



Mekong River Commission

Office of the Secretariat in Phnom Penh (OSP)
576 National Road, # 2, Chak Angre Krom,
P.O. Box 623, Phnom Penh, Cambodia
Tel. (855-23) 425 353. Fax (855-23) 425 363

Office of the Secretariat in Vientiane (OSV),
Office of the Chief Executive Officer
184 Fa Ngoum Road, P.O. Box 6101, Vientiane, Lao
PDR
Tel: (856-21) 263 263. Fax: (856-21) 263 264

TERMS OF REFERENCE

International Hydrology/Flood Expert (IHFE) for the Production of the Annual Mekong Flood Report for 2014 (AMFR-2014)

- Title:** International Hydrology/Flood Expert for the preparation of the AMFR 2014 for the Regional Flood Mitigation and Management Centre of Mekong River Commission Secretariat).
- Duration:** A maximum of 30 days (non-continuous), over the period of 5 months starting from 01 March to 31 July 2015
- Duty Station** Office of the Secretariat in Phnom Penh (OSP), Cambodia and/or home country in according to agreed work plan

1. RIVER COMMISSION

The **Mekong River Commission** (MRC) was established by the 1995 *Agreement on Cooperation for the Sustainable Development of the Mekong River Basin*, between the governments of Cambodia, Laos, Thailand and Viet Nam, in accordance with this Agreement. The **Mission** of MRC is: “to promote and coordinate sustainable management and development of water and related resources for the countries’ mutual benefit and the people’s well-being by implementing strategic programmes and activities, and providing scientific information and policy advice.”

2. The Flood Management and Mitigation Programme

The Flooding of the Mekong River is a recurrent event. Every year the Lower Mekong Basin (LMB) experiences flooding, which has the potential to adversely affect economic and human activity, often claiming lives and causing damage to important infrastructure, human settlements and essential services. Whilst the regular flood cycle is seen as a source of livelihood, severe floods can have a devastating effect on the basin’s efforts to improve economic development and reduce poverty. The negative effects of floods regularly counteract efforts for economic development and poverty reduction in various places throughout the LMB.

Right after the 2000 severe flood, the Mekong River Commission Council instructed the MRC Secretariat (MRCS) to prepare a Flood Management and Mitigation (FMM) Strategy using a highly participatory process of interaction with all National Mekong Committees (NMCs) and Line Agencies (NLAs) in the four MRC Member Countries, Development Partners, the Civil Society Organizations (CSOs) and International Organizations (IOs), etc. The development objective of the MRC Flood Management and Mitigation Programme (FMMP) is “to prevent, minimize or mitigate people’s suffering and economic losses due to floods, while preserving the environmental benefits of floods”. The objective is the key to a balanced approach to Flood Management and Mitigation (FMM) and reinforces the region’s commitment to “living with floods”. This programme will also maintain an accurate flood forecasting system, to act as a facilitator on trans-boundary issues and build capacity in Member Countries.

3. THE ANNUAL MEKONG FLOOD REPORT

The FMMP Programme 2004-2010 committed itself to annually prepare a Mekong Flood Report for the MRC, which represented an account of the floods occurred in the LMB to be presented to the MRC Joint Committee and Council. The Annual Mekong Flood Report (AMFR) also served as source of information and as a reference document, not only for the Joint Committee and Council members, but also for a wider audience, like the agencies responsible for the disaster management and mitigation functions in the Member Countries, institutes involved in water resources planning, development partners, NGO's etc. The Annual Mekong Flood Report is a FMMP product; between 2005 and 2012 a total of 8 AMFRs were successfully published by the FMMP in cooperation with the four MRC Member Countries. The Annual Mekong Flood Reports 2011, 2012 and 2013 are scheduled to be released soon.

The FMMP Programme 2011-2015, which is a support programme to the Regional Flood Management and Mitigation Centre (RFMMC), continues the commitment to prepare the Annual Mekong Flood Report (AMFR). The AMFR is divided into an annual flood analysis and a special theme that is selected in close cooperation with the MRC Member Countries. The theme touches each year upon a different topic related to floods and droughts. For 2014 the following theme has been defined: **“The impact of Flash Floods in the LMB”**. It is considered an instrumental topic to adjust the structure of the AMFR, as Member Countries have expressed that Flash Floods are perceived equally important as River Floods.

The report is usually developed through contributions from the national data collection experts (NDCE), the national hydrology/flood experts (NHFE), while the international hydrology/flood expert (IHFE) consolidates the four national reports into one AMFR. The report fosters common understanding and enables the Flood Management and Mitigation Programme (FMMP) to publish the AMFR-2014 for the benefits of the MRC Member Countries and other stakeholders.

4. RATIONAL AND OBJECTIVES

The past AMFRs were presented in Regional Consultation Meetings with the MRC Member Countries since 2005 to obtain suggestions and recommendations for improvements. Over the years a standard format was adopted with clearly defined target audiences, objectives and parameters/indicators. These improvements enabled the FMMP to work through a simpler and more user-friendly procedure with the NMCs and the MRCS in the process of data collection, processing, analysis and report writing.

The theme of the AMFR-2014 have been jointly determined, selected and agreed by the Member Countries during two Regional Technical and Consultation Meetings, which will be conducted in September 2014 in Phnom Penh, Cambodia and in December 2014 in Bangkok, Thailand respectively. The members of the Technical and Consultations Meetings were: representatives from four NMCs and line agencies concerned, National FMMP Coordinators (NCs), National Data Collection Experts (NDCEs), National Hydrology/Flood Experts (NHFEs), together with the FMMP Programme Coordinator (PC), the International Technical Advisor (ITA), the Operations Manager (OM) and the Flood Forecasting Expert (FFE), assisted by the International Hydrology/Flood Expert (IHFE), and Communications Officer of ICCS (CO) check the data and information of the draft AMFR-2013, its structure, content and lay-out. The International Cooperation and Communication Section (ICCS) of MRCS will be requested to provide guidance and advice on the draft version. The FMMP/RFMMC will be responsible for the accommodation of the amendments recommended by the meeting and ICCS into the draft AMFR-2013. Subsequently the final draft AMFR-2013 will be presented by the FMMP/RFMMC during a Regional Consultation Meeting with representatives from the MRC Member Countries, the ICCS and the FMMP/RFMMC during which the report is given a final check. After accommodation of the recommendations and suggestions the report will be printed and disseminated.

For the above reasons, the consultancy service of an IHFE is required in order to assist the FMMP/RFMMC in drafting the MRC AMFR-2014.

The main objectives of this consultancy service are:

- 1) In cooperation with the OM and FFE of the FMMP/RFMMC to undertake an in-depth analysis of 2014 flood situation at a regional scale (LMB). The analysis and report writing will be based on *Preliminary National Flood Reports* as well as other relevant flood related data and information to be provided by the NHFEs of the MRC Member Countries. Apart from this, additional relevant data and information from the MRCS and other regional and international organizations will also be needed. A Regional Technical Meeting will be organized by the FMMP/RFMMC to carry out a solid screening of the draft report.
- 2) In cooperation with the OM, FFE, CO of the ICCS of MRCS to present a well-documented draft AMFR-2014, fully structured, edited and enriched with reference information, of which the content and presentation/layout has been approved by the MRC Member Countries and the MRCS during the aforesaid Regional Consultation Meeting. The draft AMFR-2014 will be developed to such a level, that the MRCS, as a last and final step in the process, has to contract the printing services only.

5. COMPOSITION OF THE MISSION

The IHFE will technically work in a cooperative manner with the OM, FFEs of the FMMP/RFMMC and National FMMP Coordinators attached to each NMC; and will be strategically guided by the MRCS and FMMP/RFMMC Management. The IHFE will be particularly supported by the Professional Officer (PO) of ICCS, regarding basic formation, layout, structuring, reference information, editing etc.

For the specific flood data related information, support will be provided from The Information and Knowledge Management Programme (IKMP) through the Technical Support Division (TSD) and through the RFMMC in Phnom Penh.

6. DUTIES AND RESPONSIBILITIES (TASKS)

The following are the tasks of the IHFE:

1. To prepare a *Discussion Paper* on possible themes and their merits, and to present it in a one-day Technical Working Group Meeting with the MRC Member Countries in order to decide on the theme, contents and main features of the AMFR-2014.
2. To undertake an in-depth analysis of 2014 flash flood situations with the technical coordination support to be provided by the OM and FFE of the FMMP/RFMMC. The AMFR-2014 should be based on the *preliminary National Flood Reports* and other flood related data and information such as causes and mechanism of flooding; flood extent, water depth during flood events, duration maps; satellite images of flash flood events; and flood damage in standard categories etc. in the various regions of the LMB.
3. To explore and fill up the data and information gaps, if necessary, for hydro-meteorological information for better analysis of the report; the report should incorporate in the introductory part of the AMFR-2014 the deficit or surplus rainfall value over the LMB based on the comparison with the long term average basin rainfall.
4. To adjust the structure of the Annual Mekong Flood Report such, that river floods and flash floods are both thoroughly analyzed and described, and impact of the floods are separately identified and assessed in terms of casualties and damages. Casualties and damages will be identified, quantified and presented for the Member Country's territory, being part of the LMB, as well as for each Member Country as a whole.

5. As the identification of Flash Flood impacts in terms of casualties and damages is a complex process, the IHFE is requested to carefully interact with the FMMP and NDCE and to come up with recommendations that may include taking advantage of the Annual Performance Evaluation Report of the MRC-Flash Flood Guidance System. Likewise the IHFE may also take advantage of the Annual Performance Evaluation Report of the Mekong Flood Forecasting System for the Mekong River mainstream.
6. To check and where needed adjust the structure of the AMFR-2014 in accordance with the agreed format and content, and to edit the AMFR-2014 in UK English language standard in easy readable language;
7. To prepare a summary learning note on collected understanding and lessons learned about the process undergone in carrying out the work and make recommendations on improvements for the next AMFR publications;
8. To organize and implement, in close cooperation with the OM and FFE of the FMMP/RFMMC an internal MRCS round consultation with the FMMP/RFMMC management and concerned staff on the draft AMFR-2014;
9. To provide inputs (ppt and color printed copies) for the Regional Technical Meeting (RTM) and Regional Consultation Meeting (RCM) with representatives of the NMCs and responsible National Line Agencies on the draft final AMFR-2014, which is tentatively scheduled in the June and July 2014 respectively;
10. To process all comments in good coordination with the MRCS and FMMP/RFMMC and present a final draft version of the AMFR-2014 for approval by the MRCS; and
11. To duly perform other tasks as required and deemed necessary by the FMMP/RFMMC.

7. OUTPUTS

The following outputs have to be produced and provided to the FMMP following the overall work schedule below.

1. A discussion papers outlining the theme and its merits as well as the proposed structure and main features for the AMFR-2014, to be used as the basis for further discussion with the MRC Member Countries.
2. Six (6) printed and one (1) electronic version of the draft final AMFR-2014, well structured, well edited, well documented, describing the causes, mechanisms, extents, durations and consequences (casualties and damages) of the flash floods in the LMB in the year 2014.
3. A CD containing all raw data and results of data processing as well as the power point presentation (ppt) of the AMFR-2014.
4. A summary of learning note on collected understandings and lessons learned about the process undergone in carrying out the work since the commencement and make recommendations (themes and main features) on improvements for the next AMFR publications.

8. OVERALL WORKING SCHEDULE

The below presented below is shown key activities should be performed and in according to the schedule.

Overall tentative work plan for the Annual Mekong Flood Report 2014	
Schedule	Key activities and by whom
Jan/Feb 2015	Experts selections <ul style="list-style-type: none"> - <i>FMMP prepares TORs and in close cooperation with HRS and NMCs to recruit/select the experts (NMC will send CV and proposed candidates) and for international expert the waiver may be proceeding or recruitment.</i> - <i>HRS will prepare contract and get the contracts signed off</i>

Overall tentative work plan for the Annual Mekong Flood Report 2014	
Schedule	Key activities and by whom
Mar/Apr 2015	<p>Data collection, analysis and prepare a report</p> <ul style="list-style-type: none"> - <i>IHFE prepares the draft outline/lay-out of the AMFR-2014 and in according to the selected themes, then send this draft material to the NHFEs thru FMMP (cc to FMMP National Coordinators should any major comments)</i> - <i>All comments are gathered within a week and send to IHFE for the finalization</i> - <i>Data and information collection by NDCE</i> - <i>Reporting writing by NHFEs based on agreed contents</i> - <i>Communications between key stakeholders (experts)</i> - <i>Perform other related tasks if deem necessary</i>
Apr/May 2015	<p>Draft finalization of the reports</p> <ul style="list-style-type: none"> - <i>NHFE submits the first draft reports to IHFE thru the National Coordinator of FMMP and FMMP</i> - <i>IHFE reviews and provide comments on the first reports NHFEs to those who concerns (country by country)</i> - <i>NHFE revises and updates the report based on inputs from IHFE (if necessary and due to lack of data and information as required, IHFE should contact the NDCE to help and supplement)</i> - <i>Resubmit the draft final reports to FMMP and NMCs</i>
June 2015	<p>Regional Technical Meeting (RTM)</p> <ul style="list-style-type: none"> - <i>FMMP organizes and conducts a Regional Technical Meeting (RTM) to discuss the draft AMFR-2014.</i> - <i>IHFE participates and processes comments obtained from RTM and preparing the 2nd final draft AMFR-2014.</i>
July 2015	<p>Regional Consultation Meeting (RCM)</p> <ul style="list-style-type: none"> - <i>FMMP organizes and conducts a Regional Consultation Meeting (RCM) to inform and get approval of the AMFR-2014.</i> - <i>IHFE participates and processes comments obtained from RCM if any and prepare the final AMFR-2014.</i>
Nov 2015	<p>Format, publication and dissemination (by FMMP)</p>

Note: All experts if invited should prepare and present the report for at least two meetings when appropriate. FMMP will cover all related travel costs include DSA in according to MRC rule.

9. WORKING PRINCIPLE

The IHFE will work in a coordinated effort with the OM and FFE of the FMMP/RFMMC and closely interact with the FMMP/RFMMC Management, the TSD and the PO of ICCS. The IHFE will work under the overall supervision and guidance of the FMMP Coordinator, report to the OM, and is technically assisted by the ITA of FMMP, and other concerned professional staff of the FMMP/RFMMC, if and when required.

The FMMP/RFMMC will secure support from the Communication Officer of the ICCS and the TSD of the MRCS to provide data and information (printed reports, publications, newspaper articles, hydraulic, hydrological data and information, statistics, aerial photographs, satellite images, maps, other relevant material) to the IHFE; at the request of the Consultant the material will be made available to him/her.

10. QUALIFICATIONS

The following qualifications are required:

- a. The IHFE must have a MSc. or PhD level university degree in a field of study closely related to water engineering , i.e., hydrology, hydraulics, flood plain analysis and flood disaster management and/or integrated water resources management;
- b. The IHFE must have proven long-term experience in a field closely related to , i.e., hydrology, hydraulics, flood plain analysis and flood disaster management;
- c. The IHFE must have a minimum of 15-20 years working experience in the field of integrated water resources management, irrigation and drainage and/or disaster/flood management and mitigation;
- d. The IHFE must have a minimum of 5 years' experience in working in one or more MRC Member Countries;
- e. The IHFE must have been working with modern technology for collection, processing and presentation of data and information;
- f. The IHFE must have general knowledge and experience with remote sensing imaging, satellite imaging, GIS mapping and experience with designing and writing general reports, including structuring, editing, presenting, documenting and designing lay-out;
- g. The IHFE must have good general understanding of meteorological/hydrological processes, hydraulic and hydrodynamic processes, topo-hydrographic conditions, generating and/or affecting flood conditions; and
- h. The IHFE must have a good general understanding of the needs for meteorological, hydrological and hydraulic data collection, hydrologic and hydraulic/hydrodynamic modeling, flood forecasting and early warning processes to reduce the vulnerability of the communities living in the LMB.

11. CONDITION OF PAYMENT

In consideration for at least two key milestones/outputs: after the completion of the regional technical meeting (see proposed working schedules in the section 8 above) and upon approval of the report from the FMMP, the MRC shall pay the consultant for the following amounts:

MILESTONE	AMOUNT	TARGET DATE
After the Regional Technical Meeting undertaken, tentatively to held in June 2015 (50%)		June/July 2015
Upon completion of the report and approval by the FMMP (50%)		July/August 2015

This consultancy service will be detailed in a Special Services Agreement (SSA) to be entered between the MRC Secretariat and the Consultant. The daily service rate set by the MRC will be applied. For the consultancy service fee, please charge to the project code 2.2.17/12/SWI/H and BL 17-00-00

Signed: _____ FMMP Coordinator Date: _____

Signed: _____ Director, TSD Date: _____

Signed: _____ International Consultant Date: _____