TERMS OF REFERENCE

International Water Resources Modeler to support the fast tracking of some Basin Development Plan scenarios

Position: International Water Resources Modeller
Duty Station: MRC Secretariat, Vientiane, Lao PDR
Duration: Total of 25 working days in August 2008 (6 working days per week)
Reporting to: BDP Chief Technical Advisor and Programme Coordinator

1. Objectives of BDP Programme Phase 2

The main aim of the BDP Programme Phase 2 (BDP2) is the formulation of the rolling IWRM based Basin Development Plan that is acceptable to the countries and main stakeholders. The Plan will comprise three main elements, as follows:

- **Development Scenarios**, which assess the potential for development of the Mekong waters and enables informed decision making on an acceptable balance between resource development and resource protection in the Lower Mekong Basin.

- **An IWRM-based Basin Strategy**, which provides a long-term view of how the Mekong Basin can be developed and a planning framework that brings the basin perspective into the national planning and guides the development of multi-purpose projects.

- **A Project Portfolio** of large-scale water resources development projects and supporting non-structural projects that would continue to develop some of the Basin’s land and water resources, as envisioned in the 1995 Agreement.

The rolling IWRM based BDP will employ the MRC knowledge base and some existing assessment tools, and others to be improved, which will ensure the plan achieves benefits for all countries and projects comply with sound environmental and socioeconomic principles. The Plan will bring all existing, ongoing, planned and considered water resources development projects in the BDP process. This would offer a platform for MRC to assess interaction between projects. It is envisioned that many of the non-structural projects in the plan will be implemented by MRC, within the existing programme frameworks.
To prepare the Plan, BDP2 will further develop the knowledge base and assessment tools for basin planning, and to manage the many BDP interfaces, such as the NMCs, national line agencies, civil society, NGOs, private project developers, and development banks.

2. Fast tracking some BDP scenarios

Recently, water resources development is being accelerated, in particular in the hydropower and irrigation sectors. The main drivers behind this development include high oil and natural gas prices that make hydropower development financially more attractive, and sharp rises in the rice price that make irrigation more profitable. The financial attractiveness of the “run-of-river” dams on the mainstream in the LMB is further enhanced by the large storage dams that are being developed in the Upper Mekong Basin. Important decisions on the construction of mainstream dams in the LMB could be taken during the next 6-12 months.

In this connection, the BDP2 is requested to fast track the assessment of the cumulative positive and negative hydrological impacts of some of the basin-wide development scenarios. The assessment of the wider cumulative impacts in social, ecological or economic terms will require a longer process, involving other programmes and the outputs of expert meetings on complex issues, such as the barrier effect of dams on migratory fish. A Concept note for the fast tracking of BDP scenarios is provided in Annex to this TOR.

3. Objective of the assignment

To support the formulation and assessment of the cumulative hydrological impact of some BDP scenarios as per the Concept note.

4. Scope of works

The proposed short term consultant will work with the BDP modeling specialist and the IKMP modeling team. His/her main tasks are defined below.

- Review the existing baseline scenario and correct the unrealistic irrigation input data in consultation with BDP staff.
- Review the existing Chinese Dam Scenario and make improvements where necessary.
- Support the detailed definition of the other scenarios (see the concept paper).
- Help prepare the required input data for these scenarios, which may require document and database searches and analytical work to produce realistic input data of the hydropower and irrigation sectors.
- Support the use of the simulation models of the DSF to formulate and assess the various scenarios on a range of indicators, including mainstream flow and level indicators, Great Lake and floodplain indicators, salinity intrusion indicators, and irrigation and hydropower production indicators.
- Support the assessment of mitigating measures which may be identified during the assessment process.
• Prepare a report with content and format as described in the concept paper.
• Transfer relevant modeling and related knowledge to the MRC modeling specialists.

5. **Expected outputs**
• A report covering content as specified in the Concept note (under Hydrological assessment).
• A brief mission report providing recommendations for the hydrological assessment of other BDP scenarios.

6. **Qualifications**
• Post graduate degree in a relevant area. Proven track record of sound experience in formulating and assessing water resources development scenarios.
• Knowledge of the Mekong River Basin/LMB is essential.
• Previous practical experience in basin-wide scenario activities in Mekong River Basin and the use of the Decision Support Framework (DSF) are required.
• Fluent in English with good writing skills

7. **Signature block**

**BDP Programme Coordinator**

Name:______________________

Date:______________________

**Expert**

Name:______________________

Date:______________________