



MEKONG RIVER COMMISSION



# ANNUAL REPORT 2018

Part 1  
*Overview*

*The MRC is funded by contribution from its member countries and development partners of Australia, Belgium, European Union, Finland, France, Germany, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, and the World Bank.*

# Table of Contents

Abbreviations and Acronyms .....	I
Message from the Chief Executive Officer .....	IV
Executive Summary.....	V
Introduction .....	1
<b>OUTCOME 1:</b> Council Study informs debate and work on basin development, reporting and management planning .....	9
<b>OUTCOME 2:</b> Study to support sustainable hydropower explores alternative pathways for the lower Mekong.....	15
<b>OUTCOME 3:</b> Preliminary Design Guidance for proposed mainstream dams updated to provide a benchmark for leading sustainable hydropower design.....	20
<b>OUTCOME 4:</b> Pak Beng prepared for joint action and Pak Lay prior consultation follows with continued innovation.....	25
<b>OUTCOME 5:</b> Design Changes for Xayaburi hydropower project reviewed for technical precision.....	30
<b>OUTCOME 6:</b> Mekong leaders and stakeholders reaffirmed MRC’s unique mandate and primary role .....	34
<b>OUTCOME 7:</b> Comprehensive report on the status of the basin to highlight trends to address.....	40
<b>OUTCOME 8:</b> MRC’s-Indicator Framework provides a foundation for better monitoring and decision-making .....	46
<b>OUTCOME 9:</b> MRC Hydromet network on track for decentralisation and expansion .....	50
<b>OUTCOME 10:</b> Expert Groups operationalised to provide inputs on technical, strategic planning, environmental and diplomatic issues.....	57
<b>OUTCOME 11:</b> Mid-term Review provides guidance for the MRC’s continual improvement .....	62
<b>FINANCIAL SUMMARY</b> .....	65
<b>OUTCOME STATUS SUMMARY</b> .....	70

## List of Figures

Figure 1: Relationship between SP, AWP & Annual Report .....	1
Figure 2: Types of Change .....	3
Figure 3: Pathway to Change.....	4
Figure 4: Progress in implementing outputs in the MRC Annual Work Plan 2018 .....	5
Figure 5: the linkages between the MRC's outcomes and outputs with the SDGs and relevant targets .....	8
Figure 6: SP Planning Cycle.....	16
Figure 7: SHDS Preparation Process .....	17
Figure 8: Role of design guidance hydropower project development phases .....	21
Figure 9: Pak Lay Road Map .....	27
Figure 12: The pathway from lessons learnt in MRC data collection and analysis exercises to the required actions and expected outcomes from implementation of the updated MRC-IF .....	48
Figure 13: Network operation for data sent to the MRC server from 2014-2017 .....	52
Figure 14: The status of the MRC HYCOS station operation over the LMB for data sent to the MRC server.	52
Figure 15: The MRC Near Real-Time Hydrometeorological Monitoring Webpage.....	53
Figure 16: No. of Page Views of the MRC Near Real-Time Hydrometeorological Monitoring Webpage .....	53
Figure 17: Thai Public Broadcasting Service on 1 August 2018, used the flood forecasting from the MRC's website during its news reporting on the flood situation in the aftermath of tropical storm Son-Tinh .....	54
Figure 18: MRC flood forecasting page .....	54
Figure 19: Expert Groups.....	58
Figure 20: 2018 Expenditures.....	66
Figure 21: Income Proportion .....	67
Figure 22: Total Income 2016-2018.....	67
Figure 23: Income Vs Expenditures .....	68
Figure 24: Outcome Evaluation matrix to assess the progress for each output in the SP and the type of change that has occurred in 2018 .....	71

## List of Tables

Table 1: Report Card on Outcome Status for 2018 .....	7
Table 2: Snapshot of examples of proposed actions for regional and national uptake of the Council Study	11
Table 3: Summary of conclusions and challenges and recommended priority actions .....	42



## Abbreviations and Acronyms

ADB	Asian Development Bank
ADPC	Asian Disaster Preparedness Centre
ARF	Administrative Reserve Fund (of MRC)
ASEAN	Association of Southeast Asia Nations
AWP	Annual Work Plan
BDP	Basin Development Plan
BDS	Basin Development Strategy
BF	Basket Fund
BFMS	Basin-wide Fisheries Management Strategy
CEO	Chief Executive Officer
CEWA	Charoen Energy and Water Asia Co. Ltd
CFDs	Core function decentralisation
CNR	Compagnie Naturelle de Rhône
DAGAP	Data Acquisition and Generation Action Plan
DP	Development Partner
EF	Earmarked Fund
EG	Expert Group
GMS	Greater Mekong Subregion
GWP	Global Water Partnership
HR	Human Resources
HPP	Hydropower Project
HYCOS	(Mekong) Hydrological Cycle Observing System
HYDROMET	Hydro-meteorological
IC	International Conference
IUCN	International Union for the Conservation of Nature
IWRM	Integrated water resources management
JAP	Joint Action Plan
JC	Joint Committee
JCWG	Joint Committee Working Group
JEM	Joint Environmental Monitoring
KPI	Key performance indicator
LMB	Lower Mekong Basin
LMI	Lower Mekong Initiative
MASAP	Mekong (Climate Change) Strategy and Adaptation Plan
MC	Member Country
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MRC	Mekong River Commission
MRC-IF	MRC Indicator Framework

MRCs	Mekong River Commission Secretariat
MTR	Mid-Term Review
NGO	Non-government Organisation
NIP	National Indicative Plan
NMC	National Mekong Committee
NMCS	National Mekong Committee Secretariat
PC	Prior Consultation
PDG	Preliminary Design Guidance
PDG2009	Preliminary Design Guidance 2009
PDG2018	Preliminary Design Guidance 2018
PDP	Power Development Plan
PBHPP	Pak Beng Hydropower Project
PLHPP	Pak Lay Hydropower Project
PDIES	Procedure for Data Information Sharing and Exchange
PMFM	Procedure for Maintenance of Flow on the Mainstream
PNPCA	Procedure for Notification, Prior Consultation and Agreement
PWUM	Procedure for Water Use Monitoring
RSAT	Rapid Sustainable Assessment Tool
RSF	Regional Stakeholder Forum
SIMVA	Social Impact Monitoring and Vulnerability Assessment
SDGs	Sustainable Development Goals
SEAFDEC	Southeast Asian Fisheries Development on fisheries management
SEI	Stockholm Environment Institute
SHDS	Sustainable Hydropower Development Strategy
SMART	5 elements of specific, measurable, achievable, relevant, and time-based goals/targets
SOBR	State of the Basin Report
SP	Strategic Plan
TbEIA	Transboundary Environmental Impact Assessment
TRR	Technical Review Report
UN	United Nations
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNOPS	United Nations Office for Project Services
USACE	United States Army Corps of Engineers
USD	United States Dollar (Currency)
USGS	United States Geological Survey
WMO	World Meteorological Organisation
XHPP	Xayaburi Hydropower Project

# Message from the Chief Executive Officer

## Dr. An Pich Hatda



It is my pleasure to present the Annual Report for 2018. During the year, the Mekong River Commission (MRC) continued to set a high standard in facilitating regional cooperation, in a proactive and mutually collaborative way, through implementing its core river basin management functions of river monitoring, flood forecasting, basin-wide planning, and coordinating the implementation of water utilisation procedures for data sharing, consultation on major infrastructure projects on the Mekong mainstream, water quality monitoring and maintenance of river flows.

One of the key highlights was the 3<sup>rd</sup> MRC Summit in April bringing together leaders of the Member Countries as well as high level delegations from China and Myanmar to reaffirm the MRC's "unique" mandate and "primary" role in Mekong basin management. The Mekong leaders also committed to financial self-sustainability by 2030 and the deepening of our ties with our Dialogue and Development Partners, and other regional and international actors.

Another highlight was the 6-month prior consultation process for the Pak Lay hydropower project, which commenced in August 2018, involved transparent sharing of detailed project information to the public, and an independent assessment by experts of the MRC Secretariat, engaging with various stakeholders at the local, national and regional levels which enabled deliberation by senior representatives of the countries. The process is expected to result in an agreed statement by the MRC Joint Committee on measures to avoid, minimise and mitigate potential adverse transboundary impacts of the proposed project and the preparation of a joint action plan to further engage in information sharing, technical exchange and joint monitoring. Important work such as the update of the Sustainable Hydropower Development Strategy, Preliminary Design Guidance for Mainstream Dams, Transboundary Environmental Impact Assessment Guidelines, State of the Basin Report and the MRC Indicator Framework made significant progress.

The year 2018 also marked the midpoint in the implementation of the MRC Strategic Plan 2016-2020 and saw major reviews carried out for MRC's operations, the progress with implementing the Strategic Plan, as well as the decentralisation of basin monitoring to Member Countries. Providing a chance to reflect on what we have achieved and where we need to refocus our efforts to ensure we continue to deliver on our mission.

The independent Mid Term Review noted in their report:

*"There have been some impressive achievements in the first half of the Strategic Plan period in terms of outputs produced, including but not limited to, the Council Study, Basin-wide Fisheries Management and Development Strategy, Mekong (Climate Change) Adaptation Strategy and Action Plan, improvements in implementing the Prior Consultation process with the Joint Committee Statement and Joint Action Plan for Pak Beng, Transboundary Environmental Impact Assessment guidelines, and the update of the Preliminary Design Guidance for mainstream hydropower projects."*

The independent Operational Review recognised that:

*"significant achievements of the MRC in recent years... have increased the reputation and relevance of the organisation considerably as well as consolidating its standing as one of the premier River Basin Commissions worldwide".*

I would like to commend the Governments of the Member Countries, our partners, and the people of the Mekong for their continual commitment and their contribution to the sustainable future of this great river.

## Executive Summary

The Annual Report covers the key achievements and progress of the Mekong River Commission for 2018, the third year of the MRC Strategic Plan 2016-2020 and the mid-point in its implementation. The MRC Strategic Plan identifies four key result areas, seven outcomes, 43 outputs and 169 activities to be implemented during its 5-year period. The status of progress of output implementation, in comparison to the two previous implementation years, has shown an ongoing improvement in performance - with **90% of outputs 'on-track'**, with only 10% delayed. This is an improvement on 2017 where 23% of outputs were delayed. An assessment of the status of the seven outcomes in terms of progress and level of change has also shown an improvement, with four outcomes now rated as 'possible' and three as 'almost certain'. The MRC are therefore on track to achieve the desired level of progress and impact and to meet its commitments in the Strategic Plan.

Overall, 2018 saw significant achievement in all areas. The Member Countries continued to increase their funding to the MRC - leading to a greater sense of ownership, with contributions made in full and on time, in line with the commitments under the 2030 Roadmap to be a self-financing inter-governmental organisation. Stakeholder engagement continues to be strengthened and the organisation's efforts to affirm its role as a **knowledge hub** continued through the finalisation of the State of Basin Report and the MRC Indicator Framework. Major initiatives were also implemented to advance the uptake of findings of the Council Study, receive feedback from key partners and stakeholders on hydropower design, planning and developments, and upgrade the monitoring network. The MRC also demonstrated its commitment to continual improvement and being more open and transparent undertaking independent reviews of its operations and the MRC Strategic Plan, including decentralisation, to ensure that the MRC provides value-added services to the four Member Countries and the stakeholders of the Mekong Basin.

For 2018, the Annual Work Plan budget was USD20,259,022. The total expenditure for the year was USD 12,481,200 which included USD 8,827,062 from the Basket Fund (BF), USD 3,644,467 from the Earmarked Fund, and USD 9,671 from the Administrative Reserve Fund (ARF). The overall disbursement rate was 62%. The total income received was USD 8,731,221, plus cash advances and outstanding obligations carried over from 2017, resulting in total funds of USD 21,179,436 being available for 2018.

## Key Highlights

### Council Study informs debate and work on basin development, reporting and management planning

In 2017, the MRC completed the six-year Council Study which included integrated and cumulative assessments of water resources development impacts in six sectors, tools and datasets for future reference and work, and key messages for decision. 2018 saw the further uptake of these key messages with proactive meetings occurring among policy makers at the Ministerial level of the Member Countries to provide detailed information about the Council Study, discussing and debating its findings and implications for national plans. Meetings were also held with national line agencies, and stakeholders. The findings of the Council Study also supported critical activities of the MRC including informing the State of Basin Report 2018, the MRC Indicator Framework and the study for the update of Sustainable Hydropower Development Strategy. A public version of the Council Study summary was also prepared.

### Study to support sustainable hydropower development explores alternative pathways for the lower Mekong

To support the update of the Sustainable Hydropower Development Strategy (SHDS) a science-based Study was undertaken in 2018 to *"explore possible new alternative ways in which to enhance transboundary benefits and reduce transboundary costs, while maintaining water, energy, food and livelihood security"*. Different sequences of hydropower project developments, which were characterised as 'pathways', were defined to provide insights into how best these objectives can be met. Some clear findings emerged from the

pathway analysis. The findings of the study will feed into the SHDS through strategic priorities and actions needed to address the findings and implement the strategy.

### **Preliminary Design Guidance for proposed mainstream dams updated to provide a benchmark for leading sustainable hydropower design**

In 2018, the Preliminary Design Guidance 2018 (PDG2018) was updated from the existing 2009 version through the introduction of contemporary performance targets, and design and operating principles for mitigation measures, monitoring and adaptive management. The process for updating the guidance demonstrated a continual improvement process within the MRC by drawing from the experience of the first three mainstream hydropower project technical reviews as well as the current understanding of best practices for managing the risks and mitigating the impacts of hydropower projects, internationally and in the Mekong region, as detailed in the [Hydropower Impact Mitigation and Risk Management Guidelines \(2018\)](#). PDG2018 has been developed in consultation with key line agencies, developers and stakeholders and, once agreed, will be used to guide the design of hydropower projects in the Lower Mekong and the technical review process of the prior consultation process for hydropower projects on the mainstream.

### **Pak Beng prepared for joint action and Pak Lay prior consultation follows with continued innovation**

In late 2017, the four Member Countries (MCs) issued an agreed joint “[Statement](#) on the Pak Beng Hydropower project”, concluding the prior consultation process and calling for the Government of Lao PDR to make every effort to minimise potential adverse transboundary impacts on water flow, sediment, fisheries, water quality, aquatic ecology, navigation and socio-economics issues. The MC’s requested that the MRC Secretariat prepare a Joint Action Plan (JAP), outlining a post-prior consultation process. The implementation of the JAP is an innovative way to identify the actions to ensure the Statement is implemented and provides a way for the MRC Joint Committee to monitor its implementation. This also enhances the transparency of the process to engage key partners and stakeholders. 2018 saw further work to finalise the JAP for Pak Beng. In the case of Pak Lay, the prior consultation process commenced in August 2018 and will conclude in early April 2019. Based on the experience gained for the Pak Beng case, as well as continued refinement and adjustment following feedback from MC’s and stakeholders, it is expected that the Pak Lay Hydropower project will also have an agreed joint “Statement” and a JAP, like the Pak Beng Hydropower project.

### **Design changes for the Xayaburi Hydropower project reviewed for technical precision**

Following the prior consultation process for the Xayaburi Hydropower project, and based on key MRC technical recommendations, the Government of Lao PDR and the Xayaburi Power Company have undertaken further studies and carried out a redesign of the project to mitigate certain potential impacts from dam construction and operation including those on migratory fish, sediment flow, and navigation. In 2018, the MRC undertook a technical review of the redesign based on the documentation provided by the Government of Lao. The redesign of the Xayaburi Hydropower project provides an example of where the prior consultation process resulted in the developer making a significant effort and investment to address key issues identified through the process, particularly the technical review. The redesign and the willingness of the developer to be open and transparent through the ongoing sharing of information is a positive step in improving and demonstrating the value of the consultation process and allaying the concerns of Member Countries’ and stakeholders.

### **Mekong leaders and stakeholders reaffirmed the MRC’s unique mandate and primary role**

For the third time in its history, the MRC convened a highly successful Summit of Mekong Prime Ministers and Ministers from China and Myanmar. The leaders issued the Siem Reap Declaration, reaffirming the unique mandate and role of the MRC as a treaty based inter-governmental river basin organisation in the Mekong. In addition to the pre-Summit International Conference and Summit, the MRC continued its active stakeholder program in 2018 and continued to communicate and engage with partners, stakeholders and the public. Several exchanges and mutual learning events with new and existing partners were held. The 5<sup>th</sup> Regional Stakeholder Forum took place, continuing the institutionalised mechanism of regular stakeholder engagement for key MRC work. Lastly, the MRC introduced innovative ways to capture key messages from stakeholders to ensure they are addressed in relevant strategies, policies and programs, with feedback on

progress in subsequent engagements. Communication with the media, public and through outreach continued at a high volume.

### **Existing and new partnerships forged for Mekong cooperation**

2018 saw a number of new partnerships formed by MRC with the following organisations, including: the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) for disaster risk reduction; the United Nations office for Project Services (UNOPS) for enhanced procurement services and fund mobilisation; the Viet Nam Space Agency for access to more data; as well as with the Association of Southeast Asia Nations (ASEAN), in which a renewed Framework of Cooperation has finally been agreed to. Continuing current MRC partnerships, include: the Compagnie Nationale du Rhône (CNR) resulting in successful technical visits to the Rhône River to examine hydropower coordinated operations and management; the Global Water Partnership (GWP) and the United States Army Corps of Engineers (USACE) on collaborative modelling and shared vision planning using the findings of the Council Study; the International Water Management Institute (as well as China) on progressing the Joint Research on extreme floods and droughts; the Asian Disaster Preparedness Centre on drought monitoring, the Stockholm Environment Institute (SEI) and the United States Geological Survey (USGS) on reviewing the Council Study; the USGS on improving the socio-economic database; the United Nations Environment Programme (UNEP) on water quality monitoring training; the Southeast Asian Fisheries Development (SEAFDEC) on fisheries management; and the Moroccan government on technical exchanges in watershed management. A continuing indication of the MRC's value and importance in the region was recognised in the Joint Statement of the 9<sup>th</sup> Mekong-Ganga Cooperation Ministerial Meeting in August 2018 regarding India's intention to become a partner of the MRC; as well as in the Lower Mekong Initiative (LMI) Ministerial Joint Statement to strengthen water data management and information sharing in the lower Mekong which highlighted the "critical role of the MRC as a facilitator of data and information sharing and as a regional knowledge hub to promote cooperation on science-based decision-making for development activities for the Mekong River Basin".

### **Comprehensive report on the status of the basin highlights trends for optimal and sustainable development**

The third State of Basin Report was completed in 2018, following an extensive and collaborative consultation process. The State of Basin Report (SOBR) uses a consistent set of indicators from the MRC Indicator Framework (MRC-IF) covering five core dimensions: environmental, social and economic, climate change and cooperation. For the first time, the SOBR also includes a review of conditions within the Upper Mekong Basin in China and Myanmar. The SOBR is an important resource which provides factual information about the status and trends of conditions within the basin, highlighting actions that should be taken when updating the Basin Development Strategy and national strategies and plans.

### **MRC Indicator Framework provides foundation for better decision-making**

In 2018, the MRC undertook important work in finalising the MRC Indicator Framework. The MRC-IF includes 15 Strategic Indicators, 53 Assessment Indicators and 182 Monitoring Parameters which will help inform the Member Countries as to how they are progressing towards the objectives of the 1995 Mekong Agreement. The MRC-IF provides a consistent and streamlined approach to data collection, analysis and reporting, alerting Member Countries to key issues and trends and enables the identification of areas requiring further investigation and cooperation across the five core dimensions. The MRC-IF provides important information for the state of basin reporting, and basin-wide assessments. The MRC-IF sets a new basis for strengthening the standardisation of the process for data collection (generation and acquisition) across all activities of the MRC, for future projects, studies and technical reporting.

### **MRC Hydro-meteorological network on track for decentralisation and expansion**

During 2018, in a bid to ensure the efficient functioning of the Hydro-meteorological (hydromet) network, the MRC undertook important work to fix issues with the hydro-met stations which affected their ability to provide basin-wide automated and near real-time water level and rainfall data to monitor the lower Mekong and to support flood forecasting, and other water-related aspects of the basin. Furthermore, a help-desk was



set up to monitor the status of each hydro-met station on a daily basis and the website was upgraded to improve usability. Based on these efforts, the system is now working efficiently and smoothly, with plans to expand the hydro-met network and set-up additional stations in strategic geographical points to provide integrated water level and rainfall data for improved monitoring of the lower Mekong River.

### **Expert Groups operationalised to provide inputs on technical, strategic planning, environmental and diplomatic issues**

The MRC held its first meetings of the the four Expert Groups on Strategy and Partnerships, Basin Planning, Environmental Management, and Data, Modelling and Forecasting during 2018. The Expert Groups aim to enhance the mode of collaboration between the regional and national levels: the MRC Secretariat (MRCS) and national line agencies, other institutions and organisations. The Expert Groups are technical platforms, where regional and national experts regularly meet to jointly develop routine or emergent work related to transboundary water management, and to coordinate the implementation and uptake of activities and products at the national level. Their consistent engagement of national experts is crucial for the MRC to create better tailored products that are also increasingly demand-based. Because of this strengthened collaboration between the MRCS and national authorities, regional and national perspectives will be increasingly understood and harmonised. This is in line with the 2030 goal of political, technical and financial ownership of the MRC by its Member Countries.

### **Mid-term Review provides guidance for the MRC's continual improvement**

The year 2018 was the midpoint in the implementation of the MRC Strategic Plan 2016-2020, including the implementation of the new MRCS structure. As a result, a number of major reviews were carried out to assess the achievements and challenges with the MRCS' operations, the progress with implementing the Strategic Plan implementation, as well as the decentralisation of basin monitoring to Member Countries. This provided a chance to reflect on what the MRC has achieved and where the MRC needs to refocus its efforts to ensure it continues to deliver on its mission.

## Introduction

The Mekong River Commission’s Annual Report 2018 is the third annual report of the 5-year MRC Strategic Planning cycle, 2016-2020. The Annual Report highlights the key achievements of the MRC in 2018 as well as reports on the progress of outputs and activities set out in the Strategic Plan (SP) and the Annual Work Plan (AWP) 2018.

The Annual Reporting process is divided in two parts.

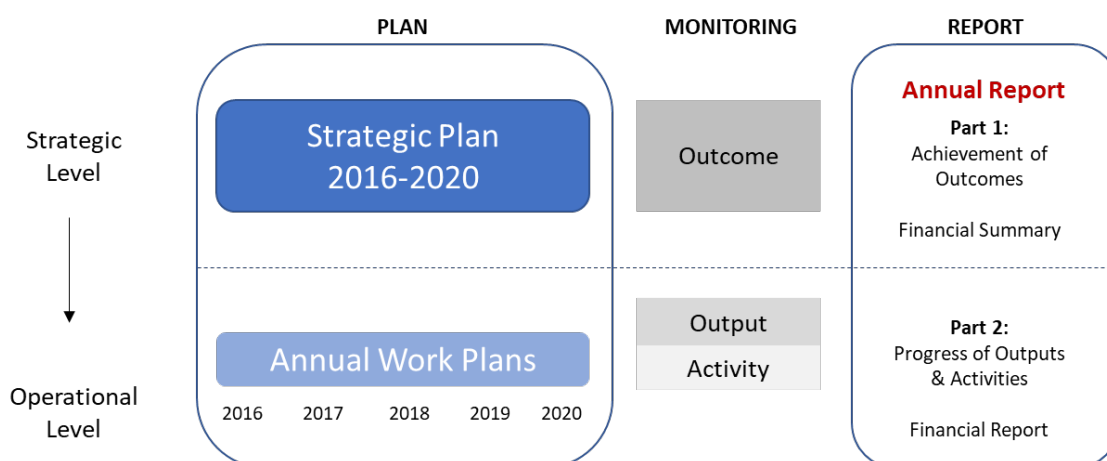
**Part 1** – this report - reports at the level of outcomes for the year in the implementation of the overall MRC Strategic Plan 2016-2020 and its Annual Work Plan for 2018 as well as providing a brief financial report summary.

- **Outcome reporting:** Showcases the outcomes that have demonstrated an “evidence of change” (in awareness or knowledge, in behaviour or action, in policy or planning) within each of the MRC Strategic Plan’s seven outcomes (see below), as measured by their indicators. Outcome indicators were selected based on where an evidence of change was observed during 2018 – not all outcome indicators are reported.
- **Financial Summary:** Summarises the MRC’s financial performance in terms of actual expenditure compared to the forecasted budget in the Annual Work Plan 2018, and a comparison with the financial performance of the previous year, 2017.
- **Outcomes Status:** Provides a report card on the status of the seven outcomes within the Strategic Plan 2016-2020 through an assessment of the likelihood of achieving the outputs identified to deliver on the outcome by the end of 2020 and the impact of the change once an output has been achieved. The report card also identifies key actions that should be undertaken to improve performance and increase the likelihood of achieving the outcomes.

**Part 2** – a separate report to this report - presents detailed progress reporting on the implementation of the Annual Work Plan 2018 in terms of outputs and activities under each outcome, as well as detailed financial reporting.

- **Progress reporting:** Presents a detailed report on the progress of delivering each output under each outcome is reported in terms of the activities completion status (as planned in the AWP for the year), the percentage of progress the output has achieved (against the 5-year MRC SP), and its implementation status in terms of being “on track” or “delayed”. In addition, a report on the indicators of each output are provided, showing the rating and status at the end of the 2018 reporting year.
- **Financial reporting:** Presents the detailed income and expenditure for the year by Basket and Earmarked funds, and the MRC’s overall financial activities for the period 1 January to December 2018.

**Figure 1: Relationship between SP, AWP & Annual Report**



# MRC and its Strategic Plan

The mission of the **MRC**, established by the **1995 Mekong Agreement** between the governments of Cambodia, Lao PDR, Thailand and Viet Nam, is to promote and coordinate sustainable management and development of water and related resources of the lower Mekong River Basin for the countries' mutual benefit and the people's well-being. Under the MRC framework, the countries cooperate in all fields of sustainable development, utilisation, management and conservation of the water and related resources of the lower Mekong River Basin including, but not limited to: irrigation, hydro-power, navigation, flood control, fisheries, etc., in a manner to optimise the multiple-use and mutual benefits of all riparian's and to minimise the harmful effects.

For 2016-2020, the **MRC Strategic Plan** identifies 4 Key Result Areas, 7 Outcomes, 43 Outputs and 169 Activities to be implemented in 5 years. The MRC SP addresses the priorities identified in the Basin Development Strategy 2016-2020 (BDS) at the regional/basin level. The National Indicative Plans 2016-2020, one for each country, address the BDS priorities at the national levels through joint projects<sup>1</sup>, national projects of basin significance, national activities and decentralised activities.

Overall MRC strives for the following results and outcomes:

<p><b>Key Result Area 1:</b> <i>Enhancement of national plans, projects and resources based on basin-wide perspectives</i></p>	<p><b>Outcome 1:</b> Increased common understanding and application of evidence-based knowledge by policy makers and project planners</p> <p><b>Outcome 2:</b> Environment management and sustainable water resource's development optimised for basin-wide benefits by national sector planning agencies</p> <p><b>Outcome 3:</b> Guidance for the development and management of water and related projects and resources shared and applied by national planning and implementing agencies</p>
<p><b>Key Result Area 2:</b> <i>Strengthening regional cooperation</i></p>	<p><b>Outcome 4:</b> Effective and coherent implementation of MRC Procedures by the Member Countries</p> <p><b>Outcome 5:</b> Effective dialogue and cooperation between Member Countries and strategic engagement of regional partners and stakeholders on transboundary water management</p>
<p><b>Key Result Area 3:</b> <i>Better monitoring and communication of the Basin conditions</i></p>	<p><b>Outcome 6:</b> Basin-wide monitoring, forecasting, impact assessment and dissemination of results strengthened for better decision-making by Member Countries</p>
<p><b>Key Result Area 4:</b> <i>Leaner River Basin Organisation</i></p>	<p><b>Outcome 7:</b> MRC transitioned to a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans</p>

## Annual Workplan 2018 Implementation: Progress, achievements and challenges

To achieve the seven outcomes of the MRC's Strategic Plan 2016-2021, the Annual Work Plan for 2018 committed to implementing 38 outputs, with a budget of USD20,259,022 and an expenditure of USD

<sup>1</sup> Joint projects are projects between two member countries that address transboundary issues.

12,481,200, resulting in a disbursement rate of 62%. The total income received was USD 8,731,221, plus cash advances and outstanding obligations carried over from 2017, resulting in total funds of USD 21,179,436 being available for 2018.

2018 marked a mid-point of the Strategic Plan 2016-2021 with implementation improving significantly from previous years, with only four (10%) outputs in the AWP 2018 classified as ‘delayed’, with the remaining outputs classified as ‘on-track’ (90%), as shown in Figure 4.

2018 saw major achievements under each of the seven outcomes, these achievements are highlighted in the stories of change for each outcome in this report.

The MRC considers it important to measure and report on not only the progress of an output but also the level of change or impact that this activity has enabled. Figure 2 and Figure 3 show this pathway of change diagrammatically. For example, an activity may lead to short-term change and building of awareness which is a good result, however, the ultimate goal is to have a long-term sustainable impact through more significant outcomes such as the adoption of important data sharing protocols, information, strategic priorities, or models (as examples) into the development and implementation of regional and national policies, plans, strategies, legislation and cooperation mechanisms.

In achieving long term change the MRC can then be more certain that it is achieving its mandate of sustainable management and development of water and related resources of the lower Mekong River Basin for the countries’ mutual benefit and the people’s well-being.

**Figure 2: Types of Change**

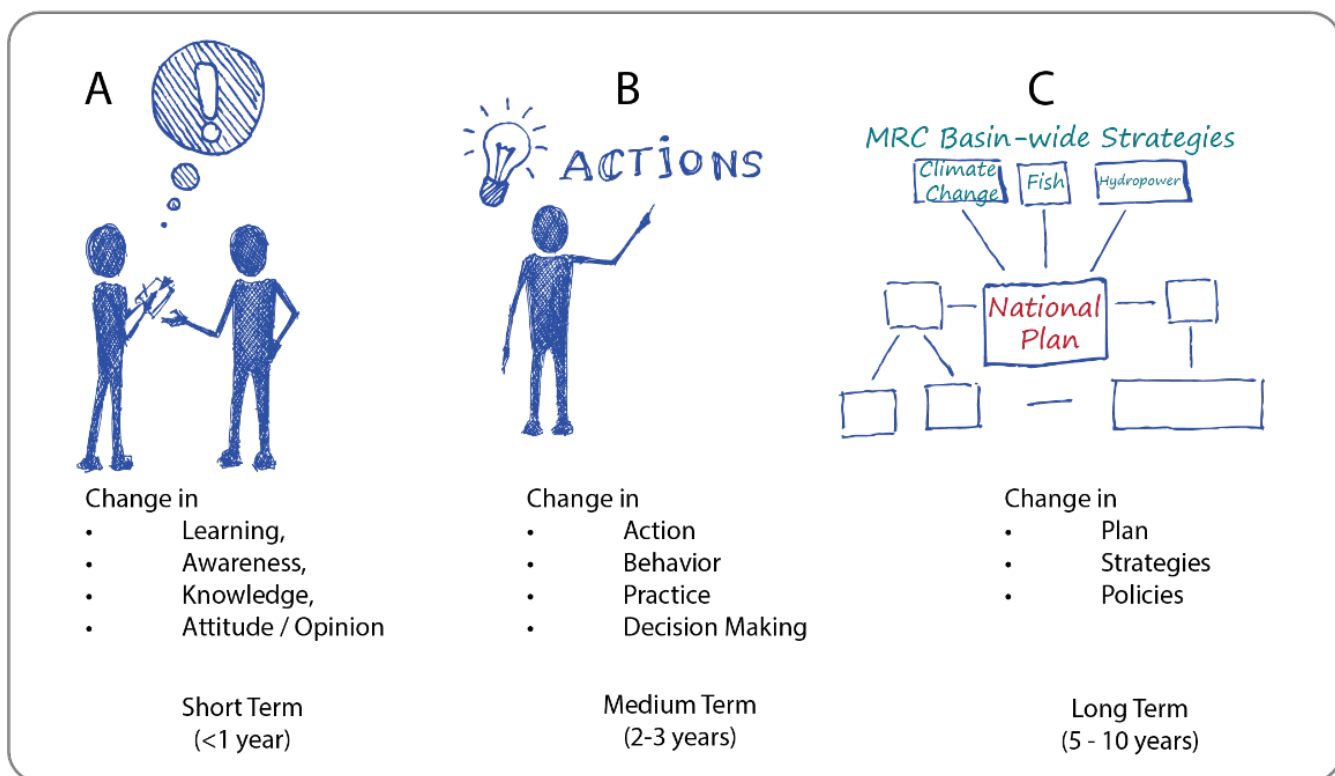


Figure 3: Pathway to Change

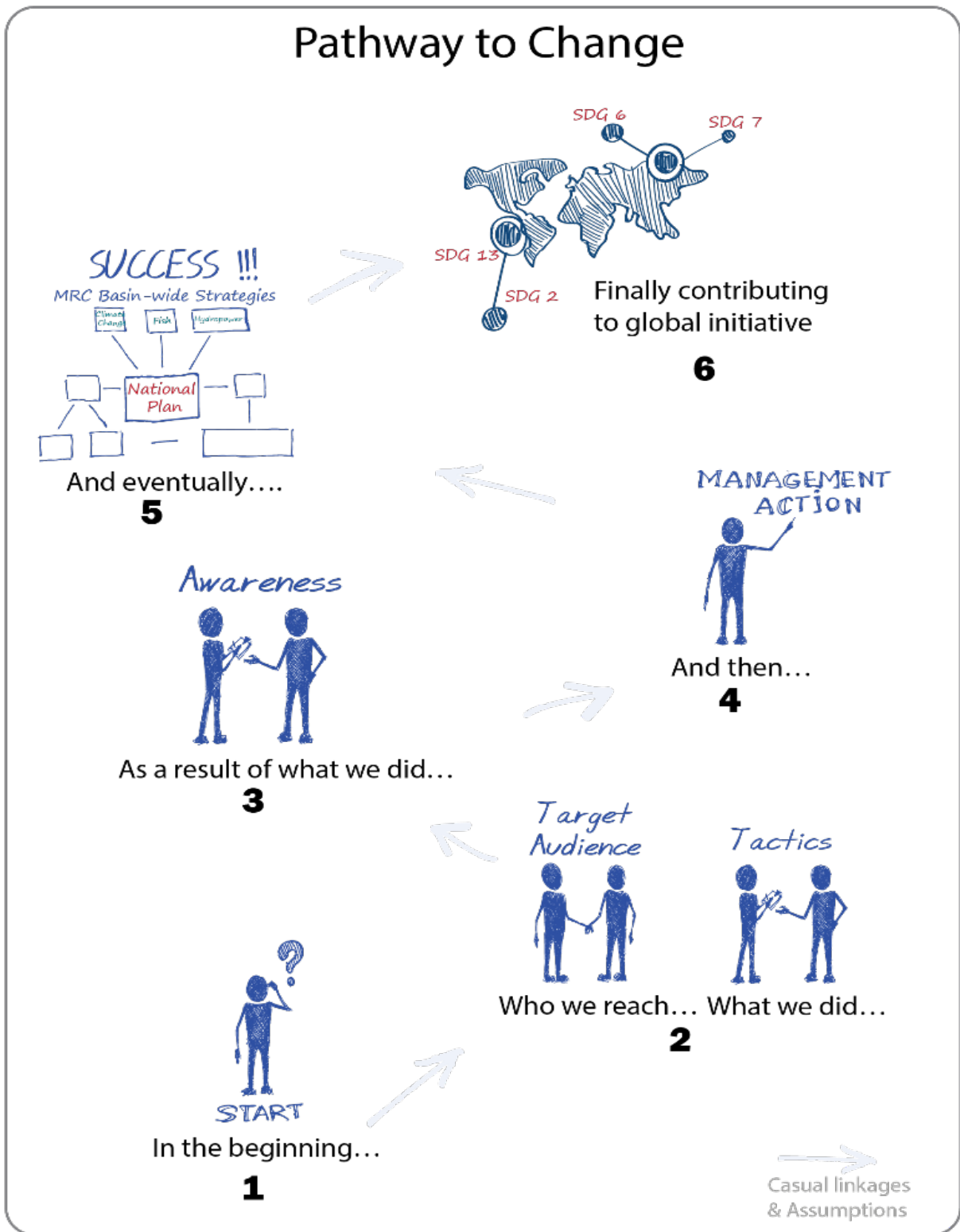


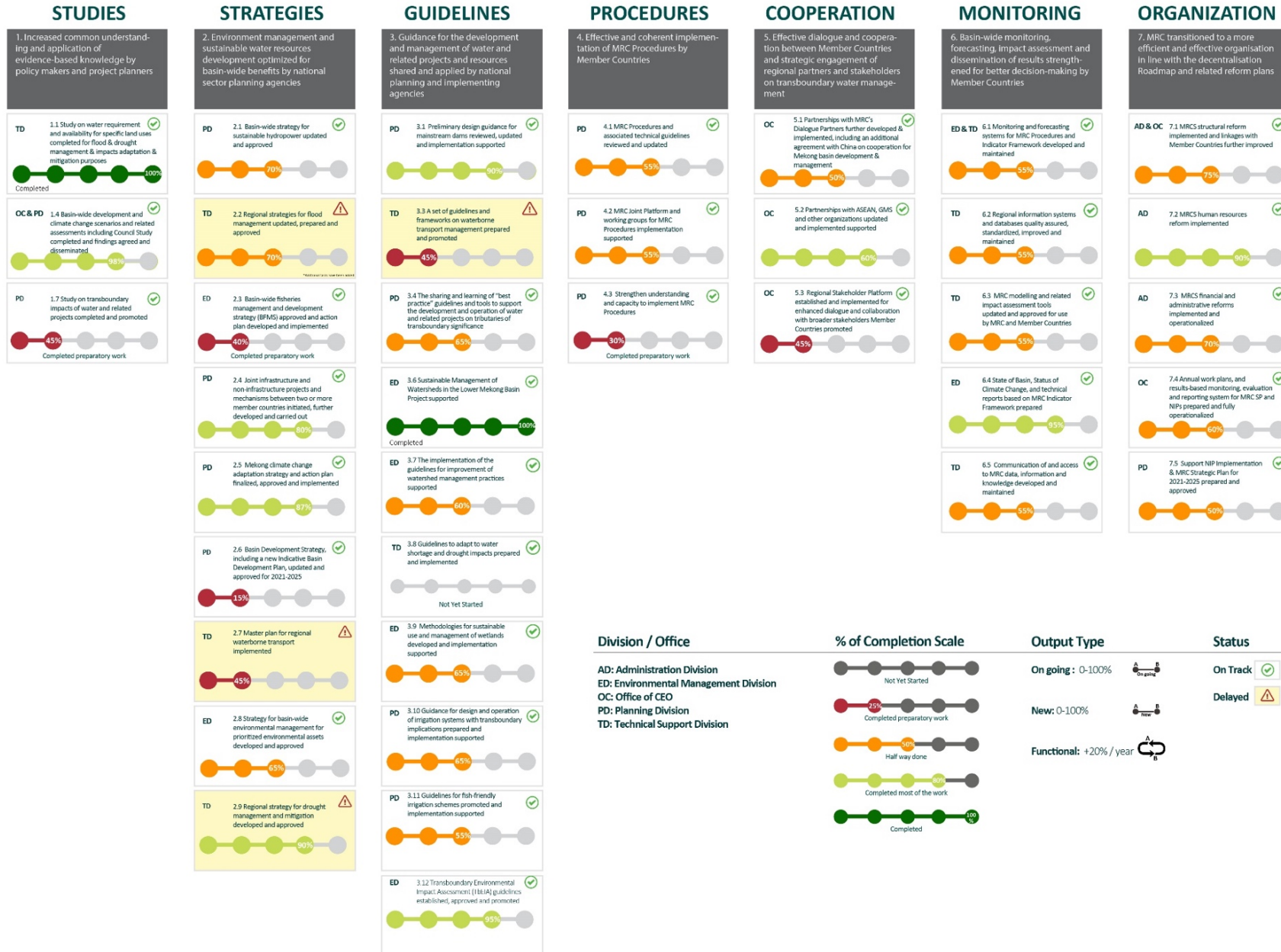
Figure 4: Progress in implementing outputs in the MRC Annual Work Plan 2018

# MRC ANNUAL WORK PLAN 2018 PROGRESS

**Summary:**  
 Total AWP 2018 Output: 38  
 Delayed: 4  
 On track: 34



Updated: December 2018





In addition to the assessment of the progress of outputs planned for in the AWP 2018, an assessment was also undertaken to determine the overall status of the MRC's seven outcomes. To guide this assessment an Outcome Evaluation matrix was applied based on the progress for each output in the SP and the type of change an output has achieved so far. The output progress was given a status category from high to low: 'on-track', 'not yet started' and 'delayed'. The type of change an output has achieved was assessed from high to low based on type of change: plans, policies and conditions (high); behaviour, practice or decision-making (medium); or knowledge, awareness and opinion (low).

Using the results of the assessment of the outputs for each Outcome an overall status was then determined as:

- 'Almost Certain': change is expected to occur;
- 'Possible': change is expected to occur but significant effort is necessary to achieve influence; or
- 'Unlikely': change is unexpected but may occur if critical issues are resolved.

Part 3 of this report includes the Outcome Status Summary for each outcome and its supporting outputs with detailed commentary on the progress with implementing these outputs and the challenges that were experienced. Recommended actions are also identified to improve the progress and/or increase the level of change of an output (where necessary) to ensure the outcome is delivered by the end of the SP 2016-2020. Suggestions are also made where it is considered that an output should be discontinued or implemented in the next SP planning phase, rather than the current SP.

The Report Card, Table 1 below, provides a snapshot of the Outcomes status for 2018, and identifies key actions that are necessary to improve the status of each outcome through implementation of the Annual Work Plan 2019. An assessment is then made of the expected result from implementing these actions by the end of 2019.

At the regional scale, the MRC in addressing basin-wide needs, challenges and opportunities contributes to the United Nations (UN) Sustainable Development Goals (SDGs). The MRC's activities directly link to the following SDGs: Goal 1 No poverty, Goal 2 Zero Hunger, Goal 5 Gender Equality, Goal 6 Clean Water and Sanitation, Goal 7 Affordable and Clean Energy, Goal 9 Industry, Innovation and Infrastructure, Goal 12 Responsible Consumption and Production, Goal 13 Climate Action, Goal 15 Life on Land and Goal 17 Partnerships for the Goals. Figure 5 following, illustrates in detail the linkages of the MRC's outcomes and outputs with the SDGs goals and relevant targets.

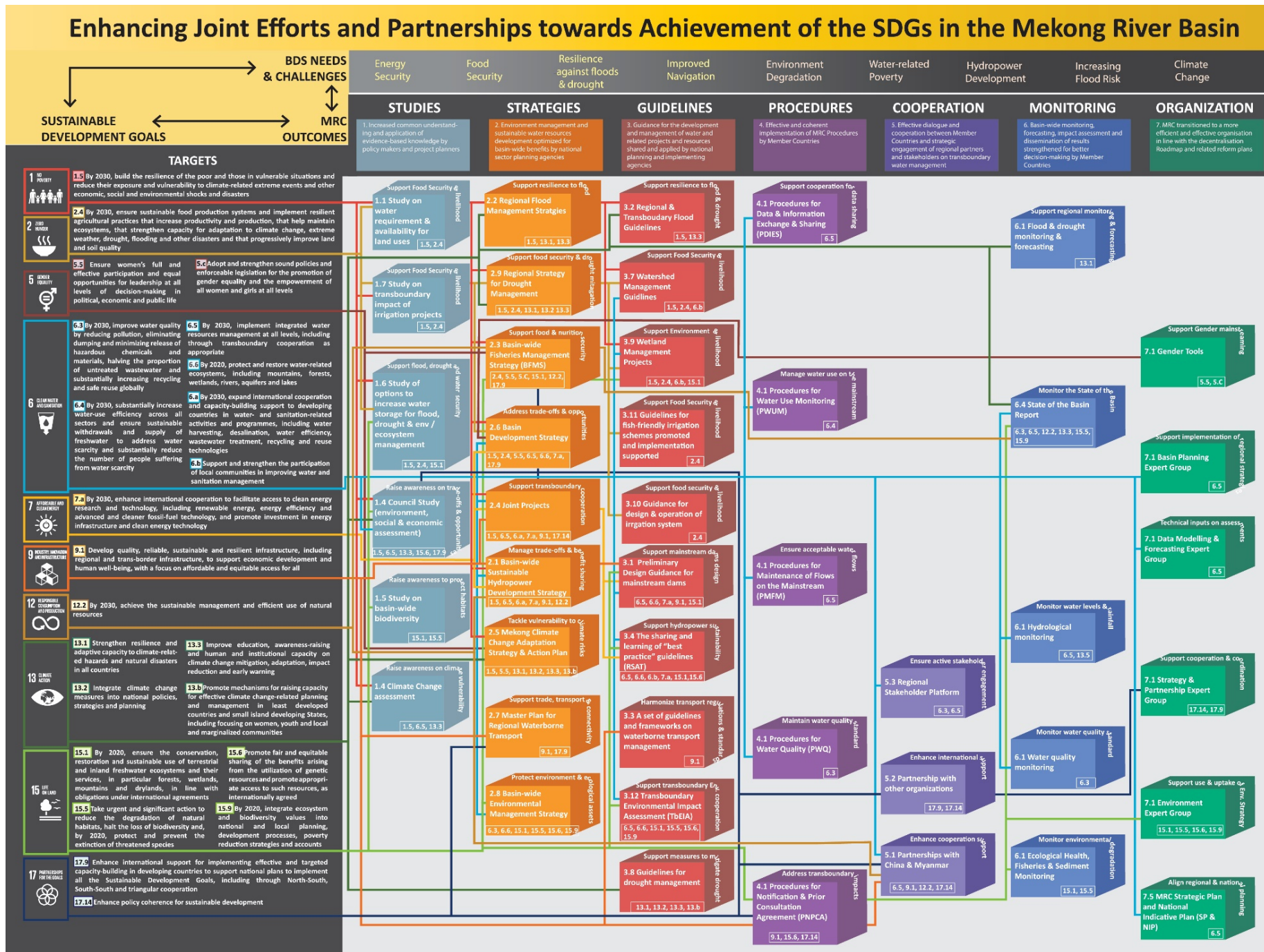
Following in the next section, the most significant achievements and stories of change in 2018 are provided detailing the key outputs undertaken to progress the MRC's important work on the development and implementation of its studies, strategies, guidelines, procedures, cooperation mechanisms, monitoring, and organisational matters.

Table 1: Report Card on Outcome Status for 2018

Outcome Status as of December 2018

	Outcome 1: Studies	Outcome 2: Strategies	Outcome 3: Guidelines	Outcome 4: Procedures	Outcome 5: Cooperation	Outcome 6: Monitoring	Outcome 7: Organization
Likelihood of the output producing change							
<b>Almost Certain</b>	2	2	6	2	3	2	3
<b>Possible</b>	2	5	1	1		1	2
<b>Unlikely</b>	3	2	5			2	
<b>Total # of Outputs under each outcome</b>	7	9	12	3	3	5	5
<b>Outcome Status</b>	<b>Possible</b>	<b>Possible</b>	<b>Possible</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Possible</b>	<b>Almost Certain</b>
<b>Key Actions to improve Outcome Status based on the Annual Work Plan 2019</b>	Further engagement with MCs to ensure the regional and national uptake plans for the Council Study are developed, finalised and adopted. Identify studies where the Council Study has already provided critical information and discontinue outputs no longer necessary.	Focus on national needs and challenges in developing new strategies and plans. Measures to encourage national uptake, need to be identified and implemented for mainstreaming into national plans, for existing strategies and plans and mainstreamed through the BDS.	Approve existing draft guidelines for voluntary use, such as the TbEIA. Review the RSAT tool for extension beyond hydropower to improve applicability. Focus on ensuring the national and regional use of the existing guidelines and standards.	Improve the way MRC exercises water diplomacy. Improve the MRC procedures, such as PDIES, PWUM and PMFM . Remain committed to the development of the Joint Statement and Joint Action Plan for hydropower development on the mainstream to mitigate and minimise	Consider comparative advantage in water resources management in the Mekong while advancing institutional cooperation. Consider a collaborative framework for improving engagement with Dialogue partners, stakeholders, and new partners.	Accelerate upgrade of the information system and databases. Ensure SOBR findings are used in developing strategic priorities in the BDS and BDP . Operationalise DAGAP. Improve the capacity and accuracy of flood forecasting, monitoring and modelling.	Upgrade the financial system so it is fit for purpose. Ensure representatives of the Expert Groups are delegated technical experts. Continue improvement of the HR systems through the approval of the manual. Refine handover agreements for decentralisation.
<b>Expected Results from implementing the Annual Work Plan 2019</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Almost Certain</b>	<b>Almost Certain</b>

Figure 5: Linkages between the MRC's outcomes and outputs with the SDGs and relevant targets





## Council Study informs debate and work on basin development, reporting and management planning

### Indicator:

- Evidence of national and regional decisions made based on or referring to MRC knowledge products

Sustainable development within the Lower Mekong Basin (LMB) requires mitigating the risks and optimising the opportunities that the Mekong River creates for the people of the LMB in a manner that conserves the river's functions for future generations. Achieving this goal is essential and urgent. Basin-wide cooperation is needed to ensure long-term water, energy and food security, address environmental needs, and realise opportunities for collaborative development that shares benefits across borders. Countries acting alone cannot achieve this goal.

In November 2011, the Prime Ministers of Cambodia, Lao PDR, Thailand and Viet Nam resolved to conduct a Study on Sustainable Management and Development of the Mekong River including impacts of mainstream hydropower projects during the Third Mekong- Japan Summit.

The MRC Council commissioned the study (the Council Study) the following month to assess current and potential future development plans of the Mekong countries in six water-related sectors – hydropower, agriculture and land use, irrigation, navigation, flood protection and industry and water use – and predicts both positive and negative impacts across environment social and economic spheres. Building on previous studies undertaken by the MRC, including the [Basin Development Plan's Assessment of Basin-wide Development Scenarios \(2011\)](#) and the [Strategic Environmental Assessment of Mainstream Dams \(2010\)](#), the Council Study was completed in December 2017.

During 2018, at the regional level, the MRC worked to incorporate and build on the information and findings of the Council Study in its various works, including the State of the Basin Report, the updating of the Sustainable Hydropower Development Strategy, and the development of various tools, thematic strategies and guidelines (see the information box on MRC strategies and guidelines).

The MRC also worked with regional and international partners to help further understand the data and results of the Council Study and their application such as using a shared vision planning tool – a collaborative approach to formulating water management solutions that integrates traditional planning processes with structured public participation and collaborative computer modelling.

Finally, the MRC continues to support the Member Countries to develop action plans to consider the Council Study findings, data and tools for inclusion in national planning processes and the implementation national programs.

## PROGRESS

During 2018, following the completion of the [Council Study](#) in December 2017, the MRCS together with the Member Countries undertook high-level meetings with policy makers at the Ministerial level to provide detailed information about the Council Study and its findings. Meetings were also held with national line agencies of the Member Countries, and also with key non-government organisations (NGO), civil society, academia and development partners.

At a regional level, the data, information, modeling and key findings as well as lesson learnt from the Council Study have been used as a basis for the development of a number of important reports, strategies and frameworks.

In the case of the State of Basin Report 2018, the data and information on the status of the five dimensions, environment, social, economic, climate change and cooperation, was supported by data and information from the current situation included in the Council Study. The update of the MRC-Indicator framework drew from the lessons learnt of the assessment work undertaken to develop the Council Study, resulting in the addition of a social indicator and guided the MRC in strategic planning for the acquisition and generation of data for regional reporting cycles. The Sustainable Hydropower Development Strategy has also drawn from the modelling of the study to further work on assessing alternative pathways and strategic priorities for future development of hydropower in the lower Mekong River Basin.

## EVIDENCE OF CHANGE

The high-level Ministerial meetings yielded discussions, questions and debate among senior policy makers on development trajectories, the national plans of each country and the impacts on the basin. Awareness and discussion of technical studies at this level are a good step towards making needed changes in policies and plans. By the end of the year, the result of the high-level meetings was the development of the Council Study national uptake action plans for the Governments of Cambodia and Vietnam, with plans for Lao PDR and Thailand still in preparation.

The national uptake plans enable the embedding of the key findings and recommendations from the Council Study into national programs and planning activities. The modelling capability of a variety of tools within the Council Study, for hydrological, ecological, social and economic aspects, have proven to be of interest for national governments, including for national environmental impact assessment considerations. For example, the DRIFT tool, an ecological modelling tool, has been identified as relevant for immediate use by some countries in their national modelling activities.

It is expected that the national uptake action plan of the Council Study for each Member Country will build a foundation for the utilisation of various impact assessment tools of water resources and related development, and improve the effectiveness of the national socio-economic development plans by enabling the consideration of benefits and trade-offs between sector development, as well as taking into account the transboundary implications toward promoting sustainable water and related resources development in each Member Country and the lower Mekong River Basin, as a whole.

Table 2 below provides a snapshot, **of a few examples of proposed actions to ensure the uptake of the Council Study**, of the detailed matrix of the regional and national uptake plans, broken down into key overall findings; specific sector key findings, challenges and opportunities; and study recommendations (high-level policy and specific technical recommendations):

**Table 2: Snapshot of examples of proposed actions for regional and national uptake of the Council Study**

Key Council Study Findings and Recommendations	Actions for Uptake by the MRCS	Actions for Uptake by MCs	Key Responsibility
<b>Key Overall findings:</b>			
<p><b>The study</b> found that combined investments in water resources for 2020 and 2040 were likely to negatively affect community resilience and vulnerability as well as sustainability and that the main trade-off was benefits accrued by power companies at the expense of fishing households</p>	<p>Implement the Update of Sustainable Hydropower Development Strategy (SHDS)</p> <p>Monitor the social situation via implementing the SIMVA</p> <p>Implement the update of the MRC Indicator Framework (MRC –IF)</p> <p>Implement the Basin-Wide Fisheries Management Strategy (BFMS)</p> <p>Assess the situation in every State of Basin Report (SOBR)</p> <p>Develop the BDS 2021-2030</p>	<p>Review and assess the infrastructure development plans for various sectors and make amendments if necessary</p> <p>Conduct further assessment on specific costs and benefits of the development plan</p> <p>Collect environmental, social, economic and climate change data based on the updated MRC-IF</p>	All Line Agencies
<b>Specific Sector key findings</b>			
<p><b>Hydropower:</b> Hydropower accounts for nearly half of the combined growth of the water-resource sector under 2040 plans but is linked to negative trade-offs – about 26 percent of the hydropower gains would be lost under the 2020 scenario and 15 percent under the scenario for 2040. Under this scenario, mitigation could reduce fish losses by an estimated 11 percent in the Mekong Delta.</p>	<p>Update of the SHDS to address this issue</p> <p>Implement updated PDG2018</p> <p>Update BDS to include BDP on joint investment and benefit sharing projects</p> <p>Implement MRC Procedures including PNPCA &amp; JAP</p>	<p>Review the national power development plan (PDP)</p> <p>Implement the agreed actions of the SHDS for all MCs</p> <p>Open the opportunity for trade-offs and benefit sharing between sectors and MCs</p>	<p>Ministry of Mine and Energy (specifically Power Planning)</p> <p>National Mekong Committees (NMCs)</p> <p>Ministry of Agriculture and fishery</p> <p>Electricity Generating Authority (specifically Generation Planning)</p> <p>Ministry of Natural Resources and Environment</p> <p>Ministry of Water Resources and Meteorology</p>
<b>Challenges and Opportunities</b>			
<p><b>Bank and bed erosion</b> is expected to increase substantially due to sediment reduction and water-level fluctuations. Erosion will especially increase in the Mekong Delta in Viet Nam and some areas along the Mekong from Vientiane in Lao PDR to Stung Treng in Cambodia.</p>	<p>Provide technical support to MCs on bank and bed erosion and mapping</p> <p>Conduct a bathymetry survey every 5 years</p> <p>Develop bank erosion and protection models</p>	<p>Increase national budget or seeking funding for river bank protection</p> <p>Develop national bank protection plan and other legislative documents</p> <p>Closely monitor river bank erosion</p> <p>Conduct a bathymetry survey every 3 years</p>	<p>Ministry of Public Work and Transport</p> <p>Ministry of Mine and Energy NMCs</p> <p>Ministry of Environment</p> <p>Ministry of Agriculture and Fishery</p>



<p><b>Hydropower projects</b> reduce wet-season flows and increase dry-season flows under normal operations (except for climate extremes). This increases irrigation potential, reduces flood damage, provides drought relief, but has negative impacts on river ecosystems, sustainability and food security associated with fisheries</p>	<p>Discuss with China on information sharing in terms of dry season flow in order to optimise irrigation planning, flood control and drought management</p> <p>Enhance and improve the capacity and quality of monitoring and assessing the impacts of flows on river ecosystem, food security and fisheries by developing various monitoring activities/projects for each specific issue</p>	<p>Conduct hydropower project by project reviews to minimise the impact and promote more sustainable development</p> <p>Establish monitoring programmes on river ecosystems, food security and fisheries</p> <p>Create mechanisms to implement cross-sector trade-offs and benefit sharing</p>	<p>Ministry of Mine and Energy (specifically Power Planning) NMCs Ministry of Environment Ministry of Agriculture, Ministry of Fisheries Electricity Generating Authority (specifically Generation Planning) Ministry of Water Resources and Meteorology</p>
<p><b>Study Recommendations – High-level Policy</b></p>			
<p><b>Managing trade-offs</b> between hydropower and fisheries is more efficiently achieved by sharing benefits across sectors rather than compensating losses between countries.</p>	<p>Initiate/Create various technical and high-level negotiation platforms as part of the BDS update</p> <p>Develop a concept note on the management of trade-offs between sectors</p>	<p>Review the benefits and costs from hydropower (HP) with other sectors</p> <p>Develop/enhance national trade-offs and benefit sharing mechanisms between HP and other sectors</p>	<p>NMCs Ministry of Mine and Energy All line ministries</p>
<p><b>Study Recommendations - Technical</b></p>			
<p>A key recommendation from the Cumulative Impact Assessment was to conduct project-by-project assessments as the scenarios combined both highly positive and negative hydropower and agriculture projects</p>	<p>Update SHDS to address this issue</p> <p>Update the BDS to include beneficial projects</p>	<p>Review all planned HP projects and identify the most environmental friendly as a first priority</p> <p>Review the benefit and cost from the HP with other sectors</p>	<p>Ministry of Mine and Energy NMCs Ministry of Agriculture and Fisheries</p>

The use of the current and verified data and information from the Council Study, and the associated modeling tools has enabled the MRC to capitalise this to develop the State of Basin Report (2018), the MRC-IF, the Basin-wide Environment Management Strategy, the Sustainable Hydropower Management Strategy and the Drought Management Strategy, resulting in credible reporting, well-designed indicators and informed strategies at the regional level.

Further, clear support for the Council Study has been received by regional, national and local stakeholders, including civil society, environmental organisations and development partners widening the dissemination of the key findings and conclusions of this study. The stakeholders have indicated the critical importance of the uptake by the Member Countries of the key findings and recommendations into key policy actions at all levels to balance the development and management of the resources in the lower Mekong River basin in more sustainable ways. The MRC will continue to pursue the use and uptake of the Council Study in 2019, including working with the USACE on using shared vision planning and collaborative modelling tool to further understand and work with the Council Study data and findings as one of the key contributions to updating the Basin Development Strategy.

## **CONTRIBUTION TO THE SDGs**

The Council Study contributes to the SDGs by providing scenarios on current and potential future development plans of the Mekong countries in six water-related sectors – hydropower, land use, irrigation, navigation, flood protection and industry – and predicts both positive and negative impacts across economic, social and environmental spheres. The use of the Council Study in the Basin Development Plan 2021-2030 (BDP) will support the achievement of:

Goal 1 of No poverty, target 1b: create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions,

Goal 2 of Zero Hunger, target 2.4: by 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality,

Goal 6 of Clean Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 13 of Climate Change, target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning,

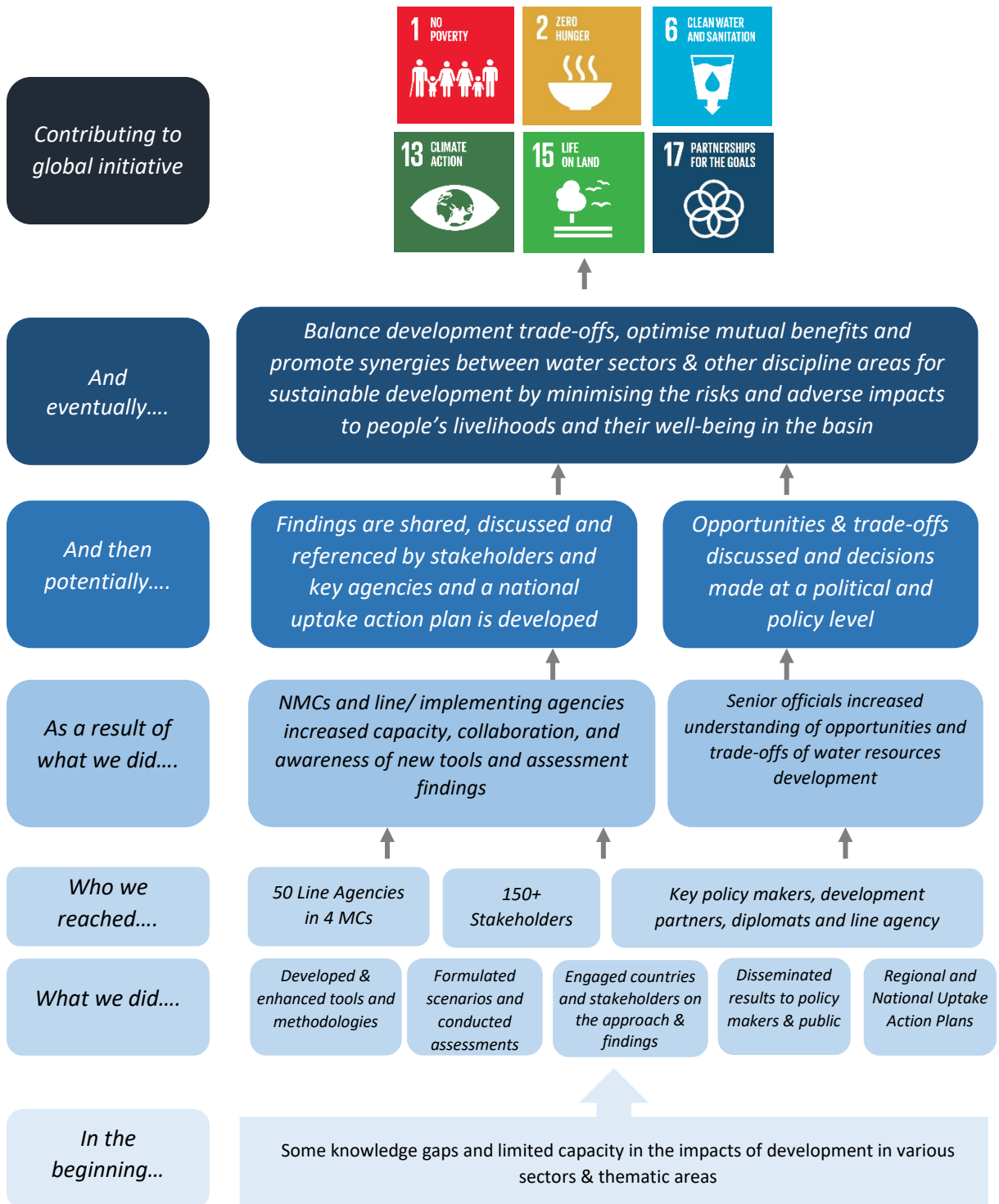
Goal 15 of Life on Land, specifically target 15.6: promote fair and equitable sharing of the benefits arising from the utilisation of genetic resources and promote appropriate access to such resources, as internationally agreed, and

Goal 17 of Partnership, specifically target 17.9: enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the SDGs, including through North-South, South-South and triangular cooperation

The ongoing work in supporting the regional and national uptake of the Council Study's findings and recommendations encourages basin-wide cooperation will ensure: long-term water, energy and food security; address environmental needs; and realise opportunities for collaborative development that enables the sharing of benefits across borders.

# Pathway to Change

*Study on the Sustainable Development and Management of the lower Mekong River Basin*



# OUTCOME 2

## Study to support sustainable hydropower explores alternative pathways for the lower Mekong

### Indicator:

- Number of transboundary national and provincial projects applying MRC guidelines
- Evidence of national and basin benefits in using MRC guidelines and standards

Hydropower development in the lower Mekong Basin has a central role to play in achieving development goals across the spectrum from the global level (notably the Sustainable Development Goals), the regional goals of the MRC, to the national goals of the Member Countries (MCs).

The MRC Basin Development Strategy and the Strategic Plan 2016-2020 underline the rising sense of urgency among stakeholders and the Member Countries for the need to move basin development towards more “optimal” and “sustainable” outcomes that can address long-term needs, including environmental protection as well as ensuring water, energy, food and livelihood security. The Update of the MRC’s Sustainable Hydropower Development Strategy (SHDS) is a key deliverable of the MRC BDS and the SP 2016-2020 which follows these principles.

The SHDS is an important strategic document to the Member Countries and a wide range of stakeholders involved in or affected by hydropower development in LMB. While acknowledging that the negative social and environmental impacts of hydropower can never be fully mitigated, hydropower development can nonetheless be designed to enhance sustainability when compared with the alternative for base load generation or thermal generation. It also has a potentially important sustainability role to play in firming and balancing intermittent sources of ‘clean’ energy such as solar and wind.

To support the development of the SHDS, a science-based Study was commissioned in 2018 to *“explore possible new alternative ways in which to enhance transboundary benefits and reduce transboundary costs, while maintaining water, energy, food and livelihood security”*.

Different sequences of hydropower project developments, which were characterised as ‘pathways’, were defined to provide insights into how best these objectives can be met. The findings of the study will feed into the SHDS 2019 through the strategic priority and actions needed to address the findings and implement the strategy.



## PROGRESS

The update of the Sustainable Hydropower Development Strategy is part of an interactive planning cycle within the basin planning processes for the lower Mekong River Basin which seeks to optimise National Power Development Plans towards improved regional outcomes. Previous MRC plans for hydropower were compiled in the early 1990's containing a portfolio of hydropower projects which Member Countries have proceeded to implement over recent years. The strategic priorities and actions in the SHDS will assist in the updating of the Basin Development Strategy 2021-2030.

**Figure 6: SP Planning Cycle**



Building on prior technical analytical work carried out by the MRC at the regional level, the updated SHDS seeks to meet the following objectives:

- **Enhance transboundary benefits** through looking for opportunities to increase the range of services and the value of services offered by hydropower and by exploring multi-sector development options.
- **Minimise adverse transboundary impacts** through adopting mitigation measures. The MRC has previously established the guiding principles for mitigation as being **avoid, minimise and compensate** ([MRC's Hydropower Impact Mitigation and Risk Management Guidelines](#)).

To meet these objectives, the updated SHDS will consist of two parts:

- A detailed technical investigation (SHD study) of a range of potential hydropower development pathways and their economic, social and environmental consequences was completed. The resulting **Technical Reference Paper** provides details of the methodology and findings. The differently-oriented pathways were analysed in an interactive way to provide deeper understanding of hydropower development sequencing and the trade-offs that different sequences involve. The objective of the analytical work was not to come up with a single idealised pathway, but to provide insights into hydropower development that will inform the Strategy, which in turn will inform future plans made at the national and regional levels. This document provides the technical analysis underpinning the Sustainable Hydropower Development Strategy.
- The **Sustainable Hydropower Development Strategy** currently in draft form for consultation, which provides Strategic Priorities and Actions to address the findings of the Technical Reference Paper.

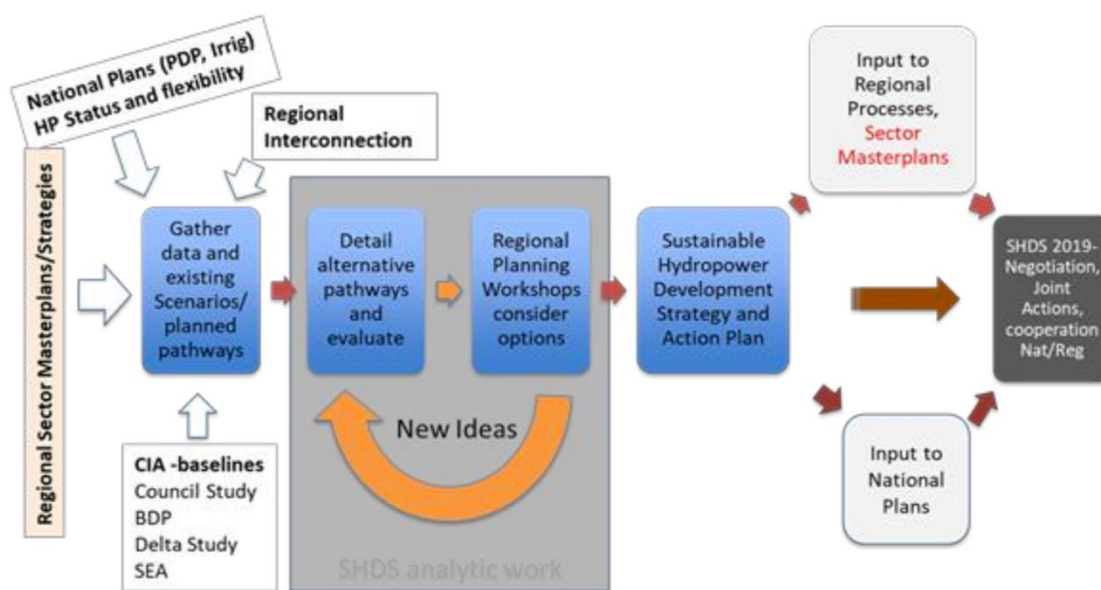
In 2018, the SHD study was completed and incorporates results from previous MRC initiatives, namely the: [Strategic Environmental Assessment of Mainstream Dams \(2010\)](#), [Basin Development Plan's Assessment of Basin-wide Development Scenarios \(2011\)](#), [the Study on Sustainable Management and Development of the Mekong River including Impacts of Mainstream Hydropower Projects \(the Council Study\)\(2017\)](#) and the

[Hydropower Impact Mitigation and Risk Management Guidelines \(MRC Hydropower Mitigation Guidelines\) \(2018\).](#)

The development of the SHD study includes pathways and indicators for detailed study developed through discussion with Member Countries and stakeholders at a Regional Consultation in May 2018, the Regional Stakeholder Forum (RSF) in September 2018, and following these consultation, more detailed National Consultations (NCs) and two interactive planning workshops. The feedback received from Member Countries was important in defining the approach finally adopted, particularly the observation that there are different interest groups in each country and it would be more valuable to have pathways which represent different 'orientations' or 'perspectives' rather than trying to arrive at different nationally agreed pathways.

The SHD study was presented to the MRC Joint Committee Preparatory Meeting before the Council Meeting at the end of 2018. The finalisation of the Sustainable Hydropower Development Strategy will be the focus of work in 2019 and the completed SHD study.

**Figure 7: SHDS Preparation Process**



## EVIDENCE OF CHANGE

The SHD study, guided by the MRCS and completed by an international team of experts, through interactive planning workshops with regional and national stakeholders and the Member Countries, has addressed the important nexus between water and energy planning. This has not been undertaken previously in such depth. To allow an understanding of the trade-off between the benefits and costs in the economic, social and environmental spaces alternative hydropower development pathways (2020 to 2040) were investigated.

The SHD study provides Member Countries with valuable information that:

- Careful project sequencing at the national level will support the highest benefit.
- Benefit enhancement and cost reduction can be achieved at the level of individual projects.
- The cost of hydropower development is disproportionately concentrated within local communities, particularly women.
- Large gains may be realised from regionally coordinated power planning.
- Hydropower development in the lower Mekong Basin provides an alternative to other energy development options that produce greenhouses gases.
- There is an uneven spread of costs and benefits of hydropower development within the lower Mekong River Basin across the Member Countries.



The tools and information contained in the study provide a reference for the Member Countries to further optimise and complement their national power development plans for both national and regional advantage and with the aim to avoid the negative consequences of hydropower development and enhance its value. For example, the information provides a scientific basis for national government and hydropower developers to decide on the most suitable development pathway and sequencing for the highest benefit, which may be different to the current identified development pathway. Also, the alternative pathways may result in a national government considering the most cost effective approach for meeting national energy needs may be through the use of renewable energy or purchasing energy from a transboundary supplier. Such information will have clear implications for national power development planning decisions.

Two Interactive Planning Workshops conducted to engage water and energy agency experts and decision-makers in the process of developing these findings has resulted in a deeper understanding of water/energy nexus and how these may be resolved, and consideration of a new paradigm for sustainable water and energy development by way of open debate, which has not happened previously.

Information shared through the various consultations with stakeholders has resulted in an informed understanding, based on sound scientific and economic analysis, of the key drivers of hydropower development. The inclusive participation by stakeholders enabled the study to have regard to issues such as alleviating poverty, reducing social impacts (gender), and encouraging regional coordination of alternative energy planning.

For example, in the project planning phase of hydropower development, women are especially vulnerable when gender sensitivities are ignored. Therefore, in this study, gender is considered as a cross-cutting indicator in the pathway analysis. The method applies gender disaggregation for the number of people affected by dams – both persons displaced and persons affected downstream, and by assuming a certain proportion of women are employed within the construction worker camps.

In conclusion, the process of developing and applying the study and SHDS will guide national power development planning and regional coordination of hydropower development, as a result project planners and implementers will be able to make more informed decisions, to ensure a balance between hydropower development and environmental and social protection in the lower Mekong River Basin, thus supporting sustainable and secure energy to the region.

## **CONTRIBUTION TO THE SDGs**

The SHDS contributes to the SDGs through a science-based study and strategy, where project planners and implementers are able to make more informed decisions, striking a balance between hydropower development and environmental and social protection in the LMB to ensure integrated management of water resources while supplying sustainable energy for all. The SHDS can support the achievement of:

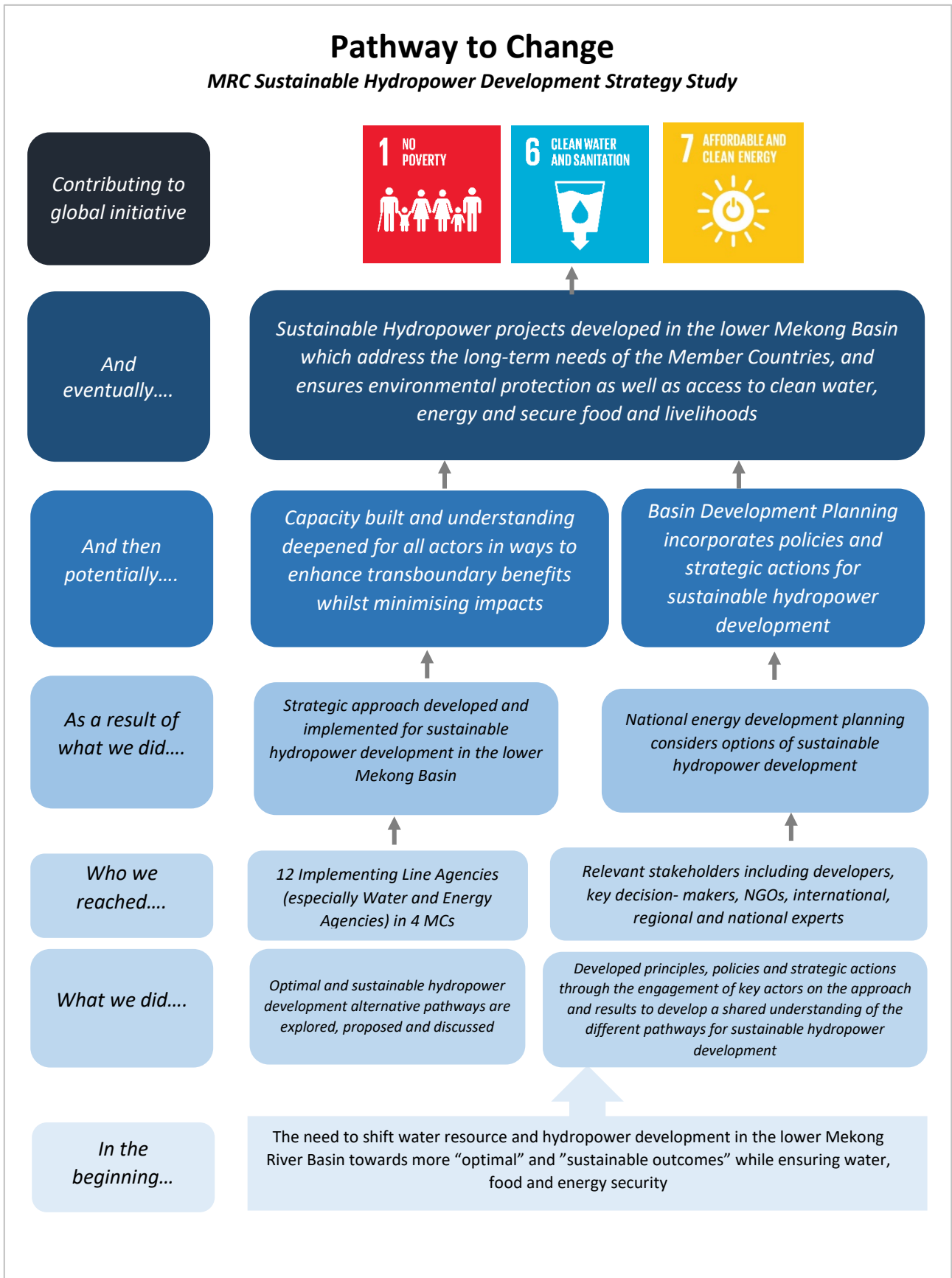
Goal 1 of No poverty, target 1B: create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions,

Goal 6 of Clean Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate, and

Goal 7 of Affordable and Clean Energy, target 7B: by 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support.

With hydropower, a vital source of renewable energy for the Mekong Region, the need for collaboration between upstream and downstream countries as well as all related sectors (Water – Energy – Food nexus) is

essential. The SHD study provides a science-based study which is a key building block for the next MRC's BDS for Member Countries to work together to make sure the vision and strategic actions are shared and applied with the aim of sustainable development.



## OUTCOME 3

### Preliminary Design Guidance for proposed mainstream dams updated to provide a benchmark for leading sustainable hydropower design

#### Indicator:

- Number of transboundary national and provincial projects applying MRC guidelines
- Evidence of national and basin benefits in using MRC guidelines and standards

In 2009, the MRC developed the [Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin \(PDG2009\)](#) in response to the imminent development of several hydropower dams on the mainstream and in the absence of any available regional guidance for developers and Member Countries on risk mitigation.

To date the PDG2009 has formed the design standards for submissions of projects and also the technical review through the Prior Consultation process, which is under the Procedures for Notification, Prior Consultation and Agreement (PNPCA). This has included the four mainstream hydropower developments in the lower Mekong: Xayaburi (1285MW, 2011); Don Sahong (260MW, 2014); Pak Beng (920MW, 2017) and Pak Lay (770MW, 2018). During the first three technical review processes, it became clear that there were gaps in the PDG2009 and also areas of ambiguity, for hydrology, sediment, fisheries, water quality, dam safety, navigation, and socio-economic issues.

The Update of the MRC's Preliminary Design Guidance for Proposed Mainstream Dams in the Lower Mekong Basin (PDG2018) is a key deliverable of the MRC Basin Development Strategy and the Strategic Plan 2016-2020 and aims to ensure that:

- Developers have timely guidance to adopt a consistent approach to the design of individual dams, as well as proposed mitigation and management measures; and
- The approach of offering performance targets allows developers the flexibility to identify and propose the best solutions.



## PROGRESS

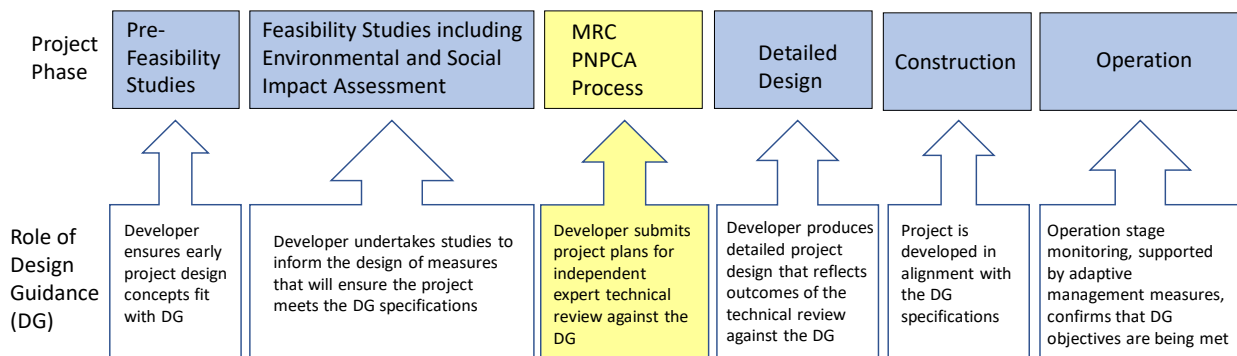
Following a one-year consultation process with the Member Countries and relevant stakeholders the update of the PDG has been technically completed. The update to the PDG was developed following a thorough process of working with Member Countries, and engaging and considering the concerns of stakeholders, including private developers and NGOs through a variety of consultation meetings. In addition, a 3-week consultation period was provided for on the MRC website seeking public comment on the final draft version, during June to July 2018. The comments received from the public consultation process were presented at the 5<sup>th</sup> MRC Regional Stakeholder Forum (RSF) to ensure all relevant stakeholders were involved in process.

The updated PDG, retains the essential principles of the PDG2009 founded on integrated water resource management, best practice, and relevant primary legislation of the Member Countries. The objective of the updated PDG is to provide performance targets and principles for the design and operation of mainstream dams that can help demonstrate avoidance, minimisation and mitigation of harmful effects (Mekong Agreement Article 7) and cessation of substantial damage (Mekong Agreement Articles 7 and 8). Specifically, this Guidance aims to ensure that:

- i. All mainstream hydropower projects have a common design and operational approach, aiming to meet common objectives and mitigate commonly understood risks.
- ii. Joint operations within a mainstream hydropower cascade are guided by a common framework informed by this Guidance.
- iii. Developers can plan for and undertake the assessments and designs for mitigation and management measures as early as possible in the project cycle.
- iv. Developers have flexibility to identify and propose the solutions that will meet the objectives and recommendations in this Guidance as outlined by “performance standards” rather than “prescriptive designs”.

Figure 8 shows the role of design guidance in the relevant project phases of hydropower development, from the pre-feasibility stage to the MRC PNPCA process, to the operational stage.

**Figure 8: Role of design guidance hydropower project development phases**



## EVIDENCE OF CHANGE

The PDG is one of the most well-known, used and applied MRC tools in the Mekong. Alignment with the PDG by hydropower projects provides confidence to most stakeholders that the dams are/or will be built to international design standards. With this good foundation, the updated Preliminary Design Guidance provides contemporary, research-based performance targets, and design and operating principles for mitigation measures, monitoring and adaptive management. The process for updating the guidance has demonstrated a continual improvement process within the MRC by drawing from the experience of the first three mainstream hydropower project technical reviews, as well as the current understanding of best practices for managing the risks and mitigating the impacts of hydropower projects, internationally and in

the Mekong region, as detailed in the [Hydropower Impact Mitigation and Risk Management Guidelines \(MRC Hydropower Mitigation Guidelines \(2018\)\)](#).

The updated guidance focusses on impacts that are of a basin-wide concern, either because they are transboundary, cumulative, or affect basin-wide processes. For example, there is a new section on “Riparian Communities and River-Based Livelihoods” to recognise that certain environmental and infrastructure changes cannot be fully mitigated (i.e. the residual impacts), and in turn, have socio-economic consequences for river-dependent communities.

There is evidence from all four prior consultation processes undertaken that the PDG2009 was used by developers for the design of mitigation measures and influenced national hydropower project planning. The Xayaburi Hydropower Project prior consultation process resulted in significant design changes to mitigate identified impacts. Once implemented, the updated PDG will continue to influence the sustainable design of hydropower projects.

The updated PDG, in combination with avoidance, minimisation and mitigation options contained in the recently completed MRC Hydropower Mitigation Guidelines, will enable planners and developers to make more informed decisions in the design of hydropower projects, striking a balance between hydropower development and environmental and social protection in the lower Mekong River Basin to ensure integrated management of water resources while supplying sustainable energy in the region.

With hydropower, a vital source of renewable energy for the Mekong Region, the updated Preliminary Design Guidance is a vital tool for the Member Countries and especially project developers, to work together to make sure good industry practice and state-of-the art hydropower design approaches are shared and applied towards sustainable development of this resource.



At the Dialogue for Sustainable Hydropower forum in Vientiane in late 2017, a number of key stakeholders were interviewed to discuss amongst other things the PDG and its importance. Discussions with the Business Development Manager Nanthaphan Hansaraphiphat of CEWA<sup>ii</sup> about the PDG as a benchmark for the Prior Consultation process under the MRC’s Procedures for Notification Prior Consultation and Agreement (PNPCA) said

*“PDG is good because it meets international standards and provides a framework for us to follow, clearly identifying which item we needed to consider during the design process.”* CEWA used the PDG to ensure their design work complied with the requirements of the PNPCA process.

Further discussions with Michael Raeder, Assistant Managing Director and Owner Representative from the Xayaburi Power Company Limited said

*“We appreciate the Preliminary Design Guidance (PDG). We used PDG during our feasibility study to prepare the outline and concept designs for Xayaburi hydropower project before we went to PNPCA process. From my point of view, the PDG covers all main aspects of a new hydropower project. It is also quite easy and straightforward to apply. We used the PDG because it is the benchmark for the PNPCA. In our design, we applied international standards as well but the PDG was special because it is designed to address specific issues of the Mekong river and it was the only document available for the region.*



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<sup>ii</sup> (CEWA) Charoen Energy and Water Asia Co. Ltd from Thailand is one of the first developers which uses the PDG in the region for its proposed project on the mainstream of the lower Mekong.



*However, some areas under the current PDG are not sufficiently detailed to design a whole project which can lead to ambiguities in the evaluation of an outline design. For the case of Xayaburi hydropower project, we had to redesign parts of the fish passing and sediment management. Thus, I propose that a new PDG version should be more precise because the more precise it is, the less uncertainty stakeholders will have. Also, the new PDG should be applicable and usable specific for hydropower development and it should have sufficient details for operators/developers to work with”.*

Such sentiments confirm the important work of updating the PDG to set a benchmark for leading sustainable hydropower design in lower Mekong basin.

### **CONTRIBUTION TO THE SDGs**

The updated PDG, combined with the substantial knowledge base on the avoidance, minimisation and mitigation options contained in the recently completed MRC Mitigation Guidelines and international industry good practice, can assist in the achievement of the SDGs. With knowledge-based design guidance, project planners and developers would be able to make more informed decisions, striking a balance between hydropower development and environmental and social protection in the LMB to ensure integrated management of water resources while supplying sustainable energy for all.

The PDG2018 can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

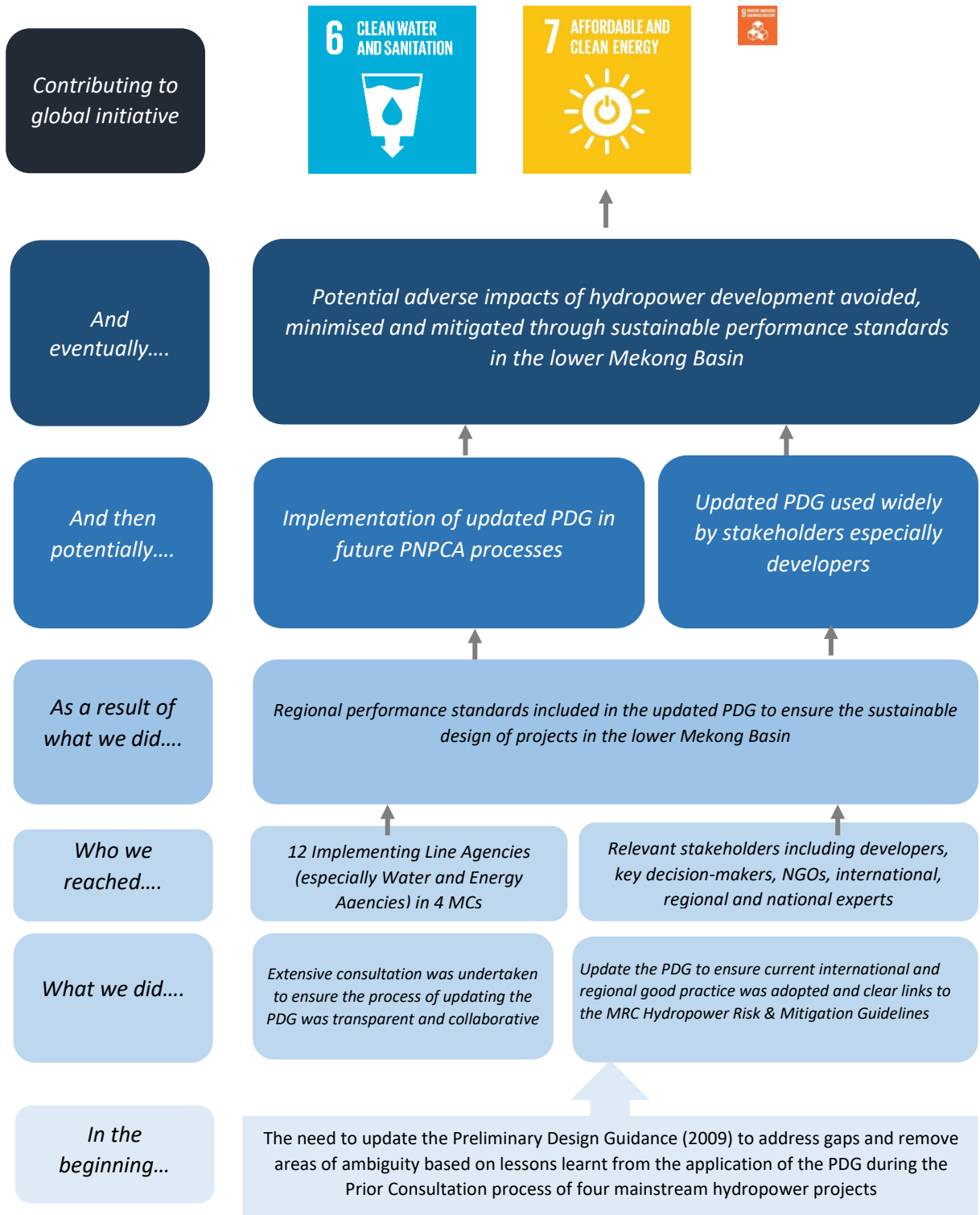
Goal 7 of Affordable and Clean Energy, target 7b: by 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support, and

Goal 9 of Industry, Innovation and Infrastructure: In relation to dam safety and navigation target 9.1: aims to develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

With hydropower, a vital source of renewable energy for the Mekong Region, the updated Preliminary Design Guidance is available for use on a voluntary basis as a vital tool for Member Countries, and especially project developers, to work together to make sure good industry practice and state-of-the art hydropower design approaches are shared and applied towards sustainable development of this resource.

# Pathway to Change

MRC Preliminary Design Guidance for proposed mainstream dams updated



# OUTCOME 4

## Pak Beng prepared for joint action and Pak Lay prior consultation follows with continued innovation

### Indicator:

- Evidence of adverse transboundary impacts that were mitigated, minimised or avoided in basin planning and management by using the MRC Procedures
- Number of water utilisation projects notified, consulted and improved agreement under consultation and notification process of PNPCA

Among the five Procedures and supporting Technical Guidelines, the Procedure for Notification, Prior Consultation and Agreement (PNPCA) has been extensively applied for both Notification and Prior Consultation. Since 1995 until December 2018, the MRC has received 49 submissions of water infrastructure projects through the PNPCA process. Forty-five projects were submitted for Notification, four projects located on the mainstream were submitted for Prior Consultation, and no referrals have occurred under the Specific Agreement. Among the 45 Notification cases, 40 were hydropower projects located on the tributaries within the LMB, two bridge projects on the mainstream and three irrigation projects.

The four Prior Consultation (PC) hydropower projects on the Mekong mainstream are located within Lao PDR: *Xayaburi (2010)*, *Don Sahong (2013)*, *Pak Beng (2016)*, and *Pak Lay (2018, ongoing)*. For the three earlier cases, the six-month Prior consultation has been completed with thorough technical assessments and open public consultation. In the first two cases of Xayaburi and Don Sahong, no specific resolution was reached at the end of the six-month process.

In the case of Pak Beng, the four Member Countries issued an agreed [Statement](#), concluding the prior consultation and calling for the Government of Lao PDR to make every effort to minimise potential adverse transboundary impacts on water flow, sediment, fisheries, water quality and aquatic ecology, dam safety, navigation and socio-economics, and requesting the MRC Secretariat to prepare a Joint Action Plan (JAP), outlining a post-prior consultation process. The JAP aims to provide a mechanism for ongoing engagement between the developer, Lao PDR, the MRC and key stakeholders.

In the case of Pak Lay, the prior consultation process commenced in 2018 and will conclude in early April 2019 with the aim to have an agreed “Statement” and a JAP, similar to the Pak Beng Hydropower Project.



## **PROGRESS**

### **Pak Beng Joint Action Plan**

In June 2017, the MRC Joint Committee agreed on a “Statement” for the Pak Beng Hydropower Project (PBHHP) and that a Joint Action Plan be prepared. The JAP aims to provide a mechanism for ongoing engagement and feedback between the developer, Lao PDR, the MRC and key stakeholders with regard to ongoing design, construction and operation of PBHHP, to monitor the implementation of the Statement and to support efforts to avoid, minimise and mitigate the potential adverse impacts of the project.

Following a number of revisions and consultations with the four Member Countries a final version of the JAP was submitted to the Joint Committee (JC) members in mid-February 2018, for endorsement. Support was received from three Member Countries. A final working version was submitted for endorsement to the JC Preparatory Meeting on 27 November 2018, prior to the 25<sup>th</sup> Council Meeting. All countries including Lao PDR indicated their willingness to implement the JAP. As a new mechanism to enhance the value of the MRC Procedures, developing and agreeing on the JAP has taken some time but it has also allowed all sides to further understand each other and build trust leading to agreement and implementation.

Once officially approved, the focus in 2019 will be to implement the JAP which will be monitored by a matrix tool with benchmarks to assess the implementation of the Statement.

### **Prior Consultation Process for Pak Lay Hydropower Project**

On 13 June 2018, the Government of Lao PDR submitted documentation for the Pak Lay Hydropower Project (PLHPP) to the MRC for Prior Consultation under the PNPCA. The proposed PLHP is a run-of-river scheme located in the north within the Pak Lay District, of the Xayaburi province, Lao PDR. The dam site is about 31 kilometres upstream of the village of Pak Lay. It is the fourth hydropower station planned for the mainstream of the lower Mekong River.

The official starting date for the six-month Prior Consultation process for PLHPP, of 8 August 2018, at the 1<sup>st</sup> PNPCA Joint Committee Working Group (JCWG) meeting, and the overall Roadmap for the implementation of the entire Prior Consultation process for the PLHPP was also agreed to at this meeting.

On 20-21 September 2018 in Vientiane, the MRC Secretariat organised its 5<sup>th</sup> RSF. The First Regional Information Sharing/Consultation Meeting on the PLHPP Prior Consultation Process took place on the first day as part of the 5<sup>th</sup> RSF, with the following objectives:

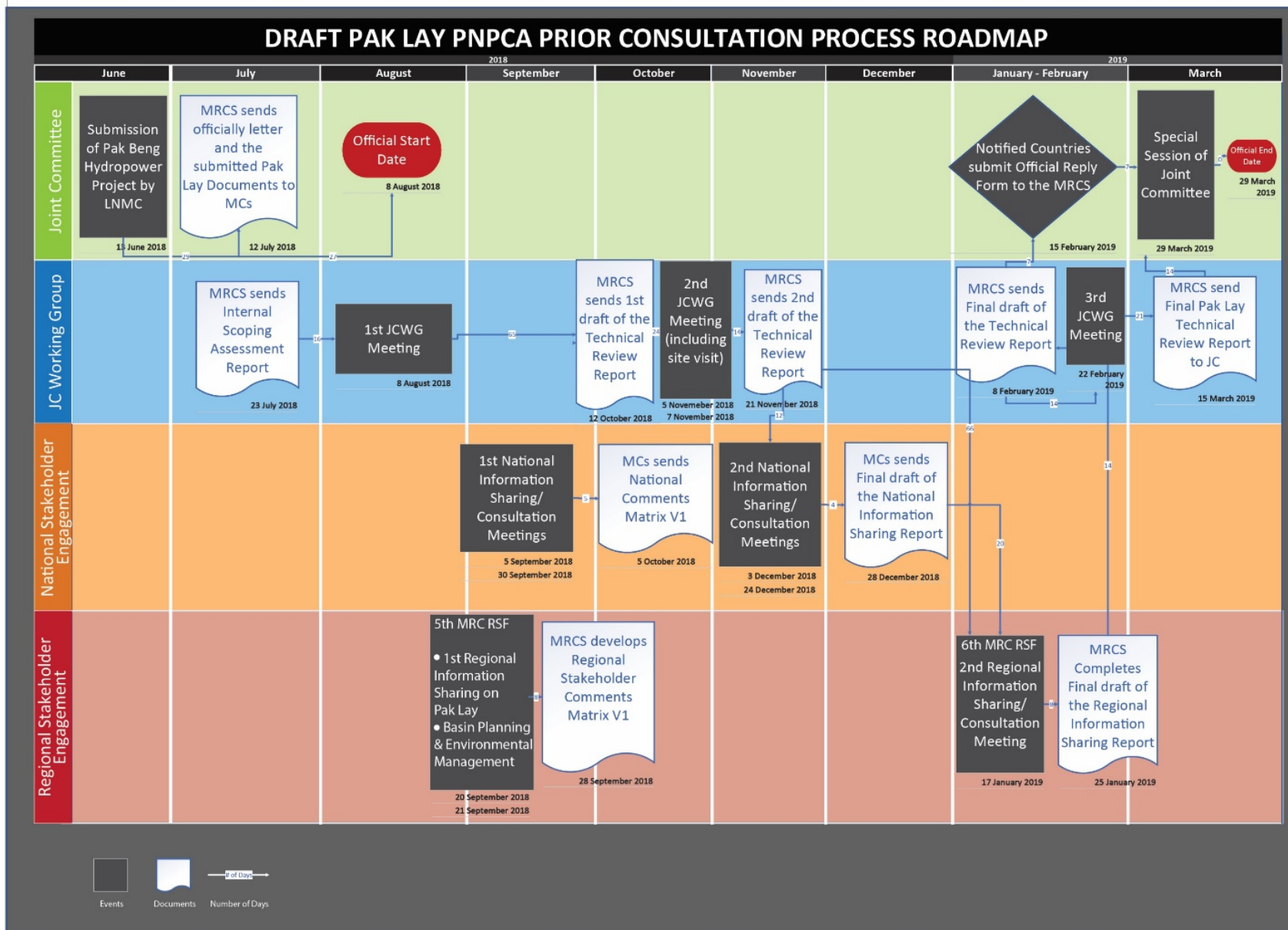
- To provide information and reinforce the understanding of the MRC’s Prior Consultation process under the PNPCA and the 1995 Mekong Agreement;
- To provide information and a general understanding of the proposed PLHPP; and
- To obtain viewpoints and comments on the approach and methodology to be undertaken by the MRC for conducting the Technical Review of the proposed PLHPP.

More than 160 representatives from different interest groups, including the MRC MCs, development partners, NGOs, research institutes, media, and private developers of the proposed PLHPP and the Xayaburi Hydropower Project, joined the 5<sup>th</sup> RSF.

On 5 November 2018, the second meeting of the PNPCA JCWG was held followed by a visit to the Pak Lay project site. The overall objective of these combined events was to present and discuss the 1<sup>st</sup> Draft Technical Review Report (TRR) and to provide all participants an opportunity to have a first-hand visual look at the Pak Lay project site in order to develop further understanding about the project and to fine tune the assessment methodology and TRR.

The 6-month Prior Consultation process will conclude in April 2019, with the aim of having a Statement and a Joint Action Plan.

Figure 9: Pak Lay Road Map





## EVIDENCE OF CHANGE

Unlike the cases of the Xayaburi and Don Sahong hydropower projects, the Prior Consultation for Pak Beng concluded with an agreed **Statement** after the Special Session of the Joint Committee on 19 June 2017. The first of its kind. The Statement includes key recommendations (*a set of measures*) to avoid, minimise and mitigate potential transboundary impacts and increase the potential benefits as well as suggesting the formulation of the JAP, and recommendations with regard to the Statement, and that the JAP be included in the Commentary for the PNPCA and its lessons learnt. The implementation of the JAP is an innovative way to clearly identify the actions to ensure the Statement is implemented and provides a way for the MRC Joint Committee to monitor its implementation. This also enhances the transparency of the process to inform key partners and stakeholders.

Following lessons learnt from the third case of Pak Beng, the prior consultation process for Pak Lay adopted a similarly open and inclusive approach with the aim of also achieving a “Statement” and JAP, solidifying the process of cooperation between the four Member Countries. In addition, through the prior consultation process for Pak Lay, the MRCS expert team experienced positive and proactive engagement with the developer (Power China) and improved interactions, communication, and clarification of issues, with support from responsible Lao government ministries. For example, the developer has been responsive in providing additional documents on Chinese standards for dam safety.

Through the MRC’s commitment to improving the prior consultation process for hydropower projects on the mainstream of the Mekong, the development of important tools to support this, through the development of a Statement and Joint Action Plan assists the MRC Joint Committee with the challenge of multi-lateral cooperation and provides greater clarity for developers and key stakeholders in the process.

## CONTRIBUTION TO SDGs

The Statement and Joint Action Plan for hydropower projects on the mainstream of the lower Mekong provide an opportunity to avoid, minimise, and mitigate adverse transboundary impacts by using the MRC Procedures and can support the achievement of:

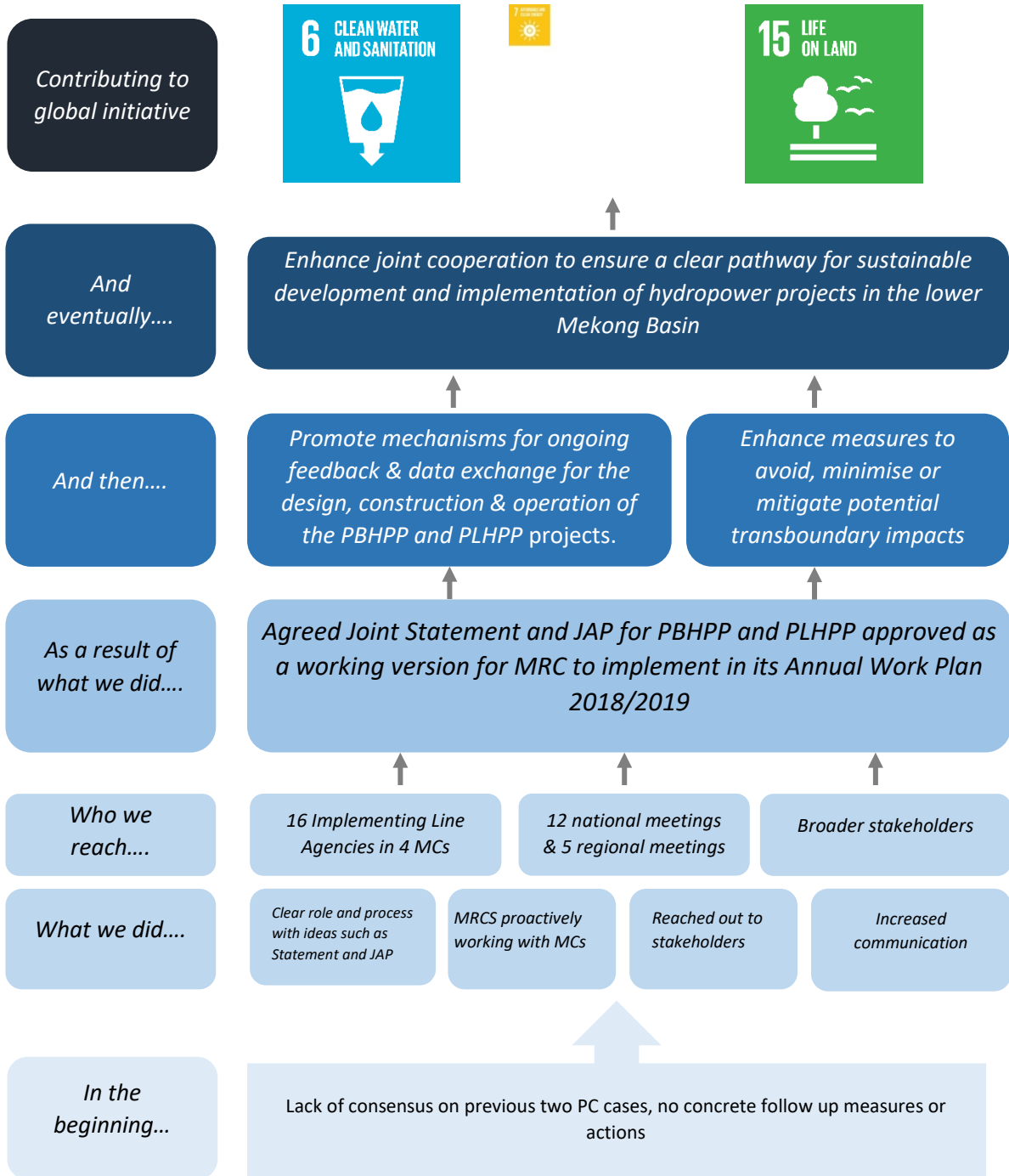
Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 7 of Affordable and Clean Energy, target 7b: by 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support, and

Goal 15 of Life on Land, specifically target 15.6: promote fair and equitable sharing of the benefits arising from the utilisation of genetic resources and promote appropriate access to such resources, as internationally agreed.

# Pathway to Change

## Joint Action Plan for the Pak Beng and Pak Lay Hydropower Projects





# OUTCOME 5

## Design Changes for the Xayaburi hydropower project reviewed for technical precision

### Indicator:

- Evidence of adverse transboundary impacts that were mitigated, minimised, or avoided in basin planning and management by using the MRC procedures
- Number of water utilisation projects notified, consulted and improved agreement under consultation and notification process of PNPCA

The Prior Consultation process for the Xayaburi hydropower project (XHPP) was formally initiated on 22<sup>nd</sup> October 2010 after the documentation submitted by the Lao National Mekong Committee was reviewed for completeness and received by the MCs.

Following the first meeting of the PNPCA JCWG on the 26 October 2010, the MRCS prepared a technical review of the submitted documents (the Xayaburi Technical Review Report). A six-month Prior Consultation process came to an end in April 2011. However, a special session of the Joint Committee held on 19<sup>th</sup> April 2011 could not come to a decision on the conclusion of the Prior Consultation process under Article 5.4.3 of the Procedure for Notification, Prior Consultation and Agreement and elevated the issue to the Council for a decision. In December 2011, the MRC Council resolved to initiate the “Council Study” to provide a better basis for future processes. No further decision on the HPP was made under the MRC framework.

Despite there being no clear decision through the mechanism of the MRC, the developer, Xayaburi Power Company, and the Government of Lao PDR undertook a re-design of certain aspects of the project to address the concerns raised during the technical review and the Prior Consultation process. During the re-design and construction process for Xayaburi, documentation, including reports, presentations and design drawings, have since been made available to the MRCS by the developer and Lao PDR.

In early 2018, the MRC reviewed the revised design\* based on all the documentation made available. This review did not aim to replicate the technical review, but rather aimed to:

1. Assess the extent to which the developer has made every effort to address the concerns and recommendations raised in the Xayaburi TRR;
2. Use the outcomes of the Council Study, the MRC Hydropower Mitigation Guidelines (ISH0306), and other studies to advise the MRC Member Countries on whether there is sufficient evidence that the revised designs will allay their concerns regarding any transboundary impacts of the Xayaburi HPP; and
3. Make recommendations to the Joint Committee for the development of a *record of the proposed use, and a record of the proposed use once commenced* as outlined in Article 5.4.3 of the PNPCA.

The possible effectiveness of the mitigation measures in the revised design is assessed both against the recommendations in the Xayaburi TRR, as well as where studies or research have subsequently been undertaken to provide more evidence of the benefits of mitigation measures.

\* Design in this context refers to both the changes in the infrastructure (some of which is already in place), as well as the changes in the operating rules.



## PROGRESS

In early 2018, the MRCS technical experts, supported by international experts, undertook the review with support from international experts. The review considered the broad technical intent of the XTRR recommendations and how they were further adopted in the redesign process. The review also provides notes where there is insufficient detail regarding the redesign choices.

The review report has been developed through consultation fora including the MRC Joint Platform and the 5<sup>th</sup> MRC Regional Stakeholder Forum on Basin Planning and Environment Management. On 27 November 2018, the review report was presented to the Preparatory Meeting of the MRC Joint Committee for the Twenty-Fifth Meeting of the MRC Council in Ha Long City, Viet Nam. The Member Countries agreed to publish the review report as a [technical reference paper](#).

## EVIDENCE OF CHANGE

The review covered six aspects related to the revised design, including navigation, fisheries, hydrology, sediment, water quality, aquatic ecology, and dam safety. The major findings of the review are summarised below.

- The review reinforced the importance of the 1995 Mekong Agreement, the Prior Consultation process, the Preliminary Design Guidance (PDG), and mutual benefits of ongoing dialogue and action towards resolving concerns regarding the impacts of the XHPP.
- The information provided by the developer and the Government of Lao PDR, along with field trips to the facilities, and ongoing discussions on the technical details were important to reduce uncertainty and misunderstandings among stakeholders.
- Many recommendations included in the Xayaburi Technical Review Report were considered by the developer in the redesign of the XHPP.
- The developer managed to make substantial investments in monitoring, research and re-engineering, which was to further minimise potential adverse impacts based on the XTRR.
- An in-depth assessment of the efficacy of the revised design to mitigate impacts would require additional detailed baseline information (e.g. on fisheries, water quality, aquatic ecology and sediment data and related operating rules) to be submitted with the redesign documentation.
- Due to the unique nature of this hydropower project, it was not possible to fully assess at this stage the effectiveness of the design of fish passage and sediment flushing operations without access to the data and detailed rationale used in the design and operations.
- The analyses undertaken using the MRC's Hydropower Mitigation Guidelines<sup>iii</sup> on the mainstream cascade indicate that major impacts can only be partially mitigated, and that the efficacy of the measures and any residual impacts may only be fully observed in two or three decades.
- Concerns regarding sediment transmission through the dam were partially addressed by the inclusion of four large low-level gates to facilitate sediment flushing. The gates have the potential to

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<sup>iii</sup> Development of Guidelines for Hydropower Environmental Impact Mitigation and Risk Management in the Lower Mekong Mainstream and Tributaries, Volume 4 – Draft Final Case Study Report, Final Mainstream Dams Assessment Including Alternative Scheme Layouts (Version 2.0)

improve sediment transmission, but since there was no provision of operating rules, the efficacy of these measures could not be evaluated at this stage.

- Design or operational mitigation measures to reduce potential impact of sediment flushing on downstream fish, fisheries, water quality and aquatic ecology were not submitted for review.
- The MRC's Hydropower Mitigation Guidelines indicate that the silt may be readily flushed through the impoundment, but gravel and coarse sand will not be effectively flushed until the sediment deposits reach the toe of the dam, which will take years to decades. During this period, coarse sand and gravel will be trapped, accounting for trapping of up to about 80% of incoming sediment load.
- The MRC's Hydropower Mitigation Guidelines study has demonstrated that an erosional 'wave' will progress downstream of major mainstream hydropower projects over the next few decades and the impact on sediment transport further downstream can only be assessed by looking at the entire mainstream cascade.
- Substantial work was undertaken by the Xayaburi power company to understand the fisheries baseline characteristics and the implications for the revised upstream and downstream fish pass design. However, detailed documentation was not supplied, and the scientific rigour of the monitoring and evaluation processes could not be evaluated.
- The complex array of both upstream and downstream fish pass facilities was modified extensively to improve attraction and passage of a wide variety of fish species and increased biomass. However, the modification did not address all the technical review recommendations. Monitoring will therefore be needed to: i) assess the efficacy of the fish pass facilities vis-à-vis the guidance provided in the PDG; ii) optimise fish pass operation; and iii) assess whether modifications may be required.
- Target species for monitoring should be based on size (e.g. small, medium, large), life stage (e.g. larvae, juvenile adult) and behavioural guilds (surface, mid-water, benthic and migratory characteristics).
- The rationale behind the re-design of the fish passage was only partially described in the submitted documentation and it was not possible to assess the effectiveness of these facilities given the unique nature of the project, and the difficulty in describing the nature of the fishery accurately.
- The MRC Joint Environmental Monitoring (JEM) scheme will be vital to enhance the technical understanding of the upstream and downstream impacts, assess the effectiveness of the mitigation measures, and build confidence that the impacts of development can be addressed.
- Adaptive management will be necessary to modify operations and manage impacts once this detailed information is available.
- The cumulative impacts of infrastructure development in the Mekong, analysed by the MRC's Council Study, indicate major adverse effects on the lower Mekong River system and riparian communities if all proposed developments in the basin proceed. This reinforces the need for joint monitoring, analysis and dialogue on **regional strategies in the water, food and energy sectors** to meet all the Member Countries development needs.

The Xayaburi Hydropower project provides an example of where the developer has made a significant effort and investment<sup>iv</sup> to address the findings of the technical review, especially where there were issues identified. Whilst a full technical review of the likely efficacy of the redesign and mitigation measures was

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<sup>iv</sup> Reports have indicated Xayaburi Hydropower Company have invested about \$400 million into the design changes.



not done at this stage, the openness and transparency through the sharing of information is a positive step to improving the process and allaying the concerns of Member Countries' and stakeholders. Other detailed information on the revised operational rules would also be useful once the project has commenced for the purposes of the Procedures for Water Use Monitoring, and is a lesson learnt to further improve the process.

Monitoring through the proposed Joint Environmental Monitoring program, and adaptive management are needed to further understand the efficacy of the mitigation measures used in hydropower projects on the mainstream and to further modify and adapt the design and operations as far as it is provided for in the Power Purchase and Concession Agreements.

At the Dialogue for Sustainable Hydropower forum in Vientiane late 2017, where developers and specialists, government, research institutes, development partners and other regional and international organisations met to discuss hydropower planning and development in the Mekong Basin, the Assistant Managing Director and Owner Representative of Xayaburi Power Company Limited, Michael Raeder commented:

*“Through conversations with experts working with MRC, I found that there are opportunities for cooperation, not only for new projects but also with existing projects. The MRC can benefit from data that is generated by developers and developers can be benefited from MRC expertise. I hope there will be more forums or working groups for developers and the MRC to work together.”*

## **CONTRIBUTION TO SDGs**

The technical study for the Xayaburi Hydropower Project design changes provides information on the possible effectiveness and benefits of the avoidance, minimisation and mitigation measures, both against the recommendations in the Xayaburi TRR, as well as where studies or research have subsequently been undertaken and can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 7 of Affordable and Clean Energy, target 7b: by 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support, and

Goal 15 of Life on Land, specifically target 15.6: promote fair and equitable sharing of the benefits arising from the utilisation of genetic resources and promote appropriate access to such resources, as internationally agreed.



## OUTCOME 6

### Mekong leaders and stakeholders reaffirmed the MRC's unique mandate and primary role

#### Indicator:

- Evidence that the opinions/perspectives of academic/research institutions, civil society and private sector are taken into consideration by MRCS and Member Countries
- Extent of continuing dialogue of MCs to resolve critical basin issues and challenges

The Mekong River flows 4,900 km across six countries. It is one of the largest and most biodiverse rivers in the world, and it is a central lifeline to the more than 65 million people living in the lower Mekong Basin.

Good cooperation with regards to transboundary water resource management is therefore important. Water, fish, sediment and other valuable resources all travel from one country to the next, and the river's ecosystems are highly connected. However, cooperating on water governance has long been a challenge for the countries in the lower Mekong River Basin, due to differing national interests and priorities, and there is no shortage of perceptions from within and without the basin on how to best develop and manage the river.

Entrusted as the "manager of the river", the MRC's role is to facilitate cooperation among riparian countries, through the building partnerships, engaging stakeholders and proactively communicating and sharing information in the lower Mekong continues. In 2018, for the third time in its history, the MRC convened a highly successful Summit of Mekong Prime Ministers and Ministers from China and Myanmar. As a result, the leaders issued the Siem Reap Declaration, reaffirming the unique mandate and role of the MRC as a treaty based inter-governmental river basin organisation in the Mekong and confirming increased financial contribution to the organisation.

In terms of partnerships, the MRC has focussed significant efforts to maintain and revive ties with existing partners and also focus has been directed towards ensuring the MRC maintains its relevance and competitive advantage in its collaboration with new partners. Stakeholder engagement has continued to occur through initiatives such as the International Conference prior to the 3<sup>rd</sup> MRC Summit, and the Regional Stakeholder Forum in a transparent and open way bringing closer the interest groups, developers and government to discuss and share their perspectives. Communication in the way of media and outreach using strategic channels and tactics has continued to send clear messages about the MRC's role and mandate and its key projects and activities.



## PROGRESS

The year 2018 focused on continuing engagement through different approaches with the aim to reach a greater diversity of stakeholder groups.

A [Consultation with Developers](#) for the Review and Update of the Preliminary Design Guidance for Proposed Mainstream Dams was organised in January 2018. The review, which supports Outcome 3 of the SP, commits to establishing “guidance for the development and management of water and related projects and resources being shared and applied by national planning and implementing agencies”. The updated Preliminary Design Guidance for Proposed Mainstream (and Tributary) Dams on the Lower Mekong Basin aims to provide contemporary, research-based performance standards, design and operating principles for mitigation measures, as well as compliance monitoring and adaptive management.

The working session created a platform for developers of hydropower projects on the Mekong mainstream and tributaries to discuss the applicability and usefulness of the Preliminary Design Guidance. Thirty developers and consultants representing sixteen hydropower companies and projects on the Mekong river actively participated and exchanged feedback on both general considerations and specific performance standards that should either be added or revised, including hydropower design and mitigation measures for issues relating to sediment, hydrology, fish, socio-economic impacts, dam safety assessment and planning, and the operation and management of navigation locks.



In April, the MRC marked its 23<sup>rd</sup> anniversary through the convening of the **3<sup>rd</sup> MRC Summit** led by the Prime Ministers of the governments of Cambodia, Lao PDR, Thailand and Viet Nam. The 3<sup>rd</sup> Summit had a motto of ‘One Mekong, One Spirit’. The main outcome of the 3<sup>rd</sup> Summit was the [Siem Reap Declaration](#), issued through consensus of the four Mekong Prime Ministers, that considered the vital importance of development and management of the water and related resources of the Mekong River Basin and reaffirmed the highest level political commitment to the more effective implementation of the 1995 Mekong Agreement. Confirming the MRC’s primary importance as a regional cooperation framework and its unique role as a

knowledge hub. The declaration acknowledged the achievements of the MRC since the 2014 Summit, the major challenges and opportunities that currently exist, and priority areas of actions and the way forward.

The **Summit's International Conference**, held prior to the Summit, served a double objective as offering a space for exchanges on transboundary water management between experts and stakeholders from the Mekong and other regions and a mechanism to contribute to the Summit through the delivering of key messages, which included the need for the use of best practices and new ideas for the sustainable management and development of the Mekong River Basin. The overall theme of the International Conference was “Enhancing Joint Efforts and Partnerships towards Achievement of the Sustainable Development Goals in the Mekong River Basin”, with regards to who should be involved to achieve this at a national and regional level.



*The International Conference drew both ministerial representatives from the host country Cambodia as well as world-renowned water leaders such as David Grey of Oxford University and Danilo Turk, Chair of the United Nations High Level Panel on Water and Peace and former President of Slovenia.*

The International Conference also set the scene to reflect on the riparianisation of the organisation. The organisation is now led and staffed by highly qualified staff from the four MRC Member Countries. The Conference highlighted the importance of the involvement of stakeholders in MRC's work and the need for better national uptake of MRC's products and knowledge, as technical and financial ownership by the Member Countries increases. Around 400 participants attended the International Conference. Of this, 155 participants represented MRCS, MRC Member Countries and its Dialogue Partners China and Myanmar (and the remaining 250 participants were from other organisations, the private sector, universities and the media (see figure 10)). The proceedings of the International Conference and [key messages of the International Conference](#) are available on the MRC website.



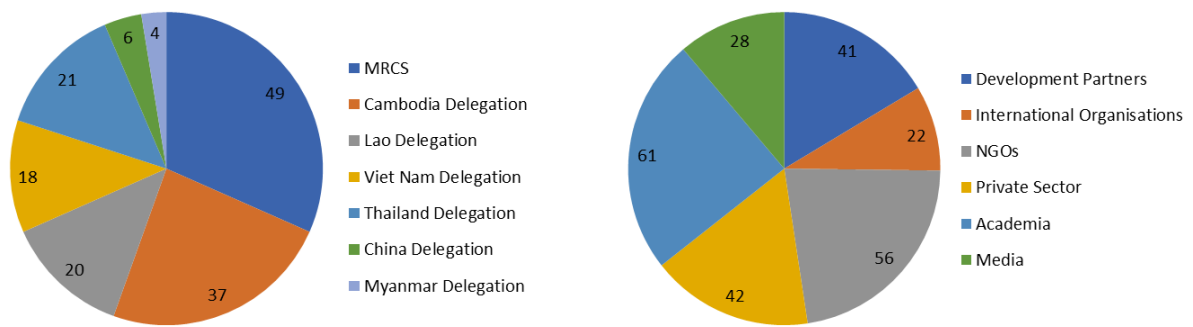


Figure 10: Number of representatives from MRCS, MRC Member Countries and Dialogue Partners (based on registration on-site) and number of participants from Development Partners, international organisations, NGOs, private sector, academia and media (based on online registration)

An important aspect of the International Conference as well as the Summit was that, unlike in the past, both the technical and administrative organisation and facilitation were done by the MRCS riparian staff. It demonstrated the capacity and ownership by the Mekong riparian members in discussing and debating the future of their own river basin at the highest level. The sessions were also chaired by national and regional representatives of the MRC member countries, with some sessions being co-facilitated by representatives from other organisations.



*The International Conference features “Voices of the Mekong” – different perspectives from Mekong citizens on their challenges and hopes for better futures displayed for Mekong leaders and partners to appreciate.*

Recognising the interests involved in the basin and the importance of a shared and informed understanding of different stakeholders’ perspectives, the MRC continues to implement various activities to strengthen relationships with a broad range of actors and players outside the national governments, including the private sector, civil society and academia, and other partners working in the Mekong region. One initiative to achieve



this is the continuation of a mechanism for engaging broader stakeholders, every year, through the Regional Stakeholder Forums (RSF).

The RSF attempts to address mutual interests and concerns of both internal, the governments of the MRC Member Countries, and external stakeholders, NGOs, the private sector, media, partners, and other interested groups. The RSF serves as a platform for the Member Countries and other relevant stakeholders to share information, and discuss, provide and exchange views and develop recommendations on the reasonable and equitable use of water and related resources in the lower Mekong. The year 2017 marked the implementation of the RSF mechanism, with four Regional Stakeholder Forums held, bringing together multi-stakeholders to have an open and constructive dialogue on pressing issues affecting the Mekong River Basin and to consider the MRC and its partners approach to addressing these issues now and in the future.

As decision-making processes on the management of water and related resources usually address multiple objectives, involve diverse interests, and have far-reaching effects, this multiple-dimensional approach is a cost-effective way to provide a platform that that considers multiple relevant issues of interest to the public. The first RSF for 2018, the [5<sup>th</sup> MRC Regional Stakeholder Forum](#) was held in September 2018, the first day allowed for the first regional information sharing meeting on the Pak Lay Hydropower Project Prior Consultation process and the second day focused on other key MRC work of interest to the public including: the Joint Action Plan (JAP) for Pak Beng Hydropower Project, the Joint Environmental Monitoring (JEM) for mainstream dams, the Xayaburi Design Changes review, the Procedures for Notification, Prior Consultation and Agreement (PNPCA) Commentary, the Guidelines for Transboundary Environmental Impact Assessments (TbEIA), the update of the Preliminary Design Guidance (PDG) for mainstream dams, the Sustainable Hydropower Development Strategy (SHDS), and the Mekong (Climate Change) Adaptation Strategy and Action Plan (MASAP). A total of 160 participants were in attendance. The MRCS offered travel support for local NGO representatives and researchers to encourage the participation of under-represented groups.

In addition to MRC hosted events, the MRCS also openly participated and contributed to other regional platforms to share information and experiences from the lower Mekong. In March 2018, the MRC Secretariat participated in sharing key findings of the Council Study and the voice of local communities on the impacts of climate change and hydropower development on the Mekong basin at the **Mekong Public Forum** entitled *“Missing the SDGs: Will the Mekong Keep up with A Fast Changing Basin?”*, a public platform for exchanging information and perspectives on existing challenges for the Mekong basin. The forum was co-organised by International Rivers, [PanNature](#), Mekong Environment Forum, and [Save the Mekong Coalition](#). The discussion focused on water fluctuation and climate change impacts on food security, ecological systems, and livelihoods as well as water quality and health-related issues of people living along the Mekong river basin.

In March 2018, the Embassy of Sweden (Thailand) in collaboration with the UNESCAP co-hosting a workshop around the theme *“Building resilience through participation”*. The workshop focused on sharing practical experiences at different levels (local, national, regional, global) towards achieving the SDGs, with an emphasis on “Empowering people and ensuring inclusiveness and equality”. The MRC led the session on sharing experiences on its participatory approach for regional engagement of stakeholders within the lower Mekong. Discussions for this session focused on how to better engage civil society and the public in the decision-making process.

In December, the MRCS led two sessions (10 & 14) at the **Greater Mekong Forum** to engage with stakeholders, mostly civil society and the public, from the Greater Mekong region. The 2018 Forum on Water, Food and Energy focused on ways in which social, economic and environmental challenges in economic development of the Greater Mekong can be addressed through tried-and-tested solutions, new knowledge and through regional, multi-sectoral, and multi-stakeholder dialogue. The forum presented research-based evidence to non-governmental organisations, policy-makers, the private sector, and development agencies.

At this forum, the MRC's sessions aimed to update and consult with participants on the MRC's ongoing work to address these challenges in the region, which is reflected through exploring Lower Mekong Hydropower Development Pathways, and how to progress the Social Impact Monitoring and Vulnerability Assessment & other socio-economic monitoring, and strengthen mechanisms to improve data access, data sharing, and data use in the region.

## EVIDENCE OF CHANGE

The International Conference and Summit were the highlight of the year, as they:

- Maintained the Mekong cooperation under the MRC at the highest political level
- Demonstrated the increased riparian ownership and steering of the development and management of the Mekong basin
- Reaffirmed the primary role and unique mandate of the MRC as a treaty-based river basin organisation in the Mekong, acting as a knowledge hub and water diplomacy platform
- Reaffirmed the increasing financial commitment from all member countries to the organisation with the goal of financial self-sustainability on track to be achieved by 2030

The implementation of strategies to better engage stakeholders by the MRC has resulted in:

- an increased awareness of stakeholders on critical issues relating to water resource management and development in the lower Mekong and different perspectives
- a better understanding of the role and work of the MRC
- more open engagement by Civil Society
- a platform for dialogue bringing interest groups, developers and national governments closer together

In the [Development Partners statement](#) and the Mid-Term Review report the MRC's initiatives to strengthen political cooperation and stakeholder engagement have been acknowledged. It is therefore important that the MRC continues to focus on engaging stakeholders at many levels. The challenge for the MRC in the future is how does it make participation by stakeholders more meaningful and how does the MRC better facilitate recommendations from certain groups that feel underrepresented into government decision-making.

## CONTRIBUTION TO SDGs

Through the MRC's ongoing commitment to the 1995 Mekong Agreement, and engagement with dialogue partners, development partners and key stakeholders, acting as a knowledge hub and platform for water diplomacy, it can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 15 of Life on Land, specifically target 15.6: promote fair and equitable sharing of the benefits arising from the utilisation of genetic resources and promote appropriate access to such resources, as internationally agreed, and

Goal 17 of Partnerships for the Goals, specifically target 17.9: enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation, and target 17.14: Enhance policy coherence for sustainable development.



# OUTCOME 7

## Comprehensive report on the status of the basin to highlight trends for optimal and sustainable development

### Indicator:

- The extent to which Line/Implementing Agencies use MRC reports and information systems for better decision-making

The MRC State of Basin Report is a flagship product of the organisation and an integral part of the MRC's strategic planning cycle. Compiled approximately every five years based on current and available data and information. The report provides an opportunity to assess conditions within the basin and the impacts, both positive and negative, that development and use of the water and related natural resources are having. The report provides a comprehensive basis for the Member Countries and other key stakeholders to discuss and determine appropriate actions by which to realise the MRC's aims for optimal and sustainable development of the basin as set out in the 1995 Mekong Agreement.

The MRC launched its first State of the Mekong Basin Report (SOBR) in June 2003, followed by a second edition in 2010 which followed the same narrative style as the first. Unlike these previous versions, the third State of Basin Report, is presented within a framework of a comprehensive and consistent set of indicators that address all aspects of the MRC's mission. The MRC's Indicator Framework and the new SOBR 2018 cover five critical dimensions associated with this, environmental, social and economic conditions, climate change and cooperation. In addition, and for the first time, this SOBR also includes a review of conditions within the Upper Mekong Basin in China and Myanmar.

Preparation of the SOBR 2018 has included widespread national and regional consultation meetings, involving national line agencies and national and regional experts in various sectors and disciplines. A final regional expert group meeting was organised in November 2018 to discuss finalisation and publication of the report.

The SOBR aims to provide readers with an understanding of (i) the current status and trends in development and management of the water and related resources within the basin; (ii) how these are impacting on environmental conditions, the livelihoods and well-being of those living in the basin and the basin's economy; (iii) the need to develop water-related resources in ways which are equitable and sustainable from an economic, social and environmental point of view; and (iv) the importance of planning and monitoring development on a basin-wide scale so that gains in



## PROGRESS

To prepare the State of Basin Report, the MRC formed six teams, five of which covered one of the five dimensions: environment, social, economic, climate change and cooperation. The sixth team covered the upper Mekong (Lancang) in China and Myanmar, examining mainly official and publicly available data and information within the basin in both upper countries.

The SOBR 2018 adopted a structure based on the MRC-Indicator framework and, within this framework and its five dimensions, provided an assessment of and commentary on 15 strategic indicators and 55 assessment indicators selected to provide more detailed information and to support the evaluation of the strategic indicators. The report was prepared using the most recent available spatial and time-series data to assess the status and trends of the various indicators. Data for the report were drawn from the Member Countries, including those already held by the MRC in datasets for the years 1985 to 2018, as well as from various MRC studies such as the Council Study. In a few cases, use was made of data from reputable third party sources such as the United Nations, World Bank, and the IUCN.

Preparation of this report has taken almost 3 years, reflecting the challenges associated with developing a comprehensive and replicable approach to state of the basin monitoring. At the request of the Member Countries, a Preparatory SOBR was developed during 2016 to trial the new approach. Taking into consideration the lessons learnt, plans were set in motion during 2017 to develop a full report to start in early 2018. Data collection, processing and analysis and the qualitative and quantitative assessment of indicators has taken a further year, during which successive drafts of report were developed and discussed in numerous regional technical working group consultations, small group meetings and national level discussions. Final discussions were held during December 2018.

## EVIDENCE OF CHANGE

The main outputs from this report were:

- an assessment of current conditions and trends within the basin as expressed through the 15 strategic-level indicators within the five dimensions;
- the identification of key issues within these assessments that impinge upon or inhibit MRC from achieving its aim for sustainable, optimal and equitable development of the basin's resources;
- the identification of priority actions and recommendations to be considered by the Member Countries when updating the Basin Development Strategy.
- The contribution to the knowledge base on sustainable management of the Mekong River Basin by providing datasets that can be used and replicated to guide future policy-oriented research;
- the creation of a foundation upon which Member Countries can assess their individual and collective contribution to achievement of those SDGs relevant to MRC's mission. It is also very clear that the emerging results and findings presented in the report, some previously not known, will help to guide plans for management and development of the basin.

Furthermore, the report provides a template upon which to base future SOBR so that a consistent and high quality approach can be followed to monitor conditions within the basin and the impacts that developments may have. Other innovations in the report include the introduction of a traffic light system to facilitate greater appreciation of basin conditions by the public and non-technical stakeholders.











**Table 3: Summary of conclusions and challenges and recommended priority actions**



Strategic indicators	Key strategic questions	Status /condition	Challenges	Recommended priority actions	BDS Recommendation
<b>Environment</b>					
<b>Water flow conditions in mainstream</b>	<i>Are the conditions of water flow in the Mekong mainstream acceptable?</i>	Generally compliant with PMFM, but induced changes in flow regime are of some concern	Managing the impacts of an apparent decrease of wet season flow during the recession period, the increase in dry season low flows and the increase in daily fluctuation in flows experienced in some reaches of the mainstream.	Continue monitoring programmes and, in addition to PMFM reporting, monitor decreases in wet season flows and daily fluctuations and consider implications of impacts that may arise, Improve monitoring of water use for various sectors to ensure balance is maintained with increased development	A B
<b>Water quality and sediment conditions</b>	<i>Are the conditions of water quality and sediment acceptable?</i>	Generally compliant with PWQ, but sediment concentrations much reduced	Identifying and implementing practical measures to mitigate the effects of reduced sediment concentrations and minimise further reductions	Continue the sediment and water quality monitoring programmes. Address the implications of reduced sediment concentrations through mechanisms to better manage sediment flows and mitigate transboundary impacts of reduced concentrations	A C
<b>Status of environmental assets</b>	<i>Are key environmental assets in the Mekong basin being adequately preserved and protected?</i>	Loss of wetlands and riverine habitats continues, pressure on capture fisheries becoming evident	Taking urgent action to protect remaining assets and to better manage fisheries Addressing the lack of sufficient data on wetland and riverine habits	Agree clear regional objectives, joint strategies and action plans for protecting and sustainably managing the remaining environmental assets and fisheries. Establish regular monitoring and data collection to address knowledge gaps and conservation activities for wetlands and other environmental assets including fisheries.	D B
<b>Social</b>					
<b>Living conditions and well-being</b>	<i>What social benefits, direct and indirect, are being derived from water resource developments in the Mekong basin?</i>	Living conditions improving but water sector impacts unclear	Provincial and district levels data needed to better understand relationship with water-related sectors alongside greater consistency of data quality and accuracy.	Review and refinement of indicators and develop and implement a data acquisition, generation and requirements action plan to address knowledge gaps.	B
<b>Employment in MRC water-related sectors</b>	<i>How are the river-related livelihoods in each country being affected by land and water management decisions?</i>	More information is needed to form a view	As above	As above	B

Note: BDS recommendations A – E are elaborated in Section 9.3.2

Strategic indicators	Key strategic questions	Status /condition	Challenges	Recommended priority actions	BDS Recommendation
<b>Economic</b>					
<b>Aggregate economic value of MRC water-related sectors</b>	<i>What economic value does each Member Country derive from the use of the Mekong river system within the water-related sectors?</i>	 <i>More information is needed to form a view</i>	Comprehensive data on all water-related sectors need to be assembled and analysed. Promotion of economic development consistent with the aims of the 1995 Mekong Agreement.	Review and refinement of indicators and develop and implement a data acquisition, generation and requirements action plan to address knowledge gaps. Adoption of pro-active regional planning to promote optimal and equitable development through increased cooperation and to identify opportunities for both socio-economic development and environmental protection consistent with these aims	B E
<b>Contribution to basin economy</b>	<i>How important is the economic value of the water-related sectors to the economy of the basin?</i>	 <i>More information is needed to form a view</i>	<i>As above</i>	<i>As above</i>	B/E
<b>Climate change</b>					
<b>Greenhouse gas emissions</b>	<i>To what extent is the Mekong Basin contributing to global GHG emissions?</i>	 LMB countries (as a whole) emission is about 1.5% of global total	Promote development practices within the basin that minimise GHG emissions consistent with each country's Nationally Determined Contribution under the Paris Agreement	Promotion of development practices that minimise GHG emission. Develop and implement a data acquisition, generation and requirements action plan to address knowledge gaps.	E B
<b>Climate change trends and extremes</b>	<i>Is there evidence of climate change within the basin?</i>	 Some evidence of rising temperatures and sea-levels. Flood damages are also higher. Other CC impacts are not seen.	Continued monitoring needed Continued assessment of potential future CC impacts based on latest available global and regional forecasts	Incorporate sea level rise as an indicator in future SOBR. Continue hydro-meteorological data collection programmes.	B A
<b>Adaptation to climate change</b>	<i>How resilient are the current water infrastructure and plans to climate change?</i>	 All countries have policies and strategies in place and 166 climate adaptation projects identified (2016)	To ensure that climate change is fully factored into development plans and that resilience is assured	Adoption of pro-active regional planning to address climate change and promote optimal and equitable development through increased cooperation	E
<b>Cooperation</b>					
<b>Equity of benefits from the Mekong River system</b>	<i>How well is Mekong basin development moving towards optimal and sustainable development?</i>	 Significant development in all countries, <i>but equity considerations need more data as above</i>	Adoption of pro-active regional planning to promote <i>equitable</i> use of basin's resources, together with establishment of a clear mechanism to define equity of benefit and trade-off arising from development in throughout the basin in water-related sectors	Adoption of pro-active regional planning to address climate change, promote optimal and equitable development through increased cooperation and to identify opportunities for both socio-economic development and environmental protection consistent with these aims	E
<b>Benefits derived from cooperation</b>	<i>What is the added value of cooperation under the 1995 Mekong Agreement facilitated by MRC?</i>	 US\$838m of projects supporting cooperation identified in National Indicative Plans	<i>As above</i>	<i>As above</i>	E
<b>Self-finance of the MRC</b>	<i>Is the MRC on-track to self-finance by 2030?</i>	 MRC budgets in line with achieving self-finance by 2030, alongside renewed commitments to this end	Retain focus on core function activities and look to ways to improve efficiency in delivering these	Identify smart and cost-effective approaches to basin monitoring and information and knowledge sharing	B

Reporting on the state of the basin has been occurring for over 15 years, during this time the status and trends with regard the social and economic livelihood within the lower Mekong Basin have improved. The SOBR has also enabled the identification of knowledge gaps, at the national level, and the importance of having the regional picture to support national planning and management for water and natural resources. The SOBR enables the validation of previous projections, and any adjustments to these projections, emphasising the MRC's role as a regional knowledge hub.

National and regional dissemination to policy makers, publication and development of the SOBR web version are planned for 2019, alongside the integration of the report's findings, conclusions and key recommendation into various MRC activities, such as the development of the next Basin Development Strategy and the Data Acquisition and Generation Action Plan.

## **CONTRIBUTION TO SDGs**

The State of the Basin Report provides an opportunity to assess conditions within the basin and the impacts, both positive and negative, that development and use of the water and related natural resources are having and a comprehensive basis for the Member Countries and other key stakeholders to discuss and determine appropriate actions by which to realise the MRC's aims for optimal and sustainable development of the basin. The report can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.3: by 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally and 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

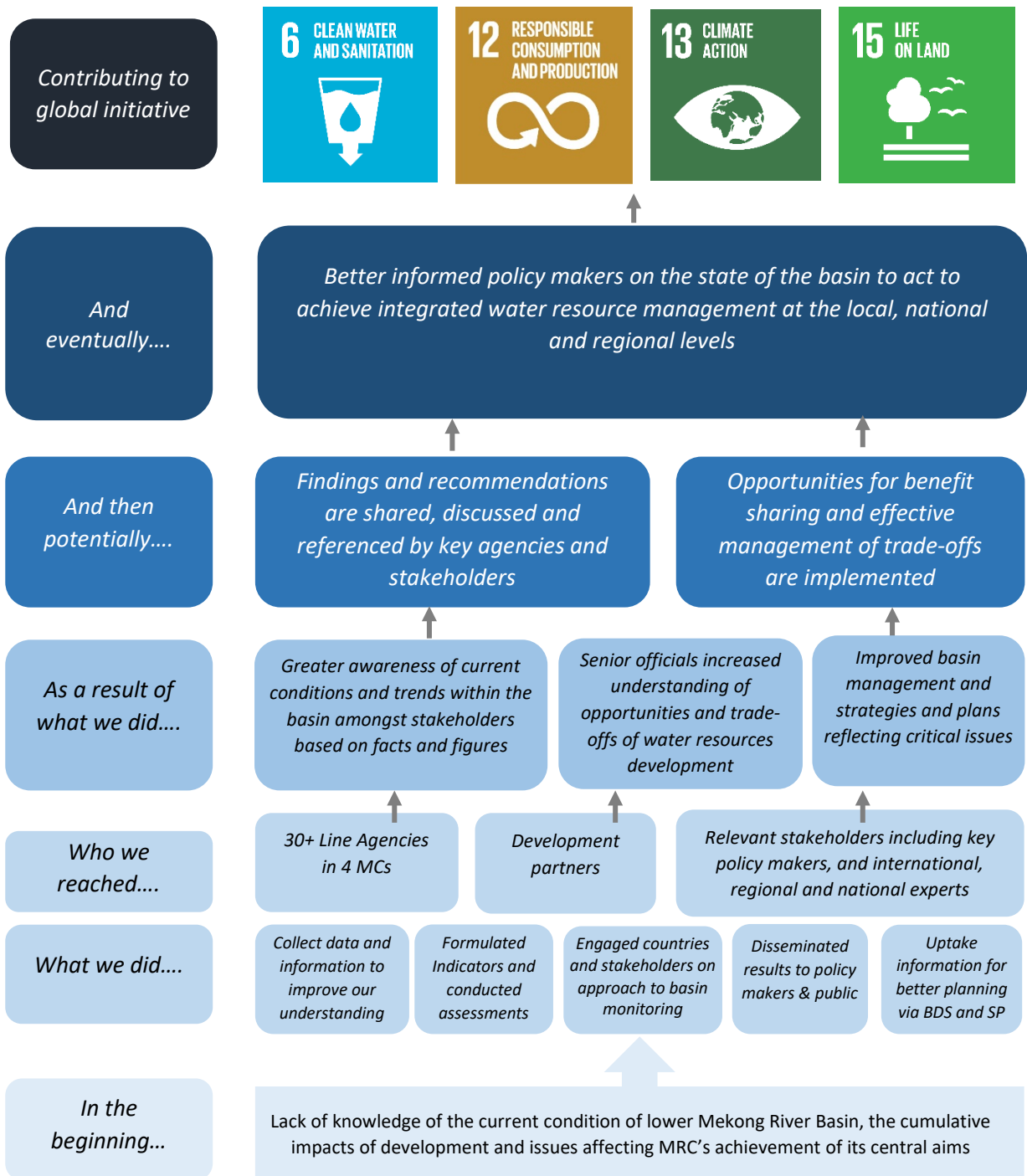
Goal 12 of Responsible Consumption and Production, specifically target 12.2: by 2030, achieve the sustainable management and efficient use of natural resources,

Goal 13 of Climate Action, specifically target 13.3: improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning, and

Goal 15 of Life on Land, specifically target 15.5: take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species, and target 15.9: by 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts.

# Pathway to Change

## State of Basin Report





## MRC's-Indicator Framework provides a foundation for better monitoring and decision-making

### Indicator:

- The extent to which line/implementing agencies use Mekong River Commission (MRC) reports and information systems for better decision-making

The MRC Indicator Framework (MRC-IF) is the back bone of the MRC's strategic planning cycle. The 15 Strategic Indicators, 53 Assessment Indicators and 182 Monitoring Parameters of the MRC-IF will be a vital tool to help inform Member Countries how they are progressing towards the aims of the 1995 Mekong Agreement. The MRC-IF provides a consistent and streamlined approach to data collection, analysis and reporting, which will help alert the Member Countries to key issues and trends and identify areas for further investigation and cooperation across five core dimensions (environment, social, economic, climate change and cooperation). The framework has been designed to enable:

1. cost-effective monitoring and analysis by the MRC and Member Countries over the long term
2. an assessment of the status and trends for conditions across the whole of the basin, while also allowing for scenario assessments at different spatial scales as appropriate to the circumstances

The MRC Indicator Framework is hierarchical in nature (Figure 11) and has been identified for use in support of:

1. State of the Basin reporting;
2. Assessment of basin-wide development plans, scenarios and projects, including in relation to the conservation, utilisation and management of the water and water-related resources;
3. Collection and sharing of data and information needed for MRC activities agreed in the next MRC Strategic Plan and enabled by the improved implementation of the Procedures for Data and Information Exchange and Sharing; and
4. Decentralisation and strengthening of primary data collection at the national level.

### Illustrative uses

High-level information for decision-takers, eg as presented in Executive Summaries of State of Basin and Scenario Assessment Reports

Comparison of scenarios and sections in the main body of the SoB, both as a means of generating strategic indicators

Field survey and other monitoring data periodically collected and maintained in the MRC information system

### Examples

- Sectoral economic performance
  - Status of river-dependant livelihoods

- Annual sectoral economic output and exports
  - Employment and incomes in fisheries

- Installed capacity and irrigated area
- Per capita incomes obtained from census and SIMVA records

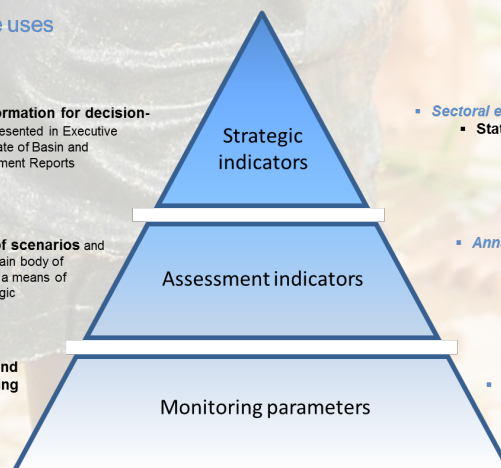


Figure 11: Three levels of the MRC Indicator Framework



## PROGRESS

Preparation of the MRC-IF has involved widespread national and regional consultation over many years with national line agencies, NMC Secretariats (NMCS), and national and regional experts in relevant sectors and disciplines. Commencing in 2012 and proceeded with progressive elaboration and agreement to the various components of the framework, as following:

- In 2015, general agreement to the five dimensions and the 15 Strategic Indicators;
- In 2017, further refinement of prioritisation of the Assessment Indicators – to inform the 2018 State of the Basin Report; and
- In 2018, finalisation of the Assessment Indicators and monitoring parameters and the development of an assessment methodology to guide implementation.

The final ‘working document’ was agreed to at a meeting of the Expert Group on Environmental Management in Hanoi in December 2018, with further discussion to be undertaken on the detail of the framework’s appendices – particularly the assessment methodology and assessment thresholds and the data acquisition and generation action plan.

Preparation of the MRC-IF has taken more than six years, reflecting the substantial challenges associated with developing a comprehensive and replicable approach to an assessment of basin conditions through a full set of indicators across social, economic, environmental, climate change and cooperation dimensions. The MRC have agreement on the full list of strategic and assessment indicators and monitoring parameters as Batch 1 of the framework and plan, for the MRC Joint Committee’s consideration. The coordination team also continues to work across the MRCS and with Member Countries to finalise the assessment methodology and thresholds and the data acquisition and generation action plan by the end of 2019.

The MRC-IF will be implemented through a systematic and consistent approach to data collection (acquisition and generation), processing, transmission, analysis and reporting. It will enable existing data gaps to be filled so that future state of the basin reports, basin development strategies and strategic plans are informed by a more comprehensive understanding of social, economic and environmental conditions and the potential impacts of alternative future scenarios. Indeed, this link to the 5-year basin development planning cycle means the MRC-IF will serve as a basis for all future MRC reporting, scenario assessment and preparation of the MRC basin strategy and planning. It will also enable cost-effective monitoring, surveys and studies to be conducted according to a consistent and integrated approach, supporting the MRC in its transition toward self-financing by 2030 and increasing the multi-use value of existing MRC datasets.

## EVIDENCE OF CHANGE

The main outputs from the MRC-IF are:

- a set of indicators that correspond to the key matters of relevance to meeting the objectives of the 1995 Mekong Agreement, for use in MRC reporting, assessment and planning through a robust, practical and cost-effective approach across five dimensions;
- a clear approach and methodology for undertaking an assessment against the indicators and ensuring common understanding on data acquisition and generation for smooth implementation of the MRC-IF; and
- enhanced and strengthened capacity of the MRC for effective and standardised long-term data acquisition, generation, analysis and assessment to support multipurpose uses of MRC datasets with efficient and effective planning and reporting.

Given the importance of agreed objectives for the selection of indicators, the MRC’s vision of an economically prosperous, socially just and environmental sound Mekong River Basin is reflected in the framework (Figure 12). While the particulars of this vision may be progressively refined over time, this provides an overarching direction for the main elements of the framework. Each strategic and assessment indicator has been selected to provide meaningful information on the extent to which the vision is being met.

The MRC has encountered many challenges and learned valuable lessons from the implementation of past regional studies and projects, including the Council Study, the SOBR and so on. Many of these challenges relate to the ad-hoc nature of data collection exercises and the lack of a consistent and systematic approach to planning for data collection over time. The MRC-IF sets a new basis for strengthening the standardisation of the process of data collection (generation and acquisition) across all MRCS divisions for future projects, studies and technical reporting.

The framework will be accompanied by a Data Acquisition and Generation Action Plan (DAGAP), which is expected to help fill the data and information gaps that currently exist in relation to the MRC-IF while building capacity across the MRC for readiness to respond to any new studies or assessments the Member Countries may wish to commission in the future. The implementation of the DAGAP will improve the cost effectiveness of implementing MRC activities, studies and projects by creating a clear mechanism for ensuring that the MRC has holistic and strategic data sets for use across the organisation. Allowing a greater focus on value-adding work such as status reporting, assessments of impacts, and to scale information from the local or regional level, with the ability to also cross reference different indicators for more qualitative and quantitative information and reporting. Through the agreement of the action plan by the Member Countries the decentralisation of monitoring will also be solidified.

**Figure 10: The pathway from lessons learnt in MRC data collection and analysis exercises to the required actions and expected outcomes from implementation of the updated MRC-IF**

Lesson Learnt:	What we need to do?	What are the future Outcomes and Impacts?
<ul style="list-style-type: none"> <li>• BDP2</li> <li>• Council Study</li> <li>• State of Basin Report</li> <li>• Update of MRC-IF</li> <li>• Procedures implementation</li> <li>• Basin Development Strategy</li> <li>• MASAP</li> <li>• Others MRC studies and Projects</li> </ul>	<ul style="list-style-type: none"> <li>• Standardization of process data collections and generations by all divisions</li> <li>• MRC-IF as basis of projects, studies implementation and Technical reporting</li> <li>• Develop and Implement Data Acquisition, Transmission and Generation Action Plan (DAGAP) and embedded into divisions activities and planning</li> </ul>	<ul style="list-style-type: none"> <li>• Closing the MRC data and information gaps</li> <li>• Capacity improvement</li> <li>• Ready for any MRC reports and studies</li> <li>• Cost effective implementation of MRC activities, studies and projects</li> <li>• More focus on MRC core functions and MRC objectives</li> <li>• Enhanced MRC values as the IWRM Knowledge and Data Hub in the region</li> </ul>

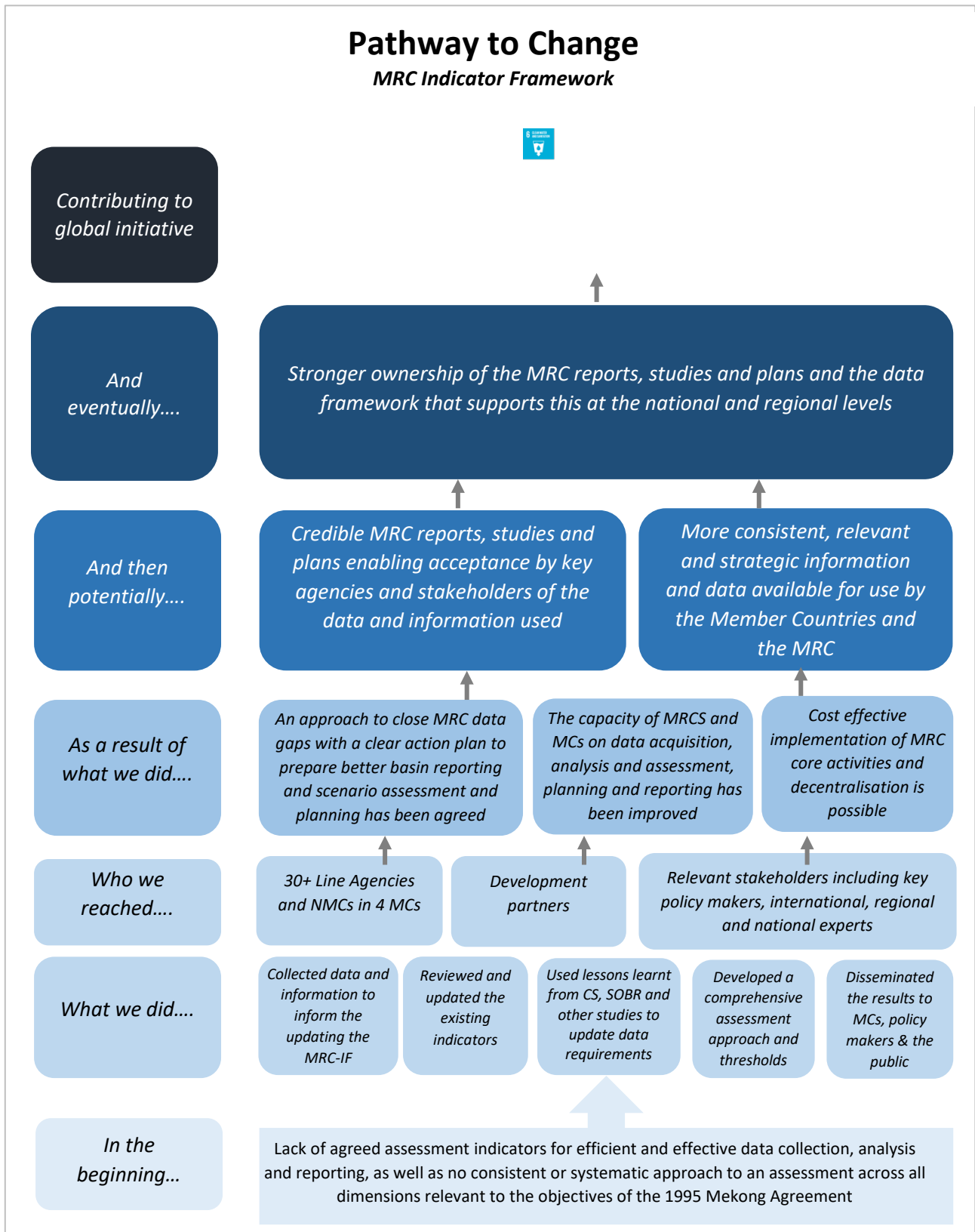
Moreover, the updated MRC-IF has been acknowledged and published in the global Guidebook “Using indicators for improved water resources management – guide for basin managers and practitioners” by the UN Environment and DHI team of experts in Bertule *et al.* (2017), as a case study contribution from the MRCS.

### CONTRIBUTION TO SDGs

The MRC-IF and DAGAP provides an opportunity to have a consistent means to assess conditions within the basin and the impacts, to support regional and national planning and monitoring. The framework and plan can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.3: by 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of

untreated wastewater and substantially increasing recycling and safe reuse globally and 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.





## OUTCOME 9

### MRC Hydromet network on track for decentralisation and expansion

**Indicator:**

- Quality (timeliness and accuracy) of MRC forecasting information in critical or emergency situations.

Hydro-meteorological monitoring is an essential undertaking and forms the foundation for sound planning in the context of transboundary integrated water resources management. The Mekong-HYCOS project (the Mekong Hydrological Cycle Observing System Project) is implemented by the MRC in collaboration with World Meteorological Organisation (WMO).

The main objectives of the Mekong-HYCOS project, now known as the MRC Hydrometeorological (hydro-met) Network, is to establish an efficient, reliable and accurate, timely hydrometeorological data collection and transmission system at basin level, and to strengthen relevant national and regional capacities. The Mekong-HYCOS project resulted in the establishment of a basin-wide hydrometeorological information system that provides data in real time (every 15 minutes). The system is now integrated into the existing MRC monitoring system resulting in improved hydrological networks and river monitoring/forecasting. This information is also shared among the Member Countries. The Mekong-HYCOS network was established during 2008 to 2012 and is now operating to present day.

The aim of this network is to provide basin-wide automated and near real-time water level and rainfall data to better monitor the lower Mekong River and to support flood forecasting, and other water-related aspects of the basin. The great advantage of this network is also that all Member Countries have the same reliable and accurate information about the Mekong basin at their fingertips, in a digitalised form, from the upper Mekong in China (noting that data from China is provided manually during the wet season only) through to the Delta in Vietnam.



## PROGRESS

Under the first phase of the Mekong-HYCOS project (2008-2012), the Mekong-HYCOS network with 49 stations (2 stations in China, 12 stations each in Cambodia, Lao PDR and Viet Nam, and 11 stations in Thailand) on the Mekong mainstream and relevant tributaries was established to continuously measure rainfall and water levels. The network of 49 telemetric stations transmitted near real-time data in 15-minute intervals to the respective line agencies in each country and also to the MRCS.

Currently there are 45 HYCOS stations. China no longer uses the HYCOS equipment, but rather submits one-hour interval measurements once a day during the agreed flood season period. Furthermore, two tidal stations in the Vietnam Delta stopped operating due to challenging physical conditions and their inappropriate locations and have since been withdrawn from the MRC-HYCOS network.

The data provided by the hydro-met network contributes to many national, regional and MRC programmes and procedures, such as:

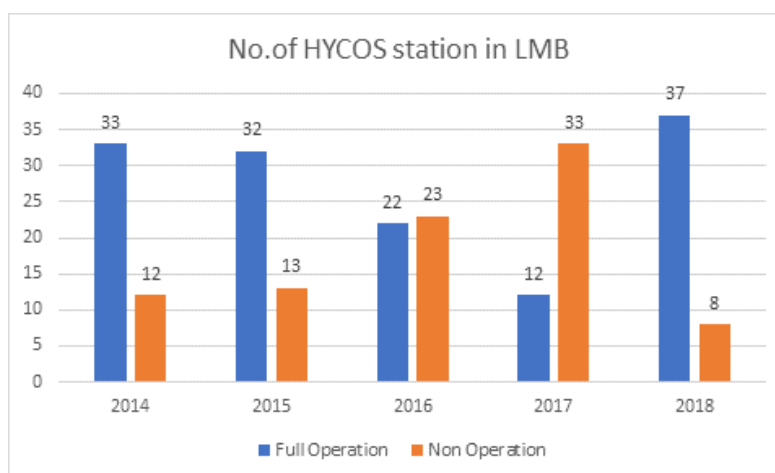
- Improving the river monitoring and forecasting system
- The implementation of the Procedures for Data and Information Exchange and Sharing (PDIES) between the Member Countries, which was approved by the MRC Council in 2001
- The upgrading of national data processing and archiving systems
- The establishment of distributed regional databases and telecommunication networks
- The provision and dissemination of hydrological information to the users in a timely manner
- Capacity building for the operation and maintenance of the system in order to ensure the long-term sustainability of the network

During the first phase of the Mekong-HYCOS project the number of fully operational HYCOS stations was stable. A programme for expansion was then developed, with the second phase of the Mekong-HYCOS project starting in early 2016. In the past few years, there have been a number of issues relating to the maintenance of the monitoring stations and the hydro-met network which have affected the proper functioning of the system. A significant reduction in the effectiveness of network operation for data sent to the MRC server from 2014-2017 occurred as can be observed in Figure 13.

Therefore, attention had focused firstly on measures to address the issues relating to the operation and maintenance of existing hydro-met stations as a priority activity. Prior to the establishment of additional hydro-met stations in the lower Mekong Basin.



**Figure 11: Network operation for data sent to the MRC server from 2014-2017**

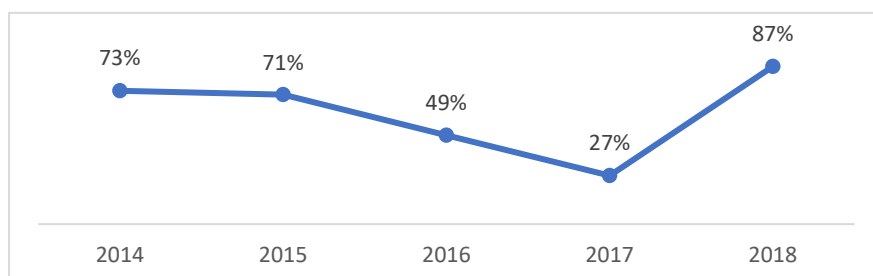


### EVIDENCE OF CHANGE

Following the decentralisation of the responsibility for hydro-meteorological monitoring to the Member Countries, the MRC hydro-met network has been challenged in providing real time data on rainfall and water levels in a digitalised format. This was due to capacity and funding challenges within the Member Countries to operate and maintain the HYCOS stations during 2016 and 2017. The issues of maintenance related to the need for spare parts to replace faulty equipment, a change in the frequency of the telecommunication network being used to transmit digital information from the stations – meaning an upgrade was required to some monitoring stations, and a lack of credit remaining on some sim cards which were used to transmit the information. This hampered the ongoing operation of some stations and their ability to transmit the information back to the Member Countries and the MRC.

To deal with this critical problem focused efforts took place to build the capacity of the Member Countries through station maintenance training and site visits of the existing HYCOS stations between March and May 2018. The main priority was to upgrade the stations that were not fully operating to ensure that the HYCOS network was well functioning. The MRC Secretariat proactively made all necessary efforts to recover all the stations from March to May. The improvement of the HYCOS operations over the region is illustrated in the Figure 14 below, showing an increase of more than 220% in 2018 from the status of operations of stations in 2017. A key performance indicator was also introduced which measured the percentage of data transferred automatically by each HYCOS station. This was communicated with the Member Countries and a letter sent initially where the stations were not functioning. This process is continuing more informally.

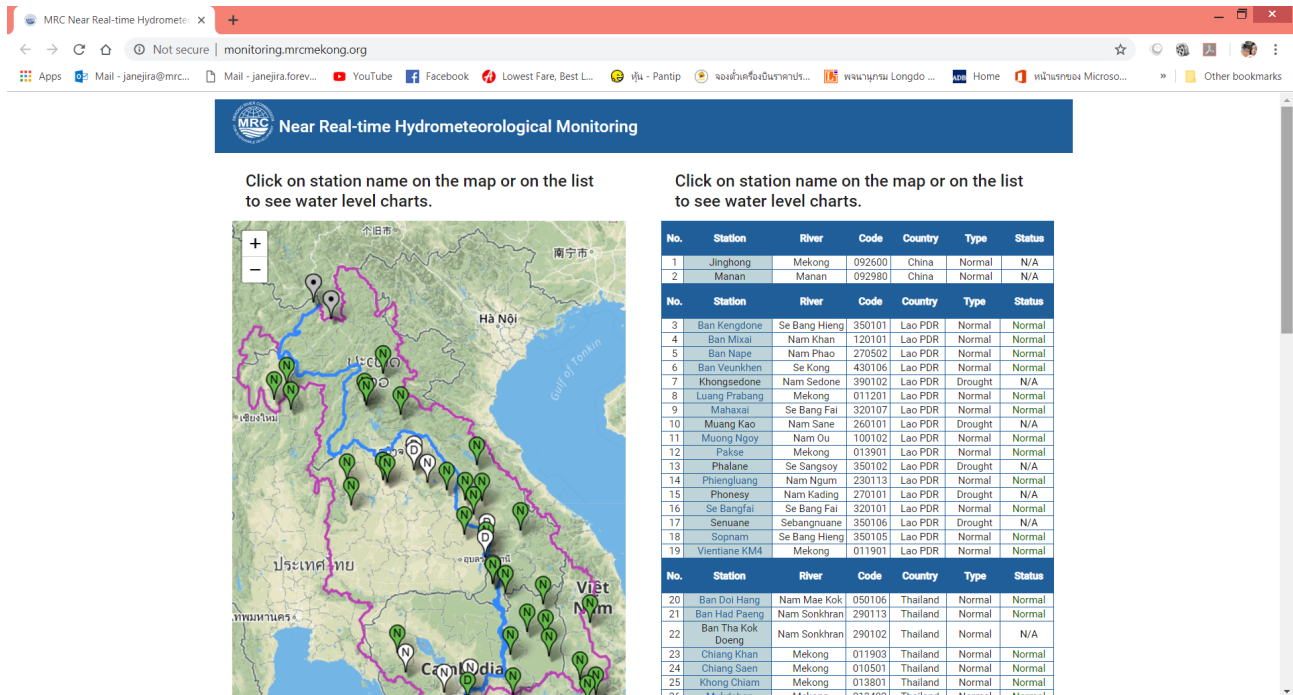
**Figure 12: The status of the MRC HYCOS station operation over the LMB for data sent to the MRC server**



In addition to this, improvements have been made to the functionality of the HYCOS monitoring website (<http://monitoring.mrcmekong.org/>) as shown in the Figure 15 below. The Member Countries can check the status of the stations anytime and anywhere. The hydro-met help-desk has also been activated creating a process whereby the Member Countries are notified automatically every morning by e-mail on the operation

of the stations. Where the station is identified as not working, the Member Countries and the MRC then act to look into the issue and address it in a timely fashion.

**Figure 13: The MRC Near Real-Time Hydrometeorological Monitoring Webpage**



The real-time information which is now available on the website and informed by the well maintained and ongoing operation of the HYCOS stations has proven to be useful for the Member Countries, MRC, the Regional Flood Management and Mitigation Centre, local people and agencies situated along the lower Mekong River.

Since the MRC monitoring webpage was upgraded in May 2018, there have been approximately 210,000 views in total from May 2018 until February 2019 (the no. page views were computed using the webalizer tool). It can be observed in the monthly graph of page views, Figure 16, that more people visited the MRC monitoring webpage during the flood period between July and September. This implies that the MRC monitoring webpage is useful and of interest to the public, particularly during the flood season. This is, further evidenced by the live broadcasting of the MRC flood forecasting page by the Thai Public Broadcasting Service (Thai PBS) on 1 August 2018 to report on the flood situation in the aftermath of tropical storm Son-Tinh, Figure 17 and Figure 18. Whilst the data from HYCOS network is not directly used for forecasting, it is used by the forecasting team to produce forecasting products.

**Figure 14: No. of Page Views of the MRC Near Real-Time Hydrometeorological Monitoring Webpage**

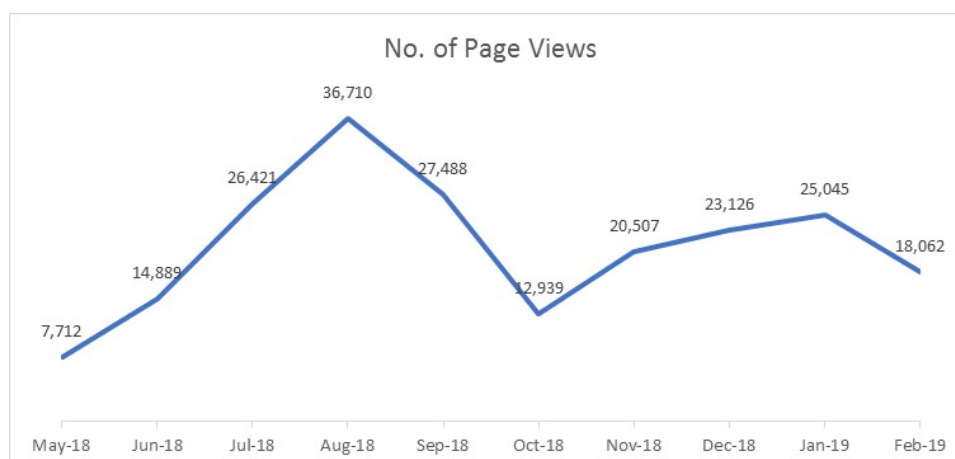




Figure 15: Thai Public Broadcasting Service on 1 August 2018, used the flood forecasting from the MRC's website during its news reporting on the flood situation in the aftermath of tropical storm Son-Tinh

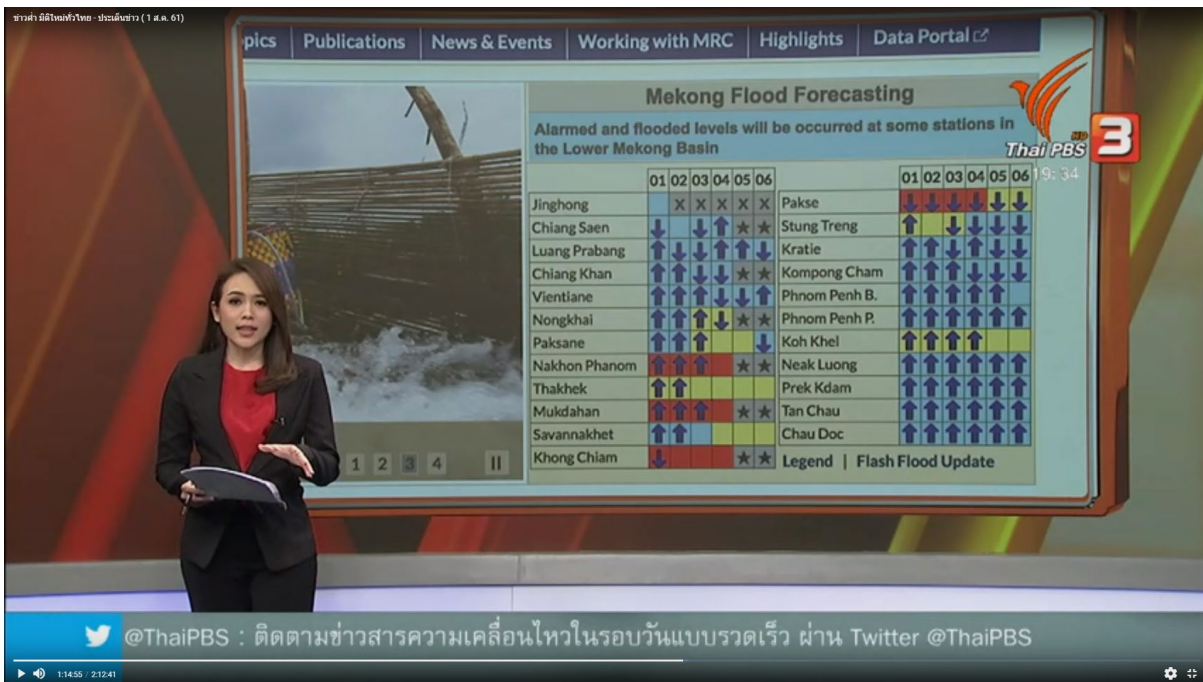


Figure 16: MRC flood forecasting page

(Also available in Khmer, Lao, Thai and Viet Nameese languages)

The screenshot shows the MRC flood forecasting website. The page title is 'Mekong Flood Forecasting'. Below the title, it says 'Alarm – 33 days at 8 sites; Flood – 14 days at 4 sites'. The main content is a table with two columns of stations and their forecasted levels for days 04 through 09. The table is color-coded: red for 'Alarm' and yellow for 'Flood'. The legend at the bottom right indicates that red means 'Alarm' and yellow means 'Flood'.

Stations	Calendar Dates						Stations	Calendar Dates					
	04	05	06	07	08	09		04	05	06	07	08	09
Jinghong		X	X	X	X	X	Pakse	↓	↓	↓	↓	↓	↓
Chiang Saen	↑	↑	↓	↓	★	★	Stung Treng			↓			↓
Luang Prabang	↑	↑	↓	↓	↓	↓	Kratie			↓	↓	↓	↓
Chiang Khan	↓		↑	↓	★	★	Kompong Cham	↓		↓	↓	↓	↓
Vientiane	↓	↑	↑	↑	↓	↓	Phnom Penh B.						↑
Nongkhai	↓	↑	↑	↑	★	★	Phnom Penh P.				↓		
Paksane	↓	↑	↓	↓	↓	↓	Koh Khel				↑		
Nakhon Phanom	↓	↑	↓	↓	★	★	Neak Luong						
Thakhek		↑					Prek Kdam						
Mukdahhan	↓	↓	↓	↓	★	★	Tan Chau				↓		
Savannakhet							Chau Doc						
Khong Chiam	↓		↓	↓	★	★							



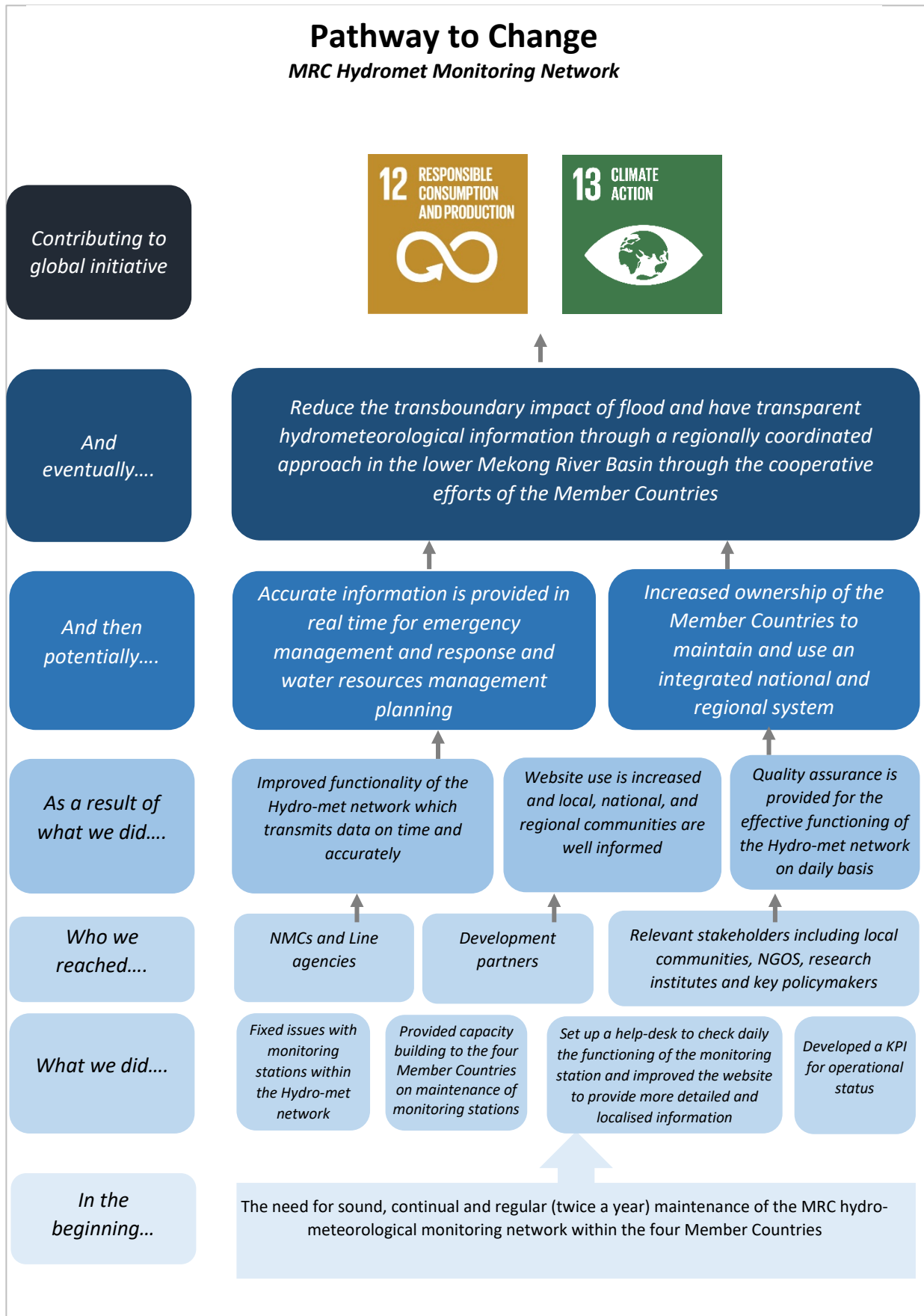
### **CONTRIBUTION TO SDGs**

The MRC hydro-meteorological monitoring forms the foundation for sound planning in the context of transboundary integrated water resources management providing important data in real time for water level and rainfall. The MRC hydro-met network can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.3: by 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally and 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 12 of Responsible Consumption and Production, specifically target 12.2: by 2030, achieve the sustainable management and efficient use of natural resources, and

Goal 13 of Climate Action, specifically target 13.1: strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries, and target 13.3: improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.





# OUTCOME 10

## **Expert Groups operationalised to provide inputs on technical, strategic planning, environmental and diplomatic issues**

### **Indicator:**

- How well the structure supports cross-cutting coordination.

In 2010, the Heads of Government of the four MRC Member Countries committed to be a financially self-sustained organisation by 2030. To meet this goal, the MRCS since embarked on a comprehensive institutional reform towards a leaner and more efficient organisation. As part of the reform process, the MRC established Expert Groups in line with the practice of other international river basin organisations around the world. These groups replace the steering committees, technical working groups and advisory bodies of the former MRC Programmes, as recommended by the Regional Roadmap on Decentralisation approved by the MRC Council in 2014.

Under the previous working arrangements, the MRC Member Countries had the competence to guide and shape MRC products, but did not have the opportunity to contribute to all stages of the development of MRC's technical work. The newly formed Expert Groups aim for a substantially more enhanced mode of collaboration between the regional and national levels: the MRCS and national line agencies, other institutions and organisations. They are technical platforms, where regional and national experts regularly meet to jointly develop routine or emergent work related to transboundary water management, and to coordinate the implementation and uptake of activities and products at the national level.

The role and contribution of national experts will be gradually strengthened through to 2030, and beyond. Their consistent engagement is crucial for the MRC to create better tailored products that are also increasingly demand-based. In addition, the work of the Expert Groups (EGs) offers opportunities to increase capacity within national line agencies and institutions. As a result of this strengthened collaboration with the MRCS and among national authorities, regional and national perspectives will be increasingly understood and harmonised. This is in line with the 2030 goal of political, technical and financial ownership of the MRC by its Member Countries.

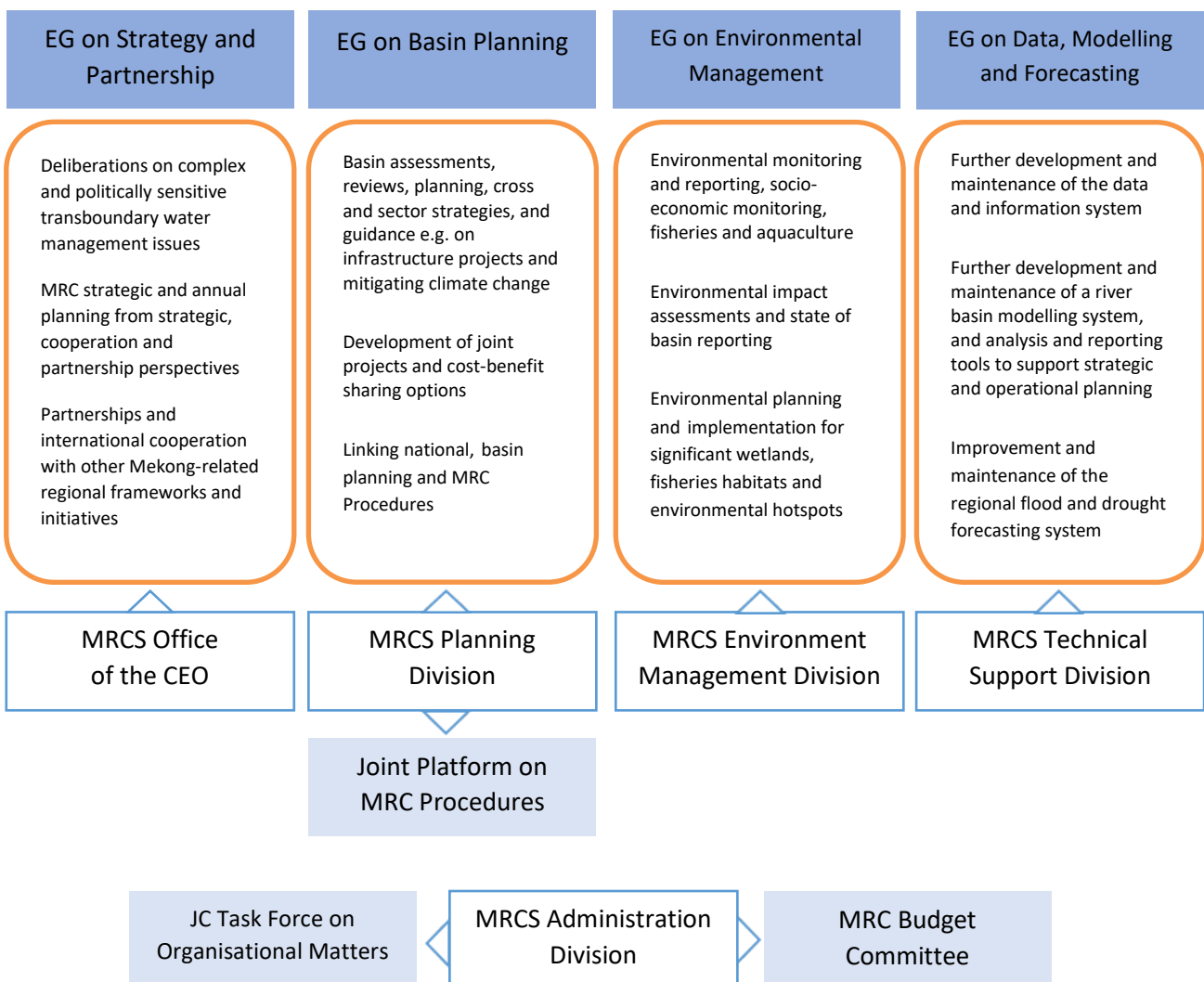


## Progress

Following the approval of the 2014 Roadmap on Decentralisation, initial debates on how the MRC’s new Expert Groups should look like were held whenever there was an opportunity to exchange with representatives from other international river basin organisations. Formal discussions started in 2016 when the new MRCS structure was adopted and implemented. In 2017, the MRC Joint Committee decided to establish four Expert Groups – three technical ones and one on strategy and partnership issues – and to maintain three existing working group arrangements, after various consultations. For each Expert Group, the MRCS developed and shared the Terms of Reference that serve as a basis for the groups to start working on a learning-by-doing basis. Also, the Member Countries were asked to nominate permanent members as suggested in the Terms of Reference.

**Figure 17: Expert Groups**

### MRC Expert Groups (EGs) and other existing working arrangements



In 2018, the four Expert Groups met. The meetings were coordinated by the responsible MRCS technical division or Office of the CEO. For each group, the countries selected relevant representatives to attend and

chair the meetings. The first meetings of the four Expert Groups served to discuss the respective Terms of Reference, including areas and mode of collaboration. Also, relevant topics were taken up.



Participants at the first meeting of the Expert Group on Strategy and Partnership on 8 May 2018 in Vientiane

At the first meeting of the Expert Group on Strategy and Partnership on 5 May in Vientiane, the participants discussed issues relating to their expertise, including: collaboration with the Mekong Lancang Cooperation, ASEAN and the Greater Mekong Subregion (GMS) Economic Cooperation Program of the ADB (Asian Development Bank). Participants of the first meeting of the Expert Group on Basin Planning on 27 April in Siem Reap looked at the required actions for the implementation of joint projects between Cambodia-Lao PDR and Cambodia-Thailand, collaboration for fish friendly irrigation and climate change actions, among others. The Expert Group on Data, Modelling and Forecasting meeting on 24-25 April in Bangkok covered issues on the MRC flood and drought forecasting system, modelling, data and information management. While the Environmental Management Division held various meetings between May and November under the umbrella of the Expert Group on Environment Management, including: Transboundary Environmental Impact Assessment Guidelines, Strategy for Environmental Management, joint environmental monitoring, and State of Basin Reporting.

As the work with the new Expert Groups is an ongoing learning process, the MRCS tried to capture some learnings and analysis of the membership of the groups towards the end of 2018. For the latter, the number and kind of participants sent by the countries and the lists of assigned permanent members were analysed. For the Expert Groups to perform their role it is crucial that the membership have appointed and stable members. These are the professionals that will engage in regular technical exchanges and discussions with the MRCS, accompanying and contributing to the development of MRC activities and products, and making the national knowledge and products better understood by MRC.

As there may still be different understandings and approaches to work by the Expert Groups among the MRCS and national authorities, the MRC continues to keep up the dialogue to find the best mode to work with these groups, to identify the need for specific sub-groups if necessary as foreseen in the Terms of References and to ensure relevant members are appointed.

### **Evidence of change**

There is a common agreement that the MRC activities and products should meet national needs and be fit for purpose. To achieve this, the linkages and way of collaboration between the regional and national levels need to be strengthened. The establishment of the four Expert Groups provides a mechanism to reach this goal and enhance political, technical and financial ownership by the countries by 2030. Expert Groups can contribute to streamlining the current MRC decision-making processes and the saving of operational costs, making the countries less reliant on support from external experts and resources.

The first meetings of the newly established Expert Groups were successfully held and resulted in an increased awareness about the need to enhance the engagement of relevant national line agencies and other actors from the onset of the development of MRC activities and products. Through the continuity of members on the expert group, selected based on their relevant technical expertise, this enables the uptake of the MRC's activities and products at the national level. The Expert Group meetings are also open for specialists and experts from other regional organisations, non-governmental and international organisation and the private sector if needed. Representatives from the MRC Dialogue Partners – the People's Republic of China and the Union of Myanmar – may also be invited to participate in the Expert Group's meetings in the future, if useful.

### **CONTRIBUTION TO SDGs**

the MRC's Expert Groups provide an opportunity to engage national experts and specialists, as well as key stakeholders in the development of its activities, policies, strategies and products, further enhancing its role as a knowledge hub and platform for water diplomacy, and building capacity at the national level. The Expert Groups can support the achievement of:

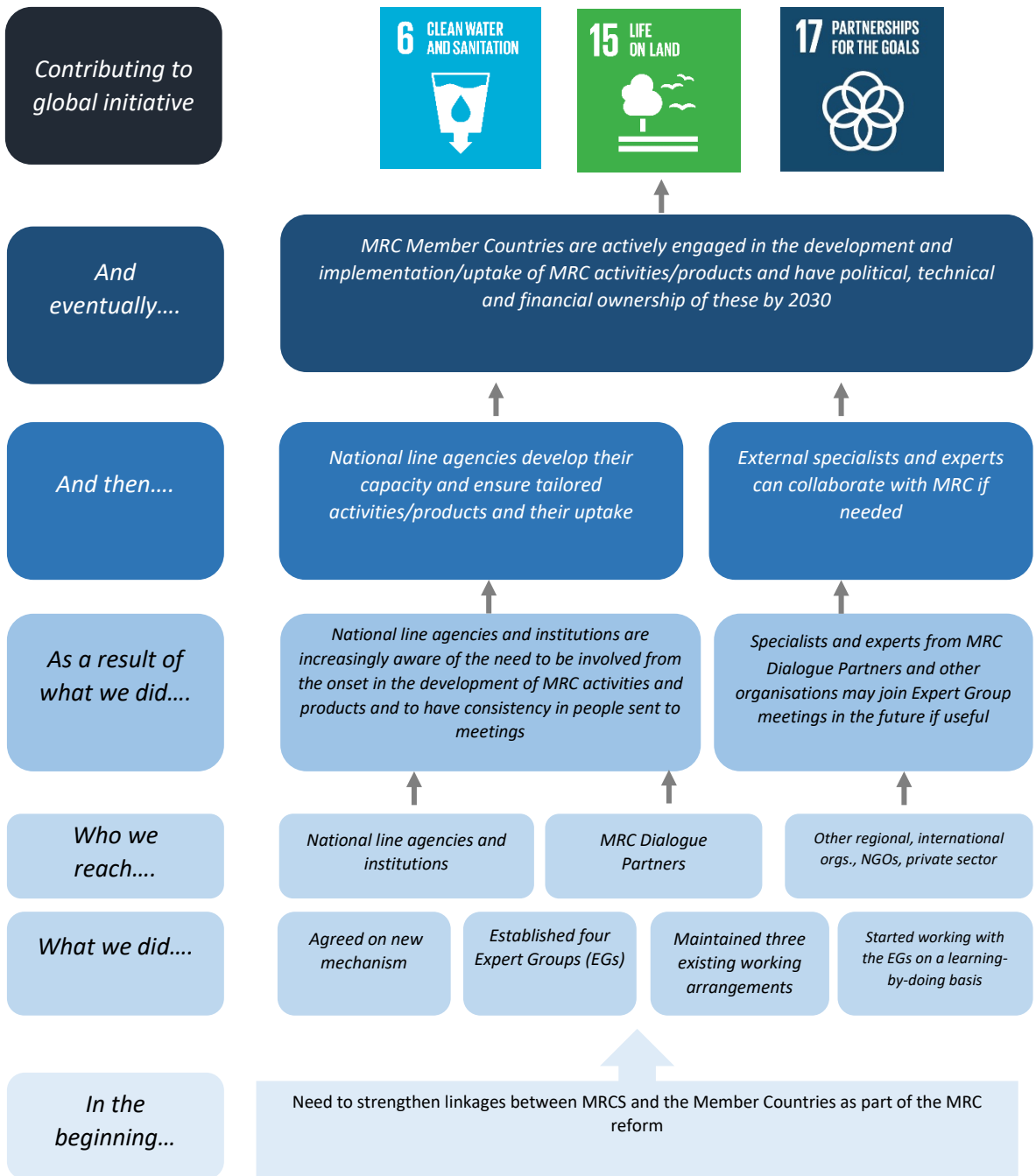
Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate,

Goal 15 of Life on Land, specifically target 15.1: by 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements, 15.5: take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species, target: 15.6: promote fair and equitable sharing of the benefits arising from the utilisation of genetic resources and promote appropriate access to such resources, as internationally agreed, and target 15.9: by 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts, and

Goal 17 of Partnerships for the Goals, specifically target 17.9: enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation and target 17.14: Enhance policy coherence for sustainable development.

# Pathway to Change

## MRC Expert Groups





## Mid-term Review provides guidance for the MRC's continual improvement

### Indicator:

- Percentage of MRC SP outputs completed as planned
- Extent of staff morale and satisfaction with the MRC management system and organisational direction
- Satisfaction with decisions made within the organisation

The year 2018 was the midpoint in the implementation of the MRC Strategic Plan 2016-2020. As a result, a number of major reviews were carried out to assess the achievements and challenges with the MRC operations, the progress with implementation of the Strategic Plan, as well as the decentralisation of basin monitoring to Member Countries.

This provided a chance to reflect on what the MRC has achieved and where the MRC needs to refocus its efforts to ensure it continues to deliver on its mission.

The Operational Review focussed on:

- At the strategic and policy levels, to assess whether the new, reformed MRC is able to implement its mandate and provide recommendations on how the organisation could deliver on its mandate in the best possible way. This part of the review includes an assessment of the linkages and interrelations within the different structures of the MRC (Council; JC; the various Committees, Task Forces, Expert Groups and Platforms) as well as between the regional (MRCS) and national levels (NMCs and line agencies).
- At the organisational level, to assess if the organisational structures, planning and work flow processes, skill levels and organisational culture are adequate to provide an enabling environment for effective and efficient delivery.
- At the operational level, to assess the MRCS' internal processes and systems, such as the information systems and administration, financial management, procurement, and human resources management systems.

The independent Mid-term Review objectives were to:

- Review the present state of the implementation of the SP against the outputs and indicative activities set forth in the plan
- Assess the progress and achievement of the outcomes and desired results as specified in the SP
- Make recommendations on how to improve the implementation of the SP, on prioritisation and implementation of key outputs during the remaining two years of the current planning cycle, taking into account emerging opportunities and challenges, as well as budgetary and organisation constraints at the MRC.

A major subcomponent of the MTR was a review of the decentralisation process considering achievements and challenges to make concrete recommendations for the MRC and its Member Countries in terms of what activities have been successfully decentralised, or made steady progress in that direction, and those that face challenges and should change course.

## Progress

The reviews acknowledged that the MRC had undergone its most comprehensive institutional reform to date with the aim of transitioning to a leaner and more efficient organisational structure, with the commitment to be self-financed by 2030. Whilst evidence of remarkable progress in many areas was observed, there was signs of strain in some areas that affected the MRC's ability to deliver on its mandate, and the SP. The implementation of the institutional reforms, the SP and decentralisation also occurred at a time where significant change has occurred in the Mekong Basin from increased regulation of the tributaries and the mainstream river and the demographic and societal changes as the economies of the region grow.

The Operational review identified the priority recommendations as:

- Provide clarity to the rules of procedures,
- Introduce key performance indicators for the JC and MRCS,
- Fine-tune the role of the Chief Executive Officer (CEO) and head of Administration Division to improve service delivery, operation financial and organisational management,
- Readjust and introduce new positions,
- Review the RFMMC to facilitate better monitoring and forecasting,
- Streamline the management of consulting assistance, ensure knowledge and capacity transfer to the MRCS, continue professional development to enhance MRCS organisational culture and 'transboundary voice',
- Fine tune the set up for the Budget Committee and the Audit Committee,
- Implement a Medium-Term Expenditure Framework, and
- Improve financial reporting.

The Mid-term Review of the SP identified the priority recommendations as:

- Address issues to improve implementation of the MRC Procedures,
- Prepare a paper on benefit sharing policy for high level discussion between countries,
- Prioritise active uptake of outputs for work planning processes, and prioritise the uptake of efforts for high relevance work,
- Expedite the establishment of the sub-groups of the Expert Groups,
- Consider alternative wording for guidelines and studies to expedite approvals,
- Upgrade the MRC Information System, flood forecasting and modelling ability,
- Better align the National Indicative Plans and formulate the BDS and SP with a light touch,
- Finalise handover arrangements, secure funding, develop capacity, prioritise monitoring activities and review the core monitoring network to implement effectively the core river basin management functions and to achieve joint decentralisation,
- Clarify MRC's role in the changing landscape of regional cooperation, identify strategic partners to relevant technical and governance meetings to enhance dialogue and collaboration,
- Review gender issues in MRC's work to promote gender issues relevant to the mandate,
- Ensure the MRC are more closely involved in developing monitoring Cascade Joint Operating Rules for the Basin,
- Agree on data sharing arrangements and communication protocols as part of a response action plan for flood release and flood storage, dam safety warnings and water quality incidents,
- Prepare and implement an organisational development capacity development plan, and
- Broaden the adoption of SMART indicators in the M&E system based on agreed impact pathways and introduce feedback loop to management

## **Evidence of Change**

Overall, there is strong evidence of behaviour change and political support by the MRC and Member Countries to implement the 2030 Roadmap for the MRC to be a self-financing inter-governmental organisation through the implementation of the organisational restructure in 2016 and the ongoing increase of member's financial contributions.

The mid-term review(s) enabled interviews and discussions at all levels of the MRC including secretariat staff, members of the MRC Council, Joint Committee, national line agencies, and development partners. Meetings were also held with dialogue partners, in particular the Chinese Ministry of Water Resources and the Lancang Mekong Water Resources Cooperation Centre. The sharing of information and assessing the situation to affirm what is working and identify what is not working so well has enabled all involved to conceptualise the MRC's role and its future and make suggestions to better guide the MRC's planning processes to achieve the SP, improve staff morale and satisfaction with the organisation's direction and decisions made within the organisation.

Following the completion of the mid-term review, the MRC have been swift to act where a quick fix could be found. Where recommendations require further consideration and a more strategic response the MRC has developed an implementation plan and will look to execute these in the short term, through the Annual Work Plan 2019 and 2020, and in the medium term, to support the development of the next MRC Basin Development Strategy 2021-2030 and Strategic Plan 2021-2025.

## **CONTRIBUTION TO SDGs**

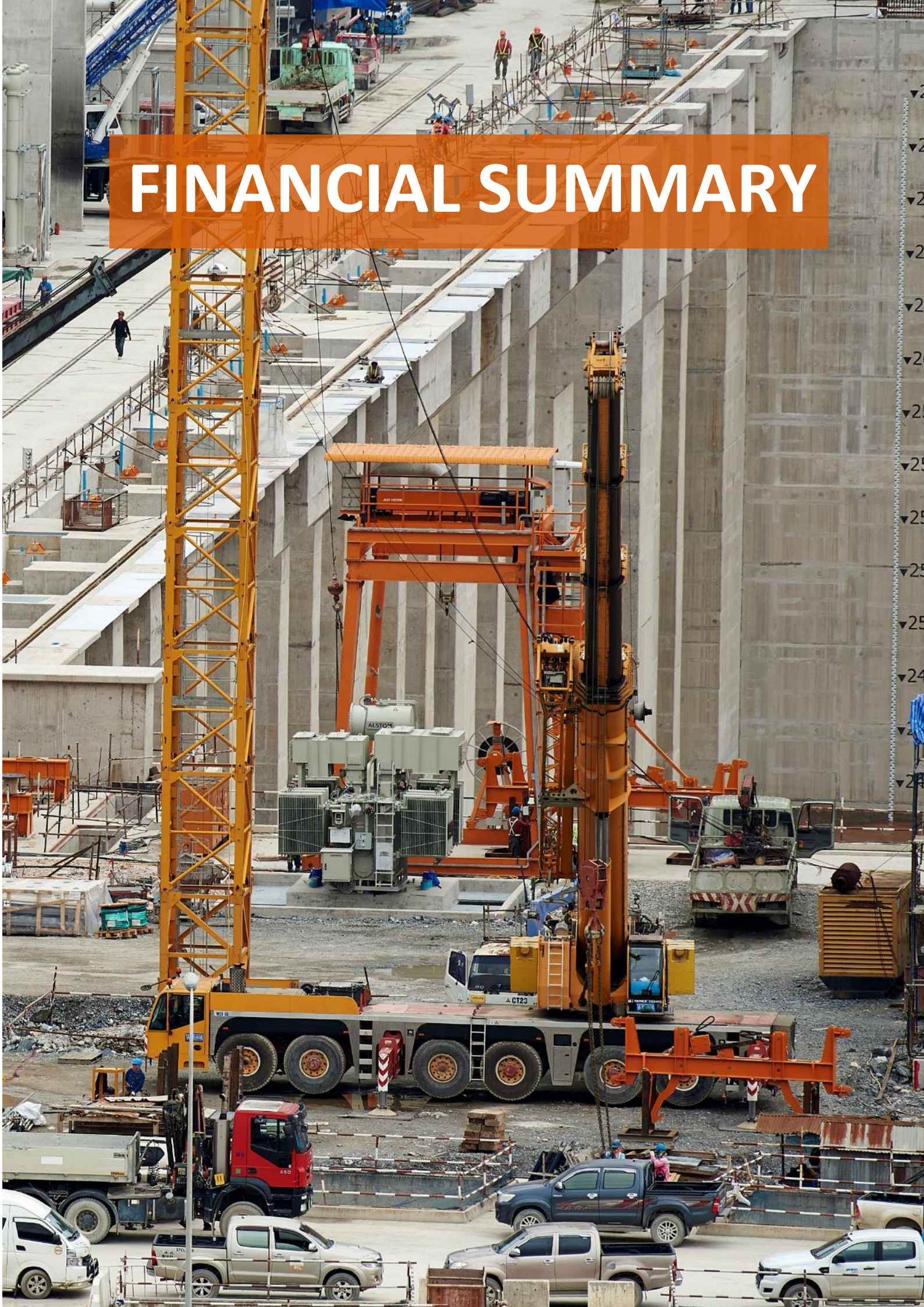
The MRC's commitment to continual improvement through its internal review, its operational review and the mid-term review of the MRC Strategic Plan enables reflection and adjustment to ensure the MRC and its framework are delivering on the 1995 Mekong Agreement and the 2014 Roadmap to decentralisation. The implementation of these reviews can support the achievement of:

Goal 6 of Water and Sanitation, specifically target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate, and

Goal 17 of Partnerships for the Goals, specifically target 17.9: enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation.



# FINANCIAL SUMMARY





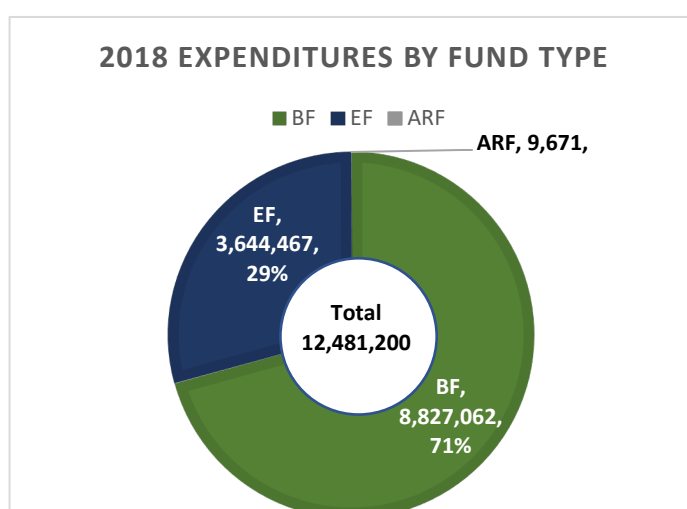
## FINANCIAL SUMMARY

The opening fund balance on the 1<sup>st</sup> of January 2018 was USD 12,448,215, and the total income for 2018 of was USD 8,731,221, with the total funds available (the opening fund balance for 2018 plus new income) for 2018 being USD 21,179,436. The total budget (AWP 2018 budget plus carried over cash advances and outstanding obligations from 2017) was USD 20,259,022 for 2018. The total expenditure was USD 12,481,200, resulting in a disbursement rate of 62%.

The total income of USD 8,731,221 consisted of USD 6,100,987 for the Basket Fund (BF), USD 2,539,761 for the Earmarked Fund (EF), and USD 90,473 for the Administration Reserve Fund (ARF). The total expenditure of USD 12,481,200 included USD 8,827,062 from the BF, USD 3,644,467 from the EF, and USD 9,671 from the ARF. As a result, the movement in fund balance for the year 2018 was (USD 3,749,979).

**Figure 20: 2018 Expenditures**

<b>Opening Fund Balance</b>	12,448,215
<b>Income 2018</b>	8,731,221
<b>Total funds available</b>	21,179,436
<b>AWP 2018 Budget</b>	20,259,022
<b>2018 Expenditures</b>	12,481,200
<b>Overall Disbursement Rate</b>	62%



The MRCS' total net current assets were a total of USD 8,673,272 at the end of 2018, compared to the previous year at the end of 2017 of USD 12,448,215. In line with the roadmap for self-sustainability, MRC Member Countries have increased their financial contribution each year. In 2018, the total contribution from the member countries was USD 3,109,406, compared to USD 2,851,149 in 2017. Also, a few development partners delayed their contribution in 2018 due to pending issues with the MRC's internal control and financial management system, with the a of USD 5,021,943 being contributed by Development Partners (DPs) compared to USD 8,784,319 in 2017.

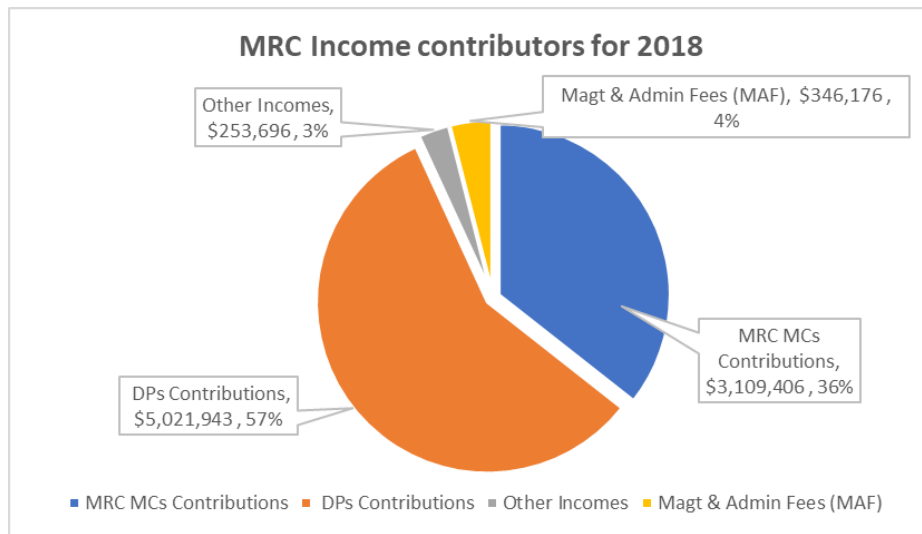
In order to resolve the pending issues, the MRCS has continued to improve its internal control and financial management system, resulting in, amongst other actions, the hiring of an Internal Auditor and the establishment of the Audit Committee.

## FINANCIAL PERFORMANCE

### Income

The MRCS receives income from three main sources: contributions from MRC Member Countries, contributions from Development Partners and other incomes including interest revenue, management and administration fees (MAF) charged to earmarked contributions, data sales, etc. By the end of December 2018, the total income received was USD 8,731,221, which was approximately 17% lower than the income projection for the year. This was because a few DPs delayed their fund transfers.

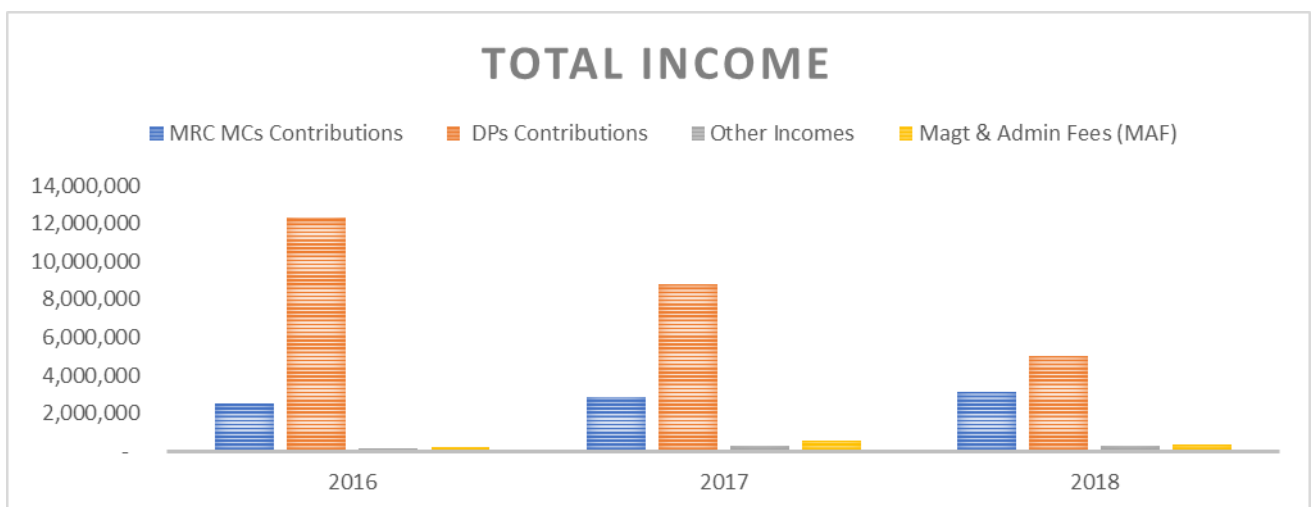
**Figure 21: Income Proportion**



Overall the income contributions for the year 2018 consisted of 57% of contributions from Development Partners and 36% of contributions from MRC Member Countries.

The chart below shows there has been a stable increase in contributions received from MRC Member Countries in line with the Roadmap for self-sustainability and continued strong commitment to self-financing of the MRC by 2030. There was an overall decline in actual contributions from development partners (DPs) from 2016 to 2018. On the one hand, this was expected as contributions from the MRC Member Countries increased. In addition, as some DPs provided funds for the whole five-year strategic plan period, there are different funding transfer schedules each year. For earmarked funds, transfers into the MRCS account are often based on actual expenditure. Lastly, the MRC also faced challenges in 2018 with some DPs not transferring funds as scheduled due to concerns about internal control mechanisms (these are currently being resolved).

**Figure 18: Total Income 2016-2018**





## Income break down by fund type

In 2018, the MRCS expected to receive USD 7,965,680 of BF contributions and USD 2,526,158 of EF contributions, a total of USD 10,491,839.

**Income for the Basket Fund (BF):** As of 31 December 2018, the MRCS had received a total of USD 6,100,987 (rather than the expected USD 7,965,680), which is equal to 77% of the projected BF funds to be transferred for the year 2018. This is 23% lower than then the projected income for the BF.

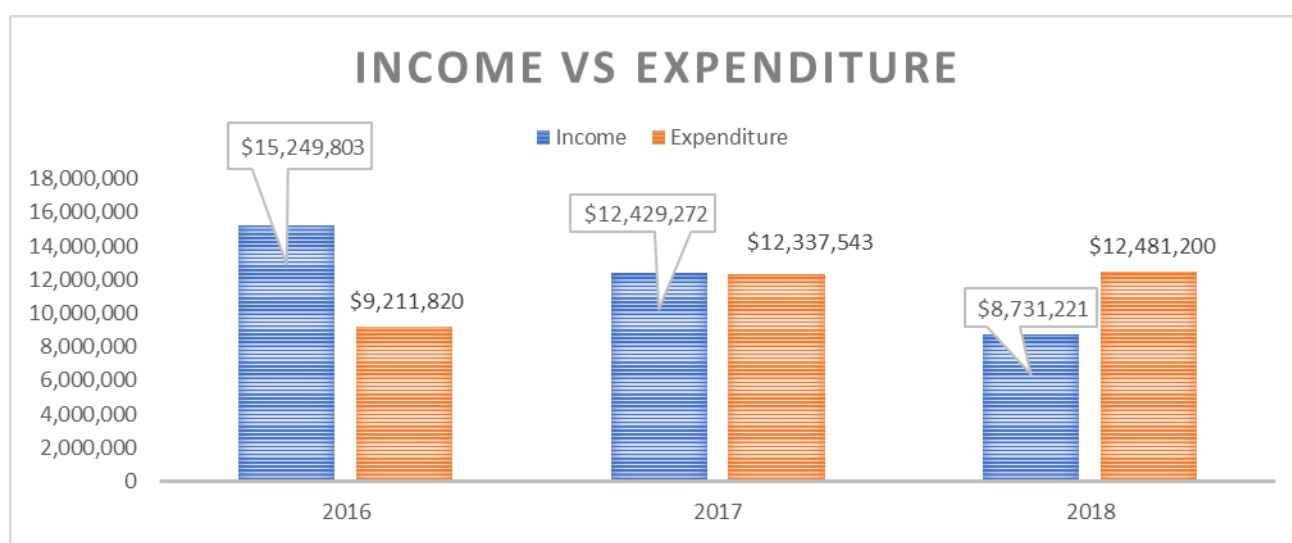
**Income for the Earmarked Fund (EF):** MRCS received a total of USD 2,539,761 for EF for the year 2018, which is equal to approximately 101% of projected income for the EF in 2018. This was because most activities under EF met good progress according to planned activity for the year, including the activities funded by the World Bank.

**Income for the Administration Reserve Fund (ARF):** During the period ending December 2018, the only income for the Administration Reserve Fund was from interest received from a term deposit of USD 90,473. No other income was generated for the ARF during 2018.

## EXPENDITURE

Total expenditure for 2018 was USD 12,481,200, resulting in a disbursement rate of 62% of the planned budget (USD 20,259,022). Showing that the overall actual expenditure by the MRC was significantly lower than the overall budget plan for 2018. Some of the reasons for the low expenditure included a concentration of resources to activities of high importance - such as the 3<sup>rd</sup> MRC Summit and the PNPCA process for Pak Lay - which took priority over other activities, consultation scheduling difficulties, implementation bottlenecks related to ongoing financial and HR reforms, and new policies and measures introduced by MRCS top management which took time for internal adoption and resulted in delayed activity. These lessons learnt have been considered in developing the AWP for 2019, which has resulted in the development of a more realistic budget. Nonetheless, overall, if compared to the previous two years, expenditure was slightly higher in 2018. This is likely to be because of 2018 being the third year for the implementation of the MRC structural reforms. The chart below outlines the main highlighted information on financial performance of the MRC.

**Figure 19: Income Vs Expenditures**



## **Expenditure break down by fund types**

**Expenditure for the Basket Fund (BF):** In 2018, the MRCS spent USD 8,827,062 which was about 64% of the planned expenditure for the BF of USD 13,897,627. Noting, that this figure is actual expenditure based on a cash accounting basis and thus does NOT include outstanding obligations (contracts) and cash advances which will be settled in the following year (2019).

**Expenditure for the Earmarked Fund (EF):** At the end of December 2018, the expenditure of EF was USD 3,644,467 which was about 58% compared to the planned expenditure for the EF budget for 2018. Expenditure in 2018 for the EF was slightly lower than the previous year.

**Expenditure for the Administration Reserve Fund (ARF):** Utilisation of the ARF requires the approval of the MRC Member Countries before it can be used. In late 2016, the MRC Joint Committee approved a budget of \$414,699 from the ARF to cover the costs of office relocation activities from Phnom Penh to Vientiane. Many of the relocation activities were completed in 2017. However, a few activities were still ongoing in 2018, such as the replacement of elevators. Thus, the expenditure of the ARF for the year was only USD 9,671.

## **INTERNAL CONTROL AND AUDITING**

One of the achievements in enhancing the financial control mechanisms of the MRC and building the confidence of the member countries and development partners was the establishment of the MRC Audit Committee which was formally approved by the MRC Joint Committee in November 2018. The Audit Committee will play a key role within the MRC governance framework to support the MRC in matters relating to internal control and financial risk management. The first Audit Committee meeting was set for March 2019, to discuss strengthening internal controls, the audit plan for 2019 and internal audit reports.

The Members of Audit Committee are nominated by each member country and the MRCS, making a total of five independent members. All Committee members do not represent any country and have significant financial experience and accounting and auditing expertise.

Furthermore, MRCS also focused on other key risk areas such as cash handling and information technology security. In addition, enterprise risk management was conducted, offering relevant implementing divisions and offices practical information for risk management and self-monitoring, significantly increasing the visibility—and accessibility—of compliance specialists across the organisation.

Moreover, as per the MRC Member Countries and DP requirements, the external auditor, KPMG, had audited the MRC financial statement and confirmed unreservedly that the financial statement presents fairly the financial position of the MRC.

The final Audited consolidated financial statement for 2018 is included in this report (see below) and also published on MRCS website.

INSERT THE EXTERNAL AUDITOR'S STATEMENT

# OUTCOME STATUS SUMMARY





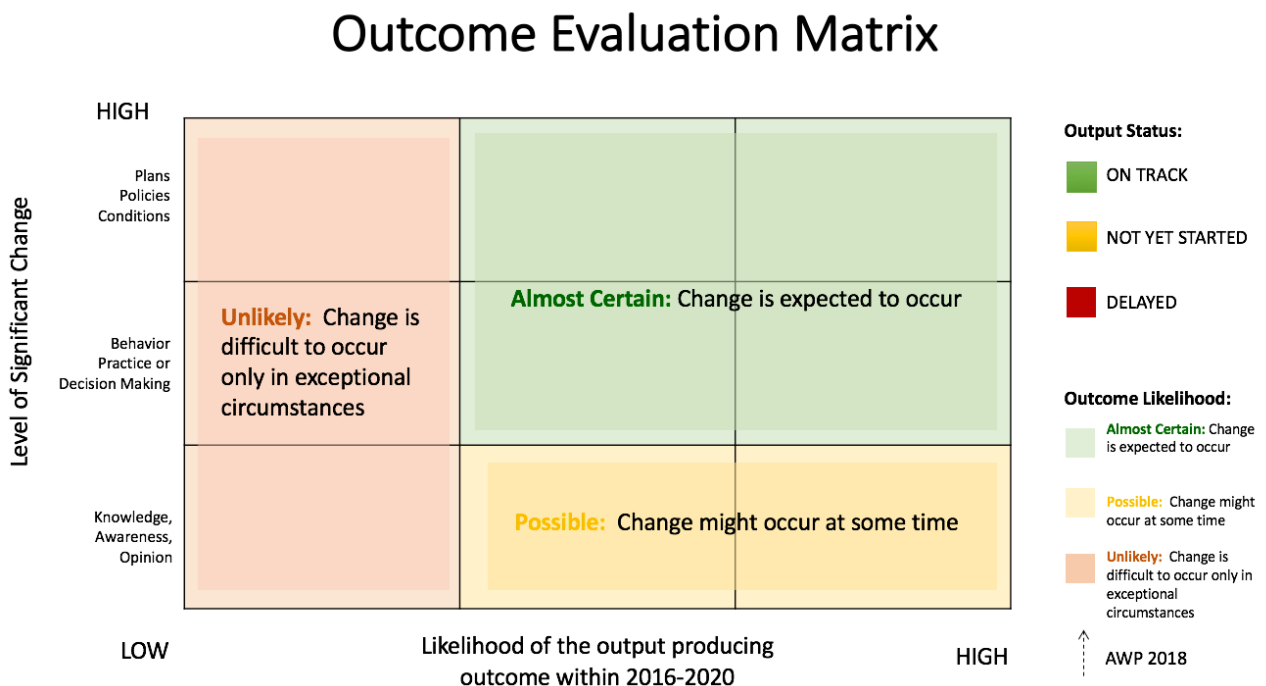
2018 marked significant progress by the MRC towards achieving its Strategic Plan through implementation of the 2018 Annual Work Plan. The MRC monitoring and evaluation system measures progress at the output level through the Annual Work Plan, the outcome level through the Annual Report, and the key result area level through the Strategic Plan.

For the Annual Report, an assessment is made annually on the progress of the organisation to achieve the seven outcomes as defined in the Strategic Plan. To guide this assessment an Outcome Evaluation matrix was applied based on the progress for each output in the SP and the type of change an output has achieved so far, Figure 24. The output progress was given a status category from high to low: ‘on-track’, ‘not yet started’ and ‘delayed’. The type of change an output has achieved was assessed from high to low based on type of change: plans, policies and conditions (high); behaviour, practice or decision-making (medium); or knowledge, awareness and opinion (low).

Using the results of the assessment of the outputs for each Outcome an overall status was then determined as:

- Almost Certain: change is expected to occur;
- Possible: change is expected to occur but significant effort is necessary to achieve influence; or
- Unlikely: change is unexpected but may occur if critical issues are resolved.

**Figure 20: Outcome Evaluation matrix to assess the progress for each output in the SP and the type of change that has occurred in 2018**



The overall status of each outcome for 2018 is provided in detail below, ascertained using the Outcome Evaluation matrix and also by cross-referencing the results of the Mid-term review of the SP. The report card, Table 1 (page 7 of this report), provides a snapshot of the Outcomes status for 2018, and identifies key actions

to improve each outcomes' status as implemented through the Annual Work Plan 2019. An assessment is then made of the expected result from implementing these actions for 2019.

### **Outcome 1: Increased common understanding and application of evidence-based decision-making based on or referring to MRC knowledge products**

Outcome 1 focusses on producing policy relevant knowledge that contributes to sound decision-making. Examples of this are major studies to support the MRC's knowledge base including studies on drought, fisheries, biodiversity, irrigation, and multi-disciplinary studies such as the Council Study.

The likelihood of achieving this outcome is rated as 'possible' for 2018, with two outputs 'almost certain' (1.1 Drought Study and 1.4 Council Study), two outputs 'possible' (1.7 Study on transboundary impacts on irrigation projects and 1.2 Fisheries Study) and three outputs 'unlikely' (1.3 Rural Livelihoods Study, 1.5 Biodiversity Study and 1.6 Water Storage Study). The overall status for Outcome 1 has improved from its status in 2017, which was 'unlikely'.

This improvement is the result of significant work undertaken for the Council Study delivering basin-wide impact results of present and planned development in the hydrological, biological resources, and socio-economic areas as well as sector specific studies for all the major outputs.

The completion of the Council Study has enabled the MRC and Member Countries to now focus on the regional and national uptake of its findings, capitalising on the work already undertaken. In 2018, the proactive high-level meetings with policy makers by the MRC with Member Countries has resulted in the drafting of one **regional** and four **national uptake action plans**, with early commitment from two of the four Member Countries to implement the national uptake action plans. Through the regional and national uptake action plans, some of the outputs under this outcome have already been addressed indirectly, such as the studies for fisheries, biodiversity and rural livelihoods.

In conclusion, the critical action that is now required to ensure this outcome is 'almost certain' is further engagement with Member Countries to ensure the national uptake plans for the Council Study are (further) developed, finalised and adopted. Finally, the outputs under this outcome should be examined and an agreement sought to discontinue three outputs, that is, 1.3 Rural Livelihoods Study, 1.5 Biodiversity Study and 1.6 Water Storage Study as these have not yet started and the Council Study has already covered some of these studies.

### **Outcome 2: Evidence that National Plans benefit from basin-wide strategies and action plans**

Outcome 2 is about influencing national plans, prepared mostly for each country's national context and needs, through basin-wide strategies so that transboundary benefits are optimised and costs reduced. The outputs for this outcome include master plans, joint projects, and strategies for specific sectors or issues including basin development, navigation, fisheries, climate change, drought, hydropower, environment, flood and fisheries.

The likelihood of achieving this outcome is rated as 'possible' for 2018, with two outputs 'almost certain' (2.4 Joint Projects and 2.7 Navigation Master Plan), five outputs 'possible' (2.1 Hydropower Strategy, 2.3 Fisheries Strategy, 2.5 MASAP, 2.6 BDS and 2.8 Environment Strategy) and two outputs 'unlikely' (2.2 Flood Strategies and 2.9 Drought Strategy).

The MTR highlighted that a number of outputs under Outcome 2 require ‘major issues to be addressed’ noting that these outputs also tend to be of higher relevance and thus have a greater influence on achieving the outcome. Outcome 2 has many of the MRC’s flagship activities, and consequently attracts a greater allocation of the overall budget.

As of 2018, two sector or thematic strategies are prepared and approved – fisheries, and climate change. The Navigation master plan is finalised, approved by three countries and awaiting one formal approval from one country. Under the Sustainable Hydropower Development Strategy extensive work has occurred for the study which considers alternative pathways of water and energy development in the Mekong Basin, this will be volume 2 and 3 of the Strategy, and a draft Strategy will be ready for consultation in early 2019.

In 2018, the regional and national environmental asset inventory was completed, selection criteria were developed to prioritise national environmental assets to identify a list of regionally important sites for the development of the environmental strategy, raising further awareness on the values and benefits of these assets in the lower Mekong.

For already approved strategies, especially fisheries and climate change, effective implementation depends on funding. Some projects and actions in the Navigation Master Plan have already been implemented, demonstrating evidence of change in terms of implementation (change in behavior, practice, decisions). For example, the Lao-Thai Joint NIP Project on navigation safety resulted in harmonised rules and regulations on waterways navigation safety, technical safety standards for vessels characteristic and equipment; and technical safety inspection procedures being drafted. In 2019, an MoU between Lao PDR and Thailand will be signed to implement these rules and regulations.

To ensure the greatest impact and level of change occurs from the strategies, joint projects and plans, the MRC needs to identify measures to better integrate them into national systems. For example, the MRC often succeeds in developing a product under an output, such as the MASAP or Fisheries Management Strategy, but their full implementation is sometimes impeded by a lack of available funding. The MRC needs to enhance its ‘game plan’ for the development and implementation of its strategies and plans. A first step would be to establish standardised guidelines for strategy development that include consideration of: uptake mechanisms, funding opportunities, implementation arrangement, engagement of key actors (expert groups and sub-groups), national budgetary processes, M&E and exploring private sector investment for relevant strategies.

Prior to the development of regional strategies and plans the MRC needs to first ensure that the focus meets national needs, and challenges. Where strategies and plans already exist, measures to encourage national uptake need to be identified early, and integrated into the implementation plan. Lessons learnt from the implementation phase of the MASAP and actions for national mainstreaming have focussed on areas where the MRC has a comparative advantage. This required the identification of national activities and where MRC could add value and/or increase efficiency for implementation through regional findings that are useful for national assessments or when the scale of the analysis requires basin-wide information. Through regional trainings or basin-wide studies that involve Member Countries efficiencies are gained by cost savings and avoiding the development of parallel initiatives.

Such an approach could be replicated for the fisheries and drought. The MRC should encourage Member Countries to consider integrating strategies, and plans that are developed at the regional level into national budgetary processes, to ensure that implementation is supported both financially and politically. Further, the development of the BDS, which will start in 2019 for the planning cycle 2021-2030, will need to go beyond the compilation of strategies and priorities as set in sectoral strategies and plans and consider how does the



BDS support the integration of these into national plans. The BDS should develop criteria to identify the top priority actions from each regional sectoral strategy or plan, that can be implemented immediately for the next basin development planning cycle.

In conclusion, national needs and challenges should be addressed when developing new strategies and plans. Where strategies and plans already exist measures to encourage national uptake, need to be identified and implemented for mainstreaming into national plans. The next basin development planning cycle needs to integrate the top priorities of sectoral strategies and plans and ensure integration into national plans.

### **Outcome 3 Evidence of national and basin benefits in using MRC guidelines and standards**

The intent of this outcome is to improve national and regional management, practice and projects of water and related resources of transboundary significance through the use of MRC guidelines and standards.

The likelihood of achieving this outcome is rated as 'possible' for 2018, with six outputs 'almost certain' (3.1 Preliminary Design Guidance, 3.9 Wetlands, 3.12 TbEIA, 3.11 Fish-friendly Irrigation guideline, 3.3 Waterborne Transportation Guidelines, and 3.6 Watershed Management), one output 'possible' (3.4 RSAT) and five outputs 'unlikely' (3.5 Dangerous Goods, 3.8 Drought Guidelines, 3.2 Flood Risk Management Guidelines, 3.7 Watershed Guidelines, 3.10 Irrigation guidance).

2018 saw key work implemented which made important contributions and changes. The Preliminary Design Guidance of mainstream dams cemented its status as the standard guide in developing mainstream hydropower projects in the lower Mekong following its use by hydropower developers for the design of the Pak Beng and Pak Lay projects and during the prior consultation processes in terms of assessment by the MRC and other actors. The update of the PDG2018 has been completed through a collaborative multi-stakeholder approach resulting in a deeper understanding of the importance of clear benchmarks for designing, construction and operating sustainable hydropower in the lower Mekong.

The Transboundary Environmental Impact Assessment Guidelines (TbEIA) is finalised. However, concerns have been raised about its legal status. The TbEIA will remain advisory in nature until such a time it is incorporated into national systems through national legislation, it could therefore be considered as a working version. The mid-term review recommends that the status of guidelines could be approved for use whilst not be considered a binding policy or regulation by the Member Countries. The extension of RSAT beyond the Sesan and Srepok has been challenging. The mid-term review considers RSAT relevant, and recommends champions to drive its application, regionally and nationally.

Two outputs that were identified as a priority activity through the mid-term review, 3.2 flood risk management guidelines and 3.5 regional action plan for sustainable transportation of dangerous goods, will not be completed. Three other outputs (3.7 Watershed Guidelines, 3.8 Drought Guidelines and 3.10 Irrigation guidance) will not be completed.

In conclusion, the outputs under this outcome should be re-examined and an agreement sought to postpone activity or modify it for the next SP. Future work under this outcome should focus on ensuring the national and regional use of the guidelines and standards, can be used as a 'working version' in special circumstances for sensitive guidelines.

### **Outcome 4 Evidence of adverse transboundary impacts that were mitigated, minimised or avoided in basin planning and management by using MRC Procedures**

This outcome targets the contribution of the MRC Procedures in mitigating, minimising and avoiding adverse transboundary impacts from development projects.

The likelihood of achieving this outcome is rated as ‘almost certain’, with two of the three outputs ‘almost certain’ (4.1 Technical Guidelines of MRC Procedures, 4.2 MRC Procedures and Joint Platform) and one output ‘possible’ (4.3 Sharing and learning for implementing MRC Procedures). During 2018, the Joint Action Plan for Pak Beng was developed to implement the Joint Statement, and the Pak Lay hydropower project commenced the prior consultation process in August aiming to achieve the same result. It is considered that the Joint Action Plans will provide a greater likelihood that potentially negative transboundary effects of the project will be minimised and mitigated. To complement this, the Commentary for the PNPCA has been developed to provide clarity in the PNPCA process, and includes the process for developing a Joint Statement and Joint Action Plan for prior consultation. The Commentary was completed in 2018.

In May 2018, a two-day regional meeting was organised to discuss the handbook on ‘Understanding the 1995 Mekong Agreement and Procedures linkage’. The Member Countries agreed to use the handbook for national capacity building. During the implementation of the third and fourth Prior Consultation processes, the intent and scope of the PNPCA have become clearer through pro-active actions by the MRC Secretariat, the Member Countries and lessons learnt have been drawn from the previous cases.

To further ensure the important role of the procedures are maintained, some work is necessary. The Procedure for Data and Information Exchange and Sharing (PDIES) should be reviewed to adjust to the new MRC Indicator Framework and to the needs under a decentralised modality. PMFM needs to be better used for supporting operational management of the Mekong, and PWUM needs to progress further and consider alternative approaches to gathering data, through remote sensing and water accounting tools.

In conclusion, the MRC needs to ensure the JAP for Pak Beng is approved and implemented. And equally for Pak Lay, that a Joint Statement that is implemented through an approved Joint Action Plan. Further work is required for PDIES and PWUM to improve the implementation and effectiveness of the MRC Procedures.

#### **Outcome 5 Evidence of stronger engagement with China and Myanmar (increase cooperation with partners and stakeholders)**

The intent of this outcome is to demonstrate close cooperation and collaboration with the MRC’s dialogue partners – China and Myanmar – who are critically important in the overall management of the river as the riparians of the Upper Mekong. Equally important is the engagement with other partners and stakeholders – a distinctive mark of Mekong cooperation through the MRC – in an open, inclusive and transparent manner.

The likelihood of achieving this outcome is rated as ‘almost certain’, with all three outputs ‘almost certain’ (Output 5.1 Partnerships with MRC’s Dialogue Partners, 5.2 Partnerships with ASEAN, GMS and other organisations, and 5.3 Regional Stakeholder Engagement). The focus on the implementation of these outputs is therefore important to increase its level of impact and significance of change.

In 2018, the MRC held the International Conference, the 5<sup>th</sup> Regional Stakeholder Forum, and numerous interactive planning workshops for sustainable hydropower and other activities. During the 5<sup>th</sup> RSF, the MRC experienced some challenges where certain civil society organisations, including the Save the Mekong Coalition, boycotted their attendance on the first day which discussed the Pak Lay Hydropower Project. This was because this group of NGOs were concerned about the previous prior consultation process for Pak Beng as they did not consider that their concerns had been taken onboard after the process. The MRCS worked actively to meet with the concerned civil society, in advance of the RSF, to understand their concerns, and to reiterate the role and mandate of the MRC, make assurances about transparency, and improve communication and information sharing practices.

Further, the MRC have developed interactive tools to record comments and key messages. For example, during the International Conference (IC), PNPCA processes and RSF, a comments matrix was used, updated live, and then published on the website. In the case of the IC, the live recording of comments using the matrix directly contributed to the key messages presented to the leaders during the Summit, demonstrating a clear line between stakeholder feedback and the development of policy statements. The special relationship that the MRC has through the 1995 MA as an intergovernmental organisation that actively engages with stakeholders emphasises its role in brokering agreements, facilitating different points of view and bringing different parties to the negotiation table to discuss trade-offs and identify the point in which agreement can be met.

In April, the 3<sup>rd</sup> Summit saw leaders of the Member Countries meet to reaffirm their commitment to the MRC mandate and financial self-sustainability by 2030 and the deepening of its ties with Dialogue Partners, ASEAN, and other regional fora. Ministerial and senior representatives from China publicly and privately made commitments to work with MRC, including through the Mekong Lancang Cooperation. The new Cooperation Framework with ASEAN was also agreed to; and the MRC's key role in the region was recognised in the ministerial statements of the Lower Mekong Initiative and the Mekong-Ganga Cooperation.

In conclusion, following from the recommendations in the Mid-term review, the MRC needs to continue to articulate the MRC's comparative advantage *viz-a-viz* water resources priority area of the Mekong Lancang Cooperation and therefore where the MRC should invest while advancing institutional cooperation. Further work needs to be undertaken in developing tools and a collaborative framework for engaging with Dialogue Partners and stakeholders, and establishing new partnerships and MoUs which moves beyond business as usual.

#### **Outcome 6    The extent to which Line/Implementing Agencies use MRC reports and information systems for better decision-making**

This outcome is for the MRC's information system and databases and relates to the ongoing services required to deliver the MRC's core river basin management functions. This includes data and information collection, management, dissemination in support of forecasting, emergency preparedness, implementation of the MRC procedures and basin water resources planning. By effective implementation of this outcome, the MRC can achieve its aim to be a regional knowledge hub.

The likelihood of achieving this outcome is rated as 'possible', with two outputs are 'almost certain' (6.1 Monitoring and forecasting systems, 6.4 SOBR), one output is 'possible' (6.3 Modelling and assessment) and two outputs are unlikely (6.2 information systems and databases, and 6.5 Data portal and info dissemination).

In 2018, significant work was undertaken in finalising the State of the Basin Report, the MRC Indicator Framework and the development of the DAGAP, providing crucial information on the status and trends of various indicators and assisting with framing what the next update of the Basin Development Strategy and national plans should address. Delays occurred with sediment monitoring and some issues with the decentralisation of the HYCOS stations.

A proactive effort was made to fix the HYCOS stations with a noticeable improvement in the networks operation. This was supported by the development of a key performance indicator (KPI) for the effective operation of the HYCOS stations to provide real time data of rainfall and water levels in a digitalised form. The KPI enabled the identification of where there was issues in a stations ability to transmit information back the MRC's server. Further improvements to the monitoring webpage have been made to increase usability



and enable the Member Countries to check which stations are working or not. A help-desk has also been set up to check the status of stations daily.

The MRC modelling is generally on-track with the toolbox being used for key MRC studies including the Council Study but further work is required to update the baseline and approve data for use beyond 2008. There is also the need for modelling that spans time frames. The MTR suggested that the modelling capability of the MRC to have a greater operational emphasis will require a technical and operational review of the Regional Flood Mitigation Management Centre.

The MTR also identified that **Output 6.2 Regional information systems and databases, quality assured, standardised, improved and maintained** was at a high risk of not being completed by the end of 2020. The work on improving the information system is ongoing, however, the MRC plans to expedite this activity with more significant effort to complete this task.

In conclusion, significant focus is required to accelerate the information system and database upgrade so that it is operational for public use. The uptake of the SOBR findings needs to occur in developing strategic priorities in the BDP and BDS. The DAGAP needs to be approved and operationalised and work to improve the capacity and accuracy of flood forecasting and monitoring should continue, as well as the MRC's modelling capacity.

#### **Outcome 7    Extent to which MRCS organisation structure supports integrated water resources planning implementation**

This outcome ensures that the MRC organisational structure, associated mechanisms, work plans and operations are efficient and effective in supporting the work of MRC and integrated water resources management (IWRM). The likelihood of achieving this outcome was rated as 'almost certain', with two outputs 'almost certain' (7.1 Expert Groups, 7.4 AWP, M&E and CFDs) and three outputs 'possible' (7.2 HR Reform, 7.3 Financial Reform, 7.5 National Indicative Plans).

The new structure has been in place now for some time, new staff are fully recruited, and expert groups have been established and operational, albeit with some challenges. The new structure is based on the core river basin management functions and IWRM principles, as are the expert groups. The basket fund is in place and is being improved based on experience. Various existing manuals are still in the process of being updating. Annual work plans are always prepared and approved, with their monitoring in place and operational.

The Operational Review and the Mid-term Review have been completed and support the ongoing improvement of the MRCS, the implementation of the Strategic Plan 2016-2020 and decentralisation.

With regards to the financial system it was identified that significant adjustments were necessary to improve the strategic financial planning, reporting and management of the organisation. There is also the need for greater attention to improving the HR manual and supporting policies. To meet this need, the HR manual was drafted in 2018 with approval planned for in 2019.

For the decentralisation of activities, the MTR suggested that where monitoring activities do not have existing handover arrangements in place new handover agreements should be developed, where existing agreements exist with Member Countries these should be revised. Both new and existing handover agreements should aim for a more realistic handover timeline with regards to financial contribution, and technical capacity to ensure the national government are given adequate support. The MTR also suggested that a Decentralisation fund be established to avoid delay supporting capacity building, knowledge sharing,

and maintenance support, where it is more efficient to do so at a regional level and to ensure ongoing availability of critical data.

The Expert Groups are an important initiative that should continue with a confirmed list of relevant experts at a senior level to participate in technical issues. The consideration of sub-groups for Expert Groups to address the complexities of technical issues relating to sustainable water resources management and development in the Mekong River Basin should also be adopted.

In conclusion, issues of relevant membership of the Expert Groups need to be resolved, the financial system needs to be fit for purpose, the HR manual should be approved and complied with, and the core river basin management functions should be examined to update the handover agreement for decentralisation.