



Mekong River Commission

For Sustainable Development

TERMS OF REFERENCE

I. Learning/Training Agreement:

Title:	Junior Riparian Professional (JRP)
Consultancy/staff type:	MRC Secretariat Staff under Special Agreement
Division:	MRC Secretariat's related Division
Duration:	From 1 st January 2022 – 31 st December 2022
Duty Station:	MRC Secretariat Office, Vientiane, Lao DPR or the Regional Flood and Drought Management Centre under the Technical Division which is in Phnom Penh, Cambodia.
Reporting:	MRC Secretariat's Assigned Advisor
Expected Deliverables:	Written Learning Report (<i>Form JRP-02</i>), together with the PowerPoint presentation and contributions to specific MRC's products (policy paper, technical report, chapters, etc.) submitted to the MRC Secretariat prior to departure to home country at the end of the on-the-job training period.

II. 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."

Utilizing the current resources of the MRC Secretariat to strengthen capacity for young professionals from the Lower Mekong Basin in areas related to IWRM is one of the key strategic approaches of the MRC to build future work force or leadership, at the same time, to build further understanding emerging IWRM issues such as sustainable hydropower, climate change resilience and adaptation, sustainable basin planning and management, etc. This is also a strategic approach to transfer knowledge and skills in IWRM to the MCs. Hundreds of JRPs had been trained by the MRCS, with some of them then work for MRC Secretariat, at the NMCs, or returned to their organizations, either being promoted, or obtaining further tasks related to their work, or higher education to further enrich their careers in IWRM or related disciplines. The majority of whom are still serving their governments and regional organizations in the areas of Mekong development and cooperation. The MRC continue to invest in this important and valuable human resource development program.

The JRP nominated by the National Mekong Committees and are selected by the MRCS for on the job capacity development while contributing to the work of the MRC, which is hand-on,

practical and on-the-job with specific assignment. The on-the-job training period is a maximum of 6 to 12-months period.

On-the-job training can range from IWRM disciplines, Climate Change, Stakeholder engagement, modelling, data analysis and management, Sustainable basin planning, Strategic Planning, Project cycle management, policy analysis, financial management, human resource management and development, gender equality in IWRM, together with other soft skills such as leadership and management, negotiation, moderation.

The JRPs will receive a certification from the MRC for the period of their capacity development and contribution to MRC.

The JRPs will have a Special Agreement to work at the MRC Secretariat, following terms and conditions of this contract type.

III. Objectives of the JPR Program

- To continue building capacity of young professionals working in related government agencies and members of river basin organizations in MRC member countries in the field of integrated water resource management, organizational development of river basin organizations, climate change adaptation, sustainable hydropower development, water policy analysis, etc.
- To maximizing the use of knowledge and skills resources available at the Secretariat and to transfer them to the MCs through training young riparian professionals.
- To expanding the understanding and promotion of the work of the Secretariat to a wider system beyond the MRC.

IV. Deliverables and Concrete Timelines:

Deliverables and Expected Quality	To be Delivered by
Concrete capacity development and contribution plan with specific and realistic objective/s, deliverables, which are attainable and measurable in the period. The plan needs approval from the responsible director or chief. Specific inputs / contributions / deliverables directly related to MRC activities	First 5 days of the first week
Learning results/product available with a presentation of learning and achievements.	Month 5 th or month 11 th depending on the on-the-job training period.
Final written learning product available (technical report, policy paper, briefing notes, etc.)	Second week of month 6 th or 12 th depending on the on-the-job training period.
Exit clearance procedures (Handover of products, Learning Report (<i>Form JRP-02</i>), assigned assets, etc.)	2 days prior to departure.

V. Required Tasks and Responsibilities:

- Together with assigned supervisor to develop smart learning objectives and action plans for contribution to MRC work.
- Work together with assigned staff to implement the learning project, bearing in mind the learning by doing/on-the-job training principles of the learning process.
- Work to create, develop, complete assigned tasks, and produce committed report and product.
- Prepare PPT regarding the learning product, and present to related staff for inputs.
- Take part in training, field trips, workshops, as available and assigned by related Division/s.
- Fully cooperate with assigned supervisor and other colleagues to maximize the acquisition of knowledge and skills at the Secretariat.
- Perform related tasks as assigned by the director and/or chief.
- Comply to all MRCS applied rules and regulations.

VI. 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.

VII. Working Arrangement:

Reporting line:	Division Director/Chief Officer
Communication line:	Assigned MRCS Advisor/s
Workstation:	MRC Secretariat Office in Vientiane Lao PDR or the RFDMC in Phnom Penh, Cambodia

VIII. Qualifications and Requirements:

- All participants require a bachelor's degree in IWRM, social sciences, development studies, or management field regarding project management, financial and human resources management.
- At least 2 years of practical experience in project, financial and human resources operation or management, or integrated water resource management, development sector, and related fields.
- Only nationals of Cambodia, Lao PDR, Thailand and Viet Nam as well as China and Myanmar are eligible to the program. Age of 35 years old or below.
- Very good command of English skills (reading, writing, speaking, listening and understanding) is essential as the training activities as well as the on-the-job training and working scheme will be conducted in English.
- Clear learning and contribution objectives, that are relevant to the MRCS' field of work and operations.

- Commit to learn and to contribute to the completion of assigned work at the MRCS and has the attitude of learning by doing.
- Competent in using MS Office software: Microsoft Word, Excel, PowerPoint. Knowledge of other software used in the area of water work is a plus.
- Good inter-personal and communication skills – the ability to work independently as well as team spirit and active participation at the training activities is desirable.
- Culturally sensitive and gender cautious.
- Comply to all MRCS staffing regulations and rules.

IX. Financial Support

According to the agreed MRC policy.

X. Signature Block

T. M. Khoi

AD Director 's Full Name



AD Director's Signature

20.10.21.

Date

JRP's Full Name

JRP's Signature

Date



Mekong River Commission

For Sustainable Development

TERMS OF REFERENCE

1. CONSULTANCY SUMMARY:

Title:	Associate Modeller to support the maintaining and enhancing the MRC DSF modelling dataset and tools
Consultancy Type:	Service Contract (SC)
Division:	Technical Support Division (TD)
Duration:	From 01 January 2022 to 31 December 2022
Duty Station:	MRCS Office in Vientiane
Reporting to:	The incumbant will be working under the overall supervision of the Director of TD, Chief Hydrologist and under the direct supervision of the Modellers
Expected Deliverables:	See section 5

2. INTRODUCTION AND BACKGROUND:

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, Lao PDR, Thailand and Viet Nam. The role of the MRC is to coordinate and promote cooperation in all fields of sustainable development, utilisation, management and conservation of the water and related resources of the Mekong River Basin.

The MRC Secretariat (MRCS) is the operational arm of the MRC. It provides technical and administrative services to the Joint Committee and the Council to achieve the MRC's mission. Modelling Team (MT) under the MRCS Technical Support Division (TD) is responsible for conducting modelling activities and providing technical assistance to other division in modelling, assessment and analysis. It also provides other information and support for sustainable development, when required. To do so, the Decision Support Framework (DSF) system was developed aiming for MRC to have a transparent modelling system that could be used by each and any of the member countries (MCs) to study and check proposals and strategies for water resources developments.

MRCS Modelling Team (MT) was established in 1998 within the Technical Support Division to provide modelling service to other MRCS units. Since the start of implementation of the World-Bank-funded project of Water Utilization Programme in 2000, the MT have been involved intensively in the development and application of the Basin Modelling and Knowledge Base, also known collectively as the DSF with a set of the simulated Model such as: SWAT, IQQM and ISIS Model to support the studies within LMB related to water resources.

Reference is made to the Reinvigoration Information System, MRC BDS 2021-2030, SP 2021-2025 in particular the TD Multi-year WorkPlan 2021-2022 under the implementation of the endorsed design concept of reinvigorated MRC's data, information, modelling, forecasting and communication systems and the concept note of regional proactive planning exercise including the upgrade of MRC DSF with the integration of other potential tools. The MRC Secretariate has

been working on necessary documents for the preparatory process of upgrading MRC DSF which will start the implementation in 2022. In meantime this year 2021, MT is working on the update of modelling datasets received from MCs to expand the simulation till most recent as data available to support future MRC studies such as the Joint Study with China, Mekong Basin-wise Development Scenarios for Adaptive Basin Plan, and so on.

The involvement of the MCs in all processes of above mentioned activities with MT through the Associate Modeller Programme will ensure the acceptable quality of MRC products and it will intensively maintain and enhance national modelling capacity and human resources at the national level.

Against the above background, the TD is seeking a competent national modelling expert from each MC to support the implementation of the modelling activities in 2022.

The key deliverables, with timelines, of the Task to be provided by the Consultant are listed in **Section 5** of this ToR.

3. OBJECTIVES OF THE CONSULTANCY:

The overall objective is to assist MT in updating MRC DSF datasets, models and tools and to support in process of improvement of DSF under the reinvigorated IS, proactive regional planning exercise and the implementation of national pilot projects on modelling and forecasting capacity in 2022. In addition, the associate modeller is expected to be resources person to support the national modelling activities after they complete the term and return to their respective countries.

The specific objectives of Associate Modeller are:

1. To assist MT in all modelling activities in particular the update/upgrade of MRC DSF modelling dataset and knowledge base (KB), model development and improvement including Quality Assurance and Control (QA/QC) and collecting additional modelling hydro-met data, hydropower data, irrigation data, and other water utilities, etc;
2. To assist MT and MCs in national modelling capacity building through the implementation of national pilot project on modelling and forecasting capacity of their respective countries;
3. To support all the process of modelling tasks in the reinvigorated IS, regional proactive planning exercise.
4. To enhance their knowledge and skills on operation of DSF/MRC Toolbox, DSF models, other potential models/tools such as eWater SOURCE, DRIFT, ArcGIS and so on through learning by doing approach with modelling application and case study guided by MT;
5. To gain further experiences on MRC DSF, analysis tools, and systems at both regional and national projects/activities and participate in relevant trainings/workshops organized by TD or other divisions;
6. To implement other technical-related works as assigned by TD Director and relevant supervisors.

4. EXPECTED RESULTS:

Based on the above objectives of the assignment, the key expected outputs of this consultancy are as follows:

- QA/QC of the collected historical hydro-meteorological data, as well as national socio-economic development data, dam operation data, water supply, and consumption data in the respective country to be ready for modelling works;
- The support on the update of SWAT-IQMM and other relevant models for entire Mekong Basin with recent time-series (1985-2020) and other relevant datasets.
- The support on the implementation of national pilot project in 2022 to produce acceptable products, and the support on the maintenance and enhancement of the national modelling knowledge at national level;
- The support on the update/upgrade of MRC DSF through exploring the potential tools and the involvement in the processes of the regional proactive planning exercise.
- The lesson learnt and the technical reports for the case study from the intensive capacity building including the presentations.

5. DELIVERABLES AND CONCRETE TIMELINES:

A tentative schedule of key deliverables is provided below. The exact schedule will depend on the timing of the contracting with the successful consultant, but it is anticipated that the assignment will commence on 1 January 2022 through 31 December 2022. Noted that some assignments will be started in the specific period and parallel with other tasks, while some assignments will be started after the completion of other tasks.

No.	Deliverables and Expected Quality	Number of Working Months	Deadline
1	QA/QC of the collected historical hydro-meteorological data, as well as national socio-economic development data, dam operation data, water supply, and consumption data in the respective country to be ready for modelling works	2	30 March 2022
2	The update of SWAT-IQMM/SOURCE models for entire Mekong Basin with recent time-series (1985-2020) and other relevant datasets	3	31 December 2022
3	The support to the implementation of national pilot project in 2022 to produce acceptable products and national modelling knowledge are maintained and enhanced in national level	2	30 November 2022
4	The support to the update/upgrade of MRC DSF through exploring the potential tools and the involvement in the process of the regional proactive planning exercise	2	31 December 2022
5	The report for the lesson learnt and the technical report for the case study from the intensive capacity building including the presentations	3	31 December 2022
Total Number of Working Months		12	

6. REQUIRED TASKS AND RESPONSIBILITIES:

Required tasks and responsibilities for the Consultant are summarised below:

- Assist MT in Quality Assurance and Control (QA/QC) of collected data, gap filling and preparing data in a correct format including AQUARIUS products.
- Communicate and collect additional data from respective country to update modelling datasets.
- Assist MT in updating Knowledge Base (KB) both of Time series and Spatial data.
- Assist MT in model set up, calibration and validation process with updated datasets
- Submit his/her monthly work plan and provide inputs to MT's Work Plan;
- Participate in all training activities organized by the MRC and MT as required;
- Assist MT in the technical activities as request through providing the technical support on modeling implementation work (National Pilot Project by MCs, Joint Study with China, Proactive Regional Planning..etc) including capacity building to national events.
- Prepare the monthly progress reports, and the final reports of lesson learnt and case study.
- Other tasks as assigned by MT and TD.

7. PAYMENT MODALITY:

The payment will be made in monthly basis with acceptable reporting quality.

8. INTELLECTUAL PROPERTY RIGHTS (IPR):

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. DECLARATION OF NON-FRAUDULENCE AND PROTECTION OF PERSONAL DATA:

The Consultant shall adhere to the MRC's relevant rules and regulations of the MRC on personal data protection, business exclusion, and fraud prevention and anti-corruption principles, and shall be under strict disciplinary measures should any violation occurs.

10. WORKING ARRANGEMENT:

Communication Line: The Consultant will be working under the overall supervision of the Director of TD, Chief Hydrologist and under the direct supervision of the Modellers.

11. QUALIFICATIONS AND REQUIREMENTS:

The incumbent must have the following qualifications:

- Bachelor's Degree or higher in field of Water Resources Modeling, Hydrology and Hydrodynamic Modeling, Water Resources Planning and Management, or equivalent/related fields.

- Preferably former trainee of the previous MRC Toolbox or DSF training conducted by MRCS Modeling Team.
- Preferably at least five (5) year of experience of working in river basin and water resources modeling, planning and management, hydrology, or aquatic environment or related field.
- Proven capabilities and skills in activities of mathematical modeling, hydrological analysis, and environmental impact assessment etc.
- Demonstrated ability to work in an international environment, communication skills, teamwork.
- Good knowledge about activities of the MRC in general and the Information and Knowledge Management Programme in particular is a valuable asset.
- Excellent computer skills are preferable;
- Good command of spoken and written English and good presentation and reporting skills.

12. SIGNATURE BLOCK:

MRCS:

Full Name: *Winai Wangpramool*

Incumbent's Full Name: _____

Title: Director of TD

Signature: *W. Winai*

Incumbent's Signature: _____

Date: *21/10/2021*

Date: _____



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	(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: • 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 precessing;
- 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;
- Peform 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

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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:	Director of TD through the Head of RFDMC who is a direct supervisor for technical and management issues
Communication Line: Work station:	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:

Name and Title: W. Winai
Winai Wangpionoi
Director of JID

Incumbent's Signature: _____

Date: 21/10/2021

Date: _____