



Mekong River Commission

For Sustainable Development

TERMS OF REFERENCE

1. CONSULTANCY SUMMARY

Title:	Associate Flood and Drought Forecaster (AFDF)
Consultancy/Staff Type:	Service Contract (SC)
Division:	Technical Support Division (TD)
Duration:	12 months (Jan-Dec 2022)
Duty Station:	Regional Flood and Drought Management Centre (RFDMC)
Reporting to	The Director of TD through the Head of the RFDMC and through the assigned supervisor(s)
Expected Deliverables	<ul style="list-style-type: none"> (1) Weekly and monthly drought monitoring and forecasting products; (2) Daily, weekly update technical bulletin and report on flood and drought assessment; and (3) Support daily routine work on flood and drought activities

2. INTRODUCTION AND BACKGROUND

The Mekong River Commission (MRC) was established by the 1995 *Agreement on Co-operation for the Sustainable Development of the Mekong River Basin*, between the governments of Cambodia, Lao PDR, 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.”

The Technical Support Division (TD) is in charge of managing the implementation of the various projects and provide technical supports to the MRC Member Countries on Hydrological and River Modelling, Database Management and Information System, Modelling and Assessment, GIS and Remote Sensing Application, and Flood and Drought Monitoring and Forecasting and importantly the implementation of the MRC procedures.

The TD teams/specialists focus on specific sectors and address regional issues that are significant to the management of the entire Mekong River Basin. While the teams have a regional focus, they also complement and support initiatives at the national and trans-boundary levels.

The Regional Flood and Drought Management Centre (RFDMC) is the core part of TD which performs daily, weekly, and monthly flood and drought monitoring, forecasting, and provides information for early warning services, including state emergencies to four Member Countries for flood and drought management and preparedness.

The Government of Japan through its Official Development Assistance (ODA) has committed to support the MRC-RFDMC to enhance institutional and technical capability of the RFDMC through

upgrading of the Operations Room and enhancing the dissemination of Flood and Drought monitoring and forecasting, warning and alerts, in line with modern and international good practices, thereby facilitating integration of flood and drought management at the MRC's RFDMC in Phnom Penh, Cambodia.

Also, one of the priorities in the MRC Multi-year Work Plan (MWP) for 2021-2022 is to enhance drought forecasting and early warning tools with more drought indicator indices to be analysed and used for the basin, as well as to strengthen technical capacities for National Line Agencies to be able to monitor, analyse, and forecast drought conditions for their own national and sub-national levels.

The above-mentioned objectives and outcomes have been developed based on the approved Drought Management Strategy 2020-2025 and the Project Implementation Plan of Japan-ODA funded project on flood and drought management, which aim to address the needs of the MRC Member Countries to manage and mitigate flood and drought vulnerability at national levels, build up adaptive capacity to adapt to flood and drought impacts, and enhance data sharing platform between Countries and the RFDMC in the future.

To elevate national capability on flood and drought forecasting work, the "on-the-job training" for Associate Flood and Drought Forecaster (AFDF) has been designed to equip junior riparian professionals with necessary knowledge and experiences. The AFDFs are to be recruited annually from the MRC Member Countries starting from 2021 through 2025 aligning with the MWP 2021-2025.

3. OBJECTIVES OF THE TASK

The AFDF is recruited yearly to take part in the on-the-job training for a period of 12 months, starting from January to December 2022 for 2022.

He/she will be trained to perform daily operation of both flood and drought monitoring, forecasting, and information services. This on-the-job training programme is to strengthen the young forecasters' capacities in particular on how to apply flood and drought assessment with modelling and analysis tools at regional level with the hope that she or he will be able to contribute to the improvement and enhancement of their respective national flood and drought forecasting capacity upon return to the country.

4. EXPECTED RESULTS

- Update technical bulletin both of flood and drought;
- Daily/Weekly river monitoring and flood forecasting for 2022 using FEWS-URBS-ISIS-Regression;
- Daily/Weekly Flash Flood Guidance (FFG) for 2022;
- Weekly and monthly drought assessment and forecast for 2022 using the Standardized Precipitation Index (SPI), the Standardized Runoff Index (SRI), the Soil moisture Anomaly (SMA)/the Soil Moisture Deficit Index (SMDI), and the Combined Drought Index (CDI);
- Practical knowledge and understanding of the operations, and tools and systems used by the RFDMC for flood and drought forecasting as well as other services; and

- Technical and coordination assistance provided to the RFDMC for the implementation of the Japan-ODA funded project and other activities (i.e., pilot project) by working closely working with national forecasting office/centre and other concerned agencies.

5. DELIVERABLES AND CONCRETE TIMELINES

Deliverables and Expected Quality	Number of Days	Deadline
Daily/Weekly river flood monitoring and forecasting for 2022 using FEWS-URBS-ISIS-Regression		Routine work: from Jan-Dec 2022
Daily/Weekly Flash Flood Guidance (FFG) for 2022		Routine work: Weekly/monthly from Jan-Aug 2022
Weekly and monthly drought assessment and forecast for 2022: <ul style="list-style-type: none"> • SPI • SRI • SMA/SMDI • CDI 		Routine work: weekly monthly from Mar-May, Sept-Dec 2022
Technical bulletin and report on flood and drought assessment		31 Dec 2022
Coordination support for the implementation of Japan funded project and other activities (i.e., pilot project) with national forecasting office/centre at national level		31 Dec 2022
Total Number of Days		

6. REQUIRED TASKS AND RESPONSIBILITIES

Under direct supervision of the Head of the RFDMC and assigned supervisor(s) (flood and drought forecasters), and under overall supervision and guidance of the Director of TD, the Associate Flood and Drought Forecaster will carry out the following tasks:

Main tasks:

- Prepare daily rainfall data from HYMET and satellite for river flood processing;
- Process weekly and monthly river flood monitoring and forecasting as per advices by co-supervisor;
- Prepare forecast data inputs including real-time precipitation and radar for flash flood processing;
- Process weekly flash flood forecasting as per advices by co-supervisor;
- Assist/prepare drought indicator indices including SPI, SRI, SMA/SMDI, and CDI;
- Prepare daily precipitation and soil moisture data as inputs for the models as per advices by co-supervisor;
- Perform weekly and monthly drought index calculations for monitoring and forecasting;
- Assist and prepare technical bulletin and report on flood and drought assessment;

- i. Support the implementation of the Japan funded project on flood and drought management in the LMB and national pilot project for flood and drought activities at national level;
- j. Undertake individual study and research that will contribute to personal learning on the operations and application of the tools and systems used by the RFDMC as well as for future application at home-country; and
- k. Other tasks as assigned by supervisors.

7. PAYMENT MODALITY

The monthly payment will be made upon the submission of the monthly working timesheet and requests for payment to be endorsed by the Head of the RFDMC and approved by Director of TD.

Note: Remuneration rate and other allowances are defined by the MRCS policy. The MRC is a tax-exempted agency for the work done for the MRC. The AFDF, in case mission is required, will be covered with a return ticket to and from the assigned duty stations with a daily related subsistence allowance of 75% of the UN for the mission days.

8. INTELLECTUAL PROPERTY RIGHTS

Intellectual property rights - IPR: Information, data, database, knowledge resources in the forms of briefings, reports, proceedings, articles, essays, etc. issued by and for the MRCS will be the MRCS property.

Any utility, announcement and disclosure that are without MRCS highest levels of authority' permission is considered illegal and will be charged by relevant local and international legal procedures.

9. WORKING ARRANGEMENT

Reporting Line:	<ul style="list-style-type: none"> • Director of TD through the Head of RFDMC who is a direct supervisor for technical and management issues
Communication Line: Work station:	<ul style="list-style-type: none"> • The AFDFs will communicate with and report directly to his/her assigned supervisor(s) who are the immediate supervisor(s) for verification of the products and compliance with TOR before reporting to the Head of the RFDMC.

10. QUALIFICATIONS AND REQUIREMENTS (*select as appropriate*)

- Bachelor's Degree or higher degree(s) in water resources engineering, hydrology, meteorology, environmental science, or relevant discipline;
- Preferably at least three (3) year of experience of working in river basin and water resources planning and management, hydrology, or related field;
- Extensive experience in water resources management, flood or drought assessment and forecasting is an advantage;
- Knowledge and experience with river monitoring, modelling, GIS and remote sensing is an asset;
- Experience and skill on using dashboard, infographic, excel spreadsheet and statistical

- analysis;
- Experience on develop web portal, information system and services;
- Previous experience in the Mekong river basin, preferably working with or for the Mekong River Commission;
- Excellent computer skills are preferable; Good command of spoken and written English and good presentation and reporting skills; and
- Demonstrated ability to work in an international environment, communication skills and teamwork.

11. SIGNATURE BLOCK

MRCS: *W. Winai*
 Name and Title: *Winai Wangpionoi* Incumbent's Signature: _____
 Director of JTD.
 Date: _____ Date: _____
 21/10/2021