



Initiative on Sustainable Hydropower (ISH)

2011-2015 Document

Discussed at the first meeting of the ISH Regional Advisory Committee

October 2010

PREFACE

This document sets out the rationale and orientation of the MRC Initiative on Sustainable Hydropower (ISH) for the MRC Strategic Plan Cycle (2011-2015).

The ISH outcome structure and approach for delivering outputs in 2011-2015 follows the path that was identified in the multi-stakeholder regional consultation processes in 2008-2011 to formulate the Initiative, and the direction subsequently set by the MRC Joint Committee. In this, the ISH is implemented as a cross-cutting initiative, working closely with and through other MRC Programmes. This approach enables the MRC to help Member Countries handle the full range of multi-disciplinary issues that are integral to the sustainability challenge for hydropower in the Mekong context.

The 2011-2015 outputs build on the multi-year ISH Work Plan approved by the MRC Joint Committee in July 2009, and the 2009-2010 Implementation Plan (PIP Document). These outputs have been updated to reflect the strategic achievements and practical lessons drawn from ISH implementation experience in 2009, and in 2010 to-date. They reflect also the evolving situation with hydropower policy, regulation and practice in LMB countries, recognizing that the situation is dynamic.

The main document reviews considerations for sustainable hydropower in the Mekong context, together with the main drivers of change in hydropower that influence regional cooperation for sustainable development of the Mekong River Basin. It considers the relevance, focus and expected influence of the MRC's activities delivered through the ISH to advance this cooperation.¹ It sets out the ISH outputs, management arrangements, and the related resource requirements for the 2011-2015 period. And it describes how these outputs both derive from, and support, the MRC Strategic Plan objectives and orientation to implement the 1995 Mekong Agreement.

Annexes of this document provide the updated logical framework analysis (LFA) used to derive the ISH outcomes for 2011-2015 and prioritize outputs, the projected budget requirements by output, and the TOR for the ISH Regional Advisory Committee (AC), the Regional Technical Advisor Group (TRG), the ISH National Coordinators in NMCS, and for key selected ISH staff positions now located in the MRC Planning Division after the MRCS permanent relocation.

This document and other supporting material was discussed at the first ISH Regional Advisory Committee meeting in 5 October 2010. It is consistent with the ISH Project Implementation document (PIN) for 2011-2015, last updated in March 2010.

¹ While the MRC's emphasis is sustainable development of the Mekong Basin, it also considers wider links with sustainable development of the regional power sector.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
GoBL	Government of Belgium
BCM	Billion of cubic meters
BDP	Basin Development Plan (MRC Programme)
CIA	Cumulative Impact Assessment
DSM/EE/RE	Demand side management / energy efficiency / renewable energy
ECSHD	Environmental Considerations for Sustainable Hydropower Development
ECO-Asia	Environmental Cooperation Asia (USAID)
EIA	Environmental Impact Assessment
FRG	Federal Republic of Germany
GoFL	Government of Finland
GIS	Geographic Information System
GMS	Greater Mekong Sub-Region (six countries)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HSAF	Hydropower Sustainability Assessment Forum (IHA-Organized)
IBFM	Integrated Basin flow Management
IFI	International Financial Institution
IHA	International Hydropower Association
IKMP	Integrated Knowledge Management Programme (MRC Programme)
ISH	MRC Initiative for Sustainable Hydropower
IWRM	Integrated Water Resource Management
JAIF	Japan-ASEAN Integration Fund
JC	Joint Committee (of MRC)
LMB	Lower Mekong Basin
M-IWRMP	Mekong Integrated Water Resources Management Project
MoU	Memorandum of Understanding
MRC	Mekong River Commission
MRCS	Mekong River Commission Secretariat
NGO	Non Governmental Organisation
NMC	National Mekong Committee
NMCS	National Mekong Committee Secretariat
NT2	Nam Theun 2 Hydroelectric Project
PNPCA	Procedures for Notification Prior Consultation and Agreement
RETA	ADB Regional Technical Assistance Programme
RSAT	Rapid (basin-wise and multi-project) Sustainability Assessment tool
SAP	Hydropower Sustainability Assessment Protocol
SEA	Strategic Environmental Assessment
TbEIA	Transboundary Environmental Impact Assessment
TOR	Terms of Reference
TSD	Technical Support Division
UMB	Upper Mekong Basin (Lancang-Mekong River in China)
USAID	United States Agency for International Development
WB	World Bank
WFC	World Fish Centre
WUP	Water Utilisation Programme (MRC Programme)
WWF	World Wide Fund for Nature

GENERAL SUMMARY

The accelerating pace of hydropower development in the Mekong was cited as a major interest and challenge for the MRC's mission to implement the 1995 Mekong Agreement during regional preparations for the MRC Strategic Plan (2011-2015).² At the 3rd Regional Consultation on the Basin Development Plan (BDP) Scenario Assessment, July 2010, it was further emphasized that the Mekong has reached a crossroads on decisions about hydropower in the lower Mekong basin (LMB).³

The Initiative on Sustainable Hydropower (ISH) recognizes that the challenge ahead is not only about informing decisions about possible new hydropower schemes, or their design features.⁴ It is also to advance and clarify thinking about the sort of cooperation that is needed among Mekong countries to sustainably manage the growing number of existing hydropower assets in the Mekong basin, as the cumulative and transboundary impacts of these projects are increasingly felt. Such considerations need to be linked also to wider strategies for sustainable development of the regional power sector.

One indication of the relevance, immediacy and scale of the common challenge is offered in the MRC's recent BDP Scenario Assessment exercise. In this, the Definite Future Scenario (DFS) of the BDP sees up to 41 large hydropower schemes on LMB tributary systems by 2015.⁵ This compares to 15 LMB schemes in the BDP Baseline case for 2000, an increase of 26 large dams. The BDP 20-year Probable Future (PFS) Scenario sees up to 71 large hydropower schemes operating on LMB tributaries by 2030. These would have a combined active daily-to-seasonal storage and flow regulation capacity of 45 BCM, almost double the 23 BCM storage of Lancang-Mekong dams in Yunnan Province in China.

The policies and legislation of MRC Member Countries, to some extent, already recognize the need to address hydropower sustainability challenges in their planning and regulation systems in an integrated way (i.e. across the economic, social and environmental dimensions) nationally, through bilateral mechanisms, and regionally through implementing the 1995 Mekong Agreement.

Goal, objectives and outcomes

The ISH responds directly to the goal hierarchy of the MRC Strategic Plan 2011-2015 by combining the use of awareness raising and multi-stakeholder dialogue (**ISH outcome 1**) knowledge management and capacity building (**outcome 2**) imbedding sustainable hydropower considerations in regional planning and regulatory systems (**outcome 3**) and, sustainability assessment and adoption of good practice (**outcome 4**). At the same time, the ISH must provide the MRC with enhanced capacity to measure and respond to all stakeholder views about hydropower.

A central objective of the ISH in 2011-2015, in this respect, is to enable MRC to help Member Countries better integrate decisions about hydropower management and development with basin-wide integrated

²Regional Meeting on MRC Strategic Plan 2011-2015, 16-17 March, 2010, Vientiane; Also that wider efforts to advance cooperation on the sustainable development of Mekong water and related resources.

³At the 3rd Regional Stakeholder Forum on Basin Development Planning, 29-30 July 2010.

⁴Projects contained in the policies and national Power Development Plans (PDP) of MRC Member Countries and BDP

⁵Plus the large storage mainstream dams in the upper Mekong basin (Lancang-Mekong River) in China.

water resource management (IWRM) perspectives, through the established MRC mechanisms and national planning systems, consistent with the 1995 Mekong Agreement.

It is clear that many new opportunities to do this rest with the ongoing institutional and regulatory changes in the power and water resource management sectors of MRC Member Countries. For instance, the river basin committees (RBCs) and organizations (RBOs) now provided in the national legislation of most countries can play a central role in these tasks, when they become functional overtime, with the MRC offering overarching support as the regional-level RBO entity.

A second wider objective is to help Member Country efforts to bring two major decision “spheres” (or “worlds”) concerned with hydropower decision-making closer together; namely (i) the energy and power sector / regulatory bodies, and (ii) the IWRM water resource and other natural resource management sectors / regulatory bodies. Why is this important? Because energy and power considerations often drive major decisions on Mekong water infrastructure. Moreover, sector fragmentation has always been a major challenge in IWRM implementation world-wide and in practice.

ISH Implementation strategy

The strategy for 2011-2015 builds on MRC’s achievements in ISH implementation from its formulation in 2008 to its first full year (mid-2009 to mid-2010). The strategy has several aspects.

Overall, emphasis is placed on value added outputs that enable the MRC to help Member Countries (i) close gaps between current policy and practice relevant to sustainable hydropower outcomes (ii) develop capacity to pro-actively draw lessons from the growing pool of regional and international good practice, and (iii) more effectively respond to MRC stakeholder expectations, including contemporary issues that stakeholders feel are most important to their interests.

Elements of the strategy seek to catalyze, encourage and support efforts of MRC countries to:

- Adopt partnership approaches for dialogue to raise awareness, promote and genuinely advance sustainable considerations in hydropower decision-making;
- Draw effectively on regional and international experience, build confidence and share good practices relevant to all stages of planning and the infrastructure project cycle;
- Introduce /reinforce enabling provisions for sustainable hydropower in national policy and regulatory frameworks, planning systems and related procedures;
- Monitor progress over time introducing sustainable considerations from policy to practice through hydropower sustainability assessments at the project and basin/sub-basin levels;
- Improve 2-way strategic communication between MRC and its stakeholders on hydropower sustainability issues in a way that adds value for all stakeholders; and
- Build appropriate capacity in NMCs / and national line agencies for all these aspects, including the capacity of private sector and civil society stakeholder interests concerned.

It is recognized that hydropower is a controversial and often polarized topic in the Mekong and among MRC stakeholders. No single organization on its own can bring about sustainable outcomes. To do this requires thinking about water infrastructure as a wider development intervention, with greater

attention to the overall development effectiveness of projects; and not just seeing infrastructure narrowly as a way to meet growing needs for water and energy services.

Key features of 2011-2015 Work Plan

The 2011-2015 Plan for the ISH maintains the structure of four mutually reinforcing components in the 2008-2011 work plan, now transformed to five outcomes. These relate to:

1. Awareness Raising, Dialogue and Communication⁶
2. Capacity Building and Knowledge Base Support
3. Regional Planning Support
4. Sustainability Assessment and Financing
5. Effective management of the Initiative

Proposed outputs in 2011-2015 largely extend outputs in the 2008-2011 Work Plan. Adjustments are made to reflect lessons and recent developments, and respond to the draft MRC 2011-2015 Strategic Plan and core river basin management functions that the Strategic Plan embodies. To illustrate, ISH outputs concerning regional planning are widened to ensure follow-up on the key recommendations from the MRC's Strategic Environmental Assessment (SEA) of proposed LMB mainstream dams. Similarly, outputs concerning hydropower sustainability assessment are widened to reflect the positive outcomes of trialling the new basin/sub-basin hydropower sustainability assessment tool and Member Country consensus on value-added use of this tool in 2011-2015.

Outputs prioritized for 2011-2012, the first two years, broadly centre on MRC support to Member Countries to advance regional and transboundary cooperation, through:

- i. Enrichment and continuous, collaborative update of the MRCS Hydropower Data Base, especially to incorporate more parameters useful to measure sustainable outcomes and needed actions;
- ii. Adoption and use of hydropower sustainability assessment tools, around which awareness raising, shared learning and capacity building can be effectively delivered (in particular basin/sub-basin hydropower sustainability assessment tools);
- iii. Elaboration and support for the introduction of mechanisms for benefit sharing and innovative finance related to sustainable hydropower outcomes in planning / regulatory systems.
- iv. Ensuring agreed follow-up on cross-cutting recommendations emerging from the SEA of proposed LMB mainstream dams, working with and through MRC Programmes and regional partners.
- v. Cooperation with China on sustainable hydropower themes initiated in 2009-2010 with the Ecosystem Study Commission for International Rivers (ESCIR) through SEA processes that have proved highly constructive for data exchange, site visits and confidence building.

The 2010-2015 ISH outputs, as a whole, aim to construct and maintain a dialogue "platform" and proactive knowledge network to enable MRC Countries to routinely exchange information, share experience and collaborate on the development / implementation of tools and related capacity building

⁶ Awareness raising is in parenthesis as a minor update of the output title for 2011-2015

to deliver sustainable outcomes beneficial to each countries needs, and ensure ownership and the sustainability of the ISH itself within the MRC Programme structure.

Across outputs, the ISH will directly engage with key stakeholder interests, such as private sector developers, energy regulators and partners at the regional level (e.g. GMS and China) and specifically help bring the energy / power and IWRM basin management policy-makers and practitioners together. The broader strategy for stakeholder engagement is the ISH will work in cooperation with other MRC Programmes to form multi-stakeholder partnerships and outreach. This will avoid confusion, duplication and capture synergies in engaging with key basin and sub-basin stakeholders of MRC.

Management and implementation

The ISH is managed and executed by the MRC through its Secretariat and implemented through the relevant line agencies in the four Member Countries, coordinated by the NMC Secretariats and engaging the private sector, civil society organizations and experts where appropriate. As noted, the ISH will continue as a cross-cutting initiative in MRCS in 2011-2015 situated now in the MRCS Planning Division. Regional level cooperation mechanisms set up in 2009-2010 and common to other MRC Programmes will be further strengthened, namely:⁷

- i. **The National ISH Coordinator Network:** Set up in 2009, consisting of ISH coordinators based in the NMCS. These coordinators assist in day-to-day, and “as needed” with dialogue around ISH outputs, and with the coordination of information flows between the MRCS and NMCS/line agencies and other NMC stakeholders.
- ii. **Regional Technical Review Group (TRG):** Set up in 2009, consisting of representatives of NMCS and line agencies. Key ISH outputs will be reviewed by the TRG. This will continue the successful method of cooperation achieved in 2009-2010 on the MRC Preliminary Design Guidance (PDG) of proposed LMB mainstream dams, design of tributary significance studies; consideration of the international Hydropower Sustainability Assessment Protocol (SAP); and, the formulation of the basin/sub-basin rapid hydropower sustainability assessment tool (RSAT).
- iii. **Regional Advisory Committee (AC):** In 2009, TOR for the high-level RAC was prepared and members nominated by NMCs. This mechanism will provide advice and directional guidance on the strategic outlook for hydropower sustainability, the strategic orientation of the ISH, the 2011-2015 Work Plan design and implementation and the evaluation of it’s effectiveness. Other members of the AC include development partners as well as ad hock members and observers who may be invited to specific AC meetings (see Annex 4).

The operational strategy is to progressively scale-up ISH outputs on a priority basis, as staffing levels increase to the approved ISH complement by the end of 2010, or early 2011. ISH would then function at this level through 2011-2015, reflecting the need to stay lean and leverage outcomes.

The 2011-2015 outputs of the ISH work with a triangle of partners (the NMC/NMCS, national line agencies and the MRCS) linking with regional organizations. NMCs play an advisory / decision role in their respective countries and NMCSs coordinate output related workshops, capacity building and

⁷ As part of the 2008-2011 ISH Work Plan approved by the JC in 2009.

stakeholder engagement. National line agencies play a primary role in implementing outputs (e.g. conducting sustainability assessments, applying good practice within the country planning and regulatory systems) and liaising with the private sector developers / operators. The ISH facilitate various MRCS roles such as coordination, guidance, technical assistance, regional synthesis, capacity building and fund raising. Regional organizations will be engaged to support knowledge production around distillation of good practice and dissemination of tools, with related capacity building to use them.

Monitoring and reporting

These activities will follow the established MRCS systems and procedures. Three levels or areas of monitoring and reporting for the ISH in 2011-2015 relate to:

- i. ***Monitoring progress introducing sustainable hydropower considerations in the Mekong*** – this aspect covers help to Member Countries to measure and monitor progress being made, such as increasing levels of awareness, steps taken to provide the enabling policy and regulatory frameworks, and the translation of policy into practice. It will also seek to measure stakeholder perceptions of the achievement of sustainable outcomes at project and basin / sub-basin levels.
- ii. ***Monitoring progress implementing the 1995 Agreement, relevant to sustainable hydropower***: – this aspect covers the extent to which the MRC itself, through various ISH outputs and otherwise, has influenced the introduction hydropower sustainability considerations into policy and practice, in fostering cooperation, and in meeting the expectation of MRC stakeholders.
- iii. ***Monitoring the performance of ISH implementation*** – this aspect covers monitoring the process of implementing the ISH, the provision of deliverables against set targets at the output level, the functioning and contribution of the Advisory Committee, TRG and ISH National Coordinators in NMCSs with respect to their TOR, the adequacy of ISH reporting, status of MRCS internal staffing, ISH funding, and the sustainability of the overall work of the ISH.

In addition to regular reporting through MRCS management systems, an annual performance assessment report will be prepared for the ISH Advisory Committee. It will be submitted for consideration by the MRCS Senior Staff prior to submission to the ISH Advisory Committee.

Six-monthly progress reports prepared by the ISH will outline factors such as what has been done in the past six months, how much has been spent on which activities, assessment of progress against performance indicators at the output level, and issues and problems that have arisen. An independent mid-term review and evaluation of the ISH is planned for 2013.

Budget and funding status

The budget estimate for the ISH 2011-2015 is US\$ 12.5 million for the five year implementation period 2011-2015. This is equivalent to the \$US 2.5 million per year, which is the average annual budget in the 2008-2011 Workplan approved by the Joint Committee. Committed funds are available from the Government of Belgium (2010-2013). Pledge funds are under discussion for ongoing support from the Government of Finland (2007-2014). The MRCS also has discussions underway with other potential development partners including the Government of Germany. Current committed and pledged support is \$US 6.35 million, leaving a funding gap of some \$US 6.15 million.

1 BACKGROUND

1.1 FORMULATION OF THE INITIATIVE

The evolution of MRC support to Member Countries in the hydropower sector is characterized by a gradual shift in emphasis away from the sole promotion of hydropower development as a means to underpin economic growth, towards promoting sustainable forms of hydropower management and development. From a sustainability perspective, hydropower projects can no longer be seen only as infrastructure investments that produce electricity and water services. Rather they must be seen as wider development interventions in the river basin setting, where a range of natural resource management and socio-economic considerations come into play.

This shift reflects the central philosophy of the 1995 Mekong Agreement to cooperate on mutually beneficial, sustainable development of the Mekong water and related resources and to reinforce poverty alleviation.

Since 2006, interest in hydropower in the lower Mekong Basin (LMB) has rapidly accelerated. This is prompted by interest to expand cooperation in cross-border power trade, amid renewed calls by LMB Governments for private sector investment in power sector infrastructure and in other sectors such as mining, transport and agriculture. A combination of factors has led to many new proposals for LMB hydropower schemes, both on the lower Mekong tributaries; and more recently, a revival of interest in hydropower on the Mekong mainstream.

In response to the rapidly changing situation, the MRC began formulating the Initiative on Sustainable Hydropower (ISH) in early 2008. In part, this was to help Member Countries respond to the emergence of active hydropower proposals on the LMB mainstream, the consideration of which is central to the 1995 Mekong Agreement. But it was also in response to the growing recognition of the need to cooperate on sustainable management of the increasing number of existing hydropower assets in LMB tributaries as cumulative and transboundary impacts become increasingly felt; in particular, with respect to the influence on water flows, related sediment-nutrient flows, fisheries productivity in river systems and existing riverine livelihoods.

ISH Formulation in 2007-2009

The ISH was formulated in concept in 2007, and in detail in 2008-2009 during progressive, multi-stakeholder consultative steps. These culminated in Joint Committee approval of the 2008-2011 work plan in July 2009.

The ISH design was thus built on several factors, including the previous MRC activities in the hydropower sector, evolving IWRM thinking in the Mekong, and emerging good practice in the Greater Mekong Subregion (GMS region) since the 1995 Mekong Agreement was signed.

Among the foundations in the MRC were:

- **MRC Hydropower Development Strategy (2001):** where in 2001, the MRC Council and Joint Committee approved a new Hydropower Development Strategy. The strategy treated hydropower as one potential use of indigenous, renewable natural resources to consider synergies and tradeoffs of hydropower with balanced development in other sectors of the economy, encompassing consideration of the evolving environment, social and cultural heritage values of Mekong people.⁸

⁸ The strategy was developed through extensive consultation with a wide range of stakeholders including National Mekong Committees, line agencies, representatives of civil society groups and industry, as well as interested international organizations. The strategy was founded on five principles which MRC's Council endorsed at its annual meeting in 1998: (1) information exchange; (2) international cooperation on sustainable development of hydropower projects; (3) integrated overall planning of the mainstream and sub-basins; (4) cumulative environmental and socio-economic aspects, as well as public participation; and (5) encouragement of the private sector to join in developing hydropower with proper consideration of the environment and well-being of the people.

- **MRC Hydropower Programme Concept Paper (2005):** where an initial proposal for the MRC Hydropower Programme was prepared in response to the MRC Council decision at its 11th Meeting in December 2004 to include a hydropower programme in MRC work programme. The concept paper was drafted under guidance of a task force involving consultations with the NMCs at each step.⁹
- **Discussion Brief on the Two-track Approach (2008):** The MRCS Discussion Brief prepared in 2007-2008 that built on the previous achievements and outlined a multi-track approach to (i) formulate details of MRC's hydropower programme in an open and participatory process, and (ii) at the same time, respond to urgent needs for MRC analysis of proposals for mainstream dams and their transboundary implications. The Discussion Brief was approved by the MRC Joint Committee at its Informal Meeting on 19 June 2008.
- **The ISH Work Plan 2008-2011:** the plan initially drafted in late 2008 was endorsed in principle at the 29th Meeting of the Joint Committee in March 2009, subject to minor modifications in a regional workshop. That work plan including the ISH rationale and objectives, ISH components, the definition of activities and outputs, and the arrangements for implementation was approved by the JC in July 2009.

The consultations conducted throughout 2008 and early 2009 included a series of national-level meetings for NMCs and Line agencies. Multi-stakeholder regional meetings were held with representatives of hydropower policy-makers, regulators and practitioners, civil society including academia and research networks, representatives of advocacy NGOs and pressure groups, development partners, private sector financing institutions and other interested regional parties.

In this process the ISH outputs were integrated under the four mutually reinforcing components (later changed to five outcomes), in summary form namely:

- Outcome 1: Awareness raising, Dialogue and Communication
- Outcome 2: Capacity Building and Knowledge Base Support
- Outcome 3: Regional Planning Support
- Outcome 4: Sustainability Assessment and Financing
- Outcome 5: Effective management of the Initiative

Activities in 2009-2010 are reported in the ISH Implementation Plan 2009-2010. They are broadly captured in the key achievements and lessons in the following section.

1.2 KEY ACHIEVEMENTS AND IMPLEMENTATION LESSONS TO DATE

Key Achievements – Strategic perspective

During the time and since the Initiative on Sustainable Hydropower (ISH) was formulated, the MRC has used the Initiative as a vehicle to coordinate a number of cross-cutting activities essential to assess and promote sustainable considerations in decision-making and to respond to immediate challenges. These activities are inherently multi-disciplinary and require support from many MRC Programmes.

For example, in 2008 and 2009 activities included:

⁹ The Concept Paper was submitted for consideration by the Joint Committee at its Twenty-second Meeting in August 2005. The Joint Committee approved the concept paper in principle. The objective of a hydropower programme, as stated in the Concept Note was: "To promote and coordinate the development of hydropower resources in the LMB, with minimum negative impacts on the environment and local people, for mutual benefit of the MRC member countries and for partly meeting the increasing energy demand in the MRC countries, thereby supporting the countries' economic growth and poverty reduction."

- Studies on fish migration, the barrier effect of dams to fish migration and potential mitigation measures with the MRC Fisheries Programme and a fish larvae sampling programme to contribute to understanding life histories and migratory fish patterns.
- A collaborative venture with the Asian Development Bank (ADB) and World Wide Fund for Nature (WWF, Mekong) to develop hydropower sustainability assessment tools working with the MRC Environment Programme.
- Designing specifications for standard navigation locks for proposed LMB mainstream dams with the MRC Navigation Programme.
- Capacity building within MRC Bodies, line-agencies and other stakeholder groups with the MRC Integrated Capacity Building Programme, and
- Stepped-up dialogue with hydropower developers, national line agencies and power sector regulators to share multi-disciplinary data, applied research, analysis and other outputs from all MRC Programmes relevant to sustainable hydropower considerations and evaluating the synergies and tradeoffs of hydropower with development of other sectors of LMB economies, growth and poverty reduction strategies.

Several activities with high strategic relevance to help MRC bodies and Member countries respond to the accelerated interest in hydropower, especially the twelve proposed hydropower schemes on the LMB mainstream were undertaken through the Initiative in 2009-2010. Prominent among these include:

1. **Strategic environment assessment (SEA) of proposed LMB mainstream schemes:**¹⁰ A significant initiative of the MRC that engaged with NMCSs, relevant line agencies and regional stakeholders in a participatory process featuring multi-stakeholder engagement and structured dialogue. This was incorporated in national and regional workshops, information dissemination and site visits.
 - From mid-2009, the SEA started evaluating the regional distribution of development opportunities and risks of the LMB mainstream schemes. This took into account the influence of mainstream dams in Lancang-Mekong part of the upper basin.
 - All SEA materials for the Inception stage and three subsequent stages (i) baseline assessment (ii) impact assessment (opportunities and risks), and (iii) avoidance, mitigation and enhancement were placed on the MRC website. This helped to ensure that government, private sector and civil society stakeholders (their representatives) had full and equal information access.
 - The SEA provided input to the MRC Basin Development Plan (BDP) process, and through dialogue and analysis offers MRC stakeholders a better understanding of the full range of opportunities and risks of proposed mainstream dams, and issues relate to implementation of the 1995 Mekong Agreement and MRC Procedures, especially the PNPCA to consider an individual project, in the context of its contribution to the cumulative impact of all proposed LMB mainstream schemes.
2. **Preliminary design guidance (PDG) for proposed LMB mainstream hydropower schemes:**¹¹ The ISH coordinated MRC-wide preparation of the PDG in 2008-2009 and related dialogue workshops with the private developers and regulators/line agencies of MRC Member countries to disseminated the guidance:
 - The PDG brought together the body of existing MRC Programme work relevant to the proposed LMB mainstream hydropower schemes, and offered guidance on (i) navigation locks (ii) fish passage

¹⁰ <http://www.mrcmekong.org/ish/SEA.htm>

¹¹ <http://www.mrcmekong.org/ish/design-guidance.htm>

- (iii) sediment transport and management (iv) water quality and aquatic ecology, and (iv) the safety of dams. It takes into account regional and international experience in these areas.
- Meetings and workshops with developers, many from the Asia region and the regulatory bodies responsible for project MOUs help to facilitate timely input of MRC information into project preparations studies underway. In this respect, the regulatory agencies responsible for project MOUs reportedly instructed developers to reflect the MRC's guidance when preparing their project feasibility and EIA/SIA studies.
 - This brought the MRCS guidance on sustainable hydropower considerations pro-actively into the design stages. It also offers the opportunity to systematically “benchmark” individual developer proposals against accepted international good practice for subsequent consideration in MRC PNPCA processes, along-side other MRCS technical inputs requested by the MRC Joint Committee.
3. **Hydropower sustainability assessment tool development:** Through the ISH, in cooperation with the MRC Environment Programme (EP) work proceeded on development and trialling of hydropower sustainability assessment tools that Member Countries can use at project and basin / sub-basin levels..
- In 2009 ISH trialled a project-specific hydropower sustainability assessment tool, the Hydropower Sustainability Assessment Protocol (SAP). The SAP is being developed in a multi-stakeholder international process led by the IHA, which captures accepted international good practice.
 - In parallel, through the ECSHD partnership (MRC / WWF / ADB)¹² The ISH and EP has been developing a complementary basin-wise hydropower sustainability assessment tool designed for rapid hydropower sustainability assessment and dialogue among key stakeholders in basins / sub-basins, where there may be several existing projects or proposed projects, or both.
 - These tools are not only essential to monitor and measure progress in introducing sustainable hydropower consideration in the Mekong, they also help to target work on hydropower sustainability improvements in 2011-2015 and beyond. They offer a clear and focused framework for structured dialogue, awareness raising and capacity building.
4. **International sustainability linkage and profile for the MRC:** Through the ISH the MRC has played a facilitating and pro-active role to link Mekong hydropower sustainability activities to hydropower sustainability work proceeding at international levels.
- The MRC/ISH hosted the final meeting of the international multi-stakeholder Hydropower Sustainability Assessment Forum (HSAF) that is developing the SAP in May 2010.
 - These processes also engage with Mekong regional stakeholders in the non-government and private sector who are interested in hydropower sustainability assessment.
 - These engagements reinforce the transfer of regional and international experience and best practice and ensure it is captured in ISH support to Member Countries.
5. **China engagement on hydropower sustainability considerations:** The ISH has been an important vehicle for MRC cooperation with China on hydropower sustainability issues relevant to the LMB and wider Mekong River Basin context. Initial linkage on hydropower sustainability themes were pursued through PRC participation in the SEA of proposed LMB mainstream dams, coordinated by the ISH.

¹² ECSHD – Environment criteria for sustainable hydropower development (See also Section 1.4.2 – Regional Initiatives)

- In 2009, a 5-point MRC-PRC cooperation program¹³ was agreed with the China Ecosystem Study Commission for International Rivers (ESCIR) in Nov 2009, later authorised by Foreign Affairs.
 - Under this technical visits by the MRC modelling team (ISH/IKMP/BDP) and site visits by MRC to the Lancang Mekong dams in China were undertaken in 2010. ESCIR also participated in the region SEA workshops. This multi-stakeholder dialogue process together with the supporting SEA analysis helped China gain a better perspective of LMB issues and concerns.
 - These engagements, as China notes, opens important opportunities for further MRC-China work on hydropower sustainability issues, and offers a foundation for ISH cooperation in 2011-2015.¹⁴
6. **Regional Greater Mekong Sub Region (GMS) sustainably hydropower linkages strengthened** the ISH has sought to establish strong links with MRC LMB and GMS regional level initiatives on sustainable hydropower, notably in response to a number of GMS agreements including those for cross-boarder power trade, transboundary-environment sustainability and other sustainability domains.
- In 2009 ISH established observer status on ADB RETA 6440 working group on GMS regional power trade and energy sustainability that meets regularly. A document and data exchange agreement was put in place for the MRC SEA and the GMS RETA work.
 - Through the RETA process, the ISH has two-way information exchange with the six GMS countries at a relatively high-level in the regional power sector planning / regulation community. The RETA also has a core sustainability focus, which ISH is advising on (e.g. RETA preparation of TOR for SEAs of the regional power road map). At the same time, the ISH is continuously briefing key energy and power stakeholders on progress with the MRC ISH initiatives, in particular the SEA.
 - These engagements reinforce cooperation on LMB and GMS hydropower sustainability challenges and opens new opportunities to link thinking on sustainable development of the regional power sector to sustainable development of the Mekong River basin and the MRC role.
7. **Preparations for the MRC Procedures for Prior Notification, Prior Consultation Agreement (PNPCA) concerning the ISH role:** the MRC is expecting the first notification for consultation component of the MRC's formal PNPCA procedure, anticipated in late 2010.
- In 2009 work undertaken through the ISH helped MRC Countries and regional stakeholders prepared for this eventuality by the work previously described in this Section of the document, within the context of the prescribed and expected role of the MRCS in any PNPCA process.
 - As previously noted, the ISH outputs in 2009-2010 collectively enhance the analysis and information that MRCS can offer the Joint Committee for consideration in a PNPCA process.¹⁵
 - The ISH has also prepared a number of key strategic briefings for JC and Council in 2009, including a briefing on a potential transboundary mechanism for benefit sharing.
8. **Strategic Presence – MRC/ISH enhanced.** Through ISH outputs and the regional multi-stakeholder approach used to deliver them, the MRC is recognized as a leading role-player in LMB hydropower

¹³ 5-Points: (i) Report & data exchange (ii) technical exchange visits between MRCS modelling staff and PRC experts (iii) MRC site visits to Lancang-Mekong projects (iv) ESCIR participation in SEA workshops (v) research cooperation E.g. case studies.

¹⁴ Ongoing MRC-PRC cooperation as noted by the PRC representatives participating in the final SEA workshop in Viet Nam in June 2010, and in the BDP 3rd Regional Stakeholder Forum in Vientiane, July 2010.

¹⁵ Like the SEA of LMB mainstream dams and preliminary design guidance (PDG), which together with other material the MRCS provides including the BDP Scenario analysis will offer a concrete basis for MRC technical advice on the PNPCA according to its role, along with technical review of project specific documents such as the developer prepared feasibility studies and EIA/SIAs.

sustainability considerations by LMB governments, the private sector and civil society. This speaks well for value-added ISH contribution and profile in 2011-2015.

Key Achievements – from an initiative management perspective:

- The ISH National Coordinator network was put in place in the NMCSs (see Annex 9).
- The Technical Review Group (TRG) consisting of technical representatives from each Member Country was established, and has been functional since June 2009 (see Annex 5).
- The ISH Advisory Committee was formed in early 2010 (See Annex 4).
- Substantive cross-cutting work was pursued across a number of ISH outputs working with other MRC Programmes, NMCs and regional and national stakeholders. The ISH has a good track record.
- ISH management documents prepared include:
 - o 5-year Project Initiation Note (PIN)
 - o 5-year 2011-2015 Document – this document that is derived from the PIN
 - o 2009-2010 Programme Implementation Plan (PIP)
 - o 2010 Work Plan
 - o 2008-2011 Work Plan
 - o Monitoring and Evaluation (M&E) Logical Framework

Lessons learned from ISH experience to date

2010 is the first full year of ISH operation. Some overall lessons and conclusions from the situation now, and experience to date include:

- The model of the ISH functioning as a cross-cutting initiative working with and through the MRC Programmes has proven to be successful, as envisaged by the MRC Joint Committee and MRCS management. There are areas for improvement, as noted in the SWOT analysis in Table 1;
- Several key strategic aims of the MRCS have been accomplished through the ISH. MRC profile on sustainable hydropower themes is reinforced in the eyes of MRC stakeholders and in the wider GMS region and internationally. There has been regional and international media interest in MRC's work undertaken through the ISH. Some output related events also generated national media coverage (e.g. SEA Workshops, MRC visits to China dams, dialogue meetings with developers and regulators).
- Regional management systems for the Initiative are in place (e.g. the AC, TRG and ISH national coordinator network). The TRG especially has been an effective mechanism for collaborative development of key tools. Cooperation with a number of relevant regional initiatives has been established. The basis for future cooperation with regional partners is reinforced.
- The success to date attracting development partners for 2011-2015 is a measure of the wider international endorsement of the approach and focus of MRC's ISH and aims to promote sustainable outcomes in hydropower management and development rather than promoting hydropower.

□ ***SWOT Analysis of the ISH (Strengths, weaknesses, opportunities and threats / risks)***

Lessons must reveal both strengths and weaknesses. Table 1 is a conventional SWOT analysis used to summarize key lessons from ISH implementation experience in 2008-2010 to date. It also indicates areas of improvement for the 2011-2015 implementation period. To be succinct, these are limited to five points on each SWOT category.

Table 1: Summary SWOT Analysis of ISH Implementation experience in 2008- 2010 to date	
<p>Strengths</p> <ul style="list-style-type: none"> • MRC-ISH role as a regional actor and “platform” for collaborative development, sharing and disseminating good practice is accepted; • Partnership approaches have so far proved to be effective and fundamental for cooperation and stakeholder acceptance; • A large body of multi-disciplinary MRCS Programme work, as well as regional and international experience can be draw upon; • Key hydropower sustainability assessment (flexible) tools are largely ready, or soon to be ready for project-level and basin / sub-basin applications; • Awareness of the value taking steps to advance sustainable hydropower considerations in implementing the 1995 Agreement is growing. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • The MRC hydropower database is becoming dated. Steps for routine systematic improvement and updating the database working with NMCSs and line agencies need reinforcing; • ISH National Coordinator roles in NMCSs are mostly limited to administrative matters and there are opportunities to expand these; • The practical realities of operating the ISH as a cross-cutting initiative leads to budget debate (e.g. what programme pays) and much depends on the degree of internal MRCS cooperation; • Capacity is uneven in LMB countries to introduce hydropower sustainability considerations; • There are limitations in follow-up to outcomes of multi-stakeholder engagements that ensure all stakeholder expectations have been met.
<p>Opportunities</p> <ul style="list-style-type: none"> ▪ More pro-actively engage with the emerging RBOs/RBCs in Member Countries tailored to their needs; ▪ Build on existing work and cooperation on the distillation of good practice (regional and international) to apply in Member Countries; ▪ Build on relations with China’s ESCIR and also the PRC Research Institute for Sustainable Hydropower; ▪ Linking the voluntary international hydropower sustainability assessment protocol (SAP) to the basin wide sustainability assessments to constantly refresh on emerging good practice; ▪ Demonstrate the relevance and value-added nature of mechanisms like benefit sharing and innovative finance in implementing the 1995 Agreement. 	<p>Risks</p> <ul style="list-style-type: none"> • Insufficient financial resource to support implementation of 2011-2015 outputs; • ISH staffing complement in the MRCS not filled • Resistance to multi-stakeholder / partnership approaches, or related failure to communicate, measure and meet stakeholder expectations; • Failure to demonstrate how sustainable outcomes benefit all stakeholders, resulting, for example, in lack of cooperation of the hydropower industry or other stakeholders – this coupled with failure to reach consensus on the meaning of sustainable hydropower or respect different viewpoints; • Failure to demonstrate how sustainable hydropower outcomes are central to cooperation in implementing the 1995 Mekong Agreement.

Further elaboration of the risks (threats) for ISH outcomes and specific outputs for 2011-2015 are provided in the logical framework analysis in Annex 1.

Looking forward generally, the 2009-2011 experience shows that it is possible, for example, to use hydropower sustainability assessments at the project and basin / sub-basin scale as a platform for cooperation in the exchange of experience, shared learning and digestion of good practice, for confidence building, and for capacity building in a targeted manner relevant to the MRC mission and implementation of the 1995 Mekong Agreement.

Flexible assessment approaches rather than rigid tools are needed that Member Countries can tailor to their needs and underpin regional cooperation in recognized areas of co-dependence.

1.3 ENERGY AND POWER SECTOR TRENDS IN THE MEKONG

Hydropower is a sub-sector of the energy and power sector. Three MRC Countries (Cambodia, Lao PDR and Vietnam) actively promote new hydropower development in their energy sector policies and national Power Development Plans (PDPs).¹⁶ Nonetheless, because most large LMB hydropower schemes have an export and cross-border trade component, trends in the energy and power sectors in all LMB countries are relevant to Mekong hydropower decisions – and by extension, relevant to sustainable hydropower.¹⁷

The following reviews key trends in MRC Member Countries. Two wider questions that often arise in multi-stakeholder dialogue about these trends relate to (i) the expected growth in LMB electricity demand, and (ii) what demand-supply alternatives can sustainably meet that demand – and what is implied for the role of hydropower as a supply option in the generation mix, from a sustainability perspective.

1.3.1 Situation Overview

Over the past few decades, the Mekong region has experienced high rates of economic growth. From 1993 to 2005, economic growth and electricity demand increased at an average annual rate of about eight per cent, one of the highest in the world over a sustained period.¹⁸ Access to modern energy is nevertheless uneven across LMB economies and between urban and rural areas. Many people in rural and peri-urban areas in the wider GMS region still depend heavily on traditional biomass energy sources for their household and on-farm needs.

Commercial energy imports into the LMB region account for more than 21 per cent final energy consumption, and rising.¹⁹ The current dependence on fossil fuel imports is projected to increase significantly with ongoing growth in all economic sectors, including the LMB power sector.²⁰ For Mekong countries with large conventional energy resources endowments as compared to their national needs (e.g. Lao PDR and Cambodia with their hydropower resources) there is strong interest in generating national income from power exports in the manner that Myanmar generates national income from its large, strategic natural gas and oil reserves.

Several factors are driving electricity demand growth in MRC Countries, as well as the growing interest in expanding the role of hydropower in the electricity supply mix.

□ *Strong electricity demand growth nationally*

LMB countries are gradually moving from largely state-dominated to mixed-market economies. The shift is away from reliance on subsistence agriculture to more diversified economies, where industry and services account for

¹⁶ MRCS participates in the Regional Technical Assistance (RETA-6440) initiative ADB reviewing national power development plans, as part of facilitating regional power trade and environment sustainability of electricity infrastructure in the GMS.

¹⁷ Many LMB hydropower schemes, especially in Lao PDR and Cambodia are developed under regulatory systems employing private sector investment BOT/BOOT models. Export sales finance repayment of project lending during concession periods.

¹⁸ Electricity demand remains highly correlated to LMB economic growth as set out in the Energy and Power thematic assessment in the MRC SEA of mainstream hydropower schemes. Despite the recent global economic recession and dip in the rate of demand growth, high rates of electricity demand growth resumed in early 2010.

¹⁹ Energy imports to the region account for more than 21 per cent final energy consumption (2005 figures). Thailand, one of the largest economies, imports more than 50 per cent of its domestic energy requirements. Cambodia and Lao PDR import all their commercial fuels. Oil and coal dependency in the GMS is projected to increase in the coming decades, especially with the growth of the transport and power sectors sector (ADB 2009a, and National PDPs).

²⁰ (ADB 2009, ADB RETA 6440 and National PDPs).

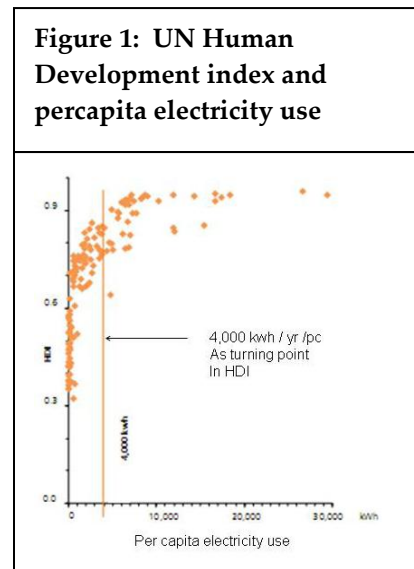
an increasingly larger share of employment and domestic GDP. As part of this transition, the rapid pace of export-led economic growth, and its implications for regional energy demand, comes on top of efforts to improve and expand electricity access in rural areas, and higher levels of household consumption as average family incomes rise, amid rapid trends to urbanization and underlying population growth.

□ *Low levels of relative per capita electricity use*

While the rate of electricity demand growth in the Mekong is high, it is growing from a low per capita level. Electricity utilization in the wider GMS (940 kWh/person/yr), by 2008, was two thirds of the developing world average of 1,221 kWh/yr. It is about one tenth of the OECD average near 9,000 kWh/year. Cambodia, Lao and Viet Nam’s per capita electricity consumption is among the lowest in Asia.

□ *Clear energy-poverty linkages*

Energy poverty is still a major concern in the wider Mekong. Figure 1, shows the global UN Human Development Index (HDI) against per capita electricity use. Electricity use levels in LMB countries are well below the 4,000 kWh/per capita annual figure the UN shows to reach the inflection point where HDI is achieved (e.g. Cambodia 56 kWh/yr, Lao PDR 187 kWh/yr, Viet Nam 573 kWh/yr and Thailand 1,950 kWh/yr). Many observers say lack of efficient electricity supply in rural areas impedes government policies towards effective, overall poverty reduction and closing the growing income gap between urban and rural people.²¹



□ *Improving national electrification ratios*

The proportion of households with electricity access varies between countries. In Thailand, the grid reaches over 99% of villages and electrification ratios are +95% (see Table 2). Similarly in Viet Nam, the national electrification ratio is over 85% presently, though in some rural areas it is under 50%. Current policy targets are to reach +95% by 2020, mainly through conventional grid extension.

Table 2:
Urbanization and Electrification Ratios in the LMB

Country	Urbanization Ratio	Electrification Ratio (%)
Cambodia	17%	Less than 20%
Lao PDR	21%	60% - 2008 Goal 90% -2020
Thailand	33%	+95%
Vietnam	27%	+85%

In Cambodia and Lao the picture is different. Cambodia has 22 isolated grid systems working separately on expensive power generation (with diesel generators currently dominating). This has led Cambodia to high electricity tariffs, with consequences not only for poverty alleviation but also a barrier for economic investment.

Cambodia’s policy is to have all villages with electricity (by all sources and off-grid from 2020) and at least 70% of households grid-connected by 2030. Lao PDR increased household connections from 16% in 1995; to 44% in 2004; and to 60% in 2008. It is reportedly 67% today. The Lao PDR target is to achieve 90% household connections by 2020, mainly through expansion of grid, with off-grid supply in very isolated areas.

²¹ The Human Development Index (by UNDP) is a measure of poverty. The HDI has steadily improved in some LMB countries now classified as “medium development”. Despite the high economic growth rates, about one third of the population of Lao PDR and Cambodia live below the national poverty line.

□ *Regional and bilateral policies for cross-border power trade and electricity grid integration*

Energy policies of Mekong countries envisage further development of LMB hydropower as part of meeting today's growing national power needs, increasing cross-border trade, and as part of long-term regional energy integration. The power trade aspect is important for sustainable hydropower because this influences, and largely determines the scale and pace of hydropower development in the lower Mekong.

At the regional level, all six governments of the Greater Mekong Sub Region signed an Intergovernmental Agreement on Power Interconnection and Trade in 2005. This agreement embodies the objectives to, "... continue with the development of (transmission) interconnections between the respective (electricity) networks and expand capacity and energy trade to provide further opportunities to: (i) enhance the reliability of (power) supply, (ii) coordinate the installation and operation of (electricity) generation and transmission facilities, (iii) reduce investment and operating costs, and (iv) share in other benefits resulting from the interconnected operations of their systems".²² It is much like the grid integration in Europe (e.g. Nord Pool) and North America as well as developing country regions in Africa and Latin America.^{23, 24}

The regional aspect builds on bilateral agreements to expand cross-border power trade that LMB governments have concluded with one another. These bilateral MOUs authorize the respective power entities in each country to negotiate a power purchase agreements (PPAs) for specific hydropower and thermal projects.²⁵ Lao PDR, for example, has signed a MOU with Thailand for up to 7,000 MW export. Lao PDR, also has power trade agreements with Cambodia and Viet Nam (5,000 MW). The MRC formal Dialogue partners Myanmar and China are also engaged in cross-border power trade with MRC Member Countries (e.g. China and Viet Nam), much of this based on hydropower supply.

□ *National energy policies and influences of private sector investment*

Energy policies of Mekong countries reflect a strong interest in meeting their development aspirations, in part. by expanding access to energy services and maximizing utilization of the region's indigenous energy resource base, and using cross-border trade in this manner also. Regional energy security and supply diversification is also an aspect of the power development policies. Underlying energy security concerns include trends towards higher and more volatile international energy prices and implications for national debt burdens and long-term tariff stability.

Figure 2, illustrates the regulatory framework that Lao PDR has established to regulate public and private sector investment in new hydropower. The importance for sustainable hydropower outcomes is threefold; firstly, with respect to the linkage between steps in the national regulatory system for hydropower to MRC's role in basin planning and implementation of procedures – and the IWRM objective of placing decisions on hydropower development and management in a river basin IWRM perspective; secondly, with respect MRC support to Member countries efforts to introduce good practice sustainable considerations at each step of the regulatory process; and

²² The Inter-Governmental Agreement on Regional Power Trade In the Greater Mekong Sub-Region, signed by Ministers from the Kingdom of Cambodia, Yunnan Province of the People's Republic of China, Lao People's Democratic Republic, the Union of Myanmar, the Kingdom of Thailand, and the Socialist Republic of Viet Nam.

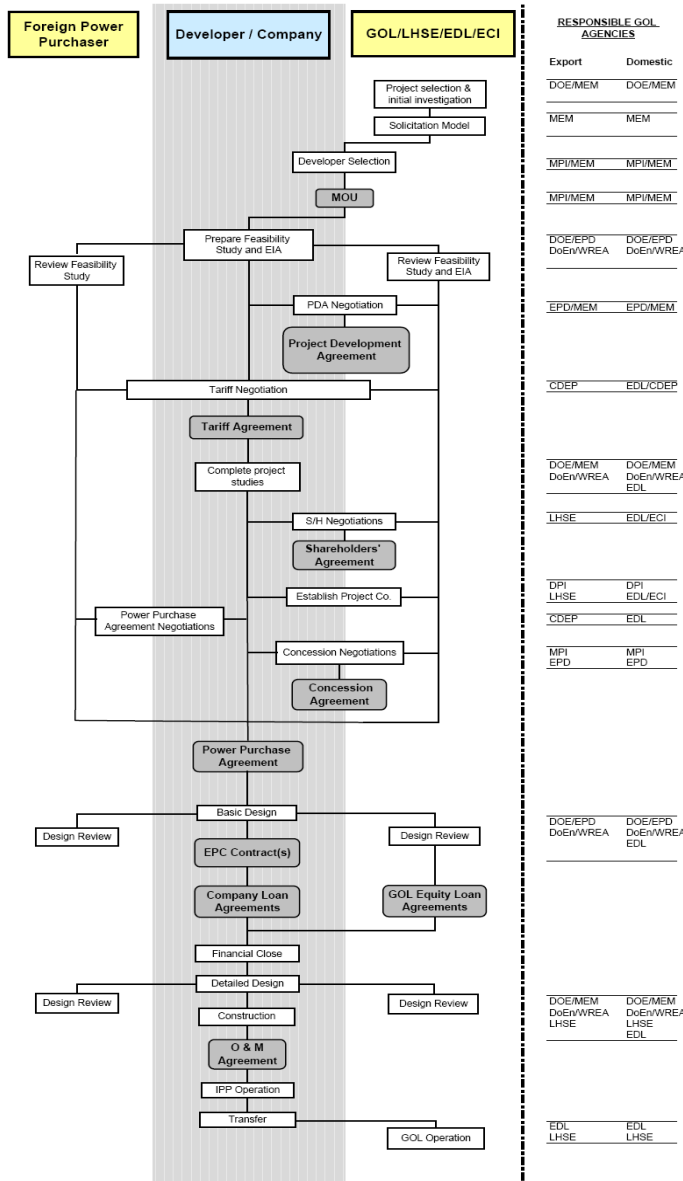
²³ Expert groups including a Regional Power Trade Coordination Committee (RPTCC) were set up to oversee establishment of the regulatory, institutional and commercial framework. A "Road Map" to implement the 2003 agreement and a regional power interconnection master plan was prepared supported by the ADB. With development partners, environment sustainability has recently become a key aspect of the Road Map.

²⁴ The ADB Regional Technical Assistance (RETA) 6440 "Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Sub-region (GMS)" Stated aims are to: (i) develop and adopt a road map for implementing the Regional Power Trade (RPT) and to agree on a regional power interconnection master plan; (ii) help GMS countries develop strategic integrated environmental conservation programs; and (iii) extend it to environmental planning and environmental monitoring of future power projects during their construction and operation.

²⁵ The approval of any individual project is subject to concluding a Power Purchase Agreement (PPA).

thirdly and more broadly, as a area of dialogue to help link the two “worlds” of power sector planning and IWRM river basin planning, as described previously in this document.

Figure 2: Regulatory system for public and private sector power projects – Example of Lao PDR



1.3.2 Regional energy and power sector trends

One overarching consideration in sustainable development of the Mekong is to have clear links between sustainable development of the Mekong River Basin on one hand, and sustainable development of the regional power sector, on the other. While MRC is a river basin organization, not an energy planning body, the strategic outlook for the energy and power sectors of the LMB is relevant to the MRC challenge.^{26, 27}

²⁶ Adapted from the MRC SEA of LMB mainstream dams (written contribution of the ISH to the SEA).

Key trends and outlook

- Overall the Mekong basin is well endowed with energy resources, including fossil fuels (hydrocarbons) and renewable energy (RE) sources to support electricity generation at different scales. However, energy resources are not uniformly distributed among countries. Lao PDR, Viet Nam, Myanmar and Yunnan (PRC), for example, have significant hydropower potential. Hydrocarbon exploration is ongoing in a number of countries. Thailand and Viet Nam currently use natural gas reserves for power. Myanmar has the major strategic natural gas and oil reserves and exports these. Viet Nam has the largest proven coal deposits after the PRC. The overall picture is while LMB countries do have hydrocarbon energy resources, in many cases, the reserves are not strategic (long term) and there is competition for their use in other economic sectors.
- In the renewable energy source category, total hydropower potential of the Mekong River Basin is estimated to be 53,000 MW, with about 30,000 MW technically available in the lower Mekong (of which about 10% is now utilized). The LMB has other indigenous RE resources to support decentralized off-grid power supply in isolated and rural areas and also feed the electrical grid as intermittent power sources. Among these sources include biomass, solar, wind and small scale hydro. Non-conventional renewable resources have longer term potential. Among these include off-shore wind and ocean sources for LMB countries with significant coast lines (e.g. tidal, wave and OTEC).
- Amid trends to urbanization, diversification of regional economies and rapid population growth, electricity demand is expected to continue to grow in the LMB. Current trends suggests that annual growth rates in electricity demand in the LMB will average 8.5 percent to 2015, and slow to 6.5 percent by 2030, with the high rate of demand growth in Viet Nam figuring prominently. In both 2015 and 2025, energy demand (GWh) in Vietnam and Thailand combined will represent 96 percent of LMB demand.²⁸
- There is controversy over the role that demand-side management will play in future. Higher electricity tariffs and DSM/EE promotion programmes will gradually influence consumer behaviour, e.g. turning off lights and appliances when they are not needed and buying energy efficient bulbs and appliances. Except for the easier measures or low “hanging fruit” like energy efficient lighting and power factor correction in industry, significant penetration of DSM requires structural change and replacement of the existing stock of inefficient appliances and electricity using equipment in all modern sectors of the economy.
- Current trends in supply side-efficiencies and demand-side efficiency are therefore expected to lead to peak (MW) and energy (GWh) savings in LMB countries. While this is always contested,²⁹ the consensus of the LMB Government’s, as expressed in their policies, projections and national PDPs is that the main role of DSM / EE will be to slow the rate of electricity demand growth in the short to medium-term.
- Hydrocarbons (natural gas, coal and oil) today account for about 85% of electricity generation in LMB power sectors combined. Hydrocarbon imports for power generation (currently about 22 percent) are set to rise as Thailand and Vietnam increasingly consider coal imports from outside the GMS region (as described in

²⁷ Elaboration of these and related topics is can be found in the Energy and Power Baseline paper prepared for the MRC SEA of proposed mainstream dams, coordinated by the ISH.

²⁸ According to the ADB (RETA 6440, 2009-2010) peak demand in the LMB region will grow from 44,565 MW in 2010 to around 130,000 MW 2025. The picture that emerges is roughly a fourfold increase over the next 20 years. Vietnam and Thailand combined represent 96 percent of LMB demand. Official projections are Thailand’s power demand will increase by a factor of 2.2 in the next 15 years, with an annual increase of peak demand of 2,600 MW per year by 2025 (equivalent to 3 new 800 MW gas-fired plants per year). Vietnam demand will pass Thailand’s in 2014 increasing by a factor of 3.7 in the next 15 years, with an annual increase of 4,600 MW per year by 2025 (equivalent to 6 new gas-fired plants per year).

²⁹ The full potential for DSM in Thailand and Viet Nam, especially remain contested on (i) the amount of savings possible (peak reduction and energy reduction) and (ii) uncertainty on whether technical estimates of DSM are achievable, over what timeframe, and (iii) the extent one-time DSM savings can be relied upon power supply planning / reliability.

national PDPs).³⁰ On a regional basis, natural gas supports the largest share of power generation at 58% of the total generation mix (but a declining share). Coal-fired plants and hydropower share equally another 30% of the supply, and the remaining 12% is mostly oil-fired generation, whether diesel or bunker. There are very small but growing shares at present of biomass and wind.

- There is a significant renewable energy (RE) resource base, to support non-hydro RE generation across the GMS countries from various biomass sources, solar and wind on a site-specific basis (and small hydro, when grouped with RE generators). Small-scale REs are important to pursue, and central to the energy policies and the poverty reduction policies of LMB Countries.
- Thailand has advanced most in promotion of advanced RE conversion technologies for power generation and has established a system of feed-in tariffs for RE suppliers to connect to the grid. Through large subsidies, the target is to derive 11,216 MW from non-hydro RE sources by 2022, including co-generation.³¹ Activity with advanced RE conversion technology is more limited in other LMB countries, though development partners plan to increase support for RE funding in Cambodia, Lao PDR and Viet Nam.
- Strategically, prospects for RE/DSM/EE in a grid or off-grid context does not change the drivers of LMB power export and cross-border trade in the short to mid-term. The policy statements of LMB governments note that small-scale and renewable off-grid power does not compete with, but rather complements grid power in extending electricity access and services to LMB populations, especially people in remote rural areas where grid extension is not contemplated in the near future. Increasingly RE generation, including small hydropower, have a role to play in feeding the grid and forming part of the generation mix.
- LMB hydropower and other RE generators have significant potential for GHG reduction in the regional power sector due to the current high proportion (85%) of hydrocarbon generation in the LMB supply mix (see also quantification of potential GHG impacts at the end of 1.4.1 Section).

To bring this back to hydropower, total LMB hydropower potential represents 134,030 GWh/yr of generation. This represents about half (48%) of combined LMB energy consumption in 2010 (of 280,415 GWh/yr). It would represent about 16% of the total projected LMB electricity use by 2025 (projected to be about 820,500 GWh/yr).

As a matter of scale, the 65,000 GWh/yr of generation by the twelve proposed LMB mainstream hydropower schemes represents about 23% of 2010 LMB electricity demand. By 2025, that would reduce to about 8%, and by 2030 it would be less than one year of LMB combined projected electricity load growth.

³⁰ Higher efficiency clean coal technologies will no doubt be of interest in LMB countries due to the high current and expected future reliance on coal import. While these technologies imply higher investment and operating costs they can improve plant efficiencies and reduce GHG emissions. Thailand has already signalled it may use the new clean coal technologies in any future coal plant based on imports.

³¹ Each LMB country is evolving its RE policy, implementation of which is most advanced in Thailand, which adopted a 15-year Alternative Energy Development Plan (AEDP) in January 2009. The AEDP aims to reach a target of 20% alternative / renewable energy in the total national energy mix by 2022 and advance use of high-efficiency energy technologies. For the power sector, the target is to derive 11,216 MW from non-hydro RE sources by 2022. For the required subsidy, there are plans to establish a fund that all large and non-RE generators will pay into or retain the current add-on tariff charge on consumer bills. In Viet Nam, the updated Power Development Plan (PDP) prepared in 2009 anticipates that electric generation from RE sources may reach 2,400 MW by 2025, or close to 3% of installed capacity by that time.

1.4 CURRENT HYDROPOWER STATUS THE LOWER MEKONG

The Mekong region has considerable hydroelectric potential at all scales - from larger-scale schemes of up to 2,000 MW installed capacity, or more, to small, mini and micro-scale hydropower for decentralized grids and isolated supply down to the household level. Slightly over 10 percent (3,235 MW) of the LMB estimated large-scale hydroelectric potential of 30,000 MW is now utilized on Mekong tributaries. Most of this is from projects completed in the past two decades.³²

A further 3,209 MW are currently under construction on LMB tributary systems.

A significant shift of recent is the active consideration up to 12 mainstream hydropower schemes on Lao, Lao-Thailand and Cambodian reaches of the mainstream. These have a potential installed capacity of up 14,000 MW and generate up to 65,000 GWh/yr. For comparison purpose this amount of energy generation is equivalent to slightly more than 10 Nam Theun 2 schemes.³³

China is actively proceeding with a series of medium and high-dam storage projects in the Upper Mekong basin (UMB), on the Lancang-Mekong mainstream.³⁴ Of the seven UMB mainstream projects that are in operation, under construction or actively planned in Yunnan, the two major storage schemes (Xiaowan and Nozahadu) are expected to operational by 2015. Xiaowan (which was visited by MRCS in June 2010) is impounding.³⁵ It is expected to be operational later in 2010-11.

1.4.1 Existing and potential hydropower in the LMB

The following data offers further perspective on existing and potential LMB hydropower. These data are helpful to dimension the accelerated pace of LMB hydropower development as well as the nature of the challenge in introducing sustainable hydropower considerations in a dynamic situation.

□ *LMB hydropower potential and the MRC Hydropower Database*

The MRC hydropower database (MHDB) includes all hydropower projects above 10 MW that MRC Member countries have included in planning documents submitted to MRC. The database includes all operational, planned, under construction and proposed projects. To date 135 hydropower schemes are identified, including multi-purpose projects with a hydropower component. Of these 38 projects are now in operation or under construction, as compared to 15 projects in operation in 2000.

Table 3 shows the status of these projects in each MRC Member Country.

³² Lao PDR and Cambodia are pursuing a projects using BOO/BOOT models through private sector participation. MOUs have been signed with developers to prepare feasibility and EIA/SIA studies, as required under national regulatory systems. All the large projects are export-oriented, where a portion of the project outputs is reserved to supply the domestic grid, and the larger portion exported. Concession periods are typically of 25 years or more.

³³ NT2 is 1,070-megawatt. About 93% of the electricity generated by the plant (5960 GWh) is exported to Thailand (5,354 GWh)

³⁴ While Developers proposals for dams in the lower Mekong mainstream have not been finalized, generally they would vary in head between 6 m or more to 35-40 m. The eight dams completed or under construction upstream in China vary from 67 m to 248 m head (for Jinghong and Xiaowan respectively).

³⁵ The site was visited by a MRC delegation in June 2010. There was also a visit to the Jinhong project currently the lowest-most in the Lancang-Mekong cascade. Jinhong is of interest as it is performing the daily / weekly regulation function. The visit was organized through the ISH and MRC was the first official international visit the Xiaowan facility.

Table 3: Status of Hydropower Projects in the LMB (MRC Hydropower Database)						
Country	Parameter	Project Status				
		In Operation	Under Construction	Under License	Planned	Total
Cambodia	Number of Projects	1	0	0	13	14
	Installed Capacity (MW)	1	0	0	5,589	5,590
	Annual Energy Generation (GWh)	3	0	0	27,125	27,128
	Investment (Million US\$ 2008)	7	0	0	18,575	18,582
Laos	Number of Projects	10	8	22	60	100
	Installed Capacity (MW)	662	2,558	4,126	13,561	20,907
	Annual Energy Generation (GWh)	3,356	11,390	20,308	59,502	94,556
	Investment (Million US\$ 2008)	1,020	3,256	8,560	26,997	39,833
Thailand	Number of Projects	7	0	0	0	7
	Installed Capacity (MW)	745	0	0	0	745
	Annual Energy Generation (GWh)	532	0	0	0	532
	Investment (Million US\$ 2008)	1,940	0	0	0	1,940
Vietnam	Number of Projects	7	5	1	1	14
	Installed Capacity (MW)	1,204	1,016	250	49	2,519
	Annual Energy Generation (GWh)	5,954	4,623	1,056	181	11,814
	Investment (Million US\$ 2008)	1,435	1,312	381	97	3,225
All Countries	Number of Projects	25	13	23	74	135
	Installed Capacity (MW)	2,612	3,574	4,376	19,199	29,761
	Annual Energy Generation (GWh)	9,845	16,013	21,364	86,808	134,030
	Investment (Million US\$ 2008)	4,402	4,568	8,941	45,669	63,580

Source: ADB RETA 6440, December 2009, base on updating national Power Development Plans(PDPs) and the MRCS Hydropower Database, December 2008 update.

□ **Share of hydropower in each LMB Country**

As shown in Table 3, of all projects in the MRC database, more than 74 per cent are in Lao PDR and 10 percent are in Cambodia and Viet Nam each. Thailand is not planning any more LMB tributary projects; however, two of the 12 proposed mainstream schemes would straddle the Lao-Thailand border, namely Ban Khoum and Pak Chom. In respect to the share of the electricity generation mix of each country, hydropower is the largest percentage share in Lao PDR (over 95%) and Vietnam (about 40%, though a declining share). Cambodia and Thailand are mostly reliant of fossil fuel generation. In Cambodia's case, it is all imported from the international energy markets.

□ **Hydropower in the MRC's BDP Scenario Assessments**

As part of the MRC's Basin Development Plan process, the BDP-2 offers a set of basin-wide development scenarios to represent different levels and combinations of potential sector development in the basin, including hydropower.

³⁶ Table 4 shows the total number of hydropower projects and the associated total reservoir storage capacity (in

³⁶ The BDP scenarios are to help MRC Countries consider the full range of development synergies and trade-offs among the different water-related sectors, such as irrigation and hydropower synergies and hydropower and fisheries tradeoffs, and with the wide range of resource management, environment and social considerations.

BCM) contained in the main BDP scenarios. Table 4 focuses on the LMB tributary schemes and Lancang-Mekong projects.

Table 4: BDP Scenarios, numbers of LMB hydropower projects and total storage				
BDP Scenario	Number of Tributary Hydropower Projects	Storage / Regulation (BCM)		% of Mekong Mean Annual Runoff (MAR)
		LMB Tributaries (seasonal to daily)	UMB mainstream (seasonal)	
Baseline situation (2000) – establishing the reference situation as regards hydrological, economic, environmental and social conditions	15	9.6	2.6	2.4%
Definite future situation (2015) – looking at developments expected by 2015 (i.e. existing, under construction or committed)	41	23.7	23	9.2%
Probable future situation (2030) – looking at country plans for development in the next 20 years through to 2030, with and without 11 mainstream dams and variants on these	71	46	23	14.2%

Source: Adapted from BDP
 The percentage of MAR refers to the 505 BCM or 5 cubic kilometres is the annual Mekong runoff.
 The 12 proposed LMB mainstream schemes would LMB Mainstream schemes combined would add 3.1 BCM storage (daily +) equivalent to 0.6 % of mean annual runoff (MAR).

Table 4 also illustrates the acceleration of interest in LMB hydropower schemes; by 2030 up to 71 large hydropower projects may be operating on LMB tributaries. It is expected that the 3-S river basins (Sekong, Sesan and Sre Pok Rivers) shared between three LMB countries (likely sending power to all four LMB countries), would contain more than half of the LMB projects. Nine of the potential 45 3-S hydropower projects, identified in national studies, were operating in 2010 and a further nine were under construction.³⁷

□ **Economic supply curves for remaining LMB hydropower potential**

The MRCS has analysis on the relative economics of hydropower schemes in the LMB. In the alternative analysis of the SEA of proposed LMB mainstream dams a set of economic supply curves for LMB hydropower resources were prepared.³⁸ These data show that:

- Total potential LMB hydropower generation capacity is 134,030 GWh/year (equivalent to the energy generation of about 20.3 Nam Theun 2 (NT2) projects in Lao PDR, exporting to Thailand.³⁹

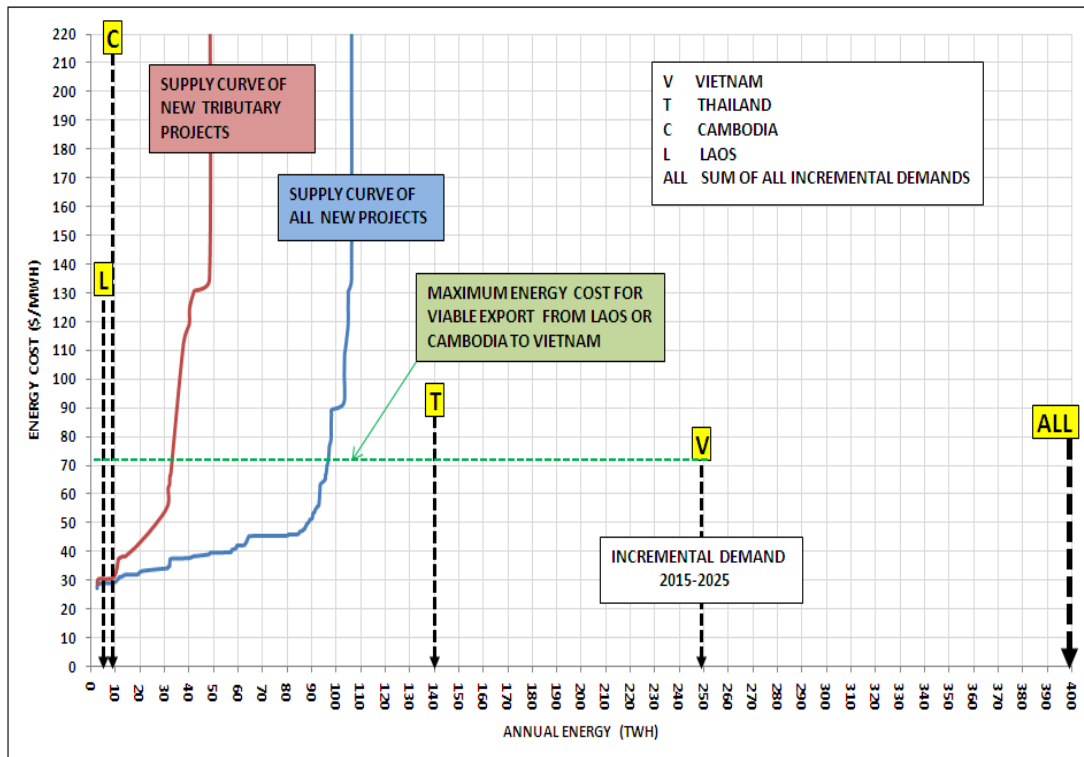
³⁷ MRCS-ADB Joint study of the 3-S Basin <http://reta.3sbasin.org/>

³⁸ These alone do not represent the full picture that must incorporate the impacts across also sectors, livelihoods and nutrition and poverty. See SEA of mainstream dams energy and power baseline assessment theme paper for the alternatives analysis.

- Remaining hydropower LMB potential is 105,000 GWh/ year, (equivalent to about 17.7 NT2s);
- Within remaining the LMB hydropower potential amount, tributary projects are 40,000 GWh / year (equivalent to about 6.7 NT2s), and
- LMB mainstream schemes have a potential of 65,000 GWh per year (about 11 NT2s).

Figure 3 illustrates the remaining LMB hydropower together with projected incremental LMB power demand between 2010-2025. This shows the amount of energy that may be supplied by tributary hydropower alone and in combination with mainstream projects, plus the relative power system economic valuation.

Figure 3: Economic supply curves for remaining LMB Hydropower



In Figure 3, the incremental annual electricity demand is shown on the horizontal axis (using dashed arrows). This shows projected demand for each LMB country in TWh (Cambodia and Laos PDR are less than 10 TWh each, Thailand is 140 TWh and Viet Nam is 250 TWh, with the LMB total 500 TWh).⁴⁰ The vertical axis indicates the expected cost of that power. This is expressed in \$US per MWh generated using data from the MRC HDB. The solid lines in the graph (coloured pink and blue) are the economic supply curves for remaining LMB hydropower.

³⁹ As noted, NT2 is 1,070 megawatts installed capacity. About 93% of the electricity generated by the plant (5960 GWh) is exported to Thailand (5,354 GWh) and 7% of electricity produced would be available for Lao PDR grid supply.

⁴⁰ The individual Power Development Plans (PDPs) for GMS countries reviewed in the ADB RETA 6440 only provide load forecasts to 2025. In this figure the height of each dashed arrow represents the energy cost of the alternative thermal energy generation in each country (from the country mix of natural gas, coal and oil expected by 2025). The alternative energy cost in Viet Nam and Thailand is much lower than in Cambodia and Laos. This measure (\$/MWh) is an indication of the limit where hydropower in Laos and Cambodia could competitively export to each country power market.

These analysis help MRC Countries respond to frequently asked questions about the relative amount of energy in LMB tributary versus mainstream schemes, and how attractive they are from a power system economics perspective.

□ **Other regional scale sustainability parameters**

Several other indicators can offer a sense of the linkages between sustainable development of the regional power sector, and sustainable development of the Mekong River Basin.

Among these include:

- **Climate change mitigation contribution:** This is in terms of the contribution of LMB hydropower to reduction of greenhouse gas emissions (GHG) in the regional power sector.

It is estimated that hydropower contained in the BDP 20-year Probable Future Scenario (PFS) would lead to a reduction of some 42 million tonnes of CO₂ emissions per year by 2030, through displacement of fossil fuel generation in Thailand, Viet Nam and to a lesser extent in Cambodia. If all LMB mainstream dams were to proceed, this amount would increase to 94 million tonnes CO₂ emissions per year. The emissions of GHG from the reservoirs of all LMB hydropower schemes combined is estimated to be 13 million tonnes of CO₂ tones of carbon, and needs to be subtracted.⁴¹

Therefore the net GHG reduction potential is significant. To place that in perspective, 94 million tonnes / CO₂ annually is equivalent to about 28 million tonnes of coal-fired generation a year.

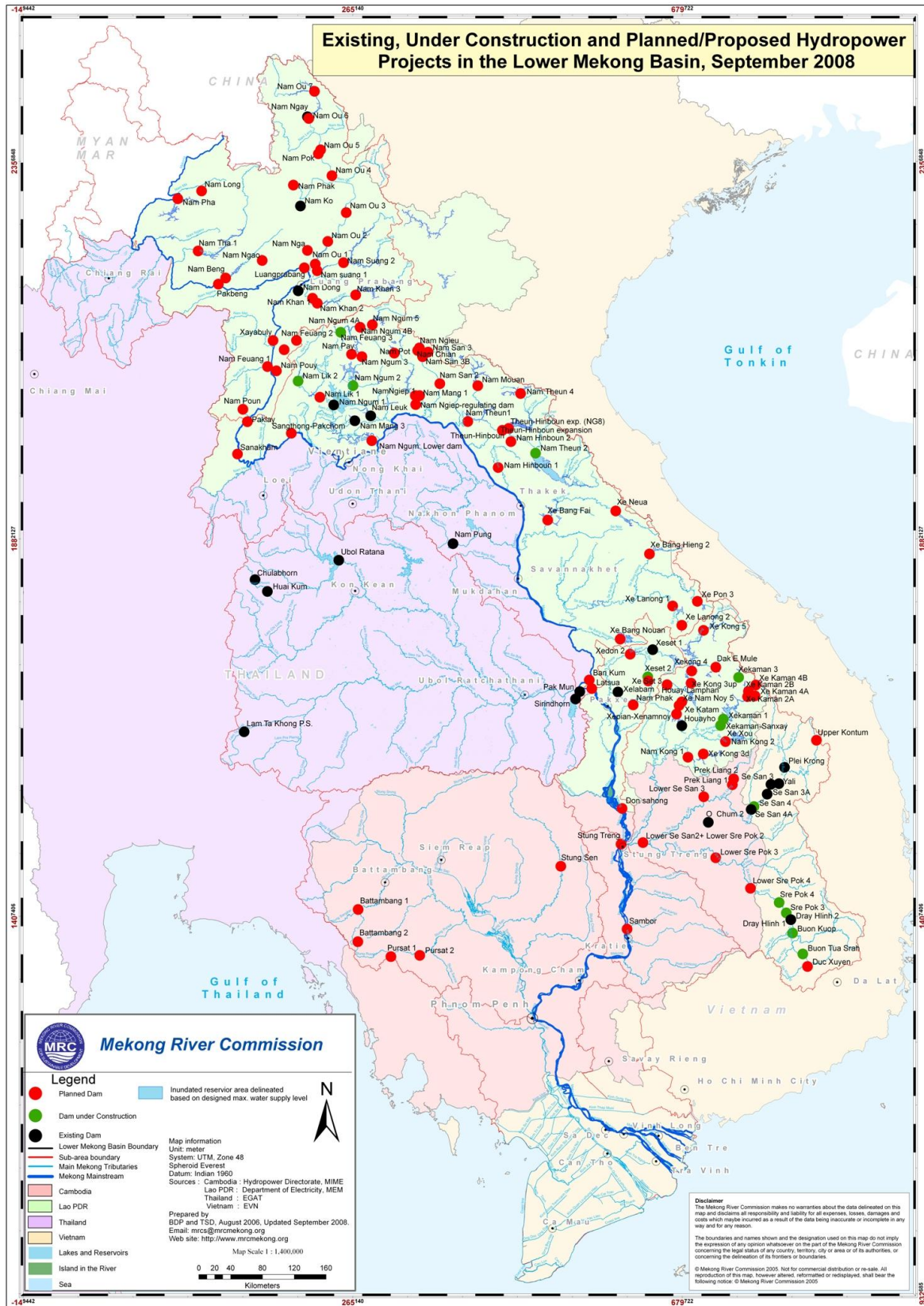
- **Adaptation to climate change:** Hydropower and irrigation reservoirs could potentially play a role in helping Member countries better adapt to extreme events (both drought and flood management). Climate scientists expected extreme events will be more frequent and intense as time goes on. The adaptation requires pro-active measures to optimize the management of individual hydropower reservoirs, as well as multi-reservoir optimization, while giving appropriate priority for these roles over electricity generation, when necessary. A regional perspective of cooperation and co-dependence is needed to do this. It should be recognized also that proposed LMB tributary hydropower schemes may represent daily-to-seasonal storage of up to 43 BCM by 2030. Dams in the Lancang-Mekong reach in China will represent 23 BCM by 2015. Combined, all Mekong dams would represent about 15% of the Mekong mean annual run-off of about 5 cubic kilometres of water (see Table 4).
- **Regional employment and job diversification:** The BDP Probable Future Scenario (without LMB mainstream schemes) implies capital investments of some 15 \$US billion USD in hydropower over the next 20 years; and a further \$US 20-25 billion, if all LMB mainstream schemes were to go ahead. How this level of capital investment is translated into jobs in LMB countries and wider GMS, and demonstrated links to national poverty reduction strategies is part of the wider hydropower sustainability challenge.

All the above considerations need to be balanced with the full range of cumulative and transboundary impacts in the Mekong River basin and synergies and tradeoffs with each development sector and the distribution effects.

Map Figure 4 shows the location of all the 135 existing and potential hydropower sites in the LMB that are contained in the MRC Hydropower Database at the end of 2009.

⁴¹ Analysis provided in the Energy and Power Baseline Paper of the MRC SEA of LMB mainstream schemes.

Figure 4: MRC Hydropower Data Base



1.4.2 National, Regional and International Initiatives

Several active national and regional initiatives are directly relevant to sustainable hydropower, MRC's regional role and ISH Outcomes and outputs for 2011-2015.⁴²

A. National initiatives relevant to Mekong sustainable hydropower

□ *Hydropower sustainability policies*

- In the past decade all LMB countries have incorporated sustainable development of the power sector in their body of energy laws and policies; expressed largely as policy aspirations. Therefore, addressing the gap between the new policy and actual practice is an acknowledged concern.
- Some LMB countries, such as Lao PDR have now prepared an explicit policy for the promotion of sustainable hydropower, though it is limited in detail, and
- The theme of sustainable hydropower more broadly is embodied in the 1995 Mekong Agreement between all Member Countries. The Initiative on Sustainable Hydropower was endorsed by the MRC Joint Committee, which reaffirmed commitment of Member Countries to take a comprehensive, step-wise approach to hydropower sustainability, as set out in the 2008-2011 ISH work plan.

□ *Natural Resource Management sectors*

The land, water and other natural resource management strategies of LMB countries are central to the aim of placing decisions about hydropower management and development in a river basin perspective. A primary institutional vehicle to do the necessary cross-sector integration, apart from the MRC at the regional level, are the **river basin organizations (RBOs)** and **river basin committees (RBCs)** that are now prescribed in the laws of Lao PDR, Thailand and Viet Nam. The ISH accordingly has placed emphasis in 2009-2010 on developing a rapid, but robust and flexible river basin hydropower sustainability assessment tool for this need and to assist the RBC/RBOs in their mandate.

The MRC Member Countries more broadly aim to manage their river basins according to their environmental protection laws and with due reference to MRC agreements and procedures. This builds on existing environmental monitoring and assessment and use environmental management tools. The capacity and experience in application of these tools varies between countries. There is higher capacity in Thailand and Vietnam for these tools, including strategic environmental assessments (SEA) in their EIA legislation, not yet applied in Cambodia and Lao PDR.

□ *Other development sectors*

Other development sectors are directly relevant to sustainable hydropower by virtue of the development synergies and development tradeoffs with hydropower. These need to be explicitly taken into account; especially fisheries, irrigated agriculture, navigation and tourism; and to a lesser extent sectors such as water supply. Some concerns are project-specific, while other concerns are related to cumulative and transboundary impacts. The sector linkages are recognized in MRC Programme work, and through the BDP integration process. In this respect, the ISH supports the cross-sector integration, for example, in the preparation of the MRC Preliminary Design Guidance of proposed mainstream dams in 2009, sections of which in the first version were navigation, fish passage, sediment management, water quality management and the safety of dams linked also to climate change.

⁴² It is important to note also that hydropower design and management practices in the LMB and world-wide are not static. They evolve as policy-makers to practitioners and stakeholders address contemporary concerns and adopt new thinking.

□ **Cross-cutting sectors and policy themes**

The **environment sector** has fundamental relevance to the environment sustainability dimension of hydropower. Legislation in all LMB countries requires project-specific EIAs/SIAs and environment management plans for impact avoidance, mitigation and management during construction and operation phases. There are acknowledged limitations and weaknesses in use of these tools, such as where there is no baseline data or very narrow and limited baseline data to predict impacts and mitigation / enhancement needs. Use of tools relevant to sustainable hydropower, such as environmental flows assessment is starting to be seen in Thailand, and to a lesser extent in other countries, but mostly in connection with specific studies, rather than being a tool routinely used as part of a water allocation scheme, or for other practical uses such as connecting to water quality, fish productivity or linking the management of hydropower (water quantity and quality releases, timing and duration, etc.) to wetland management plans. In this regard, the Mekong wetlands are highly sensitive to water quality and quality changes.

There are many opportunities to build on emerging experience to make cross-sector linkages. For example, the use of environmental standards was recently embedded in the environmental legislation in Cambodia and Lao PDR. This has supported the transboundary collaboration with MRC, such as maintain good/acceptable water quality in the LMB through the Procedures for Water Quality (PWQ). All four Member Countries have established environmental monitoring systems that routinely provide information for environmental management and protection relevant to sustainable hydropower considerations.

The policies and programmes in the **social/socio-economic sectors** similarly have fundamental relevance to the social sustainability dimension of hydropower. Resettlement and livelihood restoration for both resettled people and the resettlement host community is a major concern, but this it is a less a direct responsibility of the MRC and its regional role, except for the cumulative and transboundary aspects.

The main regional-level concerns relate to the impacts on Mekong livelihoods, which are derived from ecosystem services that are transformed by hydropower, primarily fishing, recession and flood plain agriculture. This recognizes that many Mekong communities living along the mainstream and tributary systems today depend on ecosystem services for their livelihoods, culture and social values. The impact of the resource transformations of hydropower on the poverty alleviation strategies of Member Countries (both positive and negative) thus is a key consideration. Consequently, one emphasis in ISH outputs is to help raise awareness of the role that benefit sharing can play and start dialogue on the ways and means to introduce policies and mechanisms for benefit sharing from local to national levels and regional levels. Here it is important, for example, to see that benefits from hydropower (revenues) that accrue at the national level are equitably distributed to those communities who may give up land or resource access in order for the regional and national benefits to be realized.

Climate change mitigation and adaptation is one example of new themes to be explicitly factored into sustainable hydropower considerations in the Mekong, as discussed in Section 1.4.1. For this, the ISH maintains linkage to the MRC Initiative on Climate Change Adaptation. It also maintains a “watching brief” on opportunities emerging with carbon financing; though not as a means to promote hydropower, rather as a potential way to mobilize innovative financing to fund sustainability components. Payments from the revenue stream generated by hydropower, payment for ecological services (PES) and carbon finance all can play a role in funding catchment management, as well as national and transboundary mitigation and benefit sharing. Experience with these approaches is growing in other regions of the world and in the Asia, Latin America and Africa developing country context in particular.

b. Regional initiatives in the Mekong

A number of Mekong regional initiatives have direct relevance MRC’s role in advancing sustainable hydropower considerations in the LMB and ISH Outcomes in 2011-2015. These initiatives are often part of larger regional development programmes of regional bodies like the ASEAN, and the ADB supported Greater Mekong Sub-Region

(GMS) initiative, as well as regional programmes of international NGOs such as IUCN, the World Wide Fund for Nature (WWF), the M-Power Research Network and the CGIAR Challenge Program on Water and Food (CPWF) - to only name a few.⁴³

Among the most active engagements with MRC sustainable hydropower activities in 2009-2010, where further expansion of regional cooperating with ISH in 2011-2015 is envisaged, include:

□ ***Greater Mekong Sub-Region (GMS) activities***

The GMS regional link covers a number of regional and sub-regional infrastructure investment areas that started in the 1990's, and of recent, have an explicit sustainability theme incorporated. One relevant initiative to inform MRC and Member thinking on the long-term linkage of sustainable development of the Mekong River Basin to sustainable development of the regional power sector was the formulation of a GMS Sustainable Energy Strategy in 2008-2009. That multi-stakeholder exercise provided an overall perspective on the issues and options for accelerating low-carbon energy systems based on regional renewable energy sources.⁴⁴

Another example of regional integration, was at the GMS Summit in 2002, the GMS countries endorsed and then signed the Intergovernmental Agreement on Regional Power Trade in the GMS (IGA), later ratified in 2005 at the second GMS summit.

More recently, as follow-up to support implementation of the IGA, the ADB RETA 6440 initiative, "Facilitating Regional Power Trading and Environmentally Sustainable Electricity Infrastructure in the GMS" is of particular importance to sustainable hydropower considerations. Apart from its direct objectives, the RETA process and its follow-up offers a basis to practically link sustainable development of the regional power sector to the Mekong river basin, using techniques such as Strategic Environment Assessments. As noted earlier in this document, the MRC Member Countries and MRCS participate in the RETA processes. In this, the ISH is continuously briefing key stakeholders in the regional power sector on the progress being made with MRC ISH initiatives for the purposes of awareness raising, data exchange and laying foundations for future cooperation.

The ***WWF Greater Mekong Programme*** is an example of a regional level NGO initiative that links to sustainable hydropower considerations. The WWF is working to conserve biologically diverse and threatened forests and rivers within the Greater Mekong region (Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and China). WWF works in four eco-regions in the Greater Mekong area: the dry forests, the Annamites, the Kayah Karen and Tenasserim and the Mekong River with stated objectives to: i) promote sustainable hydropower in the lower Mekong River basin; ii) support protected area managers and communities to help maintain and protect forest and freshwater habitats; iii) develop responses to threats posed by climate change; iv) ensure conservation of viable populations of flagship species; and v) capacity-building to create the next generation of environmental leaders. Clear links between hydropower operation and wetland management plans are one area to explore with WWF in future. The WWF is a key partner in the ECSHD that is delivered through MRC, as noted below.

□ ***Environment considerations for sustainable hydropower development (ECSHD - ADB,MRC,WWF)***

The ECSHD is a partnership platform between MRC, WWF and ADB centrally relevant to advancing Mekong sustainable hydropower and the tools to do this, as it's name implies. Since 2006, the ECSHD platform has supported activities to survey, develop and adapt hydropower sustainability tools and other thematic analysis and dialogue facilitation, suited to the Mekong situation and MRC role. The MRC work under the ECSHD is managed

⁴³ Universities and research institutions, such as the Asian Institute of Technology (AIT), the World Fish Centre and the International Water Management Institute (IWMI) also have regional involvement in the Mekong River Basin concerned with a range of interrelated issues for transboundary governance and sustainable development that have implications for opinion about and practices in sustainable hydropower.

⁴⁴ ADB, 2009, Building a Sustainable Energy Future, The Greater Mekong Subregion.

and implemented by ISH in close cooperation with the MRC Environment Programme staff. The initial work has focused on evaluation, development, trialling hydropower sustainability assessment tools at the project level (the SAP, as discussed in a minute, and the rapid sustainability assessment tool at the sub-basin levels (RSAT, see the discussion of RSAT in Section 1.5).

The MRC Programmes also have linkages to many regional initiatives, through which the ISH (as a cross-cutting initiative) can expand cooperation on themes relevant to sustainable hydropower.

In addition to these regional forums, there are interactions with ***MRC's formal Dialogue Partners*** (China, and Myanmar). China through Ecosystem Study Commission for International Rivers (ESCIR) has an explicit mandate for Mekong related cooperation on themes related to sustainable hydropower using a cross-cutting approach. As noted in Section 1.2, the ISH has coordinated the MRC's very fruitful initial cooperation with ESCIR including data exchange, MRC site visits to dams in the Lancang-Mekong and the SEA of proposed mainstream dams that encompasses the influence of dams in the Lancang-Mekong on the LMB development opportunities and risks. China in 2009 also set up a National Research Centre for Sustainable Hydropower Development (NRCSHD) that is based Beijing and operates under the China Institute of Water Resources and Hydropower Research (IWHR).⁴⁵ The NRCSHD provides a "window" on the considerable body of research and translation of policy into practice relevant to sustainable hydropower in China. This is significant also considering that China has almost half the world's total of just under 50,000 large dams (dams above 15m in height) plus the number of Chinese companies now active in the LMB hydropower scene as investors, developers and operators. Modes of cooperation between the MRC ISH and the NRCSHD will be explored with ESCIR in the 2011-2015 under the ISH outputs.

c. International initiatives – relevant to sustainable hydropower thinking in the Mekong

Sustainable infrastructure development and management is a major theme in international work today, and there is considerable evolving experience to draw on.

□ ASEAN support on transboundary water management

The Japan-ASEAN Integrated Fund has been supporting the MRC and Member Countries in carrying out several activities relevant to sustainable water infrastructure in the Mekong region. The ASEAN fund co-financed the MRC start-up of the ISH under the project entitled, "Initial Analysis of the Hydropower Potentials of the Lower Mekong Basin (LMB) in relation to Cumulative Transboundary Impacts". This support focused on ISH outputs for raising awareness about sustainability issues with LMB hydropower and the consultative regional processes to formulate the ISH in 2008-2009. Other aspects of the ASEAN support to the MRC through the ISH included outputs providing hydropower project data updates and analysis and capacity building to enable Member Countries to better address transboundary issues and projects with basin-wide impacts in multi-stakeholder processes.

□ International Hydropower Association (IHA) on sustainability Assessments

A particular focus in the work of this international body since 2004 has been development a voluntary international Sustainability Assessment Protocol (SAP) for Hydropower.⁴⁶ The current work on the SAP is being

⁴⁵ Among the objectives set for the NRCSHD are to promote the theoretical research for sustainable development of hydropower, improve the technologies of environment-friendly hydropower construction, strengthen the research on ecological and environmental protection of hydropower, and achieve the target of orderly development of hydropower on the basis of ecological protection. <http://www.iwhr.com/english/newsview.asp?NewsID=21174>

⁴⁶ The IHA was formed under the auspices of UNESCO in 1995 as a forum to promote and disseminate good practice and further knowledge about hydropower. The IHA representing the hydropower sector - focussed in particular on electricity generation, water management, and related industries has members in more than 80 countries drawn from organisations and individuals in industry, international organisations, governments, scientific and academic institutions, and civil society.

carried out since 2008 by the multi-stakeholder Hydropower Sustainability Assessment Forum (HSAF). After completing its ninth meeting in May 2010 in Vientiane, Lao PDR, hosted by the MRC, the Forum members have convened two more times to revise and reach agreements on final amendments to the latest version of the Protocol. Earlier versions of the SAP were discussed with LMB Member Countries in workshop sessions sponsored by the MRC, coordinated by ISH with EP (in ISH TRG meetings). It is expected that the international SAP would be ready at the end of 2010 and will be backed by certification and training programmes to be developed in 2011-2012. A key consideration going forward is the use of the voluntary project-specific SAP in conjunction with the “(Mekong born”) basin/sub-basin hydropower sustainability assessment tool developed under the ECSHD.

□ *Experience sharing with Transboundary Rivers in Developing Countries*

In 2010 ISH is coordinating a MRC visit to the La Plata River Basin in Latin America, the fifth largest river basin in the world shared by five countries Argentina, Bolivia, Brazil, Paraguay, and Uruguay. Site visits are planned to enable MRC Countries to see first-hand how issues such as fisheries, navigation, regional and national-to-local benefit sharing and participatory watershed management are handled with large bi-national projects in the La Plata Basin that have transboundary impacts. A further aim of the technical exchange with La Plata Basin countries is to have wide-ranging discussion on the governance challenges that each region (Mekong and La Plata) face in transboundary water resource cooperation and the approaches they have taken in the developing country context.⁴⁷ This offers MRC the opportunity to informally draw on Latin American’s practical experience, perspectives and advice in relation to current Mekong challenges, especially with LMB mainstream proposals.

In addition to the above, the MRC through the ISH maintains links to a number of established practitioner networks at the international level relevant to distil emerging good practice. Among these include interactions with the International Commission on Large Dams (ICOLD) and hydropower industry forums held in Asia, focusing on Asian challenges and experience sharing. MRCs presentations in these Forums serve to raise awareness among the regional industry actors of the priority the Mekong places on sustainable outcomes in hydropower development and management, and also the MRC leading regional role in this regard. These exchanges also have very practical relevance, for example, the ICOLD technical bulletins are one basis for the MRC Preliminary Design Guidance concerning the safety of dams. MRC also has the opportunity to comment on and influence industry guidelines ICOLD is preparing on the integration of hydropower and river basin planning.

1.5 TOWARD A LONG-TERM VISION FOR MEKONG SUSTAINABLE HYDROPOWER

The long term vision for sustainable hydropower of the ISH derives from the vision for sustainable development of the Mekong River Basin in the MRC Strategic Plan (2011-2015), the MRC State of the Basin Report (2010), and as embodied in the 1995 Mekong Agreement.

In all this, it is generally acknowledged that a shared vision is needed on the role that water infrastructure will play in striking a balance between the protection and development of water resources in the Mekong. Synergies and tradeoffs between hydropower and other development sectors that rely on Mekong water and related natural resources must be made explicit, and centrally, the implications for Mekong riverine livelihoods and poverty alleviation must be clear. It is also important how this links to the national strategies of LMB governments for overall sustainable development of the power sector.

⁴⁷ In dialogue with Board Members of bi-national hydropower organizations (Itaipu Binacional, Yacyretá and Salto Grande) and national representatives of the 5-country inter-government coordination committee for the La Plata basin.

□ ***Systematic steps in comprehensive approach***

Wider international experience shows that sustainable outcomes result from systematic steps to factor sustainable considerations into the existing policy and regulatory frameworks, to thereby inform decisions at all stages of planning and the infrastructure project cycle: from strategic planning and the assessment of options for water and energy services, through project identification and selection, to the design and multi-purpose optimization of potential hydropower projects that are selected, to construction activities and the related implementation of environment and social mitigation and monitoring programmes that may span several years or more, and especially for the long-term operation, mitigation and monitoring stages.

Hydropower projects are permanent, or otherwise long-life infrastructure that last 50-100 years or more. Building in physical capacity from the outset, together with use of strategies for adaptive management gives the Mekong strategic flexibility to re-optimize the performance of projects as development circumstances and policies evolve over time and new pressures emerge, such as adaptation to potential climate change influences. Centrally, decisions on hydropower development and management must be integrated with basin-wide planning perspectives using IWRM principles.

There are many related issues and concerns to take a step-wise and comprehensive approach.

□ ***Cooperate at all levels***

As mentioned earlier, it is equally important to recognize that hydropower considerations influence and often drive decisions that Member Countries make on the development and management of Mekong water infrastructure. Given the rapid escalation of interest in Mekong hydropower, there is need to step-up efforts to bring the major decision actors concerned with sustainable hydropower closer together, namely (i) the energy and power sector / regulatory bodies, and (ii) the IWRM water resources management sectors / regulatory bodies.

Cooperation among all the key stakeholder interests from the government sector, to private and civil society sectors is essential to deliver sustainable outcomes, recognising the different forms of governance in Member countries. Also innovation and partnership approaches, in particular, are important to bring dynamic, creative and practical solutions that are acceptable to all MRC stakeholders.

In this respect, all the MRC multi-stakeholder engagements show the range of competing views about how to value the inherent synergies and tradeoffs between hydropower and development of other sectors in the Mekong basin, especially the implications for riverine livelihoods and poverty alleviation. Equity in the distribution of benefits and costs is thus increasingly raised in dialogue process.⁴⁸ Creative thinking on benefit sharing not only between Member Countries, but also on ways to translate some of the benefits accruing at regional and national levels to local levels, is a vital to meet hydropower sustainability challenge in practice.

□ ***Foster a common understanding of sustainable hydropower***

Governments and people of the Mekong today broadly accept that hydropower must be placed on a sustainable footing. The mechanics of doing so must be practical, step-wise, and constructively help to rethink and re-balance (as needed) economic, social and environmental considerations, for example with:⁴⁹

⁴⁸ This recognizes that riverine communities often bear the greatest costs of hydropower development, while the national economy and electricity consumers in society often benefit the most.

⁴⁹ As the national and regional consultation process led by the MRC in 2007-2008 to formulate the ISH showed, and the more recent multi-stakeholder consultation on ISH products such as the SEA of proposed mainstream dams and preliminary design guidance (PDG) confirm - in practice - advancing sustainable considerations in hydropower requires Member countries to adopt new thinking and measures at all stages of the project cycle.

- Applying sustainable hydropower considerations to Member Country decisions on both proposed projects and existing hydropower projects.
- Use of partnership approaches at regional levels, in sub-basins and at the project level to enrich dialogue on sustainable outcomes and how they require new thinking, innovation and creative solutions. Use of strategic communication to measures and respond to stakeholder expectations.
- Reinforcing planning systems to explicitly consider synergies and tradeoffs - exploiting positive synergies such as with irrigation and navigation (e.g. via storage and enhanced management of downstream flows), and avoid or mitigate the adverse tradeoffs, such as with Mekong fisheries productivity and sediment-nutrient management and sediment change impacts on river morphology;
- Project site and design criteria that enable countries to “build-in” the physical flexibility to adaptively manage dams in response to longer-term, changing conditions in the basin.
- At the operational stages, introducing mechanisms that are proven to be effective elsewhere (regionally or internationally) to provide equitable sharing of benefits.
- Identifying and exploiting opportunities to tap innovative financing sources, with mechanism like payment for ecological services (PES), carbon financing and other creative forms or risk reduction that reduce the cost of money and free resources to invest more in making project sustainable. These funds can focus on overcoming real and perceived barriers to improve social and environmental performance of hydropower projects.
- Ensuring the explicit the allocation of risks and responsibilities in private IPP Projects and public-private partnerships (PPP) and also monitoring and compliance of sustainable performance that broadly integrates and strengthens the different forms of M&E such as for environmental and social impact monitoring and dam safety monitoring. Ultimately, these considerations must be incorporated in regulatory instruments, including project-level concession agreements (CAs) and power purchase agreements (PPAs).⁵⁰
- Taking account of new technologies such as hydrokinetic technologies where power can be generated in-stream or off channel without dams, for consideration in sensitive river reaches.
- Climate change impact and vulnerability assessments at the sub-basin and project level also to help understand and respond to opportunities presented for climate change mitigation (GHG emission reduction from the regional power sector) and optimal use of reservoirs to adapt to extremes (flood and drought) using a regional approach where it is practical.

Central to the MRC role is help for Member Countries to introduce hydropower sustainability considerations into basin-scale planning and management practice (e.g. through the MRC’s BDP process and the relevant MRC Programmes), and encourage and support the newly emerging tributary basin / sub-basin PBC/RBOs do the same.

□ ***Move from policy to practice***

MRC stakeholders have different viewpoints and emphasis on what sustainable hydropower means in practice. The MRC needs to help Member countries arrive at a shared vision to translate policy into practice in a way that captures all the opportunities present and responds to all stakeholder views.

One practical and relevant illustration of how MRC Members countries have cooperated to develop a common view on how to move from policy to practice is offered in the recently prepared basin / sub-basin hydropower

⁵⁰ An initial model for this is illustrated in the approach that MRC Member countries have taken with the Preliminary Design Guidance (PDG) prepared through the ISH working with other MRC programmes to systematically bring together the accumulated body of MRC work, while providing outreach to regulators and developers.

sustainability assessment tool (RSAT). This tool and its topic and criteria framework was subject of considerable discussion by the MRC Technical Review Group for the ISH. It was accepted as a basis to proceed to pilot implementation in the Mekong. Table 5 is the summary of the 11 topics and criteria agreed upon to “boil down” the key sustainability considerations, that may be national and transboundary in nature, or both.

Table 5: Topic and Criteria Summary for Hydropower Sustainability Assessment (RSAT)

Topic	Criteria
1: Hydropower and economic development in the basin / sub-basin	1.1 Relative contribution of hydropower to national economies
	1.2 Relative contribution of hydropower to local economies
	1.3: Synergies and trade-offs with other economic sectors in the basin (upstream and downstream)
	1.4: Multiple water use optimisation
2: Hydropower and social and cultural well-being in the basin / sub-basin	2.1: Cultural values and non-material uses of resources
	2.2 Protection of livelihoods and land and water access rights and entitlements
	2.3 Involuntary re-settlement
	2.4 Hydropower and poverty reduction
	2.5 Hydropower and equitable social advancement
3: Hydropower and environmental quality and natural resources management in the basin / sub-basin	3.1: Understanding and protection of basin-wide ecosystem integrity
	3.2: Management of hydropower environmental impacts
	3.3: Protection of high value rivers from development
	3.4: Hydropower impact on sustainable use of natural resources
	3.5 Impact on river morphology, erosion and sedimentation
	3.6: Monitoring changes to environmental quality as a result of hydropower
4: Options assessment and alignment with national, regional and international agreements, policies and plans	4.1 Options assessment for water and energy services in the basin or export revenue
	4.2 Alignment with regional and international agreements, policies / plans and national commitments for basin development
	4.3 Alignment with integrated water resource management (IWRM) planning in the basin
5: The co-ordination and optimisation of site selection and design, implementation and operations for multiple projects in a basin or cascade	5.1 Multi-criteria assessment for site selection and optimisation for multiple projects in a basin or cascade
	5.2 Protection of unique biodiversity / habitat and culturally significant sites in hydropower site selection and design
	5.3 Co-ordination of planning for hydropower implementation in a basin with multiple objectives
	5.4 Co-ordination of planning for operations within a system of multiple reservoirs or cascade
6: Environmental flows and downstream regulation	6.1: Environmental flow assessment (EFA)
	6.2: Structural provision and operational procedures for sediment management and sediment flushing during all project stages
	6.3 Structural provision and operational procedures for downstream flow regulation including transboundary considerations
	6.4 Flood and drought management and floodplain protection
	6.5 Maintaining the flow of nutrient rich silt
	6.6 River transport and navigation locks
7: Fish passage and fisheries management	7.1 Understanding and monitoring of fisheries resources
	7.2 Policy, regulations and practices for fish management in hydropower
	7.3 Structural and operational provision for fish passage
	7.4 Protection of upstream and downstream fisheries and development of reservoir fisheries
8: Sharing of benefits and use of innovative financing measures for sustainability (local and transboundary)	8.1 Sharing of project benefits
	8.2 Equitable water resource allocation between sectors and countries
	8.3 Payment for ecological services (PES)
	8.4 Carbon financing opportunities to fund sustainability measures
	8.5 Project revenue to fund sustainability measures
9: Provision for safety and disaster prevention and	9.1 Dam safety management system (DSMS)
	9.2 Consistency across basin / cascade

Topic	Criteria
management	9.3: Emergency preparedness plans (EPP) and co-ordination
	9.4: Dam break and other analysis prepared for projects in cascades
	9.5: Emergency flood management
10: National and basin-wide institutional setting	10.1 Sustainable hydropower – roles and allocation of responsibility
	10.2 Co-ordination mechanisms between key stakeholders
	10.3 Transboundary notification, conflict resolution and communication
	10.4 Monitoring, review and compliance provisions
	10.5: Sustainability principles in hydropower agreements
	10.6: Capacity building plans for key agencies and River Basin Organisations and Committees (RBO / RBC)
11: Communication, basin stakeholder and community involvement and support for hydropower development	11.1 Strategic communication and awareness of sustainable hydropower – principles and practices
	11.2: Informed participation and representation in hydropower decision making at all stages of the project cycle
	11.3 Information sharing and access to data and reports
	11.4: Basin level community support for hydropower
	11.5 Integration of operations in watershed / catchment management

The range of topics and criteria in Table 5 reinforce the inherent multi-disciplinary nature of the sustainability hydropower challenge in the Mekong and the acceptance of a step-wise, comprehensive approach.

One feature of the vision to advance sustainable hydropower in the Mekong, is therefore, to complete sustainability assessments for all existing, planned and proposed hydropower projects contained in the MRC Hydropower Database (135 currently) and for tributary and sub/basins, where these dams are proposed, or currently operate. This will provide Member Countries with greater capacity to monitor and measure progress over time advancing sustainable hydropower in the Mekong, and offer a learning and capacity building platform for the distillation of good practice and the means for adoption.

The timeframe for achieving the vision will be beyond the next five years, but the direction would be set and initial steps taken to allow national ownership. At the same time, it is important not to downplay the nature of the challenges involved or the key role that support from development partners would play.

2 REGIONAL RELEVANCE AND RATIONALE

2.1 REGIONAL RELEVANCE

The orientation of the ISH is based the MRC regional role in implementing the 1995 Mekong Agreement. It furthermore responds to the MRC vision of sustainable development, the related contribution to achievement of the Millennium Development Goals Member Countries have set, and the decision by the MRC Member Countries to use IWRM based approaches for basin planning and management.

In this respect, one central aim is to help Member Countries place decisions about the development and management of Mekong hydropower in a river basin perspective applying IWRM principles. To advance this aim, the ISH orientation and focus was established through national and regional multi-stakeholder processes in 2008-2009, guided by MRC Joint Committee direction (described in Section 1). Although the ISH is a reformulation of the previous MRC Hydropower programme as a cross-cutting initiative focused more on sustainability themes, it is for all intent and purposes a new initiative.

□ *Hydropower and the 1995 Mekong Agreement*

Explicit and implicit references to hydropower in the 1995 Mekong Agreement are summarised in Table 6. Because sustainable hydropower is a multi-disciplinary challenge, provisions in the Agreement of direct relevant for other MRC Programmes, such as the environment and navigation are implicit and applicable to hydropower.

Table 6: Articles in the 1995 Mekong Agreement to cooperate on sustainable development with explicit relevance to hydropower and sustainable hydropower

Section in the 1995 Agreement	Detail and relevance to hydropower considerations
Explicit references to hydropower	
Article 1	Areas of Cooperation - ... all fields of sustainable development, utilization, management and conservation of the water and related resources ... including, but not limited to irrigation, hydropower , navigation, flood control, fisheries, timber floating, recreation and tourism, in a manner to optimize the multiple-use and mutual benefits of all riparian's and to minimize the harmful effects that might result from natural occurrences and man-made activities.
Article 5	Reasonable and Equitable utilization - to cooperate ... Item A. concerning notification of intra-basin use on tributaries (<i>e.g. proposed hydropower schemes</i>); Item B. concerning consultation on dry season intra-basin use on the mainstream, which aims at reaching an agreement by the Joint Committee (<i>e.g. proposed mainstream hydropower schemes and hydropower schemes on significant tributaries as relevant to the Procedures</i>)
Article 6	Maintenance of flows on the mainstream - ... to cooperate in the maintenance of the flows on the mainstream from diversions, storage releases (<i>e.g. from hydropower reservoirs</i>), or other actions of a permanent nature --- (<i>In the BDP Probable Future scenario by 2030, up to 45 BCM storage in Mekong would come from tributary hydropower schemes compared to 23 BCM active storage on the Lancang Mekong – see Table 4 in Section 1</i>).
Implicit references to hydropower	
Article 7	Prevention of Harmful effects - .. to avoid, minimize and mitigate harmful effects that might occur to the environment, especially the water quantity and quality, the aquatic (eco-system) conditions, and

Section in the 1995 Agreement	Detail and relevance to hydropower considerations
	ecological balance of the river system, from the development and use of the Mekong River Basin water resource
Article 9	Freedom of navigation on the mainstream - . navigation shall be accorded throughout the mainstream of the Mekong River... navigational uses are not assured any priority over other uses, but will be incorporated into any mainstream project.
Article 26	Rules for water utilization – ...(3) setting out criteria for determining surplus quantities of water during the dry season on the mainstream; 4) improving upon the mechanism to monitor intra-basin use;....
Article 10	Emergency Situations: ... any special water quantity or quality problems constituting an emergency that requires immediate response, it shall notify and consult directly with the party(ies) concerned and the Joint Committee without delay in order to take appropriate remedial action.” (connected to safety of hydropower dams and emergency preparedness procedures linked also to coordinated reservoir flood management, and linked to water quality management in hydropower reservoirs).
Article 24	Functions of the Joint Committee: ... B. To formulate a basin development plan ... and joint development projects/programs to be implemented in connection with it; and to confer with donors ... to obtain the financial and technical support necessary for project/program implementation (in connection with sustainable hydropower aspects)... and, G. To review and approve studies and training for the personnel of the riparian member countries... (connecting to sustainable hydropower via capacity building).

The 1995 Mekong Agreement also prescribes conformity to the United Nation’s provisions. This brings in several direct and indirect linkages of the Mekong sustainable hydropower from the UN Millennium Development Goals to be achieved by 2015, to UNFCCC convention on Climate Change on climate change mitigation and adaptation.

Among the MDG linkages include, Goal 1 on “Eradication of Extreme Poverty and Hunger, and Target 2 “Achieve full and productive employment and decent work for all, including women and young people”; Goal 7: “Ensure environmental sustainability” and “Target 7a: Integrate the principles of sustainable development into country policies and programmes.”

□ *IWRM Implementation Context*

Cumulative and transboundary impact issues that need to be addressed in an IWRM sustainability context, considering also the accelerated interest in LMB hydropower as characterized in Section 1 of this document - are numerous and include:

- water availability and quality for use by people and to retain ecosystem productivity and provide essential goods and services;
- water flow and sediment and nutrient transport changes potentially affecting integrity and productivity (fisheries and agriculture) of flood plains and river ecosystems and delta stability;
- fisheries production in the Mekong river systems under pressure from habitat fragmentation, floodplain reduction and blockage of migratory fish in addition to non-dam pressures on fisheries resources;
- floodplain management reducing vulnerability to floods and droughts and delta management (including considerations of possible impacts of climate change);

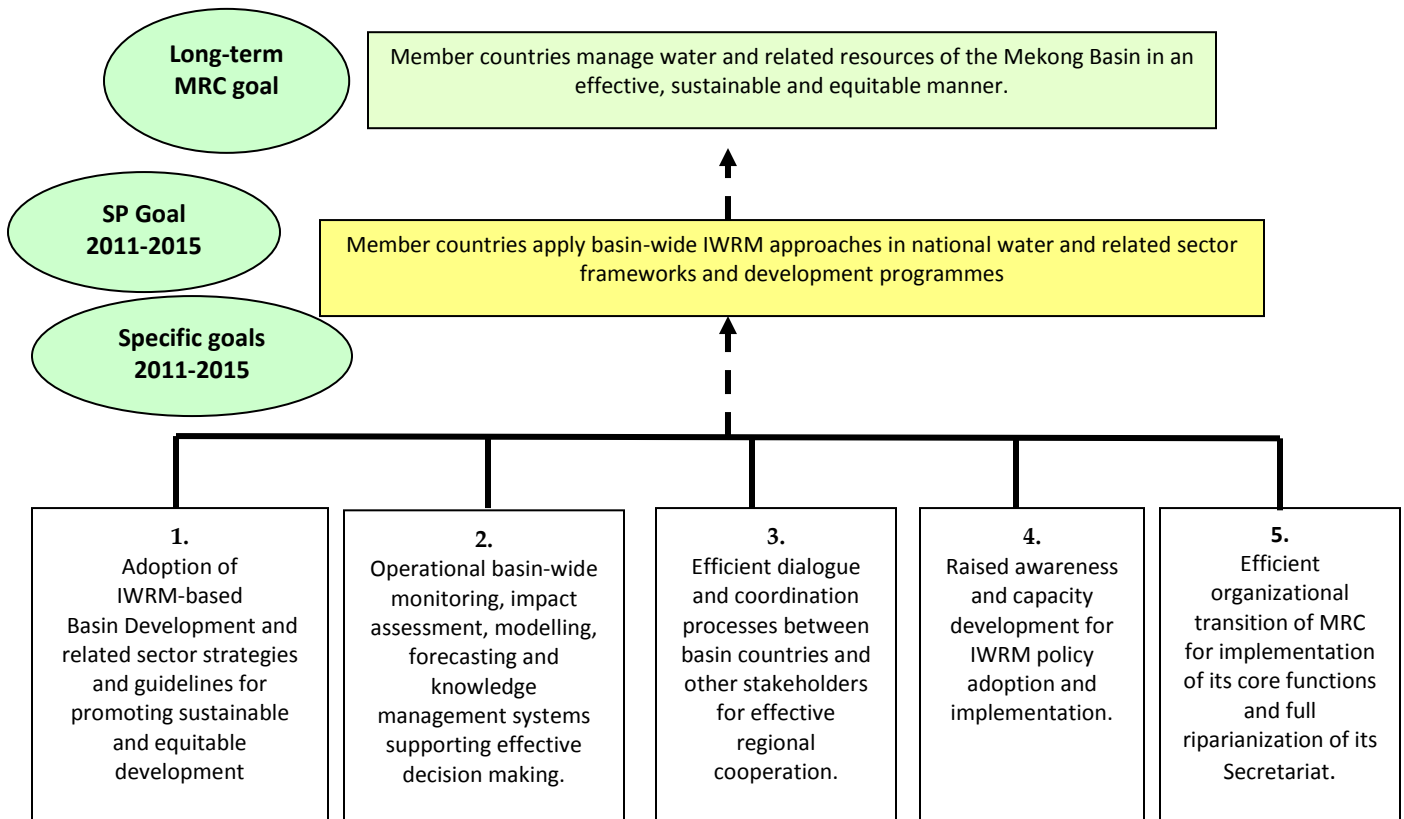
- navigation considering barrier effects of dams and other infrastructure developments;
- wetland conservation and management including productivity and biodiversity issues such as fish biodiversity, and other biodiversity considerations related to the Mekong natural resources impacted by hydropower, and
- equitable electricity access and development of indigenous renewable energy sources in ways that promote interdependent sub-regional growth and poverty alleviation.

IWRM processes seek to address natural resources degradation by maintaining environmental flows thus sustaining ecosystem productivity and supporting people’s livelihoods. Providing equal opportunity for men and women in dealing with these issues is also a challenge. The ISH, as part of MRC Programmes supports the IWRM based planning and management providing up to date information, knowledge and assessment tools.

2.2 GROUNDING IN THE MRC STRATEGIC PLAN (2011-2015)

The vision of the four Member Countries of MRC is “an economically prosperous, socially just and environmentally sound Mekong River Basin”. Overarching goals and five specific goals have been formulated for the MRC Strategic Plan (2011-2015) period as shown in Figure 5 reflecting current status of MRCS discussion with NMCs and stakeholders. These are subject to review and endorsement by the MRC Joint Committee and approval by the MRC Council. Otherwise they are used to design ISH in response to MRCS strategic goals.

Figure 5: The Goal Hierarchy of the MRC Strategic Plan 2011-2015



The 2011-2015 ISH outcomes and outputs support **MRC's specific Goal 1** through the provision of data and information to increase understanding of the relationships between hydropower planning and operation and IWRM river basin management principles, supporting tools to address these linkages. It includes the impacts on ecosystem functions and services and Mekong peoples livelihoods and also linkages between sustainable development of the Mekong river basin and sustainable development of the regional power sector.

The ISH supports **MRC's specific Goal 2** through the provision of hydropower sustainability assessment tools for systematic assessment to support decision making at all stages of planning and the project cycles, and to consider provisions in enabling regulatory frameworks of Member Countries. This includes help with monitoring and impact assessment systems and reporting of the results to qualitatively measure how the Mekong is progressing with the adoption of sustainable hydropower considerations in national policy/planning and regulatory frameworks, as well as absorbing and applying good practice on the ground.

The **MRC specific Goal 3** for regional cooperation is supported by a range of activities from collaborative development of tools, assessment procedures and distillation of good practice and in reflecting these in implementation of MRC procedures, such as the PNPCA. This includes cooperation with MRC Dialogue partners on sustainable hydropower issues and concerns. It included exploring a range of specific cooperation mechanisms from benefit sharing mechanisms, to innovative finance to design guidance, to ensure that all MRC Programme work is reflected. It includes cooperation with regional institutions, NGO regional programmes and inter-governmental initiatives that are relevant to Mekong sustainable hydropower, as described previously in Section 1, including regional level cooperation to link hydropower and Mekong river basin management to drivers of sustainable development of the regional power sector through SEAs and other tools.

Awareness raising and capacity building including outreach activities contribute to the **MRC specific Goal 4**. Here it is important to note that ISH outputs (as a cross-cutting initiative) pro-actively seeks to bring together all stakeholder interests in government, private sector and civil society in partnership approaches, and to ensure that stakeholder expectations are measured and accommodated.

As a cross-cutting initiative, the ISH will also work along-side other MRC programmes to support the **MRC Specific Goal 5**, through implementation of the MRC River Basin Management Core Functions, thereby providing monitoring, assessment information essential for river basin management at transboundary levels. The core function linkages are elaborated in the following sections.

2.3 IMPLEMENTING THE MRC CORE FUNCTIONS

The MRC's core functions were designed in collaborate national and regional processes to facilitate the transition of the MRC and provide a clear focus on implementation in 2011-2015 of the 1995 Mekong Agreement, and any ancillary provisions that may be agreed upon.

Table 7 provides a description of the core functions.

Table 7: Description of MRC Core Functions Categories

Categories	Description	Examples of Functions
(i) Secretariat Administrative and Management Functions	Functions of a routine and recurrent nature that provide for the management and administration of the Secretariat and support to MRC governance processes as well as support to non-technical processes under the 1995 Mekong Agreement.	<ul style="list-style-type: none"> • Governance of the MRC • Financial and administrative management • Personnel management • International cooperation • Communications
(ii) River Basin Management Functions	Functions of the MRC through which it routinely engages in water resources development and management issues at different scales in the Mekong Basin	<ul style="list-style-type: none"> • Data acquisition, exchange and monitoring • Analysis, modelling and assessment • Planning support • Forecasting, warning and emergency response • Implementing MRC Procedures • Promoting Dialogue and Coordination • Reporting and Dissemination
(iii) Capacity Building and Tools Development Functions	Functions providing for continuous capacity building at the MRCS, NMC Secretariats and line agencies and maintenance, and updating of data holdings, processing capacity and analytic capability.	<ul style="list-style-type: none"> • Capacity building for Member Countries and MRCS across all themes • State of the art tool development
(iv) Consulting and Advisory Services Functions	Functions that make available the technical expertise, databases, modelling capacities, and expert networks of MRCS to support studies and assessments commissioned by others for sustainable water resources development, both at the project level, and at the basin wide and cumulative level.	<ul style="list-style-type: none"> • Consulting services • Commissioned studies • Expert advice
Adapted from synthesis in MRC EP 2011-2015 Documents, August 2010		

The ISH follows this direction as noted in Table 7 and as elaborated below.

□ ***MRC's River Basin Management functions***

The seven categories of the River Basin Management Functions (in Table 7) define how the MRC will engage routinely in water resources development and management issues in the Mekong Basin and cover the full range of sector areas under the mandate of MRC.

The following is to illustrate the integration and responsiveness of the ISH 2011-2015 outcomes to the MRC's seven MRC River Basin Management (RBM) Core Functions.⁵¹ The five ISH outcomes supporting these core functions are elaborated in Section 4, and in summary form are:

1. Awareness Raising, Dialogue and Communication⁵²

⁵¹ Here the ISH draws on the analytical framework offered in the EP 2011-2015 Documents, August 2010

2. Capacity Building and Knowledge Base Support
3. Regional Planning Support
4. Sustainability Assessment and Financing
5. Effective management of the Initiative

- Function 1. **Data acquisition, exchange and monitoring.** Data acquisition, exchange and monitoring provide a foundation for placing decisions about hydropower in a river basin / sub-basin perspective, as illustrated previously in Section 1 table 4, which shows the topics and criteria structure for the basin wide sustainability assessment tool (RSAT). At the higher level, the tools provide the capacity to monitor the extent to which policies are being translated into practice. Specific ISH outputs strengthen data exchange, analysis and monitoring, as it relates to cumulative and transboundary impacts and to translate this back to hydropower practice, including physical design of projects and many operational aspects. ISH Outcome 2 and 4 and its component outputs directly responds to River Basin Management function 1.
- Function 2. **Analysis, modelling and assessment.** The assessment function is central to investigating future basin and sub-basin development scenarios that involve the consideration of hydropower projects together with synergies and tradeoffs with other development sectors including poverty alleviation. The MRCS hydropower database update and related ISH outputs provides a key input to MRC modelling and assessments as well as BDP scenario assessment. ISH outcomes 2, 3 and 4 are responding to River Basin Management function 2.
- Function 3. **Planning support.** The formulation of the BDP has the key objective to identify the economic, environmental and social implications of on-going and proposed developments in the Basin, including hydropower, and building a shared view of directions for sustainable development of the Basin's water and related resources. ISH outputs seek to strengthen planning from regional planning through hydropower SEAs at the basin/sub-basin levels, and in project-level planning taking that takes into account the impact of the project on the river system (i.e. informing the decision to build or not, as well as project siteing, design and operational aspects). ISH Outcomes 2, 3 and 4 are responding to the River Basin Management function 3.
- Function 4. **Forecasting, warning and emergency response.** This river basin management function will necessarily include dam safety and emergency preparedness considerations that are regional in nature, and related to hydropower selection, design, implementation and operation. These must be reflected in the communication with riverine stakeholders and coordinated communication strategies of the project entities on the spot as well as the MRC Bodies, RBO/RBCs and line agencies. It includes the extent to which potential impacts of climate change are factor into also these issues (e.g. flood and drought). This theme is also picked up in the MRC project and sub-basin hydropower sustainability assessments and in project-level design guidance MRC has issued coordinated by ISH. Outcomes 1 to 4 are responding directly and indirectly to the River Basin Management function 4.
- Function 5. **Implementing MRC procedures.** Five Procedures have been developed to implement various Articles of the 1995 Mekong Agreement. The Procedures for Notification, Prior Consultation and Agreement (PNPCA) focus on decisions about new hydropower, while decisions about both new and the operation of existing hydropower related, in broader terms, to the other procedures. ISH Outcomes 1 and 2 respond to River Basin Management function 5.

⁵² Again awareness raising is in parenthesis, and is offered minor update of the output title

- Function 6. **Promoting dialogue and coordination.** Dialogue on transboundary and regional issues is fundamental to many of the provisions of the 1995 Mekong Agreement. The ISH outputs provide a platform for dialogue and cooperation for Member Countries to work on hydropower sustainability issues, and also to work across disciplines using multi-stakeholder approaches. The ISH outputs support dialogue and coordination also at the regional and international levels, as described in Section. 1.42. The ISH outcome are responding to River Basin Management function 6, especially outcomes 1 and 3.
- Function 7. **Reporting and Dissemination.** Implementation of the 1995 Mekong Agreement requires data and knowledge to inform decision-making that is mentioned in the Agreement, and specifically the need to maintain databases and conduct studies and assessments. The Outcomes 1 and 2 are responding to the River Basin Management function 7.

In general, the ISH 2011-2015 extends the approach adopted in 2009-2010 aimed at improving cooperation between Member Countries, being more proactive, responsive and outward looking in bring sustainable hydropower considerations into policy and practice in support of river basin management functions.

The experiences also show that the MRC hydropower database and preliminary design guidance, for example, need to be evolved (updated and extended) in joint effort among the Basin Development Plan programme, the Fisheries Programme, the Navigation programme and the Environment Programme and IKMP.

2.4 STAKEHOLDERS AND TARGET BENEFICIARIES

The **ultimate beneficiaries** of the outputs that the MRC delivered through the ISH are the people living in Mekong basin and the wider society of MRC Member Countries. The benefits are achieved through the progressive realisation of the basin vision. The intermediate beneficiaries of the ISH outputs are the MRC Member Country governments and their staff, the signatories of the 1995 Mekong Agreement. They will benefit through increased capacity to cooperate in promoting sustainable outcomes in relation to hydropower decisions.

The **intermediate beneficiaries** in the government sector will be:

- The National Mekong Committees and their Secretariats tasked with coordination between all government line agencies and stakeholders in the four LMB countries.
- The ministries responsible for hydropower in each country together with the water resource and environment regulatory bodies;
- Newly emerging RBOs/RBCs mandated to integrate sustainable hydropower considerations (directly and indirectly) in all their basin / sub-basin planning and management work – the scope of which includes development policies and project-specific development and management issues, such as multi-project coordination and monitoring and management of cumulative impacts; and
- Provincial and local government authorities, where ISH supported pilot activities take place (e.g. hydropower sustainability assessments), recognizing capacity differences at the local levels between and within MRC Member countries to do this, and steps in ensuring multi-stakeholder participation.

The Initiative promotes participation of stakeholders and partnership approaches at all levels in accordance with the MRC Stakeholder Participation Policy and the MRC Communications and Disclosure Policy. Using

representation methods where needed, stakeholders will be involved through, for example, participation in (i) pilot projects at local, transboundary and regional level, (ii) implementation of tools for sustainability assessment at project and sub-basin levels (e.g. RSAT and eventually SAP), (iii) regional symposia or forums, and (iv) regular meetings, workshops and seminars. One illustration is the extensive MRC-ISH web pages.

Apart from MRC Member countries, the governments and government agencies of the MRC's formal Dialogue Partners (China and Myanmar) will be engaged as key stakeholders.

The **main stakeholders** in implementation of the Initiative in 2011-2015 include:

- national line agencies engaged in hydropower and water management activities (e.g. MRC related sectors, planning agencies, and regulatory authorities)
- the NMCs and NMC Secretariats,
- other programmes of MRC,
- national multi-disciplinary experts and sub-discipline experts in physical, social and natural sciences domains,
- representatives of national and international NGOs and their regional programme staff,
- Private sector interests involved in hydropower development and management in the Mekong including the industry and financing institutions involved in project lending,
- representatives of local authorities and communities,
- research organisations and universities working related activities relevant for the LMB,
- regional organisations with competences and programmes in the Mekong region related to environment e.g. ASEAN and GMS, and
- development partners supporting the ISH and other MRC Programmes with a direct role in hydropower implications of a cross-sector nature.

The ISH stakeholder engagement strategy (and strategic communication) seeks to engage a triangle of partners (the NMCs, national line agencies and the MRCS) in cooperation with regional organizations. This is discussed further in Section 4. The wider strategy for stakeholder engagement is the ISH will work in cooperation with other MRC Programmes for multi-stakeholder partnerships and outreach.

2.5 CROSS CUTTING ISSUES

As a cross-cutting initiative in the MRC Programme structure, the ISH must work with and through other MRC programmes to achieve its outcomes. This cooperation will focus on aspects that are most relevant to sustainable outcomes in the management and development of LMB hydropower, the MRC role and to meet stakeholder expectations of MRC. There are numerous cross-cutting issues; five are highlighted as follows:

□ ***Awareness raising and strategic communication***

Understanding and responding to how sustainability is defined in the Mekong, the different points of emphasis that MRC stakeholders have, and whether it is to consider proposed new hydropower schemes or the operation of existing schemes, or both, is part of the challenge the ISH must respond to. This recognizes that hydropower

remains a highly contested issue and that the polarized views reflect competing views about the overall sustainable development of the Mekong River basin as recognized by the 1995 Agreement.

As noted in Section 1.6, “toward a long-term vision of Mekong sustainable hydropower”, it is important to define what sustainable hydropower means to different MRC stakeholders, and as a consequence what they expect of the outputs delivered through the ISH and the relative emphasis on these.

It is important also to raise awareness at the level of policy/planning to understand the full nature of the development opportunities and risks of hydropower across all sectors; and at the level of practice - both to understand what is needed to close the gap between policy and practice and to increase awareness of the specific good practice measures and what benefits they offer to all stakeholders in reducing risks and addressing concerns.

This requires strategic communication and use of communication-based assessment tools and formal and informal techniques to focus awareness raising efforts systematically.⁵³

□ ***Infrastructure provision and poverty reduction***

Poverty reduction and closing the growing income gap between rural and urban areas is a goal of all MRC Member Countries. It is also a the key development assistance goal for all MRC development partners in the public and NGO sectors. Recent social surveys undertaken by the MRC have demonstrated the dependence of rural people on the resources of the Mekong River Basin.

The need is to include poverty reduction as an explicit part of water infrastructure provision, especially hydropower. In this respect, It is increasingly important to clearly demonstrate the extent that hydropower contributes to poverty reduction strategies of MRC Member countries and comprehensively consider both positive and negatives aspects within a framework of short-term, medium- and longer-term perspectives. Greater attention to the feasible range of mechanisms that help share benefits that accrue at the regional and national levels to local levels is increasingly important, given the accelerated pace of hydropower described in Section 1.

□ ***Gender responsiveness***

Women, the majority of the worlds poor, provide invaluable contributions to sustaining communities and managing biodiversity and natural resources. They are together with young children and elderly uniquely vulnerable to environmental degradation. The MRC Gender Strategy and Gender Policy and “Tool Kits for Gender Responsive Mekong River Basin Development” guide the gender responsiveness to this question. Furthermore, equal participation of men and women in ISH supported dialogues on sustainable hydropower at regional level needs to be monitored and promoted.

□ ***Mainstreaming climate change mitigation and adaptation***

Responses to climate change and preparedness for future climate change is an integral part of infrastructure sustainability and for hydropower - perhaps more than any other infrastructure type. This is partly because of its wide “foot print”. It is also because of the opportunities hydropower presents to reduce GHG emissions in the regional power sector. Linkages need to be maintained with MRC efforts to integrating climate change impact and vulnerability assessments into hydropower planning at the basin and project-level. In this respect the ISH 2011-2015 work will link with the EP regional climate change adaptation planning initiative through relevant activities of the CCA. The role of hydropower reservoirs identified through adaptation planning needs to consider sustainability issues. Similarly, the potential regional role of hydropower in mitigating GHG emissions needs to be factored into

⁵³ Communication based assessment has many standard techniques and involves four main steps (communication based assessment, strategy formulation, implementation, monitoring and assessment).

considerations for the regional power sector, with methodologies that take into account the full carbon balances in the Mekong river system and the level of potential reservoir GHG emissions.⁵⁴

□ **Capacity building for all stakeholders**

Capacity building is an essential part of the MRC regional role and support to Member countries. It is important that capacity building under the ISH is coordinated with and linked to capacity building efforts of other MRC Programmes. This is both to reduce costs and to reinforce integration of MRC Programme work. While the MRC focus is on capacity building for MRC bodies and the government line agencies working actively with the MRC, the perspective of meaningful participation of all MRC stakeholders and use of partnership approaches to deliver key ISH outputs means also that capacity building should be delivered in a way that helps Member Countries build capacity of their private sector and civil society stakeholders, so they may better carry out their roles.

⁵⁴ The MRC SEA of proposed mainstream dams has developed initial analysis that can be build upon. This includes analysis of potential emission reductions to be achieved by offsetting thermal power station emissions in the regional power sector and the calculation of potential reservoir emissions for all 135 projects in the MRC Hydropower Data Base.

3 OBJECTIVES AND DESIGN OF THE INITIATIVE

3.1 GOAL, OBJECTIVE AND OUTCOMES

The overall **goal** of the ISH for 2011-2015, in relation to MRC’s Strategic Goal hierarchy, is “*cooperation among Member Countries in optimizing the contribution of sustainable forms of hydropower to national development policies, consistent with implementation of the 1995 Mekong Agreement.*”

The 2-part **objective** of the ISH is, “*Decisions concerning the management and development of hydropower in the Lower Mekong are placed in a river basin planning and management perspectives by applying IWRM principles. MRC and key stakeholders actively cooperate to bring sustainable hydropower considerations into the planning systems and regulatory frameworks of Member Countries, and into project-level hydropower planning, preparation, design, implementation and operation practices.*”

Table 8 provides the Design Summary and Monitoring (LFA) Framework with the Initiative objectives and outcomes and indicators to monitor performance. The objectives are met by combining the use of awareness raising and multi-stakeholder dialogue (**ISH outcome 1**) knowledge management and capacity building (**outcome 2**) imbedding sustainable hydropower considerations in regional planning systems and regulatory frameworks of LMB Member Countries (**outcome 3**) and, sustainability assessment and adoption of good practice (**outcome 4**).

The full Design and Monitoring (LFA) Framework is included as Annex 1.

Table 8: Design summary (LFA) of the ISH (2011-2015) with objective, outcomes and indicators

ISH Design Summary	Indicators	Sources of Data
Initiative Objective		
Decisions concerning the management and development of hydropower in the Mekong are placed in a river basin planning and management context, applying IWRM principles.	1. Extent to which national agencies bring sustainable hydropower considerations into national planning systems and regulatory frameworks.	<ul style="list-style-type: none"> ▪ MRC and ISH performance reviews and reports. ▪ Periodic consultation with line-agencies agencies and stakeholders.
MRC and key stakeholders actively cooperate to bring sustainable considerations into the regulatory frameworks, planning systems of Member Countries concerned with hydropower, and into project-level planning, preparation, design, implementation and operation activities.	2. Extent that accepted of ‘good practice’ is reflected in the design, implementation and operation of LMB hydropower projects.	<ul style="list-style-type: none"> ▪ MRC and ISH performance reviews and reports. ▪ Sustainability assessments of policy / legal frameworks done by line agencies facilitated by MRC.
	3. Stakeholder perceptions of the value the ISH adds as a cross-cutting initiative relevant to the MRC’s role.	<ul style="list-style-type: none"> ▪ MRC and ISH performance reviews and reports. ▪ Stakeholder interviews.
Intermediate outcomes		
Outcome 1. A demonstrated increase in awareness of sustainable hydropower and its rationale, increased dialogue among the key stakeholder interests and partnerships being	1.1 Extent to which increased awareness of and commitment to sustainable hydropower is reflected in LMB stakeholder dialogue.	<ul style="list-style-type: none"> • Review of stakeholder documentary outputs and proceedings of events.

ISH Design Summary	Indicators	Sources of Data
formed to introduce sustainable considerations into LMB hydropower practices.	1.2 Level of request for information and knowledge outputs from MRC bodies and line agencies.	<ul style="list-style-type: none"> • MRC Reports • Periodic stakeholder meetings and solicited feedback
	1.4 The level and quality of coverage of sustainable hydropower in the LMB in regional and national media.	<ul style="list-style-type: none"> • MRCS media monitoring.
	1.5 Extent to which multi-stakeholder partnerships form for policy to project planning exercises.	<ul style="list-style-type: none"> ▪ Reports of ISH National coordinators
Outcome 2. Demonstrated improvement in technical capacities of MRC and prioritized national agency staff in hydropower data systems and use of information needed to advance sustainable hydropower considerations.	2.1 Extent to which key stakeholders use MRC information and guidance in their hydropower planning and development work.	<ul style="list-style-type: none"> • ISH progress reports
	2.2 Level of systematic knowledge sharing between relevant agencies in the Member countries.	<ul style="list-style-type: none"> • Periodic consultations with stakeholders and surveys
	2.3 Extent to which improved developer/operator information and capacity is reflected in improved project design and operation practices.	<ul style="list-style-type: none"> • Independent assessment using sustainability assessment tools
Outcome 3. Sustainable hydropower aspects are more systematically and demonstrably incorporated into sector, sub-basin and Mekong regional planning systems and regulatory frameworks.	3.1 Extent to which SEAs are undertaken by power sector agencies and sub-basin actors and reflect sustainable hydropower considerations.	<ul style="list-style-type: none"> • Review of documentation on planning studies
	3.2 Extent to which the need to plan and coordinated hydropower development and operation in sub-basins is recognized.	<ul style="list-style-type: none"> • Review of documentation on sub-basin planning and management
	3.3 Extent to which hydropower projects optimized for all water uses in planning processes and at operation stages.	<ul style="list-style-type: none"> • Analysis of trends in agency planning studies and project feasibility studies.
Outcome 4a). Hydropower sustainability assessment tools at the project and sub-basin level are in place to systematically measure and assess progress made with sustainable hydropower in the LMB. Outcome 4b.) Innovative financing mechanisms, especially benefit sharing mechanism, are increasingly evaluated and introduced for LMB hydropower projects.	4.1 Proportion of projects in MRC hydropower database on which hydropower sustainability assessment protocol (SAP) has been undertaken. Stakeholder perceptions of quality and value added.	<ul style="list-style-type: none"> • MRC and line agency reports • Stakeholder evaluations as part of SAP assessments
	4.2 Outcome from basin-wise rapid assessment / dialogue tools as perceived by (i) sub-basin basin planning entities (ii) hydropower developers and operators, and (iii) relevant regulatory agencies.	<ul style="list-style-type: none"> • Stakeholder evaluation as part of basin-wise assessments / dialogue facilitation
	4.3 Extent to which innovative financing mechanisms including benefit sharing are piloted and introduced by Member Countries.	<ul style="list-style-type: none"> • MRC and line agency reports

ISH Design Summary	Indicators	Sources of Data
<p>Outcome 5. ISH is effectively managed and staffed and functions as a cross-cutting initiative working with other MRC Programmes.⁵⁵</p>	<p>5.1 Achievement of approved staffing levels functioning of the technical Review Group (TRG) and Hydropower Advisory Committee (HAC) and the ISH Coordinator network.</p>	<ul style="list-style-type: none"> • MRC and ISH Progress reports
	<p>5.2 Proportion of ISH outputs produced to the expected level of quality.</p>	<ul style="list-style-type: none"> • Self-assessment by members of the Hydropower Steering Committee
	<p>5.3 Degree to which key ISH stakeholders feel the ISH responds to their needs.</p>	<ul style="list-style-type: none"> • Solicited feedback from MRC bodies and NMCs

Figure 5 illustrates the ISH results chain, showing the outcomes and outputs in relation to the MRC’s Goal hierarchy. This can be read in conjunction with Table 9 (shown later) that indicates the other MRC Programmes and Initiatives that ISH would work with to deliver specific outputs supporting these five Outcomes.

⁵⁵ Effective management of the ISH is noted as Output 1.1 in the previous ISH Component-Output structure, under previous component 1 Management and communication. For the purpose of 2011-2015 planning it is shown as IO 5.1, as provided in the LFA in Annex 1.

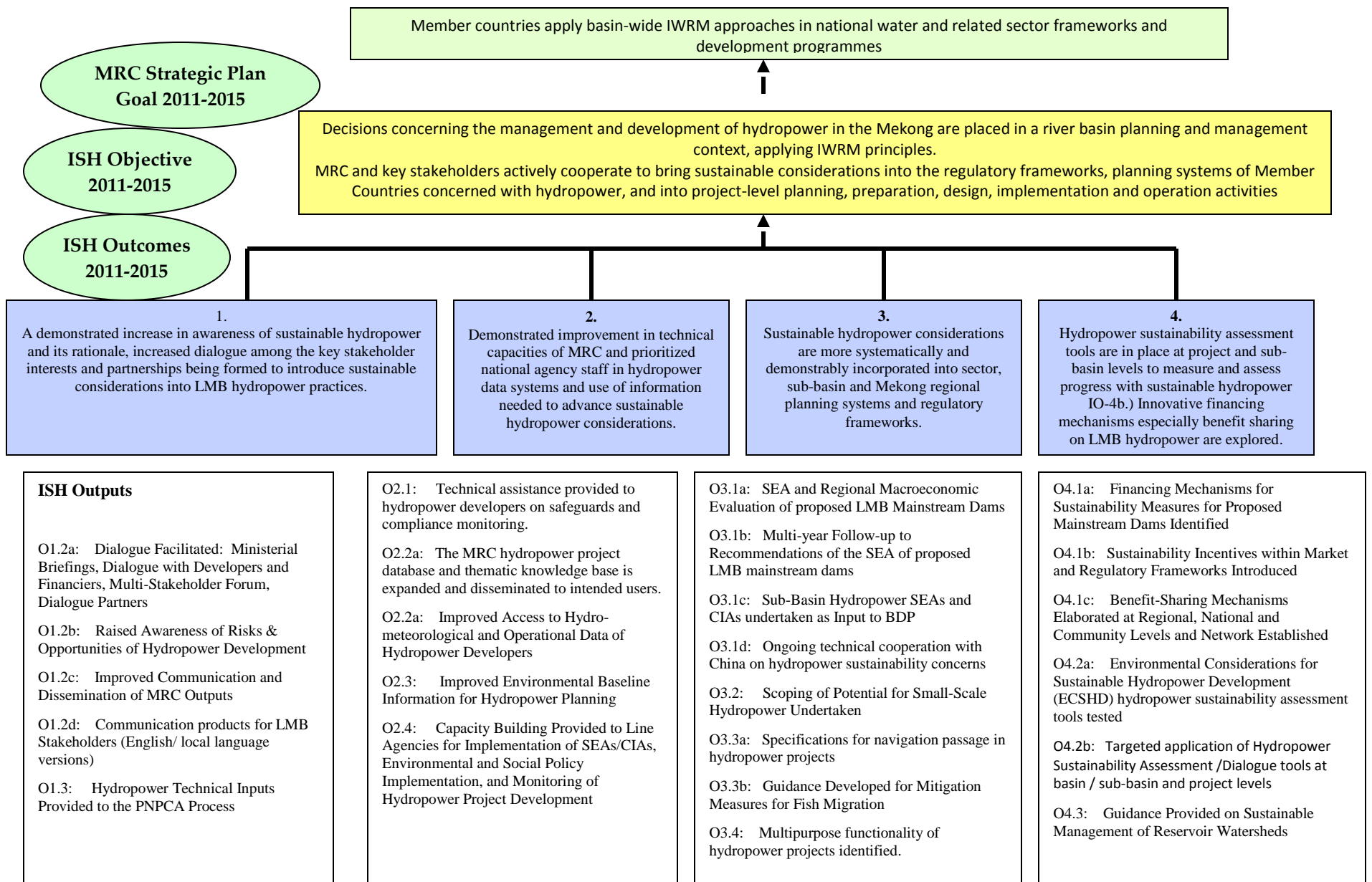


Figure 5. ISH results chain indication outcomes and outputs in relation to the MRC Goal Hierarchy

3.2 KEY DESIGN FEATURES OF THE ISH (2011-2015)

The ISH Outcomes and outputs for 2011-2015 derive from a number of considerations brought together in the Initiative Design and Monitoring (LFA) Framework shown in Annex 1.

Among the design considerations include several criteria identified in the 2008-2009 national and regional consultation process to formulate the ISH (as described previously in Section 1); including the contribution to:

- Added value of MRC as a regional river basin organization, facilitating communication and interchange of opinions and views between Member Countries and Dialogue Partners.
- Participatory and inclusive engagement of all MRC stakeholders, and interested and affected parties.
- Relevance to i) the mandates of agencies responsible for setting the policy framework and regulating hydropower project developments (economic, environment, social and technical regulation), and ii) other Basin stakeholder interests, making available a body of knowledge and analysis to support decision-making for joint interests of MRC Member Countries.
- Consistency with the MRC Goal hierarchy and Strategic Plans.
- Responsiveness and outreach to basin stakeholders expectations of MRC.
- Integration with regional and national level activities that are relevant.
- Capacity building, recognizing the capacity differences between and within MRC Member Countries and using a strategy focused on reducing those gaps.
- Coordination with the various MRC Programmes/Sections, in particular the BDP, and
- Articulation of the benefits of a basin-wide approach focusing on long-term sustainability of hydropower development in accordance with the Procedures of the 1995 Mekong Agreement.

ISH Outcomes and outputs for 2011-2015 are thus a product of (i) the top-down formulation of the MRC Strategic Plan 2011-2011 with responsiveness to Core Functions and the River Basin Management Functions (as described in Section 3 of this document) (ii) continuity with the 2008-2011 Outputs that were formulated in national and regional dialogue, and (iii) the synthesis of all these factors in the Initiative Design Summary (LFA) Framework.

3.3 SUMMARY DESCRIPTION OF ISH OUTCOMES AND OUTPUTS

This section summarises the outputs associated with the five outcomes. Linkages with other MRC Programmes are then shown. Detailed planning of each output will be provided in annual work plans (See section 4.4)

As noted in the summary of this document **outputs prioritized for 2011-2012** broadly centre on MRC support to Member Countries to advance regional and transboundary cooperation, through:

- i. Enrichment and continuous, collaborative update of the MRC Hydropower Database, especially to incorporate more parameters to measure sustainable outcomes and steps needed;
- ii. Application hydropower sustainability assessment tools, around which awareness raising, shared learning and capacity building can be effectively delivered (in particular basin/sub-basin hydropower sustainability assessment tools);

- iii. Elaboration and support for the introduction of mechanisms for benefit sharing and innovative finance related to sustainable hydropower outcomes in planning / regulatory systems.
- iv. Ensuring agreed follow-up on cross-cutting recommendations emerging from the SEA of proposed LMB mainstream dams, working with and through MRC Programmes and regional partners. This recognizes that other MRC Programmes may not have planned for work that responds to all the SEA recommendations.
- v. Cooperation with China on sustainable hydropower themes initiated in 2009-2010 with Ecosystem Study Commission for International Rivers (ESCIR) through SEA processes that have proved highly constructive for data exchange, site visits and confidence building.

This prioritization also reflects the fact there is still a funding gap for 2011-2015 and that most of the committed and pledged funds are available in the first years 1 to 3, or they are front ended. Annex 3 identifies outputs that will be prioritized with committed and pledged funds, which in total, is about half the 2011-2015 requirement of \$ US 12.5 million (see Section 4.3.2 on Funding Status).

□ **Outcomes and outputs**

Outcome 1: A demonstrated increase in awareness of sustainable hydropower and its rationale, increased dialogue among the key stakeholder interests and partnerships being formed to introduce sustainable considerations into LMB hydropower practices.

This Outcome includes help to MRC Member Countries to raise awareness of sustainable hydropower considerations, the value they add for all stakeholders and basin residents, what they entail, understand what MRC stakeholders perceive as important and address these concerns with demand-responsive activities. Emphasis is placed on facilitating effective dialogue with and among MRC Bodies, MRC Formal Dialogue Partners, the private sector and other stakeholders of MRC to raise awareness and reinforce cooperation needed for multi-disciplinary approaches and functional partnerships. A special focus is placed on providing ISH technical and thematic inputs to the PNPCA Procedure process, which the MRC Joint Committee will use to reach agreement on mainstream and significant tributary developments in implementing the 1995 Agreement.

There are five outputs which contribute to Outcome 1:⁵⁶

- Outcome 1.2a: Dialogue Facilitated: Ministerial Briefings, Dialogue with Developers and Financiers, Multi-Stakeholder Forums and Dialogue Partners
- Outcome 1.2b: Raised Awareness of Risks & Opportunities of Hydropower Development (ISH)
- Outcome 1.2c: Improved Communication and Dissemination of ISH Outputs
- Outcome 1.2d: Communication products for LMB Stakeholders based on ISH outputs (English/ local language versions)
- Outcome 1.3: Hydropower Technical Inputs Provided to the PNPCA Process

⁵⁶ Note that output numbering is maintained to ensure consistency with 2009-2010 outputs, especially where there is a continuation of work under the output. In addition, in the 2009-2011 work plan effective management of the Initiative was part of Component 1. That is now discussed as Outcome 5 under the 2011-2015 structure to ensure the Initiative adds value as a cross-cutting initiative and is well integrated with other MRC Programmes.

- **Output 1.2a – Multi-stakeholder Dialogue Facilitated:** This output provides briefs and presentations for MRC Bodies, in particular the Joint Committee (JC), Council, formal MRC Dialogue Partners (China and Myanmar) NMC / NMCS and MRCS. It covers ISH work with NMCS to ensure dialogue with relevant line agencies, hydropower developers and project lending entities in the public and private finance sectors, and various multi-stakeholder forums attached to specific ISH Outputs (e.g. information exchange, workshops, ISH Output-based interactions, etc). Among other aspects it aims to encourage functional partnerships to form around various ISH activities and outputs to maximize impact and influence in leading to cooperation for beneficial change.
- **Output 1.2b - Raised Awareness of Risks and Opportunities of Hydropower Development:** This output provides a coherent and logical set of targeted messages and information to raise awareness and respond to concerns and expectations of the various stakeholders interests on the rationale, opportunities and challenges advancing sustainable forms of hydropower (via a comprehensive but simple communication strategy that covers all ISH Outputs, and implementation of the strategy to target messages to the needs of specific stakeholder groups, e.g. regulators and line agencies, RBOs/RBCs, developers and operators, MRC Bodies, regional partners and representatives of NGO/CSO organizations and research networks). MRC will be increasingly called upon to provide well-founded information and clearly understandable explanations of many hydropower-related issues.
- **Output 1.2c - Improved Communication and Dissemination of MRC Outputs:** This output supports line agencies of four Member Countries not only to maintain close communication with each other, but also to share and disseminate MRCS information in a timely manner on the development risks and opportunities of hydropower development relevant to stakeholder interests and their specific roles and responsibilities. There is also a need for to feed into the overall MRC communication strategies to continue to increase the effectiveness of its communications strategy, making more widely known the outputs produced by the ISH and fostering general recognition of MRC as a source of sound and impartial information, opinion and advice.
- **Output 1.2d - Communication products for LMB Stakeholders prepared and disseminated (English/ local language versions) (ISH, ICCS):** This output provides synthesized and packaged information in the form of information products on sustainable hydropower suited to needs of different stakeholders. Products will be in English languages and in formats the NMCS/Line-agencies require in local languages so they can be used in information and outreach to their respective public, civil society and private sector stakeholders.
- **Output 1.3 - Technical Inputs provided to the PNPCA Process:** This output focuses on the ISH role as a cross-cutting initiative in supporting technical inputs to the project-specific PNPCA process. Among the activities anticipated are (i) in collaboration with relevant MRC programmes, technical review of documents to ascertain whether appropriate technical information on the projects has been included with the submission including conformance to the MRC Preliminary Design Guidance (e.g. fish passage provisions, navigation, sediment management, water quality management and environmental flow provision and the safety of dams (ii) preliminary technical review of project documents submitted by developers (i.e. feasibility, and EIA/SIA reports) (iii) when requested by MRCS management, more detailed technical review of specific project technical features impacting on sustainable performance, for example, with reference to RSAT and SAP tools to do a systematic check (iv) respond to technical questions of the Joint Committee requested of MRCS (v) where required, provide technical support for JC visits to the project area, and (vi) contribute to any MRCS work needed to refine and/or revise the current PNPCA Procedures and guidance on MRCS roles in the PNPCA.

<p>Outcome 2: Demonstrated improvement in technical capacities of MRC and prioritized national agency staff in hydropower data systems and use of information needed to advance sustainable hydropower considerations.</p>

This Outcome includes help to MRC Member Countries to build capacity and knowledge bases relevant to MRC Programme work and sustainable hydropower outcomes. Technical knowledge is shared with developers and operators on safeguards for design and operations (environmental, social and dam safety). Knowledge base

support includes expanding MRC's databases and baseline data relevant to environment and social assessment parameters and hydropower operations, and monitoring hydropower project development as regard to trends, influences, risks and opportunities. Efforts to catalyze and build capacity within MRCS, NMCs and line agencies and LMB developers and operators of projects falling under the remit of the 1995 Mekong Agreement will be emphasized. It supports knowledge sharing and capacity building within all these bodies noted and for their interactions with other stakeholders.

There are five technical outputs which contribute to Outcome 2:

Outcome 2.1: Technical assistance provided to hydropower developers on safeguards and compliance monitoring.

Outcome 2.2a: The MRC hydropower project database and thematic knowledge base is expanded and disseminated to intended users.

Outcome 2.2a: Improved Access to Hydro-meteorological and Operational Data of Hydropower Developers

Outcome 2.3: Improved Environmental Baseline Information for Hydropower Planning

Outcome 2.4: Capacity Building Provided to Line Agencies for Implementation of SEAs/CIAs, Environmental and Social Policy Implementation, and Monitoring of Hydropower Project Development

- Output 2.1- Technical Assistance Provided to Hydropower Developers on Safeguards and Monitoring: This output provides guidance for hydropower developers/operators on safeguard themes relevant to the 1995 Mekong Agreement and accepted international good practice. This will target guidance for use by hydropower entities and the LMB line agencies regulating them to help them interpret and meet the various national regulations, with a focus on transboundary concerns. An update to the Preliminary Design Guidance (PDG) of LMB mainstream dams would be one product (e.g. encompassing guidance on (i) navigation locks (ii) fish passage (iii) sediment transport and management (iv) water quality and aquatic ecology, and (iv) safety of dams) and capture new monitoring data and findings of MRC Programme work. Similarly, a PDG for hydropower projects on significant LMB tributaries will be considered, pending the outcome of the MRCS significance study to define significance on LMB tributaries. Here it is important to translate MRC programme work to a technical language that developers and operators are familiar with and the technical language and formats that regulators and hydropower developers/ operators and communicators now use. This will help maximize understanding and lead to improved adoption of MRC scientific and specialist work.

- Output 2.2a- Expanded MRC Hydropower Knowledge Base: This output will update and expand the MRC hydropower data base (HDB). With the rapidly changing pace of the hydropower development the MRC database needs to be continuously updated. Additional data beyond what is required for BDP purposes is needed, in particular with regard to (i) reservoir operating policies and related socio-environmental impacts and environmental flows provisions, (ii) use of the HDB to support application of Sustainability Assessment tools (RSAT and eventually SAP) to apply to the full population of hydropower projects (existing to potential), as noted in Output 4.2b. Compilation of non-commercially sensitive sections of MOUs, concession agreements, project developments agreements, power purchase agreements, licenses, certifications and other such documents, in particular those data sets needed for the RSAT / SAP and the BDP scenario assessments and to inform work under other ISH Outcomes. This work will be undertaken in cooperation with BDP/IKMP with ISH responsible for the technical updates.

- Output 2.2b-Improved Access to Hydro meteorological and Operational Data of Hydropower Developers: This output encompasses collection and sharing data from hydro-meteorological stations and networks set up by private hydropower companies, in particular relating to dry and wet-season flows, sediment transport and water quality and fisheries. MRC/ISH would help build links with project developers to promote the sharing of hydro-meteorological and reservoir monitoring data, in particular for projects with transboundary impacts. This data is also useful in regional analyses and can lead to improved designs and enhanced sustainability of other projects in

sub-basins. Similarly, regular sharing of operational data with downstream communities, protected area managers and operators of other projects in the basin or sub-basin can lead to increased energy production through more efficient regulation, greater control of downstream flooding (spillway releases from reservoirs during floods) and improved management of environmental flows.

- **Output 2.3-Improved Environmental Baseline Information for Hydropower Planning:** This output recognizes the formulation of appropriate impact mitigation measures requires knowledge of the existing situation with regard to key environmental parameters that influence sustainable performance of hydropower projects in implementation and operation. In addition, continued monitoring of changes in aquatic environmental conditions at sub-basin and basin level can be fed back into project operations. This output would consist of specific data collection implemented in cooperation with BDP, EPD and IKMP for projects in the MRC Hydropower Database starting with projects with significant potential for transboundary impacts.
- **Output 2.4: Capacity Building provided:** this output aims to systematically organize ISH coordinated support to Member Country line Agencies for implementation environmental and social policy, strategic and project-level studies and monitoring of hydropower project development and management. It responds to the general need to build capacity within the respective line agencies in Member Countries for (i) hydropower sustainability assessments at the basin /sub-basin levels (ii) strategic environmental assessments (SEAs) of sub-basins (iii) developing environmental and social policies to enhance these aspects of sustainability of projects, and (iv) ensuring a consistent interpretation of these policies and associated regulations in independent project monitoring and facilitation of impartial grievance mechanisms.

Outcome 3: Sustainable hydropower considerations are more systematically and demonstrably incorporated into sector, sub-basin and Mekong regional planning systems and regulatory frameworks.

This Outcome includes help to MRC Member Country efforts to imbed sustainable hydropower considerations in the regional planning processes and regulatory frameworks for hydropower (economic, environment and social and technical / safety regulation), consistent with needs to implement national policies and the 1995 Agreement. In regard to the MRC Regional role, a key focus is on extending support to government line agencies to introduce SEA-type assessments. These SEAs are linked to MRC Programmes to ensure the efficient sharing of information, cooperation, synergy, and to ensure consistent approaches. A special focus will be on ensuring follow-up to the recommendations of MRC's SEA of proposed mainstream dams working closely with other MRC Programmes and in continuing the Cooperation with China through ESCIR.

There are seven outputs which contribute to Outcome 3:

- Output 3.1a: SEA and Regional Macroeconomic Evaluation of proposed LMB Mainstream Dams
- Output 3.1b: Multi-year Follow-up to Recommendations of the SEA of proposed LMB mainstream dams
- Output 3.1c: Sub-Basin Hydropower SEAs and CIAs undertaken as Input to BDP
- Output 3.1d: Ongoing technical cooperation with China on hydropower sustainability concerns
- Output 3.2: Scoping of Potential for Small-Scale Hydropower Undertaken
- Output 3.3a: Specifications for navigation passage in hydropower projects
- Output 3.3b: Guidance Developed for Mitigation Measures for Fish Migration
- Output 3.4: Multipurpose functionality of hydropower projects identified.

- Output 3.1a: SEA and Regional Macroeconomic Evaluation of Proposed Mainstream Dams in LMB: The SEA of mainstream dams will complete in 2010. This output provides further work on macro-economic evaluation aspects concerning the regional distribution of benefits and costs of hydropower development.
- Output 3.1b - Multi-year follow-up to Recommendations of SEA and Cross-programme work undertaken: This output will respond to substantive recommendations the MRC SEA of proposed mainstream dams offers for MRCS Programme activities in 2011-2015 to address critical gaps in knowledge and uncertainty - as identified by the SEA process and MRC stakeholders. This would include for example, provided for additional tasks and priorities in field data collection, research, analysis and monitoring to address uncertainties in the impacts on fisheries migration, sediment-nutrient balances and their implications, safety of dams issues where the MRCS is best positioned as regional basin entity to undertake. These tasks are generally beyond what the other MRC programmes already envisage in their 2011-2015 planning to date, and would continue with the successful approach in 2008-2010 where ISH co-financed priority items relevant to MRC needs to address the accelerated interest in hydropower and MRC's role in that. Other sub-outputs will respond to recommendations such as updating MRCS data bases with SEA information and additional analysis needed for implementation of the PNPCA procedures (Output 1.3).
- Output 3.1c - Sub-Basin Hydropower SEAs and CIAs undertaken as Input to BDP: This output supports consultation with BDP and line agencies. Within resource constraints, this will identify the tributary sub-basins for hydropower SEAs to be carried out and the corresponding priorities. BDP and IKMP intend to extend the Decision Support Framework (DSF) software to sub-basin level, starting with the 3S (Sekong / Sesan / Srepok) sub-basin.⁵⁷
- Output 3.1d – Ongoing technical cooperation with China (PRC) on sustainable hydropower implemented: This output provides for follow-on cooperation with designated agencies in China on Mekong hydropower sustainability issues. As part of the SEA of mainstream dams in 2010 Foreign Affairs China approved a 5-point cooperation programme with the MRC SEA coordinated and supervised by ISH as a cross-cutting / participatory initiative involving MRC Programmes, NMCS/Line Agencies and local to regional stakeholders. The China counterpart is the PRC Ecosystem Study Commission for International Rivers (ESCIR). This will build on cooperation from 2009-2010 and provisionally includes further (i) report & data exchange (ii) technical exchange (e.g. short visits by modelling and other staff) (iii) site visits to selected Yunnan dams (iv) ESCIR participation in the key MRC Regional Workshops and (v) other research cooperation, e.g. case studies around the SEA thematic areas.
- Output 3.2-Scoping of Potential for Small-Scale Hydropower Undertaken: This output provides an assessment of opportunities and constraints to advance sustainable small hydropower in the LMB. Small-scale hydropower development could also make significant contribution to reducing poverty and maintaining sustainable communities in rural areas across the Basin. Generally with limited environmental impact, providing opportunity for employment generation and potentially replacing significant amounts of fossil-fuelled power generation if implemented collectively in a concerted and coordinated manner.
- Output 3.3b- Navigation Passage related to LMB hydropower: This output supports continued ISH collaboration with the Navigation Programme (NP) on navigation lock design and performance standards for the Preliminary design guidance of mainstream LMB dams. Additionally, NP is considering smaller navigation potential on significant LMB tributaries as part of the MRC Significance study (on the definition of significant tributaries). This task is for follow-up assessment and study and provision of technical specifications.
- Output 3.3b- Guidance Developed for Mitigation Measures for Fish Migration: This output supports continued ISH collaboration with the Fisheries Programme, where a sub-group of the Fisheries Expert Group will be commissioned to collaborate through a number of meetings and in preparing guidance on suitable design

⁵⁷ Among the candidate basins where accelerated hydropower is anticipated include the 3-S or sub-basins of the 3S, Nam Theun, Nam Ngum and Nam Ou.

measures and assessment reports on the effectiveness of possible mitigation measures for the barrier effects to fish migration of the proposed LMB mainstream and significant tributary hydropower projects.

- **Output 3.5-Multipurpose Functionality of Hydropower Projects Identified:** This output supports systematic assessment of untapped opportunities for any existing, planned or proposed projects in the MRC hydropower database to provide additional water for irrigation, as well as for other uses and ecosystem values. This will entail (i) assessment with regard to the other possible water uses and feedback into BDP (ii) incorporation of assessment results in the Hydropower Project Database, establishing links to corresponding entries in the Irrigation Project Database (iii) formulation of draft recommendations of the identified additional uses in pre-construction studies of the hydropower projects (iv) national workshops with relevant line agencies to discuss the draft recommendations (especially for any transboundary implications created by a particular hydropower project) and (v) report elaboration on scope for multi-functionality of projects.

Outcome 4: Hydropower sustainability assessment tools are in place at project and sub-basin levels to measure and assess progress with sustainable hydropower (IO-4b.) Innovative financing mechanisms, especially benefit sharing on LMB hydropower increasingly evaluated and introduced for LMB hydropower projects

This outcome has two main complementary streams or sets of outputs. The first stream involves helping MRC Member Countries in developing hydropower sustainability assessment tools and building toward a more comprehensive sustainability assessment “platform” that Member Countries can apply to the population of LMB dams (existing and proposed) in the MRC Hydropower database. It includes sustainability assessment at project and sub-basin levels. One strategic aim is to ensure Member countries have the tools they need to measure and monitor progress in advancing hydropower sustainability .

The second stream involves assisting national line agencies of Member countries and their interactions with project developers to adapt and apply good practice. This will help the Mekong take advantage of existing and emerging opportunities for innovative financing of hydropower sustainability measures (including carbon financing and PES) with a special focus on introducing benefit sharing mechanisms.

There are six technical outputs which contribute to Outcome 4:

Output 4.1a: Financing Mechanisms for Sustainability Measures for Proposed Mainstream Dams Identified

Output 4.1b: Sustainability Incentives within Market and Regulatory Frameworks Introduced

Output 4.1c: Benefit-Sharing Mechanisms Elaborated at Regional, National and Community Levels and Network Established

Output 4.2a: Environmental Considerations for Sustainable Hydropower Development (ECSHD) hydropower sustainability assessment tools tested

Output 4.2b: Targeted application of Hydropower Sustainability Assessment /Dialogue tools at basin / sub-basin and project levels

Output 4.3: Guidance Provided on Sustainable Management of Reservoir Watersheds

- **Output 4.1a- Financing Mechanisms for Sustainability Measures for Proposed Mainstream Dams Identified:** This output will evaluate potential measures to be adopted to fund sustainability components of proposed mainstream dams to inform planning. This depends also on the Outcome of the first PNPCA and expected to start in 2010 and provisionally last 6 months. It would be accelerated on a priority basis if called for in the PNPCA process. This will be measures that would probably be jointly undertaken by developers and applied in a coordinated manner in all developments throughout the affected riparian countries. Special financing

mechanisms and incentives may be required to ensure that this takes place. MRC, as a regional organisation, would facilitate discussion amongst governments, developers and financiers to identify these mechanisms and incentives.

- Output 4.1b- Sustainability Incentives within Market and Regulatory Frameworks Introduced: This output will explore the formation and support dialogue on new market and regulatory frameworks that offer opportunities to introduce incentives to implement good practices and to finance sustainable measures on hydropower projects. Environmental regulatory agencies have also been established in the Member Countries, most recently the Water Resources and Environment Administration (WREA) in Lao PDR, with responsibilities for the issue of licenses for water use by development activities and regulation of environmental impacts. MRC as a regional organisation would facilitate exploratory discussions with the private sector, government agencies and developing banks on introducing such incentives.
- Output 4.1c- Benefit-Sharing Mechanisms Elaborated at Regional, National and Community Levels: This output support sharing of regional and international experience in developing benefit sharing mechanisms at local to national levels and transboundary levels. This would follow the approach set out in the MRC Council Brief prepared by the ISH in 2009. Policy frameworks, laws and regulations for compensation of persons affected by the construction of a hydropower project are generally well established in the MRC Member Countries. Benefit sharing can be in monetary or non-monetary forms. Revenue sharing (as a form of Benefit Sharing) during the operational life of the project enhances social and environmental sustainability through contributions to local development and poverty reduction and local actions that synergistically manage catchments in ways that contributed to sustainable performance of hydropower (e.g. tree planting to reduce reservoir sedimentation).
- Output 4.2a- Environmental Considerations for Sustainable Hydropower Development (ECSHD) project and basin-wise hydropower sustainability assessment tools "workshop" tested (ISH, EP): This output supports further development, regional workshops and "workshop trailing" of project and basin level hydropower sustainability assessment tools. After initial trialling in 2010, it is important to increase awareness of the tool via dialogue in multi-stakeholder workshops.
- Output 4.2b- Targeted application of Hydropower Sustainability Assessment /Dialogue tools at basin / sub-basin and project levels. This output will support full field implementation of the hydropower sustainability assessment tools at basin / sub-basin and project levels. The basin-wise rapid assessment / dialogue tool will be applied after the SAP in a targeted manner to maximize effectiveness working with four primary users, namely (i) newly forming sub-basin river basin entities (expected to be multi stakeholder) (ii) line agencies regulating hydropower in the sub-basin (e.g. economic, environment, social and safety regulation) and, (iii) hydropower developers / operators in the sub-basin. The basin-wise sustainability assessment will be practical and dialogue-oriented. It thus will inform a basin-wise coordination of hydropower operations as well as capacity building and reinforcing of coordination mechanisms and provide concrete exposure to relevant ISH Outputs. From the planning perspective it will practically inform the TOR for heavier tools like CIAs and SEAs and the BDP planning processes. The project-specific tool (the voluntary international IHA Hydropower Sustainability Assessment Protocol - SAP) will be applied in a systematic, targeted manner for all projects in the MRC Hydropower Data base (to limits of available funds) working with NMCS/line agencies and developers on a voluntary basis. This will be based on TRG review and consideration of its use in the Mekong.
- Output 4.3- Guidance Provided on Sustainable Management of Reservoir Watersheds: This output supports development of guidance and trialling of a program for sustainable reservoir management that will eventually lead to guidance documents. Climate, soil and geological conditions, ground cover vegetation and land use practices determine the amount of erosion in a river basin and the quantity of sediment that can be expected to accumulate in the reservoirs of any storage hydropower projects. Watershed protection and sediment management will help resolve important sustainability issues for many hydropower projects, particularly in areas subject to uncontrolled logging and shifting cultivation to minimize high sediment loads which can adversely affect the operation of run-of-river hydropower schemes. Monitoring for the preservation of good water quality of reservoir releases to downstream area is critical as it can be detrimentally affected by the abuse of bio-chemical

characteristics (nutrients, pesticides, mining and construction waste drainage, etc.). This Output will be implemented in close collaboration with the GTZ-supported Watershed Management Programme (WSMP).

Outcome 5: ISH is effectively managed and staffed and functions as a cross-cutting initiative with other MRC Programmes.

This outcome is to ensure the initiative functions effectively as a cross-cutting initiative in the MRC, is staffed to the level approved by the Joint-Committee, and provides policy/technical advice in a timely manner with quality and in a manner responsive to needs. Part of this is to ensure management and administrative procedures of the ISH conform to Development Partner Agreements and MRC practices, and the preparation of MRCS management and Development Partner briefings and reports on the ISH progress.

Emphasis is also placed on effective management of the regional mechanisms central to ISH functionality and Outputs, namely (i) the network of ISH National Coordinators resident in NMC Secretariats (ii) the regional technical review group (ISH-TRG) established for the ISH and (iii) the new high-level Regional ISH Advisory Committee (ISH-AC) with 15 permanent members and additional members from Dialogue Partners, development partners and private sector and civil society interests taking a regional view.

□ **ISH Integration across MRC programmes**

Table 9 outlines integration between the ISH and other MRC programmes and Initiatives for the delivery of ISH outputs for 2011-2015.

Table 9: ISH outputs/activities integrated with other MRC Programmes and Initiatives

ISH outputs	The main MRC Programmes Involved
Outcome 1	
O1.2a: Dialogue Facilitated: Ministerial Briefings, Dialogue with Developers and Financiers, Multi-Stakeholder Forum, Dialogue Partners	ISH engaging all MRC Programmes for multi-stakeholder inputs
O1.2b: Raised Awareness of Risks & Opportunities of Hydropower Development	ISH with ICCS
O1.2c: Improved Communication and Dissemination of ISH Outputs	ISH with ICCS
O1.2d: Communication products for LMB Stakeholders based on ISH outputs (English/ local language versions)	ISH with ICCS and BDP
O1.3: Hydropower Technical Inputs Provided to the PNPCA Process	(MIWRM/P, BDP and ICCS, with ISH providing technical support to MRC Programmes
Outcome 2	
O2.1: Technical assistance provided to hydropower developers on safeguards and compliance monitoring.	ISH with NP, IKMP, FP and EP
O2.2a: The MRC hydropower project database and thematic knowledge base is expanded and disseminated to intended users.	ISH with IKMP, BDP, EP
O2.2a: Improved Access to Hydro-meteorological and Operational Data of Hydropower Developers	ISH, IKMP, BDP

ISH outputs	The main MRC Programmes Involved
O2.3: Improved Environmental Baseline Information for Hydropower Planning	ISH, EP, IKMP
O2.4: Capacity Building Provided to Line Agencies for Implementation of SEAs/CIAs, Environmental and Social Policy Implementation, and Monitoring of Hydropower Project Development	ISH, EP, ICBP
Outcome 3	
O3.1a: SEA and Regional Macroeconomic Evaluation of Proposed Mainstream Dams in LMB	ISH, BPP and engaging all MRC Programmes
O3.1b: Multi-year Follow-up to Recommendations of the SEA of proposed LMB mainstream dams	ISH supporting all concerned MRC Programmes (FP, IKMP, BDP, EP)
O3.1c: Sub-Basin Hydropower SEAs and CIAs undertaken as Input to BDP	BDP, EP
O3.1d: Ongoing technical cooperation with China on hydropower sustainability concerns	ISH also supporting all concerned MRC Programmes
O3.2: Scoping of Potential for Small-Scale Hydropower Undertaken	ISH with MIWRM-P
O3.3a: Specifications for navigation passage in hydropower projects	NP
O3.3b: Guidance Developed for Mitigation Measures for Fish Migration	FP
Outcome 4	
O4.1a: Financing Mechanisms for Sustainability Measures for Proposed Mainstream Dams Identified	BDP
O4.1b: Sustainability Incentives within Market and Regulatory Frameworks Introduced	BDP
O4.1c: Benefit-Sharing Mechanisms Elaborated at Regional, National and Community Levels and Network Established	BDP
O4.2a: Environmental Considerations for Sustainable Hydropower Development (ECSHD) hydropower sustainability assessment tools tested (ISH, EP)	EP, BDP, MIWRM/P
O4.2b: Targeted application of project-specific Hydropower Sustainability Assessments and Basin-wise Hydropower Rapid Assessment / Dialogue tools	ISH with EP
O4.3: Guidance Provided on Sustainable Management of Reservoir Watersheds (AIFP/WSMP).	ISH, AIFP/WSMP, MIWRM-P

3.4 ADDRESSING SUSTAINABILITY

The ISH Outcomes outputs are within the core of the MRC mission to ensure the sustainable and equitable use of the Mekong water and related resources. Ensuring that decisions about the management and development of hydropower are placed in an IWRM river basin management perspective is central to the 1995 Mekong Agreement and regional cooperation it envisages.

At the MRC Programme level, the sustainability of the ISH itself as part of the MRC Programme structure is also a concern when thinking about the 2011-2015 period - and beyond.

With reference to the SWOT analysis of the ISH implementation experience to date that is provided in Section 1.2 (Table 1), and also the long-term MRC river basin management functions discussed previously in Section 2, Table

10 below identifies a number of sustainability factors for the ISH (as an Initiative) and how they can be enhanced. Enhancing, or satisfying these factors will help ensure sufficient “critical mass” and the ISH maintains its relevance and value added contribution to MRC’s Mission and MRC stakeholder interests. This continued relevance and value added would go a long way to guarantee the Initiatives sustainability as part of the MRC Programme structure.

Table 10 : ISH 2011-2015 sustainability matrix

Sustainability factors	How sustainability will be enhanced
MRC Member Countries find ISH outputs and cooperation mechanisms it supports relevant	Three approaches will be use : i) Consultation with line agencies regularly on work plan and activity planning; ii) increased integration with national monitoring activities related to hydropower; and (iii) strategic communication with 2-way dialogue to assess MRC stakeholder expectations of the ISH Outcomes and outputs, and the adequacy of responses to those expectations.
Capacity building addresses the differences in capacity between the Member Countries	The targeted capacity building activities will address this integration issue. Partnership approaches will be encouraged so there is shared learning and not only transfer of experience from outside the region into the region but also transfer of experience between MRC Countries and between areas within countries of higher and lower capacities.
Increased ownership and integration with national processes through continuous transfer of activities to Member Countries	Capacity building includes development and implementation of a plan to transfer knowledge and skills and also build a “platform” for knowledge and skills transfer that is sustainable. Outputs will be implemented in a manner that maximizes country ownership, responsibility and accountability. A continued focus on adapting activities towards improved implementation of MRC Core functions will follow up on this aspect, with additional elements if necessary. Here also it important to have a clear definition of the responsibilities of the roles and responsibilities of NMCS and Line agencies.
Partnerships approach including other national and regional organisations supporting LMB governments	A range of regional organisations and development partner programmes support capacity building of the LMB countries on a long-term basis As described in Section 1; improved collaboration with regional water, energy and environment organisations and increased outreach to discuss knowledge gaps and joint activities to fill those gaps will be pursued. Because sustainable hydropower is a relatively new concept, and because the MRC has assumed a leadership role in this aspect (to a considerable extent), these engagements will be oriented to bringing other national and regional organizations into the ISH outputs where that adds value.
Emphasising the benefits of sustainable hydropower for all stakeholders	Legitimacy of the concept of sustainable hydropower and the MRC role to help Member Countries deliver sustainable outcomes in hydropower, depends on the relevance of the ISH to meet stakeholder expectations. The hydropower sustainability assessments at the project and basin/sub-basin levels and coherent linkage of the ISH outputs to matters of importance to MRC stakeholders will provide demonstration of benefits. Valuation of the impact of hydropower management (existing projects) and future development proposals (new projects) on poverty alleviation strategies is particularly important.
Methods and activities adapted to the changing Mekong context to maintain high relevance	All ISH Outcomes contribute to ensuring that the ISH databases and information are up-to-date and methodologies are not only relevant to realities of today, but also are “organic”, grow and dynamic. This is in the sense they continuously seek new understanding, invite cooperation and bring in evolving good practice. This will also contribute to the overall relevance of the Initiative and its cross-cutting purpose of linking different

Sustainability factors	How sustainability will be enhanced
	sector interests / information to decisions traditionally taken in the hydropower “sphere” alone, and otherwise lowering barriers in information flow and dialogue needed to promote new behaviours.
Adequate resourcing of ISH related activities to deliver the outputs	Hydropower and the decision-making around it are highly significant to the 1995 Mekong Agreement and its spirit. The ISH budget and activity level for 2011-2015 has been maintained at average funding levels in the 2008-2011 work plan, and not increased. This reflects two facts i) the period of focusing on development of new tools should be followed by a focusing on application the tools, and ii) the need to respond in due course to the gradual change towards long-term core functions and a much leaner Secretariat.
Efficient implementation at MRCS level implementing MRC long-term core functions	The ISH was formulated in 2008-2009 and therefore it is largely up-to-date and reflects the 2011-2015 focus on key activities supporting the 1995 Mekong Agreement as well as the new MRC long-term core functions (as discussed previously). The Initiative design includes provisions for further adjustments for efficient implementation of the MRC core functions.

3.5 RISKS AND RISK MANAGEMENT

The Design and Monitoring (LFA) Framework in Annex 1 identifies the risks associated with the ISH objectives, outcomes and outputs. The risks, and the success of risk management strategies, will be evaluated as part of the annual performance reporting on the ISH and the adjustments to implementation approaches. Corrective actions will be taken in connection with normal MRCS management mechanisms. This aspect will be reported on and discussed by MRCS Management and the Regional Advisory Committee, as noted in section 4 of this document.

4 MANAGEMENT AND IMPLEMENTATION OF THE INITIATIVE

4.1 IMPLEMENTATION STRATEGY

The ISH implementation and stakeholder engagement strategy is based on cooperation among a triangle of partners (MRC, NMC/NMC Secretariat and line ministries / agencies) delivering outputs, engaging with their respective stakeholders, and cooperating with regional bodies and other development partners.

Figure 6 conceptually illustrates the implementation partners for ISH outputs 2011-2015, which is the current approach used in 2010.

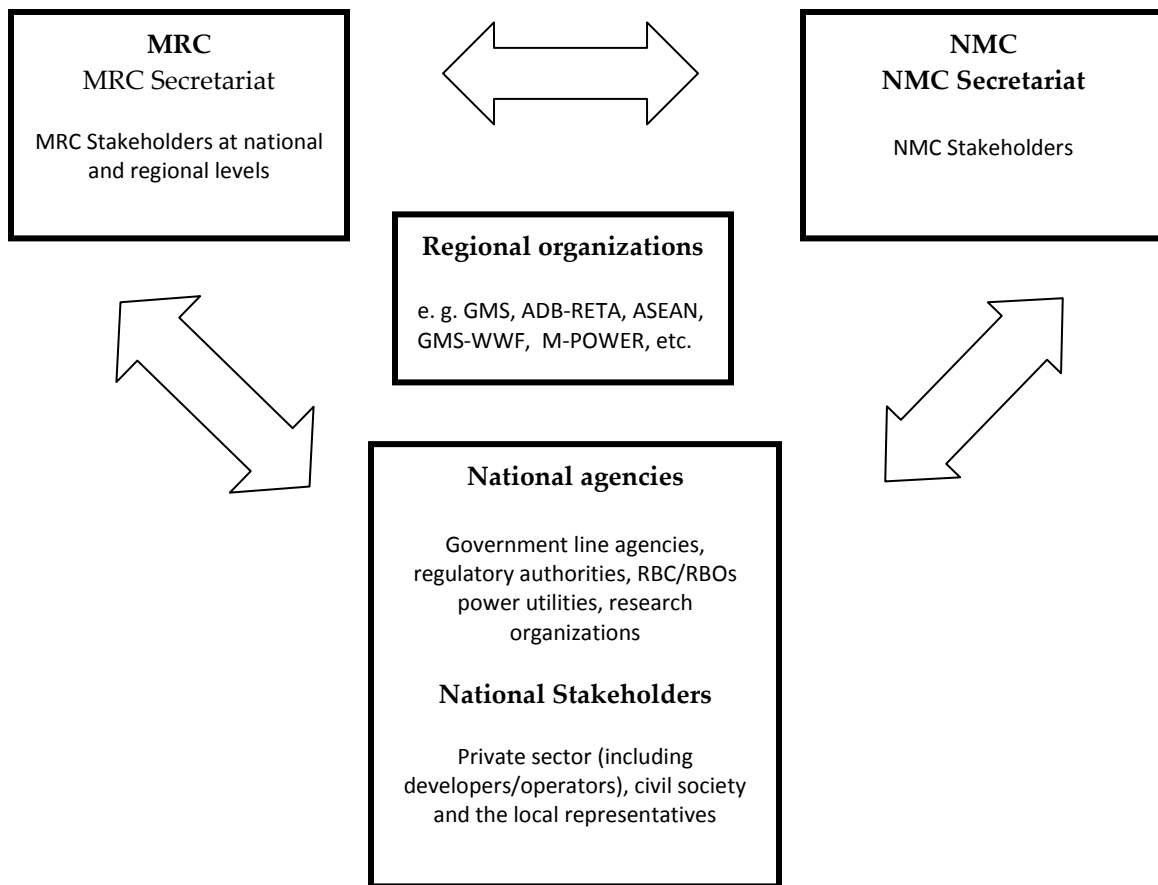


Figure 6: Implementation partners of the MRC ISH

This overall model would work differently according to the output and type of activity. In general the roles would be the normal roles and functions as summarized below:

NMC	Advisory body at the national level in each country
NMCS	Coordinating role
Line agencies	Implementing agency
MRCS	Regional coordination, guidance, reporting, capacity building and fund raising

- NMCS play a coordination role in their respective countries, in particular for output related workshops and capacity building with related stakeholder engagement, consistent with normal NMC/NMCS roles.
- National line agencies play a primary role in implementing outputs (e.g. conducting sustainability assessments, applying good practice within the country planning and regulatory systems) and liaising with the private sector developers / operators on the adoption and use of good practice.
- MRCS / ISH will facilitate the various MRCS regional roles, as noted, such as coordination, guidance, technical assistance, regional synthesis, capacity building and fund raising.
- Regional organizations will continue to be engaged to support knowledge development around the distillation of good practice, bringing to the table experience and good practice from other regions, and the dissemination of methodologies/tools most relevant, with related capacity building to use them.

The wider strategy for stakeholder engagement is the ISH will work in cooperation with other MRC Programmes for multi-stakeholder partnerships and outreach. This will avoid confusion, duplication and capture synergies in engaging with key basin and sub-basin stakeholders of MRC.

The operational strategy is to progressively scale-up ISH outputs on a priority basis, as ISH staffing levels in MRCS are increase to the approved ISH complement by the end of 2010, or early 2011. ISH would then function at this level through 2011-2015, reflecting the need to stay lean and leverage outcomes.

4.2 INSTITUTIONAL AND MANAGEMENT ARRANGEMENTS

The ISH is managed and executed by the MRC through its Secretariat and implemented through the relevant line agencies in the four Member Countries, coordinated by the four NMC Secretariats and engaging the private sector, civil society organizations and experts where appropriate. Advice and guidance is provided by the regional mechanisms described in section 4.2.2 (e.g. the regional Advisory Committee and Technical Advisory Group).

4.2.1 Institutional Arrangements

□ Regional level

The four countries differ in institutional arrangements and thus there is variation in the arrangements for the NMC Secretariats to fulfil their roles. The general arrangement includes national ISH Co-ordinator as the focal point for coordination and management of implementation of ISH outputs at the national level. They assist in engaging with the national line agencies, experts and NMC stakeholders and help to ensure that activities are implemented in a way that suits the country needs and context.

□ National level

National level working groups/technical bodies with members from national line agencies and the NMC Secretariats will be established for key outputs as needed covering areas such as update of the MRC Hydropower database hydropower, implementing sustainability assessments in a basin/sub-basin perspective with an “assessment team approach”, and work on regional and transboundary aspects needed to support the implementation of ISH outputs, provide continuity and facilitate maximum uptake by the Member Countries. The increased focus on sustainability assessment requires a specific effort to ensure engagement of relevant line and regulatory agencies, developers / operators, and RBO/RBCs and also working with other MRC Programmes alongside NMCS to ensure a multi-stakeholder and partnership orientation.

□ **MRC Secretariat**

The ISH located within the Planning Division of the MRC Secretariat has overall management responsibility for the implementation of the ISH in 2011-2015. Co-ordination with other divisions and sections of the Secretariat is ensured through the internal MRCS coordination mechanisms, e.g. the programme coordination meetings. As a cross-cutting initiative, the ISH is closely coordinated with other Planning Division Programme including the BDP and IWRM-P in implementing the core River Basin Management functions of the MRC, while at the same time, working with the sector programmes (e.g. EP, FP, NAP, FMMP and IKMP).

4.2.2 Initiative Management Arrangements

The organisational arrangement of the ISH within MRCS is presented in Annex 7.

The Director of the MRC Planning Division has overall responsibility. The ISH Unit Manager / task leader supervises and manages the activities and outputs on a day-to-day basis and ensures that planning, implementation and reporting on activities is co-ordinated between the Secretariat and the NMC Secretariats and line agencies. The ISH manager is supported by a riparian staff of up three persons and an internal ISH International Consultant. TORs for key riparian ISH positions are included in Annex 8.

□ ***Regional management mechanisms***

The regional organisation and management includes a high level Advisory Group and efficient use of coordination mechanisms within the MRC.

- **Regional Advisory Committee (AC) on ISH:** In 2009, TOR for the high-level AC was prepared and regional Permanent Members were nominated by NMCS. The Advisory Committee mechanism will provide advice and directional guidance on the strategic outlook for hydropower sustainability in the Mekong, the strategic orientation of the ISH, the 2011-2015 Initiative design and subsequent Annual Work Plans and evaluation of ISH performance and effectiveness. Other permanent members of the AC include representatives of development partners helping to finance the ISH in 2011-2015. Ad Hoc Members and Observers from the private and civil society sectors, Formal Dialogue Partners, and regional / international specialists may be invited to specific AC meetings depending on the Agenda. The first AC meeting will be held in October 2010. Thereafter, semi-annual meetings are planned. TOR for the regional Advisory Committee is provided in Annex 4.⁵⁸
- **Regional Technical Review Group (TRG) on ISH:** Set up in 2009, consisting of representatives of NMCS and line agencies (3 persons per Member country) to technically review key ISH outputs. This will continue the successful method of cooperation that was achieved in 2009-2010 on the MRC Preliminary Design Guidance (PDG) of proposed LMB mainstream dams, the design of tributary significance studies; consideration of the international Hydropower Sustainability Assessment Protocol (SAP); and, the formulation of the basin/sub-basin rapid hydropower sustainability assessment tool (RSAT). TRG

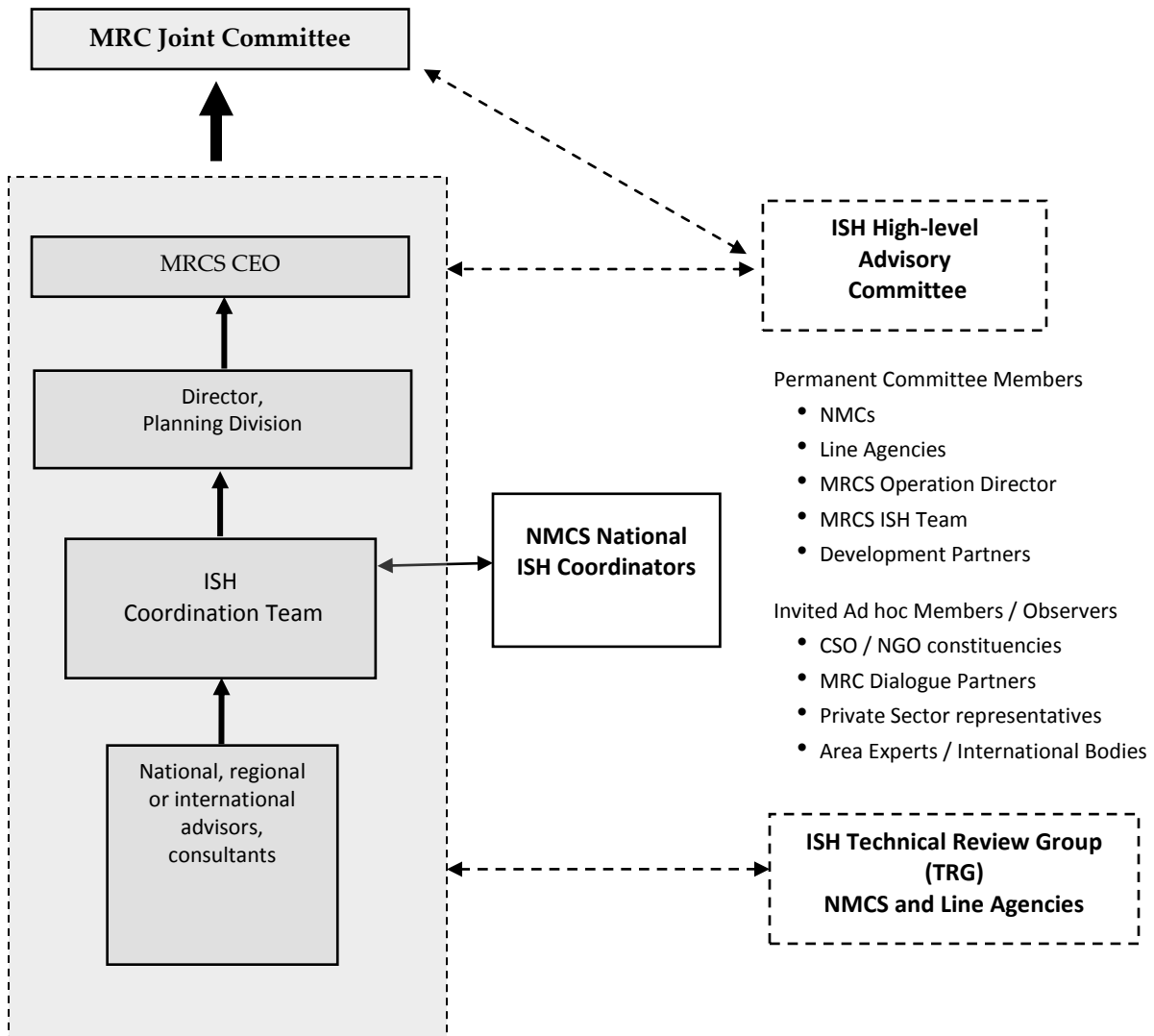
⁵⁸ Draft TOR shared with MRC Joint Committee Members, for (i) comment on TOR; and (ii) nomination of country representatives. Due date for reply – 15 May 2009.

membership is expanded in certain meetings depending on the need for additional multi-disciplinary expertise, such as done to review progress trialling hydropower sustainability assessment tools in November 2009 and June 2010. TOR for the regional Advisory Group are provided in Annex 5.

- **Regional / National ISH Coordinator Network (NCN):** Set up in 2009, consisting of ISH coordinators based in the NMCS. These coordinators assist in day-to-day, and “as needed” with dialogue around ISH outputs, and with the coordination of information flows between the MRCS and NMCS/line agencies and other NMC stakeholders. One initial focus was to finalize the ISH Work Plan. TOR for the regional Advisory Group are provided in Annex 5.

Figure 7 shows the institutional setting of the ISH in MRC, with lines of reporting.

Figure 7: Institutional Setting for the Initiative (ISH)



The decisions on the ISH annual work plans will be made by MRC management in normal reporting to the MRC Joint Committee. This is important because MRCS is responsible to the Joint Committee to ensure the strategic, effective and practical cross-sector integration of all ISH outputs with other MRC Programme work (i.e., the ISH being a cross-cutting initiative working with, and through other MRC Programmes).

The Advisory Committee will have two channels to offer advice and guidance to MRC Bodies (i) directly to MRCS Senior Management, and (ii) directly to the MRC Joint Committee. This is shown in Figure 7 and also noted in the text in the AC Terms of Reference in Annex 4. Minutes of AC meetings would be routinely provided to MRC Joint Committee Members for information or consideration.

□ **Other MRCS management arrangements:**

- **ISH Internal Coordination Meetings**, where national ISH coordinators, PD Division Director, ISH Manager, staff and resident consultant discuss output progress and implementation actions.
- **MRCS Senior Management Meeting:** The CEO and the MRC Division Directors will provide the overall direction and oversight for ISH implementation at MRCS level. They are responsible for monitoring of progress towards achieving the outcomes, management of risks, overall coordination within MRCS and assessment of suggestions to adjust the implementation from the AC and NMC/NMCS and, through the CEO for briefing and progress reports to the MRC Joint Committee and the MRC Council.
- **The MRCS Programme Coordination Meetings** are institutionalised through the Technical Coordination Advisor in the Office of the CEO responsible for regular meetings on aspects of coordination and rolling out of specific organisational policies e.g. the performance monitoring system. Programme Coordination meetings will be used as the overall mechanism for integration with the key MRC Programmes particularly with regards to moving the operation towards the core River Basin Management function.

□ **Required Resources and inputs**

The required resources and inputs to the ISH include the following:

- **MRCS Staff time** – this includes both the full-time staff as well as the required technical staff inputs associated with all ISH outputs and management reporting and monitoring.
- **Consultancies** – Regional and international consultant companies and individual consultants are contracted to undertake specific tasks. These include studies, impact and vulnerability assessments, preparation of guidelines, training and mentoring. There are two types of consultants:

Expert Roster: With the riparianisation process, temporary expert support is envisaged through increased recruitment of short-term consultants for specific technical, policy, mentoring and Initiative management support tasks. In this respect, subject to MRCS contracting procedures, the ISH will established a roster of pre-qualified regional and international experts in hydropower policy and planning disciplines who may be drawn upon, on an “as required basis” up to pre-set limits. This will enable rapid response to specialized and “un-planned” demands on the ISH, recognizing the dynamic nature of the work.

Normal consultancies: Regional and international consultant companies and individual consultants are contracted to undertake the specific planned outputs as in standard practice. These include studies, impact and vulnerability assessments, preparation of guidelines, and training.

- **Consultation and coordination meetings** – consultation meetings constitute one of the principal forms of discussing and disseminating the results and future challenges. These include the annual meeting as well as the regular consultations and workshops related to the initiative activities. It also covers the expenses related to technical, partner and development partner coordination.
- **Training events** – these include the expenses related to training courses, exchange visits, technical study visits.
- **Publications** – monitoring reports, study reports, case studies, guidelines and manuals and inputs to MRC publications such as the State of the Basin report
- **Communication** – publicity material, interactive website, media events, newsletter, journal articles
- **Travel and logistics** associated with meetings, training events
- **Documentation and secretariat expenses** – covering the costs of preparing documentation for dialogue, presentations, meetings and the running of the ISH.

4.3 BUDGET AND FUNDING STATUS

The budget estimate for the ISH in 2011-2015 is based on experiences of implementation of ISH outputs to date, the activities included in the design and monitoring (LFA) framework (Annex 1) that are envisaged to achieve the ISH Outputs and outcomes, and the longer-term prospects of moving towards a leaner Secretariat focusing on core functions of monitoring and reporting supporting the Member Countries in applying developed methods and tools and working with stakeholders at all levels to adopt and apply good practice.

4.3.1 Budget Requirement for 2011-2015

The budget estimate for the ISH is US\$ 12.5 million for the five year implementation period 2011-2015. This is equivalent to the \$US 2.5 million per year, which is the average annual budget in the 2008-2011 Workplan approved by the Joint Committee.

Details of the budget requirement are in:

Annex 2– Showing the breakdown of the budget requirement by the MRCS budget categories

Annex 3 – Showing the breakdown of the budget requirement by ISH Outcome and output

The budget shows that:

- Outcome 1, dealing with management of the initiative, dialogue, awareness raising and communication accounts for 26% for the budget requirement.
- Outcome 2, dealing with capacity building and knowledge base support accounts for about 12% of the budget requirement. (see comment below on capacity building in all outcome)
- Outcome 3, dealing with regional planning support accounts for about 34% of the budget requirement.
- Outcome 4, dealing sustainability assessment and Innovative financing accounts for about 26% of the budget requirement.

It is important to note capacity building is included in outputs such as implementation of SEAs and sustainability assessment tools (in particular) in Outcomes 3 and 4. It is noted also that Annexes 2 and 3 show the allocated

funding requirement in relation to two funding scenarios (i) the current scenario of committed and pledged development partner financial contributions, and (ii) the remaining amount where further fund raising is needed. This allocation shows what outputs can be delivered with current funding, and what outputs would be deferred to when the funding gap is filled, or run at a reduced level of effort based on what is feasible and practical.

4.3.2 Funding Status for 2011-2015

Committed funds are available from the Government of Belgium (2010-2013). Pledge funds are under discussion for ongoing support from the Government of Finland (2007-2014). The funding picture is shown in Table 11 indicating a funding gap at US\$ 6.15 million.

Table 11. ISH funding for 2011-2015 committed and pledged by 2010

Funding committed and pledged	USD Equivalent
Government of Belgium (2010-2012)	2,760,000
Government of Finland (to 2014)	3,750,000
Government of Germany (under discussion) ⁵⁹	-
Total – committed and pledged	6,350,000
Funding gap	6,150,000
Note: European Partner funds are in Euros. USD equivalents vary over time.	

Discussions are ongoing with development partners who supported the ISH formation and initial operation (2007-2010) including the ASEAN-Japan/ASEAN and the Government of Germany. The general approach for the ISH has been development partners contribute on a cost-share basis to the JC approved ISH work plan activities. ISH then reflects any special orientation or focus requested by individual development partners.

Other ongoing discussions of a financial nature also include discussions with the MRCS's ECSHD Partners (ADB, WWF). Any such funds are not provided for the ISH budget, but rather they fund joint activities, where the ISH may either co-finance or provide other support such as facilitation MRC Member country participation.

4.4 ANNUAL WORKPLANS

An annual work plan will be prepared for each calendar year in 2011-2015 in accordance with MRCS procedures. In 2011-2012 emphasis is placed on the “funded” outputs that are shown in Annexes 2 and 3 (these are shown under the column of the committed and pledged budget).

As note previously in this document, outputs centred on five areas of ongoing MRC/ISH support to Member Countries to advance regional and transboundary cooperation will be prioritized in the 2011 and 2012 workplans. These are repeated here for clarity and convenience, namely:

- i. Enrichment and continuous, collaborative update of the MRCS Hydropower Database, especially to incorporate more parameters to measure sustainable outcomes and needed actions;

⁵⁹ 2.5 million Euros provisionally

- ii. Application hydropower sustainability assessment tools, around which awareness raising, shared learning and capacity building can be effectively delivered (in particular basin/sub-basin hydropower sustainability assessment tools);
- iii. Elaboration and support introduction of mechanisms for benefit sharing and innovative finance related to sustainable hydropower outcomes in planning / regulatory systems.
- iv. Ensuring agreed follow-up on cross-cutting recommendations emerging from the SEA of proposed LMB mainstream dams, working with and through MRC Programmes and regional partners.
- v. Cooperation with China on sustainable hydropower themes initiated in 2009-2010 with Ecosystem Study Commission for International Rivers (ESCIR) through SEA processes that have proved highly constructive for data exchange, site visits and confidence building.

This reflects the fact there is still a funding gap for 2011-2015.

4.5 MONITORING AND REPORTING

Monitoring and reporting will follow the established MRCS systems and procedures. Three levels, or areas of monitoring and reporting for the ISH in 2011-2015 relate to:

1. **Status of progress introducing hydropower sustainability considerations in the Mekong** – this aspect covers help to Member Countries to measure and monitor progress being made, such as increasing levels of awareness, steps taken to provide enabling policy and regulatory frameworks, and translation of policy into practice. It will also seek to measure stakeholder perceptions of the achievement of sustainable outcomes at project and basin / sub-basin levels.
2. **Status of progress implementing the 1995 Agreement, relevant to sustainable hydropower:** – this aspect covers the extent to which the MRC itself, through various ISH outputs and otherwise, has influenced the introduction hydropower sustainability considerations into policy and practice, in fostering cooperation, and in meeting the expectation of MRC stakeholders.
3. **Performance status of ISH implementation** – this aspect covers monitoring the process of implementing the ISH, the provision of deliverables against set targets at the output level, the functioning and contribution of the Advisory Committee, TRG and ISH National Coordinators in NMCSs with respect to their TOR, the adequacy of ISH reporting, status of MRCS internal staffing, ISH funding, and the sustainability of the overall work of the ISH.

In addition to regular reporting through MRCS management systems, an annual performance assessment report will be prepared for the ISH Advisory Committee. It will be submitted for consideration by the MRCS Senior Staff prior to submission to the ISH Advisory Committee.

Indicators used for reporting with reference to the above:

- Indicators for ISH performance at objective, outcome and outputs level included in the Design and Monitoring (LFA) Framework (Annex 1) developed in line with the methodologies and principles of the MRC Performance management system.
- Indicators at MRC level aimed at monitoring the performance of the MRC Strategic Plan 2011-2015 implementation.
- Indicators for the performance, sustainability status, key events, and milestone trends of the ISH.

The following reports will be produced by the ISH to support management and monitoring of the performance:

1. The annual work plan
2. Six-monthly progress reports outlining what has been done in the past six months, how much has been spent on which activities, assessment of changes in progress and performance indicators at output level, and issues and problems that have arisen. An update of the annual work plan to reflect adjustments necessary for the next six months will be included in the mid-year progress report. This report will be submitted for consideration by the MRCS Senior Staff before being submitted to the ISH development partners.
3. The annual performance assessment report focusing on the impacts of the ISH on achieving the sustainability of basin hydropower developments and Initiative achievements and performance at objective and outcome level, assessment of risks and assumptions and by reflecting on the progress propose any necessary adjustments to the implementation. This report is targeted at serving the management information needs of the ISH Advisory Committee and the senior strategic coordination at MRCS. As noted, this report will be submitted for consideration by the MRCS Senior Staff prior to submission to the Advisory Committee.

An independent mid-term review and evaluation of the ISH is planned for 2013.

5 LIST OF REFERENCES

MRC (2009). MRC Stakeholder engagement policy. Draft. Mekong River Commission, Vientiane Lao PDR.

MRC (2010). State of the Basin Report 2010. Mekong River Commission, Vientiane Lao PDR.

MRC ISH – Initiative management and reporting documents.

- ISH Work Plan (2008-2011) issued in draft in 2008 and final in August 2009
- ISH Implementation Plan (2009-2010) issued in March 2010
- ISH Programme Initiation Note (PIN) for 2011-2015 updated in March 2010
- Various Development Partners Reports (Semi-Annual and Annual)

ISH Output Reports

MRC ISH SEA of Proposed Mainstream Schemes in the Lower Mekong

- Inception Report (5-Volumes) issued in October 2009
- Baseline Report issued in Dec 2009
- Impact Report (Opportunities and Risks) issued in April 2010
- Avoidance, Mitigation and Enhancement Report – draft issued in June 2010

Basin-wide hydropower sustainability Assessment tool for basin / sub-basin scale, Rapid Sustainability Assessment Tool (RSAT Version 3), issued August, 2010

Annex 1. Logical Framework Analysis – Design and Monitoring for 2011-2015

Design Summary	Indicators	Sources of Data	Risks
Goal:			
Cooperation among Member Countries in optimizing the contribution of sustainable forms of hydropower to national development policies, consistent with implementation of the 1995 Mekong Agreement.	1. Extent that hydropower sustainability considerations are integrated with IWRM planning and hydropower practices in the LMB.	Hydropower sustainability assessments conducted by the MRC Bodies involving national agencies at sub-basin basin and project-levels.	<ul style="list-style-type: none"> Failure to communicate the rationale and steps to advance hydropower sustainability in the Mekong context.
Programme / Initiative Objective			
<p>Decisions concerning the management and development of hydropower in the Mekong are placed in a river basin planning and management perspective applying IWRM principles.</p> <p>MRC and key stakeholders actively cooperate to bring sustainable hydropower considerations into the planning systems and regulatory frameworks of Member Countries, and into project-level planning, preparation, design, implementation and operation practices.</p>	4. Extent to which national agencies bring sustainable hydropower considerations into national planning systems and regulatory frameworks.	<ul style="list-style-type: none"> MRC and ISH performance reviews and reports. Periodic consultation with line-agencies agencies and stakeholders. 	<ul style="list-style-type: none"> Failure to communicate effectively and respond to stakeholder expectations
	5. Extent to which accepted 'good practice' is reflected in the design, implementation and operation of LMB hydropower projects.	<ul style="list-style-type: none"> MRC and ISH performance reviews and reports. Sustainability assessments of policy / legal frameworks done by line agencies facilitated by MRC 	<ul style="list-style-type: none"> Failure to develop capacity and use participatory processes appropriate to each country
	6. Stakeholder perceptions of the value the ISH adds as a cross-cutting initiative relevant to the MRC's role.	<ul style="list-style-type: none"> MRC and ISH performance reviews and reports. Stakeholder interviews 	<ul style="list-style-type: none"> Failure to communicate what the ISH is doing
Intermediate Outcomes (IO)			
<p>IO-1. A demonstrated increase in awareness of sustainable hydropower and its rationale, increased dialogue among the key stakeholder interests and partnerships being formed to introduce sustainable considerations into LMB hydropower practices.</p>	1.1 Extent to which increased awareness of and commitment to sustainable hydropower is reflected in LMB stakeholder dialogue.	<ul style="list-style-type: none"> Review of stakeholder documentary outputs and proceedings of events. 	<ul style="list-style-type: none"> Failure to contextually define sustainability capturing stakeholder perceptions
	1.2 Level of request for information and knowledge outputs from MRC bodies and	<ul style="list-style-type: none"> MRC Reports Periodic stakeholder meetings and solicited feedback 	<ul style="list-style-type: none"> Failure to provide relevant timely information responsive to stakeholder needs

Design Summary	Indicators	Sources of Data	Risks
	line agencies.		
	1.4 The level and quality of coverage of sustainable hydropower in the LMB in regional and national media.	<ul style="list-style-type: none"> • MRCS media monitoring. 	<ul style="list-style-type: none"> • Failure to engage with the media such that the sustainability message is lost
	1.5 Extent to which multi-stakeholder partnerships form for policy to project planning exercises.	<ul style="list-style-type: none"> ▪ Reports of ISH National coordinators 	<ul style="list-style-type: none"> • Insufficient time for dialogue processes to establish the trust for genuine partnership approaches.
IO-2. Demonstrated improvement in technical capacities of MRC and prioritized national agency staff in hydropower data systems and use of information needed to advance sustainable hydropower considerations.	2.1 Extent to which key stakeholders use MRC information and guidance in their hydropower planning and development work.	<ul style="list-style-type: none"> • ISH progress reports 	<ul style="list-style-type: none"> • Multi-stakeholder dialogue breaks down on ideological positions
	2.2 Level of systematic knowledge sharing between relevant agencies in the Member countries.	<ul style="list-style-type: none"> • Periodic consultations with stakeholders and surveys 	<ul style="list-style-type: none"> • Failure to support a critical mass of regional dialogue
	2.3 Extent to which improved developer/operator information and capacity is reflected in improved project design and operation practices.	<ul style="list-style-type: none"> • Independent assessment using sustainability assessment tools 	<ul style="list-style-type: none"> • Lack of communication-based assessment to address critical difference and information gaps
IO-3. Sustainable hydropower aspects are more systematically and demonstrably incorporated into sector, sub-basin and Mekong regional planning systems.	3.1 Extent to which SEAs are undertaken by power sector agencies and sub-basin actors and reflect sustainable hydropower considerations.	<ul style="list-style-type: none"> • Review of documentation on planning studies 	<ul style="list-style-type: none"> • SEAs are not legally required or not undertaken when legally required • Reluctance to change past behaviour.
	3.2 Extent to which the need to plan and coordinated hydropower development and operation in sub-basins is recognized.	<ul style="list-style-type: none"> • Review of documentation on sub-basin planning and management 	<ul style="list-style-type: none"> • Limited concern for sub-basin planning and management in LMB countries
	3.3 Extent to which hydropower projects optimized for all water uses in planning processes and at operation stages.	<ul style="list-style-type: none"> • Analysis of trends in agency planning studies and project feasibility studies. 	<ul style="list-style-type: none"> • Example policy and management tools are not available in a form NMCs/line agencies can readily use

Design Summary	Indicators	Sources of Data	Risks
<p>IO-4a). Hydropower sustainability assessment tools at the project and sub-basin level are in place to systematically measure and assess progress made with sustainable hydropower in the LMB.</p> <p>IO-4b.) Innovative financing mechanisms especially benefit sharing are increasingly evaluated and introduced for LMB hydropower projects.</p>	<p>4.1 Proportion of projects in MRC hydropower database on which hydropower sustainability assessment protocol (SAP) has been undertaken. Stakeholder perceptions of quality and value added.</p>	<ul style="list-style-type: none"> • MRC and line agency reports • Stakeholder evaluations as part of SAP assessments 	<ul style="list-style-type: none"> • Multi-stakeholder consensus on hydropower sustainability assessment tools is not achieved •
	<p>4.2 Outcome from basin-wise rapid assessment / dialogue tools as perceived by (i) sub-basin basin planning entities (ii) hydropower developers and operators, and (iii) relevant regulatory agencies.</p>	<ul style="list-style-type: none"> • Stakeholder evaluation as part of basin-wise assessments / dialogue facilitation 	<ul style="list-style-type: none"> • Multi-stakeholder consensus on hydropower sustainability assessment tools is not achieved
	<p>4.3 Extent to which innovative financing mechanisms including benefit sharing are piloted and introduced by Member Countries.</p>	<ul style="list-style-type: none"> • MRC and line agency reports 	<ul style="list-style-type: none"> • Detractors prevail in arguing that nothing is required or possible
<p>IO-5. ISH is effectively managed and staffed and functions as a cross-cutting initiative with other MRC Programmes.</p>	<p>5.1 Achievement of approved staffing levels functioning of the technical Review Group (TRG) and Hydropower Advisory Committee (HAC) and the ISH Coordinator network.</p>	<ul style="list-style-type: none"> • MRC and ISH Progress reports 	<ul style="list-style-type: none"> • Development partner funding not secured.
	<p>5.2 Proportion of ISH outputs produced to the expected level of quality.</p>	<ul style="list-style-type: none"> • Self-assessment by members of the Hydropower Steering Committee 	<ul style="list-style-type: none"> • The Hydropower Steering Committee is not established or fails to meet regularly or function effectively.
	<p>5.3 Degree to which key ISH stakeholders feel the ISH responds to their needs.</p>	<ul style="list-style-type: none"> • Solicited feedback from MRC bodies and NMCs 	<ul style="list-style-type: none"> • Development partner contributions to cross-cutting initiatives the ISH plans with other MRC Programmes do not materialise
Outputs			
<p>IO-1. A demonstrated increase in awareness of sustainable hydropower and its rationale, increased dialogue among the key stakeholder interests and partnerships being formed to introduce sustainable considerations into LMB hydropower practices.</p>			
<p>O1.2a: Dialogue Facilitated: Ministerial Briefings, Dialogue with Developers and</p>	<ul style="list-style-type: none"> • Number / quality of awareness-raising outputs (e.g. dialogues facilitated; workshops held, media campaigns 	<ul style="list-style-type: none"> • MRC and ISH Progress reports • Periodic stakeholder consultations 	<ul style="list-style-type: none"> ▪ As above in IO-1

Design Summary	Indicators	Sources of Data	Risks
Financiers, Multi-Stakeholder Forum, Dialogue Partners (ISH, all Programmes)	etc).	and feedback	
O1.2b: Raised Awareness of Risks & Opportunities of Hydropower Development (ISH)	<ul style="list-style-type: none"> Stakeholder feedback on quality of main MRC awareness-raising outputs. 	<ul style="list-style-type: none"> Periodic stakeholder consultations and feedback 	<ul style="list-style-type: none"> As above in IO-1
O1.2c: Improved Communication and Dissemination of MRC Outputs (ISH and ICCS)	<ul style="list-style-type: none"> Stakeholder feedback on ISH product dissemination and website accesses. 	<ul style="list-style-type: none"> Periodic stakeholder consultations and feedback 	<ul style="list-style-type: none"> As above in IO-1
O1.2d: Communication products for LMB Stakeholders (English/ local language versions) (ISH, ICCS)	<ul style="list-style-type: none"> Number / quality of products disseminated. 	<ul style="list-style-type: none"> Periodic stakeholder consultations and feedback 	<ul style="list-style-type: none"> As above in IO-1
O1.3: Hydropower Technical Inputs Provided to the PNPCA Process (ISH and ICCS)	<ul style="list-style-type: none"> Demands made and quality of inputs provided. 	<ul style="list-style-type: none"> PNPCA Reporting 	<ul style="list-style-type: none"> As above in IO-1
IO-2. Demonstrated improvement in technical capacities of MRC and prioritized national agency staff in hydropower data systems and use of information needed to advance sustainable hydropower considerations.			
O2.1: Technical assistance provided to hydropower developers on safeguards and compliance monitoring.	<ul style="list-style-type: none"> Relevance of strategy to engage with line agencies and hydropower entities and degree of cooperation achieved. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-2
O2.2a: The MRC hydropower project database and thematic knowledge base is expanded and disseminated to intended users.	<ul style="list-style-type: none"> Feedback from users on quality of data and value added use of knowledge bases. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-2
O2.2a: Improved Access to Hydro-meteorological and Operational Data of Hydropower Developers (ISH, IKMP, BDP)	<ul style="list-style-type: none"> Feedback from users on quality of data and value added use of knowledge bases. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-2
O2.3: Improved Environmental Baseline Information for Hydropower Planning (ISH, PP, IKMP)	<ul style="list-style-type: none"> Feedback from users on quality of data and value added use of knowledge bases. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-2
O2.4: Capacity Building Provided to Line Agencies for Implementation of SEAs/CIAs, Environmental and Social Policy Implementation, and Monitoring of Hydropower Project Development (ISH, EP, ICBP)	<ul style="list-style-type: none"> No. of stakeholders assessed as having achieved capacity-strengthening targets. No. of stakeholders reporting having increased their capacities increased. 	<ul style="list-style-type: none"> Assessment of national agency responses to MRC outputs. Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-2

Design Summary	Indicators	Sources of Data	Risks
I.O 3: Sustainable hydropower aspects are more systematically and demonstrably incorporated into sector, sub-basin and Mekong regional planning systems.			
O3.1a: SEA and Regional Macroeconomic Evaluation of Proposed Mainstream Dams in LMB (ISH, All).	<ul style="list-style-type: none"> Stakeholder assessment of the quality of the SEAs and use of recommendations. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.1b: Multi-year Follow-up to Recommendations of the SEA of proposed LMB mainstream dams (ISH, All)	<ul style="list-style-type: none"> Number / quality of follow-up activities that respond to SEA recommendations 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.1c: Sub-Basin Hydropower SEAs and CIAs undertaken as Input to BDP(WG)	<ul style="list-style-type: none"> Stakeholder assessment of the quality of and use of studies. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.1d: Ongoing technical cooperation with China on hydropower sustainability concerns (ISH)	<ul style="list-style-type: none"> Scale and number of interactions and assessed value added in two-way cooperation and knowledge sharing 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.2: Scoping of Potential for Small-Scale Hydropower Undertaken (ISH)	<ul style="list-style-type: none"> Guidance developed Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.3a: Specifications for navigation passage in hydropower projects (NP)	<ul style="list-style-type: none"> Number / quality of agencies supported and level of support provided per agency. Level of response of agencies to the support provided. 	<ul style="list-style-type: none"> ISH Progress Reports Reviews of agency documentary products. 	<ul style="list-style-type: none"> As above in IO-3
O3.3b: Guidance Developed for Mitigation Measures for Fish Migration (FP)	<ul style="list-style-type: none"> Guidance developed Scale and type of dissemination outputs achieved. Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ISH Progress Reports Periodic stakeholder consultations 	<ul style="list-style-type: none"> As above in IO-3
O3.4: Multipurpose functionality of hydropower projects identified.	<ul style="list-style-type: none"> Study conducted 	<ul style="list-style-type: none"> Programme Progress Reports 	<ul style="list-style-type: none"> As above in IO-3
IO-4a) Hydropower sustainability assessment tools at the project and sub-basin level are in place to systematically measure and assess progress made with sustainable hydropower in the LMB.			
I.O 4b) Innovative financing mechanisms especially benefit sharing are increasingly evaluated and introduced for LMB hydropower projects.			
O4.1a: Financing Mechanisms for Sustainability Measures for Proposed Mainstream Dams Identified (ISH)	<ul style="list-style-type: none"> Number / quality of studies conducted. Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ISH Progress Reports 	<ul style="list-style-type: none"> As above in IO-4

Design Summary	Indicators	Sources of Data	Risks
O4.1b: Sustainability Incentives within Market and Regulatory Frameworks Introduced (ISH)	<ul style="list-style-type: none"> ▪ Number / quality of studies conducted. ▪ Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ▪ ISH Progress Reports 	<ul style="list-style-type: none"> ▪ As above in IO-4
O4.1c: Benefit-Sharing Mechanisms Elaborated at Regional, National and Community Levels and Network Established (ISH)	<ul style="list-style-type: none"> ▪ Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ▪ ISH Progress Reports ▪ Periodic stakeholder consultations 	<ul style="list-style-type: none"> ▪ As above in IO-4
O4.2a: Environmental Considerations for Sustainable Hydropower Development (ECSHD) hydropower sustainability assessment tools tested (ISH, EP)	<ul style="list-style-type: none"> ▪ Project-specific sustainability assessment protocol accepted ▪ Basin-wise rapid assessment tool developed and tested ▪ Responsiveness of stakeholders to the disseminated outputs 	<ul style="list-style-type: none"> ▪ Programme Progress Reports ▪ Periodic stakeholder consultations 	<ul style="list-style-type: none"> ▪ As above in IO-4
O4.2b: Targeted application of Hydropower Sustainability Assessment /Dialogue tools at basin / sub-basin and project levels	<ul style="list-style-type: none"> ▪ Targeted implementation of the tools ▪ Responsiveness of stakeholders to the disseminated outputs 	<ul style="list-style-type: none"> ▪ Programme Progress Reports ▪ Periodic stakeholder consultations 	<ul style="list-style-type: none"> ▪ As above in IO-4
O4.3: Guidance Provided on Sustainable Management of Reservoir Watersheds (AIFP/WSMP).	<ul style="list-style-type: none"> ▪ Guidance developed and targeted dissemination. ▪ Responsiveness of stakeholders to the disseminated outputs. 	<ul style="list-style-type: none"> ▪ Programme Progress Reports ▪ Periodic stakeholder consultations 	<ul style="list-style-type: none"> ▪ As above in IO-4
IO-5. The ISH is effectively managed, coordinated and fully integrated as a cross-cutting initiative with other MRC Programmes.			
IO 5.1 Initiative managed effectively (ISH)	<ul style="list-style-type: none"> ▪ The ISH is staffed to the full approved complement of 5 persons, ▪ The Hydropower Steering Committee functional. and adding value in policy and strategic direction ▪ Technical review group (TRG) functional. and adding value on technical outputs ▪ ISH Coordinator Network functional and adding value in a coordination capacity ▪ The ISH functional as an effective crosscutting initiative in the MRC. 	<ul style="list-style-type: none"> ▪ Programme-level and MRC-level annual performance reviews. ▪ Independent evaluations of the ISH. 	<ul style="list-style-type: none"> ▪ As above in IO-5

Annex 2. Summary of the ISH 2011-2015 Budget (Perspective)

Col 1	2	3	4	5	6	7
BL	Description	Committed + Pledged Funds for ISH (\$US)	% in col 3	Additional Financing sought (\$US)	Total Funding Requirement (2011-2015) (\$US)	% in Col 6
11-00-00	International Experts / Consultants	764,100	12.0%	1,112,700	1,876,800	15.0%
12-00-00	International Staff (MRCS)	0	0.0%	0	0	0.0%
13-00-00	Support Staff	50,000	0.3%	0	50,000	0.4%
15-00-00	Official Travel	432,758	6.8%	419,128	851,886	6.8%
16-00-00	Project Evaluation	109,632	1.7%	106,179	215,811	1.7%
17-00-00	Riparian Experts / Consultants	591,436	9.3%	572,808	1,164,244	9.3%
18-00-00	Riparian Professional Staff (MRCS)	213,000	3.4%	393,228	606,228	4.8%
21-00-00	Sub-contracts	1,821,165	29.0%	1,242,943	3,054,108	24.4%
30-00-00	Training	787,619	12.4%	762,812	1,550,432	12.4%
41-00-00	Expendable Equipments	187,528	3.0%	181,622	369,150	3.0%
42-00-00	Non- Expendable Equipment	75,011	1.2%	72,649	147,660	1.2%
43-00-00	Construction	0	0.0%	0	0	0.0%
51-00-00	Operation and Maintenance of Equipment	26,254	0.4%	25,427	51,681	0.4%
52-00-00	Reporting Costs	225,034	3.5%	217,946	442,980	3.5%
53-00-00	Miscellaneous	187,528	3.0%	181,622	369,150	3.0%
57-00-00	Contingency	259,655	4.1%	251,477	511,131	4.1%
	Subtotal	5,720,721		5,540,540	11,261,261	
70-00-00	MRC management and administration fee (11%)	629,279		609,459	1,238,739	
	Total	6,350,000		6,150,000	12,500,000	

Annex 3. Funding requirement by outcome and output

Output	Outcome and Outputs / Description	Total Requirement 2011-2015	Financing Situation		
			Committed Financing	Probable Financing	GAP / Shortfall to meet requirement
1	Management and Communication				
1.1	Initiative managed effectively	1,500,000	1,500,000	0	0
1.2a	Dialogue Facilitated: Ministerial Briefings, Dialogue with Developers and Financiers, Multi-Stakeholder Forum, Dialogue Partners	400,000	100,000	100,000	200,000
1.2b	Raised Awareness of Risks and Opportunities of Hydropower Development (ISH)	200,000	100,000	100,000	0
1.2c	Improved Communication and Dissemination of MRC Outputs (ISH and ICCS)	200,000	100,000	100,000	0
1.2d	Communication products for LMB Stakeholders (local languages)	250,000	0	250,000	0
1.3	Hydropower Technical Inputs Provided to the PNPCA Process (ISH and ICCS)	700,000	100,000	50,000	550,000
Outcome Sub-Total		3,250,000	1,900,000	600,000	750,000
2	Capacity Building and Knowledge Base Support				
2.1	Technical Assistance Provided to Hydropower Developers on Safeguards, Monitoring and Compliance	400,000	200,000	100,000	100,000
2.2a	Expanded MRC Hydropower Knowledge Base	250,000	100,000	200,000	-50,000
2.2b	Improved Access to Hydro-meteorological and Operational Data of Hydropower Developers (IKMP, BDP)	200,000		100,000	100,000
2.3	Improved Environmental Baseline Information for Hydropower Planning	200,000		200,000	0
2.4	Capacity Building Provided to Line Agencies for Implementation of SEAs/CIAs, Environmental and Social Policy Implementation, and Monitoring of Hydropower Project Development (EP, ICBP)	500,000		200,000	300,000
Outcome Sub-Total		1,550,000	300,000	800,000	450,000

3	Regional Planning Support				
3.1a	Regional Macroeconomic Evaluation / Distribution Analysis of Hydropower Benefit and Costs	150000		100,000	50,000
3.1b	Multi-year Follow-up to Recommendations of SEA and cross-programme work	1,000,000	10,000	428,000	562,000
3.1b	Sub-Basin Hydropower SEAs and CIAs undertaken as Input to BDP(WG)	1,500,000		200,000	1,300,000
3.1c	Ongoing Technical cooperation with China	1,000,000	increase	300,000	700,000
3.2	Scoping of Potential for Small-Scale Hydropower Undertaken (ISH)	200,000		160,000	40,000
3.3b	Navigation passage related to hydropower projects	300,000		0	300,000
3.3b	Guidance Developed for Mitigation Measures for Fish Migration (FP)	200,000		100,000	100,000
Outcome Sub-Total		4,350,000	10,000	1,288,000	3,052,000
4	Sustainability Assessment and Financing				
4.1a	Financing Mechanisms for Sustainability Measures for Proposed Mainstream Dams Identified (ISH)	500,000	75,000	75,000	350,000
4.1b	Sustainability Incentives within Market and Regulatory Frameworks Introduced (ISH)	500,000	75,000	75,000	350,000
4.1c	Benefit-Sharing Mechanisms Elaborated at Regional, National and Community Levels (ISH) and Network Established	500,000	100,000	150,000	250,000
4.2a	"Environmental Considerations for Sustainable Hydropower Development" Field-Tested	100,000		0	100,000
4.2a	"Hydropower Sustainability Assessment (SAP) and Basin (RSAT) Targeted Implementation	1,500,000	300,000	500,000	700,000
4.3	Guidance Provided on Sustainable Management of Reservoir Watersheds (AIFP/WSMP)	250,000		100,000	150,000
Outcome Sub-Total		3,350,000	550,000	900,000	1,900,000
Total all Outcomes		12,500,000	2,760,000	3,588,000	6,152,000

Annex 4. TOR for the ISH Regional Advisory Committee (ISH-AC)

MRC Initiative on Sustainable Hydropower
Advisory Committee
Terms of Reference

Version 1: 31 October 2009

Version 2: Proposed Update 30 September 2010

1. Background

Hydropower is an important indigenous, renewable energy resource for people living in the Mekong Basin. The region as a whole has considerable hydroelectric potential at all scales, ranging from sites for larger-scale developments suited to supply existing or planned national power grids to small and micro-scale hydropower schemes appropriate for rural electrification and also grid connection in some settings. Slightly over 10 percent (3,235 MW) of the lower Mekong basin's estimated 30,000 MW of hydroelectric potential has been developed on Mekong tributaries, mainly in the past two decades.

In the wider GMS region, energy security and supply diversity is an increasingly important concern. Factors underlying these concerns include trends towards higher and more volatile international energy prices, the desire to optimize the use of the Mekong region's indigenous energy resources, rising electricity demand from demographic trends including growing populations and the rapid pace of urbanization, and the planned diversification of economies away from sole reliance on the agriculture sector. Despite high rates of sustained economic and electricity demand growth over the past 2 decades, among the highest in the world, there is also widespread energy poverty in the Mekong region. Average per capita electricity consumption in the GMS is still only two thirds the average of all developing countries (1993-2005).

Among the challenges facing Mekong governments today is how to balance the role of hydropower with the protection and development of the Mekong water and related resources, in implementing the 1995 Mekong Agreement. Linking sustainable development of the Mekong River basin, the core mandate of the MRC, to sustainable development of the regional power sector is a further strategic consideration.⁶⁰

□ Accelerated interest in Mekong hydropower

Today many new proposals for large hydropower schemes are being advanced by private sector developers under new regulatory systems that Mekong governments have put in place to attract private capital and investment to the power sector. As a result of these policies, and a combination of other external factors, the Mekong has become one of the most active regions in the world today for hydropower. The need to balance the development opportunities and risks of hydropower have come to the forefront.

⁶⁰ Other strategic considerations with respect to Mekong energy futures include the role of hydropower in the electricity supply mix (i) in meeting the region's medium to longer-term power needs (ii) in assuring reliable power supply to sectors of the economy where assured power supply is a catalyst in investment decisions, (iii) to realize foreign exchange earnings and balance of trade opportunities, particularly for Cambodia and Lao PDR that may be reinvested in social and other development programmes, and (iv) the role in climate change mitigation and adaptation.

□ Refocusing on sustainable hydropower

The evolution of MRC's support to Member Countries in the hydropower sector is characterized by a gradual shift in emphasis away from the sole promotion of hydropower as a means to underpin economic growth towards the advancement of sustainable forms of hydropower management and development. This reflects the central idea of cooperation between Member Countries to move on a pathway to sustainable, mutually beneficial development of the Mekong basin's water and related resources.

□ Sustainability challenge with proposed and existing hydropower

Since 2006, interest in the potential for hydropower development in the lower basin has significantly accelerated. In response to the sustainability challenge and in keeping with its regional role, the MRC began formulating the Initiative on Sustainable Hydropower (ISH) in 2008. In part, this was to enable the MRC to effectively respond to the dynamic situation with the 12 hydropower proposals on the Mekong mainstream, the consideration of which is central to the MRC mandate. The mainstream proposals are also highly visible in the public eye and have sparked debate and controversy locally, nationally and internationally.

But it also responds to growing recognition of the need to sustainably manage the increasing number of existing hydropower assets as cumulative and transboundary impacts are increasingly felt, in particular with respect to changes in river flows, sediment-nutrient flows and fish abundance in river systems. Many opportunities to optimize the overall development performance of the proposed and the existing hydropower projects are presented. Moreover, wider international experience clearly shows that measures to advance sustainable forms of hydropower must be factored into national policy and regulatory frameworks and in decision processes at all stages of planning and the project cycle, from strategic planning and options assessment, through project design, implementation, and long-term operation stages.

Equally important, it recognizes that hydropower considerations influence and often drive decisions that Member Countries take on the development and management of water infrastructure. Cooperation among all the key stakeholder interests from government, private and civil society sectors is essential to deliver sustainable outcomes in hydropower management and development and respond to stakeholders concerns.

□ Formulation of the ISH

The formulation of MRC's Initiative on Sustainable Hydropower began in 2008. Work to determine the final structure of the ISH continued throughout 2008-2009 involving national and regional multi-stakeholder consultations. In the process, the previous MRC hydropower programme was reformulated as a cross-cutting initiative integrated with, and in varying degrees implemented through the other MRC programmes and the Basin Development Plan (BDP). This approach reflects the multi-disciplinary nature of the sustainability challenge, the need for integrated solutions, and the large body of research and knowledge residing with MRC Programmes that needs to be brought together systematically.

The multi-year ISH work plan was endorsed in principle by the Joint Committee in March 2009, and finalized in July 2009. The work plan calls for the establishment of a high-level, multi-stakeholder Advisory Committee for the ISH, which is the purpose of this TOR.

□ The 2011-2015 Initiative

The ISH activities for 2011-2015 are organized around five mutually reinforcing Outcomes concerning:

1. Dialogue Awareness Raising and Communication
2. Capacity Building and Knowledge Support
3. Regional Planning Support
4. Sustainability Assessment and Financing
5. Effective management of the Initiative

A brief description of each Outcome is provided in Annex 2. Guiding principles used to define the ISH outputs in 2011-2015 design are provided in Annex 3 of this TOR.

A central objective of the MRC Initiative on Sustainable Hydropower (ISH) is to enable MRC to help Member Countries better integrate decisions about hydropower management and development with basin-wide integrated water resource management (IWRM) perspectives, through the established MRC mechanisms and national planning systems, consistent with the 1995 Mekong Agreement.

2. Advisory Committee Scope and Role

2.1 Purpose

The broader purpose of the ISH Advisory Committee is to provide strategic, directional advice to the MRCS and the MRC Joint Committee on:

- (i) the strategic outlook, issues and concerns with advancing sustainable forms of hydropower development and management in the Mekong Basin, consistent with the 1995 Agreement;
- (ii) the strategy and implementation of the multi-year ISH work plan;
- (iii) the effective involvement of all stakeholders in ISH-related activities and effective strategic communication messages for the ISH, and
- (iv) the review and evaluation of the effectiveness of ISH activities and outputs.

The wider group of stakeholders interests include those groups that the MRC previously engaged in formulating the Hydropower Strategy (in 2001) and the ISH design (in 2008-2009). These stakeholders included the MRC Governance Bodies, national-level regulatory and line agencies, National Mekong Committee Secretariats, representatives of the NGO / CSO communities, developers and the private sector, as well as electricity utilities, international organizations, research centres and academia and the development partners of MRC Member Countries and the private sector investment communities.

2.2 Scope

The Advisory Committee's remit covers the four Outcomes and all Outputs of the ISH 2011-2015 Document and Annual work plans. The scope is not restricted. Rather it encompasses any strategic aspects that the Advisory Committee feels to be important to advance sustainable hydropower development and management appropriate to the Mekong situation. This is from:

- all stakeholder perspectives,
- local to national and regional perspectives,
- the Greater Mekong Sub-region (GMS) perspective, and
- international thinking and experience.

The Advisory Committee functions through dialogue among its Members and the MRC Bodies acting upon its advice and guidance. Through a diverse set of Members consisting of Permanent Members and ad hoc members and observers, the Advisory Committee brings to the table the perspectives and resources of national line agencies and NMCS, and the resources and networks of the private sector and civil society.

2.3 Roles

The Advisory Committee has three main roles in relation to its purpose:

1. To provide a platform for multi-stakeholder identification and discussion of high-level strategic issues – with a view to advise the Joint Committee and provide the MRC Secretariat and ISH team with intelligence and guidance on the strategic outlook and related opportunities and constraints to consider in the ISH work plan and its implementation.
2. To provide a mechanism for receiving periodic review and advice – with a view to advise the MRC Secretariat and ISH team on value-added improvements in the strategy, design, implementation and performance monitoring of the multi-year ISH work plan as well as the opportunities to engage more effectively with key stakeholders and strategic partners.
3. To promote the adoption and use ISH outputs- with a view to provide guidance on the adoption of ISH outputs, their routine integration with MRC Procedures and MRC support to Member Countries, especially to foster and “mainstream” their adoption in national planning systems, policy and regulatory frameworks and to help close gaps between policy and actual practice.

3. Advisory Committee Composition

3.1 Organizational setting

The ISH Advisory Committee will function in the institutional setting of the ISH, within the MRC framework as illustrated in the Figure in Annex 1. The ISH is part of the Planning Division of the MRCS and implemented as a cross-cutting initiative working with other MRC programmes.

In addition to the Advisory Committee, the MRCS/ISH has formed a Regional Technical Committee (called the Technical Review Group, or TRG). This has technical-level representation from NMCS and line agencies in each Member Country. Membership of the TRG may be expanded temporarily depending on the issues to be reviewed and the need for multi-disciplinary perspectives and expertise.

3.2 Composition of the Advisory Committee

To carry out its role, the composition of the ISH Advisory Committee includes both permanent and ad hoc membership. This is noted as follows:

Permanent Membership

1. Three permanent members from the four MRC member countries at Director Level (12 persons):
 - i. One member nominated by the National Mekong Committee Secretariats.
 - ii. Two members nominated by the national line agencies responsible for power development planning and regulatory matters
2. The MRC Secretariat Operations Division Director (1 person)
3. The ISH Team Manager / Coordinator (ex officio, 1-2 person);
4. The International Cooperation and Communication Section of MRCS (1 person)

5. One or more representatives of Development Partners funding the ISH

A total of 16 regional positions will be reserved for permanent membership of the Advisory Committee.

Ad hoc membership and observers:

The Permanent Members will decide the policy on ad hoc members and observers during the first meeting of the Advisory Committee when this TOR is reviewed.

Potential ad hoc Members may include:

1. Two representations from each Member Country nominated by NMCs in consultation with the Committee Members from line agencies and the MRCS:
 - i. One representative of private sector, which includes the hydropower developer community and consultant community.
 - ii. One representative from the CSO / NGO community
2. Observers from the MRC Dialogue Partners, China and Myanmar
3. External observers, as expert resource people from regional or international organizations as appropriate from time-to-time.

It is anticipated that Ad Hoc Members from the CSO/NGO and private sectors would be routinely invited to the main semi-annual meetings of the Advisory Committee.

Otherwise, the Ad Hoc Members and Observers would be invited by the Chairman to attend AC meetings depending on the meeting Agenda, on the advice of MRCS Senior Management and other Permanent AC Members. Policies on these aspects will be reviewed in the Establishment Meeting of the Advisory Committee.

3.3 Chairmanship of the Committee

A rotating chairmanship arrangement will be followed. The Advisory Committee will be chaired by a senior permanent member of the Committee from the MRC Member Country presently chairing the Joint Committee. The Chairperson will be given secretarial assistance from the MRC Secretariat through the ISH on a regional level, and through the National ISH Coordinator on a national level.

3.4 Reporting

The Advisory Committee has two channels to deliver advice and guidance to MRC Bodies. The ISH Advisory Committee will report to the MRC Joint Committee on policy matters, and to the CEO of the MRC Secretariat for strategy and administrative matters concerning implementation of ISH 2011-2015 annual work plans. Minutes of Advisory Committee meetings would be routinely provided to MRC Joint Committee Members for information or consideration.

4. Other Matters

4.1 Meetings and Venues

Meetings and venues of the Advisory Committee will be as follows:

- i. The Advisory Committee will meet at least twice per year
- ii. The venue of a meeting will generally be the capital city of the Committee Chairperson unless there is a clear justification for another venue.
- iii. Meetings of the Advisory Committee will be attended by all Member Countries;
- iv. The MRC ISH will serve as reporter/recorder at Committee meetings and provide administrative support for meetings. The ISH will be responsible for preparing minutes of meetings for the Advisory Committee Chairperson to approve.
- v. Meeting announcement, the proposed agenda and documentation for each meeting will be sent to all members by the MRCS/ISH at least one month before proposed meeting dates.
- vi. The Chairperson in consultation with the Director OPD / MRCS may invite, as appropriate ad hoc members person(s) and observer(s) within the parameters of the policy agreed by Permanent Members at the Meeting.

4.2 Proceedings

The proceedings of meetings will be prepared as minutes and relevant reports that will be submitted to the Joint Committee for consideration. It is anticipated that these proceeding with be published on the MRC website for all stakeholders to view after they have been considered by the MRC Joint Committee.

4.3 Amendment of the TOR

The ISH Advisory Committee may recommend modifications to this TOR in the first meeting and all amendments of the TOR are subject to approval of the MRC's Joint Committee.

Annexes

Annex 1: Institutional Setting for the MRC Initiative on Sustainable Hydropower (see Annex 6 in this document)

Annex 2: Description of the Four Outcomes of the ISH Work Plan

Annex 3: Guiding principles defining ISH Outcomes and outputs

Annex 5. TOR for the Regional Technical Review Group (ISH-TRG)

First Revision 22 June 2009
Second Revision 31 August 2009
Proposed Revision 30 Sept 2010

Terms of Reference

Technical Review Group on Sustainable Hydropower

1 Rationale

The Mekong River Basin is experiencing accelerated development, in particular in the hydropower sector. The accelerating development needs to be complemented by effective governance and management of water and related resources to ensure that further development of water-related resources is sensitive to the maintenance of vital ecosystems and capture fisheries productivity, on which most of the poor population depend for their livelihoods and balances between protection and development, consistent with the 1995 Mekong Agreement.

Given the progress of MRC support to Member Countries through the cross-cutting Initiative on Sustainable Hydropower, the Technical review group was established to consider key ISH led activities. On this:

- The Preparatory Meeting of the 29th MRC Joint Committee in March 2009 considered two documents, the 'Preliminary Recommendations, Design Guidance for Mekong Mainstream Dams' and the 'Draft Scoping Report, A Multivariate Approach to Defining 'Significance' in Regard to the Tributaries of the Mekong River System'.
- The Meeting took note of the two reports. Considering the multi-disciplinary aspects and technical nature of the two reports, the Joint Committee advised that a Technical Review Group, composed of technical subject matter specialists of the MRC member countries, should support the MRC Secretariat in furthering this work.

In 2009-2010 the TRG met to consider two additional topics:

- The international Hydropower Sustainability Assessment Protocol (SAP) under development by in an multi-stakeholder process led by the International Hydropower Association (IHA), and
- The Rapid Basin / Sub-basin Hydropower Sustainability Assessment tool under development by the partnership of ADB-WWF-MRCS as part of the ECSHD programme (Environment Criteria for Sustainable Hydropower Development)

A summary of the two first reports is given below.

Design guidance for Mekong mainstream dams

The Preliminary Recommendations focus on Mekong mainstream hydropower development, and provide initial recommendations on performance targets, design and operating principles for mitigation measures, as well as compliance monitoring and principles of adaptive management. They cover the fields of navigation, fisheries, river morphology and sediment transport, as well as water quality. The Preliminary Recommendations are developed in response to a request from developers of hydropower projects on the mainstream. They are based on completed and on-going work of MRC programmes.

Definition of 'significant' tributaries

The 'Draft Scoping Report, A Multivariate Approach to Defining 'Significance' in Regard to the Tributaries of the Mekong River System' focuses on water resources related developments on tributaries. The Draft Scoping Report

builds on an earlier preliminary study presented to the Preparatory Meeting of the 27th Joint Committee Meeting held in April 2008. The Report further develops the concept of a multivariate analysis showing how 'significance' may be evaluated in terms of hydrology as well as other criteria, including water-quality, aquatic ecosystems, and fisheries. The Report also proposes a methodology allowing for a consistent assessment of cumulative impacts based on the topology and connectivity of the entire river network.

2 Functions of the Technical Review Group

The Technical Review Group shall advise the MRC Joint Committee on the further development of the 'Design Guidance for Mekong Mainstream Dams' and the 'Definition of 'Significance' of Tributaries through a Multivariate Approach' and guide further work of the MRC Secretariat in these areas and other key ISH outputs. This will in particular include:

- Review the 'Preliminary Recommendations, Design Guidance for Mekong Mainstream Dams'.
- Review the 'Draft Scoping Report, A Multivariate Approach to Defining 'Significance' in Regard to the Tributaries of the Mekong River System'.
- Provide additional (national) data sources, as appropriate.
- Individual country members will consult with concerned line agencies, the regulatory authorities, electricity utilities, private sector developers and other interested parties in their respective countries, to ensure appropriate representation of conflicting objective settings and broad ownership. Individual country members will subsequently provide concise feedback to the Technical Review Group.
- Guide the Secretariat in incorporating the earlier work of the WUP Technical Drafting Group, in particular into the principles section of the 'Design Guidance' document, as appropriate.
- Propose approaches to include areas currently not covered, e.g. safe passage of extreme floods and dam safety issues in the 'design guidance' report, or vulnerability and bio-diversity issues in the 'significance' report.
- Endorse or comment on the Final Recommendations on the 'Design Guidance for Mekong Mainstream Dams'.
- Endorse the report, defining 'significance' of tributaries of the Mekong River System.

In addition the TRG would perform similar duties concerning hydropower sustainability assessment tools and key ISH outputs as may be determined by the Joint Committee, or on the request of MRCS.

3 Implementation Arrangements

Process and time table

- Draft TOR shared with MRC Joint Committee Members, for (i) comment on TOR; and (ii) nomination of country representatives. Due date for reply – 15 May 2009.
- First meeting of the Technical Review Group at the MRC Secretariat in Vientiane, Lao PDR – 22 May 2009.
- Second meeting of the Technical Review Group at the MRC Secretariat in Vientiane, Lao PDR – end of June 2009, if required, otherwise early September 2009.
- Further meetings, as required.
- Final 'Design Guidance for Mekong Mainstream Dams', to be presented by the MRC Secretariat to the 30th MRC Joint Committee Meeting (tentatively scheduled for late July 2009), and to be shared with private sector developers subsequently.
- Report, defining 'significance' of tributaries of the Mekong River System, to be presented by the MRC Secretariat to the Preparatory Meeting of the MRC Joint Committee to the 16th Council Meeting (tentatively scheduled for November 2009).

The TRG similarly, shall meet as required for review and guidance on hydropower sustainability assessment tools and key ISH outputs.

Composition

The Technical Review Group shall be composed of 12 members:

- 12 representatives from the MRC member countries, including a comprehensive mix of technical expertise in the fields of: (i) national planning, in particular water and related nature resources planning; (ii) power sector development, particularly familiar with hydropower design and operation, and with a relevant engineering background; (iii) environment and fisheries, with particular knowledge in rural livelihoods/rural development issues.
- 1 representative of the MRC Secretariat (ex officio) to be appointed by the CEO, also serving as convener of and providing secretariat services to the Technical Review Group.

The Technical Review Group shall be chaired by one of the country representatives, to be selected during the first meeting.

Meetings

- A first meeting of the Technical Review Group will be convened by the CEO of the MRC Secretariat. During this meeting the schedule of further meetings shall be agreed upon. Meetings shall be held at the MRC Secretariat in Vientiane, Lao PDR to facilitate interactions with MRC technical staff as required.
- The MRC Initiative on sustainable Hydropower (ISH) will provide secretariat services to the Technical Review Group.
- In accordance with the particular subject matters under discussion, the Technical Review Group may invite participation of external resource persons to their sessions.
- The MRC Secretariat will assume travel and related expenses of Technical Review Group members joining the meetings.

Reporting

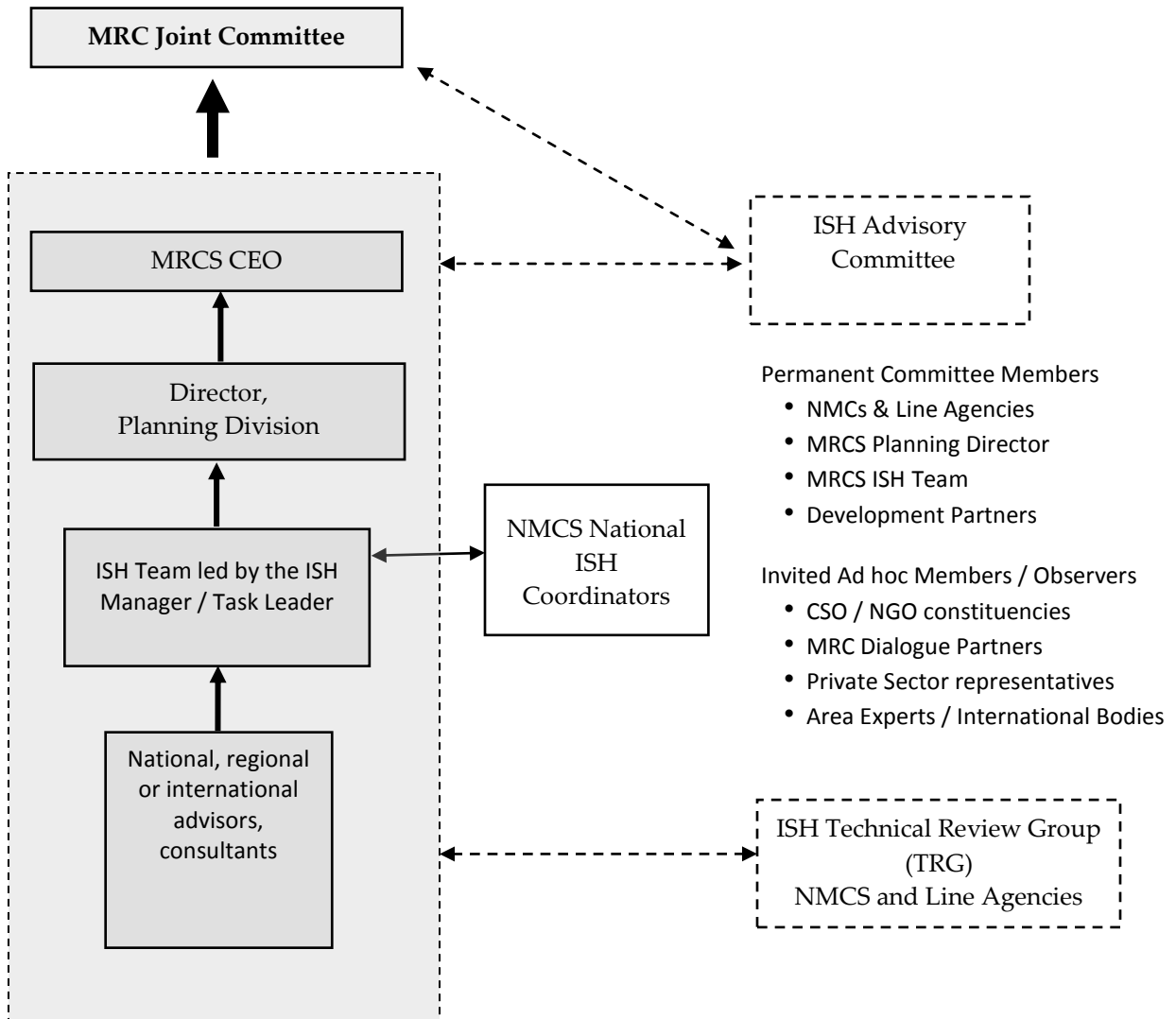
The Technical Review Group shall minute conclusions and recommendations of its meetings, and distribute them to all TRG members.

The Technical Review Group shall prepare a short briefing note to the 30th MRC Joint Committee Meeting, detailing progress and listing open issues.

Modification of TOR

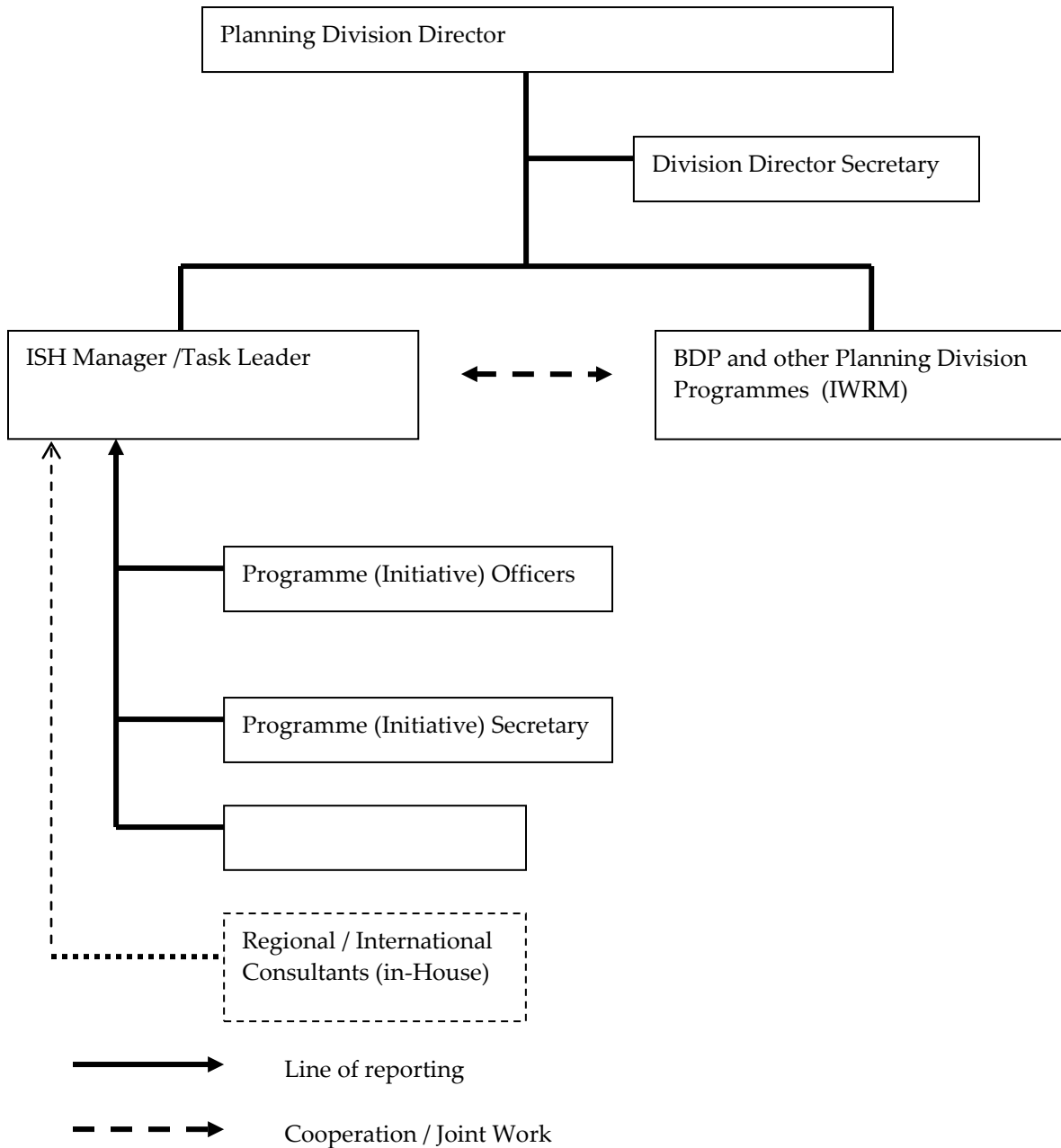
The Technical Review Group may review and recommend modifications to these TOR in their first meeting. Any of these modifications require approval of the MRC Joint Committee through circulation.

Annex 6. Institutional Setting for the Initiative (ISH)



Annex 7. Arrangements for the ISH within MRCS

In 2010 - 2011



Annex 8: Job summaries of key ISH Riparian staff in MRCS

Summary responsibilities for the key MRCS staff based in the MRCS Planning Division.

ISH Manager / Task Leader

Under the overall supervision of the Chief Executive Officer of the Mekong River Commission Secretariat and direct supervision of the Director of Planning Division.

Overall management and coordination of the ISH:

- Manage and coordinate all technical, administrative and financial activities to ensure the effective and efficient implementation of the Initiative to achieve its objectives and in full compliance with all applicable development funding agreements, the Initiative document and MRCS procedures and standards;
- Ensure effective communications and coordination between MRCS, International organizations (development partners, ADB, WB, WWF, IUCN, IHA, etc.), National Mekong Committees, the TRG and IAC for the synergies between the regional, the national and transboundary components of the Initiative and joint learning;
- Collaborate in the development of guidelines, design processes and lead actions to synthesize component workplan into coherent Initiative Implementation Plan, to consolidate reporting and to implement;
- Provide secretariat support for the Steering Committee on the IAC of the Initiative including organizing meetings, taking notes, following up on the recommendations and decisions of the Steering Committee and IAC and liaison between the IAC and ISH/ MRCS through NMCSs and country focal points;
- Prepare progress reports and other updates on the overall Initiative preparation of progress reports and other routine reports in accordance with MRCS procedures and development partner requirements;
- Preparation of Terms of Reference (TOR), specifications, tender documents, budgets etc. as required for implementation of ISH activities, recruitment of additional staff and consultants;
- Coordinate, organize and facilitate the ISH Workplan, the ISH personnel, budget plans, technical studies, training and workshop schedules, etc. in a well coordinated and harmonized manner, Coordinate and mobilise requirement for the main activities of the Initiative;
- Provide the Initiative related information to the CEO, the National Mekong Committees Secretariats (NMCSs), and other related MRCS Programmes and National Implementing Agencies;
- Liaise and exchange information with other related regional projects, programmes and initiatives;
- Identify progressive risks, key and emerging issues hampering the progress of ISH coordination and implementation including foreseen and/or actual deviations from the workplans, milestones and indicators, assess consequences, select and implement appropriate response measures;
- Undertake general advocacy, promotion and dissemination of the components of ISH Workplan and its outcome with stakeholders and support NMCSs and national focal points in the same efforts at national level;
- Represent the ISH/MRCS to report to the JC and Council as required by the MRCS management;
- Represent the MRCS in international conferences, meetings, workshops, forums, etc and deliver presentations to a wide range of stakeholders including developers, civil societies, non governmental organizations, etc;
- Perform any other duties related to the coordination and management of the Initiative as assigned by the CEO and Director of Planning Division.

Implementation in the regional context (LMB and GMS):

- Coordinate the MRC Programmes inputs to the detailed design, implementation and monitoring and performance management of the regional component of the Initiative;
- Maintain the MRC hydropower data base, coordinate involve other MRC programmes to collaborating to this task, i.e. BDP and IKMP;
- Promote and facilitate a smooth, regular and timely exchange of reliable data and information between the member countries and with the MRCS;
- Prepare and facilitate national and regional consultations in the LMB and with Dialogue Partners, especially China;
- Direct and collaborate with the ISH International Advisor as to prepare operational planning and project budgeting, drafting of progress reports and other routine reports;
- Ensure the effective management of the various sources of funds and reporting to the CEO and the Development Partners;
- Ensure the close linkage of all ISH Workplan component and other MRC activities and the effective operation of the ISH as a cross-cutting initiative;
- Facilitate the support from relevant MRC Programmes to the national and transboundary components;
- Conduct sector specific research in MRC member countries;
- Support the PNPCA process by coordinating technical reviews and processes where required;
- Prepare and participate in sector-specific and multi-stakeholder meetings and conferences with concerned agencies, development partners, international financial institutions, private sector, civil society organizations, resource persons and academia;
- Organize study tours to hydropower sites for institutional dialogues in the Mekong Basin and overseas;
- Collaborate and Networking with other international hydropower related organizations and develop global links as to exchange experiences and lessons to promote sustainable hydropower development;
- Collaborate in the drafting of MRC position papers and briefing notes on individual hydropower projects and particular technical issues.

Management of staff within MRCS:

Provide day-to-day direction and supervision of the approved complement of MRCS ISH staff and in-house consultants.

Sustainability Hydropower (Programme / Initiative Officer)

Reporting to the ISH Manager / Task Leader in the MRCS Planning Division

- Provides leadership and takes primary responsibility to ensure the MRC Hydropower database is updated and improved to reflect evolving requirements and uses for the data base, in particular output identified under the Outcome Capacity Building and Knowledge Base Support
- Assists in the organisation, planning and implementation of all outputs of ISH, including surveys and analysis and compilation of existing information;

- Assists, supervises and evaluates consultants and technical advisers in the implementation of Environment Programme activities;
- Reviews and edits (as necessary) technical reports pertaining to the ISH outputs;
- Works as a team member in the overall planning, implementation management and reporting of ISH activities;
- Facilitates inter-institutional co-ordination and collaboration, and secure full involvement of the appropriate management levels;
- Manages administrative tasks related to key duties (preparation/reviewing TORs, draft reports, etc.); and
- Performs other related duties as assigned by the supervisor.

Annex 9: Job summary for ISH National Coordinators in NMCS

In cooperation with the MRCS ISH, the ISH National Coordinators will help with implementation ISH outputs in technical, administrative and financial areas including:

- To collaborate in operational planning and project budgeting for works to occur in the country of the Coordinator;
- To collaborate in the preparation of the term of reference and budgets for workshops and training seminars and field trips or sites visits;
- To provide help in the management of all technical, administrative and financial activities occurring in the country of the Coordinator to ensure the effective and efficient implementation of the project.
- To collaborate in the preparation of work agreements and budgets for line agencies delivering project specific tasks;
- To liaise with NMCs, Line Agencies, private sector, NGOs and other relevant stakeholders in order to obtain their assistance for the implementation of outputs and related issues;
- To liaise with Line Agencies, private sector, NGOs and other relevant stakeholders in order to obtain their assistance for the collection of comments, questions and suggestion related to Project related issues and studies;
- To liaise with Line Agencies, private sector, NGO and other relevant stakeholders in order to obtain their assistance for the collection of the Project relevant data;
- To lead in the preparation and arrangement of all Event Logistics such as Seminar, Workshops, Training, Field Trips which occur in the country of the Coordinator. Provide support to those event including:
 - Prepare detailed to-do-list for logistics;
 - Establish detailed, itemized budget;
 - Convene pre-event preparatory meetings, as required;
 - Implement all logistic arrangements for venue preparation, including refreshments and meals;
 - Provide consultation operation, including pre-event stationary, graphic design of posters/banners, help desk, various supplies, secretariat services, etc.;
 - Arrange airport pick-ups, hotel booking and transfers, for selected participants;
 - Set-up all necessary logistic arrangements for field trip.

Priority tasks related to ISH outputs are to be identified on an annual basis based on the Annual Work Plan.