

Cambodia • Lao PDR • Thailand • Viet Nam
For sustainable development



Agenda B.1

Progress Report on the Study on Sustainable Management and Development of the Mekong River including Impacts by Mainstream Hydropower Projects



*Preparatory Meeting of the MRC Joint Committee
For the Forty-Third Meeting of the MRC Joint Committee
Mekong River Commission
15 March 2016
Can Tho, Viet Nam*

www.mrcmekong.org

Contents

- Background
- Overall Progress
- Accomplishments
- Implementation Plan Phase 2
- Implementation Options
- Option 4: Reduced Overall Scope
- Summary



www.mrcmekong.org

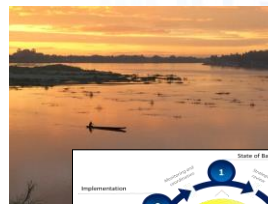


BACKGROUND

www.mrcmekong.org

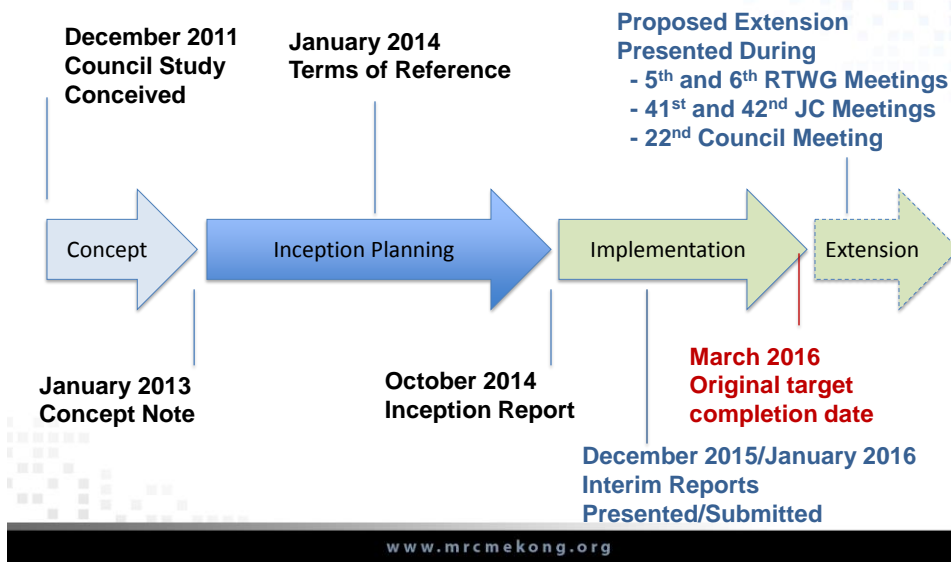
Objectives

- Further develop/establish a reliable scientific evidence of positive and negative environmental, social, and economic impacts of water resources development
- Integrate results into the MRC knowledge base to enhance the BDP process
- Promote capacity and ensure technology transfer to Member Countries



www.mrcmekong.org

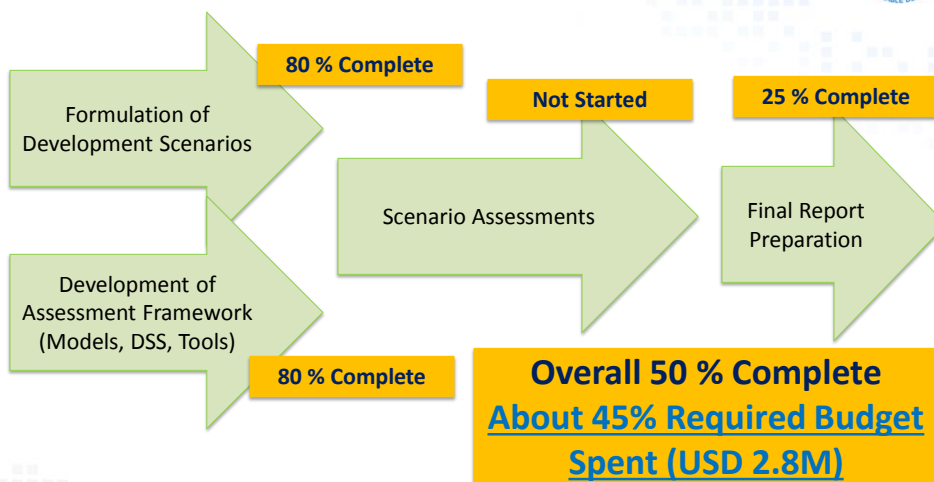
Overall Timeline Perspective



OVERALL PROGRESS



Progress by Major Activity



Reference: Council Study Draft 2015 Annual Report

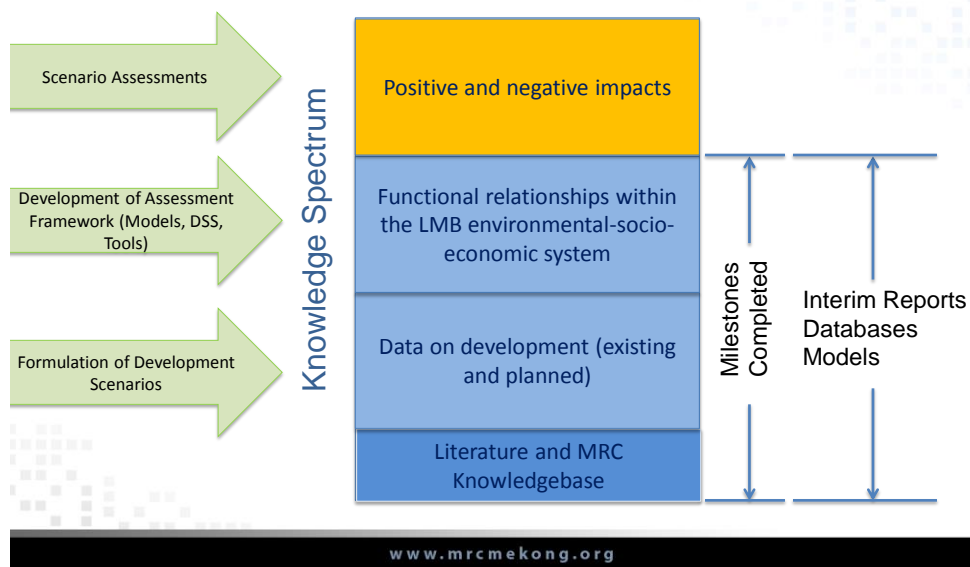
www.mrcmekong.org



ACCOMPLISHMENTS (IF WE STOP NOW)

www.mrcmekong.org

Producing/Improving Knowledge



Interim Reports



Reports (as per Inception Report)	Status
6 Thematic Reports	5 Draft Interim Thematic Reports Completed Draft Interim Thematic Report on Domestic/Industrial In Preparation
1 Cumulative Report	Planned for Phase 2 and will serve as Main Report
4 Technical Reports (Modeling, Bioresource Assessment, Socio-Economic, Climate Change)	3 Draft Interim Technical Reports Completed Draft Technical Report on Climate Change in Preparation
6 Working Papers on Development Scenarios	5 Draft Working Papers Completed Draft Working Paper on Domestic/Industrial in Preparation

Updated Databases and Models



Database	Status
Hydropower Database	Draft Updated Version Completed
Irrigation Database	Draft Updated Version in Preparation
Fish Species Database	Draft Completed
Literature Review (List of Priority Documents)	Completed

Models and Tools	Status
Calibrated DSF (SWAT, IQQM, ISIS) for 1985 – 2008	Partially Calibrated
WUP-FIN integrated with DSF	In Preparation
eWater Source integrated with DSF	In Preparation
BioRA DSS (Ecosystem Model/Assessment Tool)	Draft Version Completed
Socio-Economic Assessment Methodology	Methodology Developed

www.mrcmekong.org

Capacity Building, Technology Transfer, and Consultation Meetings



Activities	Status
RTWG Meetings and Implementation Startup Workshop	Completed
Regional Technical Workgroup Meetings	Completed
National Consultations	Completed
Technical Workshops on WUP-FIN	Completed
Technical Workshops on eWater Source	Completed
BioRA DSS Technical Workshop	Completed
BioRA Knowledge Capture Workshop	Completed

www.mrcmekong.org

Council Study Web Site and Team Site



Full online access to all reports, presentations, etc., produced under the Council Study

The screenshot shows the Mekong River Commission website. The main navigation bar includes: Home, About MRC, Mekong Basin, Topics, Publications, News & Events, Working with MRC, Highlights, and Data Portal. The page title is "The Study on Sustainable Management and Development of the Mekong River including Impacts of Mainstream Hydropower Projects".

Two sections are highlighted with red arrows and boxes:

- Publicly Accessible:** Points to a "New: Implementation Progress Update (February 2016)" section featuring a sunset image over a river.
- Password Protected (Team Members Only):** Points to a "Login" button labeled "(Team members only)".

Other visible content includes "Key MRC documents" (Concept Note, Terms of Reference, Inception Reports, etc.) and "Latest Consultation" items (Don Sahong Hydropower Project, Xayaburi Hydropower Project, etc.). The footer displays the website URL: www.mrcmekong.org.

Bottomline Statements



- Achieved significant accomplishments (50 percent complete)
 - In over a year of implementation when three years of implementation was originally planned
 - Despite all the challenges and constraints
- Achieved these accomplishments for about 45 percent of the original budget required (USD 2.8M)
- If we stop and conclude the Council Study now
 - Significant new and improved knowledge has been gained
 - Momentum may be lost but not the knowledge gained because they are fully documented and can be reused easily in the next project (available at the Council Study Team Site)
 - MCs are more informed and capable



IMPLEMENTATION PLAN PHASE 2

www.mrcmekong.org



[Draft Implementation Plan for CS Phase 2 \(3 February 2016\)](#)

Table of Contents (1)

EXECUTIVE SUMMARY	1
1. Introduction.....	5
1.1 Context and Purpose.....	5
1.2 Content of this Document.....	6
1.3 Assumptions.....	6
1.4 Sequence of Events for Approval of This Document.....	6
2. Phase 2 Implementation Arrangement	7
2.1 Rationale.....	7
2.2 Council Study Coordination.....	7
2.2.1 Full-Time Council Study Coordinator.....	8
2.2.2 Part Time (JSA-Consultant) Technical Adviser for Technical Coordination.....	8
2.2.3 Central Team.....	9
2.2.4 Support Team.....	9
2.2.5 Advisory Group.....	9
2.3 Smaller and Leaner Management and Technical Team.....	9
3. Scope of Work	11
3.1 General Principles.....	11
3.2 Scenario Assessments.....	11
3.2.1 Development Scenarios.....	11
3.2.2 Reference Period.....	13
3.2.3 Reference Scenario and Indicator Statistics for Scenario Comparison.....	13
3.3 Report Deliverables.....	13
3.3.1 Cumulative and Thematic Reports.....	13
3.3.2 Technical Reports.....	14
3.3.3 Working Papers.....	16
4. Budget	17
4.1 Estimated Total Budget Required and Funding Gap.....	17
4.1 Available Budget for Phase 2 in 2016 from the Basket Funding.....	18
4.2 Available Budget from Anticipated Overflow Funding from Phase 1.....	18

www.mrcmekong.org



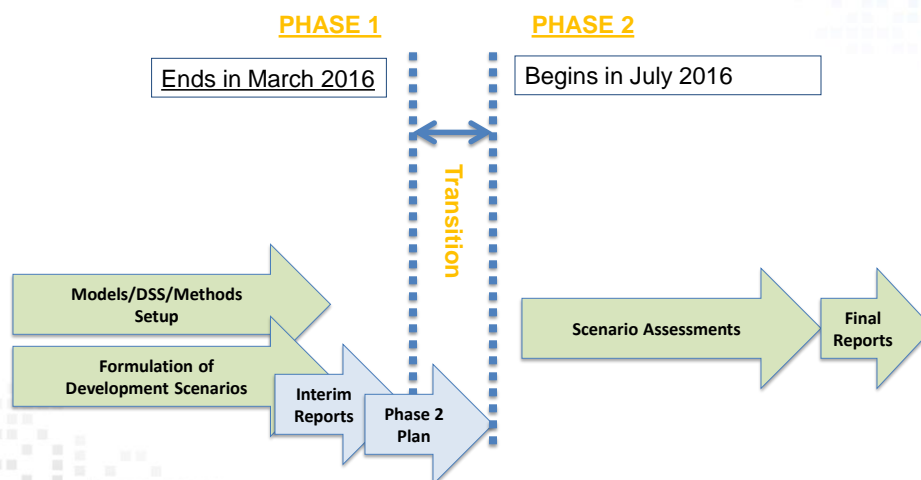
4.3 Summary of Available Budget for Transition Phase and Phase 2.....	18
5. Implementation Details of Phase 2 in 2016.....	20
5.1 Implementation Guiding Principles.....	20
5.2 Technical Scope of Phase 2 2016.....	20
5.3 Establishing and Funding the Central Team for 2016.....	22
5.4 Establishing and Funding the Support Team for 2016.....	22
5.5 Funding the Process.....	23
5.6 Funding Activities during the Transition Phase.....	24
5.7 Summary of Budget Required for Transition Phase and Phase 2 in 2016.....	25
Implementation Details of Phase 2 in 2017 Including Project Closeout.....	26
7. Overall Summary of Budget Available and Required.....	30
8. Implementation Schedule.....	31
Options for Reduction in Cost and Scope of Work.....	32
9.1 Delay the start of Phase 2 to 1 October 2016 and keep the transition activities at the minimum 32	
9.2 Reduce the scope of work in 2016.....	33
9.3 Cost and Scope Reduction Considerations in 2017.....	34
10. Risk Management.....	35
Overall Assessment of the Council Study Implementation and Lessons Learned.....	38
Annex A. Estimated Budget for Phase 1 Remaining Activities.....	41
Annex B. Council Study Draft 2015 Annual Report.....	43

Table of Contents (2)

- Implementation 2016
- Implementation 2017
- Available vs. Required Budget
- Overall Schedule
- Implementation Options
- Risk Management
- Lessons Learned
- Annex: Draft 2015 Annual Report

www.mrcmekong.org

Proposed Implementation Schedule



www.mrcmekong.org

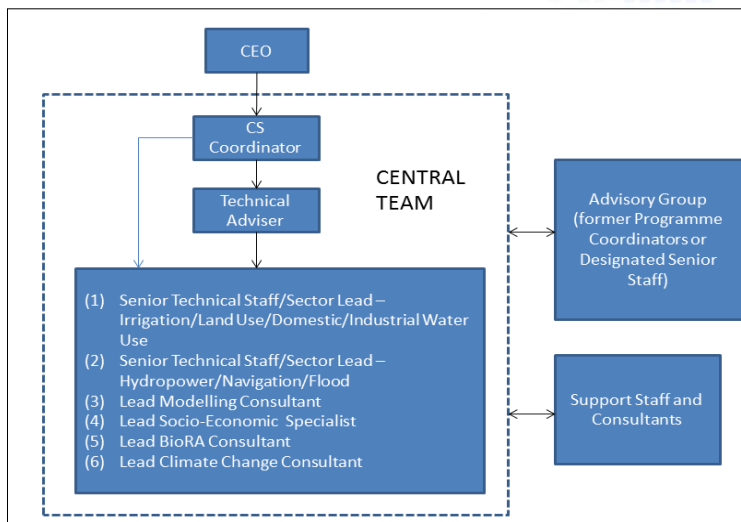


Implementation Context

- Smaller Funding Gap: USD 1.9M instead of USD 2.5M
 - As a result of progress made in Phase 1 and refining cost estimate of activities in Phase 2
- Budget Overflow from Phase 1 of USD 192K (**and more because we are spending less than planned during January – March 2016**)
- Phase 2 implementation will extend to 2017
 - As a result of planned Basket Funding of 500K for Council Study in 2016 is inadequate to cover the funding gap
- Full scope as per Inception Report

www.mrcmekong.org

New Implementation Arrangement



www.mrcmekong.org



IMPLEMENTATION OPTIONS

www.mrcmekong.org

Implementation Options



Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016*	Funding Gap
Option 1 Preferred Option	Full Scope	April – June 2016	July 2016	370K	1,019K
Option 2 Delayed Start	Full Scope	April – September 2016	October 2016	0	1,389K
Option 3 Reduced Scope in 2016	Full Scope	April – June 2016	July 2016	0	1,389K
Option 4 Reduced Overall Scope	Reduced Scope	April – June 2016	July 2016	0	TBD – None Potentially

*On top of the 500K of MRC Basket Funding already allocated to the Council Study

www.mrcmekong.org

Option 1: Preferred Option



Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016	Funding Gap
Option 1 Preferred Option	Full Scope	April – June 2016	July 2016	370K	1,019K

- Team working **full time** for **6 months** in 2016
- Feasible if MRC Basket Fund allocation of USD 500K in 2016 can be increased to USD 870K
- Complete modeling and biological assessments in 2016; and socio-economic assessments in 2017
- Advantages
 - Less disruptive and keep momentum
 - Tangible accomplishments in 2016 by completing hydrologic and environmental assessments
 - Complete Council Study earlier in 2017 (June 2017)

www.mrcmekong.org

Option 2: Delayed Start



Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016	Funding Gap
Option 2 Delayed Start	Full Scope	April – September 2016	October 2016	0	1,389K

- Team working **full time** for **3 months** in 2016
- Advantages
 - Longer transition period will provide more time to complete outstanding tasks in Phase 1 and also more time to recruit personnel
 - Compatible with SC consultants paid on a monthly full time basis (i.e., CS Coordinator, riparian and national modellers)
- Disadvantages
 - Loss of momentum and associated increase in total budget required
 - Not enough tangible results by the end of 2016
 - Higher budget required in 2017

www.mrcmekong.org

Option 3: Reduced Scope in 2016



Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016	Funding Gap
Option 3 Reduced Scope in 2016	Full Scope	April – June 2016	July 2016	0	1,389K

- Team working **part time** for **6 months** in 2016
- Advantage
 - Short transition period will maintain urgency and keep momentum to some extent
- Disadvantages
 - Reduced scope may not be compatible with consultants who are traditionally hired as full time consultants (e.g., riparian modellers)
 - Loss of momentum and associated increase in total budget required
 - Not enough tangible results by the end of 2016
 - Higher budget required in 2017
 - Reduced scope may involve delaying the thematic assessments for 2017

www.mrcmekong.org

Option 4: Reduced Overall Scope



Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016	Funding Gap
Option 4 Reduced Overall Scope	Reduced Scope	April – June 2016	July 2016	0	TBD – None Potentially

- Team working **full time** for **6 months** in 2016
- Advantage
 - Compatibility of budget availability with the reduced scope
- Disadvantage
 - Potentially will take time for MCs to agree on the reduced scope thereby delaying the implementation further

www.mrcmekong.org



OPTION 4: REDUCED OVERALL SCOPE

www.mrcmekong.org

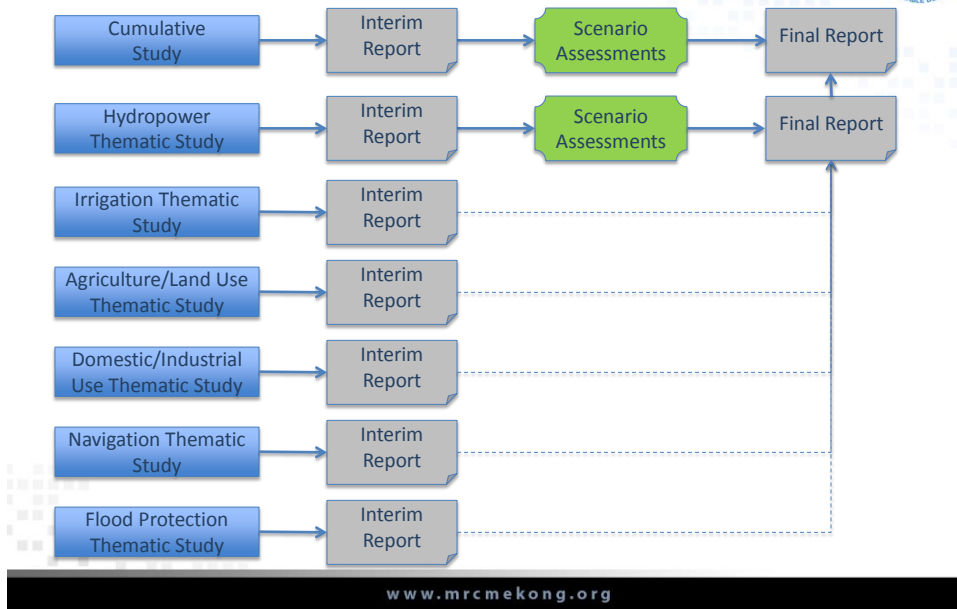
Reduced Overall Scope



- Current Scope: Equivalent to seven (7) studies
 - 1 cumulative study (similar to the BDP2 Study)
 - 6 thematic studies (one of which, hydropower thematic study, is similar to the Mekong Delta Study)
- Reduced Scope: Focus on two studies
 - Cumulative Study to update and extend the BDP2 study
 - Hydropower Thematic Study to validate and extend the Mekong Delta Study

www.mrcmekong.org

Focus on Two Studies



Study 1: Cumulative Study - Extending/Updating BDP2 Study

- Greatest/Latest Data
 - Thematic data
 - Flow, sediment, water quality
 - Socio-economic (SIM/VA)
- New set of future development scenarios (2020, 2040)
- New set of climate change scenarios
- Improved models/tools
 - WUP/FIN and eWater models integrated with an improved DSF
 - New ecosystem model (BioRA DSS)
 - Improved socio-economic assessment methodology

Study 2: Hydropower Thematic Study - Validating/Extending the Mekong Delta Study



- Conduct a planning workshop to explore this option in more detail
- Identify and perform analysis to validate/supplement/extend the Delta Study and answer remaining outstanding questions/knowledge gaps
- Identify data, models/tools, and results that can be integrated with the assessment framework of the Council Study

www.mrcmekong.org



SUMMARY

www.mrcmekong.org

Concluding Remarks



- Council Study has accomplished significant, tangible, and documented milestones for less money
 - Interim reports, database, and models
- Waiting for comments of MCs to improve and finalize the interim reports
- Need clear decision on what implementation option to select

www.mrcmekong.org

The Joint Committee is kindly requested to:



- Take note of progress and accomplishments
- Approve proposed implementation plan
- Select implementation option for Phase 2 (and corresponding transition phase)

Option	Scope	Transition Phase	Start of Phase 2	Funding Gap in 2016*	Funding Gap
Option 1 Preferred Option	Full Scope	April–June 2016	July 2016	370K	1,019K
Option 2 Delayed Start	Full Scope	April–September 2016	October 2016	0	1,389K
Option 3 Reduced Scope in 2016	Full Scope	April–June 2016	July 2016	0	1,389K
Option 4 Reduced Overall Scope	Reduced Scope	April–June 2016	July 2016	0	TBD – None Potentially

*On top of the 500K of MRC Basket Funding already allocated to the Council Study

www.mrcmekong.org



ADDITIONAL DETAILS

www.mrcmekong.org

Overall Schedule and Budget Constraints

- Compressed implementation schedule
 - 1.5 Year of implementation instead of original plan of 3 Years
- USD 2.5M Funding Gap
 - Out of the USD 6.2M external funding required

www.mrcmekong.org

Cumulative and Thematic Reports



Report	Status
A Thematic Report on the Positive and Negative Impacts of Irrigation Development on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Draft Interim Report Completed Dec 2015
A Thematic Report on the Positive and Negative Impacts of Non-irrigated Agriculture Development and General Trends in Major Land-Use Categories on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Draft Interim Report Completed Dec 2015
A Thematic Report on the Positive and Negative Impacts of Domestic and Industrial Water Use on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Delayed
A Thematic Report on the Positive and Negative Impacts of Flood Protection Structures and Floodplain Infrastructure on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Draft Interim Report Completed Dec 2015
A Thematic Report on the Positive and Negative Impacts of Hydropower Development on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Draft Interim Report Completed Dec 2015
A Thematic Report on the Positive and Negative Impacts of Navigation Infrastructure Development on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Draft Interim Report Completed Dec 2015
Cumulative Positive and Negative Impacts of the Selected Water Resources Developments and infrastructure on the Social, Environmental and Economic Conditions of the Lower Mekong River Basin and Policy Recommendations.	Planned for Phase 2

www.mrcmekong.org

Technical Reports



Report	Status
Hydrology, Sediment, and Water Quality Data, and Results Report for the Assessment of Positive and Negative Impacts of Selected Water Resources Developments and Infrastructure in the Lower Mekong River Basin – A Report for the Council Study.	Completed the following technical reports (Dec 2015): <ol style="list-style-type: none"> 1) ISIS Baseline Model for Mekong River in Upper Kratie 2) Improvements of the ISIS LMB Baseline Scenario Model 3) SWAT Model for Sediment and Nutrient Simulation in the Mekong River Basin 4) The Sediment and Nutrient Data Available and Analysis for the DSF model Simulation in the Lower Mekong Basin 5) eWater Source Model (Baseline 2007): Application in the Upper Mekong River Basin
Bioresources Assessment of the Positive and Negative Impacts of Selected Water Resources Developments and Infrastructure in the Lower Mekong River Basin – A Report for the Council Study.	Completed the following technical reports (Dec 2015): <p>Volume 1: Specialists' Report Volume 2: Guide to Viewing and Updating the BioRA DSS Volume 3: Preliminary Calibration Report</p>
Socio-Economic (including Macro-Economic) Assessment of the Positive and Negative Impacts of Selected Water Resources Developments and Infrastructure in the Lower Mekong River Basin – A Report for the Council Study.	Completed the following technical reports (Dec 2015): <ol style="list-style-type: none"> 1) Social Assessment Methodology Report 2) Economic Assessment Methodology Report
A Climate Change Assessment of Selected Water Resources Developments and Infrastructure in the Lower Mekong River Basin – A Report for the Council Study.	Delayed

Working Papers



Report	Status
Specifications of Selected Irrigation Developments and Infrastructure for Use in Hydrological Modelling	Draft Completed
Specifications and map of Selected Non-irrigation Agriculture Development and General Trends in Major Land-Use Categories in the Lower Mekong River Basin for Use in Hydrological Modelling.	Draft Completed
Specifications and Map of Selected Domestic and Industrial Water Use in the Lower Mekong River Basin for Use in Hydrological Modelling	Delayed
Specifications and Map of Selected Flood Protection Structures and Floodplain Infrastructure for Use in Hydrological Modelling	Draft Completed
Specifications and Map of Selected Hydropower Developments for Use in Hydrological Modelling	Draft Completed
Specifications and Map of Selected Navigation Infrastructure Development	Draft Completed

www.mrcmekong.org

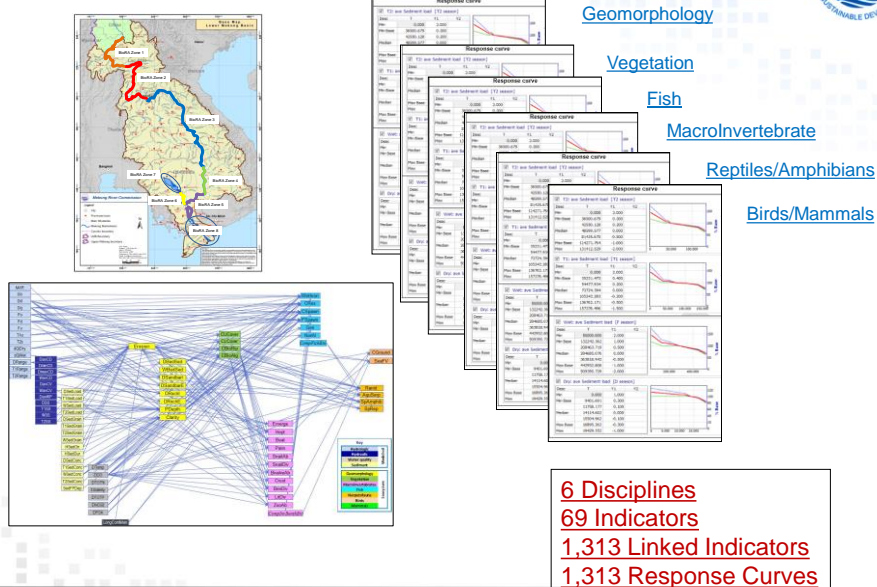
Example Knowledge Gap: Ecosystem Impact Assessment



Knowledge Gained	Ecosystem status and trends and development drivers since the 1990s	Interim Report (734- page three volume document)
	Key ecosystem indicators and linked indicators	
	Quantitative relationships at the fundamental level the stressor-response relationships between these indicators	
Capacity Built	Ecosystem Model to extend DSF Impact Assessment Tool	Version 2.82 1.2 GB Database 1,313 Response Curves 11 Scenarios (including Preliminary Reference Scenario 1985-2008)

www.mrcmekong.org

LMB Ecosystem Body of Knowledge



www.mrcmekong.org

Option 1: Budget Required



Overall summary of budget available and required for Phase 2

Item	Budget Available	Budget Spent or Budget Required
Secured External Funding	3,731,569	
Inception and Phase 1 Spending (2014 – 2015)		2,825,571
Phase 1 Spending (January – March 2016)		713,476
Phase 2 2016		1,063,182
Phase 2 2017 and Project Closeout		1,018,845
Total		5,621,074
Funding Gap		1,889,505
2016 Basket Funding Allocation		500,000
Funding Gap After 2016 Basket Funding Allocation		1,389,505*

*Of this amount, USD 370,660 should be made available in 2016 to complete planned activities in 2016.

www.mrcmekong.org

Option 2: Budget Required



Table 19. Summary of 2016 budget required for Option: Delay Start of Phase 2 and Keep Transition Activities at the Minimum

Item	Amount USD
Transition Phase	44,111
Phase 2 in 2016 – Central Team	125,290*
Phase 2 in 2016 – Support Team	289,156*
Phase 2 in 2016 – Process	143,334
Sub-Total	601,891
Operation (3.5 percent)	21,066
Contingency (5 percent)	30,095
11 percent MAF for the Phase 1 Overflow Funding	21,177
Total	674,229**
*A fraction is allocated to complete the development of the BioRA DSS for the Delta with minimum support of the modelling team during the transition phase	
**Given the available budget of USD 692,522, this represents a surplus of USD 18,293.	

www.mrcmekong.org

Option 3: Budget Required



Table 20. Summary of 2016 budget required for Option: Reduce Scope in 2016

Item	Amount USD
Transition Phase	84,346
Phase 2 in 2016 – Central Team	149,330
Phase 2 in 2016 – Support Team	201,460
Phase 2 in 2016 – Process	184,960
Sub-Total	620,096
Operation (3.5 percent)	21,703
Contingency (5 percent)	31,005
11 percent MAF for the Phase 1 Overflow Funding	21,177
Total	693,981*
*Given the available budget of USD 692,522, this represents a funding gap of USD 1,459	

www.mrcmekong.org