

# **Sustainable Hydropower Practice Forum #4**

## **Mekong River Commission studies, guidelines and tools**

### **Dialogue with Hydropower Developers**

#### **Concept Note and Agenda**

10-11 August 2017, Crowne Plaza Hotel, Vientiane, Lao PDR

#### **Objectives**

The objective of this forum is to discuss aspects related to hydropower planning and development in the Mekong Basin with project developers (and/or their consultants), who are or will be investing in hydropower dams on both the Mekong mainstream and its tributaries.

The forum shall focus on the role developers and their advisors can play in improving the sustainability of their projects for Mekong basin-wide outcomes and the relevance to developers of using MRC studies, tools and guidelines for sustainable planning, design and operation of hydropower projects to reduce basin-wide impacts.

#### **Expected Outcomes**

**It is expected that after the forum hydropower developers and consulting companies will be in a better position to improve their design and coordinate operations as to ensure overall optimisation and sustainability in hydropower development in a basin-wide context.**

Key outcomes to be achieved are:

- Participants will have an improved understanding of the significant pressure on the basin's resources induced by continuing large-scale hydropower development in the Mekong basin and consequently the role developers and their advisors can play mitigating the increasing cumulative impacts;
- Participants will gain an improved understanding of the MRC's IWRM-based basin planning process and related implementation challenges and are thus able to give due consideration to the basin perspective by following established procedures and best practice guidance when engaging in hydropower development;
- In that regard, participants will be able to appreciate the potential direct benefit from the use of MRC studies, tools and guidelines relevant to sustainable planning, design and operation of the hydropower project in a basin-wide context including:
  - Direct benefits to developers (improved social license to operate, improved cost/benefit over project life cycle)
  - National benefits (energy portfolios optimised for economic, social & environmental outcomes)
  - Regional benefits (sustainable river basin development, cooperation & dialogue);
- Specifically, participants will have an improved understanding of the Preliminary Design Guidance (PDG) as part of the Procedure for Notification, Prior Consultation and Agreement (PNPCA) process as a potential mechanism for improving sustainability aspects of hydropower development in a basin-wide context;

- Participants will be able to provide feedback on the PDG and the imminent Sustainable Hydropower Development Strategy, in particular regarding the importance of coordinated planning & design as well as joint operation & management for dams built in cascades.

### **Approach**

International consultants and regional experts from the MRC Secretariat will share information regarding relevant MRC studies, tools and guidelines. Member country representatives and private developers and consultants will have an opportunity to share their experience in working with these resources. Presentations will be followed by plenary Q&A sessions and in addition break-out groups will allow for in-depth discussions according to participants' expertise and interests. Any practical recommendations on the way forward with these products, e.g. with the planned update of the PDG, will be considered within the further work of MRC on sustainable hydropower tools, guidelines and dialogue mechanisms.

### **Target group**

The forum primarily targets both management and operations staff of project developers (and/or their consultants), who are or will be investing in hydropower dams on both the Mekong mainstream and its tributaries and are either required to follow MRC standards or are interested to explore the usefulness of the MRC tools and guidelines in their project development in order to follow international best-practice.

The forum also targets government hydropower project development departments and energy portfolio planning departments in all Mekong countries and is open to international and national professional hydropower-related associations and financing institutions.

### **Forum Cost & Registration Process**

Forum participation is free of charge. Participants are expected to cover their own travel and accommodation.

Interested participants are requested to contact Mr. Palakorn Chanbanyong, email: [palakorn@mrcmekong.org](mailto:palakorn@mrcmekong.org) or Ms. Duong Hai Nhu, email: [nhu@mrcmekong.org](mailto:nhu@mrcmekong.org). A confirmation of participation will be sent within 3 working days.

Relevant documents and presentations will be made available on the MRC website <http://www.mrcmekong.org/news-and-events/events/sustainable-hydropower-practice-forum-4-dialogue-with-hydropower-developers/>

# Sustainable Hydropower Practice Forum #4 Dialogue with Hydropower Developers

## Draft Agenda

*10-11 August 2017, Crowne Plaza Hotel, Vientiane, Lao PDR*

Day 1		
Time	Session	Speakers
8:00 – 8:30	Registration	Organiser team
8:30 – 8:45	Opening Remarks	MRCS CEO / GIZ Programme Director
8:45 – 9:00	Objectives & Introduction to the Forum process	Forum Facilitator Praivan Limpanboon, Independent consultant
9:00 -10:00	<b>Keynotes</b> <b>1: Status of HP Development in the GMS –current sub-basin and mainstream projects and future development (Lao PDR, Cambodia, Viet Nam, Thailand, tbc Myanmar &amp; China/Lancang) – emerging constraints (ownership and operational coordination).</b> <b>2: Status and benefits of Sustainable HP practice – Developers/Operators perspective - what are the emerging difficulties and constraints of sustainable cascade operation with multiple owners?</b>	1. Panel: Representatives from national Energy Planning authorities  2. Panel: Representatives from developer/operator dealing with these aspects directly.
10:00 – 10:15	<b>Q &amp; A with Panel</b>	All above speakers
10:15 – 10:30	<i>Coffee Break</i>	
10:30 – 12:00	<b>Plenary session and panel Q&amp;A</b> <b>Challenges in planning and developing sustainable hydropower portfolios in basins with multiple developers and owners – the role of standards and guidelines</b> <ul style="list-style-type: none"> <li>• The role of MRC and engagement of developers in sustainable hydropower development</li> <li>• The need for international cooperation/dialogue</li> <li>• Common standards and guidelines</li> <li>• The role of MRC tools and guidelines, including PDG</li> <li>• Scoping the update of the MRC Sustainable Hydropower Development Strategy</li> </ul>	<b>MRC Representatives:</b> <ol style="list-style-type: none"> <li>1. Dr. An Pich Hatda, Director of Planning</li> <li>2. Dr. Thim Ly, Chief River Basin Planner</li> <li>3. Dr. Anoulak Kittikhoun, Chief Strategy and Partnership Officer</li> <li>4. Voradeth Phonekeo, Sustainable Hydropower Advisor</li> </ol> <b>International resource persons:</b> <ol style="list-style-type: none"> <li>1. Chris Grant, Hydropower Planner</li> <li>2. Peter-John Meynell, Environmental Consultant</li> </ol>
12:00 – 13:00	<i>Lunch Break</i>	

Day 1			
Time	Session		Speakers
13:00 – 14:00	<b>MRC tools and guidelines – an overview</b> Resource persons present and form a panel for Q&A: <ul style="list-style-type: none"> <li>• “Development of Guidelines for Hydropower Environmental Impact Mitigation and Risk Management in the Lower Mekong Mainstream and Tributaries” (Mitigation Guidelines) - Overall approach, process and deliverables</li> <li>• Consultation and Dialogue during planning design and operations (how developers could use the “Rapid Sustainability Assessment Tool (RSAT)” to assess sustainability for hydropower project in a basin-wide scale)</li> <li>• Preliminary Design Guidance: its form of performance targets, design and operating principles for mitigation measures, as well as compliance monitoring and adaptive management</li> <li>• Improved environmental and Socio economic baseline Information for Hydropower</li> </ul>		<b>Resource persons:</b> <ol style="list-style-type: none"> <li>1. Leif Lillehammer, Multiconsult</li> <li>2. Peter-John Meynell</li> <li>3. Voradeth Phonekeo</li> <li>4. Kees Sloff, Hydraulic and Sediment Modelling Expert</li> </ol>
14:00 – 14:45	<b>Developer and planner experiences</b> Selected Participants will present their experiences in basins with multiple projects on the topics broadly associated with the three MRC tools: <ul style="list-style-type: none"> <li>• Basin Scale aspects of Consultation and Dialogue</li> <li>• Information gathering and basin/cascade scale sharing – maintaining information sharing during operations for coordinated operation.</li> <li>• Multiple project cascades – optimisation and operational matters – sub-basin scale planning for minimal impact.</li> </ul>		Developers and Operators, <i>tbd</i>
14:45 – 15:15	<b>Q&amp;A: How can the MRC and their tools be used to assist to ease constraints and impacts arising from developer/operator issues?</b>		Panel Speakers from previous sessions
15:15 – 15:35	<i>Coffee Break</i>		
	<b>Parallel break-out groups</b> on MRC tools Each group covers one of the guidelines and tools introduced before and facilitated by the respective resource person. Participants are invited to critically engage with the guidelines and tools and receive more detailed input from the resource persons.		
15:35 – 16:45	RSAT	Mitigation Guidelines	Baseline Information
16:45 – 17:15	<b>Plenary feedback from break-out groups – emerging ways the MRC tools can benefit developers, the issues arising and things to improve.</b>		All
17:15	Closure Day 1 & Reception		

Day 2			
Time	Session		Speakers
08:30 – 08:45	Recap Day 1 and introduction to Day 2		
08:45 – 10:15	<p><b>MRC tools and guidelines – in detail</b> Resource persons present and form a panel for Q&amp;A:</p> <ul style="list-style-type: none"> <li>• Content and role of the PDG – applications to date next steps (update)</li> <li>• Mitigation Guidelines for Sustainable Hydropower Practice: <ul style="list-style-type: none"> <li>○ Design and Operational Concepts behind the Guidelines</li> <li>○ How to use the Mitigation Guidelines and Manual</li> <li>○ Hydrology and Sediment Mitigation</li> <li>○ Fisheries Mitigation</li> <li>○ Additional Considerations.</li> </ul> </li> </ul>		<p><b>Resource persons:</b></p> <ol style="list-style-type: none"> <li>1. Voradeth Phonekeo</li> <li>2. Leif Lillehammer</li> <li>3. Kees Sloff</li> <li>4. Carina Seliger, Aquatic Ecologist</li> <li>5. Chris Grant</li> </ol>
10:15-10:30	<i>Coffee break</i>		
10:30-11:00	Continuation from previous session		As above
11:00 – 12:00	<p><b>Developer and planner experiences</b> Selected Participants will present their experiences with the PDG or similar tools. Also descriptions of specific regional experience in mitigating major Mekong impacts associated with HP projects either at project or sub-basin scale:</p> <ul style="list-style-type: none"> <li>• Use of the PDG and issues arising;</li> <li>• Investigations and regional practice and experience of environmental impact mitigation and use of PDG – measured benefits.</li> </ul>		Developers and Operators, <i>tbd</i>
12:00 – 12:30	<p><b>Q&amp;A: How can the MRC tools be used to assist to ease constraints and impacts arising from developer/operator issues?</b></p>		Panel Speakers from previous sessions
12:00 – 13:00	<i>Lunch break</i>		
<p><b>Parallel break-out groups on MRC tools</b> Each group covers one aspect related to PDG and the mitigation guidelines project introduced before and facilitated by the respective resource person. Participants are invited to critically engage with the guidelines and tools and receive more detailed input by the resource persons.</p>			
13:00 – 13:45	PDG – current user experience and needed updates	Mitigation Guidelines: Overview of Guidelines and Manual (How to use)	Case Study results: economic implications of mitigation options, basin-wide implications/ joint evaluation, preliminary recommendations
13:50 – 14:45	Hydrology and Sediment Impact Mitigation in the Guidelines/Manual	Fisheries Impact Mitigation in the Guidelines/Manual	Other Considerations under Design and Operational Concepts behind the guidelines

15:00 – 15:15	<i>Coffee break</i>	
Plenary session 15:15 – 16:00	<b>Plenary feedback from two rounds of break-out groups</b>	
Plenary session 16:00 – 16:30	<b>Closing panel &amp; Outlook</b> <ul style="list-style-type: none"> <li>• What are next action steps, activities and support needed to keep interested parties connected and updated?</li> <li>• Any additional comments or impressions from participants</li> </ul>	Selected participants give feedback on their perceptions and next steps
16:30 – 16:40	<b>Closing remarks</b>	MRCS CEO GIZ Programme Director

## Rationale

Over the past decades, the Lower Mekong Basin countries have experienced dynamic growth and an extraordinary increase in trade with the rest of the globe. Population growth, industrialisation, economic development, and urbanisation represent the main drivers of energy demand.

In the decades to come, demand for electricity is expected to continue to grow strongly. National and regional power systems will expand extensively to assure effective dispatching of the electricity generated from a range of energy sources, including hydropower. In the future Thailand will import more gas to produce energy while Viet Nam will significantly increase the use of coal. Given its significant hydropower potential, but moderate domestic electricity demand, Lao PDR is keen to share its potential surplus production with its neighbours as a major source of foreign exchange earnings in support of the country's socio-economic development. Therefore, an interconnected electricity system between nations can bring significant benefits. It not only offers the advantage of diversified electricity generation, but it also helps to manage shortages that may occur, e.g. from interruptions due to a shortage of imported coal and gas supplies or due to water shortages during dry seasons. Thus, the ADB's Greater Mekong Sub-region Power Trade and Interconnection is an important initiative to promote a regional interconnected system that will enable power exchange and reduce system-wide cost through utilisation of rich hydropower resources in the region, and increased energy security. Investment in power generation has attracted significant private investments, particularly in hydropower projects that are financed through Independent Power Producer (IPP) arrangements.

Consequently, the high increase in hydropower developments in the Mekong mainstream and tributaries has transformed the Mekong region into one of the most active regions in the world for hydropower development. Concerns about the cumulative and transboundary impacts of existing and proposed hydropower schemes on the environment, fisheries, and people's livelihoods in the Lower Mekong Basin have been brought to the forefront by Mekong River Commission (MRC) Member Countries and a wide range of stakeholders.

In response to this dynamic situation, the MRC's Initiative on Sustainable Hydropower (ISH, 2008-2015) focused specifically on advancing regional cooperation for the sustainable management of the growing number of hydropower projects from a basin-wide perspective. A number of studies have been conducted that draw on international experiences while developing technical expertise in the region. Sharing of good industry practice, relevant to all stages of sustainable hydropower project development is a major component of each of these. With the majority of these studies and associated guidelines and tools completed they are now ready for application, including upscaling to a basin-wide process.

Most importantly, the **2008 Preliminary Design Guidance (PDG)** has to date has been utilised in three consultation processes of Mekong mainstream dams under the **Mekong Agreement and its Procedure for Prior Notification, Prior Consultation and Agreement (PNPCA)**. These consultations paved the way for significant design changes and other follow-up measures such as joint impact monitoring. Hence, there is not only the abovementioned knowledge-base on hand, but also significant practical experience gained during the PDG's application.

In order to better inform MRC Member Countries' hydropower development decisions and in the spirit of dialogue and cooperation, the 2016-2020 Strategic Plan therefore targets the



advancement of hydropower impact mitigation guidelines, an update of the PDG (including extension to cover major tributaries), multi-stakeholder dialogue on sustainable hydropower and an update of the 2001 Mekong Hydropower Development Strategy.

MRC with support of GIZ (German Development Cooperation) has been organising a series of fora since 2015 in order to disseminate studies, guidelines and tools that are believed to be relevant to many professionals working in and with the hydropower industry. The 2017 forum will offer an opportunity for engagement in particular for hydropower project developers and the private sector. The organisers are keen to receive feedback from participants on the ease of understanding and user-friendliness of existing studies, tools and guidelines as well as to learn from any practical experience. Where participants identify potential for application, further collaboration possibilities might also be explored. Suggestions and guidance will be sought for MRC's abovementioned sustainable hydropower initiatives under the 2016-2020 Strategic Plan, in particular the update of the PDG.

### **Relevant MRC Guidelines and Tools**

- 1. Mitigation Guidelines for Sustainable Hydropower Practice:** The MRC continues to study the scale and distribution of risks associated with hydropower development on the mainstream and on tributaries and also explore possible avoidance, mitigation and benefit and risk sharing options. Beside the Preliminary Design Guidance for Mainstream Dams (PDG) introduced in 2009, additional necessary frameworks will be proposed for further consideration as to assure that risks can be efficiently minimised, mitigation measures properly deployed and monitoring tasks efficiently implemented. Consequently, ISH is endeavouring to enhance Guidelines for Risks and Mitigations based on the latest research and practice from around the world and the region and to expand the applicability of these Guidelines to the development of hydropower projects in the tributaries of transboundary significance. For more information about this topic click <http://www.mrcmekong.org/about-mrc/programmes/initiative-on-sustainable-hydropower/guidelines-for-hydropower-environmental-impact-mitigation-and-risk-management-in-the-lower-mekong-mainstream-and-tributaries-ish0306/>
- 2. Preliminary Design Guidance for Proposed LMB Hydropower Schemes:** The PDG provides preliminary design guidance in the form of performance targets, design and operating principles for mitigation measures, as well as compliance monitoring and adaptive management for reducing the environmental and social risks posed by hydropower schemes. It provides developers of proposed dams on the Lower Mekong mainstream with an overview of the issues that the MRC will be considering during the process of prior consultation under the 1995 Mekong Agreement. The document aims to ensure that developers have timely guidance to adopt a consistent approach to the design of individual dams, as well as the proposed mitigation and management measures. This is important, particularly where developments have significant transboundary impacts for people or the environment downstream. For more information about this topic click <http://www.mrcmekong.org/about-mrc/completion-of-strategic-cycle-2011-2015/initiative-on-sustainable-hydropower/guidance-for-dam-design/>
- 3. The Rapid Basin-wide Hydropower Sustainability Assessment Tool (RSAT):** The RSAT is a multi-stakeholder dialogue and assessment tool designed to consider hydropower sustainability issues in a river basin context. Placing hydropower in a basin-wide context requires looking beyond individual projects to take a broader integrated approach to



planning and management. The application of tools such as the RSAT can assist to identify development strategies, institutional responses and management measures that can be deployed to optimise the benefits of hydropower development and reduce the risks. For more information about RSAT click <http://www.mrcmekong.org/about-mrc/programmes/initiative-on-sustainable-hydropower/rsat-overview-the-basin-wide-hydropower-sustainability-assessment-tool/>

- 4. Improved Environmental and Socio-Economic Baseline Information for Hydropower Planning.** Good information underpins all aspects of hydropower planning, development and management, and is vital to maximise opportunities and reduce risks across economic, social and environmental dimensions for all stakeholders. A “Guiding Framework for MRC Basin-Scale Information for Hydropower Planning and Management” was developed to help structure a status and gap analysis and target improvement. For more information about this topic click <http://www.mrcmekong.org/about-mrc/programmes/initiative-on-sustainable-hydropower/improved-environmental-and-socio-economic-baseline-information-for-hydropower-planning-ish11/>