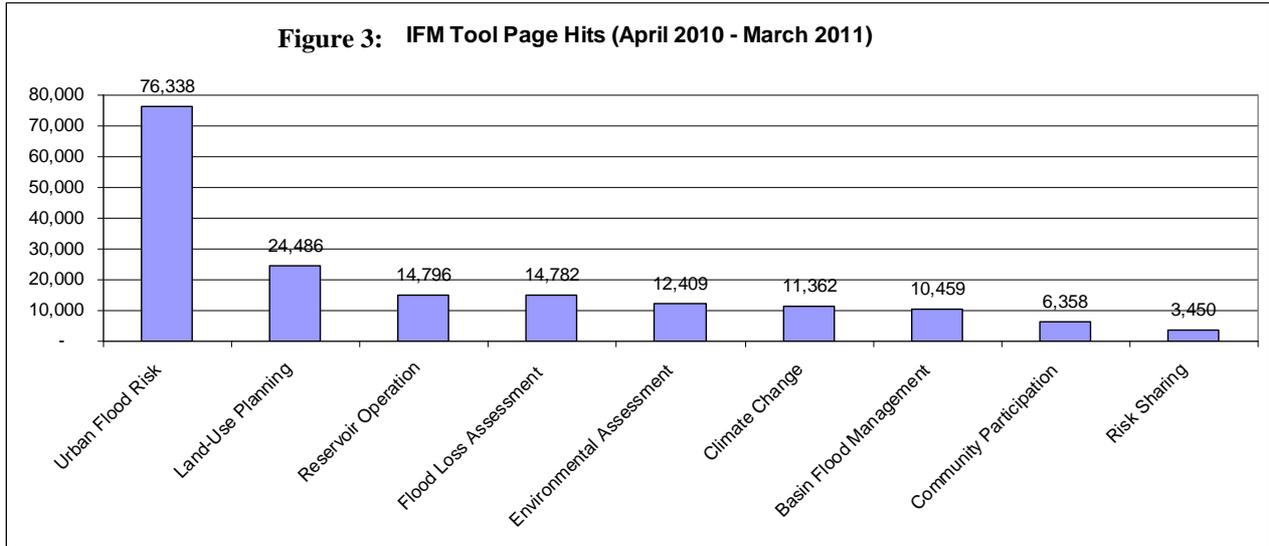


Figure 2: APFM Web Visits from 1 April 2010 to 31 March 2011

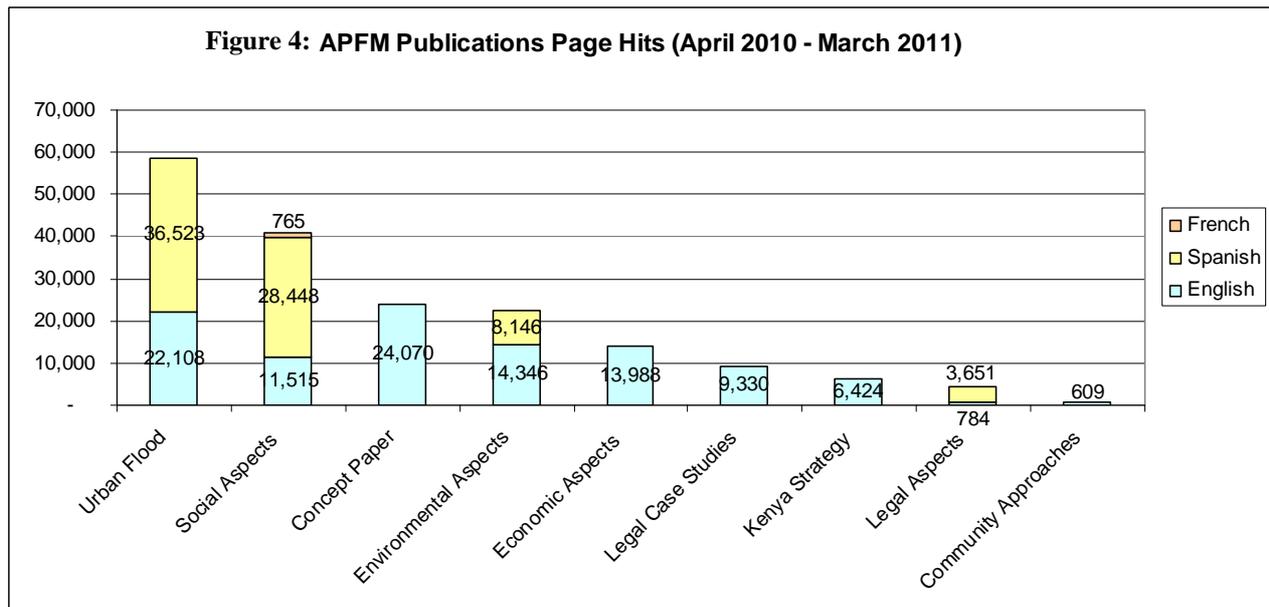


Usage of APFM Publications on Website

The number of web page hits for the past one year is summarized targeting nine IFM Tools which were published before April 2010 and posted on the APFM website during the whole period of this survey. According to the data, “Urban Flood Risk” Tool (2008) is by far the most read material followed by “Land-Use Planning” Tool (2007). These two Tools have a priority of revision if their contents become outdated and do not match socio-economic conditions in flood management. The recommendation from last year’s AC/MC meeting to develop a pop-up window to identify the downloaders for statistical purposes has not yet been implemented, due to the difficulties encountered in managing the current version of the website. The solution will be however implemented during the upcoming migration and restructuring of the website.



Regarding other APFM publications except IFM Tools, “Urban Flood” management manual and “Social Aspects” policy series are the most widely read materials. In addition to the original English edition, Spanish translations are also referenced by many readers; however other-language editions are hardly used.



2.5.5. Dissemination of publications

During the reporting period, publications were delivered and distributed upon request to NGOs and government organizations. French version and Spanish version of publications are under dispatch to French and Spanish speaking countries. At the international conferences or workshops these publications are also displayed, and requests from interested parties are collected and fulfilled upon return of TSU to the WMO headquarters. This reduces waste of resources both in terms of printed publications and in transport charges.. APFM CD which includes all APFM website contents is also distributed. The following table shows the number of countries, institutions, and copies dispatched since their publication.

	Number of countries	Number of institutions	Number of copies dispatched
Legal and Institutional Aspects of IFM (2006)	135 (134)*	438 (429)	1,352 (1,191)
Social Aspects and Stakeholder Involvement in IFM (2006)	136 (135)	446 (439)	1,379 (1,229)
Environmental Aspects of IFM (2006)	135 (134)	462 (455)	1,435 (1,315)
Economic Aspects of IFM (2007)	41 (37)	66 (61)	553 (438)

* the numbers in brackets are those reported for the annual report 2009-2010

A detailed inventory of the publications in stock has been done during the reporting period. The inventory list is available as sub-material V (c).

2.6 LINKAGE TO OTHER ACTIVITIES

2.6.1. JICE

The Japan Institute of Construction Engineering (JICE), a Japanese non-profit foundation, conducts comprehensive, effective research and development of new construction technologies with a view to improve construction engineering practices. One of their focus being flood management and water resources development including coastal management, WMO and JICE have recognized mutual interest in promoting integrated approaches to flood management, through cooperative activities in developing concepts and operational tools for implementation of IFM and thereby contribute to the prevention and mitigation of natural disasters. JICE has been working with WMO and supporting APFM based on comprehensive agreement signed on May 2007 and yearly agreements between the two parties that specify the activities and the contributions of resources for the activities (Sub-material VI (a)). Since then, valuable collaboration has been made between the JICE and WMO, particularly in the preparation of advocacy materials to disseminate IFM concepts to policy makers, flood managers, disaster management authorities, local administrations and NGOs and through translation of these materials into Japanese.

2.6.2. Swiss Federal Office for the Environment

The collaboration between the APFM and the Swiss Federal Office for the Environment (FOEN) has been substantially strengthened during the reporting period. FOEN has been working with WMO and supporting APFM based on comprehensive agreement signed on 16 July 2008 and yearly agreements between the two parties that specify the activities and the contributions of resources for the activities (Sub-material VI (b)). Being recognized that Switzerland has a long and successful experience in dealing with floods and other related natural hazards through an integrated and holistic approach, FOEN and WMO have mutual interests in promoting integrated approaches to flood management, through cooperative activities in order to: help



assimilate and implement the principle of IFM within Integrated Water Resources Management; provide guidance on flood-related issues to countries that want to adopt the IFM concept including formulation of flood management policies; facilitate technical inputs into flood management projects and programs implemented in the countries; and share experience in IFM implementation. The partnership is intended to strengthen the operations of the APFM in support of flood prone countries, both financially and technically. The scope of activities in the reporting periods includes development of IFM tools, implementation of the HelpDesk shown in the section 2.7, training and workshops in IFM, and expertise for activities such as guidelines on flood mapping.

2.6.3. UNECE Pilot Projects on Adaptation to Climate Change in the Water Sector

In the framework of the UNECE Pilot Projects on Climate Change adaptation in the water sector, WMO has been consulted to provide technical supervision and eventually provide trainings and assist in the development of an IFM strategy for the countries involved in the pilot projects. These include: Ukraine and Moldova (Dniestr project); Russia, Belarus and Lithuania (Neman); Slovenia, Croatia, Bosnia Herzegovina, Serbia (Sava).

The projects aim at reducing risks from climate change on hydrological extremes, with special focus on floods. Droughts will also be included whenever identified by the risk assessments. A main focus of the projects will be risk analysis, vulnerability assessment and mapping. The projects, which were launched in May 2010, are expected to be implemented during the next three years. In the long term, APFM is ready to deliver training courses and assist in the development of IFM strategies for the countries involved during the next period.

2.7 IFM HELP DESK

2.7.1. Outline of IFM Help Desk Concept

Responding to the need to facilitate implementation of the IFM approach at the field level, and the available capacities at the international level to provide competent, impartial and balanced guidance, and realizing the need for an international institution, which can be approached by a country requesting guidance on various aspects of integrated flood management, the Integrated Flood Management HelpDesk (IFM HelpDesk) was established in 2009. The IFM HelpDesk is a facility that provides guidance on flood management policy, strategy and institutional development related to flood issues to countries that want to adopt the IFM concept. It is based on close partnership with the country and tailored to their specific needs, with the aim of assisting in IFM implementation.

The IFM HelpDesk, hosted by WMO, is based on a multi-disciplinary network of institutions with required expertise in various facets of Integrated Flood Management. The IFM HelpDesk:

- Provides quick access to relevant flood management information;
- Provides guidance and momentum for reform in favour of IFM in countries or river basins in developing long-term flood management policies, strategies and institutional arrangements;
- Serves as a link between flood management practitioners and decision-makers and multi-disciplinary scientific expertise and best practice in various fields such as hydrology, river engineering, legal and institutional development, ecology, sociology and development economics.
- Provides a continuous and sustainable capacity development mechanism in support of IFM implementation.

The IFM HelpDesk is hosted in WMO but depends on a strong decentralized network of experts and specialized institutes (called Support Based Partners, or SBPs). This is necessary because integrated flood management depends on various inputs and Tools, excellence of which cannot be provided by one single

organization. The IFM HelpDesk functions in two modes: the autodidactic mode (Self Help) and the interactive mode (Get Help).

The target audience of the IFM HelpDesk includes the following groups:

- National, provincial and local government agencies involved in decision making charged with a role in flood management (policy makers, flood management practitioners, development planners, disaster managers, National Hydrological and Meteorological Services, etc.);
- River Basin Organizations;
- Bi- and Multi-lateral Organizations involved in Technical and Financial Cooperation;
- Non-Governmental Organizations, in particular those working with flood affected communities;
- Voluntary Organizations and Community-based Organizations ; and
- Universities.

Requests from the latter two groups would need to be considered in light of the institutional backup granting a possibility of follow up and implementation of planned activities, and the political environment in which proposals for intervention by the IFM HelpDesk are made.

2.7.2. Institutional arrangements and mechanism for the IFM HelpDesk

The TSU places emphasis on the establishment and consolidation of the support base of the IFM HelpDesk, namely, those partner institutions expected to actively support the operation of the IFM HelpDesk. This set of partners is derived from the expected needs under the IFM HelpDesk, as well as the experience made by TSU in collaborating with various partners throughout the project term of the APFM. The approach taken in establishing the support base is based on the recognition that a small group of partners that have proven to be in the position to effectively deliver together in IFM policy and implementation should be established first. Based on the operational capacity of the IFM HelpDesk after its launch, additional partners have been considered for integration into the IFM HelpDesk Support Base. The formal process of becoming an IFM HelpDesk Support Base Member consists of signing a “Letter of Engagement”. This instrument is designed to formalize to a certain degree the relationship between the APFM and the respective partner and to ensure a minimum contribution in-kind or otherwise to the IFM HelpDesk.

Sub-material VII (a) provides the IFM HelpDesk Framework Document and the (sample) Letter of Engagement. The current list of IFM HelpDesk Support Base Partners as of March 2011 is listed below:

SBP NAME	WMO REGION	DATE OF SIGNATURE	DURATION OF AGREEMENT
Asian Disaster Preparedness Center (ADPC)	II (Asia)	17/06/2009	4 years
CAP-NET/UNDP	I (Africa)	19/03/2009	4 years
Czech Hydrological Institute	VI (Europe)	19/06/2009	4 years
CIMA Foundation	VI (Europe)	05/02/2011	4 years
DELTARES	VI (Europe)	19/03/2009	4 years
DHI Group	VI (Europe)	18/08/2009	4 years
UNESCO Center for Water Law, Policy and Science – Dundee University	VI (Europe)	18/08/2009	4 years
Euro Aquae Consortium – Sophie Antipolis University	VI (Europe)	25/03/2009	4 years
Global Water Partnership	VI (Europe)	27/03/2009	Undetermined ¹
The International Association of	VI (Europe)	19/03/2009	4 years



Hydrological Science (IAHS)			
International Center for Water Hazard and Risk Management (ICHARM)	II (Asia)	21/03/2009	4 years
Japan Institute of Construction Engineering (JICE)	II (Asia)	09/12/2007	4 years
Japan Water Agency	II (Asia)	30/04/2010	4 years
Korea Water Forum	II (Asia)	19/06/2009	4 years
Korea Water Resources Association	II (Asia)	17/06/2009	4 years
The Stockholm International Water Institute (SIWI)	VI (Europe)	18/08/2008	4 years
Institute of River & Coastal Engineering at the Hamburg University of Technology (TUHH)	VI (Europe)	30/06/2009	4 years
United Nations Economic commission for Europe (UNECE)	VI (Europe)	13/09/2010	Undetermined ²
UNESCO-IHE Institute for Water Education	VI (Europe)	19/03/2009	4 years
UNITAR operational satellite applications programme "UNOSAT"	VI (Europe)	18/03/2009	4 years

Notes:

1. The GWP Letter of Engagement is not in APFM TSU archives. A similar letter in which GWP commits to support the HelpDesk signed 6 May 2009 is available; however, no duration of the support is indicated in the letter

2. Because of bureaucratically complications, not allowing them to sign the official Letter of Engagement, UNECE committed to support the HelpDesk through a letter from the director of the Water Convention. This letter does not specify the duration of the agreement.

Other potential partners, who expressed interest in the first phase after the launch of the HelpDesk, and which contribute on a non regular basis to the HelpDesk activities, include:

- AGRHYMET
- Australian Bureau of Meteorology (BoM)
- Centro de Estudios y Experimentacion de Obras Publicas (CEDEX)
- International Association of Hydraulic Research (IAHR)
- Institute for Water Resources US Army Corps of Engineers (USACE)
- Nile Basin Capacity Building Network (NBCBN)
- Ramsar Convention
- Regional Centre on Urban Water Management (RCUWM)
- UNISDR
- University of Idaho (in process)

Efforts would need to be made to broaden the linkages of the IFM HelpDesk to bi- and multilateral development agencies.

2.7.3. Operational Status of the IFM HelpDesk

Since the official launch of the IFM HelpDesk at the UN-ISDR Global Platform on Disaster Risk Reduction on 17 June 2009, the number of requests for "Get Help" part and the state of response is shown below. (Shaded requests have been received before this current reporting period.)



No.	Date received	Institution Country	Request Category	State of response	Status
1	06/2009	University of Benin Nigeria	Rapid Guidance	A request for training information. TSU provided training modules with necessary website.	Completed
2	06/2009	Progress and Business Foundation Poland	Rapid Guidance	A request for information on reservoir operation for flood control. TSU provided related IFM policy series and tool.	Completed
3	08/2009	Sao Carlos School of Engineering-University of Sao Paulo Brazil	Capacity Development	A request for the collaboration with the university. TSU proposed a training course/workshop, but no institutional counterpart to support the implementation could be found.	Discarded
4	10/2009	Ministry of Environment, Bayelsa State Nigeria	IFM policy, Law and Strategy	Responded to a question of the status on drainage plan in the Niger-Delta region was sent with necessary information for further HelpDesk assistance. However no institutional counterpart was found to support further implementation of an IFM strategy.	Discarded
5	09/2009	Nile Basin Capacity Building Network Egypt	Capacity Development	A ToT Workshop was held in November 2009 in Nairobi for the Nile Basin countries	Completed
6	09/2009	Council for Scientific and Industrial Research South Africa	Rapid Guidance	A request for information on flood risk research and electric platform. TSU provided capacity building resources available on the websites of WMO and others.	Completed
7	08/2009	ARPA Piemonte Italy	Capacity Development	A one day introduction to IFM was held in November 2009	Completed
8	12/2009	Global Water Partnership- Caribbean Trinidad & Tobago	Rapid Guidance	A question about HelpDesk scheme. TSU explained the process of requesting support from HelpDesk.	Completed
9	01/2010	Victoria Institute for Research on Environment and Development Kenya	Capacity Development	The organization of a training activity has been put on hold until resources have been mobilized.	Not implemented (lack of funding)
10	04/2010	University of Kerman Iran	Rapid Guidance	A request for articles on flood risk management. TSU provided IFM tools and data sources on APFM website.	Completed
11	08/2010	Water Resources Section, Planning Commission Pakistan	Capacity Development	A workshop on IFM concept and flood forecasting/warning was held January 2011.	Completed
12	08/2010	International Relief and Development, Inc., USAID Kabul Afghanistan	Rapid Guidance	A request for information on national flood policy. TSU provided policy-related resources available on the websites of APFM and others.	Completed



13	09/2010	International Centre for Integrated Mountain Development (ICIMOD) Nepal	Capacity Development	A ToT Workshop was held in October 2010 in Katmandu for the Hindu Kush Himalayan countries	Completed
14	10/2010	Cedar River Basin Coalition / Iowa University USA	Capacity Development	A request for a ToT workshop was received and further elaborated to draft a strategy for IFM at the state level	Work in progress
15	11/2010	RPM Engineers Sdn Bhd Malaysia	Rapid Guidance	A request for information on success stories on IFM and examples of countries which have implemented IFM strategies	Completed
16	01/2011	Regional Integrated Multi-Hazard Early Warning System – Thailand	Capacity Development	Synergy with the workshop held in MRC was proposed	?
17	01/2011	Save the Family – DRC	Rapid Guidance	A request for tools and publications in French was only partially satisfied (French translations were not available)	Completed
18	03/2011	ADEKUS University of Suriname – Suriname	Rapid Guidance	Request for informative materials (CDs and leaflets) for a training workshop	Completed
19	03/2011	Ecostudio srl – Italy	Rapid Guidance	Request on materials and tools on flash flood management in Eastern European countries	Completed

Besides the requests received through the HelpDesk, a series of other requests have been received by the TSU either through direct contacts from the requesting party, or through other WMO channels, as summarized in the following table:

Requests received by TSU members through direct contact					
No.	Date received	Institution Country	Request Category	State of response	Status
1	01/2010	University of Gezira Sudan	IFM Policy, Law and Strategy Capacity Development	A request to organize a training workshop was proposed for the development of national IFM implementation plan to be presented to high level policy makers. The request was not fulfilled due to the lack of an official counterpart to support implementation.	Discarded
2	02/2010	Directorate of Water Resources Management Uganda	IFM Policy, Law and Strategy Capacity Development	Workshop initially planned in 2010. Date postponed	On Hold
3	03/2010	JICA and JWA - Japan	Rapid Guidance Capacity Development	Annual training of IFM related issues. See 2.3.2 for details	Completed
4	03/2010	Bahir Dar University Ethiopia	IFM Policy, Law and Strategy Capacity Development	Workshop held in June 2010. Strategy to be developed.	Completed (training) On hold (strategy)
5	05/2010	UNECE / Sava River Basin Commission	IFM Policy, Law and Strategy	Workshop planned in 2012 (see 2.6.3 for details)	On hold

		(SRBC)	Capacity Development		
6	05/2010	UNECE and Zoi Environment Network	Capacity development	Workshop planned in 2012 (see 2.6.3 for details)	In process
7	08/2010	Mekong River Commission (MRC)	Capacity Development	Workshop was held in April 2011.	Completed
8	09/2010	UN-Habitat	Rapid Guidance	Support in terms of ideas and materials for the preparation of Stockholm Water Week 2011	Completed
9	10/2010	Japan International Cooperation Agency (JICA) Japan	Rapid Guidance Capacity Development	Annual training of IFM related issues. See 2.3.2 for details	In process
10	10/2010	Sino-Italian cooperation	IFM Policy, Law and Strategy	Possible cooperation was explored to implement IFM strategies in western China	On hold
11	02/2011	GWP-Caribbean	Capacity Development	Workshop to be held in the Caribbean. Date to be fixed.	In process
12	03/2011	UNESCO Cairo Office	Capacity Development	Training of Trainers workshop on Flash flood Risk Management in the Arab region	In process
13	04/2011	Global Water Fund	Rapid Guidance	Request for materials and electronic publications	Completed

Requests received by HelpDesk through other WMO departments					
No.	Date received	Institution Country	Request Category	State of response	Status
1	07/2009	Ministry of Energy and Water Afghanistan	IFM Policy, Law and Strategy	A request to develop a national IFM strategy and legal framework for implementation was received. The request was not fulfilled due to the lack of an official counterpart to support implementation.	Not implemented
2	07/2009	Permanent Representative of Mauritania with WMO Mauritania	Capacity development Technical supervision	See 2.2.8 for details	Completed (training) In process (tech. sup.)
3	01/2010	USAID/OFDA Zambezi basin	Technical supervision	See 2.2.10 for details	In process
4	02/2010	NHSs Argentina and Uruguay	Capacity Development	Workshops held in April and May 2010.	Completed
5	03/2010	International Federation of Red Cross and Red Crescent Societies (IFRC) SADC Region	Capacity Development	Request for a training workshop received, organization on hold due to internal problems in IFRC SADC region.	On hold
6	03/2010	Direction Nationale de l'Hydrologie (DNH) Mali	Technical supervision	See 2.2.7 for details	In process
7	07/2010	Ministry of Environment Czech Republic	Rapid Guidance	Request for guidance on biomass production in flood prone areas	Completed
8	08/2010	European Commission Directorate General for	Capacity Development	Workshop held in Istanbul in September 2010	Completed



		Enlargement			
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2.7.4. HelpDesk Support Base Partners meeting

The HelpDesk Support Base Partners (SBPs) Meeting, the first of its kind after the official launch of IFM HelpDesk in June 2009, was organized by WMO from 4 to 5 October 2010 in Geneva, Switzerland. Representatives of 10 SBPs (ADPC, Bureau of Meteorology of Australia, Cap-Net, DHI, EUROAQUA, GWP, IAHS, UNECE, UNESCO-IHE and UNOSAT) participated in the meeting, and five SBPs (ICHARM, JICE, JWA, MLIT and NBCBN) contributed through comments on the HelpDesk activities to the way forward, renewing their interest in the HelpDesk activities and their commitment. The main objectives of the meeting were to:

- Familiarize SBPs on the APFM activities and, in particular, review and analyze the HelpDesk functionalities, and
- Enhance the roles and functions of SBPs and improve active outreach processes to potential HelpDesk clients.

The meeting was organized in three main parts. In the first part, the Technical Support Unit of APFM reported on the APFM activities since the launch of the HelpDesk in June 2009, on the HelpDesk functions and results, and on the newly drafted HelpDesk Communication Strategy. During the second part, SBPs made presentations and gave comments on their support activities for the HelpDesk. Finally, the participants discussed how to improve the promotion of the HelpDesk, and how to increase the demand for the Get Help function, while further enhancing networking within HelpDesk users and SBPs.

As a follow up, it was decided to launch a survey to assess the different functionalities and expertises available among the wide range of SBPs. For that purpose, a first assessment was done on the basis of annexes to the Letter of Engagement already signed. However, because of other priorities the survey was not circulated among the SBPs, and the assessment has been put on hold.

2.8 FINANCIAL SUPPORT AND PERFORMANCE

The financial statement of the APFM Trust Fund with income and expenditure from April 2010 to March 2011 is summarized below.

2.8.1 Financial support

During the reporting period, CHF 255,340 was contributed by Japan and CHF 120,000 by Switzerland to APFM as a direct financial support. In addition, Switzerland, Italy and USAID contributed to APFM activities through in-kind support.

1 st instalment from Japan:	CHF 178,738 (JPY 14,000,000)	30 June 2010
2 nd instalment from Japan:	CHF 51,068 (JPY 4,000,000)	15 March 2011
3 rd instalment from Japan:	CHF 25,534 (JPY 2,000,000)	15 March 2011
(Total contribution from Japan)	CHF 255,340	
2 nd instalment from Switzerland for 2009-10	CHF 40,000	2 July 2010
1 st instalment from Switzerland:	CHF 80,000	11 January 2011
(Total contribution from Switzerland)	CHF 120,000	*not including the last instalment after 31/3/2011
Support to Pakistan activities from WMO	CHF 10,000	7 December 2010
Interest	CHF 1,529	
(Total Income)	CHF 386,869	*not including the last instalment after 31/3/2011

Effective 1 January 2010, WMO implemented International Public Sector Accounting Standards (IPSAS), which requires, inter alia, that pledged income be recognized as income. The IPSAS adjustment was made during the year end closure in December 2010 to adjust income during 2010 that had been pledged earlier i.e. in 2009. In accordance with IPSAS it is required to recognize that revenue at the date of the written agreement and not in the period it is received. As a consequence, total income to the APFM Trust Fund according to WMO Finance Division (FIN) amounted to CHF 421,580 on the financial statement, which includes interest and other adjustments, instead of the CHF 386,869 calculated above.

2.8.2 Financial performance

According to APFM calculations, against the available funds of CHF 386,869 (contributions plus interest) plus carryover of CHF 428,382 (giving a total of available funds of CHF 815,241), an expenditure of CHF 280,917 was made and a balance of CHF 534,324 was carried over.

Because of the introduction of IPSAS and the closure of APFM Phase II account, the carry over of CHF 428,382 (which was reported on the Final Report of AC/MC meeting in 2010, Annex V, point 1.a) was adjusted to the final balance of CHF 443,166, which is an addition of CHF 14,784. On the financial statement below during this reporting period another CHF 169,729 were added as pledges-adjustments made during transition from 31 December 2010 to 1 January 2010 balances due to adoption of IPSAS, together with another CHF 3,363 as savings on cancellation of obligations. Considering the difference in financial support reported above under 2.8.1, and noting that expenditure was CHF 281,424, calculations made according to IPSAS lead to a total available fund of CHF 864,746, and a balance of CHF 583,322.

The whole difference is summarized in the table below:

	According to APFM	According to FIN	Difference
Balance as 1st April 2010	CHF 428,382	CHF 443,166	CHF 14,784
Total income	CHF 386,869	CHF 421,580	CHF 34,711
Total funds available	CHF 815,251	CHF 864,746	CHF 49,495
Expenditure	CHF 280,351	CHF 281,424	CHF 1,073
Balance as 31st March 2011	CHF 534,900	CHF 583,322	CHF 48,422

Further clarifications about the IPSAS accounting system will be provided during the AC/MC meeting, following explanation to be received from WMO Financial Division.

Along with the APFM Trust Fund, the APFM activities were supported from WMO regular budget and the other trust funds. For example, the Training for Trainers “Integrated Flood Management for Sustainable Development” in Mekong River Basin was supported directly from WMO regular budget (CHF 32,726). Staff of the Hydrology Branch of the Climate and Water Department of WMO also supports APFM activities. The current Trust Fund balance by end of April 2011 is equivalent to 1.5 to 2 years expenditure. To maintain a high financial reserve is seen as important, as levels of donor support after 2012 cannot be foreseen at present.



**TRUST FUND FOR
ASSOCIATED PROGRAMME FOR FLOOD MANAGEMENT
INTERIM STATEMENT OF INCOME AND EXPENDITURE
FOR THE PERIOD 1 APRIL 2010 TO 31 MARCH 2011
(amounts expressed in Swiss Francs)**

1. Balance as at 1 April 2010			443,166
2. Income (contributions + interest):	(a)		
2.1 Contributions	(b)	246,959	
2.2 Interest		1,529	
2.3 Pledges -Adjustments made on 31 Dec 2010 to 1 Jan 2010 balances due to adoption of IPSAS	(b)	169,729	
2.4 Savings on cancellation of obligations		3,363	
2.5 Total Income		<u>421,580</u>	
3. Total funds available			<u>864,746</u>
4. Expenditure	(a)		<u>281,424</u>
5. Balance as at 31 March 2011			<u><u>583,322</u></u>

(a) Data during the period 1 January to 31 March 2011 is provisional, as the three months had not been closed financially at the time this report was compiled.

(b) Effective 1 January 2010, the World Meteorological Organization implemented International Public Sector Accounting Standards (IPSAS), which requires, inter alia, that pledged income be recognized as income. To the extent there were pledges of contributions to this Fund during the twelve-month period on which the report is based, the total contributions of CHF 246,959 include such pledges.

Certified correct:

Luckson Ngwira
Chief, Finance Division
6 June 2011



3. ACTIVITY PLAN FOR THE PERIOD 2011/2012

3.1 IFM TOOLS AND IFM CONCEPT PAPER

TSU will continue to develop needs-based new Tools including:

“Effectiveness of flood prevention measures”,
“Regulations and technical standards of flood”;
“Role of the media in Flood Management”,
“Health and Sanitation Aspects of Flood Management”,
“Urban Floods in a Changing Climate”,
“Flood Forecasting and Early Warning”,
“Coastal Flood Management”

Moreover, TSU will finalize drafting “Transboundary aspects,” and “Guidelines on Flood Mapping”. The existing Tool will be updated including current work on “Reservoir operations and managed flows,” “Conducting Flood loss assessments”, “Applying Environmental Assessment for Flood Management”, “Organizing Community Participation for Flood Management” and “Risk Sharing in Flood Management.”

It is understood that except for the first 2-3 tools, the other proposed new tools will be started but not finalized in the period 2011/2012.

Update of the Policy paper on “Economic Aspects of IFM” and the Russian translation of the Concept Paper 3rd edition are also planned to be finalized in the next period.

3.1.1. Effectiveness of flood prevention measures

Economic analysis conducted after major flood disasters, such as Hurricane Katrina, shows that flood prevention measures, if implemented timely, could have saved huge amount of disaster damages at much smaller cost. Because of growing urbanization and projected climate change all over the world, damage potential in floodplains, both human lives and property assets, is rapidly increasing. In order to cope with this issue, prevention measures play an important role in reducing vulnerability to flood disasters and subsequent flood damages. This tool introduces good practices as well as unsuccessful examples of prevention measures collected from various developed and developing countries. Some key indexes will be derived from readily available socioeconomic data to prove the effectiveness of prevention measures.

3.1.2. Regulations and technical standards of flood

Various flood management laws, regulations and design standards have been compiled and amended in each country, reflecting the past experiences of flood disasters and considering local site conditions. It is often the case that national governments establish minimum standards and either national or local organizations implement flood management projects. Even if the regulatory framework and standards differ country by country, the basic concept of flood management and examples of technical standards are useful resources for other countries, especially for those planning to develop them. This tool aims at introducing the outline of regulations and standards of flood management in major countries to help flood managers make sound decisions on developing and evaluating flood management facilities. The tool describes the following themes.

- Flood laws, regulations and design standards, Responsible organizations
- Level of protection, Design flood level
- Hydraulic model and analysis
- Structural requirements
- Risk management, Safety factor
- Maintenance, Vegetation management
- Habitat enhancement, Wetland preservation



3.1.3. Role of the media in Flood Management

The role of mass media could be of enormous benefit to Integrated Flood Management. Situational factors are very important, in particular media attention. The media is one of the most important sources of disaster information and it significantly influences or shapes how the population and the government view, perceive, and respond to hazards and disasters. Independently from the media (radio, newspapers, television, etc), they could play an important role in increasing risk awareness in the public, guiding risk perception to make people understand what is the real risk about living in flood prone areas, providing a new perspective about flood management, and fulfilling public's needs toward information, "translating" technical jargon and providing the public with understandable, maybe even simplified (but nevertheless accurate) information about the risk. In a wider sense, media can take the role of educator regarding risk management for those layers of the public which have no other mean to be informed. In some countries, the media can reach the public more than schools and education do. Moreover, media could spread trends or a tendency to encourage action and behaviour, giving examples of « success stories », and how these have served the whole community to face floods. This tool is intended to develop a constructive approach to address media coverage on floods, in order to synergize media as part of the team in development of public perception into a positive way.

3.1.4. Health and Sanitation Aspects of Flood Management

There is a lack of knowledge on how to assess the environmental and health effects associated with exposure to the often complex chemical and biological contamination of water and soil that can follow floods. Water supply and sanitation are crucial determinants of health, especially during emergencies, but failing or compromised water and sanitation services may in themselves pose a risk, and a source of contamination, the impact of which reaches beyond local and national borders. This tool will provide an overview on why and how flood management practices should consider the vulnerability of water supply and sanitation facilities and new risk elements for health and environment arising from water services management during floods.

3.1.5. Urban Floods in a changing climate

The combined impact of urbanization and climate change are considered as the most contributing factors to future flood risks. In the developed world the building stock is aged but keeps slowly increasing. Cities in the developed world are faced with a continuing demand for high quality, low density housing areas allocated in the proximity of metropolitan areas. This will result in a further development of river embankments (e.g. Thames Gateway project, UK), polders (e.g. Vinex areas, NL) and other areas currently serving some function in the water cycle. Since global climate change increases the variability of extreme flood events, current measures for flood mitigation no longer provide optimal solutions for their chosen flood risk intervals. This residual risk, possibly resulting in massive damage, urges for an impact driven approach that focuses on increasing the "flood resilience" of cities. To reverse the trend of increasing impacts of urban floods a major rethink of current planning and flood management policies and practices at different spatial and temporal scales is required. In this paper a conceptual framework for a new, holistic approach is presented which focuses on increasing resilience.

3.1.6. Flood forecasting and early warning

This tool focuses much more on helping effective decision-making for flood forecasting and warning. Flood forecasting and warning is a non-structural measure in flood management and supplements almost all other structural (dams, levees, etc.) and other non-structural (spatial planning, community preparedness, etc.) measures. This tool would allow the reader to develop a flood forecasting system in a country or allow understanding and improving the existing ones.

3.1.7. Coastal Flood Management

The Coastal Flood Inundation Demonstration Project (CFIDP) described above contains the element of Coastal Flood Management. Major issues in this tool to be developed will focus on land use and infrastructure planning in coastal zones, coastal flood risk management including risk maps, prevention and response measures using IFM approaches. It is important to note that there are significant differences, as coastal floods are mainly characterized as a result of storm surges and tidal floods in deltas and estuaries.



3.2 NATIONAL AND REGIONAL SUPPORT ACTIVITIES

3.2.1. Pakistan

APFM will continue the support to the Planning Commission of Pakistan for the implementation of a national strategy for integrated flood management. Efforts will be made particularly to secure funding to the project.

3.2.2. Zambezi

In coordination with the Basic Systems in Hydrology Division of the WMO Climate and Water Department, APFM will provide guidance and support to the ongoing project upon request.

3.2.3. Mali

APFM will provide support for the national workshop tentatively scheduled to take place in February or March 2012, to present the project outcomes on Village Plans for the Reduction of Flood Risk (PVRRI) to decision makers and donors.

3.2.4. Iowa State

In the framework of the project proposal developed with the Cedar River Basin Coalition, aiming at the development and implementation of an IFM strategic framework plan for Iowa, a training of trainers workshop is scheduled to take place in autumn 2011. The training will be coupled with a high level meeting to further decide on the implementation of the IFM strategic framework plan for Iowa, and possibly about cooperation with the local UNESCO-Help centre.

3.2.5. Laos

Following the Training of Trainers workshop in Hanoi in April 2011, participants from Laos with support from MRC programme management requested to take IFM in the development agenda of Laos and requested APFM to assist in this process. Consultations will be undertaken soon to rationalize this request.

3.2.6. Community Based Flood Management in India, Nepal and Bangladesh

In light of the interest demonstrated during conferences and other presentation events for this Phase I activity, it is planned to re-establish contacts with the local NGOs which assisted in the implementation of the pilot projects, to perform an ex-post analysis of the impacts of the project and possibly re-engage.

3.3 CAPACITY DEVELOPMENT

3.3.1. Development of training material

Vocational training materials together with Cap-Net

The “Collaborative Work Programme” of Cap-Net and WMO on Integrated Flood Management would be updated for the activity after 2011 on the allocation of activities and budget expected after the AC/MC Meetings.

Development of IFM Training Material in the framework of collaboration with Cap-Net is being undertaken on four topics for different target groups:

- Water/flood managers or policy makers at national level (*IFM Policy Course*)
Based on the development by the end of last reporting period, the final consolidation of the training material will be considered in collaboration with Cap-Net. This will also be coupled with an update of the existing training presentations and modules.
- National NGOs active in community outreach projects in water or disaster management, and subsequently district/municipal level authorities as well as community leadership in flood prone areas, particularly rural areas. (*Community flood management course*)
- Urban Flood Management training manual, currently undergoing final editing in Cap-Net, should be finalized and published in the next year.



- The self-learning tutorial on IWRM as an adaptation strategy to climate change will be finalized and made available on line. CDs will also be made out of the self-learning tutorial.

Those training materials will be finalized after peer review. Based on the first experiences with using the materials, a fully-fledged global training package will be published.

E-learning in collaboration with Technical University of Hamburg-Harburg

During a meeting in August 2010 between AFPM TSU and Prof. Pasche of TUHH, it was agreed that the e-learning platform developed by TUHH would be updated and strengthened on a regular basis, and a bulletin reporting the latest developments would be issued by TUHH every six months. The hydrological part of the e-learning platform being possibly further developed, it was planned for APFM to revise and contribute to it in the next future (possible linking it with Comet activities). APFM will dedicate a page to the platform on its website, and the platform will also appear in the tools list in the HelpDesk. Regarding tool development, it was agreed to check the e-learning platform for consistency with the IFM Tools, and whenever possible the tools would be referenced in the platform (and vice-versa). Moreover, a long term plan for producing e-learning tutorials on the IFM tools was planned to be developed. It was also planned to revise an Urban Flood Management Manual developed by the C22 Coast Group, edited by Taylor and Francis. Due to the unexpected death of Prof. Pasche in late 2010, these activities were put on hold until finalization of consultations with TUHH within the coming months.

3.3.2. Training courses

Uganda

The training for the Directorate of Water Resources Management, originally planned for 2010, could be realized in the next period. APFM is currently coordinating with the WMO Basic System in Hydrology Division to secure successful implementation of the activity.

Iowa State

A training of trainers' workshop is scheduled to take place in autumn 2011 (see above)

Democratic People's Republic of Korea

In close coordination with the Director, Climate and Water Department, the possibility of training at the national level will be explored.

Egypt UNESCO

As a follow up to the Flash Flood Risk Management expert group meeting, held in Cairo in September 2010, it was suggested to organize a Training of Trainers workshop on Flash flood Risk Management in the Arab region. The possibility of initiating a joint collaboration between UNESCO Cairo and APFM is being explored in this regard based on the APFM training materials and outputs, especially in the field of flash flood risk management, transboundary flood management and adaptation to climate change in the Arab region

Caribbean

Following a request received in early 2011 from the GWP-Caribbean, APFM is planning to implement training activities in the Caribbean region, while at the same time looking for opportunities through which this can be achieved. In the meantime GWP-Caribbean will also seek opportunities to share information on the APFM with their constituents in the Caribbean. APFM will also give consideration as to how directly contribute to flood management in the region.

Planned training courses in collaboration with JICA

APFM will continue to organize the Integrated Flood Management (IFM) module in the training organized by JICA on "River and dam management" under the overall cooperation between APFM and ICHARM for capacity building.

3.4 REFERENCE CENTRE DATABASE

The update of information contained in the Reference Centre Database is accelerated to include latest references and in particular including all references made in the Tools series. For this purpose, an assessment of the current bibliographical references contained in the IFM tools has been initiated, and some 300 references have been identified to be included in the database. Moreover, a selection of useful publications, policies and institutions dealing with flood management will be done through the newsletters and notifications received through the APFM mailbox.

3.5 DISSEMINATION OF INFORMATION

High priority will be given in the upcoming reporting period to Information Dissemination on the basis of the Communication Strategy.

3.5.1 Conferences and Seminars

Integrated Urban Flood Management - Challenges and Approaches in the Developing World, World Water Week (in preparation)

With the accelerating pace of urbanization especially in mega-cities of the developing world, there is a sharp increase in population that is exposed to urban flooding. According to projections of the Asian Development Bank, the urban population will raise from 2.5 billion in 1994 to 5.1 billion in 2025 with 80% of the urban population living in developing countries. Inadequate urban planning in the past, including the challenge of informal settlements becomes even more critical under conditions of climate change and associated increase in the frequency and magnitude of flood events including riverine floods as well as rainfall-induced flash floods and tidal floods in deltas and storm surges. This calls for an integrated flood management approach to minimize flood risks for the affected urban population. Administrators and decision-makers of cities that experience an increasing flood risk need to find approaches and sustainable solutions to safeguard population and infrastructure.

The seminar covers different components and aspects of integrated urban flood management strategies, including current trends, challenges, and documented good practices as well as outreach strategies to the affected population. Views from the audience and outcomes of a panel discussion are expected to provide the basis to develop a concept for sustainable integrated urban flood management in a cross-sectoral approach that could be further developed into concrete guidance materials and proposals for integrated urban flood management projects. The seminar also serves as an initial platform for networking organizations and experts interested in urban flood management practices.

5th International Conference on Flood Management (ICFM5)

International Conference on Flood Management (ICFM) is the only recurring international conference wholly focused on flood related issues. It is designed to bring together practitioners and researchers alike, including engineers, planners, health specialists, disaster managers, decision makers, and policy makers engaged in various aspects of floodplain management. It provides a unique opportunity for these various specialists to come together to exchange ideas and experiences.

The 5th International Conference on Flood Management (ICFM5) will be held in Tsukuba, Japan on 27-29 September 2011. The ICFM5 theme is "Floods: From Risk to Opportunity," reflective of the continued trend towards a broader understanding of how we collectively make use of the opportunities provided by floods and flooding, cope with risks posed by them and plan for and respond to flood events. ICFM5 will consist of five plenary sessions, more than 20 parallel sessions for oral presentations, poster sessions, special events and technical and cultural tours. APFM is currently seeking an opportunity to participate in the Conference.

APFM 10th Anniversary Event

The year 2011 Marks the 10th anniversary of the APFM. To mark this event, a side-meeting to the ICFM5 is being organized. Objectives of the event are to mark the achievements of the programme and outlining remaining challenges and their solutions in integrated flood management practices. This will include



developing a strategy to accelerate integration of the IFM concept and practices in the development agenda of countries and dedicated line-agencies for their implementation. The event also serves to maintain even enlarge visibility and understanding of the APFM and its activities amongst major donors, soliciting for continued support of this unique and important programme.

3.5.2. Articles

In line with the Communication Strategy, scientific and technical journals will be used as means of diffusion of the IFM concept, through the publishing of articles on IFM-related issues. SBPs assistance and support in this activity will be essential, both in establishing links with editorial boards and in producing high quality level of inputs for the articles. Examples of journals to be considered for this task are INBO newsletter, ICHARM newsletter, Korean Journal of Hydrologic Environment, ICID, RCUWM newsletter, NARBO newsletter.

3.5.3. Website

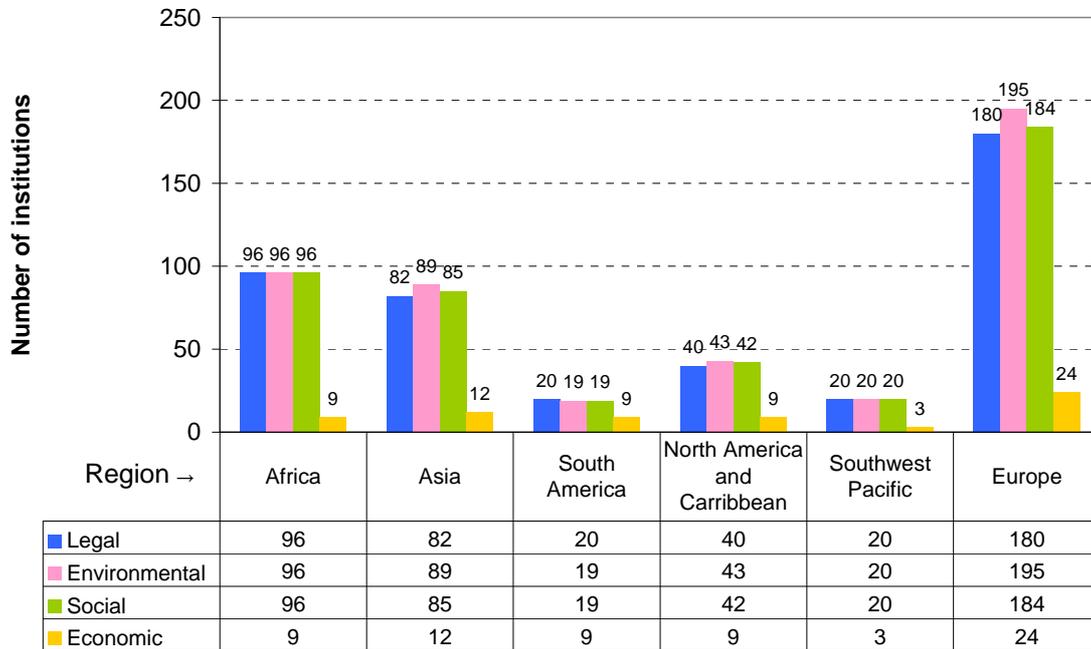
The website has become a central part of the APFM, being not only a way to present the IFM concept and APFM activities, but also the main way of access for the wide public to the materials developed by APFM. Due to the dated technology on which the website is currently based, migration from the old server (from DFI server provider to Infomaniak) will be done in the reporting period, building on a Content Management System platform. This migration will also constitute an opportunity to renew the style of the website, and to add further sections such as a press room or a multimedia channel with videos of flood events and flood management practices. The update of the website, currently not efficiently done, will be ensured by the implementation of a new user friendly content management system.

3.6 IFM HELP DESK

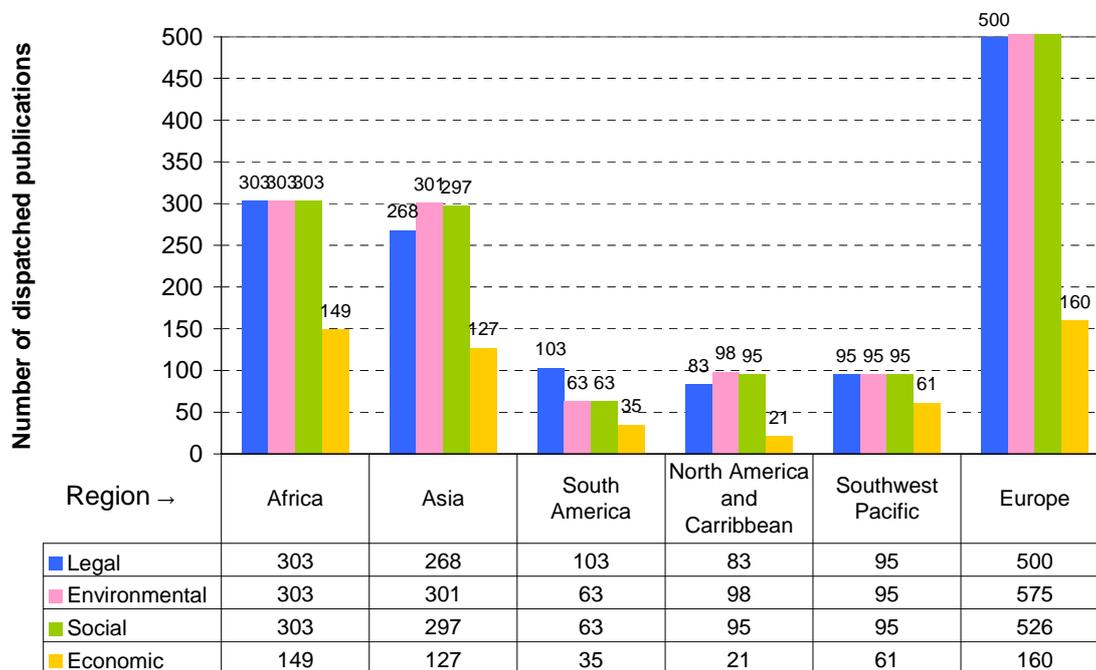
The HelpDesk has made the APFM a demand driven programme. Efforts are still needed to make the availability of the IFM HelpDesk known to the foreseen beneficiaries. Focus will be the strengthening of the “GetHelp” function of the HelpDesk. The Communication Strategy will also serve for this purpose. Close collaboration with all support base partners in the fine tuning of the functionality of the IFM HelpDesk will be pursued. Taking advantage of the migration and restructuring of the APFM website, the HelpDesk webpage will also undergo restyling, in line with the recommendations of last AC/MC meeting. This restyling will focus specifically on increasing the user friendliness of the web interface, while at the same time synchronizing the contents available for users with the ones on the APFM (e.g latest tools, past issues of newsletter, linkage to e-learning platforms and other presentation materials) and improving the understanding of the resources available through the HelpDesk.

**ANNEX I DISSEMINATION OF FLOOD MANAGEMENT POLICY SERIES
(SINCE THEIR PUBLICATION TO MARCH 2011)**

1) Number of institutions



2) Number of dispatched publications



Legal: Legal and institutional Aspects of Integrated Flood Management
 Environmental: Environmental Aspects of Integrated Flood Management
 Social: Social Aspects and Stakeholders Involvement in Integrated Flood Management
 Economic: Economic Aspects of Integrated Flood Management