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ASSOCIATED PROGRAMME ON FLOOD MANAGEMENT

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

The World Meteorological Organization (WMO) is a specialized agency of the United Nations. It coordinates the activities of the meteorological and hydrological services of 188 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).

ANNUAL REPORT (2008-2009)

TABLE OF CONTENTS

1. INTRODUCTION 1

2. ACTIVITIES 2

2.1 FLOOD MANAGEMENT POLICY SERIES AND IFM TOOLS SERIES 2

2.1.1 Risk sharing in flood management 3
2.1.2 IFM as an adaptation tool for climate change 4
2.1.3 Flash flood management 5
2.1.4 Mud flows and land slides management (in process) 5
2.1.4 Guidelines on Flood Mapping (in process) 6

2.2 NATIONAL AND REGIONAL SUPPORT ACTIVITIES 6

2.2.1 Kenya 7
2.2.2 Mali 7
2.2.3 Guinea 7
2.2.4 Zambezi Basin 8
2.2.5 Mauritania 8

2.3 CAPACITY BUILDING 8

2.3.1 Partnerships for the delivery of a comprehensive portfolio of capacity building measures 8
2.3.2 Training activities 10

2.4 FLOOD MANAGEMENT REFERENCE CENTRE 11

2.5 DISSEMINATION OF INFORMATION 11

2.5.1 Newsletter 11
2.5.2 Conferences 11
2.5.3 Website 12
2.5.4 Dissemination of publications 13

2.6 LINKAGE TO OTHER ACTIVITIES 13

2.6.1 ICHARM 13
2.6.2 JICE 14
2.6.3 Swiss Federal Office for the Environment 14

2.7 HELP DESK 14

2.7.1 Outline of Help Desk Concept 14
2.7.2 Institutional arrangements and mechanism for the HelpDesk 17
2.7.3 Further process and launch of the HelpDesk 18

3. PROGRAMME PERFORMANCE 19

3.1 PROGRESS OF ACTIVITIES 19

3.1.1 Flood Management Tools Series and Flood Management Policy Series 19
3.1.2 Support national and regional activities 19
3.1.3 Capacity building 19
3.1.4 Flood Management Reference Centre 19
3.1.5 Dissemination of Information and linkage to other activities 20
3.1.6 Establishment of the HelpDesk for Integrated Flood Management 20

3.2 FINANCIAL SUPPORT AND PERFORMANCE....20
3.2.1 Financial support....20
3.2.2 Financial performance....21
4. ACTIVITY PLAN....22
4.1 IFM TOOLS AND IFM CONCEPT PAPER....22
4.1.1 IFM as an adaptation tool for climate change (case studies)....22
4.1.2 Flood emergency planning....22
4.1.3 Flood forecasting and warning system....22
4.1.4 Mud flows and land slides management....22
4.1.5 Guidelines on Flood Mapping....22
4.2 SUPPORT TO NATIONAL AND REGIONAL ACTIVITIES....23
4.2.1 Conferences and Seminars....23
4.2.2 Kenya....23
4.2.3 Flood Management in Mali....23
4.2.4 Flood Management in Guinea....23
4.2.5 Flood management in Zambezi Basin....24
4.2.6 Flood management in Ukraine....24
4.2.7 IFM policy support for Afghanistan....24
4.3 CAPACITY DEVELOPMENT....24
4.3.1 Development of training material....24
4.3.2 Training courses....25
4.4 HELP DESK....26
ANNEX I VISITORS TO WEBSITE....27
ANNEX II DISSEMINATION OF PUBLICATIONS....32

LIST OF SUB MATERIAL

I. Flood Management Policy Series

(a)	IFM Concept Paper	(English, French, Spanish, Russian)
(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) Flash flood management

III. National and Regional support activities

(a) The Study on Integrated Flood Management for Nyando River Basin in the Republic of Kenya

IV. Training activities - Partnerships for the delivery of a comprehensive portfolio of capacity building measures

(a) Integrated Flood Management for Sustainable Development - An APFM & Cap-Net collaborative capacity building programme for flood-prone countries, cities, and communities
(b) Outline of the Training Course for Integrated Flood Management Policy Course
(c) Education materials in collaboration with Project WET

V. Dissemination of information

(a) Flood Management Reference Centre
(b) Newsletters (No.17, No.18, No19)

VI. Linkage to other activities

(a) Memorandum of Understanding between the World Meteorological Organization (WMO) and Japan Institute of Construction Engineering (JICE)
(b) Agreement between the Swiss Federal Office for the Environment (FOEN) and World Meteorological Organization (WMO) on "Long-term partnership to support countries in Integrated Flood Management"

VII. IFM HelpDesk

(a) HelpDesk for Integrated Flood Management (Concept Note)

**Bold materials* *above indicate those newly added 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 the 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 Flood Management Policy Series. The programme has conducted various regional pilot 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 are acknowledged and appreciated at various international conferences, workshops and meetings, which induce the 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.

The phase II of the programme (2006-2010) is in the process of consolidating these gains. It focuses on implementation of the IFM concept on the ground and seeks to develop capacities in the countries by supporting local and regional actions that advocate, support or demonstrate the IFM principles. The primary focus is on activities at the ground levels in supporting countries by providing guidance and organizing field demonstration projects to put the concepts of IFM, in its multidisciplinary approach, into practice. This is 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 is being achieved through capacity development, implementation of field demonstration projects and providing long-term support in the form of Help Desk and information services. Major outputs of the programme would be:

- Field Demonstration Projects;
- National platforms for multidisciplinary dialogue;
- 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 the third Annual Report of APFM Phase II, which documents the activities undertaken during the third reporting period - i.e. from 1 April 2008 to 31 March 2009. Some of the outputs and summarised documents are given in Annex, meanwhile most of the output materials are attached as sub-material in a separate CD-Rom.

2. ACTIVITIES

2.1 FLOOD MANAGEMENT POLICY SERIES AND IFM TOOLS SERIES

Flood Management Concept Paper

The '*Flood Management Concept Paper*' had been developed to demonstrate basic principles of IFM. The second edition of the IFM Concept Paper was released in 2004. Since then climate change has drawn extensive attention by the policy makers. Although this issue is conceptually covered in the concept paper, it requires to be treated in greater details. Urban floods also would require a little more treatment in the concept paper. Further, various experiences related to the concept have been gathered since then on the platform of APFM in form of pilot projects, discussion and debate at conferences and interactions with various partners. To capture the full range of experiences before the end of APFM Phase II, the IFM concept paper has been taken up a careful revision during the reporting period (Sub-material I(a)). The IFM concept has proven to be a robust policy concept in terms of being applicable under changing national priorities (such as the recent food security debate). This robustness must be maintained while deepening certain other aspects, such as the role of IFM as an adaptation tool to climate variability and change. The publication has been translated into various languages as shown below;

- IFM Concept Paper (En, Fr, Sp, Ru)

(Above publications are available from: http://www.apfm.info/publications.htm)

This has been translated into 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 completed:

- IFM Concept Paper → Japanese (complete)

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)

(Above publications are available from: http://www.apfm.info/publications.htm)

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

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(b), II(c) II(d), II(e),

II(f), and II(g)) , a new inventory of IFM Tools has been prepared (Sub-material II(h), II(i) and II(j)). 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 were selected to be developed during this period, which are “Risk sharing in flood management”, “IFM as an adaptation tool for climate change” and “Flash flood management”. These are basically developed by the TSU staff with peer reviews by outside experts, including universities and institutes. These tools are based on assessing readily available literature, and draws 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 “Flood Management Tools Series” and disseminated on the APFM website. As the “Flood Management Tools Series” is not planned to undergo extensive peer reviewing, 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 experiences sharing.

2.1.1 Risk sharing in flood management

The tool defines risk sharing as allocation of costs of taking risks that encompasses bearing the financial and other costs for flood risk management and explains the shared responsibility of each stakeholder within the physical, technical, economic and political contexts. It highlights the mechanisms for spreading the financial burden for flood management in terms of efficiency and fairness, focused on incorporating equity in flood risk management with economic effectiveness. It provides an overview on flood insurance and other forms of transferring risks of flooding and deals with the inter-relationship between flood insurance, building resilience in the effected communities and reducing risks and takes a brief look at the alternative forms of sharing financial risks from flood, like calamity and reconstructions bonds by government, internal and external solidarity funds.

Flood risks are essentially comprised of the sum total of the cost of risk reduction, costs of managing the residual risks and the flood losses that finally materialize. There are three strategies for risk management: risk reduction, risk retention and as a last resort risk transfer. Risk reduction includes activities that contribute towards diminishing the probability of potential losses. In case of floods, risks due to events greater in magnitude than the design floods of mitigation measures, the efforts required to reduce the residual risks is also included. An efficient solution requires a combination of all the three. An equitable mechanism for sharing the costs of risk mitigation is based on providing basic protection against an agreed level of flooding that reduces vulnerability to floods and accelerates wealth generation. Government as the chief development agent in a country should generally be able to bear this cost. The costs of protection against higher floods can be distributed between the state and municipal authorities as they benefit direct revenue from economic activities. For any protection above basic minimum, they should share the cost of risk

reduction through various financial instruments. As protection against all floods is neither financially viable nor environmentally sustainable, residual risks are always present. Emergency preparedness plans, early warnings and disaster response actions are undertaken to keep the materialized risk to a minimum. Individuals also take the responsibility by reducing their own vulnerability and implementing proofing measures through retro-fitting etc. Transferring of flood risks physically by diversions of flood waters to less vulnerable areas is an important option for flood risk management.

With all the efforts in place, flooding results in losses due to damage to properties and interruption of economic activities. Some of the losses that are materialized are absorbed by the element at risk, as retained risks. Depending on the capacity and vulnerability of the elements at risk, such retained risk may impact the recovery from flood and may turn into a disaster. In order to share the cost of recovery, some of the materialized risk is transferred through insurance as the last step in a systematic risk management process. It protects capital, enhance solvency and allows recovery, and if designed carefully, has the potential to encourage risk reduction behavior. Small scale floods are predictable so risk reduction methods are most suitable for dealing with such risks while low-probability high consequence events easily destroy the insurance market. As such, insurance instruments are most suitable for middle levels of risk. Re-Insurers play a crucial role in low frequency - high impact events. Recently, non-traditional financial mechanisms have been developed for the facilitation and support of recovery from flood events. Index based insurance, catastrophe bonds; micro-insurance are some of such financing instruments. Some of those mechanisms have almost exclusively been employed in developed countries and a developing country perspective needs to be brought into the financial risk sharing debate. The discussion on these financial mechanisms can contribute to relieving pressure on public finances, particularly in developing countries, for other development activities and governmental services.

The current version of the Tool is attached as Sub-material II (h).

2.1.2 IFM as an adaptation tool for climate change

A major element of climate change impact assessments undertaken within the 4th Assessment Report of the WMO/UNEP Intergovernmental Panel on Climate Change (IPCC) was pointing at the possible changes in flood frequency, magnitude and subsequently flood risk. The central theme of this tool is to bring the different aspects of climate variability and climate change as it affects flood risks with the aim to show possibilities of how they can be managed successfully. It will be argued that only the combination of spatial, technical and organizational measures will lead to a more sustainable and effective management of increasing flood risks under climate change regime. Based on a holistic paradigm of Integrated Flood Management this paper is structured into three main chapters.

Audience targeted by this is broad as the implications of climate change and variability on flood risks has to be dealt by various stakeholders. However, since flood management is primarily a public task with full involvement of stakeholders the target group is primarily the staff of the respective municipal authorities, national flood planners, emergency response authorities and the public at large. These include: flood managers, spatial planners, civil engineers, water supply and sanitation services, civil defense authorities and health and social services.

The “Tool” should not be seen as a technical manual but rather a starting point for the adaptation to climate change through integrated flood management. Wherever possible, references to more specific sources of information, predominantly online sources, are provided. As climate change impacts are better understood and experiences in dealing with them are gained, the tool will remain a living document in the true sense.

As a number of climate related terms can be easily misunderstood, Chapter 2 provides some essential concept on climate change which might be important for an initiator. However the experienced reader my like to skip this chapter. Chapter 3 looks at the various ways the climate change will affect the hydro-meteorological parameters that determine the magnitude of flooding and at the same time puts the other global changes, other than the climatic, that may determine the flood processes or flood risks. Section 4

addresses climate change and how its impacts are likely to increase the vulnerability of the society. Section 5 explores ways of containing the increased flood risks within an acceptable level and thereby helps sustainable development. Section 6 focuses on the approaches that can be taken to put IFM into practice as part of the adaptation strategies and looks brings out the advantages of doing so. At the end section 7 briefly presents some case studies that have tried to factor climate change in flood management practice.

The current version of the tool is attached as Sub-material II (i).

2.1.3 Flash flood management

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 combine with mudflow. In addition to above flash floods tend to be phenomena of local range which are difficult to predict both in terms of location and magnitude of the hazard.

This tool introduces possibilities of non-structural measures which can reduce risks of flash floods. Flood forecasting and warning are expected to play important role in flash flood management though there are difficulties to provide accurate and timely warnings. In order to deal with these difficulties there should be cooperation between National Meteorological and Hydrological Services (NMHSs) and local agencies and local communities. Usually forecasting provided by NMHSs targets so large scale area that it cannot predict local events. A local hydrological model based on Meteorological forecasts from NMHSs will help to narrow this gap and high resolution models like as Flash Flood Guidance developed by US national Weather Service will also bring better forecasting. Flood warning also faces these difficulties. Warnings usually made by NMHSs and informed to local inhabitants through local agencies. This means if local agencies have proper authority and responsibility to implement they can't deliver their services to people appropriately.

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. The degree of awareness raising and preparedness of local communities decides the effectiveness of flash flood management measures. Important steps to gain much effect through awareness rising plan are defining the target groups, specifying appropriate topics and choosing the most suitable methods.

Local activities should be focused strongly in flash flood management even though ensuring local community is usually time-consuming. Removing difficulties in local participatory approach requires flowing 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. In a step of creating team a team member should consist of all stakeholders in flood affected area and the team should be opened to all members to raise opinions. In a planning process it is important to give the local community access to information on problems which directly involve them, and to work out evaluation procedures for the prepared estimates and plans.

The current version of the tool is attached as Sub-material II (j).

2.1.4 Mud flows and land slides management (in process)

The sediment related disasters such as mud flows and land slides are often combined with the floods, particularly flash floods. The mechanism of their origin is in a variety of forms and is not always fully understood. Developing a sustainable strategy to deal with it requires appropriate analytical understanding to

formulate strategy combining structural and non structural measures. How these hazards have to be addressed in conjunction with flood issues would be addressed. After arranging the first draft, efforts were made to work with Sabo Department of MLIT and have continued reviewing.

2.1.4 Guidelines on Flood Mapping (in process)

Flood Maps are tools to visually organize the flood information for use by 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 cases of tsunamis and floods in large flatlands. Some other functions of flood maps are (non-inclusive):

- Regulatory: Land use regulation and building codes
- Planning: Impacts of urbanisation, 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 a flood maps. It is 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 the necessary information that allows making sound decisions.

An “Expert Group Meeting on the preparation of Guidelines on Flood Mapping” was organized in Geneva, 24-26 Apr 2008. More than 20 international experts attended the expert group meeting. Experts were selected based on their contribution to or exposure in practice to flood mapping programmes and technology. The meeting achieved its objectives in clarifying the scope, target audience and objectives of the undertaking, and to agree on a table of contents and work plan with all involved partners.

Scoping the document resulted in the broad areas to be covered:

- Development of the flood mapping strategy
- Describe various approaches for developing flood maps in brief (e.g., Geo-morphological, Historical, Remote Sensing, Hydraulic)
- Methodologies/technology of Hydraulic approach
- Development of different types of maps
- Social, economic, legal and other issues related to development and dissemination, including communication of flood maps with the user communities

In the months following the expert group meeting, contributions were received from various experts and compiled in an unedited draft. An Editorial Board was setup to review the contributions and make the necessary adjustments before starting an external review process of the Guidelines. Due to the fact that the effort is mostly based on voluntary inputs of the members of the expert group, the receipt of contributions sometimes required patience. The draft contributions were of good quality and the critical mass of contributions is there for the Editorial Board to take up its main job in the coming months.

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 the APFM Phase II. Such activities are categorized as;

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

New field demonstration projects can be undertaken depending on the availability of APFM core funding. However, facilitation was provided for the formulation of project proposals to be implemented with third party funding.

2.2.1 Kenya

Since the Flood Management Strategy in the Lake Victoria basin as a pilot project in Phase I of APFM, APFM has been contributing to the progress based on the strategy. Among the efforts, "The Study on Integrated Flood Management for Nyando River Basin in the Republic of Kenya" supported by Japan International Cooperation Agency (JICA) since 2006, was issued in 2008. On 11 December 2008, JICA and Kenyan Ministry of Water and Irrigation organized a regional workshop, collaborated with APFM, to finalize a master plan on which APFM provided technical advices. The executive summary of this study are attached as Sub-material III (a). This study can divide into three major components: formulation of master plan including structure and non-structure measures, capacity building through IFM workshops, and establishment of method on community-driven flood management. Five pilot projects were implemented under the study to i) examine the effectiveness of community-driven flood management, ii) develop local capacity for managing floods, and iii) review and prioritize projects in the master plan. It can be noted that the pilot projects showed the relationships between urgent needs and high satisfaction of flood management, the effectiveness of "learning by doing" in community flood management organization, and essential items for project sustainability. From 2009, the further program will launched based on the agreement between Kenyan government and JICA. APFM continues to provide inputs to the JICA and facilitate the overall understanding of the concept by the central and regional officers in Water Resources Management Authority (WRMA) and Lake Victoria South Water Services Board (LVSWSB) who are responsible for planning and implementation of flood management in the region.

2.2.2 Mali

An agreement has been reached with the Italian Ministry of Foreign Affairs to fund the implementation of a project for assessing the impacts of floods and droughts on agriculture in Mali. The total contributions is of 300.000 € The goal of the project is to reduce the vulnerability to the impacts of droughts and floods in agriculture and contribute to sustainable food security, poverty alleviation, rural development and quality of environment in Mali The project will be implemented over duration of two years with the participation of Malian national services (National Directorates for meteorology, hydrology and agriculture, Institute of Rural Economy IER), regional centres (AGRHYMET; ACMAD), international research institutions (IBIMET - Institute for Biometeorology, Florence, Italy, and NDMC National Drought Mitigation Centre, Lincoln, Nebraska, USA).

2.2.3 Guinea

A brief project proposal for IFM in Guinea has been formulated under the title "Enhancing flood preparedness of settlements at risk" with the National Directorate for Hydraulics – DNH within the Ministry of Hydraulics and Energy as the implementation partner. The proposed project seeks promote on a pilot area the implementation of the concept of IFM, through flood risk assessment and applying risk management principles in particular focusing on the preparedness of the population settled in flood prone areas. The proposal has been submitted to the African Water Facility for possible funding. This option will be further pursued and additional financial partners identified as required.

2.2.4 Zambezi Basin

WMO in close collaboration with a technical team of Zambian experts jointly prepared the strategy for Flood Management for Kafue River Basin in Zambia under the APFM. The work involved information gathering and interaction with regional stakeholders and policy makers through the organization of two workshops. The strategy was finalized in consultation with the Project Steering Committee consisting of experts from different concerned departments of the Government of Zambia in 2007. Based on engagement of WMO in Zambezi Basin to establish a Flash Flood Guidance System, several countries of the basin have voiced interest on jointly developing a comprehensive flood forecasting system for the basin. The readiness of the basin countries to politically commit to such process would be explored. Once this would be confirmed APFM would initiate a process of formulating a project proposal and getting the necessary buy-in from the financial partners.

2.2.5 Mauritania

A fact finding mission has been carried out to Mauritania in July 2008 with the goal to evaluate with experts from NMS, NHS and other concerned institutions the present status and needs of national flood forecasting and management systems, and elaborate a set draft proposal for its improvement.
The following actions were envisaged:

- Organize a sensitization seminar addressed to national decision makers on IFM
- Develop a project to reinforce NMS and NHS capabilities to produce and disseminate flood related information and warnings
- Provide scientific backstopping on IFM to the State-led study on the need and feasibility of relocating inhabitants of city of Tintâne, regularly subject to flood events, to be conducted in late 2008.

In agreement with the national authorities it was decided to give priority to the organization of the sensitization workshop, to take place in the first half of 2009.

2.3 CAPACITY BUILDING

For the implementation of IFM in the field, capacity building of stakeholders is essential. In APFM Phase II major emphasis is among others placed on capacity building. 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. Training courses and materials are under preparation for a *portfolio of capacity building measures on IFM*. 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 is being prepared. A team of experts in South East Asia has started to compile those materials 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 considered by the TSU and Cap-Net.

  The outlines of the Training courses are 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 floodprone 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 where 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. WMO is currently awaiting a revised proposal from BCAS.

- 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.

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. Two training events with WMO/APFM's involvement as co-facilitator's were held in form of a global training of trainers in August 2008 in Panama together with a Cap-Net affiliated regional capacity building network (REDICA) and in October 2008 in Cairo, Egypt in form of a regional training of trainers.

Materials for Educators and Children with Project WET

The materials were targeted towards the younger generation to aid specialized services and institutions in their outreach to the public. "Project-WET: Water Education for Teachers", a US based non-profit Foundation, have more than 20 years of experience in the field of water education for teachers and youths, and having developed a global water education delivery network designed to reach children through educators, currently active in more than 20 countries. They have a mutual interest in developing Educational Materials on floods for teachers and youths as this is a gap in their current portfolio of educational outputs. Collaborated with APFM, two outputs (Sub-material IV (c)) have been completed during the reporting period:

- *"Discover Floods Educators Guide"* targeted at teachers for use as teaching material; and
- *"Discover Floods KIDs (Kids In Discovery Series) Activity Booklet"* for children/youth ages 8-12.

These publications have been printed and widely distributed during the World Water Forum in Istanbul in March 2009.Various requests for translation have been received during the Forum and would be followed up in consultation between WMO, Project WET and its Education Delivery Network.

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 is under final review. At this stage the system remains password protected up to its official launch, planned for June 2009. Continued inputs from APFM and TUHH are expected to be accumulated over time. A formal mechanism for continued quality control is planned to be established.

2.3.2 Training activities

JICA Training course in Japan
APFM participated and delivered lectures on the Integrated Flood Management (IFM) in a training course – "Comprehensive Management of River and Dam" organized by Japan International Cooperation Agency (JICA) for flood practitioners and water resources managers from government organizations of 8 countries in October 2008. The course "Comprehensive Management of River and Dam", under the supervision of Infrastructure Development Institute (IDI) of Japan provided knowledge and skills of the planning and the design of river improvement and water resources management to participants from China, Indonesia, Iran, Mauritania, Myanmar, Pakistan, Syria and Viet Nam. APFM continues to contribute to these JICA training courses to bring the concept of IFM to flood practitioners from developing countries particularly from Asia. Through such trainings, participants will be able to extend their knowledge base to develop multi-disciplinarily approaches to flood management activities.

Regional Training of Trainers for Latin America, Peru: A Regional Training of Trainers course on Integrated Flood Management for Ibero-America was held in Lima, Peru from 6 to 10 October 2008, co-organized by WMO, SENAMHI (the National Meteorological and Hydrological Service of Peru) and Cap-Net. The modules had been tested in a course in Spanish language in Cochabamba, Bolivia, in April 2008 (reported in the APFM Annual Report 2007-2008). The workshop would be organized as a Training of Trainers with some 10 Latin American countries, and served as the basis to conduct roving seminars at the national level as a follow up. This course has been budget neutral to the APFM, as funding could be secured through a dedicated fund managed by WMO on behalf of the Spanish Government for the Iberoamerican countries. Two courses are planned in 2009, namely one in Uruguay, in June and another one in Argentina in October. Following the projects in Bolivia, a further request is also expected.

Regional Training of Trainers for South-East Asia: APFM together with the Collaborative Knowledge Network Indonesia (CKNet- INA), and AquaJarring, both Cap-Net affiliated capacity building networks in Indonesia and Southeast Asia, held a regional training of trainers (ToT) on Integrated Flood Management in Jakarta, Indonesia, from 24 to 28 February 2009. The course was financially supported by Cap-Net,

NUFFIC and the World Bank. APFM made available its training materials on Integrated Flood Management and provide facilitation for the Training of Trainer. The day before the course started was used as an open network conference on Integrated Flood Management, with attendance from central government, donor organizations, NGOs, academia and the media. The training itself was attended by 16 participants from the region. Those trainees are now in the process to develop a fully fledged training package under the leadership of CK-Net INA for the region with a national training for Indonesia planned for mid 2009. Among those trainees are also a number which would serve the APFM as regional trainers in future trainings. As a direct follow up of the ToT, a request has been received to conduct a national training for Malaysia in collaboration with the Malaysian Department for Irrigation and Drainage, which is currently under consideration by the TSU.

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 no dearth 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 four databases on Flood Management Institutions, Literature, Policy and Law. These databases are being continuously updated. 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 (111)	383 (381)
Literature on Flood Management	45 (42)	241 (228)
Flood Management Policy and Legislation	50 (50)	228 (228)
Flood Prone Areas	- (24)	- (30)

* the numbers in brackets are those reported for the annual report 2008-2009
* Flood prone Areas is not available

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 in two formats: the PDF version, HTML version. The PDF version is updated at the newsletters page of the APFM website. The HTML version is sent to subscribers of APFM newsletters (number of subscribers is approximately 800 at the reporting time, the number of approximately 100 subscribers has been increased since last Annual Report Phase II (2007-2008)) via email. The subscribers can also download the PDF version as a printable format. Generally, “outcomes” of events and conferences which APFM participates in or organizes can be obtained at the events page of the APFM website. During the reporting period three newsletters (No.17, 18, and 19) have been published (Sub-material V (b)).

2.5.2 Conferences

High-Level Expert Panel on Water and Disaster

The High-Level Expert Panel on Water and Disaster was established based on the Hashimoto Action Plan at the 4th World Water Forum, aiming at two objectives. The first is to establish clear global-level goals to reduce loss of life and livelihood caused by water-related disasters with coordination of UN/ISDR and the Japan Water Forum. The second provides adequate and safe water and sanitation during and after disasters with coordination of the World Water Council. After several meetings since September 2007 (Tokyo), the final paper was presented at the 5th World Water Form, titled “Prevention and Action to Minimize Death and Destruction” with six urgent imperatives. One of the imperatives emphasized to incorporate disaster risk reduction and climate change adaptation as integral to development planning, which is strongly advocated by the integrated approach towards disaster management.

The 5th World Water Forum in Istanbul, Turkey

The 5th World Water Forum (WWF5) was held from 16 to 22 March 2009 in Istanbul, Turkey, where high-level policymakers and various other notable guests were invited to discuss and share views on the ways to better manage water-related issues, thus contributing to concrete actions. One of main issues raised were anticipated adverse effects of climate change on water resources, including flood management. After the remarks offered by the Secretary General of WMO, the APFM participated and chaired one of the main themes of WWF5 titled "Managing Water Related Risks in a Changing Climate" organized by ICHARM and Japan Water Forum. The "Policy Brief" was issued as key message and recommendation to the participants, including Integrated Water-related Disaster Risk Reduction into national development plans, recognizing adaptation to increasing risks from climate change as a “highest” priority issue. Major issues to be bridged included water-related disaster risk and poverty reduction. The example of flood plains was mentioned as a main source of livelihoods in the agricultural oriented economies. Augmenting the productivity of those floodplains through IFM strategies are a major tool to work towards disaster risk reduction, and food and livelihood security. The APFM also participated to the side event of International Flood Initiatives (IFI) organized by ICHARM and Global Water Education Village titled "Discover floods" co-organized with Project WET. The APFM also supported two exhibitions by WMO and UN-Water along with WMO staff.

2.5.3 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); etc.

The APFM website is continuously updated to fulfil these objectives. All the publications and materials produced so far, information of latest events and flood management reference centre are made available on the website. Since the launch of APFM website in December 2004, the number of visitors has been steadily increasing. As seen in the figure below, the gap of the number of visitors in July 2007 was due to differing statistical solutions applied from different companies hosting the APFM server. (TSU had changed the hosting server company because it had identified a new company which had a better hosting server service, at a cheaper overhead cost.). Several peaks of hits have been observed after major events such as international conferences and issue of new APFM newsletters. The steady rise in number of visitors is a clear indicator, that visitors tend to revisit the page, as otherwise the peaks around events would recede back to original values.

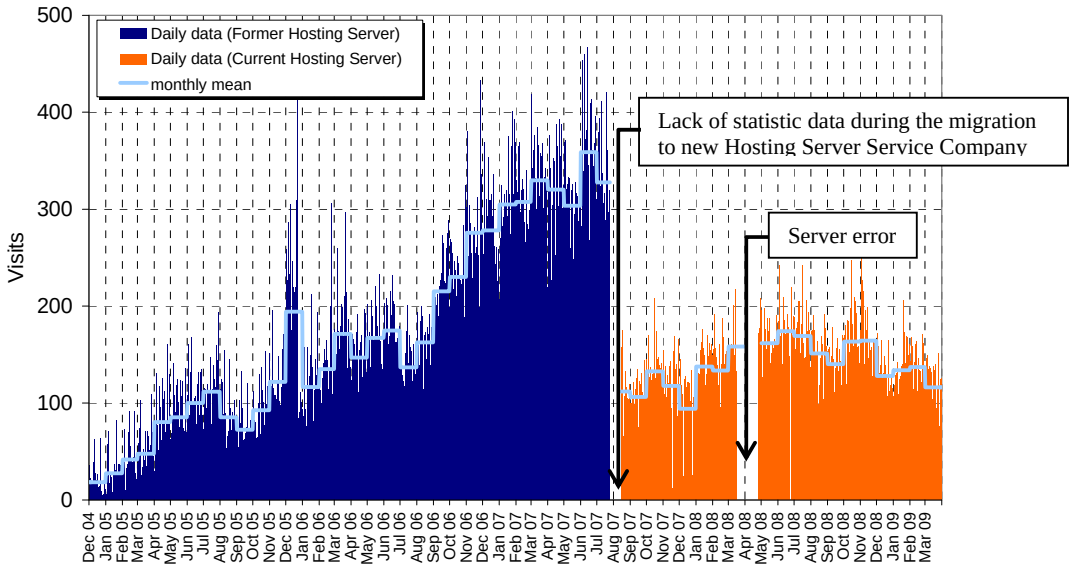

Figure 1: Sessions (from 1 December 2004 to 31 March 2009)

2.5.4 Dissemination of publications

During the reporting period, the publications of Flood Management Policy Series (Legal and Institutional Aspects of IFM, Social Aspects and Stakeholder Involvement in IFM, Environmental Aspects of IFM and Economic Aspects of IFM) in English were delivered to several universities and institutions with curriculum relevant to Integrated Water Resources Management (IWRM) or Integrated Flood Management (IFM). The publications are also delivered 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 distributed. APFM CD which includes all APFM website contents were also distributed. The number of countries, institutions, and publications in each publication, at the reporting time, is as follow (more detail information in ANNEX II);

	Number of countries	Number of institutions	Number of copies dispatched
Legal and Institutional Aspects of IFM	133 (130)*	415 (365)	962 (728)
Social Aspects and Stakeholder Involvement in IFM	134 (130)	439 (373)	1,050 (808)
Environmental Aspects of IFM	134 (130)	423 (389)	1,003 (855)
Economic Aspects of IFM	31 (-)	49 (-)	176 (-)

* the numbers in brackets are those reported for the annual report 2007-2008

2.6 LINKAGE TO OTHER ACTIVITIES

2.6.1 ICHARM

The International Centre for Water Hazard and Risk Management (ICHARM) is established at Public Works Research Institute (PWRI) in Tsukuba, Japan under the auspices of UNESCO in March 2006. The centre

provides and assists implementation of best strategies to localities, nations, regions, and the globe to manage the risk of water related disasters. The centre also serves as the secretariat of the International Flood Initiative (IFI), in which UNESCO and WMO are the key participating organizations. WMO is closely collaborating through APFM and is also represented in its Board of Governors. Since the establishment of the centre, ICHARM has been developing its activities and APFM has contributed to ICHARM by providing IFM inputs. Recognizing the importance of incorporating IFM concept into the activities of IFI and ICHARM, greater synergy is being developed through cooperative activities by APFM and ICHARM.

2.6.2 JICE

The Japan Institute of Construction Engineering (JICE), a Japanese non-profiting 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. In 2008, two APFM Policy Series, “Legal and Institutional Aspects of IFM” and “Environmental Aspects of IFM” were translated into Japanese and shown in the website, based on the License Agreement under the comprehensive agreement.

2.6.3 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 recognized mutual interest 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 Help Desk shown in the section 2.7, training and workshops in IFM, and expertise for activities such as guidelines on flood mapping.

2.7 HELP DESK

2.7.1 Outline of Help Desk Concept

There is an overwhelming need to facilitate the adoption of the IFM approach at the field level, and the capacities at the international level to provide competent, impartial and balanced guidance backed with adequate human and financial resources needs strengthening in form of a clear and accessible mechanism – The HelpDesk for Integrated Flood Management (IFM HelpDesk).

The experience in the field of IWRM has shown that acceptance of IWRM philosophy has not automatically translated into its implementation at the field level. One critical success factor identified is the lack of a clear knowledge base. It is realized that there is need for an international institution, which can be approached by a country requiring working guidance on comprehensive issues of flood management in an integrated manner. In order to help in adopting IFM approaches on the ground, the IFM HelpDesk is currently being established. During the reporting period relevant constituent bodies of WMO took the following steps in relation to the establishment of the HelpDesk:

WMO Congress
WMO Congress during its Fifteenth Session "appreciated the activities under the Associated Programme on Flood Management, which had helped achieve the objective of disaster risk reduction and provided technical support to countries in flood management policy formulation. It welcomed the establishment of the Help Desk services as a tool for providing support on flood management policy issues in collaboration with other partners."

Under Resolution 20 (Cg-XV) Congress decided "That WMO should continue its advocacy for a widespread adoption of an Integrated Flood Management approach at the basin, national and international levels"

WMO Executive Council
WMO Executive Council recognizing at its sixtieth session the "growing demand for continued scientific and technical inputs of the hydrological, meteorological and climatological communities into flood management policies and practices. It appreciated the efforts being made by the Secretariat through the implementation of the Associated Programme on Flood Management to support the countries in developing flood management strategies."

WMO Commission for Hydrology
Under Res. 4 (CHy-XIII) the Commission decided "To assist setting up of a HelpDesk for Integrated Flood Management for the benefit of Members in the areas of flood management policy and strategy, and capacity building in support thereof."

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

- Provide quick access to relevant flood management information;
- Provide 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;
- Serve 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.
- Provide a continuous and sustainable capacity development mechanism in support of IFM implementation.

The IFM Help Desk is planned to be situated in WMO but depends on a strong decentralized network of experts and specialized institutes. This is necessary because integrated flood management depends on various inputs and Tools, excellence of which cannot be provided by one single organization. The mechanism is illustrated in Figure 2.

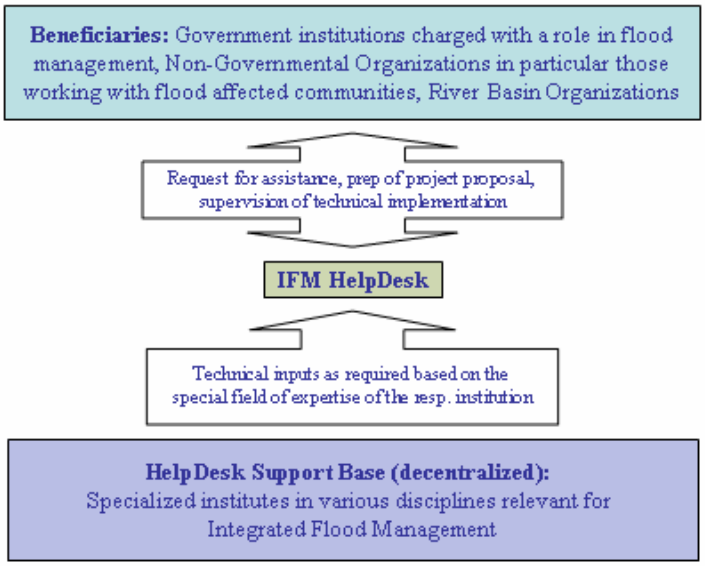

Figure 2: Overview of the IFM Help Desk

As illustrated in Figure 3, the HelpDesk is planned to function in two modes: the autodidactic mode (Self Help) and the interactive mode (Get Help).

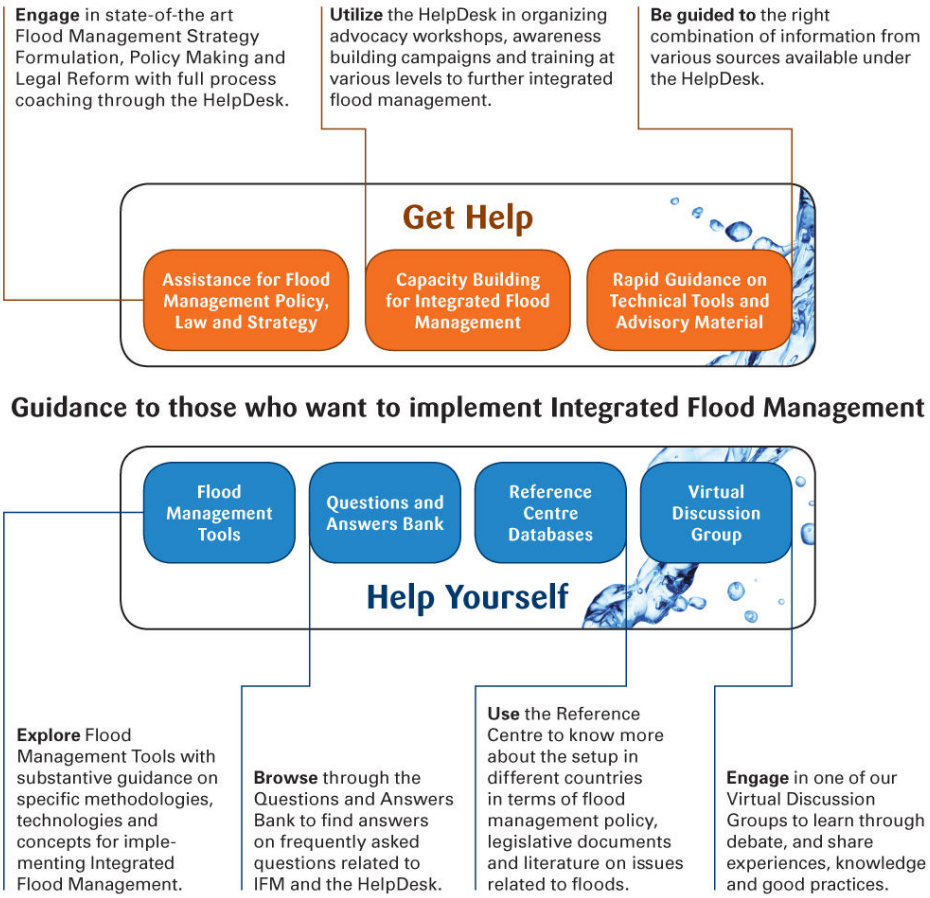

Figure 3: Overview of the IFM Help Desk

The target audience of the 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 number of requests received and the political environment in which proposals for intervention by the HelpDesk are made.

2.7.2 Institutional arrangements and mechanism for the HelpDesk

The TSU places emphasis on the establishment and consolidation of the support base of the HelpDesk, namely, those partner institutions expected to actively support the operation of the HelpDesk. This set of partners is derived from the expected needs under the 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 HelpDesk after its launch additional partners would be considered for integration into the HelpDesk Support Base. The formal process of becoming a 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 HelpDesk. The institutional arrangements under the HelpDesk were the main subject of a dedicated Workshop on the establishment of the HelpDesk with the intended Support Base partners, held 13-14 November 2008 in Geneva, Switzerland. The HelpDesk proposal was discussed in detail with 25 partners attending and their input was incorporated into the further planning. The workshop provided also an opportunity to receive the principal consent of the support base partners with the HelpDesk proposal which could be achieved.

Sub-material VII provides the HelpDesk Framework Document and Letter of Engagement.

The foreseen partners to become part of the HelpDesk Support Base include the following:

- Asian Disaster Preparedness Centre (in process)
- AGRHYMET
- Australian Bureau of Meteorology
- Cap-Net/UNDP (signed)
- Czech Hydrometeorological Institute
- EUROAQUAE (signed)
- Deltares (signed)
- Global Water Partnership (in process)
- Hamburg University of Technology (in process)
- International Association of Hydraulic Research
- International Association of Hydrological Sciences (signed)
- Japan Ministry of Land, Infrastructure Transport and Tourism (APFM Financial Partner)
- Korean Institute of Construction Technology (in process)

- Nile Basin Capacity Building Network
- PROHIMET
- RAMSAR
- Regional Centre on Urban Water Management (in process)
- The International Centre for Water Hazard and Risk Management (signed)
- Stockholm International Water Institute (in process)
- Swiss Federal Office for the Environment (APFM Financial Partner)
- UN/ISDR
- UNECE
- UNESCO-IHE (signed)
- University of Dundee (in process)
- University of Idaho (in process)
- University of Nice Sophia Antipolis (as part of EUROAQUAE)
- UNOSAT (signed)

The World Water Forum 5 in Istanbul in March 2009 provided opportunity to sign a number of the above Letters of Engagement and to start the HelpDesk promotion. It is important to note that some of those partners are foreseen as technical partners and some as technical and financial partners. Further, efforts would need to be made to broaden the linkages of the HelpDesk to the bi- and multilateral development agencies. In pursuit of satisfying this need a regular event between WMO and its technical and financial partners, the "WHYCOS International Advisory Group" (WIAG), was used to present the HelpDesk to a number of existing financial partners of WMO (especially AFD and AWF) in February 2009 at the WIAG VIII Meeting in Geneva, Switzerland. Immediate commitments could neither be expected nor obtained. Further efforts towards these as well as further financial partners would be required.

2.7.3 Further process and launch of the HelpDesk

The formal linkages will be completed between the partners to be able to officially launch the IFM HelpDesk at the UN-ISDR Global Platform on Disaster Risk Reduction on 17 June 2009. This will be an important element to make the availability of the HelpDesk known to the water and disaster management community. During 2009 further efforts would need to be undertaken to make the availability of the HelpDesk known to the foreseen beneficiaries. The World Water Week in Stockholm will be used as an additional forum to make the HelpDesk known to the water professionals in form of a side event. The period between June 2009 and spring 2010 would be the period in which the operation of the helpdesk would be fine-tuned with the aim of being fully operational at the end of the APFM Phase II. The central domain name for the Helpdesk is "www.floodmanagement.info", which helps visitors to remember its name easily.

3. PROGRAMME PERFORMANCE

3.1 PROGRESS OF ACTIVITIES

3.1.1 Flood Management Tools Series and Flood Management Policy Series

IFM Tools on "Risk sharing in flood management", "IFM as and adaptation tool for climate change" and "Flash flood management" have been developed to guide the flood practitioners in their efforts toward the implementation of IFM. Progress under this activity can be assessed as planned. Elements of the Flood Management Policy Series have been taken up in a number of additional languages; especially the IFM Concept Paper has been translated into Russian and Farsi, and Legal aspects and Environmental aspects has translated into Japanese through external collaborators.

3.1.2 Support national and regional activities

During this reporting period, APFM has continuously supported the outreach process of the pilot projects undertaken during Phase I to enhance its effectiveness and promote further implementation of the IFM in the field within the planned and available resources. The outreach process is primarily depends on the joint cooperation and resources provided by collaborating organizations and countries. The Strategy in the Lake Victoria basin is now being followed up by JICA under "Study on Integrated Flood management for Nyando River Basin in the Republic of Kenya". WMO enthusiastically took part in finalizing master plan with participating local workshops in 2008, and continues to support government of Kenya in this activity. Many actions are being identified to build the capacity in the country to facilitate the process. Achievement in the item is dependent on the requests received and the financial resources.

3.1.3 Capacity building

IFM Training Course materials have been further refined and web-published based on the contents of flood management policy series papers prepared during Phase I with a view to facilitate presentation of the concept by the trainers at training workshops and thereby support enhancing people's understanding of the issues and the multidisciplinary nature of flood management. The materials provide opportunity to introduce various aspects of IFM in the capacity building activities such as IFM training and it also can be used for self-learning. Training of Trainers courses were conducted for South East Asia and the Ibero-American countries.

The "Flood Manager E-learning" system has been further developed and would be made freely available online at the launch of the IFM HelpDesk in collaboration with TUHH. The system would be expanded in the future on an opportunity and needs basis. A children's booklet and educator's guide titled "Understanding Floods" have been published in collaboration with Project WET, USAID and University Corporation on Atmospheric Research (UCAR).

Several institutional partnerships especially those with Cap-Net, Project WET and TUHH have started to bear fruitful results and synergies for capacity building activities related to flood management. JICA training for "River and Dam Engineering III" was undertaken during reporting period and trainees were well appreciated the contents of the inputs from APFM. The promotion of cooperative activities will be continued to create the synergy of cooperation, e.g. under the umbrella of the UNWater Decade Programme on Capacity Building. Progress in this activity is assessed as satisfactory.

3.1.4 Flood Management Reference Centre

The Flood Management Reference Centre has been continuously strengthened especially the databases for Flood Management Institutions, Literature, and Policy and Law. The Question and Answer Section has been taken up and is planned to be published during the launch of the HelpDesk on several levels, namely Q&A

related to the IFM Concept and the functioning of the HelpDesk. The Flood Management Reference Centre and the Q&A Sections will become parts of autodidactic mode of IFM Help Desk (see 2.7 Help Desk).

3.1.5 Dissemination of Information and linkage to other activities

APFM participated in three international conferences during the reporting period which provided excellent opportunity to disseminate information, get the comments and suggestions to further develop our activities, and raise opportunity for future activity. Three APFM newsletters were disseminated to provide latest activities and progress under APFM. The APFM Website is continuously updated and the number of daily visitors to APFM website continues to rise. Printed form of APFM publications are disseminated to various training institutions and universities that have relevance to IFM and IWRM.

3.1.6 Establishment of the HelpDesk for Integrated Flood Management

The formation of the institutional partnerships under the Helpdesk for Integrated Flood Management formed a major part of the efforts during the reporting period. After a workshop with all intended partners, formal institutional partnerships in form of a Letter of Engagement have been taken up. This effort is well underway with formal agreement completed with some ten key institutions and a similar number expected to sign within the course of the next months. The development of the webpage of the helpdesk has proceeded satisfyingly in terms of integrating the necessary access to information and request forms for the target group. Within the first months of operation of the HelpDesk a collaborative work space for the support base partners would be setup based on the initial experience gained with incoming requests and the joint follow up of support base partners. Promotional activities have focussed on the World Water Forum, the regional IFM training courses and conferences attended by WMO staff such as the Mekong Flood Forum. Progress in this activity is assessed as satisfactory.

3.2 FINANCIAL SUPPORT AND PERFORMANCE

The financial statement of the APFM Trust Fund with income and expenditure from April 2008 to March 2009 is summarized including last instalment from Japan and Switzerland, is given in the Tables on the next page. The statement does not include the last instalment from Switzerland after April 2009.

3.2.1 Financial support

During the reporting period, CHF 471,841 was contributed by Japan and CHF 79,615 was by Switzerland to APFM as a direct financial support. Switzerland and Spain contributed to APFM activities through indirect financial supports. The general contribution from HWR was included for income of this period.

3rd instalment from Japan for 2007-2008	CHF 38,385 (JPY 3,850,000)	Apr. 15
1st instalment from Japan:	CHF 303,534 (JPY 26,950,000)	June 13, Feb.5
2nd instalment from Japan:	CHF 84,219 (JPY 7,700,000)	Aug. 25, Mar.25
3rd instalment from Japan:	CHF 45,703 (JPY 3,850,000)	Mar. 25
(Total contribution from Japan)	CHF 471,841	
1st instalment from Switzerland:	CHF 50,000	Aug. 14
2nd instalment from Switzerland:	CHF 29,615	Jan 9
(Total contribution from Switzerland)	CHF 79,615 *not including the last instalment after April 2009	
(Interest)	CHF 3,997	
(Total Income)	CHF 555,453 *not including the last instalment after April 2009	

3.2.2 Financial performance

Against the available funds of CHF 517,068 (contribution plus interest) plus carryover of CHF 103,576 (including CHF 38,385, the instalment from Japan on 15 April 2008 for contribution to 2007/2008), an expenditure of CHF 425,761 was made and a balance of CHF 194,883 is committed. The instalment after April 2009, CHF 20,000 from Switzerland will be also committed into a balance. A number of activities were undertaken through the regular WMO funds. Activities were mainly focused on the initiation of capacity building activities through creating cooperative schemes with other institutions. Support to national and regional activities was provided as requested, which is likely to pick up momentum and require resources for implementation.

Along with the APFM Trust Fund, the APFM activities were supported from WMO regular budget and the other trust funds. The formulation of the "Guidelines on Flood Mapping", of which the first expert group meeting in April 2008, has been supported directly from WMO regular budget (CHF 41,453). The Regional Training of Trainers course on Integrated Flood Management for Ibero-America in Peru October 2008 was organized with support of Spanish government (CHF 56,149). The WMO regular staffs also support APFM activities.

APFM TRUST FUND FINANCIAL STATEMENT
(as of 31 March 2009)

1. Income and Expenditure from April 2008 to March 2009

			CHF
1-1.	**Opening balance**		**65,191 (a)**
1-2.	**Income**		
	Contributions		551,456
	Interest		3,997
		Total Income	**555,453 (b)**
1-3.	**Expenditure (including support costs)**		
	Actual Expenditure (Liquidated)		358,121
	Unliquidated (Future Obligation)		73,398
	Requisition (Future Obligation)		-5,758
		Total Expenditure	**425,761 (c)**
1-4.	**Carry forward from this period**	**(a)+(b)-(c)**	**194,883**

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4. ACTIVITY PLAN

4.1 IFM TOOLS AND IFM CONCEPT PAPER

TSU will develop three tools “Flood proofing”, “Flood emergency planning” and “Flood forecasting and warning system” during next period. “Mud flows and land slides management” and “Guidelines on Flood Mapping” will also be continued. Certain other tools would be adapted from existing literature available with partners.

4.1.1 IFM as an adaptation tool for climate change (case studies)

Following the tool developed in 2008-2009, case studies are more elaborated to show: how flood management projects are adapted to climate change; legal and institutional arrangement for the adaptation; roles and responsibilities for the adaptation; how to assess flood risks for climate change; integrated and basin approaches for flood management emphasizing climate change adaptation. In principle, the tool is not seen as a technical manual but rather a starting point for the adaptation to climate change through integrated flood management, so case studies would emphasize the variety trials towards climate change. Efforts would be made to collaborated with the Japan Institute of Construction Engineering (JICE), especially for some cases in Asia.

4.1.2 Flood emergency planning

Since absolute protection from flooding is a myth, flood emergency management is an integral part of flood risk reduction, which aims at managing and minimizing the damaging effects of flooding. Flood emergency management can be divided into three stages: preparedness, response and recovery. This tool will address the issue in flood emergency management; contents of flood emergency management plan and the preparation of emergency situation. Possibility of developing this tool in collaboration with the United Stated Bureau Reclamation or International Federation of Red Cross and Red Crescent Societies (IFRC) will be explored.

4.1.3 Flood forecasting and warning system

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 to understand and improve the existing ones. Efforts would be made to work with Korea Institute of Construction Technology and possibility of commonalities of approaches would be explored.

4.1.4 Mud flows and land slides management

Based on the created relationships with Sabo Department of MLIT, the tool will be reviewed and developed through explored commonalities of approaches toward mud flows and land slides. After reviewing the draft, further external review process would be sought to finalize the process.

4.1.5 Guidelines on Flood Mapping

Based on the draft contributions of good quality the Editorial Board will review the contributions and make necessary adjustments towards a second draft. The editorial board consists of representatives of FOEN, WMO and technical universities playing a key role in the preparation process. The Guideline will be finalized through an external review process by spring of 2010. Substantive guidance material on this subject with an international and development sensitive perspective is in high demand. Elements of the guidelines would also be used in the future training courses on integrated flood management, particularly to provide practical tools in the context of risk assessment.

4.2 SUPPORT TO NATIONAL AND REGIONAL ACTIVITIES

4.2.1 Conferences and Seminars

Second Meeting of the Global Platform on Disaster Risk Reduction, Geneva, Switzerland, 16-19 June 2009

This meeting signifies the central global meeting in pursuit of the implementation of the Hyogo Framework for Action, established in 2005. APFM will organize the launching event for the HelpDesk for Integrated Flood Management during a side event on 17 June 2009.

World Water Week, Stockholm, 16-22 August 2009

The major input to the WWW would be the organization of a side event to promote the availability of the IFM HelpDesk. The side event proposal has been accepted under the title "Country Assistance for Robust Flood Management Policies: The HelpDesk for Integrated Flood Management" and would be held in the evening of 18 August.

8th IAHS Scientific Assembly & 37th IAH Congress, Hyderabad, India, 6-12 September 2009

The conference will be organized by International Association of Hydrological Sciences (IAHS) and the International Association of Hydrogeologists (IAH). The main theme is for an appropriate scientific approach conforming to the national policies through a synergic approach synthesizing science, governance, awareness and educative policies. APFM will participate as one of the co-conveners for the workshop on flood risk management (HW3).

4.2.2 Kenya

A Master plan formulated in 2008 covers both structural and non-structural measures from short-term (by 2012) to long-term (after 2021). Under support of JICA, the five pilot projects were completed in 2008 and further project (2009-2011) for integrated flood management at 24 communities in Nyando River basin along Lake Victoria has just initiated from 2009. These projects emphasize community participation and transparency of decision making. APFM will participate in the proposed workshop to be organized by JICA to support the practical phase of their flood management through disseminating IFM tools and IFM HelpDesk, which are planned to adopt the IFM principles applicable to each field. Such activities can contribute to the applicability of the IFM guidance.

4.2.3 Flood Management in Mali

The kick-off meeting of the project "Assessment of the impacts of drought and floods on agriculture in Mali – ANADIA" was held in March 2009 in Bamako. The meeting agreed to start the implementation of the project in a pilot study of 20 to 30 villages offering the possibility of refining methodologies for the assessment of impacts of floods and drought on agriculture, forestry and livestock. The local structures of DMN, DNH, DNA and IER will be involved, to ensure regular and rigorous data collection and that the methodologies to be developed in the pilot area is easily adaptable to other regions of the country

4.2.4 Flood Management in Guinea

A brief project proposal for IFM in Guinea has been formulated under the title "Enhancing flood preparedness of settlements at risk" with the National Directorate for Hydraulics – DNH within the Ministry of Hydraulics and Energy as the implementation partner. The proposal has been submitted to the African Water Facility for possible funding. This option will be further pursued and additional financial partners identified as required.

4.2.5 Flood management in Zambezi Basin

Based on engagement of WMO in Zambezi Basin to establish a Flash Flood Guidance System, WMO noted during the Regional workshop for the southern Africa sub-region that several countries of the basin have expressed the need on jointly developing a comprehensive flood forecasting system for the basin. To ensure successful implementation of such project, there is a need to obtain political commitments from the basin countries to cooperate and work together in such project. Recently, WMO completed and signed all the necessary agreements with USAID and HRC for the implementation of the Flash Flood Guidance System in southern Africa and the project activities will start soon. A kick off workshop is planned in July 2009 for participating countries including the Zambezi Basin countries. During this workshop, WMO will explore the countries willingness to be politically committed to jointly developing a comprehensive flood forecasting system for the basin. Efforts would be undertaken to use the IFM approach as an umbrella policy concept so that once the the flood forecasting and warning component would be developed, a broader set of flood management strategies could be taken up in pursuit of the aims of IFM.

4.2.6 Flood management in Ukraine

Based on a request by United Nations Development Programme (UNDP) in Ukraine, APFM plans to technically support the formulation of a flood management and mitigation project in Ukraine. After initial consultation a project brief is expected from UNDP. The process would be fully steered by UNDP so timelines are at this stage unclear.

4.2.7 IFM policy support for Afghanistan

Based on a request received from an advisor to the Afghan Ministry of Energy and Water, TSU will engage in a policy making process in Afghanistan as a supplement to the already existing policies on IWRM. Process coaching and technical inputs would be the first pursued efforts. Depending on the further process the effort may result in a broader engagement.

4.3 CAPACITY DEVELOPMENT

4.3.1 Development of training material

Vocational training materials together with Cap-Net

The “Collaborative Work Programme” of Cap-Net and WMO on Integrated Flood Mangement revised for 2009/2010 with final decision on the allocation of activities and budget expected before the AC/MC Meetings.

Development of IFM Training Material in the framework of collaboration with Cap-Net is being undertaken on two topics for different target groups, after completing urban flood management course, namely

- 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.
- National NGOs active in community outreach projects in water or disaster management, and subsequently district/municipal level authorities as well as community leadership in floodprone areas, particularly rural areas. (*Community flood management course)*
  The efforts to serve the Bangladesh Centre for Advanced Studies (BCAS) as a partner would be continued in shaping a training material for community flood management.

For the IFM Policy course, materials have been created in form of lesson plans, presentations or course readers in English and Spanish. For the South East Asian Region after holding a Training of Trainers in February 2009, a fully fledged training package is being prepared by CKNet-INA with funding from Cap-Net and the World Bank. Based on the first experiences with using the materials a fully fledged global training package according to the standards applied by Cap-Net would be publsihed. Such training package

is intended as working materials for trainers, facilitators and trainees. A course in Mauritania would serve as an opportunity to provide the first short course on IFM in French language.

E-learning in collaboration with Technical University of Hamburg-Harburg
After completing the IFM Modules, APFM and TUHH would continue to work together on an adapted version of the e-learning tool for integrated flood management, which would be jointly published at the launch of HelpDesk. Revised content is being jointly agreed-on by APFM and TUHH through an informal editorial board. If and as required, additional partners could be invited to join that board with a particular view of adding value into the contents or outreach. Such e-learning environment would be made a "living system", i.e. the content would be added on a regular bases. The E-learning system would serve as part of a "blended learning" approach which would combine "e-learning" as a preparatory step to the onsite trainings undertaken by APFM.

Learning Materials for Kids and Educators (with Project WET)
The publication of the two materials under this category during the World Water Forum in Istanbul was a great success in terms of the amount of copies that was required for distribution. During the Forum and thereafter, various requests for translating the material in other languages (such as Turkish, Spanish, Farsi and Romanian) have been received. TSU would work with its partner "Project WET" to satisfy this requirement in accordance with the standards to quality and outreach pursued by all partners.

4.3.2 Training courses

Planned training courses in collaboration with JICA
APFM will continue to organize the Integrated Flood Management (IFM) module in the trainings organized by JICA for "River and Dam Engineering III" under the overall cooperation between APFM and ICHARM for capacity building.

Planned training courses in collaboration with Cap-Net
Nile Basin: a proposal has been received from a Cap-Net affiliated regional capacity building network in the Nile-Basin to hold a regional training on integrated flood management for the countries of the Nile Basin. TSU is working with the regional partners to ensure that the proposal meets the set quality criteria and that the target group can be effectively reached before taking final decision on running the training. After specifying the training need TSU would pursue to organize the training in the third quarter of 2009 together with the Nile Basin Capacity Building Network (NBCBN).

Mekong Basin: During the 2009 Mekong Flood Forum, TSU explored whether Member countries of the Mekong River Commission are interested in a regional IFM workshop with possible follow up workshops through the national MRC committees. In light of positive indication collaboration with established regional entities such as ADPC would be sought.

Uruguay and Argentina: Several workshops on Integrated Flood Management for Latin America are planned in Uruguay July 2009 and April 2010, and in Argentina October 2009. The workshops would be organized as national training events for practitioners. This is a follow up of the workshop organized in Lima, Peru 2008. These courses would be budget neutral to the APFM, as funding could be secured through a dedicated fund managed by WMO on behalf of the Spanish Government for the Iberoamerican countries though April 2010 course will be funded by local university. Following the projects in Bolivia reported in the APFM Annual Report 2007-2008, a further request is also expected in Bolivia.

National Trainings in Southeast Asia
National training interventions are planned in Indonesia in June (as part of the training course development based on the regional training of trainers held in February 2009 in Jakarta), and Malaysia in August (in collaboration with the Malaysian Department of Irrigation and Drainage and the Malaysian Water Partnership).

Hindukush Himlaya
A training course involving China will be considered possibly embedded in a regional workshop for the Himalaya Hindukush Region. Possible collaboration would be sought with ICIMOD.

Workshop with the United Nations Economic Commission for Europe "Workshop on Transboundary Flood Risk Management", Geneva, 22-23 April 2009
The workshop would be jointly organized by WMO, UNECE and the Governments of Germany and The Netherlands. The workshop would be to discuss and facilitate transboundary issues related to flood risk management in Europe and Central Asia. Main target audience would be national government representatives responsible for flood management on the policy and upper management levels. APFM would use this opportunity also for further collaboration toward establishing IFM HelpDesk.

Following Training courses are planned with UN-Water DCP
Western Asia and the Arab Region: Under the newly established UN-Water Decade Programme on Capacity Development (UN-Water DCP) the APFM proposed to launch a regional training on IFM for the Western Asia and the Arab Region. The training work shop is planned to be held in Tehran, Iran from 11 to 14 May 2009, co-organized by UN-Water Decade Programme on Capacity Development (UNW-DPC) and Regional Centre on Urban Water Management (RCUWM-Tehran). The aim is to scale-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. This four-day course is designed to familiarize participants with the concept of Integrated Flood Management and prepare them to identify possible paths of action towards implementation of the concept in their own field of work. The course provides 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.

Training course in Mauritania
The sensitization workshop for decision makers will be organized in late June 2009 in Nouakchott for a duration of two days. It is envisaged that the first half day will be devoted to a general presentation of the IFM concept to parliamentarians and top level national decision makers, and the remaining will be devoted to a more in-depth presentation of IFM concept to representatives of Stated departments in charge of flood management and representatives of local authorities of the areas more exposed to flood risk. The Swiss Federal Office for the Environment would contribute its expertise to the organization and running of the seminar.

4.4 HELP DESK

The formal linkages would be completed between the partners to be able to officially launch the IFM HelpDesk at the UN-ISDR Global Platform on Disaster Risk Reduction in June 2009. This will be an important element to make the availability of the HelpDesk known to the water and disaster management communities. During 2009 further efforts would need to be undertaken to make the availability of the HelpDesk known to the foreseen beneficiaries. The period between June 2009 to spring 2010 would be the period in which the operation of the helpdesk would be fine-tuned with the aim of being fully operational at the end of the APFM Phase II. Close collaboration with all support base partners in the fine tuning of the functionality of the HelpDesk would be pursued. Parameters difficult to gauge without this test period are the frequency, types and implication of requests on TSU human and financial resourcing. The process of interacting with the support base partners and quality control of outputs will also need fine tuning in the first few months of operation.

Further efforts will be undertaken to strengthen the direct linkages to the financial partners for follow up of projects and strategies developed under the HelpDesk for IFM. Another line of further increasing the human resources availability under the HelpDesk would be the search of a country willing to support a Junior Professional Officer (JPO) under the APFM.

ANNEX I VISITORS TO WEBSITE

1. General visitor statistics (Traffic)

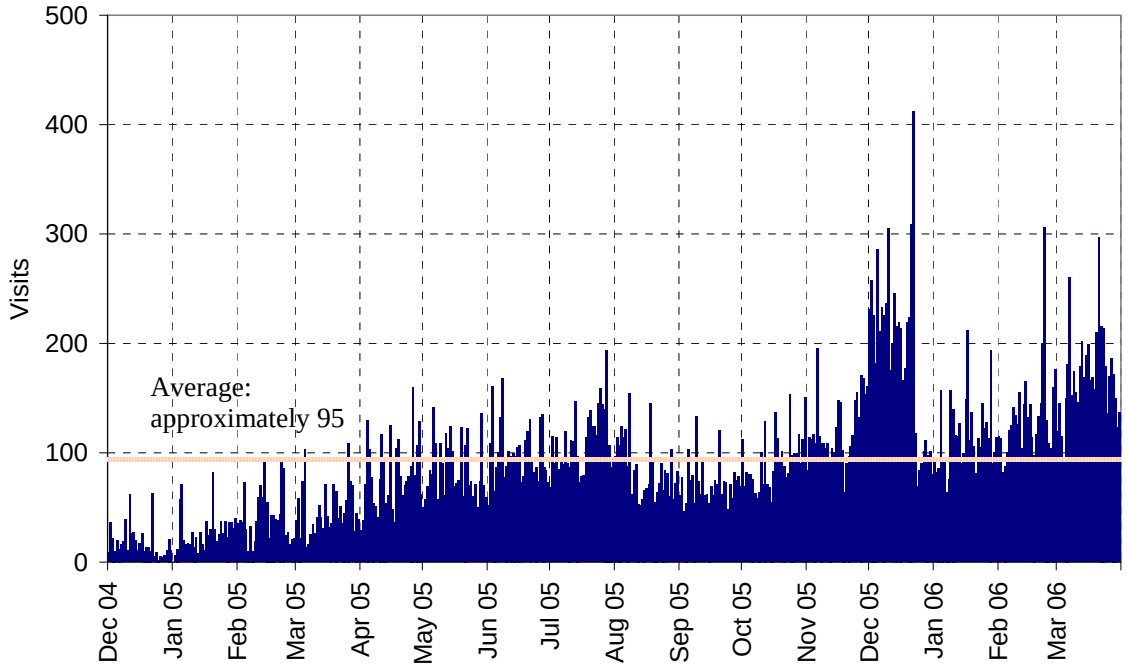


Figure 4: Sessions (from 1 December 2004 to 31 March 2006)

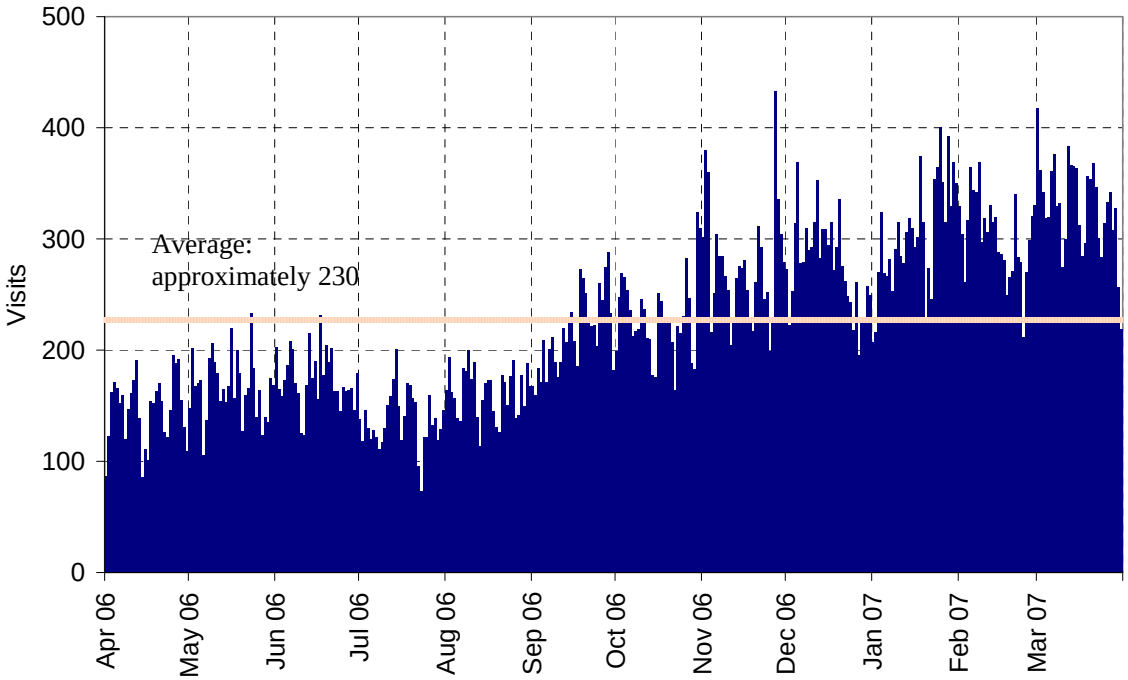


Figure 5: Sessions (from 1 April 2006 to 31 March 2007)

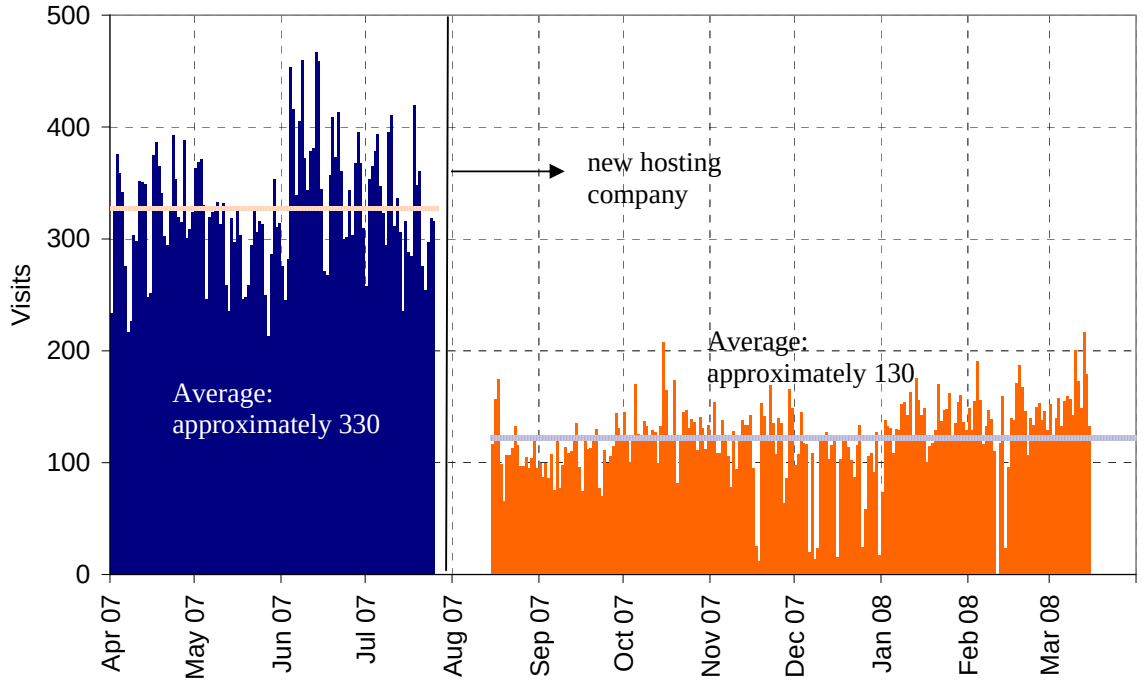


Figure 6: Sessions (from 1 April 2007 to 31 March 2008)

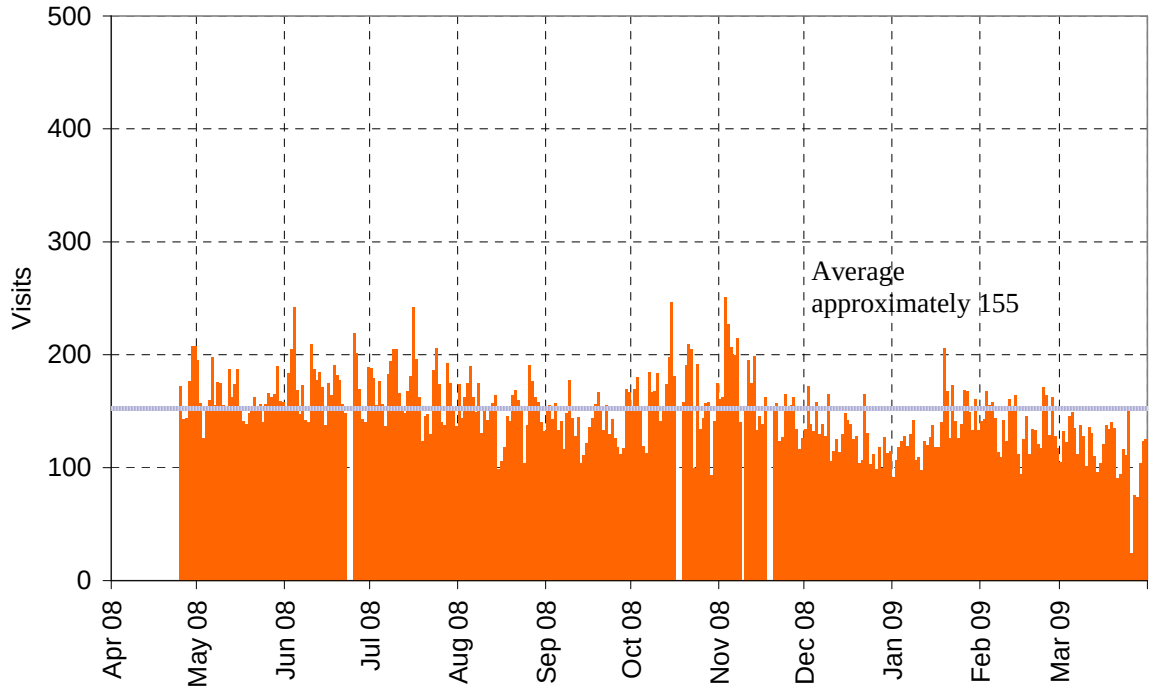


Figure 7: Sessions (from 1 April 2008 to 31 March 2009)

2. The number of access (PDF files only)

1) from Apr 2008 to Mar 2009 *hosted by New company

Table: Top 10 of page views (PDF files only) on the APFM website (monthly data)

April 2008

Rank	Hits	item	URL
1	526	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
2	368	Strategy for FM for Lake Victoria Basin, Kenya	/pdf/strategy_kenya_e.pdf
3	344	Manual on Community Approach in Bangladesh	/pdf/pilot_projects/manual_bangladesh.pdf
4	224	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
5	216	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
6	213	Synthesis Report of Flash Flood Management in CEE	/pdf/pilot_projects/APFM-CEE-Synthesis_web.pdf
7	158	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
8	124	FM Policy Series; Legal Aspects of IFM (Sp)	/pdf/ifm_legal_aspects_Sp.pdf
9	115	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
10	115	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf

May 2008

Rank	Hits	item	URL
1	1406	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
2	1341	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
3	733	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
4	618	FM Policy Series; Environmental Aspects of IFM (Sp)	/pdf/ifm_environmental_aspects_Sp.pdf
5	603	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
6	504	IFM Tools; Basin FM Plan	/pdf/ifm_tools/Tools_Basin_Flood_Management_Plan.pdf
7	493	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf
8	469	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
9	469	Manual on Community Approach in India	/pdf/pilot_projects/manual_india.pdf
10	465	IFM Tools; Environmental Assessment	/pdf/ifm_tools/Tools_Environmental_Assessment_for_Flood_Management.pdf

June 2008

Rank	Hits	item	URL
1	1698	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
2	1323	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
3	868	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
4	803	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
5	685	Manual on Community Approach in India	/pdf/pilot_projects/manual_india.pdf
6	436	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf
7	407	Strategy for FM for Lake Victoria Basin, Kenya	/pdf/strategy_kenya_e.pdf
8	396	FM Policy Series; Social Aspects in IFM (Sp)	/pdf/ifm_social_aspects_Sp.pdf
9	371	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
10	368	IFM Tools; Basin FM Plan	/pdf/ifm_tools/Tools_Basin_Flood_Management_Plan.pdf

July 2008

Rank	Hits	item	URL
1	2213	Flood Mapping; Satellite-based Flood Detection	/pdf/flood_mapping/14Satellite-based_Flood_Detection.pdf
2	1394	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
3	1006	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
4	600	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
5	559	IFM Tools; The Role of Land Use	/pdf/ifm_tools/Tools_The_Role_of_Land_Use_Planning_in_FM.pdf
6	530	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
7	461	FM Policy Series; Environmental Aspects of IFM (Sp)	/pdf/ifm_environmental_aspects_Sp.pdf
8	439	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
9	433	Case Study in Pakistan	/pdf/case_studies/cs_pakistan_nullah.pdf
10	431	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf

August 2008

Rank	Hits	item	URL
1	1866	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	971	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
3	746	IFM Tools; The Role of Land Use	/pdf/ifm_tools/Tools_The_Role_of_Land_Use_Planning_in_FM.pdf
4	519	IFM Tools; Basin FM Plan	/pdf/ifm_tools/Tools_Basin_Flood_Management_Plan.pdf
5	515	IFM Tools; Environmental Assessment	/pdf/ifm_tools/Tools_Environmental_Assessment_for_Flood_Management.pdf
6	472	IFM Tools; Organizing Community Participation	/pdf/ifm_tools/Tools_Organizing_Community_Participation_for_FM.pdf
7	462	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
8	439	IFM Tools; Flood Loss Assessment	/pdf/ifm_tools/Tools_Flood_Loss_Assessment.pdf
9	436	IFM Tools; Reservoir Operations and Managed Flow	/pdf/ifm_tools/Tools_Reservoir_Operations_and_Managed_Flows.pdf
10	435	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf

September 2008

Rank	Hits	item	URL
1	2162	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	1315	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf
3	1063	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
4	876	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
5	766	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
6	741	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
7	694	Urban Flood Management (Es low quality)	/pdf/Urban_Flood_Management_Es_low.pdf
8	668	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf
9	612	Urban Flood Management (En low quality)	/pdf/Urban_Flood_Management_En_low.pdf
10	599	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf

October 2008

Rank	Hits	item	URL
1	2448	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	1077	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
3	1042	FM Policy Series; Environmental Aspects of IFM (Sp)	/pdf/ifm_environmental_aspects_Sp.pdf
4	942	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
5	937	FM Policy Series; Social Aspects in IFM (Sp)	/pdf/ifm_social_aspects_Sp.pdf
6	847	FM Policy Series; Legal Aspects of IFM (En) Case Studies	/pdf/ifm_legal_aspects_casestudies.pdf
7	846	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
8	815	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
9	792	FM Policy Series; Legal Aspects of IFM (Sp)	/pdf/ifm_legal_aspects_Sp.pdf
10	768	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf

November 2008

Rank	Hits	item	URL
1	3343	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	967	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
3	867	Integración de los distintos elementos en la GIC – ejemplo de Perú	/pdf/peru_workshop/20_example_in_Peru.pdf
4	851	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
5	826	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
6	774	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
7	678	FM Policy Series; Legal Aspects of IFM (En) Case Studies	/pdf/ifm_legal_aspects_casestudies.pdf
8	628	FM Policy Series; Social Aspects in IFM (Sp)	/pdf/ifm_social_aspects_Sp.pdf
9	594	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf
10	559	Manual for Community-based Flood Management in Bangladesh	/pdf/pilot_projects/manual_bangladesh.pdf

December 2008

Rank	Hits	item	URL
1	1792	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	1200	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf
3	1013	Integración de los distintos elementos en la GIC – ejemplo de Perú	/pdf/peru_workshop/20_example_in_Peru.pdf
4	849	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
5	800	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
6	713	Manual for Community-based Flood Management in Bangladesh	/pdf/pilot_projects/manual_bangladesh.pdf
7	662	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
8	630	FM Policy Series; Legal Aspects of IFM (En) Case Studies	/pdf/ifm_legal_aspects_casestudies.pdf
9	550	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
10	464	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects.pdf

January 2009

Rank	Hits	item	URL
1	1506	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	964	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
3	729	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf
4	706	FM Policy Series; Environmental Aspects of IFM (En)	/pdf/ifm_environmental_aspects.pdf
5	665	Integración de los distintos elementos en la GIC – ejemplo de Perú	/pdf/peru_workshop/20_example_in_Peru.pdf
6	647	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
7	603	Manual for Community-based Flood Management in Bangladesh	/pdf/pilot_projects/manual_bangladesh.pdf
8	571	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
9	527	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
10	454	Case Study in India	/pdf/pilot_projects/manual_india.pdf

February 2009

Rank	Hits	item	URL
1	1855	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
2	1664	Urban Flood Management (En Low quality)	/pdf/Urban_Flood_Management_Es_low.pdf
3	1330	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
4	825	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf
5	760	Case Study in Mexico	/pdf/case_studies/cs_mexico.pdf
6	711	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
7	711	Integración de los distintos elementos en la GIC – ejemplo de Perú	/pdf/peru_workshop/20_example_in_Peru.pdf
8	570	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects_Sp.pdf
9	508	IFM Tools; The Role of Land Use	/pdf/ifm_tools/Tools_The_Role_of_Land_Use_Planning_in_FM.pdf
10	496	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf

March 2009

Rank	Hits	item	URL
1	1808	Urban Flood Management (En Low quality)	/pdf/Urban_Flood_Management_Es_low.pdf
2	1540	IFM Tools; The Urban Flood Risk Management	/pdf/ifm_tools/Tools_Urban_Flood_Risk_Management.pdf
3	1149	IFM Concept Paper (En)	/pdf/concept_paper_e.pdf
4	1024	Urban Flood Management (En High quality)	/pdf/Urban_Flood_Management_En_high.pdf
5	859	FM Policy Series; Social Aspects in IFM (En)	/pdf/ifm_social_aspects_Sp.pdf
6	842	Integración de los distintos elementos en la GIC – ejemplo de Perú	/pdf/peru_workshop/20_example_in_Peru.pdf
7	821	Case Study in Bangladesh	/pdf/case_studies/cs_bangladesh.pdf
8	741	FM Policy Series; Legal Aspects of IFM (En)	/pdf/ifm_legal_aspects.pdf
9	606	FM Policy Series; Economic Aspects of IFM (En)	/pdf/ifm_economic_aspects.pdf
10	603	Case Study in Bangladesh Extended summary	/pdf/case_studies/bangladesh.pdf

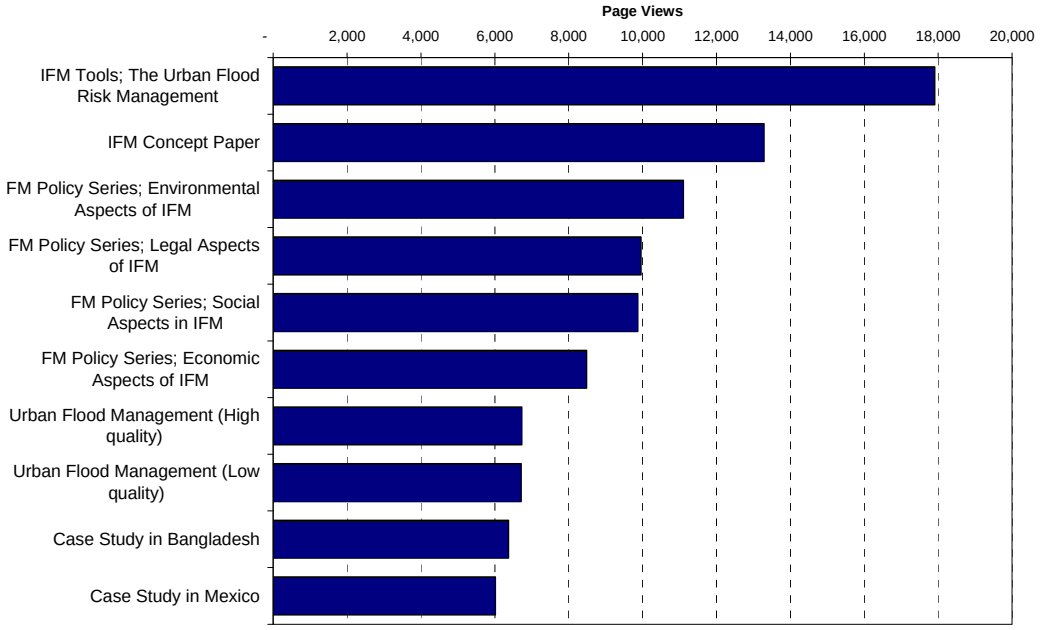
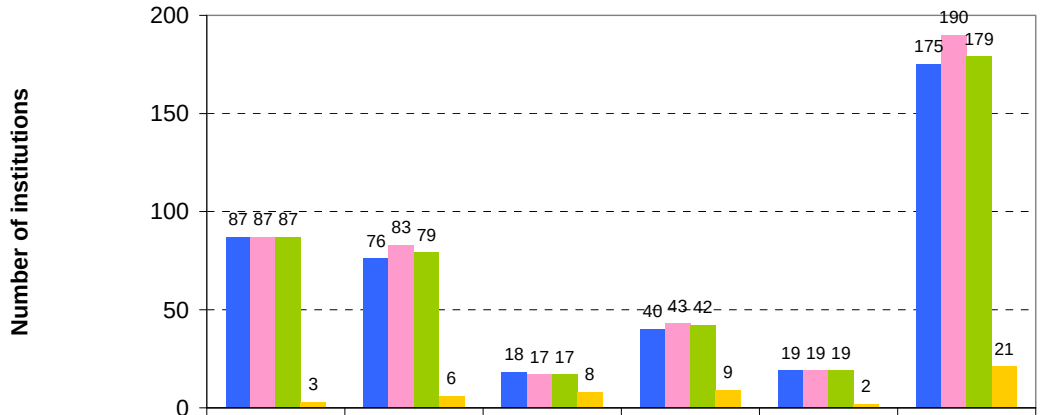


Figure 8: Top 10 of access (PDF files only) on the APFM website (monthly average)

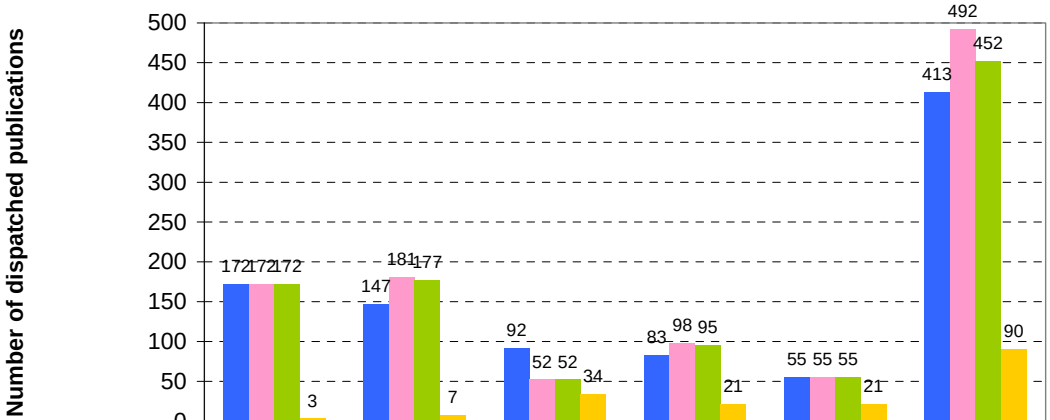
ANNEX II DISSEMINATION OF PUBLICATIONS

1) Number of institutions



Region →	Africa	Asia	South America	North America and Carribbean	Southwest Pacific	Europe
Legal	87	76	18	40	19	175
Environmental	87	83	17	43	19	190
Social	87	79	17	42	19	179
Economic	3	6	8	9	2	21

2) Number of dispatched publications



Region →	Africa	Asia	South America	North America and Carribbean	Southwest Pacific	Europe
Legal	172	147	92	83	55	413
Environmental	172	181	52	98	55	492
Social	172	177	52	95	55	452
Economic	3	7	34	21	21	90

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

Figure 9: Number of institutions and publications that APFM publication has been dispatched