COMPLETION REPORT

Achievements

THE MEKONG RIVER COMMISSION STRATEGIC PLAN

2016–2020

Mekong River Commission

The Completion Report 2016–2020 consists of two parts:

Part 1, which is this report, presents the Mekong River Commission's (MRC) key achievements in terms of the completion of outputs, the achievements of outcomes and financial performance during the five-year implementation of the MRC Strategic Plan (SP) 2016–2020 and its Annual Work Plans (AWPs).

Part 2, which will be presented in a separate report, contains the supporting details of the MRC's achievements in terms of outputs and activities under each of the seven outcomes, including a detailed account of the financial performance.

The MRC is funded by contributions from its Member Countries and Development Partners, including Australia, the European Union, Finland, Flanders/Belgium, France, Germany, Japan, Luxembourg, the Netherlands, New Zealand, Sweden, Switzerland, the United States of America and the World Bank.

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FOREWORD BY THE MRC COUNCIL CHAIRPERSON FOR 2021

The impacts induced by the COVID-19 pandemic over the last two years have demonstrated that we must be adaptable to sudden changes in our day-to-day lives yet remain steadfast in the pursuit of our mission and goals. In the Lower Mekong Basin, the impact of climate change also presents profound implications for the social and economic well-being of our constituents, which represents an ongoing challenge for policymakers. Water diplomacy has become increasingly important in our region particularly with respect to the growing number of hydropower and other water infrastructure projects and development activities.

Amid the uncertainty, the work of the Mekong River Commission (MRC) together with partners and stakeholders has become vital to managing the multitudinous opportunities and threats confronting the life-affirming Mekong River Basin. During the last five years, the MRC has closed important knowledge gaps and strengthened relationships among the MRC Member Countries, namely Cambodia, Lao PDR, Thailand, and Viet Nam, as well as with our Upper Mekong partners China and Myanmar.

This is why the Completion Report for the MRC Strategic Plan 2016–2020 is the basis for the next phase of evolution, both for the MRC and for our region. It provides insight into the accomplishments of the last five years and a lens with which we can look the future feeling reassured. The collaborative work continues.

Recognizing the interdependence of our region, the MRC's success in increasing cooperation with China and its agreement to share crucial, year-round water level and rainfall data for the first time is highly consequential for the peoples of the Lower Mekong Basin (LMB). Moreover, the recent inaugural ASEAN-MRC Water Security Dialogue highlighted the collective competition for finite water resources yet simultaneously deepened the bonds with other Southeast Asian countries. The work of the MRC continued to attract world interest and collaboration. By the end of 2020, the MRC had signed more than 30 Memoranda of Understanding (MOUs) with various regional and international partners.

Today, the MRC is a substantially different organization than in 2016, which is testament to its capacity to transform in the face of new realities. Since 2016, the MRC Secretariat has undergone a fundamental restructuring to emerge as a leaner, more dynamic body trusted by the Member Countries and Development Partners alike. In the last five years, additional regional development strategies, studies and guidelines have been put in place to fill the knowledge gaps and to safeguard an increasingly fragile riverine environment.

The established MRC procedures are used by the Member Countries and provide an enabling environment for cooperation in areas such as data sharing to maintain an acceptable flow regime and water quality throughout the LMB. The MRC has also widened its Prior Consultation, i.e. its public engagement process, so that regional stakeholders can have a say in future outcomes. But as the Completion Report establishes, there is still work to be done.

History teaches us that change is an inescapable constant, which is why I believe the MRC will implement further organizational development and its new Basin Development Strategy (BDS) to stay at the vanguard of responsible management of the Mekong River Basin. Lessons learned from the MRC Strategic Plan 2016–2020 had already served as the basis of the next planning cycle and are enshrined in the BDS 2021–2030 and the MRC Strategic Plan 2021–2025.

But with uncertainty about the trajectory and pace of climate change lying before us, transboundary water resources management and water diplomacy must recognize that change is inevitable. We have to adapt to the new climate reality with approaches that are flexible and responsive to changing conditions.

The guiding Mekong Agreement first signed in 1995 began a mission to safeguard the future of our beloved Mekong River Basin. As we look back at the last five years of the MRC's work, we can see how much has been achieved, and how much work is yet to be completed.

I am pleased to commend the Completion Report for the MRC Strategic Plan 2016–2020 to you.

H.E. General Prawit Wongsuwon
Deputy Prime Minister of the Kingdom of Thailand
Chairperson of the Thai National Mekong Committee
Member of the MRC Council for Thailand
Chairperson of the MRC Council for 2021

PREFACE BY THE CHIEF EXECUTIVE OFFICER

I am delighted to present to you the Mekong River Commission's (MRC) Completion Report for the MRC Strategic Plan 2016–2020. The report showcases the achievements that the MRC, with the support of our partners and stakeholders, that have been made over the last five years. Our collective efforts to bring about real change and more responsible development and management to the Mekong River Basin are starting to bear fruit.

As we headed into 2016, the state of the Mekong River Basin and the main drivers of change were understood, but the Basin's future was uncertain. This was partly due to major knowledge gaps in key sectors and disciplines, and partly to rapid changes in the Basin itself. These challenges demanded urgent solutions that required coherent regional development and management strategies. I believe our Member Countries, namely, Cambodia, Lao PDR, Thailand, and Viet Nam, could and should adopt these strategies for both national and regional benefits.

But after five years, we closed crucial knowledge gaps in biodiversity, fish migration, ecology, productivity, and socio-economic guidelines and strategies. We introduced updated Basin-wide, regional action plans with the endorsement of the MRC Joint Committee and approval of the MRC Council. Although greater efforts are needed to deploy these regional products at the national level, I am encouraged by the early success of their applications by the Member Countries.

Nevertheless, we recognize that we cannot be successful without working in close cooperation with all the Mekong Countries and partners. These include our Dialogue Partners in the Upper Mekong River Basin, our Development Partners, as well as international organizations, and broader stakeholders. Cooperation has been the bedrock of the Mekong Agreement since it was signed in 1995. It gives me great pleasure to note that we have deepened the level of cooperation and trust, as demonstrated by the implementation of the five MRC Procedures.

We also witnessed more inclusive and fruitful Prior Consultation processes on Mekong mainstream dams. Before 2016, the Prior Consultation processes for the first two Mekong mainstream hydropower dams – Xayaburi and Don Sahong – were highly contentious and ended without any formal agreements being reached among the Member Countries.

Five years later, following the three Prior Consultation processes for the Pak Beng, the Pak Lay, and the Luang Prabang hydropower projects, we overhauled the process so that it would focus on identifying measures to avoid, minimize, and mitigate potential transboundary impacts.

The post-Prior Consultation Joint Action Plan was an innovative mechanism to promote discussions with developers and broader stakeholders throughout the implementation phases of projects. I am hopeful that this will ultimately lead to the adoption of agreed hydropower operating rules. I am encouraged by the progress achieved to date with regard to the Joint Environmental Monitoring Programme.

Together, these initiatives will allow our Member Countries to work even more effectively to mitigate possible transboundary impacts of major projects.

Furthermore, we have bolstered cooperation with our Dialogue Partners, in particular China. China's agreement to share Lancang dry season hydrological data for the first time improves our river monitoring and flood forecasting capabilities. We have secured a partnership with the Lancang-Mekong Cooperation Water Centre, and improved our partnership with the Association of Southeast Asian Nations (ASEAN). We are also reaping the benefits from strategic partnerships with regional and international organizations.

Turning now to the adverse impact of climate change in our region, our Regional Flood and Drought Management Centre, expanded in 2017 to include drought with flood forecasting, allows the MRC to provide timely flood and drought services. This forecasting capability contributes to saving lives and protecting the properties of the people in the Basin. Hence, I acknowledge the ongoing efforts of all the people behind the scenes who keep these systems performing reliably and who continue to advance the systems' capability.

At the MRC we have made great strides in restructuring and strengthening the MRC Secretariat to become a leaner, more transparent and cost-effective organization. In 2016 we faced many challenges. We were in the midst of reforming the organization from two headquarters to one, from 13 Programmes to four Divisions, and from around 200 to 64 full-time employees. Internal reforms in human resources, administration, procurement, and finance have boosted the confidence of the Member Countries and Development Partners.

The MRC will continue to build on these efficiencies in the next strategic planning cycle. We have made a great start by successfully developing the Basin Development Strategy 2021–2030 and the MRC Strategic Plan 2021–2025. There is still much work to be done as we plot a path towards a sustainable future for the people and environment of the Mekong River Basin.

Finally, let me take this opportunity to thank all the people and entities that have made the 2016–2020 period a success. This includes the MRC Secretariat staff, the National Mekong Committee Secretariats, and the various line and implementing agencies of the Member Countries, and the MRC Development Partners. Our successes would not have been possible without their unwavering commitment, support and cooperation. I would like also to acknowledge our Mekong leaders for their vision, and the MRC Council and the MRC Joint Committee for their steady guidance throughout.

Again, special thanks to the MRC Secretariat staff for your dedication and hard work.

An Pich Hatda
Chief Executive Officer
Mekong River Commission Secretariat

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TABLES

ABBREVIATIONS AND ACRONYMS

ADPC	Asian Disaster Preparedness Center
AIT	Asian Institute of Technology
ARF	Administrative Reserve Fund (of MRC)
ASEAN	Association of Southeast Asian Nations
AUS	Arizona State University
AWC	Asia Water Council
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
CCAI	Climate Change Adaptation Initiative
CNR	Compagnie Nationale du Rhône
CRBMF	Core River Basin Management Functions
CSO	Civil society organization
DMS	Drought Management Strategy
DRIFT	Downstream Response on Imposed Flow Transformation
DSF	Decision Support Framework
DWR	Department of Water Resources
EF	Earmarked Fund
EHM	Ecological Health Monitoring
EIA	Environmental Impact Assessment
EU	European Union
FADM	Fish Abundance and Diversity Monitoring
FAO	Food and Agriculture Organization of the United Nations
FFGS	Flash Flood Guidance System
FM	Fisheries Monitoring
FMIS	Financial Management Information System
GAP	Gender Action Plan
GEF	Global Environment Fund
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMS	Greater Mekong Subregion
GWP	Global Water Partnership
HPP	Hydropower Project
HYCOS	(Mekong) Hydrological Cycle Observing System
ICPRPDR	International Commission for the Protection of the Danube River

ICPR	International Commission for the Protection of the Rhine
IOWATER	International Office of Water
IPSAS	International Public Sector Accounting Standards
IS	Information System
IUCN	International Union for the Conservation of Nature
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
JAP	Joint Action Plan
JCWG	Joint Committee Working Group
JEM	Joint Environment Monitoring
JICA	Japan International Cooperation Agency
KDI	Korea Development Institute
K-Water	Korea Water Resources Cooperation
LNMC	Lao National Mekong Committee
LMB	Lower Mekong Basin
LMC	Lancang-Mekong Cooperation
LMI	Lower Mekong Initiative
LPHPP	Luang Prabang Hydropower Project
MA	Mekong Agreement
M&E	Monitoring and Evaluation
MAF	Management and Administration Fee
MARD	Ministry of Agriculture and Rural Development
MASAP	Mekong Climate Change Adaptation Strategy and Action Plan
MC	Member Country
MDBA	Murray-Darling Basin Authority
MI	Mekong Institute
MiRC	Mississippi River Commission
MOU	Memorandum of Understanding
MRB-IF	Mekong River Basin Indicator Framework
MRC	Mekong River Commission
MRC-IF	MRC Indicator Framework
MRC-IS	MRC Information Systems
MRCS	Mekong River Commission Secretariat
MSU	Michigan State University
MTR	Mid-Term Review
NDMC	The National Disaster Management Committee
NGO	Non-government organization
NIP	National Indicative Plan
NMC	National Mekong Committee
NMCS	National Mekong Committee Secretariat
NWG	National Working Group

OR	Operational Review
PBAP	Project-based Action Plan
PBHPP	Pak Beng Hydropower Project
PDG	Preliminary Design Guidance
PDIES	Procedures for Data, Information Exchange and Sharing
PLHPP	Pak Lay Hydropower Project
PMFM	Procedures for Maintenance of Flow on the Mainstream
PNPCA	Procedures for Notification, Prior Consultation and Agreement
PWLUP	Participatory Water and Land Use Planning
PWQ	Procedures for Water Quality
PWUM	Procedures for Water Use Monitoring
RBC	River Basin Committee
REA	Regional Environmental Asset
RFDMC	Regional Flood and Drought Management Centre
RSAT	Rapid Sustainable Assessment Tool
RSF	Regional Stakeholder Forum
SBEM	Strategy for Basin-wide Environmental Management
SDG	Sustainable Development Goal
SEA	Strategic Environmental Assessment
SEAFDEC	Southeast Asian Fisheries Development Center
SEI	Stockholm Environment Institute
SHDS	Sustainable Hydropower Development Strategy
SIMVA	Social Impact Monitoring and Vulnerability Assessment
SOBR	State of the Basin Report
SUMALOM-Nam Ton	Sustainable Management of Watersheds in the Lower Mekong Basin project
SP	Strategic Plan
SWAT	Soil and Water Assessment Tool
TBWQ	Technical Body for Water Quality
TNMC	Thai National Mekong Committee
TOR	Terms of Reference
TRR	Technical Review Report
UNDPPA	United Nations Department of Political and Peacebuilding Affairs
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNOPS	United Nations Office for Project Services
VFM	Value for money
VNSC	Vietnam National Space Center
WQM	Water quality monitoring
WWF	World Wildlife Fund

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Completion Report covers the key achievements of the Mekong River Commission (MRC) in implementing the Strategic Plan 2016–2020 (SP 2016–2020), which identified four key result areas, seven outcomes, 44 outputs, and 169 activities to be implemented during its five-year period.

The MRC's implementation of the SP 2016–2020 through its Annual Work Plans (AWPs) over 2016–2020, resulted in the completion or near completion of most of the planned outputs, 23 of which were completed, 15 were not completed or incomplete, and 6 were discontinued. The 15 incomplete outputs were mostly nearly completed with completion rates at or above 90%.

In summary, the overall percent of work completed per outcome ranges from 41% (i.e. Outcome 1) to 98% (i.e. Outcome 2). The overall percent of output indicators achieved per outcome ranges from 46% (i.e. Outcome 3) to 78% (i.e. Outcomes 4 and 7).

The overall percent disbursement per outcome ranges from 49% (i.e. Outcomes 4 and 6) to 71% (i.e. Outcome 5). Based on the value for money (VfM) analysis, 45% of the outputs proved to be high VfM for the MRC, 29% were cost-effective, 18% needed additional interventions to achieve their intended outcomes and potentially become high VfM outputs, and 8% (i.e. two outputs) were rated low VfM. Among the seven outcomes, Outcomes 4, 5, and 7 produced the highest percentage of outputs with high VfM. Overall, these outcomes (Outcomes 4, 5, and 7) were assessed as **achieved,** and the remaining four outcomes (Outcomes 1, 2, 3 and 6) were assessed as **partially achieved** (see Figure E1).

The **Key achievements** section below highlights the results (i.e. outputs) and outcomes achieved under each of the seven outcomes. Together with the proposed next steps for the next strategic planning cycle, these achievements are further summarized in **Conclusions and way forward**.

The **Financial highlights** section provides a summary of MRC financial expenditures in implementing the MRC 2016–2020.

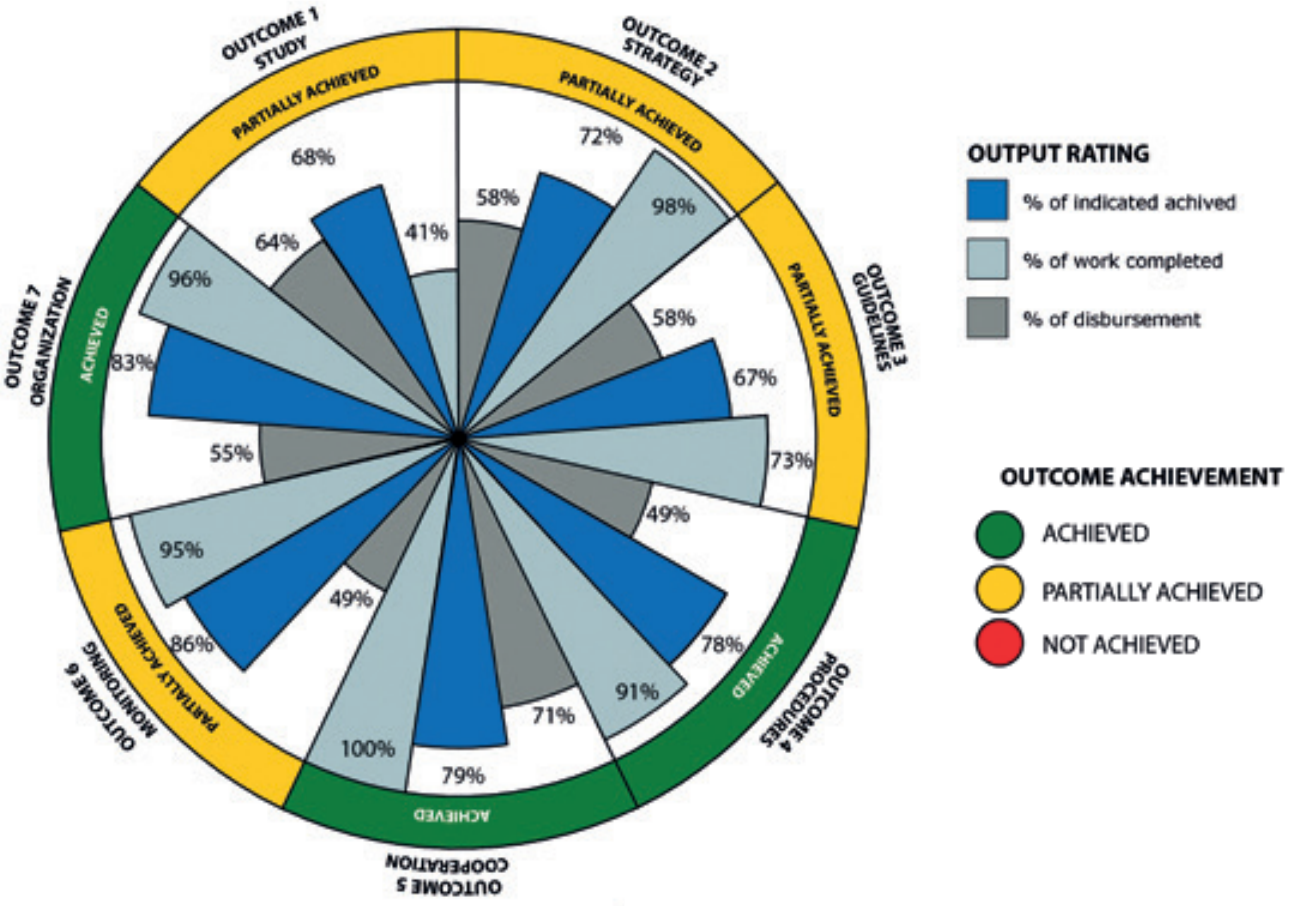


Figure E1. Achievements of outcomes and their rating

KEY ACHIEVEMENTS

Outcome 1: Increased Common Understanding and Application of Evidence-Based Knowledge by Policymakers and Project Planners

The completion of the 2018 MRC State of Basin Report (SOBR), a flagship product of the organization and an integral part of its strategic planning cycle, and the Council Study in 2017, a Study on Sustainable Management and Development of the Mekong River, including Impacts of Mainstream Hydropower Projects (HPPs), represent achievements of the MRC in closing key knowledge gaps, establishing a common understanding among the Member Countries (MCs) of the environmental and socio-economic conditions and trends in the Basin brought by development pressures and the changing climate, and informing and influencing national and regional planning and decision-making.

The resulting body of knowledge, which includes potential benefits and adverse impacts of current and future development plans of the Mekong countries in six water-related sectors – hydropower, land use, irrigation, navigation, flood protection and industry – enables the MC policymakers and project planners to make informed decisions in support of an economically prosperous, socially just, and environmentally sound Mekong River Basin. Together with the completion of the new Mekong River Basin Indicator Framework (MRB-IF), a comprehensive and consistent set of indicators for assessing the Mekong Basin's status in the environmental, social and economic, climate change, and cooperation dimensions, the MRC is in a better position to steer MCs' regional cooperation and national development efforts following a comprehensive, evidence-driven and replicable approach, and towards a set of basin objectives.

At the regional level, the findings and recommendations of the MRC studies were incorporated in the update and development of regional strategies such as the Sustainable Hydropower Development Strategy (SHDS) and the Mekong Strategy for Basin-wide Environmental Management (SBEM, or Environment Strategy), and have been referred to in key MRC activities such as the Procedures for Notification, Prior Consultation and Agreement (PNPCA) project assessment. The 2018 SOBR and other studies provided the new knowledge base to prepare the Basin Development Strategy (BDS) 2021–2030 and the MRC Strategic Plan (MRC SP) 2021–2025.

At the national level, knowledge and understanding have increased. Given the time available, evidence of their use for national planning and decision making are expected. Early examples of national applications include the use of MRC data and studies in the preparation of sub-river basin management plans in Lao PDR, and the ongoing monitoring by the Thai National Mekong Committee (TNMC) Impact Study.

Outcome 2: Environment Management and Sustainable Water Resources Development Optimized for Basin-Wide Benefits, by National Sector

A sustainable Mekong River Basin is predicated on national development plans that are optimized to increase basin-wide benefits and include measures for the avoidance, minimization, and mitigation of negative transboundary impacts. To achieve this outcome, the MRC completed the development of basin-wide sector strategies and action plans that would be integrated by MCs into their national frameworks to yield such regional benefits.

These strategies and action plans include the Mekong Climate Change Adaptation Strategy and Action Plan (MASAP), the Mekong Basin-wide Fisheries Management Development Strategy (BFMS), the SBEM, the regional Drought Management Strategy (DMS), and the Master Plan for Waterborne Transportation (Navigation Master Plan). After presenting the Sustainable Hydropower Development Strategy (SHDS) to the MRC Council and Joint Committee in 2020, the MRC has continued to work on finalizing it in preparation for its scheduled endorsement by the MRC Joint Committee and approval by the MRC Council in 2021. Four National Indicative Plans (NIPs), one for each country, for 2016–2020, and the Gender Action Plan (GAP) 2017–2020 were also prepared and approved. Five transboundary projects under the Mekong Integrated Water Resources Management (M-IWRM) Project were also implemented successfully.

Together, these strategies and plans provided critical input into producing the BDS 2021–2030 and MRC SP 2021–2025, which took into account both the basin-wide, sector-specific strategic directions

and activities, and redefined them into integrated basin-wide common directions and action points. At the national level, notable early adoptions of these strategies include: the use of the MASAP by some MCs to bolster their technical and financial capacity for climate change adaptation and help with their Nationally Determined Contributions; the Cambodian Navigation Master Plan to implement selected priority navigation projects related to improving inland waterway navigation rules and policies; the National Indicative Plans for the Cambodian-Thai joint project in the 9C-9T sub-basin to tackle common transboundary challenges related to flood and drought management; and the Cambodian–Lao joint project on water resources management and monitoring in the Khone Falls area.

Outcome 3: Guidance for the Development and Management of Water and Related Projects and Resources Shared and Applied by National Planning and Implementing Agencies

To support the MCs in employing best practices for project planning, design, and implementation, not only to enhance project benefits at the national level, but also to minimize potential regional negative transboundary impacts and risks, the MRC updated, produced, and implemented several guidelines, standards, and methodologies. These products include the Rapid Basin-Wide Hydropower Sustainability Assessment Tool (RSAT), the Waterborne Transportation Guidelines, Sustainable Watershed Management, the Guidance for Fish-Friendly Irrigation Systems, the Preliminary Design Guidance (PDG) for mainstream hydropower dams, the Hydropower Mitigation Guidelines, the Guidelines for Transboundary Environmental Impact Assessment in the Lower Mekong Basin (TbEIA), and the Wetland Assessment Methodologies. The PDG, in particular, has cemented its status as the standard guide in developing mainstream HPPs in the Lower Mekong and has been applied in the PNPCA PC for the Mekong mainstream hydropower dams.

There is evidence of MCs using the other guidelines for national, provincial and more localized projects that have transboundary impacts, but at a more opportunistic level than mainstream. Notable examples include: the use of the TbEIA by some countries to strengthen their respective national EIA systems; the Waterborne Transportation Guidelines by Lao PDR and Thailand to harmonize their navigation rules; the Guidelines for Fish-Friendly Irrigation Systems by the MCs to promote fish passage installations in their respective countries; the RSAT by Cambodia and Viet Nam to facilitate bilateral dialogue on transboundary issues in the Srepok River Basin; the Sustainable Management of Watersheds in the Lower Mekong Basin project (SUMALOM-Nam Ton) project by Lao PDR to adopt best practices on sustainable watershed management nationwide; and the wetland study by Lao PDR as a reference for designating two of their wetlands as Ramsar sites. Finally, the numerous technical meetings, training workshops, stakeholder consultations, and test applications conducted over several years for these products have resulted in an increase in the awareness, understanding, and capacity of the MCs related to their use.

This improved knowledge and capacity combined with the MRC's increased emphasis on the national uptake of these products in the next strategic planning cycle will more likely lead to the mainstream use of these guidelines for national project planning and implementations.

Outcome 4: Effective and Coherent Implementation of the MRC Procedures by the Member Countries

The MRC's procedural frameworks are an indispensable aspect of the MRC's water diplomacy platform, providing both an obligatory and enabling environment for cooperating on data sharing, monitoring, project notification, and consultation, and for maintaining an acceptable flow regime and water quality. The five MRC Procedures – the Procedures for Data, Information Exchange and Sharing (PDIES), the Procedures for Water Use Monitoring (PWUM), the Procedures for the Maintenance of Flows on the Mainstream (PMFM), the Procedures for Water Quality (PWQ) and the PNPCA – are the most comprehensive set for water management on an international river in the developing world.

The PDIES allows data sharing and exchange among MCs, resulting in the availability of an extensive amount of data to the public, researchers, and partners around the world. The PMFM and the PWQ provide the basis for the critical work in monitoring water flow and water quality. While water use monitoring per PWUM has not yet been operationalized, some work was carried out by the end of 2020 to conceptualize its implementation

in the next strategic planning period. Finally, while the implementation of the prior consultation process of the PNPCA had experienced challenges and, to some, even failures earlier, it turned around during the period of 2016–2020 with an innovative approach towards concrete results in improving project design and enhancing the process with greater understanding, transparency, accountability and agreements. The introduction of the Joint Statement and the Joint Action Plan (JAP) as concrete, agreed outputs of the PC process has elevated the cooperation among the MCs and assured the process a deliberate, and action-oriented conclusion. It has also increased both the commitment of the proposing country and the confidence of notified countries that projects that underwent the PNPCA would be implemented sustainably.

The PNPCA process has contributed to reducing tensions among countries from ten years ago and ushered in a new climate of cooperation in finding solutions together. Finally, with Xayaburi, Pak Beng, Pak Lay, Luang Prabang, and Sanakham HPPs representing a cascade of dams, there is an increasing recognition that cascade coordination and management have become a key issue. This is reiterated in the next strategic planning cycle in which the BDS 2021–2030 places stronger emphasis on improving coordination of basin management operations to increase positive transboundary effects and mitigate negative impacts.

Outcome 5: Effective Dialogue and Cooperation between Member Countries, and Strategic Engagement of Regional Partners and Stakeholders on Transboundary Water Management

The MRC has excelled in promoting effective dialogue and cooperation between MCs, with its Dialogue Partners in the Upper Mekong Basin, in particular China, with its regional and international partners, and with the broader stakeholders. The sustained outreach and dialogue with China have led to the achievement of several important milestones including two joint studies, the renewal of China's agreement to share Lancang hydrological data during the flood season that began in 2002, the new historic agreement reached in 2020 to share dry season data, the inclusion of the MRC Secretariat in the meetings of the Lancang-Mekong Cooperation[1] (LMC) Joint Working Group on Water Resources, and the signing of the Memorandum of Understanding (MOU) between the LMC Water Centre and the MRC Secretariat. The cooperation between MRC and China and Myanmar reached a new high level during the 3rd MRC Summit, during which ministerial and senior representatives from China and Myanmar made commitments to work with the MRC, including through the LMC.

The MRC's efforts to pursue broader collaboration have also resulted in a growing list of strategic and technical partners, further contributing to the positive global and regional recognition of the MRC. By the end of 2020, the MRC accumulated over 30 MOUs with various regional and international partners.

The MRC's partners include: regional organizations (Association of Southeast Asian Nations [ASEAN], Asian Development Bank [ADB], Asian Disaster Preparedness Center [ADPC], Asia Water Council [AWC], LMC Water Centre, and Southeast Asian Fisheries Development Center [SEADEC]); United Nations agencies (United Nations Environment Programme [UNEP], United Nations Office for Project Services [UNOPS], United Nations Economic and Social Commission for Asia and the Pacific [UNESCAP], United Nations Department of Political and Peacebuilding Affairs [UNDPPA], United Nations Economic Commission for Europe [UNECE], and the Food and Agriculture Organization of the United Nations [FAO]); international/national river basin organizations (Mississippi River Commission[2] [MiRC], Murray-Darling Basin Authority [MDBA], International Commission for the Protection of the Rhine [ICPR], International Commission for the Protection of the Danube River [ICPDR], and Compagnie Nationale du Rhône [CNR]); and think tanks, research institutes, academia and others (Arizona State University [ASU], Michigan State University [MSU], Vietnam National Space Center [VNSC], Asian Institute of Technology [AIT], Global Water Partnership [GWP], International Office for Water [IOWater], International Union for the

[1] In the LMB, the Lancang-Mekong Cooperation, or LMC, is sometimes called the Mekong-Lancang Cooperation, or MLC. For the purpose of consistency, this report uses the former.

[2] In the LMB, the Mississippi River Commission is abbreviated to MiRC instead of MRC, so that it is not confused with the Mekong River Commission or MRC. For this reason, this report uses MiRC for the Mississippi River Commission.

Conservation of Nature [IUCN], World Wildlife Fund [WWF], Stockholm Environment Institute [SEI], International Water Management Institute [IWMI], Mekong Institute [MI], Japan International Cooperation Agency [JICA], Korea Development Institute [KDI], and Korea Water Resources Cooperation [K-Water]).

The MRC's central leadership in the region was evident when, for the first time, it had brought together senior representatives from the Mekong countries and seven major Mekong-related regional cooperation frameworks to discuss and explore opportunities for improved coordination and collaboration in water and related areas. This was preceded by another achievement – the conclusion of a new cooperation framework agreement between the MRC and ASEAN, which is comprehensive in scope for the two organizations.

The MRC also made strides in enhancing the involvement of broader stakeholders including international NGOs, regional and national river networks and coalitions, national civil society organizations (CSOs) the private sector, and the general public. Through several mechanisms that include 10 Regional Stakeholder Forums (RSFs), specific NGO dialogues, forums for private sector engagement, and social media campaigns, the MRC has benefited from stakeholders' more meaningful participation where their comments, opinions, and suggestions have been incorporated in various MRC products, including the BDS, PNPCA Joint Statements, Technical Review Reports, the PDG, and the SHDS, among many others.

Finally, throughout 2016–2020, the MRC has worked to preserve the trust and support of its Development Partners. The total financial support that the Development Partners provided to the MRC for the strategic planning cycle 2016–2020 was approximately USD 43.8 million.

Outcome 6: Basin-wide Monitoring, Forecasting, Impact Assessment, and Dissemination of Results Strengthened for Better Decision-making by Member Countries

The MRC has made progress during 2016–2020 with respect to upgrading and maintaining its monitoring, forecasting, modelling, and data and information management systems, and in establishing a comprehensive and replicable assessment and reporting framework through the redesigned SOBR and MRB-IF. Its Mekong- Hydrological Cycle Observing System (HYCOS) Hydromet network, which provides basin-wide automated and near real-time water level and rainfall data, is now composed of 51 HYCOS stations and 13 drought stations on the Mekong mainstream and major tributaries. It has continuously improved its routine environmental monitoring, which comprises water quality monitoring (WQM), ecological health monitoring (EHM), and fish monitoring (FM), as well as its regional reporting, which includes annual hydrological/flood/drought reports, water quality (WQ) reports, annual Fish Abundance and Diversity Monitoring (FADM) reports, and status and trends of ecological health in the LMB. It has commenced the MRC's Joint Environment Monitoring for the Mekong Mainstream HPPs (JEM) Programme, a first of its kind with the implementation of pilot projects in Xayaburi and Don Sahong hydropower dams. The JEM Programme is expected to elevate joint cooperation and enable MCs to monitor, assess and mitigate impacts of specific mainstream HPPs with more certainty.

The MRC Regional Flood Management and Mitigation Centre was upgraded to the Flood and Drought Management Centre (RFDMC) in 2017 to include drought services, and continued to provide river monitoring, timely flood and drought forecasting, and early warning information throughout the year to MCs and potentially impacted communities. The increase in quality and amount of detail in the monitoring and forecasts, and in the hydrological conditions report (i.e. that illustrate more clearly the magnitude and spatial extent of the flooding and drought conditions) is leading to a more mainstream use of these forecasts by relevant agencies in the MCs, news agencies, and social media. This improved ability by the MRC to disseminate timely and quality forecasts of extreme basin and river conditions such as flooding, low flows, and droughts is contributing to protecting properties and saving lives in the Basin during these extreme conditions.

Throughout 2016–2020, the MRC continuously provided the MCs with technical support services in the areas of data and information management, modelling, and assessment. These services include the upgrade, and continuous operation and maintenance of the MRC Information System (MRC-IS), the Data Portal, the Decision Support Framework (DSF) and related tools. These services

are certainly crucial in supporting the MRC in basin-wide and project assessment, and the MCs in capacity building, and sub.basin planning as well as in informed and scientifically based decision-making.

There are notable gaps and challenges, however, in these core functions of the MRC. Hence, a major exercise was launched in 2019 and approved by the Joint Committee to strengthen the organization's systems relating to monitoring/data collection, data and information management, modelling, forecasting and assessment, and information visualization and dissemination. Implementing the Design Concept would put MRC in a more capable position to exercise its core river functions and address the pressing needs of the present and future.

Outcome 7: MRC Transitioned to a More Efficient and Effective Organization in Line with the Decentralization Roadmap and Related Reform Plans

The MRC made great strides during 2016–2020 in strengthening and transforming its Secretariat to a leaner and more transparent, accountable, and cost-effective organization – indeed, taking another leap towards world-class status – as a direct result of reforms in human resources, administration, and finance systems. This began in 2016, when the MRC completed its restructuring, which involved: (i) the consolidation of its multiple programme planning processes into one (i.e. the MRC SP); (ii) development of a new Monitoring and Evaluation (M&E) Framework, which established a mutual accountability framework and streamlined the number of indicators; (iii) decentralization of core river basin management functions (CRBMFs); (iv) the establishment of a leaner structure of the MRC Secretariat with now only one headquarters located in Vientiane as well as the RFDMC in Phnom Penh, after consolidating 13 Programmes into four Divisions and the Office of the CEO; (v) recruitment of 64 full-time staff (reduced from almost 200 in the previous period); and (vi) a shift to a more flexible and countries-driven, pooled funding mechanism of a basket fund instead of separate, donor-dependent programmes. For the first time in the MRC's history, a riparian CEO took charge from 2016, with all staff of the Secretariat coming from MCs.

With the new structure, processes, and operations in place, the MRC has subsequently embarked on and successfully completed the strengthening of its internal operations by first undergoing several independent reviews, including the EU Pillar Assessments in 2017 and 2019, the Operational Review in 2018, and the Mid-Term Review (MTR) also in 2018, and addressing the resulting recommendations. The strengthened internal operations features an independent Audit Committee, an Internal Auditor, revised operations manuals (i.e. Administration, Finance, Procurement, Fixed Asset, Human Resources, and Fraud Prevention and Anti-Corruption Guidelines), and the development of guidelines to support the implementation of the manuals. The achievement of these milestones has culminated in the MRC Secretariat's successful passing of the European Union Pillar Re-Assessment in November 2019, which provided reasonable assurance that the MRC meets international standards with regard to internal control, accounting, external auditing, and procurement. This has further galvanized the confidence of the MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner.

The strengthened operations have also provided the specificity and clarity that the MRC Secretariat's staff need to perform their tasks more deliberately according to approved rules and procedures, thereby improving the individual and collective efficiency and accountability of the workplace. The increased confidence and trust of the MCs in the MRC is also demonstrated by the fact that their annual financial contributions, which increased to USD 15.7 million for the period, are now being remitted in a timely manner. This commitment is indubitably helping reduce uncertainty, improve the MRC Secretariat staff's morale, enhance the organization's standing with Development Partners and the broader community, enable the organization to perform its functions according to plan, and keep its pledge to become a world-class, financially self-sustainable organization by 2030.

CONCLUSION AND WAY FORWARD

As noted earlier, three of the seven outcomes (Outcomes 4, 5 and 7) were assessed as 'achieved' and the remaining four outcomes (Outcomes 1, 2, 3 and 6) were assessed as 'partially achieved'. Overall, the MRC concludes that it reasonably achieved the desired outcomes and intended impacts to meet its commitments in the MRC SP 2016–2020.

These conclusions are primarily based on the percentage of completed outputs, the percentage of achieved outcome indicators under each outcome, and the VfM analysis. The section below further summarizes the key results (i.e. outputs) and key outcomes under each outcome together with next steps that will be taken during the next strategic planning cycle to incorporate lessons learned, tackle newly emerging opportunities and challenges, and continue and sustain the progress achieved thus far towards a sustainable Mekong Basin.

Summary of key results and outcomes, and way forward

OUTCOME 1: Increased Common Understanding and Application of Evidence-Based Knowledge by Policymakers and Project Planners

KEY ACHIEVEMENTS

Results: The important knowledge gaps were mostly addressed, and a comprehensive and evidence-based state of the basin was assessed and reported.

Outcomes: There are regional applications of the new body of knowledge, but at the initiative of the MRC and as planned according to the MRC SP 2016–2020. In contrast, joint and national applications are limited and remain largely at the initiative of individual sponsors or organizations, rather than part of an agency-wide effort.

Next steps for SP 2021–2025

Facilitate national uptake by implementation of the new NIPs and integrating impact pathways in the MRC's multi-year work planning, NIP preparation, and the MRC's monitoring and evaluation (M&E).

Partially achieved

OUTCOME 2: Environment Management and Sustainable Water Resources Development optimise for Basin-Wide Benefits, by National Sector

KEY ACHIEVEMENTS

Results: New and updated basin-wide sectoral strategies and associated action plans such as the Environment Strategy, Fish Management Strategy, DMS, MASAP, and the Navigation Master Plan were completed and approved by the MRC Council. The BDS 2021–2030 for the next strategic planning cycle was completed.

Outcomes: There are regional applications of the basin-wide sectoral strategies, but at the initiative of the MRC and as planned according to the MRC SP 2016–2020. In addition, joint and national applications are limited and remain largely at the initiative of individual sponsors or organizations, rather than part of an agency-wide effort. The NIPs in general were not effective in incorporating and applying the strategies to achieve basin benefits, both nationally and regionally.

Next steps for SP 2021–2025

Facilitate national uptake by implementing the new NIPs and integrating impact pathways in the MRC's multi-year work planning, NIP preparation, and the MRC's M&E. Pending approval of the updated SHDS by the Council will be tackled in 2021.
With the basin-wide sector strategies complete, embark on a more proactive planning approach focusing on joint investment projects and national projects of basin-wide significance.

Partially achieved

OUTCOME 3: Guidance for the Development and Management of Water and Related Projects and Resources Shared and Applied by National Planning and Implementing Agencies

KEY ACHIEVEMENTS

Results: New and updated guidelines, such as the PDG, the TbEIA, the RSAT, Fish-Friendly Irrigation Systems, and Water-borne Transportation Guidelines were technically completed, and were either endorsed or scheduled for endorsement by the MRC Joint Committee.

Outcomes: There are regional applications of the guidance, but at the initiative of the MRC and as planned according to the MRC SP 2016–2020. However, joint and national applications are limited and remain largely at the initiative of sponsoring individuals or organizations rather than part of an agency-wide effort. The NIPs in general were not effective in incorporating and applying the guidelines to achieve basin benefits both nationally and regionally.

Next steps for SP 2021–2025

Facilitate national uptake by implementing the new NIPs and integrating impact pathways in the MRC's multi-year work planning, NIP preparation, and the MRC's M&E. Pending approval of the updated PDG and the TbEIA by the Joint Committee will be addressed in 2021.

Partially achieved

OUTCOME 4: Effective and Coherent Implementation of MRC Procedures by MRC Member Countries

KEY ACHIEVEMENTS

Results: The MRC Joint Platform was strengthened to elevate regional cooperation among the MCs through the implementation of the MRC Procedures.

Outcomes: The routine activities under the PMFM, the Procedures for PWQ and the PDIES were implemented effectively and improved continuously. The PNPCA Prior Consultations for the three most recent Mekong mainstream HPPs were regarded by MCs, Development Partners, and some stakeholders as major success with formal agreements among the MCs and the post-PC engagement mechanism (JAP).

Next steps for SP 2021–2025

Increase emphasis on the coordination of basin management operations. This is in recognition of the increasing importance of cascade operations with Xayaburi, Pak Beng, Pak Lay, Luang Prabang, and Sanakham dams representing a cascade of dams.

Due diligence and duty of conduct for the implementation of JAPs need to be released for all PNPCA PC completed mainstream HPPs.

Achieved

OUTCOME 5: Effective Dialogue and Cooperation Between Member Countries (MCs), and Strategic Engagement of Regional Partners and Stakeholders on Transboundary Water Management

KEY ACHIEVEMENTS

Results: The 3rd MRC Summit uplifted Mekong cooperation. Several dialogue meetings, data and information sharing, exchange visits, joint studies, conferences, and outreach were conducted to promote cooperation with regional and international partners and broader stakeholders.

Outcomes: Cooperation with Dialogue Partners, in particular with China, was strengthened, resulting in several important milestones, such as the renewal of China's agreement to share Lancang hydrological data, the granting the MRC Secretariat the status as observer/participant in meetings of the LMC Joint Working Group on Water Resources, and the signing of the MOU between the LMC Water Center and the MRC Secretariat.

Broader collaboration was achieved with a growing list of partners, including ASEAN, resulting in over 30 MOUs by the end of 2020. The trust and strong support of Development Partners were maintained. Active and meaningful participation by the broader stakeholders was also achieved.

Next steps for SP 2021–2025

Further strengthen key partnerships and together bring practical and meaningful positive changes in the region that directly benefit its people, communities, and the environment. Promote and synergise the implementation of the BDS 2021–2030 by regional and international partners.

Achieved

OUTCOME 6: Basin-Wide Monitoring, Forecasting, Impact Assessment and Dissemination of Results Strengthened for Better Decision-Making by MCs

KEY ACHIEVEMENTS

Results: The Mekong-HYCOS hydromet network was improved and expanded, and together with the routine environmental monitoring through WQM, EHM, and FM, operation and maintenance were continuously improved, effectively implemented, and results reported. The JEM Programme was developed with the initiation of its pilot studies in Xayaburi and Don Sahong Dams. The RFDMC was expanded to include drought with flood forecasting services. The MRC IS, the Data Portal, the DSF and related tools were upgraded and applied. In response to the Siem Reap Declaration, which called for strengthening of the MRC systems, the Design Concept for system reinvigoration was completed.

Outcomes: The continuous operation of the MRC's hydrometeorological and environmental monitoring has provided the region with complete, uninterrupted, near real-time conditions of the Mekong River and its major tributaries. The JEM Programme will enable the MCs to jointly monitor, assess, and mitigate with more certainty impacts of specific mainstream HPPs. The RFDMC has provided MCs and communities access to timely flood and drought forecasting and early warning information throughout the year. This will then allow them to protect themselves from loss of lives and properties. The MRC-IS, the Data Portal, the DSF and related tools have provided project planners and implementers with the required data and the tools to make informed and scientifically based decisions. The MRC will be a more capable position to fulfil its mandate and address the needs of the future once the Design Concept is implemented.

Next steps for SP 2021–2025

Modernize fragmented water-related monitoring, modelling and assessment tools, and information systems to support impacts assessment and proactive regional planning and coordination of basin operations, and stakeholder communication. Promote a more integrated, entire river basin information management system, especially between the MRC and LMC Water.

Consider an alternative approach to the current decentralization approach for CRBMF for monitoring that would involve the complete decentralization of water-related data collection functions while maintaining a regional approach to the management of a core monitoring network with financial support provided by the MRC

Partially achieved

OUTCOME 7: The MRC Transitioned to a More Efficient and Effective Organization in Line with the Decentralization Roadmap and Related Reform Plans

KEY ACHIEVEMENTS

Results: The MRC restructuring was completed, establishing one headquarters in Vientiane and consolidating 13 Programmes into four Divisions and an Office, among many other structural changes. The first riparian CEO came on board in 2016, and all MRC Secretariat staff members were riparianized. The MRC's internal operations were strengthened with the addition of an independent Audit Committee, an Internal Auditor, and the revisions of operation manuals for administration, finance, procurement, and human resources. The MCs increased its financial contribution to the MRC. The MRC SP 2021–2025 was completed, endorsed by the MRC Joint Committee and approved by the MRC Council. National Mekong Committees (NMCs) have also began preparing the first draft of the NIPs.

Outcomes: The strengthened internal operations, in particular the revised manuals and their operational guidelines, have enabled the MRC Secretariat staff to perform their tasks more deliberately according to the approved rules, resulting in improved individual and collective working efficiency and effectiveness of the workplace.

The MRC's passing of the EU Pillar Re-Assessment provided reasonable assurance to the EU and other Development Partners that the MRC is fulfilling the applicable requirements with regard to the assessed pillars: internal control, accounting, external auditing, and procurement. This has further galvanised the confidence of the MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner. This confidence and trust, and corresponding increase in commitment are helping reduce uncertainty, improve the Secretariat staff's morale, and enhance the organization's standing with Development Partners and the broader community. This enables the organization to perform its functions according to plan, and keep its pledge that it will become a world-class, financially self-sustainable organization by 2030.

Next steps for SP 2021–2025

Further improve the MRC Secretariat structure to align with the core functions, and further strengthen the financial management to support planning, implementation, and reporting for accountability, transparency, and cost-effectiveness of the implementation.

Establish joint basin expert groups with representation from the six countries to contribute technically to support proactive planning, integrated monitoring/information systems, and coordination of basin operations.

Prepare the new NIPs based on the BDS directions so that they will become more effective in supporting the BDS implementation at the national level during the next strategic planning cycle 2021–2025.

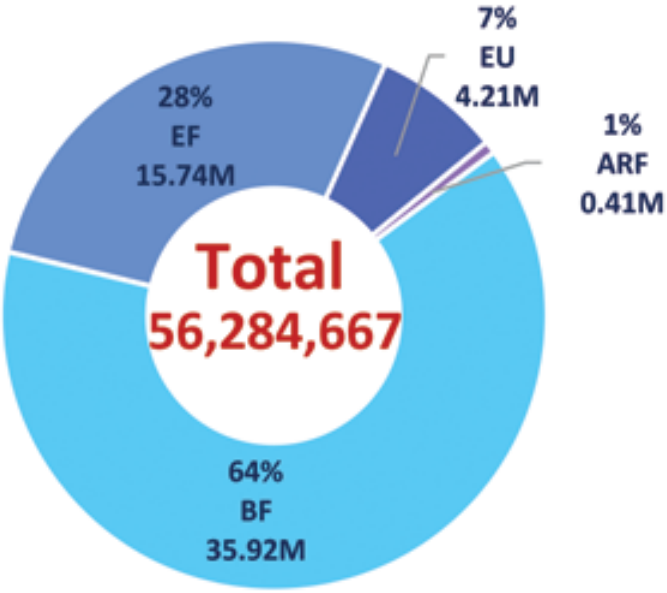
Achieved

FINANCIAL HIGHLIGHTS

From 2016 to 2020, the MRC Secretariat's overall income was **USD 74,077,211**, which included **USD 68,941,781** for the **MRC SP 2016–2020** (fund balance in 2015 of USD 6,508,461, and actual funds received of USD 62,433,320 during the period of 2016–2020), and **USD 5,135,430 for the new MRC SP 2021–2025**. The fund balance at the end of December 2015 was: USD 6,508,461 including: USD 788,721 for the Basket Fund (BF); USD 1,088,046 for the Earmarked Fund (EF); and USD 4,631,694 for the Administrative Reserve Fund (ARF). The income of USD 62,433,320 received during the MRC SP 2016–2020 included USD 43,758,550, or 70%, the Management and Administration Fee (MAF) and other sources. The BF accounted for most of the income USD 40,973,493, or 66%. The EF accounted for USD 14,682,996, or 23%; the EU for USD 6,233,771, or 10%; and the ARF for USD 543,059, or 1% of the total five-year income.

The total expenditure over the last five years was USD 56,284,668 against the projected budget of USD 65,000,000 of the MRC SP 2016–2020, equivalent to an overall 87% disbursement. However, based on the total accumulated budget per five-year AWP of USD 86,082,315, the total expenditure represents about 65% of the total AWPs budgets. The total expenditure consists of: USD 35,916,689, or 64% of the BF; USD 15,743,892, or 28% of the EF; USD 4,209,363, or 7% of the EU Fund; and USD 414,722, or 1% of the ARF.

Expenditures by Funds for 2016–2020



AWPs Budgets vs Actual Expeditures for 2016–2020

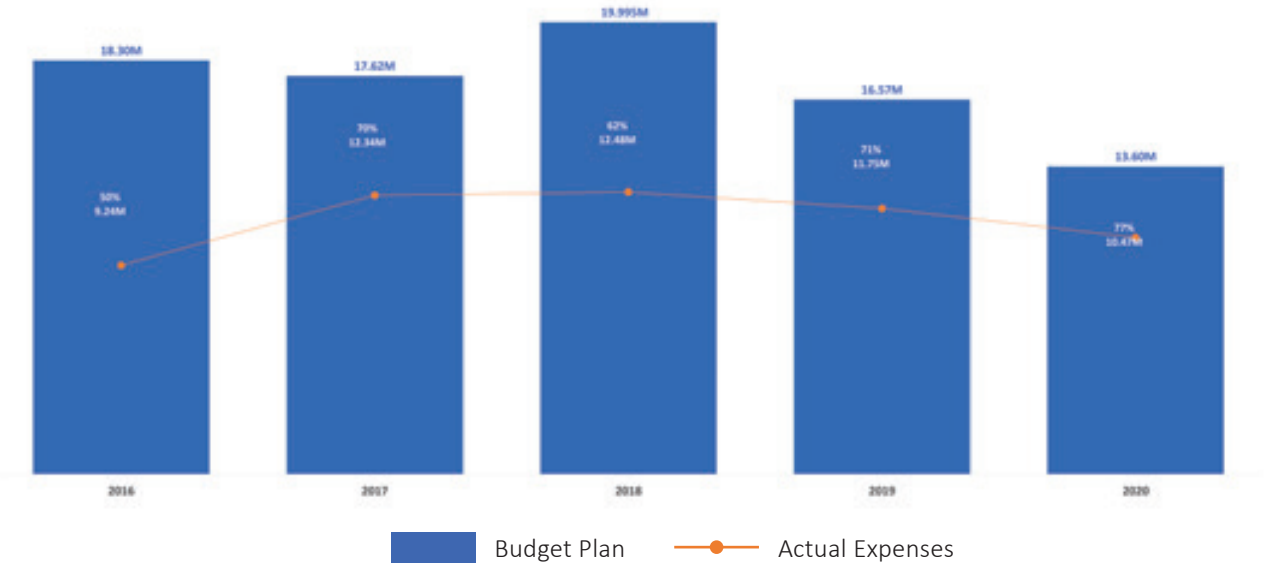


Figure E2. Planned budget vs actual expenditure, and expenditure by funding sources during 2016–2020

INTRODUCTION

INTRODUCTION

The MRC Completion Report for the MRC Strategic Plan (SP) 2016–2020 highlights the key achievements of the MRC during the 2016–2020 strategic planning cycle, as well as reports on the completions status of outputs and activities set out in the MRC SP and the AWPs.

The MRC Completion Report as illustrated in Figure 1 consists of two parts.

PART 1 presents MRC's achievements at the level of outcomes as a result of the five-year implementation of the MRC SP 2016–2020 and its Annual Work Plans (AWPs) for 2016–2020. Part 1 also includes a summary of the financial report.

Achievements: The achievements for each of the seven outcomes in terms of completion of outputs, evidence of change, and contribution to the United Nations Sustainable Development Goals (SDGs) are showcased.

Financial summary: The MRC Secretariat's financial performance in terms of actual expenditure compared to the forecasted budget over the five-year period is summarized.

Conclusions and way forward: It discusses the implementation of MRC SP 2016–2020 in terms of the overall achievement of the seven outcomes.

PART 2, which is presented in a separate report, will present detailed progress reporting on implementation of the AWP 2020 in terms of outputs and activities under each outcome, as well as detailed financial reporting.

Progress reporting: This is presented in different annexes in which the progress of delivering each output under each outcome is reported in terms of completion of its activities (as planned in the AWP for the year), the percentage of progress of that output (against the five-year MRC SP), and implementation status in terms of being on track or delayed. In addition, reports on the indicators of each output are provided, showing the rating and status at the end of the reporting year.

Financial reporting: The detailed income and expenditure for the year by Basket and Earmarked Funds is presented.

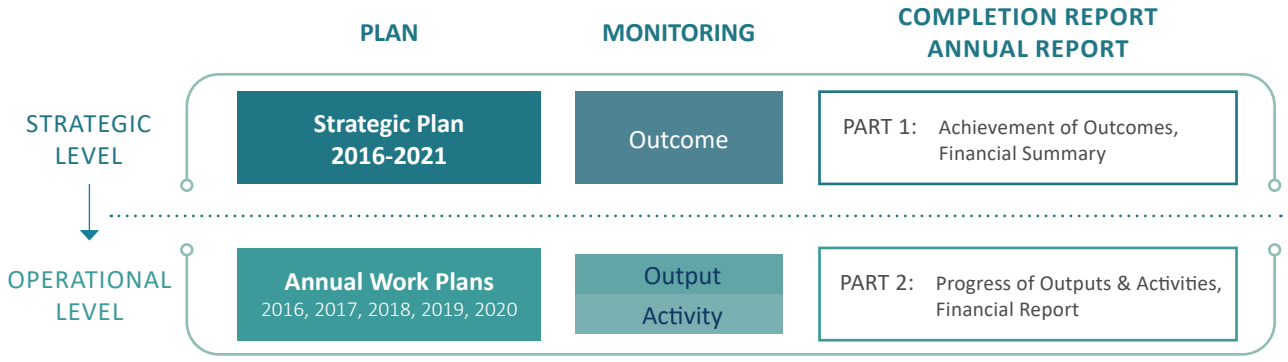


Figure 1. Relationships between the MRC SP, Annual Work Plans and the Completion Report

THE MRC AND ITS STRATEGIC PLAN

The mission of the Mekong River Commission (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 in the LMB for the countries' mutual benefit and the people's wellbeing. Under the MRC framework, the countries cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the LMB. This includes but is not limited to irrigation, hydropower, navigation, flood control, and fisheries, in a manner that optimizes the multiple-use and mutual benefits of all riparian countries and peoples and to minimize harmful effects.

For 2016–2020, the MRC SP 2016–2020 identified 4 key result areas, 7 outcomes, 44 outputs and 169 activities to be implemented over five years. The MRC SP 2016–2020 addresses the priorities identified in the Basin Development Strategy (BDS) 2016–2020 at the regional/basin level. The National Indicative Plans 2016–2020 (NIP 2016–2020), one for each country, address the BDS priorities at the national level through joint projects,[3] national projects of significance to the Basin, national activities, and decentralized activities.

Overall, the MRC as detailed in the MRC SP 2016–2020 aimed to achieve the following results and outcomes:

KEY RESULT AREA 1: Enhancement of national plans, projects and resources based on basin-wide perspectives	**Outcome 1:** Increased common understanding and application of evidence-based knowledge by policymakers and project planners
	Outcome 2: Environment management and sustainable water resources development optimized for basin-wide benefits by national sector planning agencies
	Outcome 3: Guidance for the development and management of water and related projects and resources shared and applied by national planning and implementing agencies
KEY RESULT AREA 2: Strengthening of regional cooperation	**Outcome 4:** Effective and coherent implementation of MRC Procedures by MCs
	Outcome 5: Effective dialogue and cooperation between MCs and strategic engagement of regional partners and stakeholders on transboundary water management
KEY RESULT AREA 3: Better monitoring and communication of the Basin conditions	**Outcome 6:** Basin-wide monitoring, forecasting, impact assessment and dissemination of results strengthened for better decision-making by MCs
KEY RESULT AREA 4: A leaner River Basin Organization	**Outcome 7:** The MRC transitioned to a more efficient and effective organization in line with the Decentralization Roadmap and related reform plans.

IMPLEMENTATION OF ANNUAL WORK PLANS

To achieve the seven outcomes of the MRC SP 2016–2020, the AWPs over the 2016–2020 period committed to implementing 44 outputs, with an estimated budget of USD **65,000,000**. The actual expenditure over the five-year period was USD **56,284,668,** resulting in a disbursement rate of **87%.** The total income received during the period of 2016–2020 including the fund balance in 2015 was USD **74,077,211,** which included USD **68,941,781 for implementing the MRC SP 2016–2020** and **USD 5,135,430 for implementing the new MRC SP 2021–2025.** Figure 2 shows the completion rate of SP 2016–2020 outputs and the disbursement rate for five years.

[3] Joint projects are projects between two MCs that address transboundary issues.

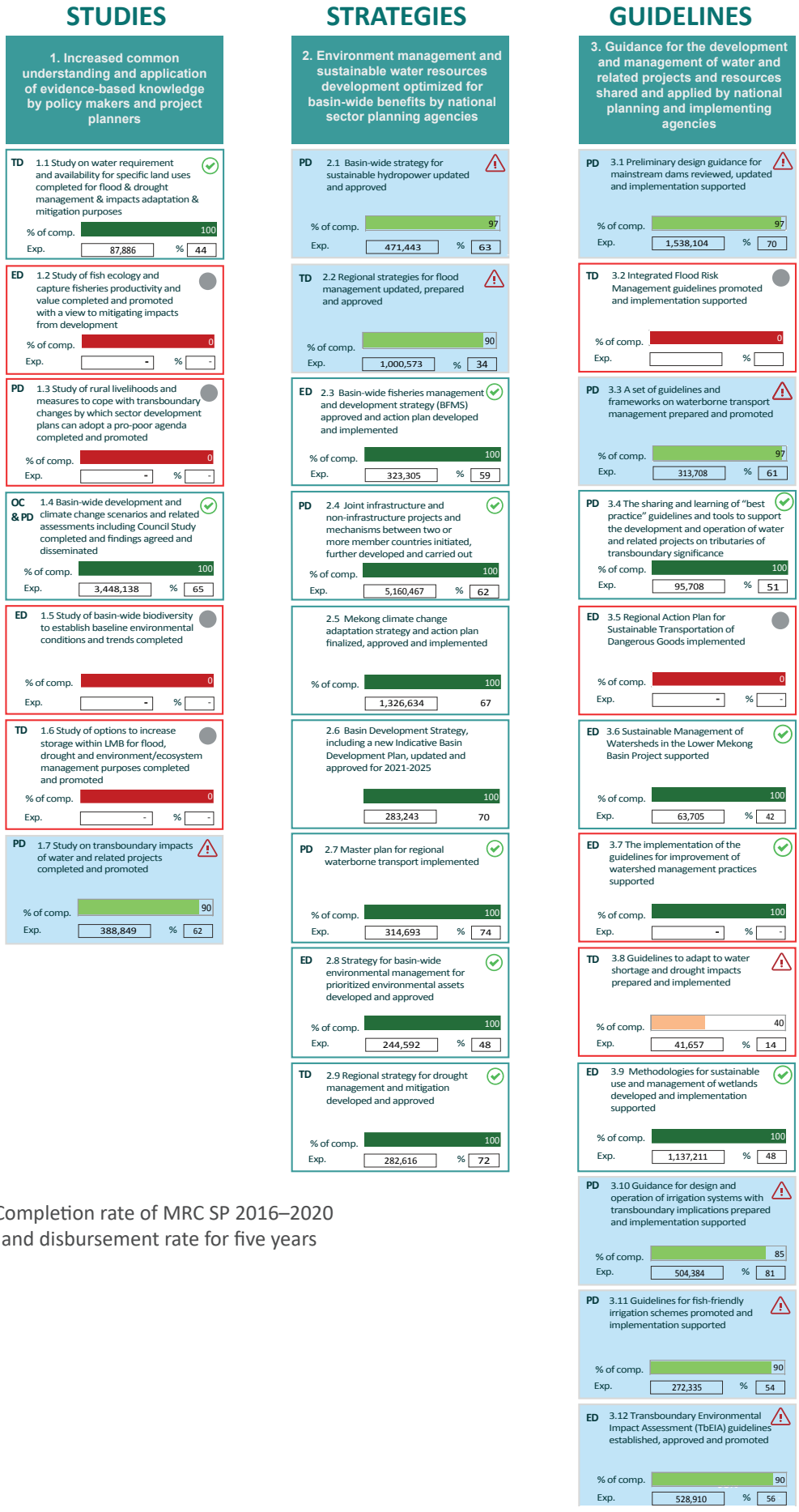


Figure 2. Completion rate of MRC SP 2016–2020 outputs and disbursement rate for five years

PROCEDURES

4. Effective and coherent implementation of MRC Procedures by Member Countries

PD 4.1 MRC Procedures and associated technical guidelines reviewed and updated

% of comp. 95 | Exp. 169,445 | % 40

PD 4.2 MRC Joint Platform and working groups for MRC Procedures implementation supported

% of comp. 100 | Exp. 1,217,089 | % 52

PD 4.3 Strengthen understanding and capacity to implement MRC Procedures

% of comp. 80 | Exp. 19,236 | % 26

COOPERATION

5. Effective dialogue and cooperation between Member Countries and strategic engagement of regional partners and stakeholders on transboundary water management

OC 5.1 Partnerships with MRC's Dialogue Partners further developed & implemented, including an additional agreement with China on cooperation for Mekong basin development & management

% of comp. 100 | Exp. 246,829 | % 53

OC 5.2 Partnerships with ASEAN, GMS and other organizations

% of comp. 100 | Exp. 253,708 | % 54

OC 5.3 Regional Stakeholder Platform established and implemented for enhanced dialogue and collaboration with broader stakeholders

% of comp. 100 | Exp. 1,228,892 | % 81

MONITORING

6. Basin-wide monitoring, forecasting, impact assessment and dissemination of results strengthened for better decision-making by Member Countries

ED & TD & PD 6.1 Monitoring and forecasting systems for MRC Procedures and Indicator Framework developed and maintained

% of comp. 96 | Exp. 5,078,899 | % 48

TD 6.2 Regional information systems and databases quality assured, standardized, improved and maintained

% of comp. 80 | Exp. 714,663 | % 62

TD 6.3 MRC modelling and related impact assessment tools updated and approved for use by MRC and Member Countries

% of comp. 100 | Exp. 472,762 | % 41

ED 6.4 State of Basin, Status of Climate Change, and technical reports based on MRC Indicator Framework prepared

% of comp. 100 | Exp. 1,075,337 | % 47

TD 6.5 Communication of and access to MRC data, information and knowledge developed and maintained

% of comp. 100 | Exp. 70,771 | % 43

ORGANIZATION

7. MRC transitioned to a more efficient and effective organization in line with the decentralization roadmap and related reform plans

OC 7.1 MRCS structural reform implemented and linkages with Member Countries further improved

% of comp. 100 | Exp. 264,224 | % 48

AD 7.2 MRCS human resources reform implemented

% of comp. 100 | Exp. 350,339 | % 58

AD 7.3 MRCS financial and administrative reforms implemented and operationalized

% of comp. 90 | Exp. 414,875 | % 41

OC 7.4 Annual work plans, and results-based monitoring, evaluation and reporting system for MRC SP and NIPs prepared and fully operationalized

% of comp. 100 | Exp. 697,811 | % 68

OC 7.5 Support NIP Implementation & MRC Strategic Plan for 2021-2025 prepared and approved

% of comp. 90 | Exp. 344,496 | % 66

Division/Office

AD: Administration Division
ED: Environmental Management Division
OC: Office of the CEO
PD: Planning Division
TD: Technical Support Division

% of Completion Scale

Discontinued	0
Completed Preparatory Work	1 - 49
Half Way Done	50-79
Completed Most of The Work	80-99
Completed	100

Status

Completed
Incomplete
Discontinued

MTR will not be achieved by 2020 =

Summary:
Total MRC SP 2016-2020 Output: 44
Incomplete: 15
Completed: 23
Discontinued: 6

COMPLETION REPORT'S PREPARATION

The Completion Report was prepared following an internal evaluation process and consultation with MCs through national meetings. The evaluation employed several assessment tools such as the Outcome Evaluation Matrix, the Pathway of Change Assessment, and the Value for Money Multidimensional Analysis (VfMMA) in addition to the routine monitoring and evaluation (M&E) of indicators, outputs, tasks, and finances. The sources of verification include the 2018 Mid-Term Review Report (MTR), annual reports, mid-year reports, and external audit reports, as well as documents at the regional and national levels.

The 2018 MTR concluded that impressive progress had been achieved in terms of producing some of the planned outputs during the first half of the MRC SP 2016–2020. However, it also noted several critical areas where significant progress was needed, especially with regard to the achievement of the desired outcomes. For example, the 2018 MTR analysis showed that the least progress was achieved with respect to outcome indicators relating to the national uptake of MRC outputs.

Thus, in this Completion Report, the MRC assesses not only the completion status of outputs, but also the achievement of the outcomes (i.e. the outputs and their associated activities are contributing to the desired types of change or impacts). An activity or output may lead to a positive short-term change such as building awareness; however, the ultimate, long-term desired outcome is its adoption and integration with the regional and national planning and implementation processes of the MRC and the MCs, as illustrated in Figure 3. 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 LMB for the countries' mutual benefit and the people's well-being.

Figure 3. Types of change

To guide this assessment, an Outcome Evaluation Matrix (Figure 4) was prepared for each of the seven outcomes. Each matrix presents the completion status of each of the planned outputs (i.e. completed, incomplete or partially completed, discontinued) under an outcome and assesses the type of change that a certain output has contributed and the level of evidence that such type of change has occurred. The resulting placement of an output in the Matrix indicates the extent to which it is contributing towards the achievement of the desired outcome, which qualitatively can be one of the following:

'Outcome achieved': strong evidence of achieving outcome indicators;

'Outcome partially achieved': some evidence of achieving outcome indicators; or

'Outcome not achieved': no evidence of achieving outcome indicators.

Figure 4. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the level or type of change that occurred

The VfMMA (Figure 5) was conducted to determine whether an output in comparison with all the other outputs under an outcome is considered one of the following:

- **High VfM** (i.e. low cost but high in benefits as indicated by strong evidence of achieving outcomes)
- **Costly but effective** (i.e. high cost and high in benefits)
- **Inadequate intervention** (i.e. low cost but ineffective as indicated by limited to no evidence of achieving outcomes)
- **Low VfM** (i.e. high cost and ineffective).

The benefit rating (i.e. high to low) for each output is taken from the Outcome Evaluation, as explained earlier. The relative cost (i.e. high to low) of the output is obtained by ranking the costs of the outputs under each outcome. This analysis therefore provides low-cost outputs (i.e. focused scope and lower level of effort) with the potential to offer VfM, especially when targeting highly focused needs, and to produce a desired outcome.

In contrast, large and comprehensive undertakings (i.e. multisectoral/interdisciplinary outputs) will be inherently costly and are expected to be cost-effective (i.e. effective and/or productive in relation to cost) because they have the resources (i.e. budget, staff, and time) to achieve the desired set of outcomes and implement the necessary interventions to overcome any challenges. If such a large undertaking turned out to be ineffective in achieving the desired outcomes, then this occurrence would reflect a significant deficiency in the delivery mechanism of the organization that needs to be addressed to prevent a similar problem from occurring in the future. The completion rate of the output is also shown in Figure 5 primarily only for additional reference since its impact had been already accounted in the benefit rating.

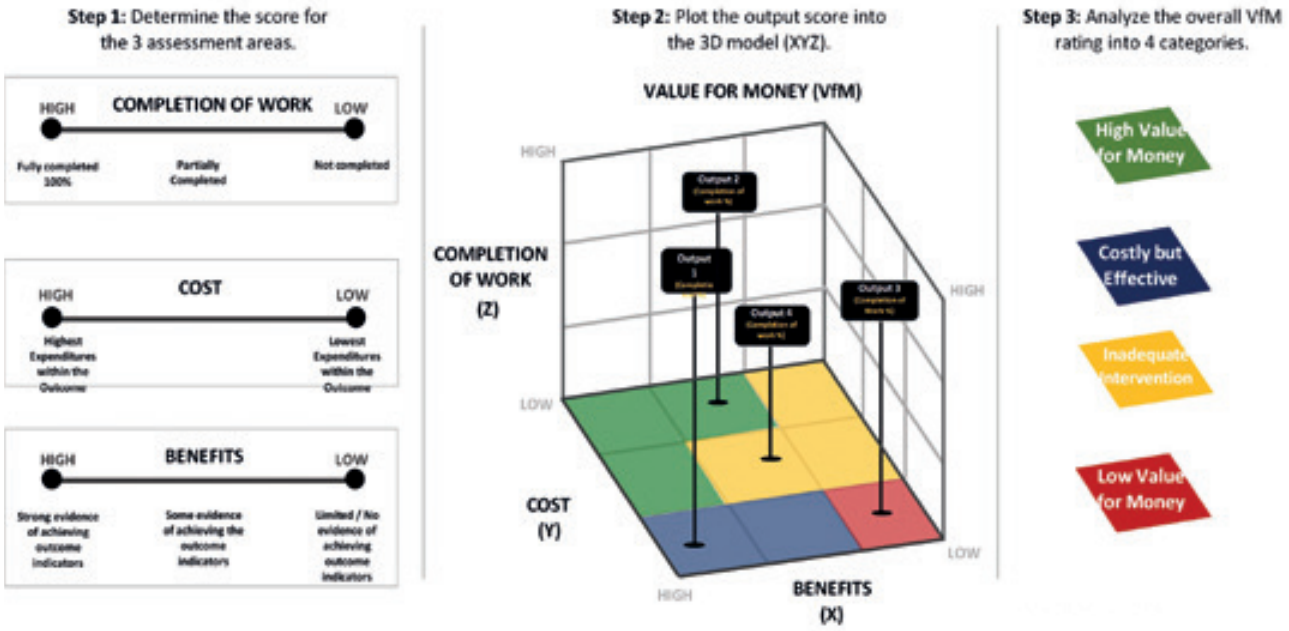
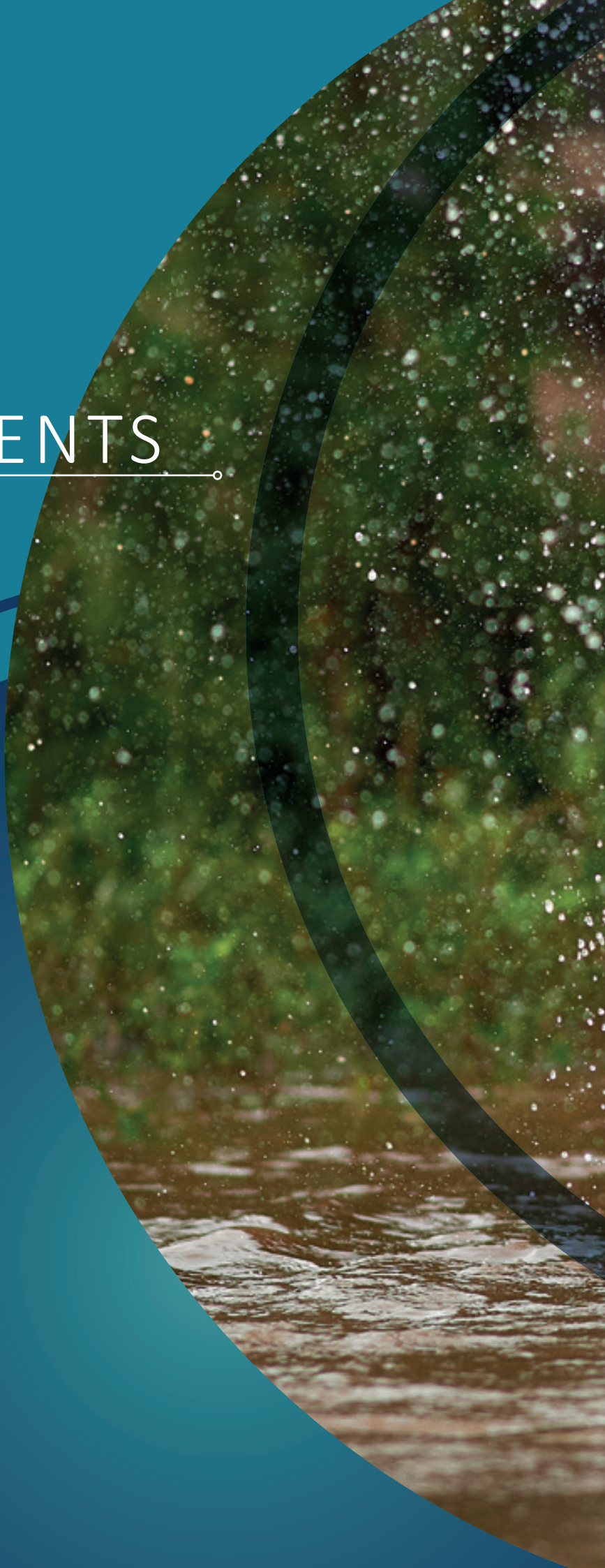


Figure 5. Value for Money Multidimensional Analysis

The implementation of the MRC SP 2016–2020 to complete the outputs and achieve the desired outcomes for the Basin is consistent with, and therefore contributes to, the achievement in the Mekong region of the SDGs. These goals specifically include: SDG 1: No Poverty, SDG 2: Zero Hunger, SDG 5: Gender Equality; SDG 6: Clean Water and Sanitation; SDG 7: Affordable and Clean Energy; SDG 9: Industry, Innovation and Infrastructure; SDG 12: Responsible Consumption and Production; SDG 13: Climate Action; SDG 15: Life on Land; SDG 16: Peace, Justice, and Strong Institutions; and SDG 17: Partnerships for the Goals. Figure 6 details the linkages between the MRC's outcomes and outputs, and the SDGs and relevant targets.

Figure 6. The MRC's efforts and achievements under SP 2016–2020 in contributing to the SDG Targets

ACHIEVEMENTS



OUTCOME 1: INCREASED COMMON UNDERSTANDING AND APPLICATION OF EVIDENCE-BASED KNOWLEDGE BY POLICYMAKERS AND PROJECT PLANNERS

INDICATORS

- *Evidence of national and regional decisions made based on, or referring to, MRC knowledge products*
- *Number of national and regional agencies and organizations using MRC knowledge generated for research, planning and policymaking*

The completion of the 2018 SOBR, a flagship product of the organization and an integral part of its strategic planning cycle, and the Council Study[4] in 2017 represent achievements of the MRC in closing key knowledge gaps, establishing a common understanding among the MCs of the environmental and socio-economic conditions and trends in the Basin brought by development pressures and the changing climate, and in informing and influencing national and regional planning and decision-making. The resulting body of knowledge, which includes potential benefits and adverse impacts of current and future development plans of the Mekong countries in six water-related sectors (hydropower, land use, irrigation, navigation, flood protection and industry), enables the MC policymakers and project planners to make informed decisions in support of an economically prosperous, socially just, and environmentally sound Mekong River Basin.

Together with the completion of the new MRB-IF, a comprehensive and consistent set of indicators for assessing the Mekong Basin's status in the environmental, social and economic, climate change, and cooperation dimensions, the MRC is in a better position to steer MCs' regional cooperation and national development efforts following a comprehensive, evidence-driven and replicable approach. At the regional level, the findings and recommendations of the Council Study and other studies were incorporated in the update and development of regional strategies such as the SHDS and the SBEM and have been referred to in key MRC activities such as the PNPCA project assessment. The 2018 SOBR and other studies provided the new knowledge base to prepare the BDS 2021–2030 and the MRC SP 2021–2025. At the national level, knowledge and understanding have increased. Given the time available, evidence of their use for national planning and decision-making are expected. Early examples of national applications include the use of MRC data and studies in the preparation of sub-river basin management plans in Lao PDR and the ongoing monitoring by the TNMC Impact Study.

[4] The Council Study is known in full as the Study on Sustainable Management and Development of the Mekong River, including Impacts of Mainstream Hydropower Projects.

INTRODUCTION

While the MRC has accumulated an extensive body of knowledge about the Basin over the years, the lack of knowledge in certain areas increases the risk and uncertainties of development decisions made and projects implemented in the Basin. Heading into 2016, the environment (more specifically biodiversity), fisheries (especially fish migration, ecology and productivity), socio-economic conditions (livelihoods) of the poor and vulnerable rural population of the Basin, and storage options for multiple purposes (flood, drought, environment) were identified as the most important topics on which more information is needed to close the remaining knowledge gaps.

Given rapid development and climate change, there was also a need to update the knowledge about the immediate and long-term impacts of planned national projects. Droughts and floods across the region appeared to be increasing in frequency and severity, and the limited knowledge about their occurrence and potential impacts did not help in adequately preparing for the next one. To close these knowledge gaps and thereby provide a complete, up-to-date, and scientifically rigorous body of knowledge for informed basin planning and decision-making, the MRC included in the MRC SP 2016–2020 several studies such as the Council Study (Output 1.4) and thematic-specific studies on flooding (i.e. Initial Studies under Output 2.2), drought (Output 1.1), climate change (Output 1.4), irrigation (Output 1.7), fisheries (Output 1.2), rural livelihood (Output 1.3), biodiversity (Output 1.5), and water storage (Output 1.6).

In addition to closing these important knowledge gaps, the role of the MRC includes promoting and disseminating the newly acquired knowledge and integrating it with the current basin understanding to facilitate their application by the policymakers and project planners. The MRC has been using the five-year SOBR (under Output 6.4) to primarily fulfill this role. To produce a comprehensive and replicable approach to monitoring, assessing, and reporting on the state of the Basin, the MRC redesigned the SOBR to align it with the MRB-IF.

The MRB-IF, an improved version of the original MRC Indicator Framework, is a new framework based on a comprehensive and consistent set of indicators that address most aspects of Mekong River Basin management. These indicators, covering five critical dimensions (environmental, social, economic, climate change, and cooperation) present the policymakers, project planners, and the broader audience a complete picture of the status and trends in the Mekong with development impacts and opportunities, and the progress made towards achieving the MRC vision of an economically prosperous, socially just, and environmentally sound Mekong River Basin.

COMPLETION STATUS OF OUTPUTS

In the MRC SP 2016–2020, major studies are grouped under Outcome 1, while others such as the Initial Studies and the SOBR are implemented under other outcomes. For the reporting purpose of this Completion Report, the SOBR is included here under Outcome 1.

Figure 7 shows that the MRC completed two outputs (e.g. the Council Study and the Drought Study), nearly completed the study on transboundary impacts of irrigation projects (with a completion rate of 90%), and either incorporated some elements of the remaining studies (e.g. on fish, livelihoods and biodiversity) as part of the Council Study, or postponed it (e.g. the storage study), resulting in an overall output completion rate of 41%.

OUTCOME 1

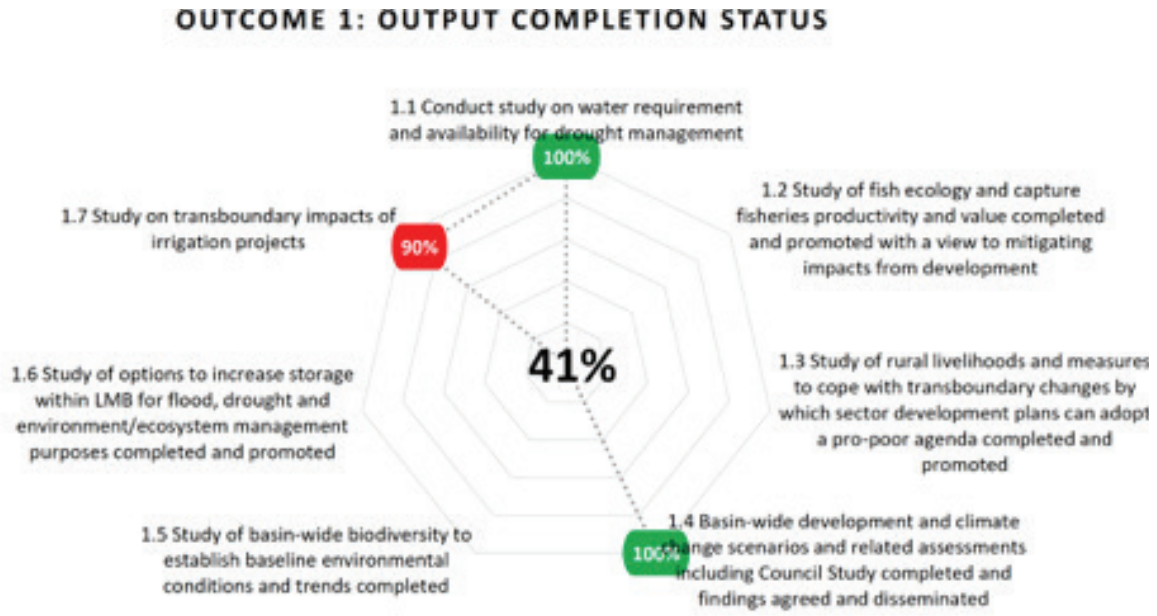


Figure 7. Output completion status under Outcome 1

THE COUNCIL STUDY

The Council Study was initiated during the planning cycle of 2011–2015, and after a number of challenges, was finally completed in 2017 (after five years). The Study was jointly implemented by several (former) MRC Programmes with technical support from national and international experts. Extensive consultations were held with MCs, through several Regional Technical Working Group meetings and national meetings, as well as with broader stakeholders.

The completion of the Council Study represents a significant achievement of the MRC. This is true not only in closing the key knowledge gaps, but also in updating the knowledge regarding the potential economic, environmental and socio-economic impacts, positive and negative, of current and potential future development plans of the Mekong countries in six water-related sectors – hydropower, land use, irrigation, navigation, flood protection and industry – under several climate change scenarios.

The MRC's decision to not fully implement a number of planned outputs under Outcome 1 (Output 1.2 on fishery, Output 1.3 on rural livelihood, Output 1.5 on biodiversity, and Output 1.6 on water storage) was due to time and resource constraints, and was partly compensated by focusing on the Council Study, which to some extent addressed many of these knowledge gaps. For example, the Council Study assessed and reported the status and trends of biodiversity by using a new model, Downstream Response on Imposed Flow Transformation (DRIFT), an Environmental Flow Assessment software based on expert opinions. Under the Council Study, fish yield surveys at the landscape scale were conducted; a regional inventory list of key transboundary migratory fish species in the LMB developed; and socio-economic impacts of reduced capture fisheries in the LMB assessed. The bio-ecology of the main fish species was largely identified and documented in Council Study technical reports. The Council Study's socio-economic and cumulative impact assessments have covered transboundary impacts on rural livelihoods. The Social Impact Monitoring and Vulnerability Assessment (SIMVA) (under Output 6.1) monitored the impacts of development and climate change on vulnerable people along the Mekong mainstream.

STATE OF THE BASIN REPORT

The MRC uses the SOBR to communicate and disseminate a comprehensive report on the conditions and trends of the basin. By synthesizing the available body of knowledge with the new knowledge, findings, and recommendations from the several studies conducted to support Outcome 1, as illustrated in Figure 8, the MRC produced the 2018 SOBR.

Published in July 2019, the 2018 SOBR is the third in the series of SOBRs, but the first to follow the redesigned format for a comprehensive and replicable monitoring, assessing, and reporting on the state of the Basin, based on the MRB Indicator Framework. The first two SOBRs were published in 2003 and 2010. A preliminary updated version was released in 2016 to partly mitigate the delays in the production of the SOBR, which is to be produced every five years, following the 2010 version. In addition, and for the first time, the 2018 SOBR includes a review of conditions within the Upper Mekong Basin, known as the Lancang Basin in China.

An MRC flagship product, the SOBR reflects the aims and commitments laid out in the 1995 Mekong Agreement. It also serves as a tool to determine progress towards achieving these aims and to identify issues and development opportunities that the MCs need to consider when making corrective actions and updating the BDS for the next planning cycle. The 2018 SOBR represents the most up-to-date and comprehensive understanding of the state of the Mekong Basin in terms of its ecological health, and the social and economic circumstances of the Mekong countries and its people, and the degree to which cooperation between riparian countries envisaged under the 1995 Mekong Agreement is enhancing these conditions.

Figure 8. The 2018 State of the Basin Report and associated studies contribute towards a comprehensive body of knowledge to support better informed basin planning and decision-making

OUTCOME 1

STUDY ON IRRIGATION IMPACTS

Irrigation is by far the biggest water consumptive sector in the Basin. Sub-optimal planning and implementation of irrigation projects combined with the uncertainties imposed by climate change may therefore result in negative transboundary impacts on water availability and the environment.

In addition to assessing the impacts of irrigation projects, the study also includes the potential for groundwater development and management for production. The agricultural land use monitoring component of the study on transboundary impacts of irrigation, which was based on implementing pilot studies in MCs, was completed in 2019 with the final report published on the MRC website. For the groundwater component, the Inception Report on Sustainable Groundwater Use and Management was completed, and the pilot study implementation was initiated but had to be suspended due to the COVID-19 pandemic.

THE STUDY ON WATER REQUIREMENT AND AVAILABILITY FOR DROUGHT MANAGEMENT

The study on water availability in the LMB and water requirements for crops was carried out from July 2017 to July 2018. The study aimed at estimating water deficits for crop areas of the LMB under different scenarios: baseline from 1984 to 2007, future scenario from 2007 to 2020 without climate change considered, and future scenario from 2020–2040 with climate change considered. The MRC's DSF, which includes the Integrated Water Quality and Quantity Simulation Model (IQQM) and the Soil and Water Assessment Tool (SWAT), was used for all MRC catchments and irrigation projects to estimate water availability and water requirements.

The study indicated that the current irrigated agriculture faces extreme water deficits, especially in Cambodia and Thailand, and that they may increase in the future during the dry season. This study was used to inform the preparation of the DMS.

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced, as shown in Figure 9, Outcome 1 is rated 'partially achieved'. Although the overall output completion status is rated at 41%, it is reasonable to conclude that the desired outcome of closing the important knowledge gaps and using the resulting evidence-based body of knowledge for decision-making is achieved, especially at the regional level, because of the completion of the Council Study, which is a comprehensive, multisectoral, and interdisciplinary undertaking by the MRC. It should be noted that the Council Study as well as the SOBR (although prepared under Outcome 6) contributed to the achievement of the indicators in Outcome 1.

Increase in knowledge and understanding. The completion of the Council Study and the 2018 SOBR involved the mobilization of significant MRC Secretariat staff and consultant resources, and extensive consultations with MCs over a three-year period (in addition to the two years during the previous planning cycle). Several broader stakeholder forums were also held both during and after the completion of the studies, together with the use of the MRC's website and other social media. For example, key findings and recommendations of both the 2018 SOBR and the Council Study are readily publicly accessible through easy-to-use interactive online versions:

- 2018 SOBR interactive report: http://interactive.mrcmekong.org/sobr-2018-findings/sobr-2018-findings

- Council Study interactive report: www.mrcmekong.org/news-and-events/news/interactive-report-for-the-council-study

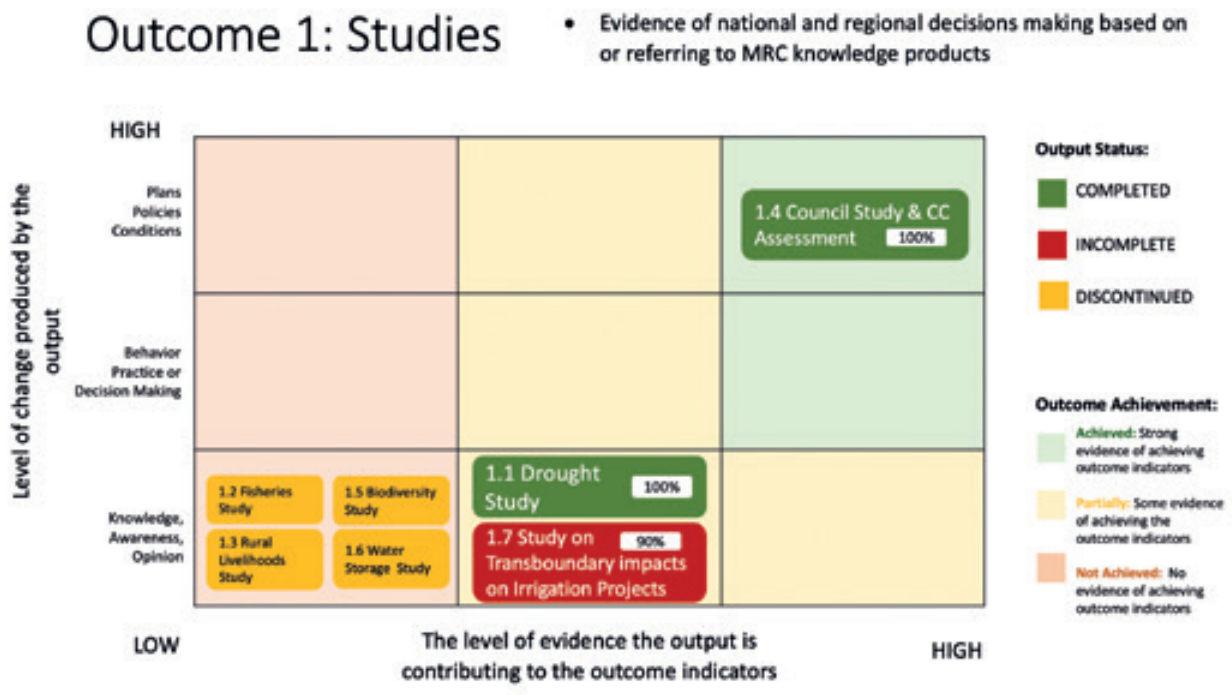
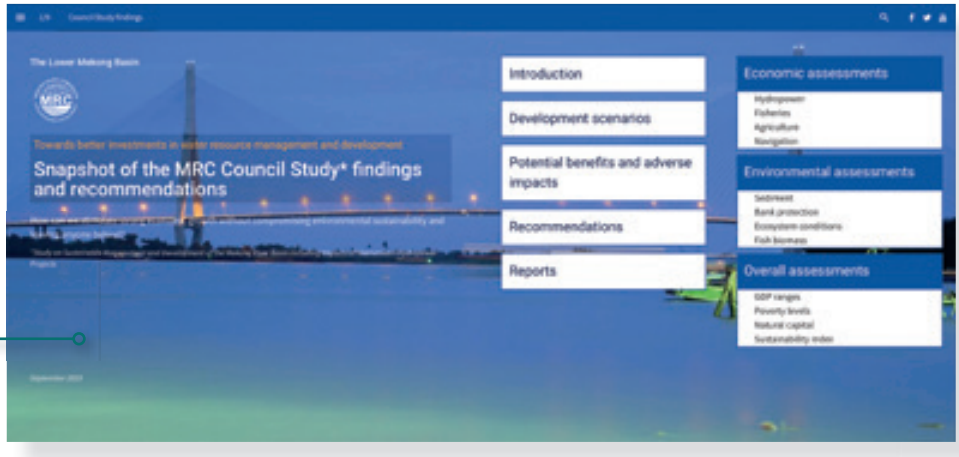


Figure 9. Outcome Evaluation Matrix to assess outcome achievement based on output completion and the type of change that occurred – Outcome 1

Web-based interactive version for the 2018 SOBR.



Web-based interactive version for the Council Study

OUTCOME 1

Overall, Outcome 1 reflects an increase in awareness and knowledge among all concerned stakeholders, in the capacity of the decision makers and project planners of national line and implementing agencies, and in the level and effectiveness of cooperation between MRC Secretariat, NMCs, MCs, Development Partners, and stakeholder organizations. The Council Study knowledge base, assessment methodologies, and tools were instrumental in enabling users to learn and apply their new-found knowledge and skills in similar studies at the national and local levels.

For the SOBR, the numerous regional and national meetings held with national line and implementing agencies have resulted in an increased common understanding of the current environmental and socio-economic conditions and trends in the Basin brought by development pressures and the changing climate. These meetings have helped build closer working relationships between the MRC Secretariat and the various line and implementing agencies that will benefit future cooperation and allow them to better identify and agree on evidence-based management interventions in support of a sustainable development pathway for the Basin.

The various stakeholder meetings were also helpful. For example, the launching event of the 2018 SOBR at the MRC Headquarters in Vientiane in August 2019 was attended by about 100 participants from embassies, Development Partners and international organizations, international NGOs, and MCs. The 8th MRC RSF in Vientiane, in which the 2018 SOBR was on the agenda, was attended by about 200 participants.

The panel of MRC Secretariat's experts address the audience at the official launch of the 2018 Mekong State of the Basin Report at the MRC Headquarters in Vientiane, with participation by countries and partners (22 October 2019).

The inclusion of a review of conditions in the Upper Mekong Basin for the first time in the SOBR not only makes the analysis more holistic, but also creates yet another avenue to promote closer cooperation with China and Myanmar in the years to come.

For the Council Study and other related studies, the new knowledge has enhanced the understanding of the MCs with respect to potential future impacts of sectoral developments in the LMB, and improved their technical know-how and capacity in assessing the impacts together with climate change. The ensuing high-level ministerial meetings yielded thoughtful discussions, questions, and debate among senior policymakers on development trajectories, the national plans of each country, and the anticipated impacts on the Basin. These meetings have raised awareness and increased technical understanding among the country leaders and policymakers that could prove informative and beneficial when reviewing their national policies and plans.

Internationally, the 2018 SOBR and the Council Study reports represent a comprehensive body of knowledge not only about the Mekong, one of the world's great rivers, but also about how to conduct and implement such studies for other basins and regions. For example, in promoting the IWRM and nexus approaches to international water and river basin cooperation, the United Nations Economic Commission for Europe, which serves as the Secretariat for the Water Convention, has referenced the works of the MRC in a number of global reports and recommendations.[5] This has not only contributed to the positive reputation of the MRC globally, but has also attracted attention and resources to support the MRC.

H.E. Mr Sommad Pholsena (centre), Minister of Natural Resources and Environment and MRC Council Member for Lao PDR, Dr Inthavy Akkharat (left), Acting Secretary General of the Lao National Mekong Committee Secretariat and Chairperson of the MRC Joint Committee for 2017, and Dr Pham Tuan Phan, CEO of the MRC Secretariat (right), answer questions from the public about the Council Study and the Procedures for Notification, Prior Consultation and Agreement during the 1st Regional Stakeholder Forum in Luang Prabang (22 and 23 February 2017).

USE IN REGIONAL AND NATIONAL PLANNING AND DECISION-MAKING

At the regional level, the SOBR and the Council Study supported decision-making and project planning. The importance of the Council Study was acknowledged by the MCs, including at the highest level in the Siem Reap Declaration of the 3rd MRC Summit. The SOBR was agreed by the MRC Joint Committee, including its key findings and recommendations.

The scientifically rigorous body of knowledge of the 2018 SOBR and associated studies such as the Council Study were used in the development of regional strategies such as the SHDS and the SBEM. They have been referred to in key MRC activities such as the PNPCA project assessment. The findings of the Initial Studies, which were only published at the end of 2020, will be used to support the

[5] See United Nations Economic Commission for Europe (2021) on the Draft Handbook on Water Allocation in Transboundary Context, presented at the Working Group on Integrated Water Resources Management and Working Group on Monitoring and Assessment, on 26 – 28 April 2021: https://bit.ly/3AAZu0J

OUTCOME 1

The **Siem Reap Declaration of the 3rd MRC** Summit states that the key findings of the Council Study should be considered by Member Countries as a reference at both the policy and technical levels. This would allow to capture development opportunities and address trade-offs, benefit sharing, risks for planning and implementation of national plans and projects, and in relevant **MRC** work.

update of the MRC Flood Management Strategy into an integrated strategy for flood and drought management. Most importantly, knowledge from the Council Study, the Initial Studies and the SOBR greatly informed the preparation of the 10-year BDS 2021–2030 and the MRC SP 2021–2025.

Moreover, the BDS strategic priorities were designed and detailed in alignment with the five dimensions of the 2018 SOBR and of the MRB-IF, resulting in five strategic priorities for the Basin. For the first time, the effectiveness of BDS implementation will be systematically measured and reported in terms of the changes it will bring in the state of the Basin through the collective efforts of the MRC and all relevant actors.

At the national level, evidence is emerging of the use of the new body of knowledge and understanding as presented in the 2018 SOBR and associated studies. In the future, evidence of their use for national planning and decision-making will increase. To date, the following are some of the early examples:

- **In Cambodia**, there has been a re-examination of its hydropower development plans, including two planned mainstream projects, as well as an increase in electricity purchase from projects in neighbouring countries.

- **In Lao PDR**, the Government has strengthened its water and hydropower governance. A new water law is adopted, and a new National Water and Water Resources Management Strategy is being finalized. The new law governs water use throughout the country and includes provision for environmental flows. A national coordinating and monitoring centre for hydropower operations is being established. The amended Electricity Law 2017 and the updated Policy on Sustainable Hydropower Development 2018 strengthened the planning, assessment, and monitoring of major projects.

  Based on the state of the Basin reported in SOBR and findings in the Council Study, Lao PDR has also begun developing more focused plans for selected sub-basins in the country, all important tributaries of the Mekong. The plans include watershed management, reservoir water use management, protection and restoration of water resources, reduction of effects of floods, droughts and climate change, and land, forest, and environmental management. To date, Lao PDR has developed sub-basin plans for Nam Ngum, Xebagfai, Xebanghieng, Nam Ou, and Nam Xekong sub-basins.

- **In Thailand,** the Government introduced a new water resources law in 2018 and established a new policy institution, the Office of National Water Resources, which also hosts the Thai National Mekong Committee (TNMC) Secretariat, under the Office of the Prime Minister, to improve coordination across sectors and engagement on Mekong issues.

  The TNMC has been implementing the Impact Study, which adopted the approach and methodologies of the Council Study to assess transboundary impacts of mainstream HPPs on the hydrology, soil erosion, sediment, water quality, fisheries, and socio-economic conditions of eight provinces along the Mekong River in the north and northeast parts of Thailand.

Figure 10. Thai National Mekong Committee Impact Study Annual Report

• **In Viet Nam**, Resolution No. 120/NQ-CP on *Sustainable and Climate-Resilient Development of the Mekong Delta* introduces a change in emphasis for agriculture and seeks to further boost it. A key driver of Resolution 120/NQ-CP is the coordination of ministerial and provincial actions to achieve more sustainable and higher value development in the face of expected climate change impacts, including rising sea levels, increased salinity intrusion, and the risk of severe flooding.

The VNMC completed the Delta Study on the impact of HPPs on the Mekong Delta, which also utilized data from the MRC and MCs.

VALUE FOR MONEY

The total cost incurred under Outcome 1 was mostly spent on the Council Study because it is a comprehensive, multisectoral, and interdisciplinary undertaking by the MRC involving a high level of effort from the MRC Secretariat, MCs, and national, regional, and international consultants combined. As noted in the *Evidence of Change* section, in addition to closing key knowledge gaps, the findings and recommendations of the Council Study have influenced both regional and national strategies and plans, including the 2018 SOBR, the BDS 2021–2030 and the MRC SP 2021–2025. In conclusion, the Council Study has proven to be a cost-effective project for the MRC.

Being smaller and more focused to address specific knowledge gaps, the two other studies had the potential to offer high VfM for the MRC. This proved to be the case for the Drought Study because it was completed and subsequently informed the preparation of the DMS. However, the groundwater component of the Irrigation Study was not completed due to the COVID-19 pandemic, and to date, the study has only shown evidence in raising awareness and promoting common understanding among the MCs.

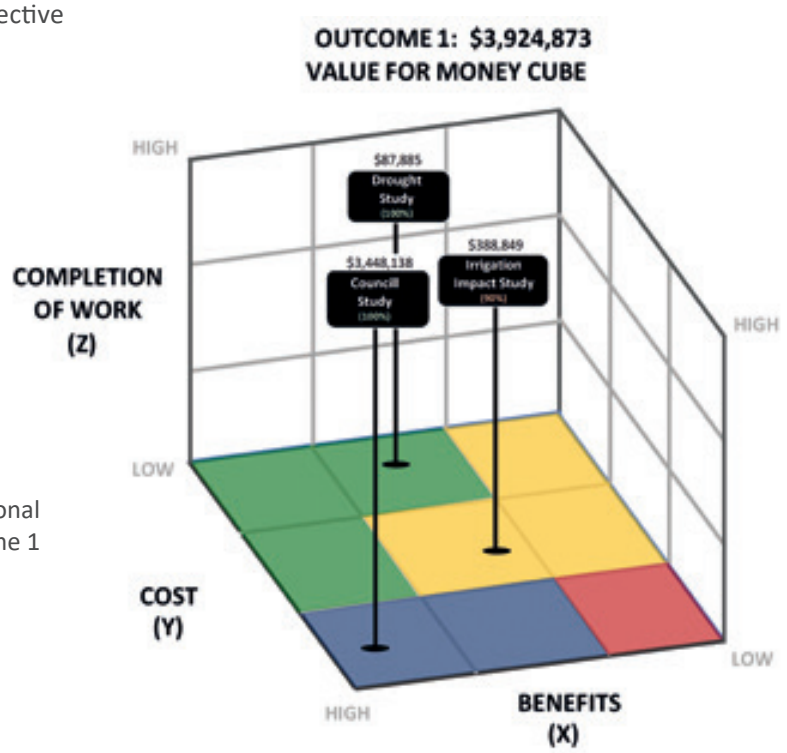


Figure 11. Value for Money Multidimensional Analysis for Outcome 1

OUTCOME 1

LESSONS LEARNED

It is clear that the knowledge that the MRC produced during the past five years has been used at the regional level and helped inform planning and monitoring at the national level. Nevertheless, difficulties remain. The lack of a systematic, deliberate, and effective uptake at the national level remains a challenge and is preventing the full realization of the potential benefits of using this new body of knowledge to improve planning and implementation.

At the national level, the use of the findings and adoption of the recommendations of the 2018 SOBR and the various studies still remain largely at the initiative of sponsoring individuals or units, rather than part of an agency-wide effort. There were also difficulties in disseminating the recommendations to key line agencies and decision makers due to questions and concerns about the data adequacy, the issue of methodology, and the perceived bias of some of the recommendations. This challenge was also noted by the 2018 MTR: while more than a third of the over 150 SP output indicators relate to national uptake, thus denoting its importance in achieving the SP outcomes, their analysis has shown that the least progress has been made to those relating to uptake of MRC outputs.

To address this in the future, the MRC has produced a guidance to improve national uptake of the various MRC products and services. The new BDS for the period 2021–2030 has also emphasized the need to rethink the formulation and implementation of the NIPs because they did not fully achieve the overall objective to support BDS implementation at the national level and bring regional and national planning closer together with a stronger focus on increasing regional benefits and reducing regional costs.

In order to facilitate the national uptake of the planned outputs in 2021–2030, the new MRC SP also emphasizes that activity/task planning should include impact pathways that specify enabling actions such as involving the responsible line agencies at the start; allocating resources to support capacity building; awareness raising on issues and options for senior government officials and having their sign-offs before proceeding further; the 'translation' of recommendations, guidance and options into national systems; and supporting the use of the regional products and services in national and regional decision-making. From the operational viewpoint, the new MRC SP 2021–2025 requires multi-year work plans to maximize engagement of line/implementing agencies, and the MRC expert groups to ensure national uptake of regional products.

Finally, a comprehensive undertaking such as the Council Study and the preparation of the SOBRs will always involve a significant level of effort, and will require coordination and collaboration among the MRC Secretariat, NMCs, MCs, Development Partners and other stakeholder organizations over several years. The Council Study was beset early because it involved unwieldy implementation arrangements between the various MRC Programmes that historically did not always communicate and work well together. Moreover, the MCs were not fully in agreement with the objectives, scope, and approach of the Council Study at the beginning. Transitioning the Council Study into a **single and leaner team** in part as the result of the MRC restructuring was critical to completing the Council Study more cost-effectively.

It is also important that large multisectoral undertaking be planned more carefully with supporting and complementing studies on its critical path identified and completed in time. For example, delays in completing the Initial Studies, which had been initiated even prior to the 2016–2020 strategic period, prevented its findings to be incorporated in the 2018 SOBR. The Initial Studies was completed in 2020, and when endorsed by the MRC Joint Committee, the results have to be made available to project planners and decision makers vis-à-vis the 2018 SOBR.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The studies under Outcome 1 present a comprehensive and near-complete account of the environmental and socio-economic conditions and trends in the Mekong Basin within the context of a changing climate and development pressures. These studies support the achievement of the following SDGs:

SDG 6: Water and Sanitation, specifically Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe re-use globally; and Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

SDG 12: Responsible Consumption and Production, specifically Target 12.2: By 2030, achieve the sustainable management and efficient use of natural resources.

SDG 13: 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.

SDG 15: 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.

OUTCOME 1

PATHWAY TO CHANGE

Increased Common Understanding and Application of Evidence-Based Knowledge by Policy Makers and Project Planners

CONTRIBUTING TO GLOBAL INITIATIVE

AND EVENTUALLY...

Better informed policymakers on the state of the basin to act to achieve integrated water resource management at the local, national and regional levels

AND THEN POTENTIALLY...

- Findings and recommendations are shared, discussed and referenced by key agencies and stakeholders, and used in national planning processes
- Opportunities for benefit-sharing and effective management of trade-offs are implemented

AS A RESULT OF WHAT WE DID...

- Greater awareness of current conditions and trends within the basin amongst stakeholders based on facts and figures
- Senior officials increased understanding of opportunities and trade-offs of water resources development
- Improved basin management and strategies and plans reflecting critical issues including BDS 2021–2030 and SP 2021–2025

WHO WE REACHED...

- 50+ Line Agencies in 4 MCs
- Development Partners
- Relevant stakeholders including key policy makers, and international, regional, and national experts

WHAT WE DID...

- 2018 SOBR interacting with newly acquired knowledge with the existing one
- Council Study
- CC assessments in conjuction with Council Study
- Thematic-specific studies
- Uptake information for better planning via BDS and SP

IN THE BEGINNING...

Insuficient/outdated knowledge of the current condition of the Lower Mekong River Basin, the impacts of development, and issues affecting MRC's achievement of its central aims

OUTCOME 2: ENVIRONMENT MANAGEMENT AND SUSTAINABLE WATER RESOURCES DEVELOPMENT OPTIMIZED FOR BASIN-WIDE BENEFITS BY NATIONAL SECTOR

INDICATORS

- *Number of transboundary national and provincial policies and plans integrating MRC basin-wide analysis and strategies*
- *Evidence that national plans benefit from basin-wide strategies and action plans*

A sustainable Mekong River Basin is predicated on national development plans that are optimized to increase basin-wide benefits and include measures for the avoidance, minimization, and mitigation of negative transboundary impacts. To achieve this outcome, the MRC completed the development of basin-wide sector strategies and action plans that would be integrated by MCs into their national frameworks to yield these regional benefits. These strategies and action plans include the MASAP, the BFMS, the SBEM, the DMS, and the Master Plan for Waterborne Transportation (Navigation Master Plan). After presenting the SHDS to the MRC Council and Joint Committee in 2020, the MRC continued to work on finalizing it in preparation for its scheduled endorsement by the MRC Joint Committee and approval by the MRC Council in 2021. Four NIPs, one for each country, for 2016–2020, and the GAP 2017–2020 were also prepared and approved. Five transboundary projects under the M-IWRM project were also implemented successfully.

Together, these strategies and plans provided critical input in producing the BDS 2021–2030 and MRC SP 2021–2025, which took into account the basin-wide, sector-specific strategic directions as well as activities, and redefined them into integrated basin-wide common directions and action points. At the national level, notable early adoptions of these strategies include the use of: MASAP by some MCs to bolster their technical and financial capacity for climate change adaptation, and help with their nationally determined contributions (NDCs); the Navigation Master Plan to implement selected priority navigation projects related to improving inland waterway navigation rules and policies; and the National Indicative Plans for the Cambodian-Thai joint project in the 9C-9T sub-basin to tackle common transboundary challenges related to flood and drought management, and the Cambodian–Lao joint project on water resources management and monitoring in the Khone Falls area.

INTRODUCTION

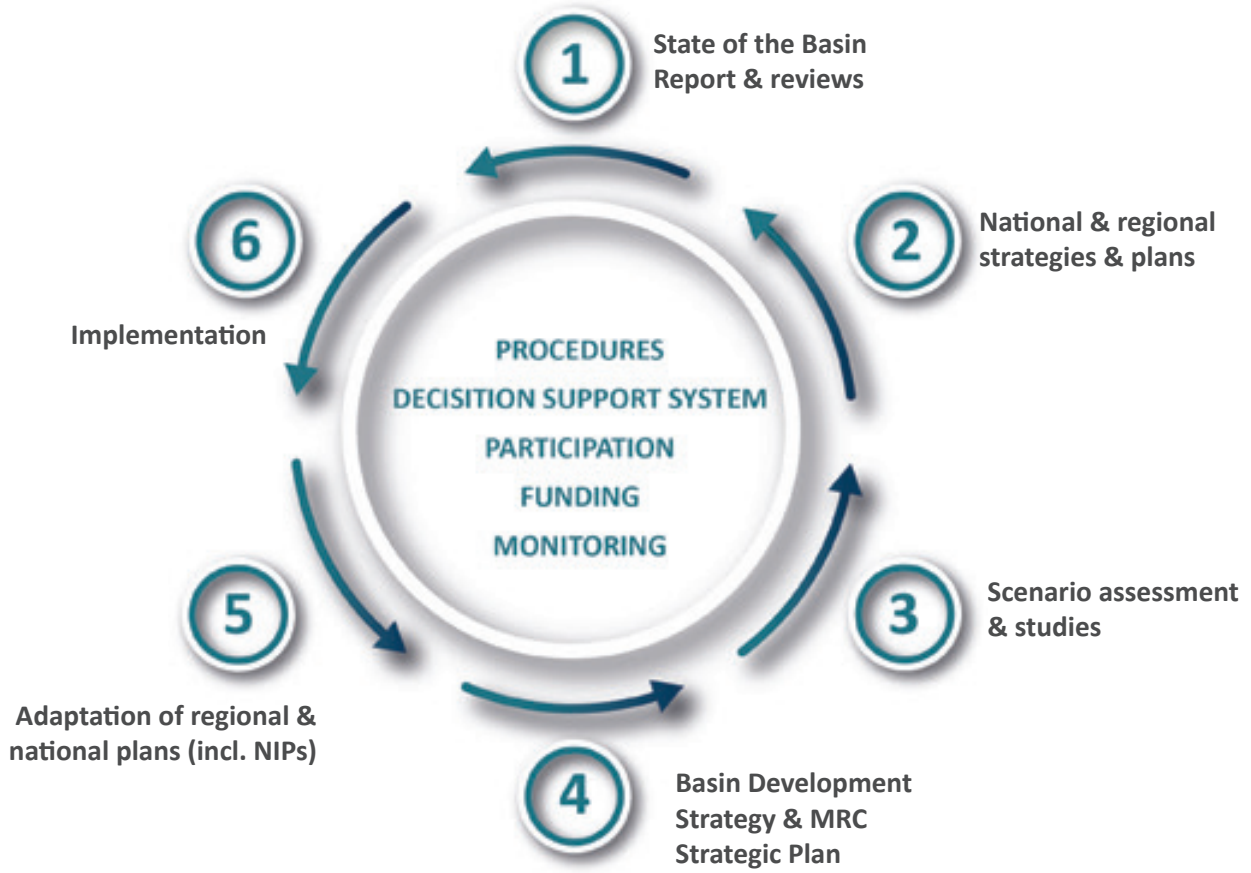
The MRC has a central basin-wide planning role in promoting optimal and sustainable development in line with the aims of the 1995 Mekong Agreement. The MRC's role and strategic approach are detailed in the cross-sectoral BDS and in several supporting sector-specific regional strategies.

As illustrated in Figure 12, these basin-wide strategies are important elements of the Mekong Basin strategic planning cycle. These regional strategies in conjunction with the studies and scenario assessments conducted during the development of the strategies are indispensable in providing the MRC a coherent basis for promoting basin-wide benefits through the national development efforts by the MCs. These regional strategies, for example, underscore how national-level planning can be improved through increased cooperation among MCs leveraging additional gains over and above the MCs could achieve individually. They also demonstrate how basin-wide and joint projects between riparian countries increase cooperation and promote benefit sharing.

To achieve Outcome 2, the MRC was tasked to update regional strategies or develop new ones for various sectors. These sectors include protecting environmental assets, promoting sustainable hydropower, fishery management, flood and drought management, climate change adaptation, and navigation. These regional strategies and their corresponding action plans also provide sectoral perspectives for updating the next BDS 2021–2030 and thus ensure an integrated effort for the MRC's planning work in the Basin. Since gender mainstreaming is one of the cross-cutting principles underlying the MRC SP 2016–2020 (and beyond), the MRC also developed a GAP for the first time.

Heading into 2016, the MRC lacked sectoral strategies except for the Flood Management and Mitigation Strategy and the Sustainable Hydropower Strategy, which were both developed in 2001. Most of the preparatory work for the Navigation Master Plan was completed by the end of 2015.

Figure 12. Mekong River Basin strategic planning cycle



OUTCOME 2

COMPLETION STATUS OF OUTPUTS

The MRC was successful in delivering the basin-wide sector strategies and their associated action plans as proposed under Outcome 2, with an overall completion rate of 98% (see Figure 13). Under this outcome, seven outputs were completed and two outputs were partially completed, with a completion rate ranging from 90 to 97%.

Together, these strategies provided critical input in producing a BDS and an MRC SP for the next strategic planning cycle that comprehensively respond to the urgent and long-term needs of the basin and its people amid its changing conditions caused by increase in population, economic growth, and climate change.

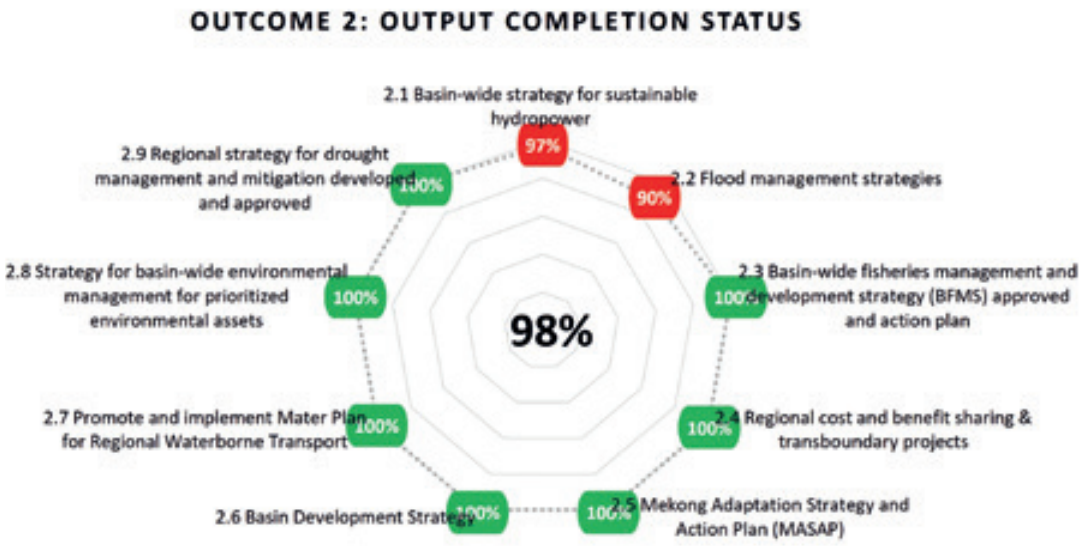


Figure 13. Output completion status under Outcome 2

SUSTAINABLE HYDROPOWER DEVELOPMENT STRATEGY

The 2001 MRC Hydropower Strategy was updated to the final draft SHDS. The current version, which was presented to the MRC Council and Joint Committee in 2020, has undergone several revisions and review iterations since its first draft in January 2019, and is targeted for MRC Council approval in 2021. Informed by MRC studies as well as a specific SHDS, the strategy presents the strategic priorities and actions at the basin level by the LMB countries to address hydropower opportunities and risks, and strengthen basin-wide cooperation for the sustainable development of the Mekong River Basin, in line with the 1995 Mekong Agreement (see Figure 14).

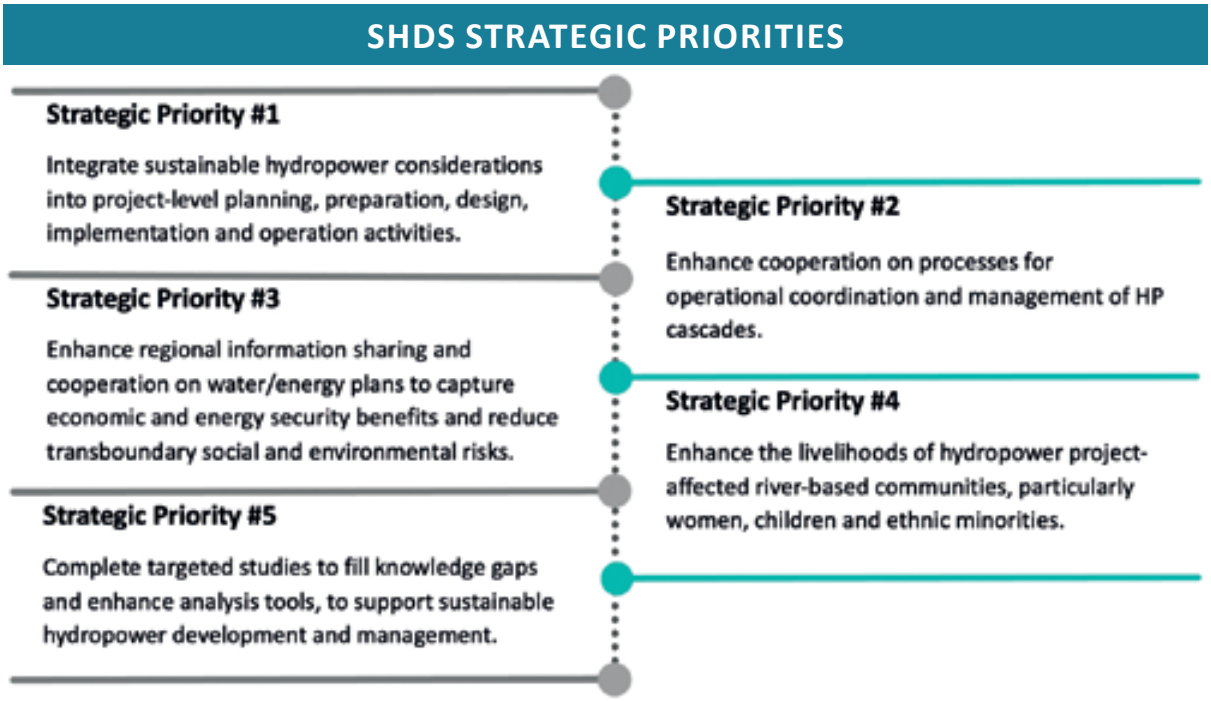


Figure 14. Strategic priorities of the Sustainable Hydropower Development Strategy

THE FLOOD MANAGEMENT AND MITIGATION STRATEGY

The current MRC flood strategy is detailed in the 2001 MRC Flood Management and Mitigation Strategy. The planned revision of this strategy was not completed because it was highly dependent on the completion of the Initial Studies. By 2020, under the Initial Studies, the draft final report on the flood behaviour in the Cambodia and Viet Nam Transboundary Floodplain was completed in November 2020. The three focal area-specific studies completed under the Initial Studies are intended to demonstrate the formulation of strategic directions to manage existing, future, and residual flood risks in the LMB. It should be noted that the BDS 2021–2030 and MRC SP 2021–2025 call for the integration of the flood strategy with the drought strategy following a proactive planning approach.

THE FISHERIES MANAGEMENT AND DEVELOPMENT STRATEGY

The BFMS began preparation in March 2013, was endorsed by the MRC Joint Committee in August 2017 and was approved by the MRC Council in November 2017. It is a regional strategy for the responsible and sustainable use of living aquatic resources with a focus on inland capture fisheries. Its Project -based Action Plan, approved in December 2019 by the Council after the endorsement by the MRC Joint Committee in October 2020, is designed to facilitate and synergize projects of regional pertinence for the management and development of inland capture fisheries in the LMB. It prioritizes sustainable use and conservation of fish resources as first and utmost priority, focusing on stakeholder participation, gender equity, and property rights in fisheries management and development (see Figure 15).

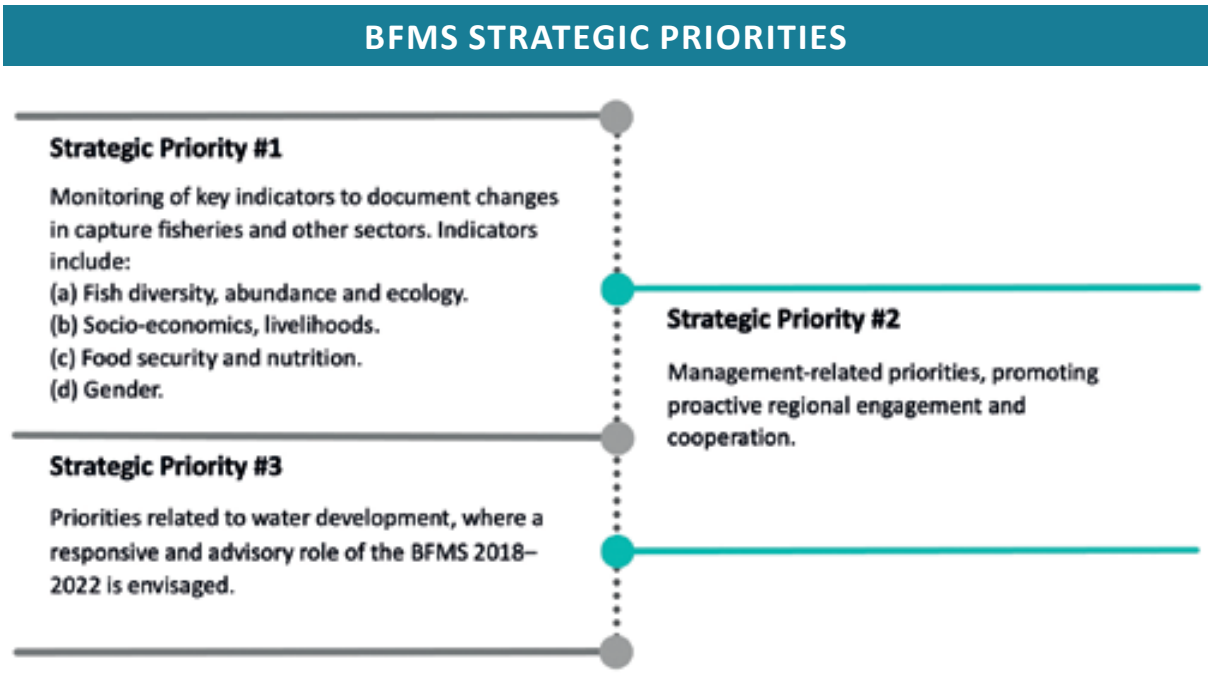


Figure 15. Strategic priorities of the Mekong Basin-wide Fisheries Management and Development Strategy

JOINT TRANSBOUNDARY PROJECTS

In 2013, the MRC embarked on five transboundary projects to tackle cross-border water issues between neighbouring MCs under the M-IWRM Project. Completed in 2019, this project aimed to promote bilateral cooperation as another tool (in addition to regional and multilateral) for more targeted cooperation in IWRM practices and address more localized transboundary water issues between two neighbouring MCs. The publication, "A Journey Towards Integrated Water Resources Management in the Lower Mekong Basin" provides a summary of the implementation of each of the five projects, showcasing how IWRM is implemented in practice through bilateral dialogues and cooperation.

Through these projects, three Joint Transboundary Management/Action Plans were developed and endorsed by MCs for implementation. These include a transboundary fisheries management plan for the Mekong-Sekong River Basins between Cambodia and Lao PDR, and transboundary joint action plans for the IWRM for Sesan and Srepok River Basins, and for the Mekong Delta between Cambodia and Viet Nam. The plans include measures, priorities and actions required to implement cooperation mechanisms with identified lead responsibility.

Other reports produced to document the findings, best practices, and lessons learned, and help institutionalize IWRM principles in transboundary bilateral cooperation include:

- Transboundary Fisheries Management in the Mekong and Sekong River of Cambodia and Lao PDR (2017)
- Transboundary Water Resources Management Issues in the Sesan and Srepok River Basins of Cambodia and Viet Nam (2017)
- Transboundary Water Resources Management Issues in the Mekong Delta of Cambodia and Viet Nam (2017)
- Joint paper on wetland management and joint report on knowledge exchange on community water management for Xe Bang Hieng and Nam Kam River Basins between Lao PDR and Thailand
- Joint learning report to capture process in the establishment of a joint network between Tonle Sap and Songkhla Lake project between Cambodia and Thailand.

In 2018, under the Cambodian and Thai NIPs, the Joint Project on Flood and Drought Management in the Cambodia-Thai Border Area was initiated. The area of interest is specifically the Tonle Sap 9C-9T sub-basin, 27% of which is located in Thailand, and the remaining 73% in Cambodia. During Phase 1 (2018–2019), an assessment of flood and drought risks in the sub-basin was conducted, and elements of a mitigation master plan developed to address the risk. The mitigation master plan identified five priority areas, 18 potential mitigation project concepts, and a number of options for Cambodia – Thailand governance mechanisms for the project. In June 2020, the Inception Report for Phase 2 was completed to fully develop a mitigation master plan and a proposal for implementation.

In 2018, under the Cambodia and Lao NIPs, the Joint Project on cross-border water resources development and management in the Khone Falls region between Cambodia and Lao PDR was initiated. The objective was to develop a long-term vision that reflects the aspirations and development objectives of the Khone Falls region shared by Cambodia and Lao PDR for Stung Treng and Champasak provinces, respectively, and joint actions that will generate mutual benefits in both provinces. From May 2018 to April 2019, through a participatory process, the two countries developed and agreed on a coordinated vision for 2040 and nine joint actions for Stung Treng and Champasak provinces for mainstreaming into the provincial investment and development plans. The joint actions are related to tourism, fisheries, trades, land use planning, information sharing, employment, agriculture, gender, and flood management.

CLIMATE CHANGE ADAPTATION STRATEGY

The MASAP began preparation in 2011 and was endorsed by the Joint Committee and approved by the Council in November 2017. The strategy sets out LMB countries' strategic priorities and actions at the basin level to address climate change risks and strengthen basin-wide resilience (see Figure 16). Since 2018, the MRC has been implementing MASAP as per its action plan, which consists in incorporating MASAP climate change strategic priorities in the BDS and other sectoral strategies such as drought, environment and fisheries. It also consists in mainstreaming climate change adaptation planning at the national level.

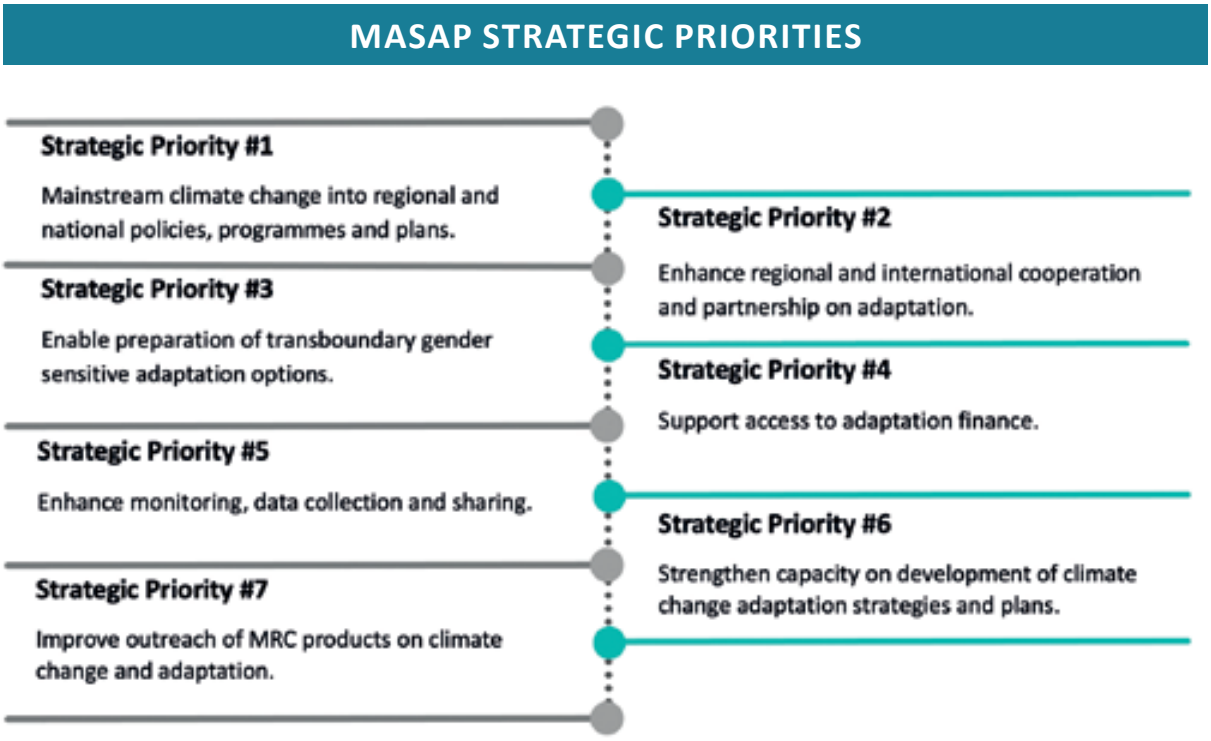


Figure 16. Strategic priorities of the Mekong Climate Change Adaptation Strategy and Action Plan

OUTCOME 2

ENVIRONMENT STRATEGY

The SBEM, whose preparation started in July 2017, was endorsed by the MRC Joint Committee and approved by the MRC Council in October 2020. As this is the first strategy of its kind that covers the entire LMB, it aims to protect and conserve an initial list of 12 environmental assets due to their importance regionally in supporting basin-wide processes or due to their transboundary nature. Its Project-Based Action Plan was finalized by the Expert Group on Environmental Management in December 2020.

Other key accomplishments include the completion of two technical guidance documents for the Environment Strategy: (i) Technical Guidance for protection and restoration of key fish habitats with regional importance in the LMB; and (ii) Technical Guidance for transboundary fisheries management in the LMB (see Figure 17).

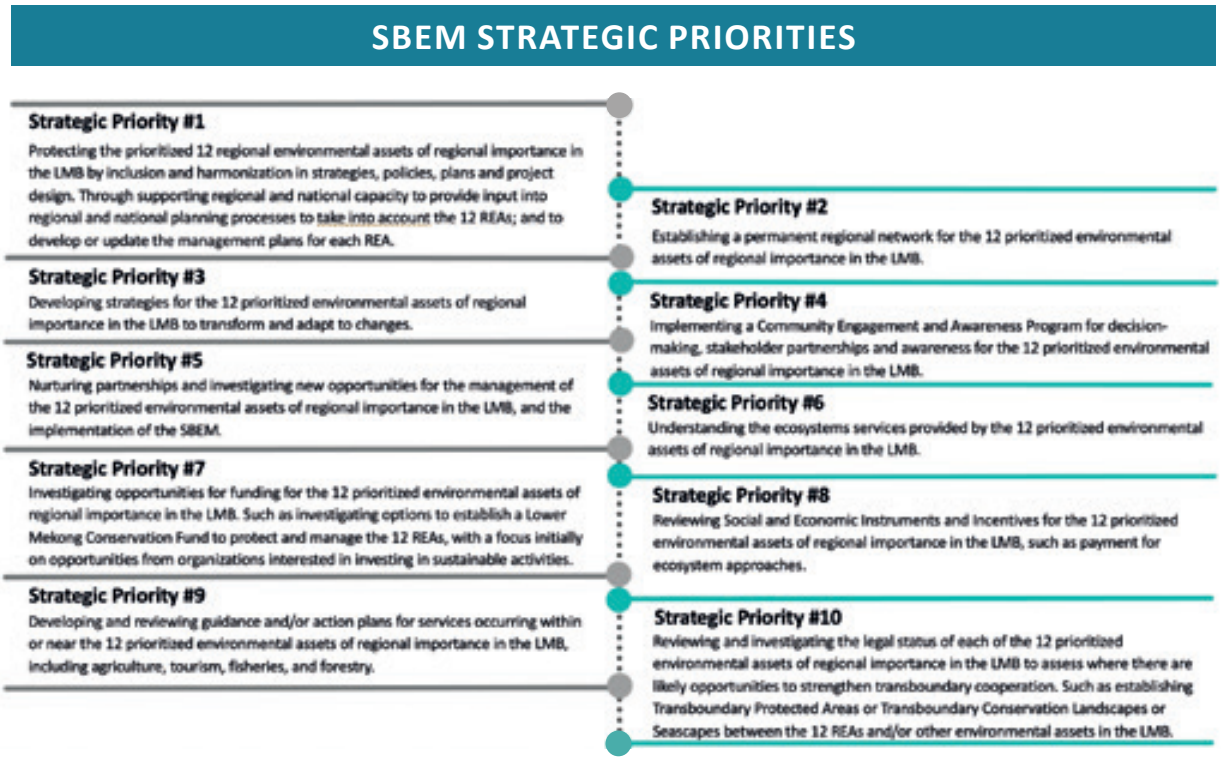


Figure 17. Strategic priorities of the Strategy for Basin-wide Environmental Management

NAVIGATION MASTER PLAN

In July 2016, MRC completed the final draft of the Master Plan for Regional Waterborne Transport in the Mekong River Basin (Navigation Master Plan). A Summary Document of the Master Plan that includes a list of over 100 short- and long-term navigation projects was prepared in October 2017. The Document also included proposals for five priority projects that require immediate implementation. The Navigation Master Plan was finally endorsed by the MRC Joint Committee and approved by the MRC Council in November 2020. It is the MRC's regional plan to develop waterborne transportation sector in the Basin to achieve the goal of increasing waterborne transport at least 125% of the actual waterborne transport volume in 2020 and to a least 250% of the actual waterborne transport volume in 2040. It also aims to make navigation safer and more sustainable for the people and for the environment.

REGIONAL DROUGHT MANAGEMENT STRATEGY

Endorsed by the Joint Committee and approved by the Council in November 2019, the regional Drought Management Strategy (DMS), which began development in 2017, aims to bring improvements in five priority areas. As illustrated in Figure 18, these strategic priorities include: (i) water use, hydrometerology, groundwater, soil moisture, and salinity monitoring; (ii) drought monitoring, forecasting, and early warning; (iii) MRC capacity on drought assessment and planning; (iv) impact mitigation and regional collaboration; and (v) information and data sharing.

The strategy was based on several studies and investigations, including a regional study on drought risk assessment for the LMB in 2013, national studies and fact-finding missions between 2013 and 2017, and a regional study on land and water resources in 2017 to 2018.

Figure 18. Strategic priorities of the Regional Drought Management Strategy

THE GENDER ACTION PLAN

In 2017, the MRC completed its first GAP to implement its gender policy in the context of the new SP. The MRC GAP consists of practical tasks to address gender equality at both institutional and activity levels, including technical capacity, leadership commitment, accountability, and organizational culture. GAP activities aim to ensure that technical skills for gender mainstreaming are strengthened, a positive organizational culture is promoted, and a mechanism for individual, programmatic and organizational accountability is in place.

THE BASIN DEVELOPMENT STRATEGY (BDS) 2021–2030 AND THE MRC SP 2021–2025

In November 2020, the MRC Council approved the next BDS 2021–2030 and the MRC SP 2021–2025 following an intensive process of preparation and consultations that began in May 2019. This involved several rounds of internal MRC Secretariat working sessions, four rounds of national meetings, three rounds of regional Expert Group meetings, specific consultations with Development Partners, ASEAN, and civil society organizations (CSOs), and two RSFs with all relevant stakeholders.

These strategic documents, which for the first time integrate the BDS and MRC SP into one coherent strategic framework and result chain, recognize the MRC's shift in focus from primarily on cooperation for knowledge acquisition and sharing, towards more proactive planning, integrated river and environment monitoring and forecasting, coordinated operation of water infrastructures, and a high level of cooperation among the MCs and between them, and the Upper Mekong countries and relevant regional cooperation frameworks in order to ensure a more integrated Mekong-Lancang management arrangement for the entire Mekong River Basin (see Figure 19).

OUTCOME 2

Regional experts gather at the MRC Expert Group on Basin Planning Meeting, in Phnom Penh, Cambodia (6 and 7 June 2019).

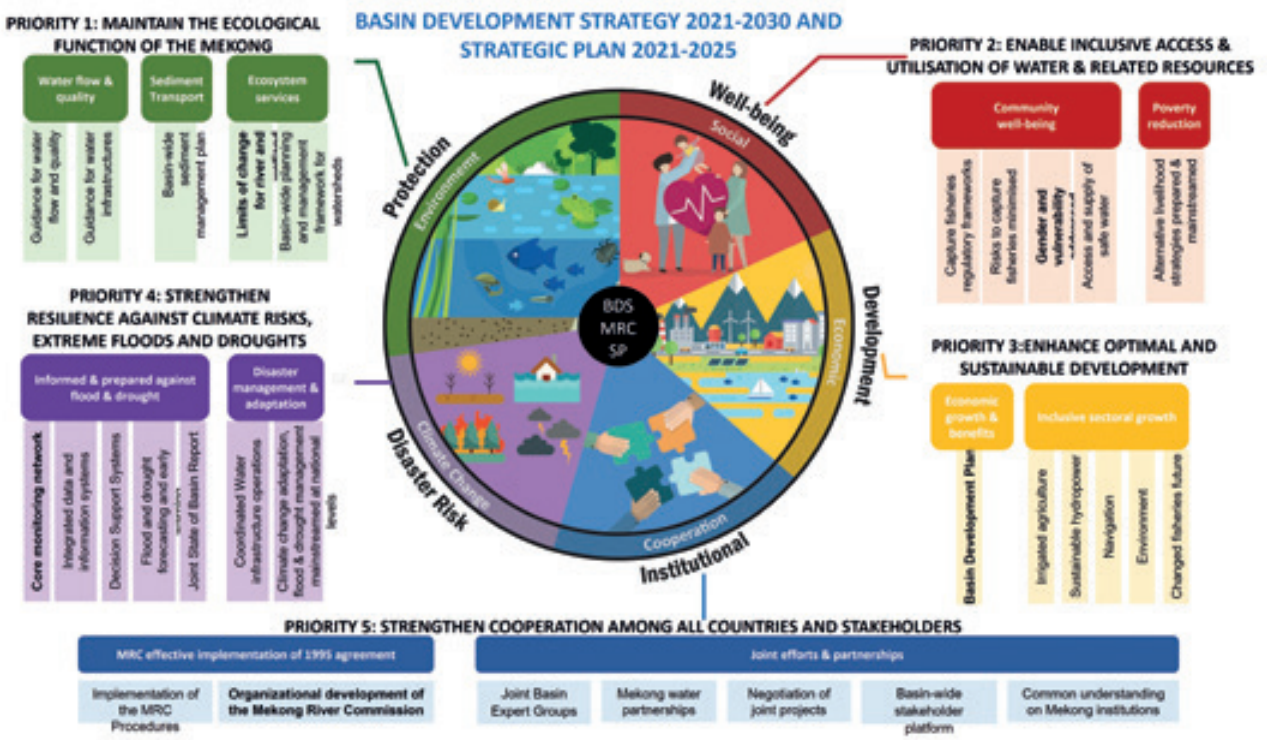


Figure 19. Priorities of the new BDS 2021–2030 and the MRC SP 2021–2025.

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced, as shown in Figure 20, Outcome 2 is rated 'partially achieved'. Outcome 2 contains many of the MRC's flagship activities and represents a substantial MRC level of effort and budget allocation. Therefore, even though the overall output completion is rated very high (i.e. 99%), not completing the SHDS and the Flood Management Strategy constitutes a gap that prevents the full achievement of the desired outcomes under Outcome 2.

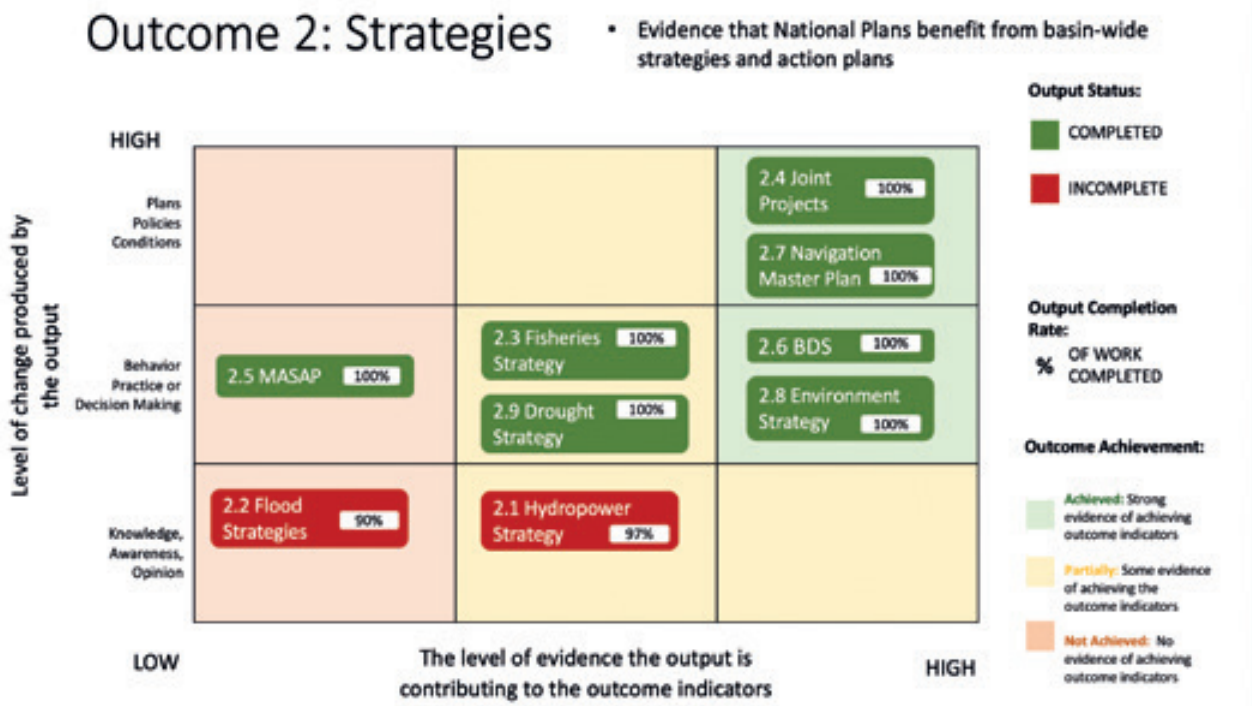


Figure 20. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the type of change that occurred – Outcome 2

INCREASE IN KNOWLEDGE AND UNDERSTANDING

The development of the BDS 2021–2030, SP 2021–2025, and basin-wide sectoral strategies has significantly increased the institutional capacity of the MRC and the MCs in holistic and multisectoral strategy development and regional basin planning to address not only long-term needs, but also pressing and urgent issues.

These strategic, collaborative efforts have led to a common acceptance and understanding, and an increase in confidence that the regional strategies will complement the national strategies. This was evident, for example, during the development of the Environment Strategy. Its implementation is expected to complement national efforts in protecting environmental assets and alleviate many of the common challenges and limitations at the national level, such as those imposed by lack of data, capacity, and funding. The BFMS resulted in seven regional project proposals for implementation under its Project-based Action Plan (PBAP) 2021–2025. These regional projects directly complement MCs' national fisheries strategies and action plans. Both the SBEM and the BDS served as a catalyst for the acceptance by the MCs that there is a need for a Mekong Fund, which started as a general concept and is now under more serious consideration as a potential mechanism to bring in resources to address not only environment issues, but also livelihoods and adaptation to climate change.

The development of the regional strategies has also heightened the level of cooperation among the MCs. During the development of the DMS, for example, the MCs, recognizing the urgent need to coordinate their drought mitigation actions, worked together to produce a highly informative and valuable inventory of ongoing and planned mitigation actions by responsible agency for each MC. The Joint Projects demonstrated that more localized transboundary issues between two MCs can be more effectively addressed through bilateral cooperation. For instance, the bilateral cooperation between Cambodia and Viet Nam has led to joint transboundary action plans in the Sesan and Srepok River Basins and the Mekong Delta to address emerging water resources development issues. These plans set out the goals, objectives, and activities with identified leads, a tentative completion date, and an estimated budget for implementation.

OUTCOME 2

The MRC GAP and the numerous consultations held during its preparation have raised gender-related issues at the activity and institution levels, and the importance of mainstreaming gender within the context of promoting sustainable water resources development and management. It was evident that the implementation of the GAP led to MRC activities under all outcomes that incorporate gender equity and equality considerations, both in technical activities (i.e. the preparation of the SOBR, the SHDS, the SIMVA, the BFMS, and the Environmental Strategy) and in organizational strengthening (i.e. Human Resources hiring practices that ensure that the MRC Secretariat is relatively balanced in terms of male and female staff, job descriptions, trainings, meeting participation and relevant manuals).

To promote accountability for gender mainstreaming, the MRC incorporated in the MRB-IF gender indicators such as gender equality in ownership of land, gender equality in education, and female-male ratio of people employed in LMB water-related sectors so that they can be monitored, assessed, and reported periodically in the SOBR. As a result of the MRC's efforts in collecting and monitoring by gender the participation in MRC events, the level of female participation has subsequently increased. The number of women participating in the MRC events as facilitators, moderators, and presenters has also increased.

USE IN REGIONAL AND NATIONAL PLANNING AND DECISION-MAKING

The completion of the regional strategies and their approval by the MRC Council paved the way for the MRC to move towards implementing a basin-wide approach across all water and related development and environment sectors of the Mekong.

"The Basin Development Strategy and the MRC Strategic Plan are comprehensive action plans to address issues facing the Mekong. If implemented, this will be a turning point for the Basin." – ***Representative of Save the Mekong Coalition, April 2021***

"Development Partners congratulate the **MRC** on the adoption of the Basin Development Strategy for 2021–2030, the Strategic Plan for 2021–2025, and the Multi-Year Work Plan for 2021–2022. They are all comprehensive documents of high quality." – ***Joint Statement of Development Partners, November 2020***

In addition to the agreement to conduct proactive planning, which seeks to assess and recommend new basin-wide and joint investment projects to serve multiple purposes, the new BDS 2021–2030 and the MRC SP 2021–2025 also expanded their scopes to include regional coordination of operation management of dams and other water infrastructure that may have transboundary effects, including for river flow management, sediment management, ecosystem services, management of emergencies, and coordination of the design and management of hydropower cascades. This is also in line with the SHDS's proposed output related to the sharing of information and coordination of cascade dams,

which MCs agreed to incorporate in the new BDS 2021–2030 and MRC SP 2021–2025.

The experience gained and lessons learned during the strategic planning cycle 2016–2020 have led the MRC to be more systematic and more precise in linking outputs to outcomes with the use of indicators. This increasing sophistication and focus on results, which started in the BDS 2016–2020, became more evident in the strategic planning cycle for 2021–2025 for which the MRC designed the results chain of the BDS and the SP to be fully integrated and the impact pathway from output to outcome fully described. This alignment and integration between BDS and MRC SP allow the MRC to plan and implement activities that will clearly result in contributing to the BDS outcomes and strategic priorities.

It is expected that the MCs will incorporate aspects of the regional strategies with their respective national strategies and plans, and take the initiative of implementing the associated activities at the national level. For instance, in relation to the BFMS, one of the seven regional project proposals in its PBAP is to conserve, protect, and enhance key fish habitats in the LMB. As this clearly complements national interests, it is conceivable that MCs would be amenable to co-funding directly or in-kind relevant activities of the proposed project, such as the identification, mapping, and delineation of key fish habitats within their respective national boundaries.

With respect to MASAP, a number of nationally led projects have been conducted in line with the identified outputs of the Strategy. These projects include the following:

- Lao PDR successfully secured funding from the GEF to develop a national climate change adaptation plan. The country also used MASAP in preparing its National Adaptation Plan.

- Viet Nam referred to MASAP to help it successfully secure climate change adaptation funding from United Nations Framework Convention on Climate Change (UNFCCC) Adaptation Fund through UNEP to implement ecosystem-based approach adaptation projects. This led to the implementation of the regional project, “Enhancing Climate Resilience in the Greater Mekong Sub-region through Ecosystem-based Adaptation in the Context of South-South Cooperation”.

- Cambodia developed climate change information systems based on information on MASAP climate change scenarios.

- Cambodia and Thailand have adopted the use of SIMCLIM in their projects following knowledge learned and capacity built from the MASAP formulation. SIMCLIM is a software tool designed to facilitate the assessment of risks from climate change.

- All MCs used MASAP strategic priorities to help them with their national adaptation priorities and/or prepare their Nationally Determined Contribution (NDC) on adaptation.

In addition, the MCs have used the Navigation Master Plan to help them with their respective investment planning to improve river navigation. Cambodia, Lao PDR, and Viet Nam have implemented a number of the projects identified in the Master Plan. For example, Lao PDR is implementing two projects: “Implementation of the international maritime dangerous goods (IMDG) code and provision of the material safety data sheet (MSDS) for inland waterway vessels”; and “Emergency and oil spill response in ports and terminals”. Cambodia is preparing the Inland Waterway Law as the highest national legislation framework for waterborne transport management, taking inspiration from projects related to the implementation of the Cambodian-Vietnamese Agreement on Waterway Transportation. Both Cambodia and Viet Nam are conducting the “Study on inclusive policy and regulatory recommendations on measures to enhance legal protection of passengers”.

In contrast, in Lao PDR and Thailand, through the Joint National Initiative Project (JNIP), which started in 2017, is implementing two Master Plan actions: “Adopt, implement and enforce harmonized safety and anti-pollution rules for Lao PDR and Thailand”; and “Adopt plans and procedures for port safety and emergency response”. Lao PDR and Thailand have agreed to initiate these priority actions through a joint project under the MRC’s basin planning process. Since no national rules are currently available in either country, Lao PDR and Thailand have prepared a common set of rules

and regulations on waterway traffic safety, ship safety, passenger protection, crew competency and certification, search and rescue, and emergency response on board vessels.

Moreover, the five M-IWRMP projects have demonstrated to the MCs that more localized transboundary issues between two countries can be more effectively tackled through bilateral cooperation – i.e. sharing experiences, gaining common understanding of the issues, and exchanging best practices and lessons learned towards finding durable solutions that are mutually acceptable and beneficial. More importantly, they have led to joint transboundary management/action plans to address specific transboundary issues through tangible bilateral project activities and investments. The joint projects between Cambodia and Thailand in 9C-9T sub-basin on flood and drought management, and between Cambodia and Lao PDR on water resources management in the Khone Falls region are two of the most recent examples of how effective bilateral cooperation can be in tackling common transboundary challenges.

The Environment Strategy has influenced Lao PDR's decision to update the management plans of the two prioritized environmental assets, the Beung Kiat Ngong Ramsar Wetland, and the Xe Champhone Ramsar Wetland. Cambodia, under its national strategy and action plan, is already managing two of the prioritized EAs, Tonle Sap Multiple Use Area and Virachey National Park. In addition, in Cambodia and Viet Nam, the Environment Strategy has initiated the co-management and co-financial mechanisms of Yok Don National Park, a prioritized environmental asset that occupies both countries.

With respect to the GAP, the MCs conducted national training on gender mainstreaming, prepared NMCs GAPs, and monitored participation by gender at national meetings.

While basin countries have made significant progress in social development and gender equality during the last decade, there remain substantial gaps and inequities. Addressing these gaps and inequities is a challenge since gender-disaggregated data are scarce and available data are often not linked effectively and in a timely manner with decision-making and budget allocations. The next MRC SP aims to address this by conducting a basin-wide review of gender and vulnerability aspects related to basin water, food security, and energy security, and by collecting and mapping gender-disaggregated data. Specifically, the next MRC SP will produce reports on: (i) gender and vulnerability related to water resources development; (ii data collected on people in vulnerable situations (including women) impacted by water resources development; and (iii) improving equity for vulnerable groups, including recommended measures for regional and national plans.

In sum, the development of the basin strategies and the action plans has provided the MCs with numerous opportunities to collaborate more effectively at the regional level through learning by doing, and to recognize challenges and gaps at the national levels. MCs are increasingly realizing that strong commitments, active participation, and value recognition will result in strategies, plans, and projects that are mutually beneficial. There is also increasing recognition of the need to simplify and improve cumbersome national frameworks to enhance opportunities for greater collaboration at the regional level.

VALUE FOR MONEY

Outcome 2 contains many of the MRC's flagship outputs and relatively represents a substantial MRC level of effort and budget allocation among the seven outcomes (see Figure 21). Four of these outputs – the BDS 2021–2030, the Environment Strategy (i.e. SBEM), the DMS, and the Navigation Master Plan – turned out to be high value for money products since they were completed with lower costs relative to the other outputs and have shown high evidence of contributing to regional decision-making and influencing national project, policies, and regulations. Both the Fisheries Management Strategy (i.e. BFMS) and the Hydropower Strategy (i.e. the SHDS) need additional interventions to achieve their intended outcomes. Although the BFMS was completed, it requires additional funding to implement the proposed projects listed in its PBAP to achieve its intended outcomes. The SHDS has not been approved by the MRC Council yet and to date has mostly shown evidence of raising awareness in sustainable hydropower management. Finally, the Joint Transboundary Projects (such as M-IWRMP), the MASAP, and the Flood Strategy are the three most expensive projects under

Outcome 2, with the M-IWRMP projects representing about 55% of the total cost incurred under Outcome 2, and MASAP and the Flood Strategy with their combined cost representing about 25%.

The five M-IWRMP projects were completed and were cost-effective since they showed good evidence of influencing national plans, resulting in tangible bilateral project a ctivities and investments, including the current joint projects between Cambodia and Thailand in 9C-9T sub-basin on flood and drought management, and between Cambodia and Lao PDR on water resources management in the Khone Falls region. In contrast, both MASAP and the Flood Strategy offered low VfM since the cost incurred outweighed the benefits. The Flood Strategy was not completed, and the MASAP benefits were limited to raising awareness, promoting common understanding, increasing capacity on climate change, and mobilizing some of resources. It should be noted as per 2018 MTR that since the preparation of the MASAP has taken a long time, to some extent, countries' actions on climate change adaptation have overtaken it. Both the Flood and Drought Management Mitigation Strategies will be updated towards the end of the next strategic planning cycle informed by the results of proactive regional planning activities and agreed joint investment and national projects of basin-wide significance. The updated strategies will reflect improved and integrated flood and drought management.

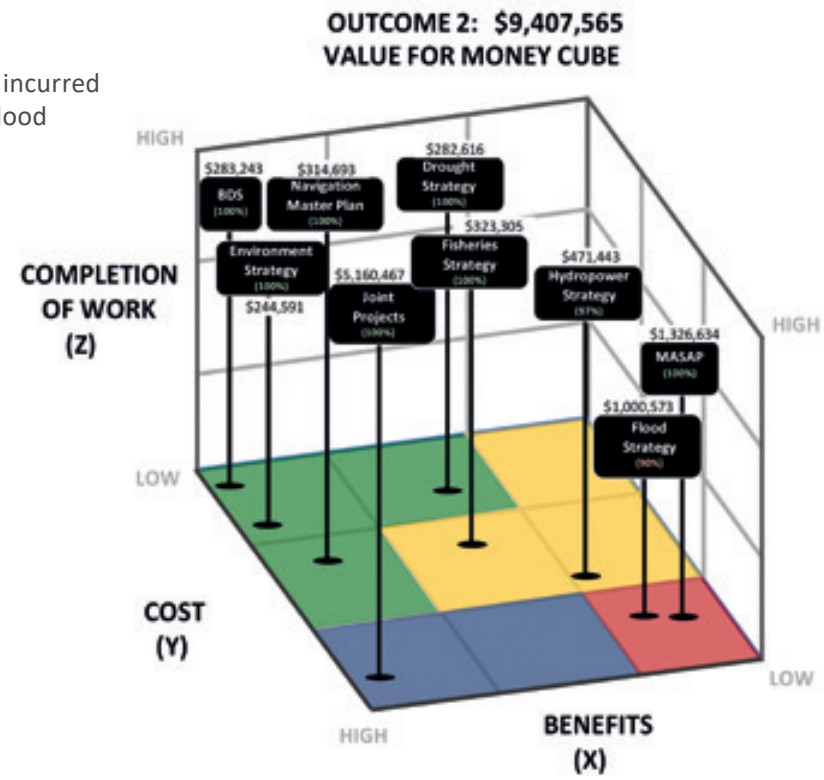


Figure 21. Value for Money Multidimensional Analysis for Outcome 2

LESSONS LEARNED

Basin planning is one of the core functions of the MRC, and the development of the BDS and several sector strategies has indeed brought benefits to the countries of the Mekong in the form of a gained common understanding of the issues, challenges, and opportunities, and capacity building for a basin-wide approach, and in ushering an agreement on actions. With most basin-wide sector strategies completed, the MRC can focus on implementation rather than development in the next SP. The delays in finalizing the SHDS are primarily caused by the challenge of obtaining the consensus of all the MCs, not necessarily because of technical issues, but more likely because of the limited willingness of all the MCs for transboundary cooperation with respect to hydropower development. High-level bilateral meetings and hydro-diplomacy may be needed to address outstanding issues. In contrast, the Flood Strategy was delayed because of the delay in completing the Initial Studies. As noted earlier in Outcome 1, studies on the critical path for completing an important output such as the Flood Strategy should be planned and managed carefully so that they can be completed on schedule.

Nevertheless, as noted earlier, a common challenge during the strategic planning cycle 2016–2020 is the lack of a systematic, deliberate, and effective uptake of these basin-wide strategies at the national level. Outcome 2 concerns influencing national plans through basin-wide strategies so that transboundary benefits are optimized and costs reduced. However, the adoption of these strategies can be more systematic at the national level, and an agency-wide effort is needed to incorporate the strategy in national systems. To address this challenge, impact pathways as described in the BDS 2021–2030 and SP 2021–2025 will be integrated in

OUTCOME 2

MRC's multi-year work planning, NIP preparation, strategy implementation, and the MRC's M&E. This aims to ensure that MRC's final products, facilities, and services respond to both the national and regional needs, and are effectively taken up by the responsible national line and implementing agencies, and their regional cooperation mechanisms.

Finally, while there was evidence for gender-related issues being addressed in 2016–2020, there is an opportunity to further expedite gender mainstreaming in the next strategic planning cycle. Therefore, gender and vulnerability activities were defined in the MRC SP to contribute to most outcomes under each Strategic Priority of the BDS. Concretely, 20 gender-related tasks under four strategic priorities, six outcomes, nine outputs, and 12 activities were included in the Multi-Year Workplan for 2021–2022, with a budget of USD 439,700 for 2021, and USD 143,800 for 2022.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

MRC's BDS 2021–2030, SP 2021–2025, and basin-wide sector strategies developed during the strategic planning cycle 2016–2020 will contribute to the achievement of the following SDGs:

SDG 1: No Poverty, specifically Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

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

SDG 3: Good Health and Wellbeing, specifically Target 3.D: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

SDG 6: Water and Sanitation, specifically Target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity; Target 6.5: by 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate; and Target 6.6: By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

SDG 9: Industry, Innovation, and Infrastructure, specifically Target 9:1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development.

SDG 13: Climate Action, specifically Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; Target 13.2: Integrate climate change measures into national policies, strategies and planning; and Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

SDG 15: Life on Land, specifically Target 15.3: By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

SDG 17: 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 SDGs, including through North-South, South-South and triangular cooperation; Target 17.14: Enhance policy coherence for sustainable development; Target 17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, in particular developing countries; and Target 17.17: Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

PATHWAY TO CHANGE

Environment Management and Sustainable Water Resources Development Optimized for Basin-Wide Benefits by National Sector.

CONTRIBUTING TO GLOBAL INITIATIVE

AND EVENTUALLY...

Environment management and sustainable water resources development are optimized for basin-wide benefits.

AND THEN POTENTIALLY...

- National pollicies, plans, and systems are integrating regional strategies and basin-wide analysis
- National plans and project implementations are benefiting from incorporating regional action plans
- Joint investment projects and national projects that promote basin-wide benefits are identified and adopted by the MCs

AS A RESULT OF WHAT WE DID...

- Sectoral and gender-responsive strategies and action plans that promote regional benefits through the national development efforts
- Increased effectiveness of collaboration among MCs through stronger commitments, active participation, and value recognition
- Increased institutional knowledge, capacity, and responsive-ness of the MRC
- Some adoption and uptake of selected aspects of the basin-wide regional strategies and action plans
- A more proactive and result-driven basin-wide planning approach for the new strategic planning cycle

WHO WE REACHED...

- Member Countries
- Expert Groups
- Development Partners
- International regional organizations and broader stakeholders

WHAT WE DID...

- Basin-wide sector strategies: Regional Drought Strategy, Environment Strategy, Sustainable Hydropower, MASAP, Fisheries Management Strategy, and Navigation Master Plan
- MRC Gender Action Plan
Joint projects
- BDS 2021–2030 and SP 2021–2025

IN THE BEGINNING...

Lack of a regional foundational and coherent basis for promoting basin-wide benefits through national development efforts by the MCs

OUTCOME 3: GUIDANCE FOR THE DEVELOPMENT AND MANAGEMENT OF WATER AND RELATED PROJECTS AND RESOURCES SHARED AND APPLIED BY NATIONAL PLANNING AND IMPLEMENTING AGENCIES

INDICATORS

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

To support the MCs in employing best practices for project planning, design, and implementation, not only to enhance project benefits at the national level, but also to minimize potential regional negative transboundary impacts and risks, the MRC updated, produced, and implemented several guidelines, standards, and methodologies.

These products include the RSAT, the Waterborne Transportation Guidelines, Sustainable Watershed Management, the Guidance for Fish-Friendly Irrigation Systems, the PDG, the Hydropower Mitigation Guidelines, the Guidelines for the TbEIA, and the Wetland Assessment Methodologies. The PDG, in particular, has cemented its status as the standard guide in developing mainstream HPPs in the lower Mekong and has been applied in the PNPCA PC for the Mekong mainstream hydropower dams.

There is evidence of MCs using the other guidelines for national, provincial and more localized projects with transboundary impacts, but at a more opportunistic level than mainstream. Notable examples include: the use of the TbEIA by some countries to strengthen their respective national EIA systems; the Waterborne Transportation Guidelines by Lao PDR and Thailand to harmonize their navigation rules; the Guidelines for Fish-Friendly Irrigation Systems by the MCs to promote fish passage installations in their respective countries; the RSAT by Cambodia and Viet Nam to facilitate bilateral dialogue on transboundary issues in the Srepok River Basin; the SUMALOM – Nam Ton project by Lao PDR to adopt best practices on sustainable watershed management nationwide; and the wetland study by Lao PDR as a reference for designating two of their wetlands as Ramsar sites. Finally, the numerous technical meetings, training workshops, stakeholder consultations, and test applications conducted over several years for these products have resulted in an increase in the awareness, understanding, and capacity of the MCs related to their use.

This improved knowledge and capacity combined with the MRC's increased emphasis on the national uptake of these products in the next strategic planning cycle will more likely lead to the mainstream use of these guidelines for national project planning and implementations.

INTRODUCTION

The MRC's role includes supporting MCs in employing best practices for project design and implementation, not only to enhance project benefits at the national level, but also to minimize potential regional transboundary impacts and risks. The MRC accomplishes this role by developing guidelines, standards, and methodologies, and by providing the necessary outreach and capacity building to facilitate their adoption and use by MCs. Heading into 2016, many of the guidelines, standards, and methodologies planned under Outcome 3 of BDS 2016–2020 were new. A notable exception was the PDG, which needed to be updated from its 2009 version.

COMPLETION STATUS OF OUTPUTS

Under Outcome 3, the MRC delivered many of the key guidelines, but a few remain to be completed. As shown in Figure 22, the overall output completion status rate is 70%, with four outputs 'completed', six outputs 'partially completed' with percent completion ranging from 40% to 97%, and two outputs 'discontinued'.

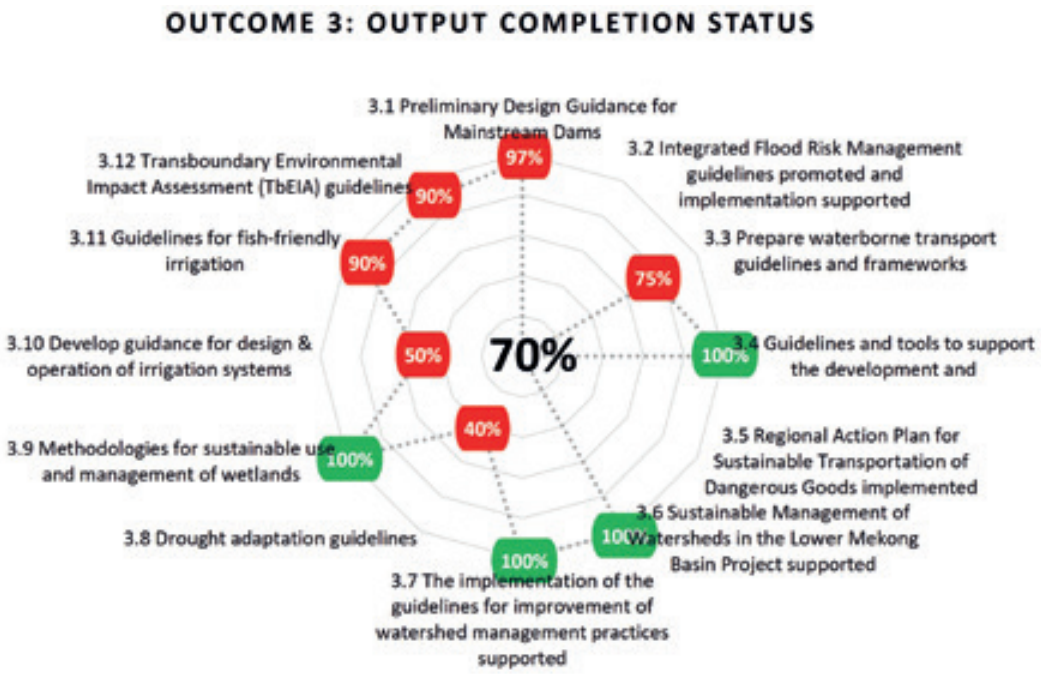


Figure 22. Output completion status under Outcome 3

PRELIMINARY DESIGN GUIDANCE

During the SP period, the PDG was used by MCs and the MRC in project design, assessment, and recommendations. Lao PDR used the PDG in designing proposed mainstream HPPs for Pak Beng, Pak Lay, Luang Prabang, and Sanakham, while the MRC Secretariat and other MCs used the PDG to review submitted documents and make recommendations during the PNPCA PC of the proposed mainstream HPPs.

Concurrently, the PDG was updated following experience of its application to the first four mainstream HPPs, and improved understanding about hydropower risk and mitigation in the Mekong region and internationally on what constitutes good practice. The PDG provides advice for MCs with regard to the design and operation of mainstream dams that can help avoid, minimize, and mitigate harmful effects and limit the potential for substan-

tial damage. While the updated PDG was still pending approval by the end of 2020, it has been used by the MRC Secretariat to provide supplementary recommendations to MCs in terms of best practice and compliance/non-compliance (in which the 2009 PDG remains applicable).

HYDROPOWER MITIGATION GUIDELINES

The MRC Guidelines for Hydropower Environmental Impact Mitigation and Risk Management in the Lower Mekong Mainstream and Tributaries (i.e. the MRC Hydropower Mitigation Guidelines) were completed and published in 2019. It is a three-volume document aimed to provide mitigation guidance for planning, design and operation of hydropower facilities to address a range of known risks and impacts in all phases of the project development cycle. The MRC Hydropower Mitigation Guidelines support the PDG, which is a more specific project design guidance on the mainstream.

According to the Guidelines, during the planning, feasibility study and design process, hydropower developers can take various steps to optimize benefits and avoid adverse impacts. These steps include, for instance, selecting the most appropriate project locations, adopting alternative project scales such as lower dams, and using alternative energy sources. During the construction and operation phases where certain impacts cannot be reduced, developers have various forms of mitigation options to consider. These include options to offset adverse impacts, for example, by providing alternative fish spawning habitats or by leaving certain river reaches free of development to allow for fish migration.

Dr An Pich Hatda, MRC Secretariat CEO, holds a bilateral meeting with H.E. Dr Khammany Inthirath, Minister of Energy and Mines of Lao PDR in Vientiane, Lao PDR (April 2019).

WATERBORNE TRANSPORTATION GUIDELINES

To promote and encourage cross-border trade along the Mekong River, a common set of standards and rules for navigation between the two neighbouring MCs needs to be in place. Without it, the differences in technical, safety, and environmental standards for ports and fleets between the countries will make cross-border trade and transport difficult, endanger the lives of waterway users, and put the shipments and waterway investments at risk.

In 2017, internal rules for the Cambodia – Viet Nam Mekong Navigation Facilitation Committee were drafted and submitted to their respective national governments, and scheduled for approval and implementation. As noted earlier under Outcome 2, for Lao PDR and Thailand, six sets of rules and regulations – on waterway traffic safety, ship safety, passenger protection, crew competency and certification, search and rescue, and emergency response on board vessels – were proposed for approval and implementation. These rules were endorsed by the Lao PDR – Thailand Steering Committee and are currently undergoing the internal approval processes of relevant national agencies for implementation as part of their respective national regulations.

RAPID BASIN-WIDE HYDROPOWER SUSTAINABILITY ASSESSMENT TOOL

The RSAT provides a framework and methods to apply IWRM principles for sustainable hydropower development from a basin-wide, rather than single project point of view. The RSAT supports MCs in planning, implementing, and monitoring hydro-power, especially in the tributaries. It is a dialogue tool that complements, but does not replace, national EIA or other hydropower assessment tools. RSAT was used to facilitate the transboundary dialogue between Cambodia and Viet Nam on 19–21 December 2016 in Boun Ma Thuot, Dak Lak, Viet Nam. With 10 representatives each from Cambodia and Viet Nam and two observers each from Lao PDR, Thailand and the MRC Secretariat, the dialogue enhanced understanding between upstream and downstream countries.

SUSTAINABLE WATERSHED MANAGEMENT

Watersheds can effectively serve as area-based planning units for holistic and integrated water resources and natural resources development and management. Watershed-based planning and management frameworks can facilitate implementation of improved land-use planning, institutional development and governance, effective policy, laws and regulations. It can also faciliate the enforcement of mechanisms to support regulation of dry season flows, mitigating flash floods, protecting biodiversity, and climate change adaptation in conjunction, for example, with reforestation projects and other natural resources management activities.

In 2009, a collaborative project was initiated to address the need for know-how and best practices in sustainable watershed management. A pilot project – "Sustainable Management of Watersheds in the Lower Mekong Basin (SUMALOM) – was conducted in Nam Ton in Lao PDR, with the expectation that lessons learned would be scaled up to strengthen watershed management in all Mekong countries. In August 2017, the MRC held a regional forum to present and discuss the watershed management knowledge base that was compiled, which included the best watershed management practices and lessons learned from the Nam Ton Project and experiences from other Mekong countries. The knowledge base was uploaded and made accessible through the watershed management website. Other products delivered include: (i) a regional report on the survey of basin management and environmental conservation in Mekong River Basin; (ii) a 30-year time series of LMB forest cover map and land use map; and (iii) policy recommendations on sustainable forest management.

SUSTAINABLE USE AND MANAGEMENT OF WETLANDS

To improve the use and management of wetland resources in the LMB, the MRC conducted a series of activities aimed at directly quantifying wetland values in the LMB and assessing how these values may change in the future as a result of development and subsequent hydrological changes. Several wetland inventories were implemented in the past by MRC and other international, regional, and national organizations; however, they were implemented sporadically and/or for different purposes.

The MRC's initiative also aims to provide a more consistent and comprehensive inventory of wetland resources across the LMB. In 2019, the MRC produced a Technical Note on Criteria and Process of Wetland Site Selection for the Implementation of Testing and Improvement of Wetland Inventory (WI), Wetland Ecosystem Functions, Assets, and Services Assessment and Management (WEFASAM) and Wetland Biodiversity Indicator Assessment (WBIA). The criteria and process were then used by MCs to select 10 wetland sites for the testing and improvement of WI, WEFASAM, and WBIA methodologies. The first four wetland sites were used in 2019 to test and revise the methodologies.

The MRC subsequently used the six remaining wetland sites to test the revised methodologies. This project concluded in 2020 with a regional report on the status and trends of LMB wetlands, a list of prioritized wetlands, and a user-friendly wetland database. The new wetland database consists of seven sections: (i) Site General Information;

(ii) Biophysical Features; (iii) Socio-economic and Cultural Features; (iv) Ecosystem Services/ Benefits; (v) Management Features and Threats; (vi) Updated Maps and Figures; and (vii) References and Annexes.

Also, the regional report includes wetland maps for 2010, 2015, and 2020 showing the temporal changes in the spatial extent and areas of wetlands in the LMB. These time-series maps were developed by integrating and reconciling many satellite imageries of different types and standards (see Figure 23).

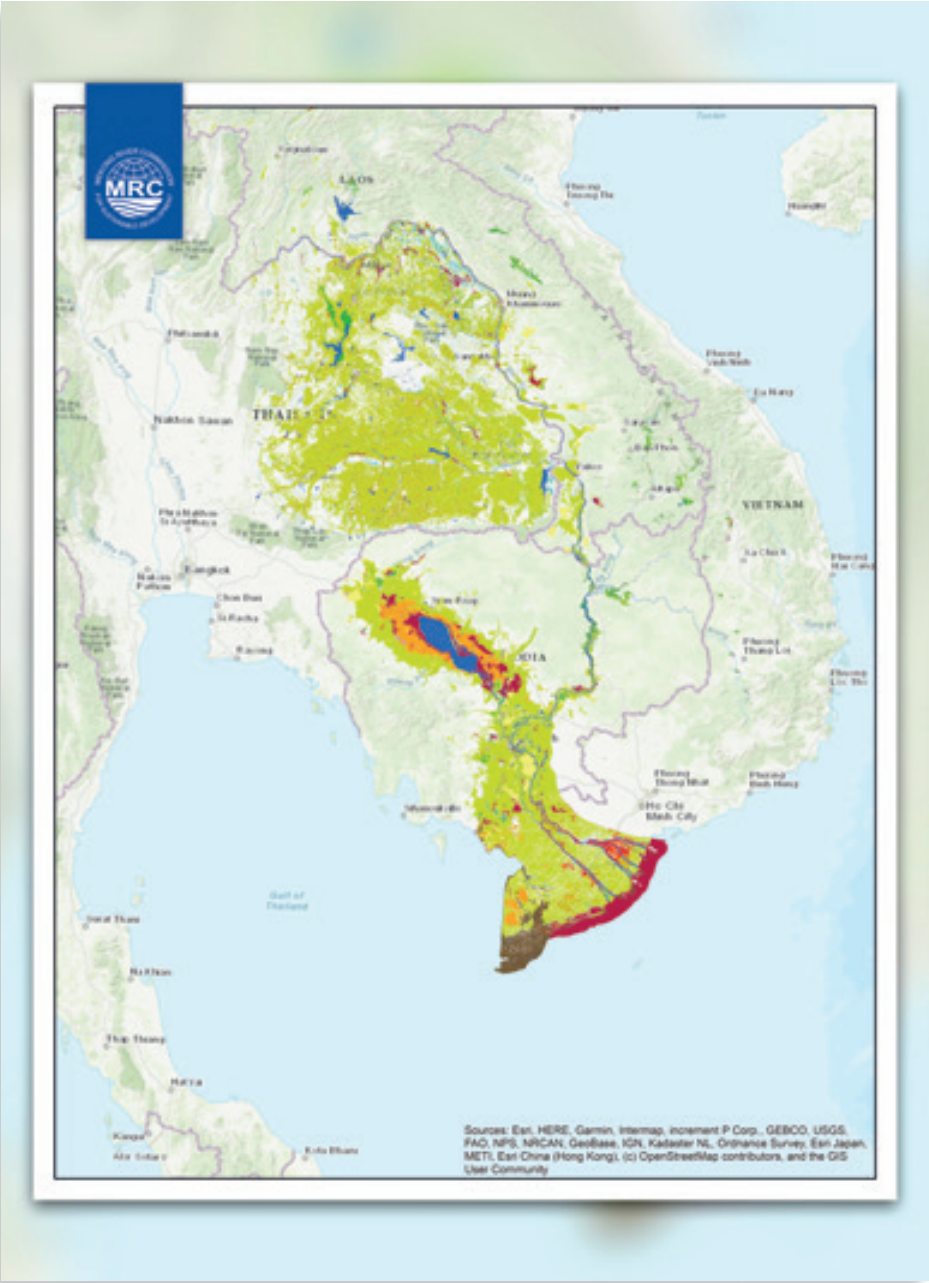


Figure 23. 2020 Map of the wetlands in the Lower Mekong Basin

FISH-FRIENDLY IRRIGATION SYSTEMS

In the LMB, the annual fish catch is estimated at 2.3 million tonnes (valued at USD 11 billion). However, the fisheries sector is threatened by tens of thousands of dams, dikes, weirs, and other water structures that have been built to store and control water for irrigation. Many of these structures make it difficult for fish to pass, affecting fish reproduction across the region. To help address the problem, the MRC and its partners worked on guidelines for fish-friendly irrigation systems and supported the testing by installing fish passes for selected irrigation schemes.

The draft Guidelines for Fish-Friendly Irrigation Systems, which was completed in October 2015, sets out a process for practitioners for identifying the highest priority irrigation structures that require repair and rehabilitation because they serve as barriers for fish passage. It also presents the design and construction process for practitioners to determine and implement the best fish passage solution for each of the high priority barriers. The MRC is revising the draft Guidelines based on the test results submitted by the countries. However, due to the COVID-19 pandemic, which caused delays in completing the fishway construction in Viet Nam and in conducting the site inspection in Thailand, the draft Guidelines will be completed under MRC SP 2021–2025.

GUIDELINES FOR TRANSBOUNDARY ENVIRONMENTAL IMPACT ASSESSMENT IN THE LOWER MEKONG BASIN

The guidance sets out the process to facilitate MCs' cooperation and communication in conducting EIAs for projects in irrigation, hydropower, and navigation, among others, with potential transboundary environmental impacts, while respecting the differences among their respective national EIA legislations and systems. Through seven regional meetings and nine national meetings from 2017–2019, the (draft) guidance was completed in September 2018 followed by a (draft) supplementary volume in May 2019. The supplementary volume provides a concise record of the long process leading to the development of the TbEIA Guidelines, including a summary of key lessons learned from the recent transboundary consultations related to major HPPs in LMB. As per the recommendation of MCs, the guidance can be used as a working document, which can be further amended based on experience gained from its practical applications.

The **guidelines for drought adaptation** and for **design and operation of irrigation systems** are both in early preparatory stages and will be continued in 2021. The remaining planned outputs under Outcome 3, namely **flood risk management guidelines**, and the implementation of the **Regional Action Plan for Sustainable Transport of Dangerous Goods along the Mekong River**, were discontinued although they were considered priority activities in the 2018 MTR.

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced as shown in Figure 24, Outcome 3 is rated 'partially achieved'. The outputs under Outcome 3 aim to promote best practices for project planning, design and implementation, and therefore are highly applicable both in regional and national settings. While many of the outputs are completed or nearly completed, and significant knowledge and capacity were gained by the MCs with respect to their use, the adoption by the MCs for national applications of certain guidelines remains limited.

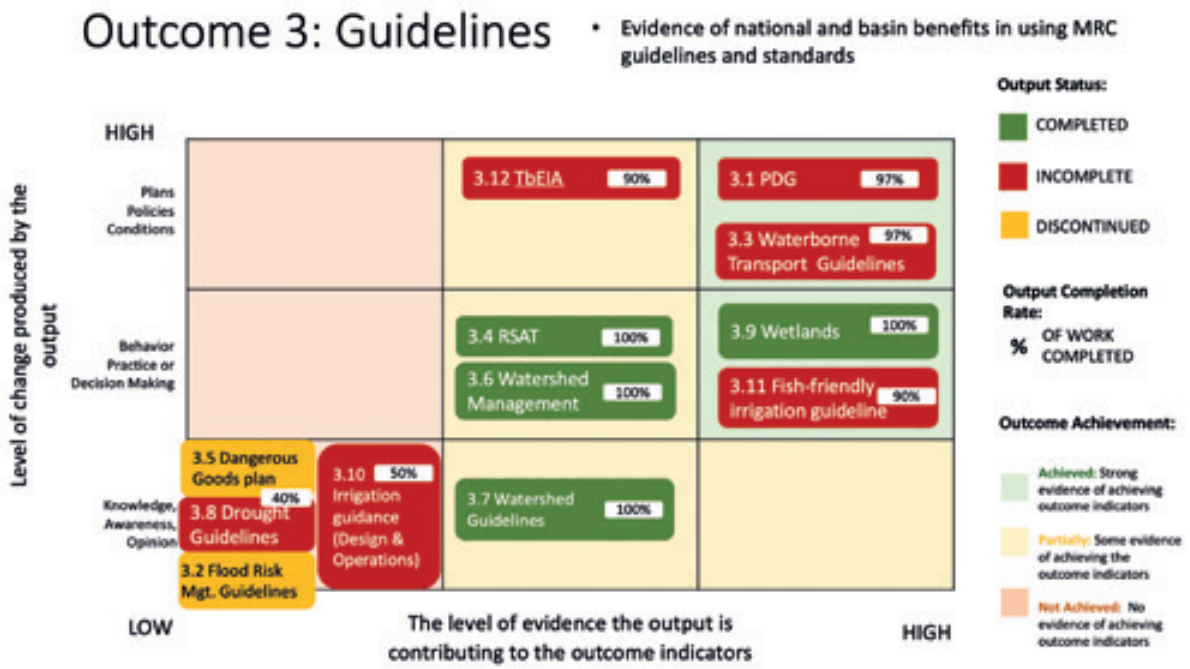


Figure 24. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the type of change that occurred – Outcome 3

OUTCOME 3

INCREASE IN KNOWLEDGE AND UNDERSTANDING

As with every other product that the MRC has developed, the numerous technical meetings, training workshops, regional and national applications, and stakeholder consultations, held over several years for the Outcome 3 guidelines, have resulted in a significant increase in awareness, understanding, and capacity of potential users.

For example, the increase in in-depth technical understanding and hence, openness of project proponents and developers can be largely attributed to the application of the PDG during the PNPCA PC of the first four mainstream HPPs.

The RSAT has the additional benefit of having trained riparian RSAT facilitators going to each of the MCs to introduce RSAT and discuss specific national and local applications. For instance, through these facilitators, diversified stakeholders from different sectors at the local level in each of the MCs quickly became knowledgeable about the RSAT. This allowed them to develop a legal framework for assessing hydropower dams and other projects in Cambodia; evaluate the opportunity for a joint transboundary project between China and Lao PDR on fisheries management to mitigate impacts from hydropower development projects; identify potential improvements of existing HPPs in Thailand; and address flooding and dry conditions in the Cham Island Marine Protected Area due to impacts of the development of nearby HPPs.

With respect to the Nam Ton River pilot area under which sustainable watershed management best practices were showcased at a local community level, the project has nonetheless contributed to a heightened regional understanding about watershed management. This was achieved by sharing lessons learned in a regional workshop attended by national line agencies, national River Basin Committees (RBCs), local governments, developers, and watershed practitioners across the region.

The lessons learned include: shifting from sector- to multisector-run management, using Participatory Water and Land Use Planning (PWLUP) as a mechanism to discuss, negotiate, and recommend watershed management practices for implementation with local communities and local administration officials; linking watershed management with forest plantation, protected areas, agricultural activities, and alternative livelihoods; and enhancing participation of communities, civil societies, and private businesses throughout the process. The MRC watershed management website is a repository of knowledge and experiences that are readily accessible for use.

"We appreciate the Preliminary Design Guidance (PDG). We used the PDG during our feasibility study to prepare the outline and concept designs for the Xayaburi hydropower project before we went to the 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 is special because it is designed to address specific issues of the Mekong River, and it was the only document available for the region" *– Dr Michael Raeder, Deputy Managing Director, CK Power and Owner Representative from the Xayaburi Power Company Limited, 2017.*

USE IN REGIONAL AND NATIONAL PLANNING AND DECISION-MAKING

At the regional level, the use of the PDG and the RSAT for the PNPCA PC has been relatively mainstreamed. In particular, the RSAT hydropower sustainability criteria were used for Technical Review Report's social-economic assessment, which was absent in the current PDG. The PDG is being used by the MRC Secretariat to assess technical compliance for all proposed mainstream dams during the PNPCA PC process, giving confidence to MCs and stakeholders that projects that pass through the MRC will be vetted, reviewed, improved, and monitored.

At the national level, hydropower developers for all mainstream projects recognize the importance of the PDG and the need to comply, cementing the status of the MRC PDG as the standard guide in developing mainstream HPPs in the Lower Mekong. Other examples of MC-led applications of the MRC guidelines and products are as follows:

- Cambodia is using the draft MRC TbEIA guidelines as a reference for developing its national environmental code and updating its national EIA systems to include a chapter on TbEIA. In addition, the Cambodian Ministry of Public Work and Transport is pilot-testing the TbEIA on a project entitled, "Channel Dredging for Waterway Improvement in Bassac River, a transboundary tributary between Cambodia and Viet Nam".

- Lao PDR updated its Decree on Environmental Impact Assessment on 31 January 2019 with the inclusion of chapters of TbEIA and Cumulative Impact Assessment (CIA). Article 22 of the Decree specifies that developers must implement the cumulative and transboundary impacts assessment as part of their studies, and in the case of cascading HPPs located on the mainstream Mekong, the project owners must implement according to the agreed terms and conditions as mentioned in the 1995 Mekong Agreement and other relevant regulations.

- Thailand held a training workshop on the MRC TbEIA Guidelines for private EIA companies in Thailand in April 2021.

- With respect to Waterborne Transportation Guidelines, Lao PDR is drafting their Law on Inland Waterway and improving their legislative system as part of harmonizing its waterway laws with Thailand. This is in line with the combined efforts of Lao PDR and Thailand to harmonize navigation rules on traffic safety, vessel safety and passenger protection, crew certification, search and rescue, and emergency response, port safety, waste management and contingency plans. Lao PDR and Thailand have also agreed to co-patrol the Mekong River regularly for traffic safety.

- Since, 2016, Chiang Saen port has been using the MRC guidelines for dangerous goods, transportation and storage, and waste management as a pilot project of the regional action plans for transportation of dangerous goods. These Guidelines are being applied to all the international and national vessels that are using the Chiang Saen port.

- With respect to fish-friendly irrigation systems, demonstration projects on the construction and performance monitoring of low-head fish passage were conducted. These projects were in several locations: Pursat Province, Cambodia; Pakpeung village, Bolihamxay Province, Lao PDR; Huai Luang Basin, Udon Thani Province, Thailand; and Dak Lak Province, Viet Nam. These demonstration projects have resulted in immediate benefits to villagers, who say that they are catching more fish every day, which provides them with more stable incomes. Following these demonstration projects, the MCs have completed drafting their action plans for promoting fish passage installations in irrigation systems in their respective countries.

- RSAT was used by Cambodia and Viet Nam to facilitate dialogue on a number of issues in the Srepok River Basin, which include flood, drought, and loss of biodiversity and ecosystem services. In addition, three proposals for future applications of RSAT were finalized in consultation with MCs in order to be referenced in the NIPs 2021–2025.

- Lessons learned from the SUMALOM – Nam Ton project were upscaled to the Lao PDR National Government for application in sustainable watershed management projects nationwide.

- The wetland baseline maps produced from the wetland study will be used by Lao PDR for designating two of their wetlands, Nong Nga

OUTCOME 3

Wetland and Nong Fah, as Ramsar sites. Cambodia will be using the wetland maps for two of their wetland sites, Prek Toal and Stung Treng that have been designated as Ramsar sites.

Vertical slot fishway structure constructed in May 2019 at the Kbal Hong Weir in Pursat Province, Cambodia.

Officials and community representatives of the Lao-Thai wetland management project cerebrate its conclusion in an event in Sakon Nakhon, sharing its outcomes and lessons with other water user groups, held on 11 June 2018 in Sakon Nakhone Province, Thailand.

VALUE FOR MONEY

The outputs under Outcome 3 are designed to be sector- or discipline-specific, and are therefore relatively less costly and potentially high VfM products for the MRC (see Figure 25). Five outputs (i.e. RSAT, Sustainable Watershed Management, Watershed Guidelines, Waterborne Transport Guidelines, and Fish-Friendly Irrigation Guidelines) proved to be high VfM products or undertakings for the MRC because they have demonstrated medium to high evidence of achieving their intended outcomes.

While the national uptake of these products can be more mainstreamed, there are numerous examples of their use in both regional and national decision-making, as described in the Evidence of Change section. Three other outputs (i.e. Drought Guidelines, Irrigation Guidance, and TbEIA) require additional interventions, not only to complete them, but also to promote their national uptake. As noted earlier, the Drought Guidelines (i.e. drought adaptation) and Irrigation Guidance (i.e. design and operation of irrigation systems) are both in early preparatory stages and will be continued in 2021. The TbEIA, while showing modest evidence of being integrated if not referenced in national EIA systems, also requires additional interventions to mainstream such integration.

With proper interventions, these three projects could potentially become high VfM outputs for the MRC. Finally, being one of the flagship products of the MRC, the PDG has the highest cost, followed by promoting the sustainable use and management of wetlands. Both of these outputs proved to be cost-effective for the MRC.

As noted earlier, the PDG has cemented its status as the standard guide in developing mainstream HPPs in the lower Mekong and has been applied in the PNPCA PC for the Mekong mainstream hydropower dams. Moreover, the Wetlands project has produced tangible products such as a regional report on the status and trends of LMB wetlands (i.e. which addressed an important knowledge gap), a list of prioritized wetlands, a wetland database, and LMB wetland maps for 2010, 2015, and 2020. These products have been used by the countries in managing wetlands that were designated as Ramsar sites and expected to be of key use in future regional and national decision-making and planning.

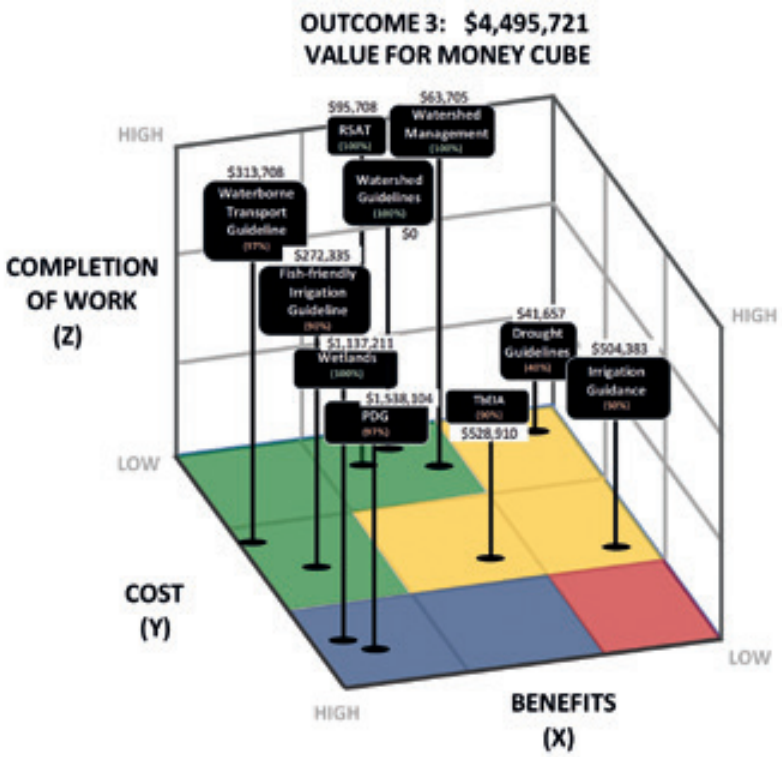


Figure 25. Value for Money Multidimensional Analysis for Outcome 3

OUTCOME 3

LESSONS LEARNED

Certain MRC guidelines are having impacts at regional and national levels. But as noted earlier, a common challenge during the strategic planning cycle 2016–2020 is the lack of a systematic, deliberate, and effective uptake at the national level of the guidance, standards, and methodologies produced under Outcome 3. The adoption of some guidelines remains limited and primarily more opportunistic than part of an agency-wide effort to incorporate them in national systems.

In addition, some MCs are not convinced of the national applicability of some MRC Guidelines because they may have been developed without considering fully their respective national needs and context. This challenge of effectively promoting national uptake of the MRC guidelines is addressed in the next strategic planning cycle by integrating impact pathways in MRC's multi-year work planning, NIP preparation, and the MRC's M&E.

Finally, a number of the MRC guidelines were not fully completed as planned with a completion rate ranging from 40% to 97%. While most of the delays can be attributed to project management and technical deficiencies, it is conceivable that some delays were also due in large part to more fundamental reasons, such as the proposed guideline is not "fit for purpose" for every MC or it does not mutually meet MCs' national needs. Any proposed MRC guideline must be demand-driven by all key parties. If the completion of a certain MRC guideline is in a 'deadlock' situation, then some high-level water diplomacy intervention should be carried out to help clarify and resolve the issues.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The use of guidelines, standards, and methodologies to enhance project benefits and minimize regional transboundary impacts and risks contribute to the achievement of the following the SDGs:

SDG 1: No Poverty, specifically Target 1.5: By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.

SDG 6: Clean Water and Sanitation, specifically Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

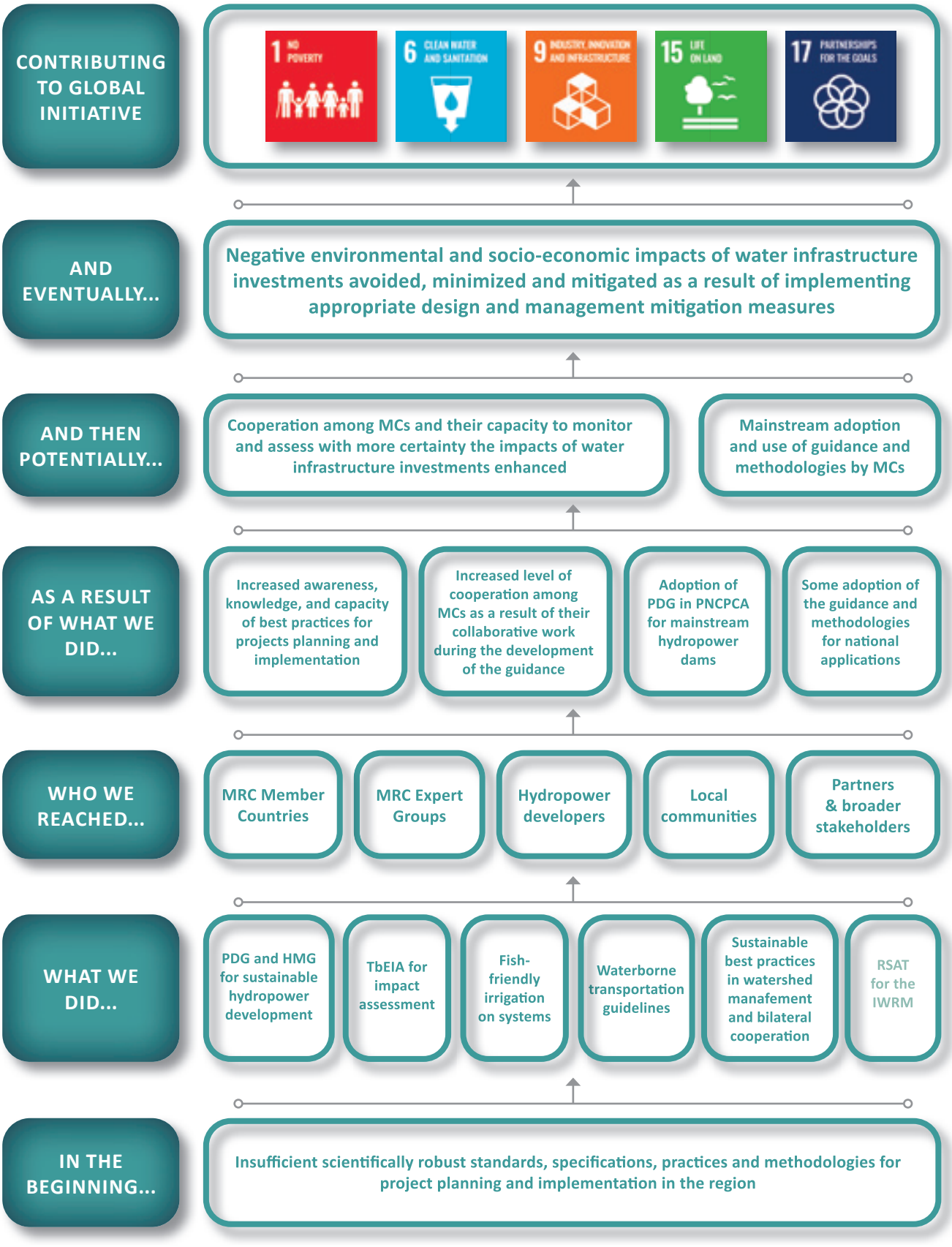
SDG 9: Industry, Innovation, and Infrastructure, specifically Target 9:1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development.

SDG 15: 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.

SDG 17: 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 SDGs, including through North-South, South-South and triangular cooperation; and Target 17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, in particular developing countries.

PATHWAY TO CHANGE

Guidance for the Development and Management of Water and Related Projects and Resources and Applied by National Planning and Implementing Agencies



OUTCOME 4: EFFECTIVE AND COHERENT IMPLEMENTATION OF MRC PROCEDURES BY THE MRC MEMBER COUNTRIES

INDICATORS

- *Evidence of adverse transboundary impacts that were mitigated, minimized, or avoided in basin planning and management by using the MRC procedures*
- *Number of water utilization projects notified and consulted on, and improved agreement under the consultation and notification process of the PNPCA*
- *Evidence of actions taken under the PWQ and the PMFM when water flows, levels and quality are at critical levels*
- *The amount of data and information under the PDIES that are shared and used for basin development planning and management, and research purposes*
- *The number of projects monitored under the PWUM at both the national and regional levels*

The MRC's procedural frameworks are an indispensable aspect of the MRC's water diplomacy platform, providing both an obligatory and enabling environment for cooperating on data sharing, monitoring, project notification and consultation, and maintaining an acceptable flow regime and water quality.

The five MRC Procedures – the PDIES, PWUM, PMFM, PWQ and PNPCA – represent the most comprehensive set for water management on an international river in the developing world. The PDIES allows data sharing and exchange among MCs, resulting in the availability of an extensive amount of data to the public, researchers, and partners around the world. The PMFM and the PWQ provide the basis for critical work in monitoring water flow and water quality. While water use monitoring per PWUM has not been operationalized yet, some work was completed by the end of 2020 to conceptualize its implementation in the next strategic planning period. Finally, while the implementation of the prior consultation process of the PNPCA had seen its challenges and, to some, even failures earlier, it turned around during the period of 2016–2020 with an innovative approach towards concrete results in improving project design, and enhancing the process itself with greater understanding, transparency, accountability and agreements. The introduction of the Joint Statement and the JAP as concrete agreed outputs of the PC process has elevated the cooperation among the MCs and assured the process a deliberate and action-oriented conclusion. It has also increased both the commitment of the proposing country and the confidence of notified countries that projects that passed through the PNPCA would be implemented sustainably. The PNPCA process has contributed to reducing tensions among countries from ten years ago and ushered in a new climate of cooperation in finding solutions together.

Finally, with Xayaburi, Pak Beng, Pak Lay, Luang Prabang, and Sanakham HPPs representing a cascade of dams, there is an increasing recognition that cascade coordination and management have become a key issue. This is reiterated in the next strategic planning cycle in which the BDS 2021–2030 places stronger emphasis on improving the coordination of basin management operations to increase positive transboundary effects and mitigate negative impacts.

INTRODUCTION

The five MRC Procedures (PNPCA, PDIES, PWUM, PMFM and PWQ) and their respective Technical Guidelines elaborate on principles and obligations established in the 1995 Mekong Agreement by which the MCs agree to cooperate in basin management and development. The MRC has an extremely important role in keeping these Procedures and respective Technical Guidelines relevant with the changing times so they can be constantly implemented effectively and coherently to address urgent and emerging basin issues.

With the recent acceleration of hydropower development in the Mekong mainstream, the PNCPA has been subjected to extensive and rigorous review and continuous improvement by the MRC to ensure that it remains 'fit for purpose', and that its implementation leads to the desired outcomes. Heading into 2016, improving the PC of the PNPCA for the hydropower dams was one of the top priorities under Outcome 4 since the first two Prior Consultations for the Xayaburi and Don Sahong HPPs were highly contentious and ended with no formal agreements among the MCs and with no concrete follow-up mechanisms agreed upon. The restructuring of the MRC in early 2016 into a leaner organization and the strengthening of the MRC Joint Platform pave the way for steering a more effective and coherent implementation of the MRC Procedures, including data sharing and routine monitoring work under the PDIES, the PMFM, and the PWQ.

COMPLETION STATUS OF OUTPUTS

As shown in Figure 26, the overall output completion rate of the planned outputs under Outcome 4 is 91%, with one output 'completed' and the two outputs 'partially completed'; a completion rate ranging from 80% to 95%.

Figure 26. Output completion status under Outcome 4

PROCEDURES FOR DATA, INFORMATION EXCHANGE AND SHARING

Transboundary water resources management in the Mekong River largely depends on the availability of reliable data and information on various sectors. From fisheries to hydrology to water quality, basin-wide field data are crucial for a better understanding of the Basin's conditions.

To operationalize the PDIES, promote data and information exchange among the four MRC MCs, and provide data and information access to the public, the MRC-IS was established and operated as regional knowledge hub in 2005 and subsequently the Data Portal in 2010 to facilitate data access. In June 2019, a new version of the Data Portal was launched with enhanced data and information services, a streamlined data request process, and user experience, and an overall improvement in system performance and functionalities as a result of integrating AQUARIUS for time-series visualization, a new GeoServer system-Web Map Service for map visualization, and a PostgreSQL database management system for data access by sector. The updated Data Portal was also designed for seamless data integration and harmonization with National Mekong Committee Information Systems (NMC-IS) in line with the Reinvigoration Design Concept.

OUTCOME 4

The MRC-IS/Data Portal currently stores and provides access to a total of 10,333 datasets, of which 3,659 consist in time-series data collected from 892 monitoring stations over 110 years. The data are categorized into the 12 major groups/types of data and information required for implementation of the MRC programme/activities and Mekong Agreement, *inter alia*:

- Water resources (3,590 datasets)
- Topography (7 datasets)
- Natural resources (94 datasets)
- Agriculture (2958 datasets)
- Navigation and transportation (1)
- Flood management and mitigation (399 datasets)
- Infrastructure (7 datasets)
- Urbanization/industrialization
- Environment/ecology (4,458 datasets)
- Administrative boundaries (3,630 datasets)
- Socio-economy (647 datasets)
- Tourism.

An important data set provided through the MRC-IS/Data Portal is the river monitoring data collected through the Mekong-HYCOS hydromet network, which now includes 51 HYCOS stations and 13 new drought stations on the Mekong mainstream and major tributaries (see Outcome 6 for more information about the network). Data from these stations are transferred either manually or through telemetry to the MRC data server so that can be made available via the MRC-IS/Data Portal.

The purpose of the **Procedures for Data, Information Exchange and Sharing (PDIES)** is to establish a repository of data on the Mekong River Basin and the tools that can be used to assess any potential impacts of developments in the Basin.

As of this writing, the MRC-IS/Data Portal has over 11,000 registered users categorized into four major groups as shown in Figure 27. The use of e-receipts, digital licence agreements, and bank gateway services for external users with email notifications has improved the data request process by users. Table 1 shows the number of data requests by user groups in 2020. Both Figure 27 and Table 1 demonstrate that the MRC-IS/Data Portal is being used considerably by external users, signifying an important benefit that the MRC provides to the Mekong region.

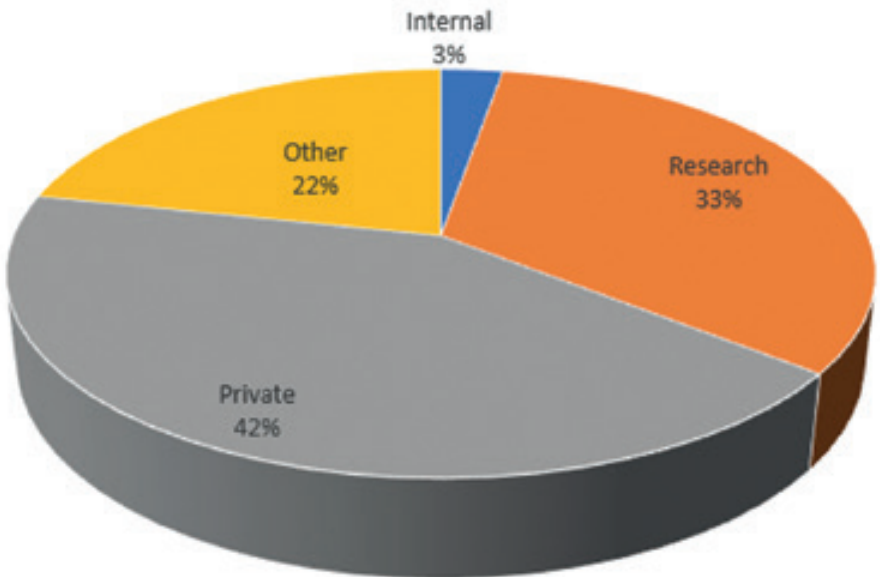


Figure 27. Percent distribution of the 11,000 registered users of the MRC-IS/Data Portal

Table 1. Number of MRC-IS/Data Portal data requests by user groups in 2020

INTERNAL	COMMERCIAL INDEPENDENT	COMMERCIAL PARTNER	DIRECTLY CONTRACTED	RESEARCH ACADEMIA	PUBLIC	TOTAL
201	92	28	29	159	45	554
36.30%	16.60%	5.10%	5.20%	28.70%	8.10%	100%

PROCEDURES FOR DATA, INFORMATION EXCHANGE AND SHARING

The PMFM has been implemented for routine monitoring of the flow regime, and for checking compliance of agreed thresholds during the PC process for proposed mainstream projects.

These agreed thresholds include the following:

- not less than the acceptable minimum monthly natural flow during each month of the dry season is maintained in the mainstream;
- an acceptable natural reverse flow of the Tonle Sap River occurs during the wet season; and
- average daily peak flows greater than what naturally occur on the average during the flood season are prevented.

A dedicated website for the PMFM is fully operational and provides a highly useful tool for the monitoring and warning of usual flow situations (see Figure 28). The PMFM Technical Guidelines were agreed to be implemented as a working version in October 2017. Given the changed flow regime, the Concept Note was reviewed and updated during the subsequent strategic planning cycle, which was also completed in 2020.

The purpose of the **Procedures for the Maintenance of Flows on the Mainstream** (PMFM) is to ensure that there is sufficient water in the mainstream to support pre-existing and previously notified (for prior consultation) downstream water use, as well as the reverse flow into the Tonle Sap, through the active management of storage. Similarly, active management of storage is required to ensure that flood disasters are not exacerbated.

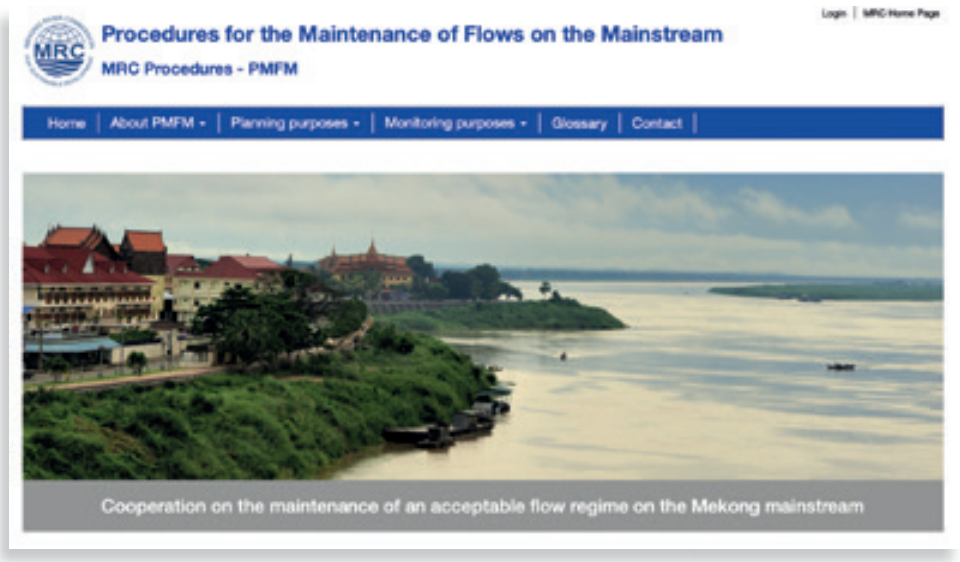


Figure 28. The PMFM website

OUTCOME 4

THE PROCEDURES FOR WATER QUALITY

Preserving the Mekong River's water quality is essential to secure the health of riverine communities and the future of the river's aquatic life. The PWQ defines two types of action to maintain water quality at acceptable levels for humans, flora, and fauna: (i) water quality monitoring; and (ii) emergency response. The PWQ Technical Guidelines on the Implementation of the Procedures for Water Quality (Technical Body for Water Quality, TBWQ) were completed and endorsed by the MRC Joint Committee in November 2016. This was the result of collaborative work among experts from the MCs for almost seven years beginning in 2009. The TBWQ work was divided in two parts: Part 1 on routine water quality monitoring, and Part 2 on emergency water quality responses. Because of the urgency of implementing water quality monitoring, Part 1 on routine water quality monitoring, which was completed early, was approved for implementation by the MRC Joint Committee in March 2010. Routine water quality monitoring, which is conducted by the appropriate line/implementing agencies of the MCs, subsequently began in 2010.

The purpose of the **Procedures for Water Quality (PWQ)** is to monitor and report on the water quality status of the Mekong River System against agreed criteria for human use and aquatic ecosystems. The Procedures also outline the protocols for reporting emergency situations.

Technical guidelines for the establishment of an emergency response and management system were developed in 2017. The guidelines recognize existing mechanisms for emergency responses to natural disasters developed by ASEAN. To avoid establishing two parallel emergency responses in the Basin, the MRC has been working with ASEAN to develop standardized regional emergency response mechanisms that meet national, transboundary and regional needs for water quality disaster control. The work is expected to be finalized in 2021.

THE PROCEDURES FOR WATER USE MONITORING

The objective of the PWUM is to provide a comprehensive and adaptive framework and process to support effective implementation of the intra-basin water use monitoring and the monitoring of inter-basin diversions. This includes establishing existing (pre-1995) water uses so that they can be protected and maintained when new water uses are put in place, which is one of the factors to consider when evaluating reasonable and equitable use. In addition, any subsequently notified (i.e. through the PNPCA) water uses will be accommodated in the future development of the Basin.

To date, the PWUM has not been rigorously pursued as a tool to record pre-1995 water use, or to capture the design and operating rules of any subsequent water uses that went through the PNPCA. However, these uses have been captured in the DSF used by the MRC, which are used in basin planning. The

The purpose of the **Procedures for Water Use Monitoring (PWUM)** is to establish a reasonable and equitable use of the water against which future uses can be evaluated. It must serve as a record of the use of water, and a record of the use of the water by the project begins. The PWUM must therefore follow the PNPCA and must include identification and monitoring of the measures put in place to avoid, minimize and mitigate impacts.

Council Study has added to these tools, especially with respect to the impacts of development on sediment, fish migration, and fisheries potential. The Xayaburi and Pak Beng prior consultation processes have also led to proposals for design and operational changes, and in the case of Xayaburi, some of the design changes have already been implemented. The PWUM is therefore implicitly being implemented through the DSF and PNPCA. However, this is not an explicit monitoring of the implementation of any measures put in place to avoid, minimize and mitigate potential impacts. An additional challenge for the PWUM is that the scope of water use is not fully defined. The wording "the MCs agreed that they did not wish to lose or reduce any existing uses of the river, whether in-stream, on-stream or off-stream" implies that water use was seen to be more than just abstract use, but should include the "use" of the water to generate hydropower, as well as to transport sediment, and maintain fish migration and fisheries potential. A concept to operationalise PWUM was prepared and consulted with MCs in 2020 and will be further worked on in the next MRC SP period.

THE PROCEDURES FOR NOTIFICATION, PRIOR CONSULTATION AND AGREEMENT

To harness the Mekong River Basin's full potential for development, the Mekong countries have begun building bridges, large-scale irrigation and flood control structures, and hydropower along the mainstream and tributaries. These projects will bring economic benefits to many but may also cause adverse transboundary impacts on the ecosystems and livelihoods of people relying on the Mekong.

The PNPCA established a regional cooperation mechanism over planned water development aimed at optimizing the use of water resources for development while minimizing potential adverse transboundary impacts. The PNPCA requires any Member Country planning a water development project that may significantly alter water flow or quality of the Mekong mainstream to undergo one of the three processes: Notification, Prior Consultation, or Specific Agreement.

During the five-year SP period of 2016–2020, 13 notifications (nine notifications, and four prior consultations) were made (10 HPPs in Lao PDR, two flood and drought management projects for irrigation in Thailand, and a bridge project in Viet Nam), making for a total of 55. As shown in Figure 29, there are currently a total of 76 notifications, 55 of which are PNPCA notifications, and 21 are only initial information.

Prior to the strategic planning cycle 2016–2020, the Prior Consultation (PC) of the PNPCA was used for the Xayaburi hydropower dam in 2010–2011 and the Don Sahong dam in 2014–2015. While each PC resulted in positive changes in the design of the dams to address the concerns raised by MCs and relevant stakeholders, they both ended with no formal agreements achieved among the MCs. Instead, the Xayaburi and Don Sahong projects ignited the most intense debates over water resources development in the Mekong, pitting countries against one another and contestations and protests from civil society, and even Development Partners. One country suggested through the media to use the international court to resolve the disputes, and another country officially recommended a 10-year deferment of constructing dams on the mainstream.

> The purpose of the **Procedures for Notification, Prior Consultation and Agreement (PNPCA)** is both to establish a record of water uses that may have an impact on the mainstream and which were initiated after 1995, as well as to provide a basis for discussions of proposed uses that could have greater impacts, with a view to the reasonable and equitable use of the Mekong River System.

OUTCOME 4

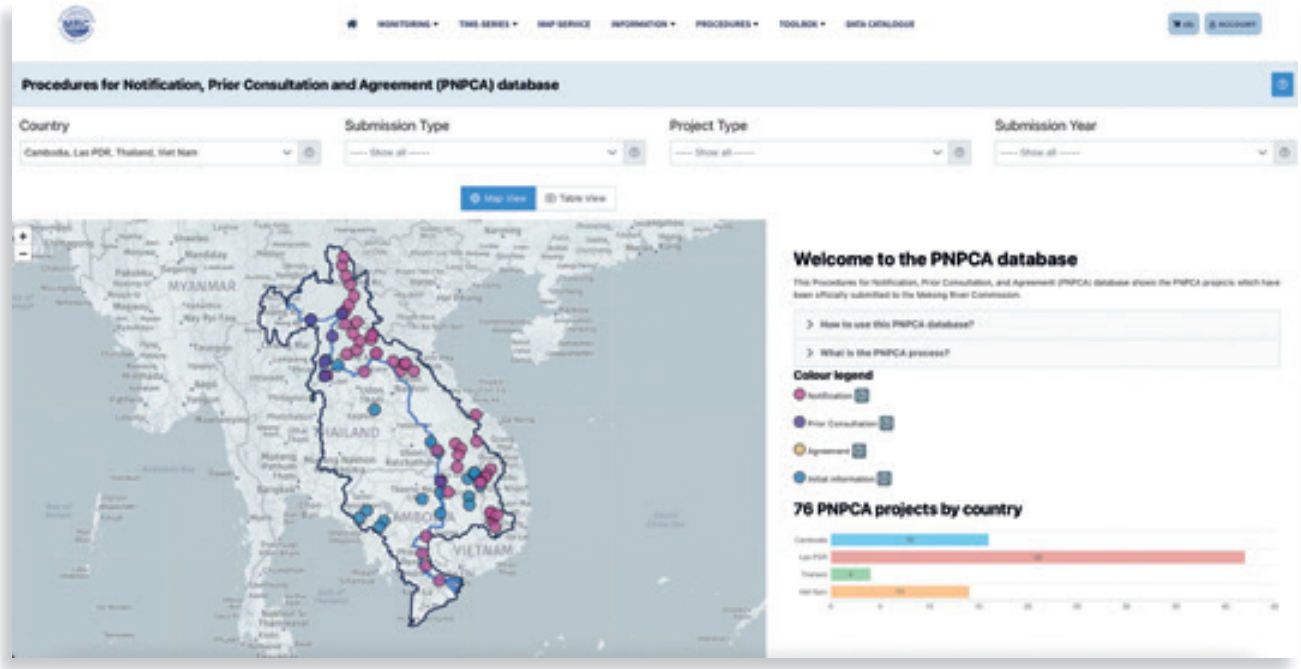


Figure 29. PNPCA projects by country

Source: MRC PNPCA data source accessible at https://portal.mrcmekong.org/pnpca-projects/map

Intent on improving the process,the MRC Secretariat worked hard with MCs to timely release documents, provide a forum to consult stakeholders early, and introduce two desired outputs of the PC, starting with the Pak Beng HPP in 2017: the Joint Statement and the JAP. Following a number of informal and formal meetings, both at technical and high level, and through bilateral and multilateral channels, the PC for the Pak Beng HPP concluded with an agreed Statement by the Joint Committee, which included key recommendations to avoid, minimize and mitigate potential transboundary impacts and increase potential benefits. The JAP was also subsequently agreed as a post-consultation mechanism to ensure that the Joint Statement would be implemented after the end of the six-month PC. The JAP enables exchange and dialogues among the notifying and notified countries and the MRC to improve the proposed project.

The introduction of the Joint Statement and the JAP for the Pak Beng HPP has resulted in the successful conclusions of the subsequent Prior Consultations for Pak Lay HPP in April 2019, and Luang Prabang HPP in June 2020. The PC for the Sanakham HPP, which began in June 2020, is scheduled to be completed in 2021. It should be noted that the Prior Consultations for Luang Prabang and Sanakham HPPs took longer than the standard duration of six months due to the COVID-19 pandemic. In addition, the pandemic also prevented face-to-face interactions both at the national and regional levels, which to some extent negatively impacted the quality and effectiveness of the consultations. The Sanakham HPP was also hampered by lack of and outdated data and information with the submitted documents, in particular, those related to the transboundary impact assessment. This was exacerbated by the strong concern expressed by Thailand over the project's impact on the livelihood of Thai communities in the border, which is of close proximity to the project.

Overall, the successful conclusions of the Prior Consultations demonstrate the increased confidence of the MCs in the mechanism of the Statement and the JAP to push for sustainable hydropower development in an open and inclusive matter. The JAP tracking matrices for the PBHPP, PLHPP and LPHPP post-consultation implementation were completed and agreed by the MCs in November 2020.

Chairperson of the MRC Joint Committee for 2019 Dr Le Duc Trung of Viet Nam (left) and CEO of the MRC Secretariat Dr An Pich Hatda (right) facilitate the Joint Committee Special Session held in Vientiane, Lao PDR to conclude the six-month Prior Consultation process for the Pak Lay HPP (4 April 2019).

THE MRC JOINT PLATFORM

At the strategic level, the improvements in the implementation of the Procedures were the result of the MRC's decision and commitment to use and support the MRC Joint Platform to address issues regarding their implementation under one roof. The MRC Joint Platform function also includes strengthening the understanding and improving the capacity of MCs for the effective implementation of the Technical Guidelines, hence, the MRC Procedures.

In February 2016, immediately at the beginning of 2016–2020 strategic planning cycle, a one-day Dialogue Workshop on Lessons Learned from the implementation of the PNPCA was held by the MRC Joint Platform. With several hydropower dams slated to undergo the PNPCA PC during the period 2016–2020, the Dialogue Workshop was intended to provide clarity in the implementation of the PNPCA and technical guidelines, and to identify ways to improve the PNPCA process, develop the capacity of the MCs, and improve public perception and participation. The Workshop led to concrete recommendations on how to improve the PNPCA process including the preparation of guidance notes to the PNPCA to improve clarity. A PNPCA Commentary Note was formulated to this end.

These helped inform the improvement in the PC process described above.

Throughout 2016–2020, the MRC Joint Platform met once or twice annually and produced several products to improve understanding and implementation of the MRC Procedures. Notably among these products are: a Booklet on Understanding the 1995 Mekong Agreement and the MRC Procedures; a concept note on a new report format to the MRC Joint Committee on the MRC Procedures implementation; a working paper on lessons learned from the PNPCA implementation; a concept note on basin-wide water use monitoring; a working paper on reasonable and equitable use; and a draft concept note on the Mekong Fund as a financing mechanism. The MRC also held a regional training on practical water diplomacy in the Mekong River Basin in 2019 to enhance the MRC Secretariat and MCs' knowledge and common understanding of the objectives and principles of the 1995 Mekong Agreement, and the roles of, and the need to implement, the MRC Procedures in a coordinated way in order to strengthen cooperation among MCs for sustainable development and management of the Mekong River Basin.

OUTCOME 4

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced, as shown in Figure 30, Outcome 4 is rated 'achieved'. The MRC Joint Platform has performed its role with respect to improving the implementation of the Procedures and their respective Technical Guidelines. The routine activities related to the PDIES, PMFM, and PWQ continued throughout 2016–2020 without a major problem. The success of the PNPCA PC for the Mekong mainstream hydropower dams greatly increases the likelihood that the potential negative transboundary impacts of the hydropower dams will be avoided, minimized, or mitigated.

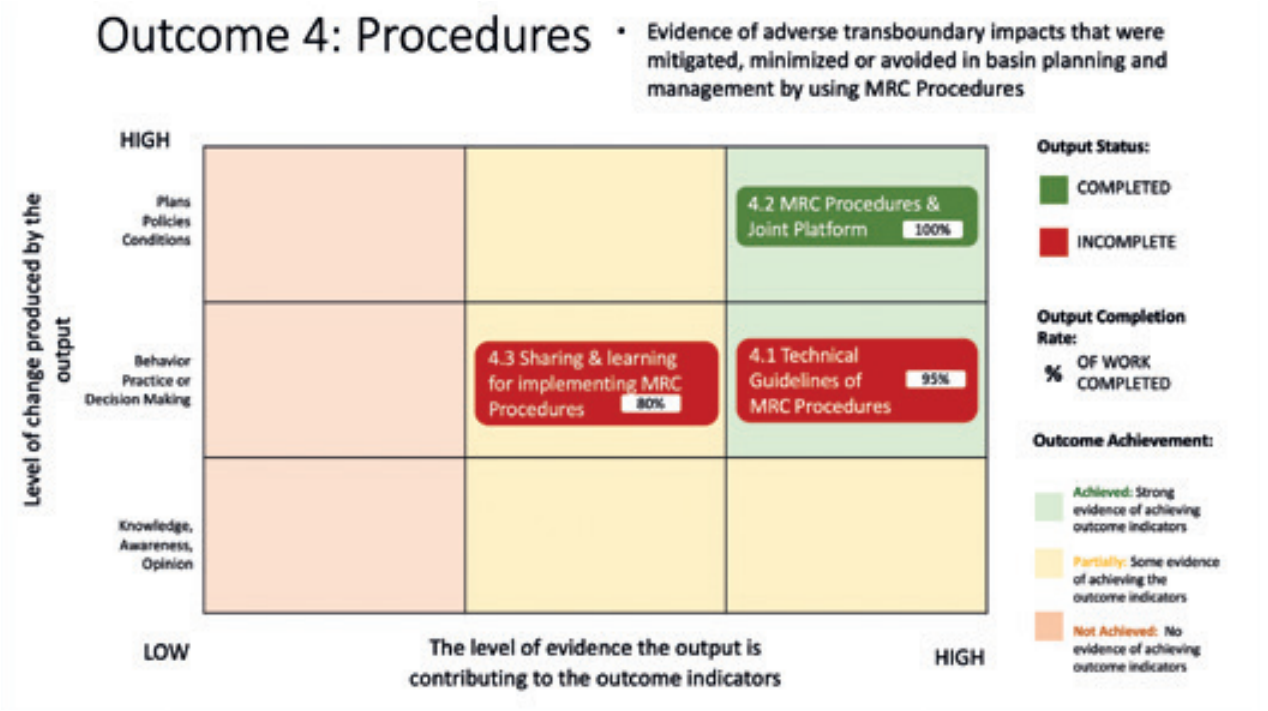


Figure 30. Outcome Evaluation Matrix

Note: Note: The Matrix assess outcome achievement based on output completion and the type of change that occurred – Outcome 4

INCREASE IN KNOWLEDGE AND UNDERSTANDING

Through the Joint Platform meetings, training workshops such as the regional training on practical water diplomacy, and the several working documents and concept notes produced throughout 2016–2020, a common and heightened understanding of the 1995 Mekong Agreement and the MRC Procedures among the MCs has been established. The resulting increase in the capacity of the MCs and in the level and quality of cooperation among them has led to significant improvements in the implementation of the MRC Procedures and their associated Technical Guidelines.

The increase in knowledge and understanding of the broader stakeholders such as the hydropower developers and the public has also led to the more effective, less contentious and less controversial implementation of the MRC Procedures, including for such a political and public process as the PC for proposed mainstream dams (see Figure 31). The PNCPCA Prior Consultation (PC) for the HPPs during the period 2016–2020, due to the increased awareness and understanding of the process among all PC participants, has led to more constructive interactions by all. There is increasing evidence that the developers are becoming more proactive, for example, by reviewing the PDG 2009 in advance of the PC and making the necessary adjustments to

increase the alignment of their hydropower design. The hydropower developers are also becoming more responsive. For instance, the developers for the Xayaburi and the Luang Prabang HPPs have been cooperative in exchanging information and dialogue, and supplying additional documents. The PLHPP developer (Power China) provided additional documents related to China's standards for dam safety in response to the MRC Secretariat's request.

With Xayaburi, Pak Beng, Pak Lay, and Luang Prabang dams representing a cascade of dams, there is also an increasing recognition that cascade operation and management have become key issues. The Lao Government also recognizes the importance of these issues, and has conducted a study with financial support from France and technical support from Compagnie Nationale du Rhône (CNR) on the feasibility of establishing a Coordination Monitoring Centre to serve as a state agency dedicated to the management of HPPs in Lao PDR. At the regional level, this is reiterated in the next strategic planning cycle in which the approved BDS 2021–2030 places stronger emphasis on improving coordination of basin management operations to increase positive transboundary effects and mitigate negative impacts.

The Development Partners have been also encouraged by the innovative evolution of the PC process, the increasing commitment of the proposing country (Lao PDR), and the MRC's efforts in facilitating the participation of different stakeholder groups during the PC process. While some stakeholder groups question the nature of the PC process, which in their view does not result in their preferred outcome, many stakeholders do appreciate the usefulness of the process. For example, the MRC's data sharing and consultation procedures obligate sovereign countries to share extensive data, proposals, and plans of their major infrastructure projects with the public. They allow the following: an independent review of government plans; international monitoring of national projects and the sharing of information to the masses; and assessment and identification of new joint and national projects that would increase regional benefits and reduce regional costs. These measures have shed more insight into what could become private information, increased transparency, and brought accountability to the high authorities.

> "We reiterate our appreciation of the work of the Secretariat throughout the Prior Consultation process for the Pak Beng hydropower project, and welcome the Member Countries' first Joint Statement on a proposed mainstream hydropower project." *– Joint Statement of the MRC Development Partners, November 2017*

Writing for the NGO International Rivers' publication, an independent observer noted:

"The MRC provided a forum for discussion and conflict resolution that was observable in real time by civil society organizations, media, donors, academic, and other interested parties. Without the MRC and its PNCPA process, there would have been a lack of procedures and guidelines to facilitate regional discussion of the impact of large-scale infrastructure. There would also have been a lack of transparency of planning, publicly accessible project documents, and various forms of research made available via the MRC website. The MRC, therefore, provided an important channel of communication, discussion, research, and information dissemination." *– Dr Oliver Hensengerth, quoted as saying in Expert Commentary on 'Review of Design Changes Made for the Xayaburi Hydropower Project (Oakland, USA: International Rivers, 2019).*

The MRC's Procedure for Notification, Prior Consultation and Agreement (PNPCA) is indispensable because:

1. It allows extensive data and information about a major infrastructure project of a country to be shared in public.
2. It provides an official legitimate and safe platform for all countries and stakeholders to air different views and suggestions after full consideration of the information provided.
3. It allows an independent review and recommendations from experts from the MRC Member Countries as well as NGOs regarding the project.
4. It results in concrete improvements and adaptations of the proposed projects
5. It results in a mechanism of a Joint Action Plan to further engage with the project as it further develops after PNPCA, including joint monitoring of impacts.

Figure 31. Benefits of the PNPCA

USE IN REGIONAL AND NATIONAL PLANNING AND DECISION-MAKING

The MRC Procedures and their respective Technical Guidelines have been applied to the various regional and nationally led activities by the MRC. All five MRC Procedures and their Technical Guidelines, for example, have been used to review the proposed Mekong mainstream HPPs during the PNPCA PC.

The PDIES has led to the continuous operation, maintenance, and use by the MCs and broader stakeholders of the MRC's Data Portal to support data and information needs. Its implementation covers both central and decentralized core monitoring functions, thereby assuring the continuous operation, maintenance, and expansion of the hydrological and environmental monitoring network and the flood and drought forecasting services.

The PMFM has led to the continuous operation and maintenance of the PMFM website, which serves as a useful reference for fostering clarity and transparency in managing and maintaining required flows in the mainstream. The MRC Secretariat regularly provides alerts to MCs on the possible non-compliance with the agreed monitoring thresholds of the PMFM, and the necessary actions that should be taken.

The PWQ and its Technical Guidelines has ensured the continuous regular monitoring of water quality of the Mekong River and the preparation of regional annual WQM reports. The MRC Secretariat regularly provided alerts to MCs on the unusual water quality issues, as well as the investigations and actions that were needed. The PWQ Guidelines for Water Quality Emergency Response and Management is intended to provide MCs on how to prepare, implement, and cooperate on transboundary water quality emergency response and management.

While the PWUM has not yet been implemented, it has served as a framework for conceptualizing water use monitoring, including following the construction of mainstream projects, and for monitoring of intra-basin water use monitoring and inter-basin diversions.

The PNPCA continues to be complied with and used by MCs, both in notifications of projects and prior consultation. The improved implementation of the Prior Consultations for PBHPP, PLHPP, and LPHPP has been instrumental in elevating the cooperation among the MCs, reducing tensions, and concluding the PC process successfully with formal agreements on follow-up monitoring and mitigation actions. The introduction of innovative mechanisms such as the Joint Statement and the JAP as concrete final outputs of the PNPCA PC process is crucial in the process' continuing importance and relevance.

The Joint Statement and the JAP represent the official agreed opinions of the four governments, thereby signifying their importance and urgency. The proposed actions in the JAP provide the notifying country and hydropower developer the opportunity to do what is right and reasonable throughout the life cycle of the project in an open, transparent, consultative, and adaptive manner to avoid, minimize, and mitigate potential negative impacts of the HPP. There is evidence that this has resulted in increased confidence in the PC process and commitment from the notifying country.

OUTCOME 4

SELECTED QUESTIONS AND ANSWERS ON STAKEHOLDERS' PARTICIPATION IN THE PNPCA PC PROCESS

How does the PC process provide equal opportunity for all stakeholders to participate, especially civil society organizations (CSOs) and affected communities?

- The PC process by design is open, transparent, and inclusive as agreed by the MCs and facilitated by the MRC Secretariat. This helps ensure that all stakeholders are given the opportunity to participate. The regional consultation is an open invitation to the public. Some financial support is provided to CSOs if warranted. While direct engagement with potentially affected local communities is still limited, their voices are represented by the CSOs, and when applicable, by their representative local government/administration. In addition, an online platform (MRC website/social media) is established to allow any public comments/views to be heard and recorded during the PC process.

How are inputs/comments by stakeholders taken into account?

- Inputs and comments from civil society and other stakeholders via various platforms, such as consultations at national and regional levels, online comments are well documented in a comment matrix as one of the annexes of the Technical Review Report (TRR).
- Within the PNPCA PC process, during meetings of the JCWG, comments gathered from national and regional consultations are presented and taken into account by the experts in formulating/revising the TRR.
- TRR is used as a basis by each NMC in formulating their respective national Reply Form, which highlights the national decision and position with regard to the proposed project.
- TRR is also used by the MRC JC to discuss and support their decision at the end of the process including the Statement and JAP.

How are communication barriers due to lack of local language translations handled/mitigated?

- The MRC provides a number of documents in riparian languages, such as the Project Overview, and the Summary of the draft TRR. They are shared to facilitate the national and regional information sharing and consultations. To keep the public informed, the outcomes of major meetings as key milestones of the PC process are shared through the MRC's website in the form of a Press Release, which is made available in all riparian languages.

How is the due diligence of the Proposing Country and Developers assured with respect to quality implementation and transparency of the information of the proposed project during both prior consultation and post-Prior Consultation processes?

- Within the PC process, in addition to the JCWG Meeting and Regional Consultation, at least three technical meetings with the Proposing Country and the developer are conducted to discuss data/information and technical aspects of the submitted project, as well as comments and recommendations made by the MRC Secretariat in the TRR.
- As agreed by the MCs (through the MRC JC), JAP implementation is reported as a standing agenda of the regular MRC Joint Committee Meeting to update other MCs with the concerns/comments and recommendations in the TRR, and any changes in the design, construction, and operation of the proposed project.
- To implement the JAP, regular meetings between the MRC Secretariat and the Proposing Country's concerned agencies are conducted to get updates on the status of the project development and how they align with the agreed Statement and the JAP.

VALUE FOR MONEY

Outcome 4 is composed of three outputs that are all related directly to MRC Procedures, which represent MRC's historic and indispensable aspect of its water diplomacy role in the Mekong Basin. The output on the MRC Joint Platform and the implementation of the MRC Procedures constituted the bulk of the level of effort under Outcome 4, equivalent to about 87% of the total cost incurred (see Figure 32). This output is considered cost-effective for MRC because the Joint Platform and its working groups have ensured the effective and coherent implementation of the MRC Procedures.

This is evidenced by the successful conclusions of PNPCA Prior Consultations for Pak Beng, Pak Lay, and Luang Prabang HPPs, and the routine implementation of activities under PDIES, PMFM, and PWQ. The two other outputs under Outcome 4 have proven to be of high VfM undertakings because they aim to address highly focused needs such as the development of Technical Guidelines (currently for PMFM, PWQ, and PWUM). The outputs also increase common understanding of the MRC Procedures *vis-à-vis* the Mekong Agreement, and build capacity in the implementation of the technical guidelines.

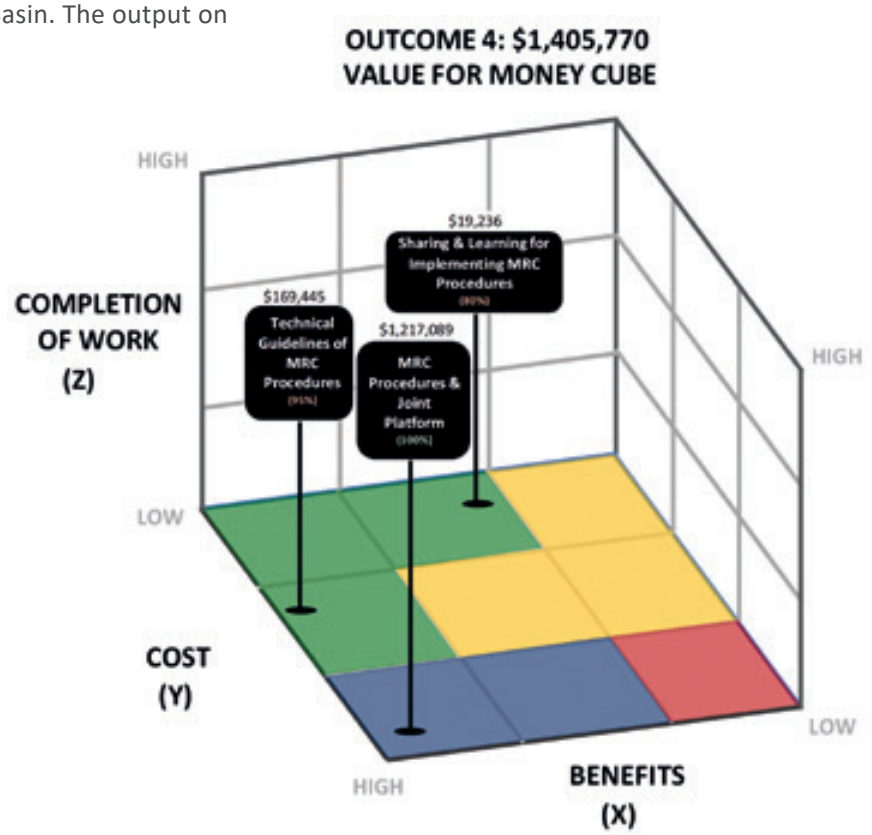


Figure 32. Value for Money Multidimensional Analysis for Outcome 4

LESSONS LEARNED

The successful conclusions of the PCs for PBHPP, PLHPP, and LPHPP were the results of lessons learned from the Prior Consultations of the first two hydropower dams that did not end with formal agreements among the MCs. The use of the Joint Statement and the JAP vastly increases the likelihood that future Prior Consultations for hydropower dams will also conclude successfully, and their transboundary negative impacts avoided, minimized, and mitigated. Such innovative tools can certainly be applied and adjusted as appropriate, in the Prior Consultations for other major infrastructure investments. The MRC's increasing emphasis on having an open and inclusive PC process provides greater clarity to developers and key stakeholders, allowing them to participate proactively and effectively.

The challenge going forward for the PC process would be for the proposing country and its developers to demonstrate their commitment to implement the JAP as agreed. This would provide even more confidence to both the PC and post-PC processes, ensuring a win-win outcome that the

mechanisms satisfy the needs of both the proposing country and notified countries. For the PMFM and the PWQ, a key lesson and action point in the next period would be to investigate violations of agreed monitoring thresholds in a timely manner, for both water flows and quality since they are increasingly linked, and for countries to take timely actions to address possible adverse impacts.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The implementation of the MRC Procedures and their Technical Guidelines will contribute to the achievement of the following SDGs:

SDG 6: Water and Sanitation, specifically Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

SDG 7: 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.

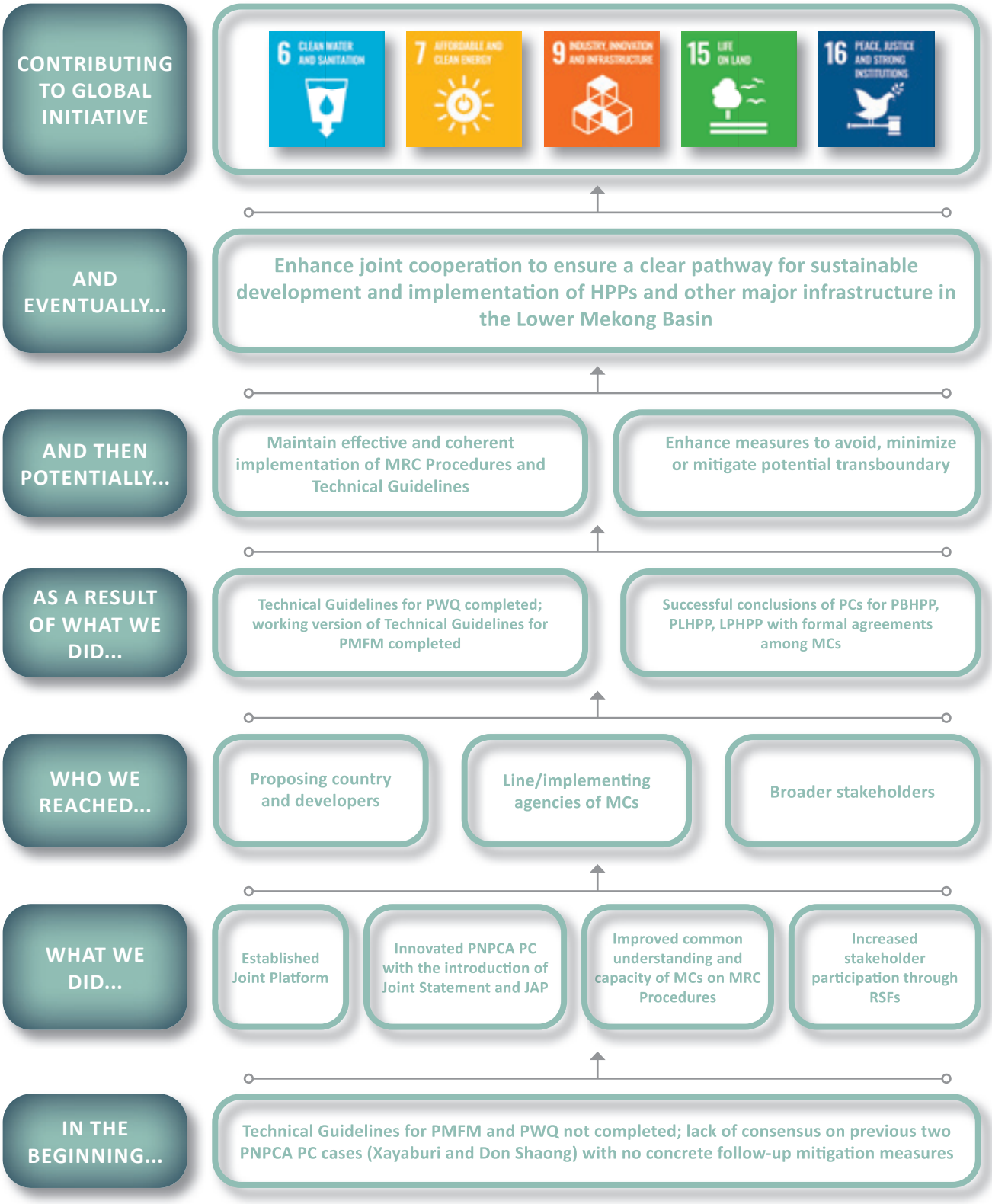
SDG 9: Industry, Innovation, and Infrastructure, specifically Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development.

SDG 15: 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.

SDG 16: Peace, Justice and Strong Institutions specifically Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels.

PATHWAY TO CHANGE

Effective and Coherent Implementation of MRC Procedures by MRC Countries



OUTCOME 5: EFFECTIVE DIALOGUE AND COOPERATION BETWEEN MEMBER COUNTRIES AND STRATEGIC ENGAGEMENT OF REGIONAL PARTNERS AND STAKEHOLDERS ON TRANSBOUNDARY WATER MANAGEMENT

INDICATORS

- *Evidence of strong engagement with China and Myanmar*
- *Evidence of ASEAN- and Great Mekong Subregion Mekong-related strategies, forums and meetings reflect MRC basin-wide perspectives*
- *Evidence that the opinions/perspectives of academic/research institutions, civil society, and the private sector are taken into consideration by the MRC Secretariat and Member Countries*

The MRC has excelled in promoting effective dialogue and cooperation between MCs, with its Dialogue Partners in the Upper Mekong Basin, in particular China, with its regional and international partners, and with the broader stakeholders. The sustained outreach and dialogue with China have led to the achievement of several important milestones including: two joint studies; the renewal of China's agreement to share Lancang hydrological data during the flood season, which began in 2002; the new historic agreement reached in 2020 to share dry season data; the inclusion of the MRC Secretariat in the meetings of the LMC Joint Working Group on Water Resources; and the signing of the MOU between the LMC Water Centre and the MRC Secretariat. The cooperation between MRC and China and Myanmar reached a new high level during the 3rd MRC Summit, during which ministerial and senior representatives from China and Myanmar made commitments to work with the MRC, including through the LMC.

The MRC's efforts to pursue broader collaboration have also resulted in a growing list of strategic and technical partners, further contributing to the positive global and regional recognition of the MRC. By the end of 2020, the MRC accumulated over 30 MOUs with various regional and international partners. The MRC's partners include regional organizations (ASEAN, ADB, ADPC, AWC, LMC Water Centre, and SEAFDEC); United Nations agencies (UNEP, UNOPS, UNESCAP, UNDPPA, UNECE, and FAO); international/national river basin organizations (MiRC, MDBA, ICPR, ICPDR, CNR); and think tanks, research institutes, academia, and others (ASU, MSU, VNSC, AIT, GWP, IOWater, IUCN, WWF, SEI, IWMI, MI, JICA, KDI, and K-Water). The MRC's central leadership in the region was evident when, for the first time, it brought together senior representatives from the Mekong countries and seven major Mekong-related regional cooperation frameworks to discuss and explore opportunities for improved coordination and collaboration in water and related areas. This was preceded by another achievement – the conclusion of a new cooperation framework agreement between the MRC and ASEAN, which is comprehensive in scope because the agreement is between the two organizations.

The MRC has also made strides in enhancing the involvement of the broader stakeholders, which include international NGOs, regional and national river networks and coalitions, national CSOs, the private sector and the general public. Through several mechanisms that include 10 RSFs, specific NGO dialogues, forums for private sector engagement, and social media campaigns, the MRC has benefited from stakeholders' more meaningful participation from which their comments, opinions, and suggestions have been incorporated in various MRC products including the BDS, PNPCA Joint Statements, Technical Review Report, the PDG, and the SHDS, among many others.

Finally, throughout 2016–2020, the MRC has worked to preserve the trust and support of its Development Partners. The Development Partners provided total financial support of approximately USD 43.8 million to the MRC for the 2016–2020 strategic planning cycle.

INTRODUCTION

The Mekong River Basin is shared by six riparian countries: the four MRC Members in the LMB and the MRC Dialogue partners, China and Myanmar, in the Upper Mekong Basin. The MRC, therefore, has the important role of promoting effective dialogue and cooperation, not only among its MCs, but also with its Dialogue Partners (especially China). This is because it recognizes that the development and management of the River is a shared responsibility and how well it is developed and managed highly depends on a high level of trust and cooperation among all riparian countries. The MRC also recognizes that its success in delivering its 1995 Mekong Agreement mandate is very much predicated on its ability to promote effective dialogue and cooperation, not only among the riparian countries, but also with its partners and stakeholders.

Heading into 2016, the cooperation with China and Myanmar was limited to annual meetings, exchange visits, and data sharing during the wet season. The cooperation with other important regional organizations such as the ASEAN was limited to secretariat-to-secretariat dialogues. The number of partners supporting the MRC (through MOUs) were few and not highly active. Finally, participation of stakeholders was not maximized since they could only participate in ad hoc forums. Overall, the MRC's reputation was floundering, and the press coverage was focusing more on its negative aspects.

Therefore, under Outcome 5, the MRC plans to conduct activities that will: (i) increase level of understanding and collaboration with its Dialogue Partners; (ii) more effectively engage other international and regional partners including other frameworks in the region such as the ASEAN and Greater Mekong Subregion (GMS); and (iii) enhance dialogue with and participation of the broader stakeholders.

COMPLETION STATUS OF OUTPUTS

During the 2016–2020 period, the MRC recorded achievements in promoting effective dialogue and cooperation between MCs, with its Dialogue Partners in the Upper Mekong Basin, in particular China, with its regional and international partners, and in enhancing stakeholder involvement in the region. As illustrated in Figure 33, the MRC nearly completed all three planned outputs under Outcome 5, resulting in an overall output completion rate of 100%.

OUTCOME 5

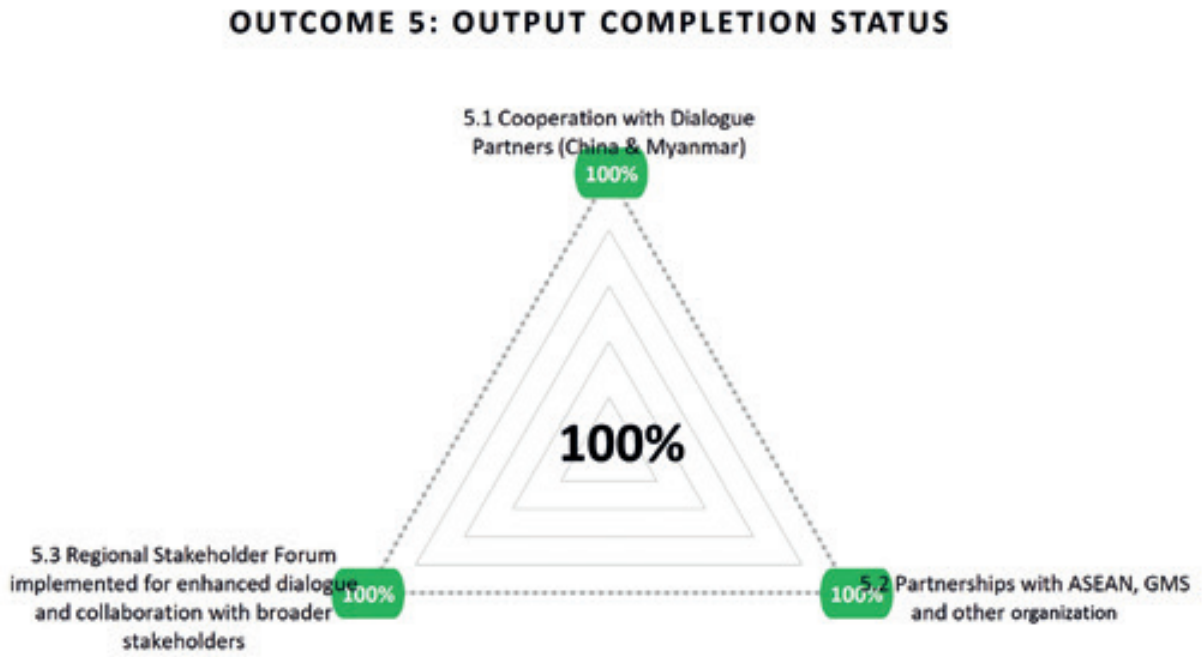


Figure 33. Output completion status under Outcome 5

INTERNATIONAL COOPERATION AT THE HIGHEST LEVEL

Heads of Governments of the MRC Member Countries (Prime Ministers Nguyen Xuan Phuc of Viet Nam, Hun Sen of Cambodia, Thongloun Sisoulith of Lao PDR, and Prayut Chan-o-cha of Thailand) shake hands in consolidating cooperation with ministers from China and Myanmar during the 3rd MRC Summit, April 2018.

For the third time in its history, Mekong cooperation under the MRC was featured at the highest level, that is, the MRC Summit, which is arguably the most high-profile international event, not only among the MRC MCs, but also partners and stakeholders. In April 2018, the MRC marked its 23rd anniversary through the convening of the **3rd MRC Summit** led by the Prime Ministers of the Governments of Cambodia, Lao PDR, Thailand and Viet Nam. The 3rd Summit had the motto, 'One Mekong, One Spirit'. The main outcome of the 3rd MRC Summit was the Siem Reap Declaration, issued by

During the MRC International Conference, H.E. Mr Lim Kean Hor, Minister of Water Resources and Meteorology and MRC Council Member for Cambodia, and delegates observe essays that capture "Voices of the Mekong" – different perspectives from Mekong citizens on their challenges and hopes for better futures.

consensus the four Mekong Prime Ministers, which considered the vital importance of development and management of the water and related resources of the Mekong River Basin, and reaffirmed the highest level of political commitment to the more effective implementation of the 1995 Mekong Agreement, the MRC's primary importance as a regional cooperation framework, and its unique role as a knowledge hub.

The **MRC Summit International Conference**, held prior to the Summit, served two purposes, offering a space for exchanges on transboundary water management between experts and stakeholders from the Mekong and other regions, and serving as a mechanism to contribute to the Summit by sharing key messages. The key messages included the need for the use of best practices and new ideas for the sustainable management and development of the Mekong River Basin. The International Conference was held under the overall theme, "Enhancing Joint Efforts and Partnerships towards Achievement of the Sustainable Development Goals in the Mekong River Basin", which spelled out who should be involved to achieve this goal at national and regional levels.

The MRC International Conference draws 400 participants from around the world, including 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.

OUTCOME 5

ON COOPERATION WITH CHINA AND MYANMAR

"China attaches great importance to the cooperative relations with the MRC, and has carried out diversified, fruitful, and practical cooperation with the MRC and its Member Countries. China welcomes the MRC and its Secretariat to play a constructive role in Lancang-Mekong water resources cooperation. We also encourage Chinese companies to participate in water development in Mekong countries, following the principle of sustainable development and win-win cooperation." *– H.E. Mr E. Jinping, Minister of Water Resources, People's Republic of China, April 2018*

The MRC has achieved significant progress in advancing cooperation with China as well as the LMC, which was established by China, Myanmar and the four LMB countries in 2016. The cooperation between the MRC and China, which dates back to 1996, has significantly increased during the strategic planning cycle 2016–2020 and has occurred through several mechanisms, including annual dialogue meetings, data and information sharing for the flood season (uninterrupted since 2002), one joint symposium, two joint studies, and numerous exchange visits on water resources development, environmental protection, flood and drought, and hydropower development. Junior Riparian Professionals from China and Myanmar worked and received training in the MRC Secretariat, and subsequently served as important links between the Dialogue Partners and the MRC.

The cooperation between the MRC and China and Myanmar reached a new, high level during the 3rd MRC Summit in which ministerial and senior representatives from China and Myanmar made commitments to Mekong leaders to work with the MRC, including through the LMC.

This increasing cooperation with China has led to the achievement of major milestones, such as:

- the release of the Emergency Water Supplement by China during the 2016 drought and the subsequent collaboration in producing a first-ever Joint Observation Report;
- the renewal of the data sharing agreement on the flood season between China and the MRC in 2018, which was expanded in 2020 to include the dry season (thus covering hydrological data year-round);
- the signing of the MOU between the MRC Secretariat and the LMC Water Centre;
- the granting of observer status to the MRC Secretariat to participate in the LMC Joint Working Group on Water Resources meetings.

Notable examples of this advanced cooperation include the following:

- joint research on the hydrological impacts of the Lancang dam cascade on extreme floods and droughts, carried out by China and IWMI, which began in 2017 and was completed in 2019;
- the jointly organized 3rd Technical Symposium on 'Capacity Building and Experience Sharing on Sediment Control and Management for River Dams', with China's Ecosystem Study Commission for International Rivers (ESCIR), held on 16–17 October 2017 in Nanjing, China;

- first-ever visit to China by the MRC Council of Water and Environment Ministers from the four MCs as a group in December 2019, and attendance at the first Ministerial Meeting of the LMC Water;

- provision of feedback and information for the preparation of the SOBR 2018 by China and Myanmar;

- participation and exchanges in various dialogue meetings in China, including: the Second Global Centre for Mekong Studies Think Tank Forum on 21–22 March 2019 in Vientiane; the Lancang-Mekong Roundtable Dialogue on the Outlook for Strategic Environmental Assessment (SEA) by Lancang-Mekong Environmental Cooperation Centre in Kunming on 20–22 March 2019; the China-ASEAN Countries Workshop on Flood Control, Drought Relief and Integrated Water Resources Management by the LMC Water Centre on 4–8 August 2019 in Yunnan province; and the Workshop on Integrated Planning and Management of River Basin by the LMC Water Centre in Guanzhou in November 2019;

- participation and exchanges in Myanmar: the MRC Secretariat's mission to Myanmar in June 2017; Ayeyarwady State of Basin Assessment Inception Workshop, June 2017 in Yangon; CEO meetings with high-level officials in Myanmar in 2018; and the Water, Land and Ecosystems (WLE) Greater Mekong Forum in Yangon in December 2018.

Dr An Pich Hatda, second riparian CEO of the MRC Secretariat, and senior representatives from China's Ministry of Water Resources present the historic agreement on year-round data sharing between China and the MRC (October 2020).

Dr Pham Tuan Phan, CEO of the MRC Secretariat, meets with Myanmar's Minister of International Cooperation H.E. U Kyaw Tin, and Minister of Natural Resources and Environmental Conservation H.E. U Ohn Win, in Napitaw, to discuss strengthening cooperation between the MRC and Myanmar (9 December 2018).

OUTCOME 5

The MRC Secretariat, represented by Dr Anoulak Kittikhoun, Chief Strategy and Partnership Officer (left, front row), participates for the first time in the 3rd Special Meeting of the Lancang Mekong Cooperation Joint Working Group on Water Resources Cooperation in Guangdong, China (29 and 30 October 2019).

ON COOPERATION WITH REGIONAL AND INTERNATIONAL PARTNERS

One aspect of the MRC's unique identity and history is its openness to cooperate with a broad spectrum of partners from all over the world. The sheer number and quality of the MRC's partners reflect both the organization's efforts and reputation for partnership excellence, and the importance of the Mekong in the international arena.

During the period, MRC's growing list of strategic and technical partners includes regional organizations (ASEAN, ADB, ADPC, AWC, LMC Water Centre, and SEAFDEC); United Nations agencies (UNEP, UNOPS, UNESCAP, UNDPPA, UNECE, and FAO); international/national river basin organizations (MiRC, MDBA, ICPR, ICPDR, CNR); and think tanks, research institutes, academia, and others (ASU, MSU, VNSC, AIT, GWP, IOWater, IUCN, WWF, SEI, IWMI, MI, JICA, KDI, and K-Water as well as Morocco). By the end of 2020, the MRC had accumulated over 30 MOUs with various regional and international partners.

In 2018, following two years of preparation, the cooperation between MRC and ASEAN, the premier regional cooperation body in Asia, was elevated to a new Cooperation Framework following two years of review, preparation, and negotiation. Building on the previous secretariat-to-secretariat MOU, the new agreement aims to foster cooperation between the two organizations and their member states, four of which are the same, in the areas of strategic and basin planning, environmental management, and disaster risks management, among others. ASEAN provided inputs to the preparation of the BDS and the emergency procedure of the PWQ. In 2020, it was agreed that the first ASEAN-MRC Water Security Dialogue would be held in 2021.

[6] Attending the meeting are also members of the MRC Joint Committee, who are members of the Joint Working Group and include Dr Le Duc Trung of Viet Nam (3rd from left), Dr Somkiat Prajamwong of Thailand (4th from left) and Mr Chanthanet Bualapha of Lao PDR (3rd from right).

In June 2017, the MRC and the SEAFDEC agreed to enter into an MOU on "The Promotion of Sustainable Development of Fisheries and Aquaculture in the Lower Mekong Basin and Southeast Asia" to formalize relevant collaborative efforts in fostering research and development (R&D) in inland fisheries in the countries of the Mekong River Basin. Through the signed MOU, SEAFDEC financially contributed to and actively participated in: (i) the development of the BFMS and its Project Based Action Plan 2021–2025; and (ii) the implementation of the BFMS/PBAP 2021–2025, including the recent development of two Technical Guidance documents: Transboundary Fisheries Management, and Protection and Restoration of Key Fish Habitats with Regional Importance in the LMB.

Other collaborative activities include: the MRC sharing its extensive knowledge and experience in fisheries monitoring and cross-border fisheries management with SEAFDEC researchers and experts from the Training Department and Inland Fisheries Research and Development Department; the MRC participating in several technical workshops organized by SEAFDEC, including the fish passage design and monitoring workshop; and the MRC coordinating jointly with SEAFDEC the regional training on the Ecosystem-Based Approach for Fisheries Management for the MRC's senior management and relevant line agencies in December 2017.

The MOU between the MRC and ADPC, which was signed in 2002, covers: areas of common interest in fields of meteorology, hydrology, and flood management; a joint undertaking of capacity building of emergency personnel in the Mekong; and joint dissemination of information (re flood preparedness, forecasting and warning) to community-level disaster management personnel in the Mekong. During the 2016–2020 period, areas of cooperation focused on improving riverine forecasting for the LMB, reservoir monitoring for flood and drought management, using the rainstorm tracker tool to enhance the Flash Flood Guidance System, and enhancing drought monitoring, forecasting, and management. Through the SERVIR-Mekong Programme, which since 2014 ADPC has been implementing for the United States Agency for International Development (USAID) and NASA, the MRC has gained access to up-to-date, satellite-based rainfall data and related products to improve its flood forecasting capabilities.

MRC Council members, Minister Sommad Pholsena of Lao PDR, Minister General Surasak Karnjanara of Thailand, and Minister Tran Hong Ha of Viet Nam, exchang views with the Mississippi River Commission led by its President, Maj. General Michael C. Wehr, of the United States (April 2017).

OUTCOME 5

The MRC also uses ADPC's Reservoir Monitoring Assessment Tool to forecast water storage changes and improve transboundary water resource management and related decision-making on flood protection across the LMB. The ADPC is also working with the MRC to enhance its existing Flash Flood Guidance System (FFGS) by using the Rainstorm Tracker tool to monitor and forecast potential rainstorms, and the Mekong X-Ray for assessing the impact of floods on critical infrastructure.

With respect to improving drought forecasting, the MRC benefits from the ADPC's Drought and Crop Watch Tool to prepare and respond to droughts, and SERVIR-Mekong's drought monitoring data, which are now integrated with the MRC's Drought portal to provide easy access of relevant drought information to Mekong policy and decision makers as well as Mekong farmers.

The engagement of the United Nations organizations in the Mekong, especially the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and UNDP, has a deep history dating back to the previous Mekong Committee from the late 1950s to the 1980s. While the United Nations' involvement decreased since the establishment of the MRC in 1995, cooperation with the United Nations renewed during the past five years with new MOUs signed with UNESCAP, UNOPS and UNEP. UNEP and the MRC worked together on addressing plastic pollution in the Mekong.

UNDPPA supported the MRC with the deployment of experts on conflict management to advise and participate in the first Mekong Regional Water Diplomacy Workshop in 2016 and the International Conference in 2018. UNECE engaged the MRC Secretariat and MC officials in a number of expert and working groups and meetings on transboundary water management, nexus assessment, financing of river basin organizations, climate change adaptation, and water allocation, and featured MRC works and results in United Nations handbooks and reports on these matters.

New and renewed partnerships and collaboration were reached with well-known river basin organizations such as the MiRC in the United States of America, the MDBA in Australia, and the CNR in France. With the MiRC, which is technically backstopped by the US Army Corps of Engineers (USACE), there were two highlights – the "High Water Inspection", in which the MRC Council members and the MRC Secretariat CEO participated in April 2017, and the "Low Water Inspection" and associated public hearings, in which the MRC Joint Committee, the MRC Secretariat CEO, and senior staff participated in August 2019. The 2019 visit also discussed flood management, sediment modelling, fish migration, transboundary cooperation, and benefit sharing in their respective basins. During the public hearings, the MRC leaders learned first-hand how MiRC Commissioners engaged directly with the public to hear concerns, which helped formulate solutions.

Dr Pham Tuan Phan, first riparin CEO of the MRC Secretariat, meets with H.E. Mr Alounkeo Kittikhoun, Minister to the Prime Minister's Office and ASEAN Senior Officials Meeting Leader of Lao PDR, in Lao PDR's capacity as ASEAN Chair in 2016. The meeting lays the foundation for renewing cooperation between the MRC and ASEAN.

Inspired by the MiRC's good example, during the MRC's own stakeholder forum later that year, the MRC Joint Committee members and the CEO met and engaged directly with Mekong stakeholders, facilitated by the MRC Secretariat Chief Strategy and Partnership Officer.

The renewal of the MOU between the MDBA and the MRC in 2019 to collaborate on many areas, including Mekong Basin-wide planning, environmental monitoring, flood and drought management, climate change adaptation, and stakeholder engagement was yet another accomplishment. It was conducted during a successful, high-level exchange visit, "Mekong-Australia Renewable Energy Dialogue" in June 2019, in which senior leaders and decision-makers from the MRC MCs discussed with Australian policymakers and experts how to deal with enormous challenges both in Australia and the Mekong. They also discussed how the new knowledge gained could influence the national energy policy- and decision-making in the Mekong region, which may have a lasting impact on the sustainability of the Basin.

H.E. Keo Rattanak (middle), Minister's Office and the Managing Director for Electricite du Cambodge, and Dr Daovong Phonekeo (right), then Permanent Secretary and now Minister of Energy and Mines of Lao PDR join a meeting with Australia's Department of Foreign Affairs and Trade senior officials during the Mekong-MRC visit to Australia (June 2019).[7]

Similarly, in its efforts to better understand various approaches to managing and operating multi-purpose dams that could be adapted and applied regionally, an increasing important issue for the Mekong, MCs and Secretariat senior staffers conducted an exchange visit in June 2018 to the Rhone river basin and CNR, the French public company responsible for the development and management of the Rhone. The participants highly appreciated the approach that CNR took to manage and operate the dams it built from a comprehensive and whole-of-river basin perspective, which must meet three equally important objectives: power generation, navigation, and irrigation. Hence, the two latter objectives "have to be met even if it means generating less power". The MRC could definitely learn from this as it further develops its projects.

The partnership with Morocco is also notable since Morocco is the first African and Arab country to become a partner of the MRC. The MRC and Morocco's MOU, which was signed in June 2017, stipulates nine potential areas of collaboration, including areas of particular Moroccan expertise such as solar energy, drought management, human development, and agriculture and food security. Several exchange visits have taken place since then, including Morocco's Secretary of State of Foreign Affairs attending the 2018 MRC Summit, and the MRC Secretariat CEO paying an official visit to Morocco in 2019.

[7] H.E. Keo Rattanak said the discussion on renewable energy such as solar and wind power was relevant to Cambodia because the country wanted to develop cleaner energy that is healthy to the environment and affordable to the people. Dr Daovong Phonekeo also noted that the new information and knowledge on how to increase the share of renewable energy in Australia is inspiring and particularly important to Lao PDR.

OUTCOME 5

Dr An Pich Hatda, MRC Secretariat CEO, meets with Her Excellency Mounia Boucetta, Secretary of State to the Moroccan Ministry of Foreign Affairs and International Cooperation, in Morocco's capital city Rabat, to discuss how the MRC and Morocco should concretize their cooperation (4 October 2019).

Finally, recognizing the benefit of developing and strengthening its relationships with the various Mekong-related cooperation frameworks, the MRC brought together, for the first time, senior representatives from the Mekong countries and seven major Mekong-related regional cooperation frameworks during its 2nd Expert Group on Strategy and Partnership meeting on 15 August 2019 in Phnom Penh. This aimed to promote joint efforts in the water sector through a more coherent and effective coordination. The organizations and cooperation frameworks represented included the ASEAN Secretariat and Asian Development Bank, which supports the Greater Mekong Subregion Economic Cooperation Programme, Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (backstopped by Thailand), Mekong-Japan Cooperation, Mekong-Korea Cooperation, Lower Mekong Initiative (backstopped by the United States of America), and the LMC on Water (backstopped by the LMC Water Center). The participating organizations presented the status of their ongoing and future projects and programmes in the water, energy, disaster and environment-related fields in supporting the Mekong countries, and discussed and explored opportunities for collaboration and the reduction of duplication of work.

Mr Dong Yanfei, Deputy Secretary General of the LMC Water Center, speaks at the 2nd MRC Expert Group on Strategy and Partnership meeting about LMC's ongoing and future projects and programmes in the Mekong region, and cooperation with the MRC (August 2019).

ON MAINTAINING STRONG SUPPORT OF DEVELOPMENT PARTNERS

The MRC's ability to maintain its strong relationship with Development Partners has enhanced the organization's capacity not only in terms of its financial wherewithal, but also organizational strengthening in financial management and internal processes and operations. For the MRC SP 2016–2020 period, the MRC received funding support from **Australia, Belgium, the European Union, France, Germany, Japan, Luxemburg, Netherlands, Sweden, Switzerland, the United States of America, and the World Bank**. Overall, the total financial support that the Development Partners provided to MRC for the strategic planning cycle was approximately USD 43.8 million.

MRC Informal Development Partners meeting in June 2019, where the MRC Joint Committee and Secretariat held a dialogue with Development Partners on the MRC's work and ways to enhance cooperation.

ON ENGAGEMENT OF BROADER STAKEHOLDERS

The MRC has made important strides in enhancing the participation of the broader stakeholders, which include international NGOs, regional and national river networks, coalitions and civil society organizations (such as Save the Mekong, Viet Nam River Network, NGO Forum in Cambodia, Rivers Coalition in Cambodia, Living River Association, Green Community Alliance), academia and the private sector (especially consultants, developers and operators of hydropower, irrigation, and navigation facilities).

The MRC has hosted numerous events as part of its stakeholder outreach, including its institutionalized and standing RSF. Starting with the first RSF in February 2017, the MRC has hosted a total of 10 RSFs on important topics of public interest that include the PNPCA PCs of the mainstream hydropower dams, the SOBR, the Council Study, hydropower strategy, watershed management, and the BDS, among others.

Due to the COVID-19 pandemic, the MRC conducted the 10th RSF in an innovative manner, a mixture of physical and virtual interactions, which drew a large and engaged audience. The RSF proved to be a highly effective mechanism to communicate key MRC outputs under each of the seven outcomes of the MRC SP 2016–2020 with various stakeholders.

OUTCOME 5

The 10th Regional Stakeholder Forum, held virtually and through four national hubs, attracts significant participation by stakeholders in the midst of the COVID-19 pandemic travel and related restrictions.

Related to hydropower development, the MRC reached out to private hydropower developers through several mechanisms including work meetings on the PDF update and the PNPCA, and the Hydropower Practice Forum. Specific dialogues were also conducted with Mekong civil society organizations by the MRC Secretariat in order to increase understanding of the role of the MRC and the value of continued engagement in MRC-Mekong matters.

Throughout the strategic planning cycle, the MRC participated in many stakeholder events organized by others in the region including the following, among many others:

- Regional Dialogue on Women's Rights and Natural Resources by Oxfam, IWRAW and GADC, with support from Australian Aid (30 May – 1 June 2017, Phnom Penh)
- Hydro-Diplomacy: Instruments and processes for water cooperation jointly by IUCN and the MRC (27–28 September 2017, Bangkok)
- Greater Mekong Forum on Water, Food and Energy (25–27 October 2017, Yangon)
- Syllabus Development Workshop organized by the National University of Lao PDR on the newly approved Master Course on Sustainable Development in Hydropower Projects (15 November 2017, Vang Vieng)
- Mekong Public Forum co-organized by International Rivers, PanNature, Mekong Environment Forum, and Save the Mekong Coalition (20 March 2018, Can Tho)

The MRC Secretariat holds dialogues with representatives of civil society organizations to foster mutual understanding and actions in support of sustainable development in the Mekong.

- Sweden's Workshop, "Building Participation through Resilience" (26–27 March 2018, Bangkok)
- Experts' Consultation Workshop on Guidance to Monitoring and Evaluation of Gender Equity and Social Well-being in Fisheries Communities by SEAFADEC (8–10 August 2018, Bangkok)
- Greater Mekong Forum on Water, Food and Energy (4–6 December 2018, Yangon)
- Sweden's Regional Workshop, "Empowering People for a Sustainable Future" (25–26 March 2019, Bangkok)
- The Mekong public forum co-organized by international Rivers, NGO Forum and Save the Mekong Coalition (29–31 July 2019, Phnom Penh)
- 1st Mekong dialogue, "Transboundary Water Resources Management in the Mekong Region" (7–9 October 2019, Chiang Rai)
- "Building Climate Resilience in the Region" – jointly organized by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the MRC Secretariat (25–26 November 2019, Vientiane)
- Asia Women and Rivers Congress webinar series by Oxfam (July – September 2020, Video Conference)
- The "Gender and Human Rights-Based Approach" workshop by Sida (15–16 September 2002, Video Conference)
- 2nd Mekong Dialogue, "The Confluence of the Powers and the Locals in the Mekong Region" (25 February 2021, Video Conference).

ON COMMUNICATION, MEDIA AND OUTREACH

The MRC has also significantly intensified its presence online through its main website and Facebook page, and hosted several social media campaigns, such as in March 2020 in celebration of MRC 25th Anniversary. Some of the notable campaigns were as follows:

MRC Secretariat Chief Strategy and Partnership Officer, Dr Anoulak Kittikhoun, also the MRC Secretariat Spokesperson, answers questions from the media during the 8th Regional Stakeholder Forum (November 2019).

- The MRC launches regional photo contest to promote Mekong water use cooperation, July 2017
- The MRC awards photo contest winners and launches photo exhibition to promote Mekong water use cooperation, December 2017
- Photo exhibition of the Mekong River increases awareness of water cooperation, January 2018
- Five riparians win the MRC writing competition: What does the Mekong mean to you? March 2018
- The MRC marks Tree Day with a planting ceremony to promote environmental sustainability, June 2018
- Mekong student open day at MRC, July 2018
- The MRC awards writing competition winners to celebrate Mekong's shared value, promote inclusive planning and management, July 2018
- The MRC awards green campaign winners to celebrate Mekong Day and raise awareness of plastic pollution, April 2019
- Campaign launched to celebrate the 25th Anniversary of the MRC and inspire river protection, March 2020.

OUTCOME 5

Dr An Pich Hatda, CEO of the MRC Secretariat, poses for a group photo with winners of the MRC Green Campaign to celebrate the Mekong Day anniversary and raise awareness of the danger of plastic waste in the Mekong River Basin (5 April 2019).

Table 2. Funding support from Development Partners and MCs to the MRC during 2016–2020

NO.	DEVELOPMENT PARTNERS	AREAS OF SUPPORT	FINANCIAL SUPPORT (USD)				TECHNICAL ASSISTANCE (USD)
			BF	EF	ARF	Total	
1	Australia	• BF – the MRC Decentralization Process and Strategic Plan 2016–2020. • Other technical cooperation and supports: . through Australian Water Partnership (in-kind hydropower expert, fisheries experts for the JEM); . through eWater for reinvigorating the MRC data, modelling and information systems.	4,091,793	(1,484)[a]	-	**4,090,309**	**300,000**[b]
2	Belgium	• The MRC Navigation and Trade Facilitation-Short Term Invention in support of the Master Plan.		260,394	-	**260,394**	
3	European Commission (EU)	• Support to Enhance Cooperation in Sustainable Transboundary Water Management in the Mekong Basin (EUR 5 million) . Implementation of the MRC's Procedures . Collaboration with Dialogue Partners and regional Mekong frameworks . Stakeholder engagement . Monitoring of water and related resources (ecosystem, water quality and fisheries) . Improvement of the MRC's accounting and financial system . Strengthening of the M&E system . Mainstreaming of gender equality • Support to the Climate Change and Adaptation Initiative (CCAI) in 2016.		6,217,630[c]	-	**6,217,630**	

NOTES:

[a] Returned balance funds under the Council Study.
[b] The Australian Government provided funding of AUD 430,000 (approx. USD 300,000) through eWater for reinvigorating the MRC data, modelling and information system.
[c] Including the EU transferred the last payment of USD 1.1 million for the CCIA project in 2016.
[d] Joint MRC-GIZ activities managed directly by MRC-GIZ programme.
[e] In 2016 and 2017, the fund received from SEAFDEF was recorded under the BF.
[f] The USD 98,436 was an amount pending from the SDC programme in 2015, and was transferred to the MRC Secretariat in 2016. For the purpose of accounting, the MRC Secretariat recorded USD 98,436 in 2016. Therefore, this amount was shown or included in the funding period from 2016 to 2020.
[g] This fund was recorded under the BF in 2016.

4	France (French Development Agency, ADF)	• The Extension of the Mekong HYCOS Network.		1,152,691	-	**1,152,691**	
5	Germany (Deutsche Gesellschaft für Internationale Zusammenarbeit, GIZ)	• The BF – Programme support to the MRC's Organization Transition II, and support to Implementation of the MRC SP 2016–2020. • The EF – Support the Council Study and the MRC organizational transition II. • Other technical cooperation through consultants mobilized by the GIZ-MRC Programme to support various SP activities, including: . organizational development, including support to FMIS, operational review, legal advice, and update of administration and finance manuals; . joint projects on Flood and Drought for both Phase 1 and Phase II; . JEM for the development of the JEM guidelines and the piloting of the JEM at Don Sahong and Xayaburi; . Sustainable hydropower development including PNPCA technical review for Pak Beng and Pak Lay, update of the preliminary design guidance, development of Initiative on Sustainable Hydropower mitigation guidelines.	4,720,593	129,879	-	**4,850,472**	275,000[d] 960,000[d] 1,440,000[d] 1,245,000[d]
6	Germany (KfW)	• LMB Wetland Management and Conservation Project. • Watershed Management Project.		1,295,358		**1,295,358**	
7	Japan	Japan ASEAN Integration Fund: • Drought Management Programme Core Function Project. • Provision of Flood Forecasting, Flash Flood Guidance, Dry Season Monitoring and Dissemination of Information, and the Flood Forecasting and Early Warning System – FMMP-JAIF (Japan-ASEAN Integration Fund).		**2,613,173**		**2,613,173**	
		Japan Ministry of Agriculture, Forestry and Fisheries: • Project for Food Security in the Lower Mekong Basin. • Project for Improving Irrigation Facilities in the LMB.		**1,740,579**		**1,740,579**	
8	Luxembourg	• Support to Implementation of the MRC Strategic Plan for 2016–2020.	1,115,453			**1,115,453**	
9	Netherlands	• The BF – Support to Implementation of the MRC Strategic Plan for 2016–2020. • The EF – Support to flood initial studies.	1,304,000	1,020,000		**2,324,000**	
10	The Southeast Asia Fisheries Development Centre (SEAFDEC)	• Promotion of Sustainable Development of Fisheries and Aquaculture in the Lower Mekong Basin and Southeast Asia.	21,000[e]	15,000		**36,000**	
11	Sweden (Sida)	• Implementation of the MRC Strategic Plan for 2016–2020.	4,517,576			**4,517,576**	
12	Switzerland (SDC)	• The General Functioning of the Organization and Implementation of the SP 2016–2020.	7,200,000	98,436[f]		**7,298,436**	
13	United States of America	• The Council Study. • Mekong-Mississippi River Commission Exchange in the United States of America.		562,013		**562,013**	
14	World Bank	• The Mekong Integrated Water Resources Management Phase I.		5,592,290		**5,592,290**	
15	Member Countries (MCs)	• The MRC's activities and operation.	15,575,753	-	112,871	**15,688,624**	
16	Other incomes		675,629	137,277	430,188	**1,243,094**	
17	MAF		1,743,052	-	-	**1,743,052**	
18	Others (supports and cooperation)	• China – Support the MRC Council visit to China.		30,000	-	**30,000**	
		• The International Centre for Water Resources and Global Change (ICWRGC) – Support the Workshop on the Water Diplomacy in the Mekong River Basin, Vientiane, Lao PDR, 28–30 November 2016.	8,644[h]			**8,644**	
		• Mekong Region Futures Institute (MERFI) – Support the Socio-Economic Modelling Project.		28,566		**28,566**	
		• Norwegian Agency for Development Cooperation (NORAD) – Support the Hydropower Forum.		23,669		**23,669**	
		• Partnerships for Enhanced Engagement in Research (PEER) – Support building a Mekong River Genetic Biodiversity Research Network.		1,297		**1,297**	
		Overall total	**40,973,493**	**20,916,768**	**543,059**	**62,433,320**	**4,220,000**

OUTCOME 5

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced as shown in Figure 34, Outcome 5 is rated 'achieved' based on the strengthened relationship with its Dialogue Partners, in particular China, the increased partnerships with regional and international organizations, resulting in MRC's increasingly positive global standing, and the effective and meaningful participation of stakeholders.

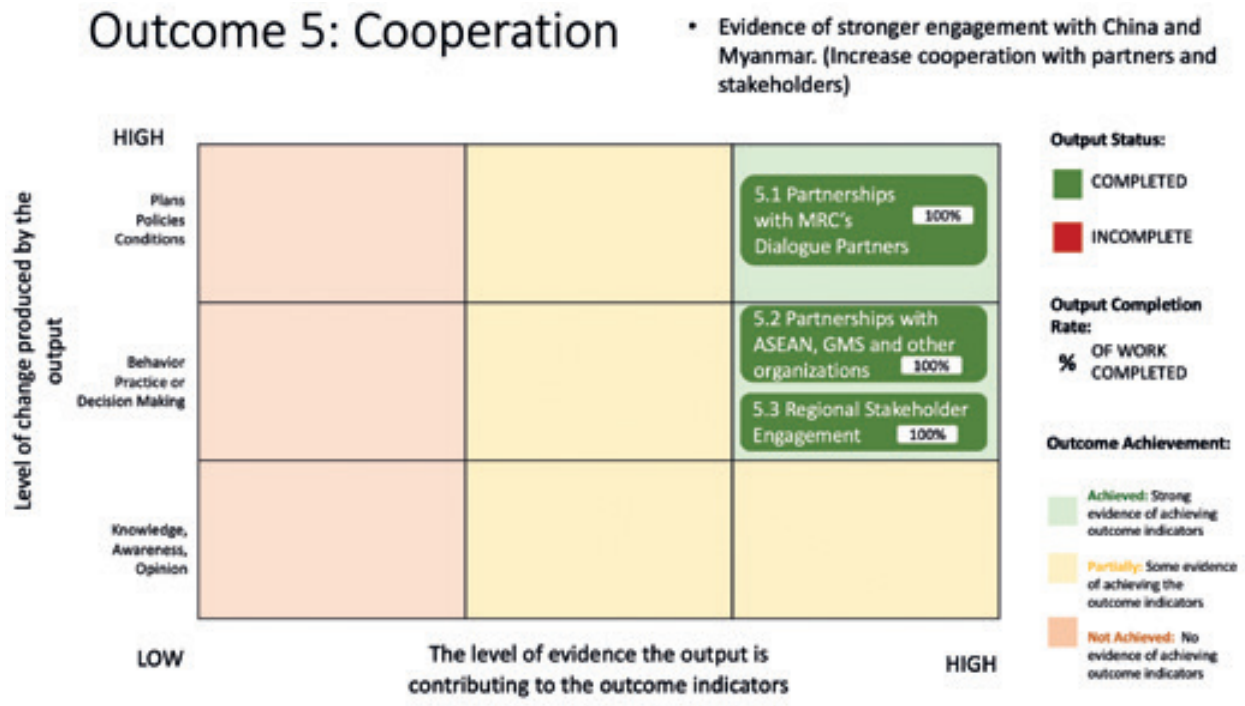


Figure 34. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the type of change that occurred – Outcome 5

INCREASED KNOWLEDGE AND UNDERSTANDING

Evidence of positive changes and benefits as a result of the MRC's continuing dialogue and cooperation with its regional and international partners include: increased awareness and common understanding among partners of the critical basin issues and challenges, which enabled better support; increased capacity of the MRC Secretariat's staff and MCs as a result of technical information exchanges, exchange visits, and workshops, including both immediate use and application of practice, such as stakeholder engagement and more medium-term implementation such as basin planning, hydropower management and operation, and flood and drought management; improvements in MRC processes as a result of lessons and best practices learned from other cooperation frameworks and other basin organizations; and infusion of new or additional funding from Development Partners and other partner organizations in support of critical activities.

STRENGTHENED RELATIONSHIP AND COOPERATION WITH UPPER MEKONG COUNTRIES

The continuing dialogue, information exchanges, and joint initiatives have resulted in a strengthened relationship and cooperation with China and Myanmar, benefiting the MRC as an organization and

the entire Basin. China's active participation in the MRC's activities, at high, senior and technical levels, such as during the 3rd MRC Summit, MRC Dialogue meetings, MRC technical meetings, notably the Expert Group of Strategy and Partnership in 2018, and the MRC stakeholder forums have contributed to the substance, quality, and comprehensiveness of the discussions and ensuing decisions. The MRC's status at home and internationally has also benefited from China's expression of commitment to work with the MRC during the 3rd MRC Summit, China's regular citation and reference of the MRC's reports with regard to the situation in the Mekong Basin, and the invitations of the MRC Secretariat to the LMC Joint Working Group meetings and various other important technical meetings, as well as the historic year-round data sharing agreement concluded in 2020.

REGIONAL AND GLOBAL RECOGNITION

The MRC's efforts in expanding and strengthening its relationship with regional and international partners are contributing to its positive reputation regionally and globally. The MRC has clearly demonstrated its central and leadership role in the region, as evidenced by the reaffirmation of its mandate through the Siem Reap Declaration, and its increasingly strategic and productive partnership with its Dialogue Partners.

The MRC's new Cooperation Framework with ASEAN at the organization level is a recognition of the MRC's critical role in bringing sustainable development to the Mekong sub-region of ASEAN. Its efforts to bring together the various Mekong-related regional frameworks to explore opportunities for greater and more effective collaboration have not gone unnoticed and have further reinforced the MRC's leadership role in steering the Mekong towards a sustainable water future.

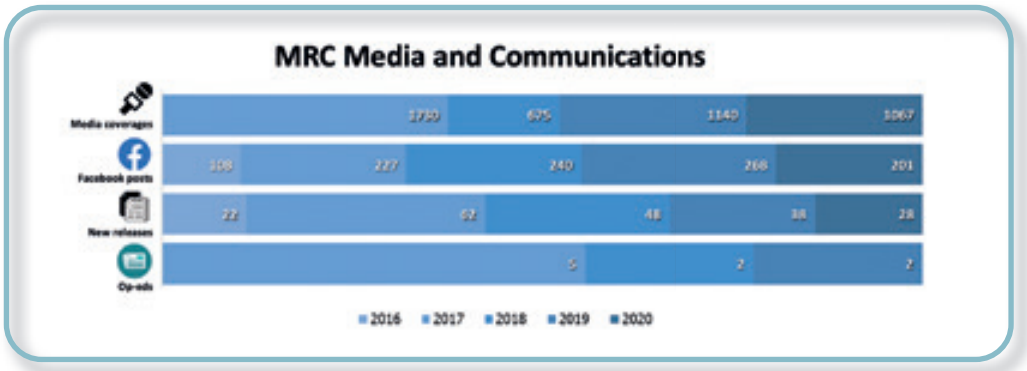
Through the technical and financial support of its growing list of regional and international partners, the MRC has produced an impressive body of knowledge, experience, and best practices in IWRM-based river basin planning and development that are highly relevant and beneficial to other river basin organizations and the international community. This contribution to the world literature is further reinforcing the positive image of the MRC globally.

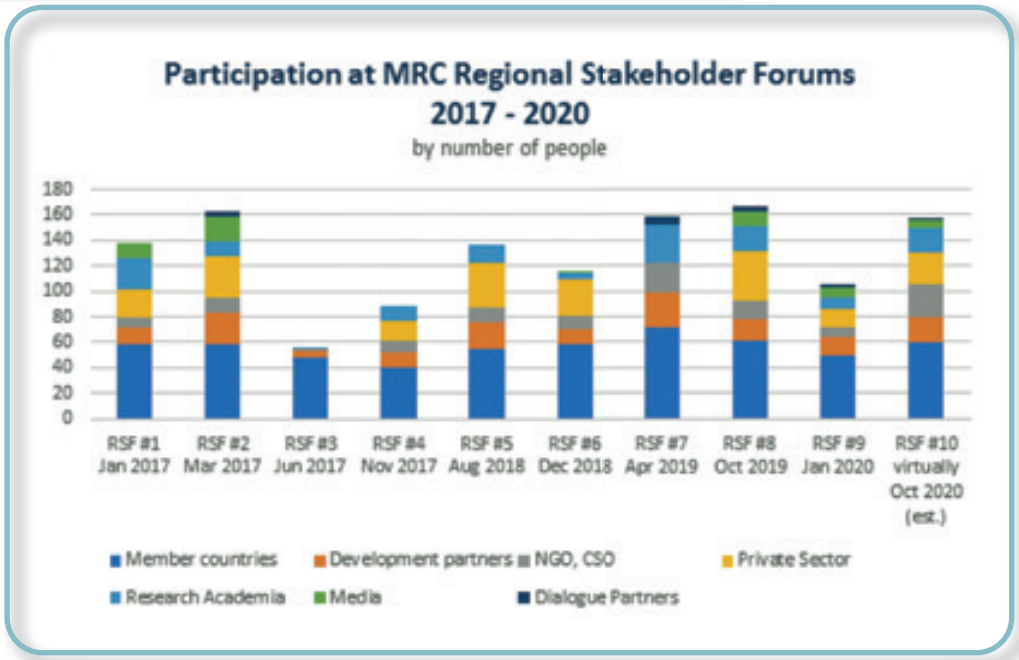
MEANINGFUL STAKEHOLDER COMMUNICATION AND PARTICIPATION

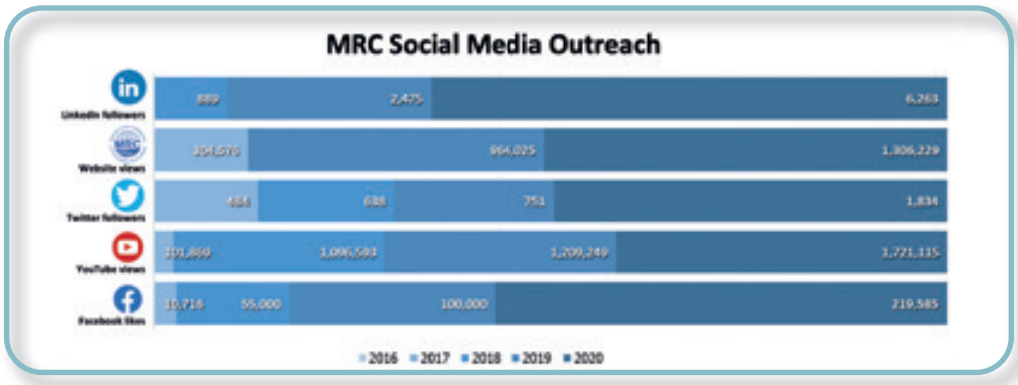
Evidence of a broader range of actively engaged stakeholders has been increasing, as reflected in Figure 35. This is the direct result of sustained and improved stakeholder efforts by the MRC and stronger commitment for an open, transparent, and inclusive process through several mechanisms, which include the RSFs, national stakeholder consultations, regular updates of the MRC website, and use of social media such as Facebook, Twitter, and LinkedIn, Facebook campaigns and livestreaming of important events, and outreach events.

More importantly, the comments, opinions, and suggestions of the broader stakeholders have been heard and incorporated into MRC products, including the BDS, PNPCA Joint Statements, Technical Review Reports (TRR), the PDG, and the SHDS, among many others. To further improve the engagement of stakeholders, in particular of NGOs and CSOs, the MRC will develop work plan in 2021 under the next SP with the following components: (i) how NGOs can contribute to BDS implementation; and (ii) how the MRC and CSOs can work together on MRC activities. Moreover, under the next SP, the MRC will institutionalize a Multiple Stakeholder Platform (MSP) with the mandate to undertake regular stakeholder reviews of the implementation of the BDS at the regional and national levels. The MSP can be used to accommodate targeted meetings with specific stakeholder groups (e.g. CSOs, the private sector, media) on major concerns with a view to sharing information, discussing perspectives and viewpoints, and working towards consensus.

Finally, the MRC's efforts to reach out to stakeholders have resulted in its more balanced and neutral media coverage.







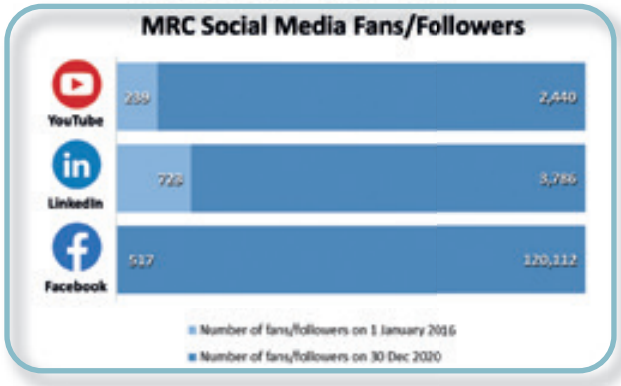


Figure 35. Key statistics indicating the MRC's efforts and results in improving stakeholders' communications and outreach

VALUE FOR MONEY

Of the three outputs that were designed to promote effective dialogue and cooperation between MCs, and between the MRC, its partners and its stakeholders, the output related to regional stakeholder engagement constituted the bulk of the level of effort under Outcome 5, equivalent to about 71% of the total cost incurred (see Figure 36). This output proved cost-effective because its implementation resulted in the active and meaningful participation of stakeholders, allowing the MRC to benefit from stakeholders' inputs on many MRC products, including the BDS, the PNPCA, Joint Statements, TRRs, the PDG, and the SHDS, among many others. The significant investments that the MRC made in holding the 10 RSFs during the 2016–2020 period were commensurate with the benefits MRC gained with respect to stakeholder engagement. An added benefit was the resulting balanced and neutral media coverage of the MRC.

The two other outputs on partnerships with MRC's Dialogue Partners and partnerships with international and regional organizations (e.g. ASEAN, GMS, and Development Partners, among many others) both proved to be high VfM undertakings for the MRC. The completion of these outputs has led to a strengthened relationship and cooperation between the MRC and its Dialogue Partners, China and Myanmar, and effective cooperation with its strategic international and regional partners. In addition to enhancing MRC's technical and financial wherewithal through these partnerships, they have also contributed to the positive reputation of the MRC regionally and globally, further solidifying its central and leadership role in the Mekong region.

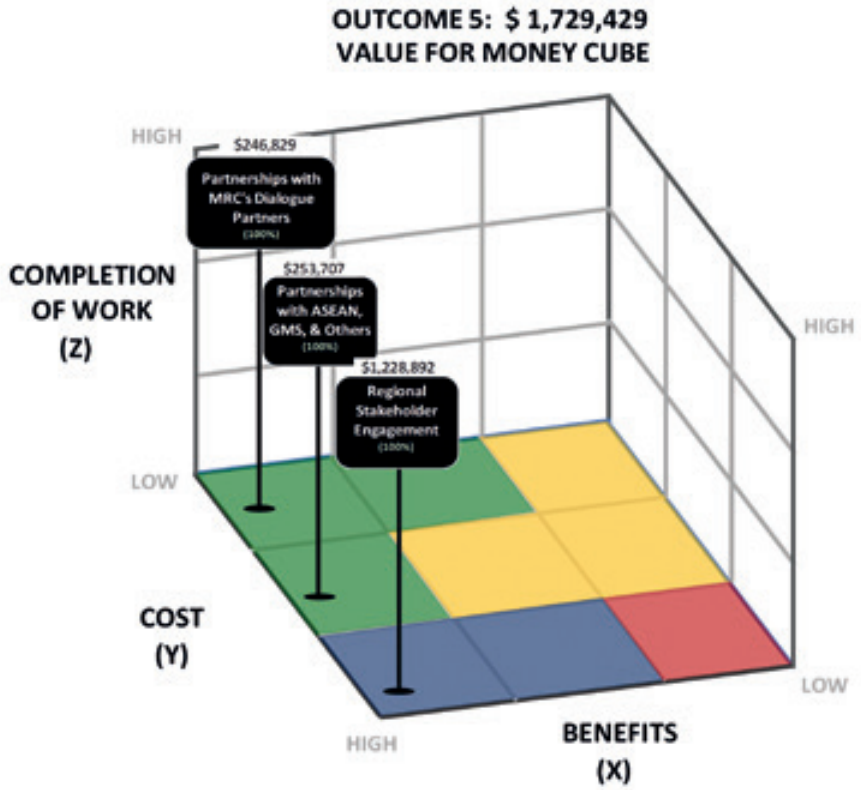


Figure 36. Value for Money Multidimensional Analysis for Outcome 5

OUTCOME 5

LESSONS LEARNED

The MRC's implementation of the planned outputs and activities under Outcome 5 has been highly successful since its efforts have undoubtedly led not only to the effective dialogue and cooperation between MCs, but also the strategic engagement of regional partners and stakeholders.

The MRC has also clearly demonstrated its central and indispensable role in the region, as evidenced by the reaffirmation of its mandate through the Siem Reap Declaration, and its increasingly strategic and productive partnership with its Dialogue Partners, in particular China. From this success, a positive lesson can be learned, i.e. when the MRC makes wise and sustained efforts, it can achieve its best performance and influence others in the region.

The MRC also made efforts to strengthen cooperation with Myanmar, including high-level visits, participation in workshops and forums in Myanmar, and inviting Myanmar representatives and experts to the MRC and its meetings. Myanmar's small contribution in terms of Mekong Basin size and its preoccupation with other priorities limited its active contribution.

The next MRC SP period should focus on a few concrete joint activities with Myanmar to showcase the value of partnership. Finally, maintaining relations and partnerships all over the world can be time-consuming and at times distract from the core work of managing the River. The next challenge is to prioritized and further strengthen key partnerships, and together bring practical and meaningful positive changes in the region that directly benefit its countries, communities, and the environment.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The MRC's commitment to and continuous pursuit of effective dialogue and cooperation with its regional and international partners enable it to deliver meaningful contributions to the Mekong Basin as per its 1995 mandate. This can contribute to the achievement of the following SDGs:

SDG 6: Water and Sanitation, specifically Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate. Collaboration with world-class international partners is one sure way to bring cutting-edge know-how, technologies and innovations to the implementation of IWRM in the Mekong. It also ensures that the MRC's work and approaches are in line with international practice, and also contributes to IWRM promotion worldwide.

SDG 16: Peace, Justice and Strong Institutions, specifically Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels.

SDG 17: 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 SDGs, including through North-South, South-South, and triangular cooperation; and Target 17.14: Enhance policy coherence for sustainable development. While North-South cooperation brings funding and advanced technologies to the MRC's work, the organization's South-South cooperation strategy is equally vital as MCs increased funding to the MRC, supported one another in capacity building and trade, increased cooperation with China, the largest developing country in the world, as well as increasingly diversified its relations to work with other non-traditional partners such as Morocco.

PATHWAY TO CHANGE

Effective Dialogue and Cooperation betwen the Member Countries and Strategic Engagement of Regional Partners and Stakeholders on Transboundary Water Management

OUTCOME 6: BASIN-WIDE MONITORING, FORECASTING, IMPACT ASSESSMENT, AND DISSEMINATION OF RESULTS STRENGTHENED FOR BETTER DECISION-MAKING BY MEMBER COUNTRIES

INDICATORS

- *The extent to which line/implementing agencies use MRC's reports and information systems for better decision-making*
- *Quality (timeliness and accuracy) of MRC's forecasting information in critical or emergency situations*

The MRC made progress during 2016–2020 with respect to upgrading and maintaining its monitoring, forecasting, modelling, and data and information management systems, and in establishing a comprehensive and replicable assessment and reporting framework through the redesigned SOBR and MRB-IF. Its Mekong-HYCOS hydromet network, which provides basin-wide automated and near real-time water level and rainfall data, is now composed of 51 HYCOS stations and 13 drought stations on the Mekong mainstream and major tributaries. It has continuously improved its routine environmental monitoring, which comprises WQM, EHM, and FM as well as its regional reporting, which includes annual hydrological/flood/drought reports, WQ reports, annual FADM reports, and status and trends of ecological health in the LMB. It commenced the MRC's JEM Programme, a first of its kind with the implementation of pilot projects in Xayaburi and Don Sahong hydropower dams. The JEM Programme is expected to elevate joint cooperation and enable MCs to monitor, assess and mitigate with more certainty impacts of specific mainstream HPPs.

The MRC Regional Flood Management and Mitigation Centre (RFMMC) was upgraded to the RFDMC in 2017 to include drought services, and continued to provide river monitoring, timely flood and drought forecasting, and early warning information throughout the year to MCs and potentially impacted communities. The increase in quality and amount of detail in the monitoring and forecasts, and hydrological conditions reports (i.e. that illustrate more clearly the magnitude and spatial extent of the flooding and drought conditions) is leading to the more mainstream use of these forecasts by relevant agencies in the MCs, news agencies and social media. This improved ability by the MRC to disseminate timely and quality forecasts of extreme basin and river conditions such as flooding, low flows, and droughts is contributing to protecting properties and saving lives in the Basin during these extreme conditions.

Throughout 2016–2020, the MRC continuously provided the MCs' technical support services in the areas of data and information management, modelling, and assessment. These services include the upgrade and continuous operation and maintenance of the MRC Information System (MRC-IS), the Data Portal, the DSF and related tools. These services are certainly crucial in supporting the MRC in basin-wide and project assessments, and the MCs in capacity building and in sub-basin planning, and in informed and scientifically based decision-making.

There are notable gaps and challenges, however, in these core functions of the MRC. Accordingly, a major exercise was launched in 2019, and approved by the Joint Committee, to strengthen the organization's systems relating to monitoring/data collection, data and information management, modelling, forecasting and assessment, and information visualization and dissemination. Implementing the Design Concept would put the MRC in a more capable position to exercise its core river functions and address the pressing needs of the present and future.

INTRODUCTION

Monitoring, tracking, forecasting and reporting the conditions and status of the Basin are needed to support better decision-making in all aspects of MCs' cooperation; they are the central core river management functions of a river basin organization. The MRC in conjunction with the MCs, therefore, has the critical role of: establishing, operating, and maintaining monitoring and forecasting systems; modernizing and upkeeping its database and information systems, including the Data Portal; and upgrading its assessment and modelling systems. A key role of the MRC includes the reporting and dissemination of the acquired information, not only through its Data Portal, but also through regular publication of technical reports and bulletins.

Heading into 2016, the Mekong-HYCOS hydromet network was performing unreliably, with several stations urgently needing repair and upgrade. The MRC's flood forecasting services were less effective, and drought monitoring and forecasting were practically non-existent. Regional monitoring of transboundary environmental changes caused by a specific project such as a Mekong mainstream HPP did not exist. Finally, the MRC's data, information, and modelling systems are antiquated and cumbersome, and will greatly benefit from better system integration and the use of modern technologies.

COMPLETION STATUS OF OUTPUTS

The MRC made progress during the strategic planning cycle 2016–2020 with respect to upgrading and maintaining its monitoring, forecasting, modelling, and information systems, and in establishing a comprehensive and replicable assessment and reporting framework through the redesigned SOBR and MRB-IF. As illustrated in Figure 37, the overall output completion rate under Outcome 6 is 95% with three outputs 'completed and two outputs 'partially completed', with a completion rate ranging from 80% to 96%.

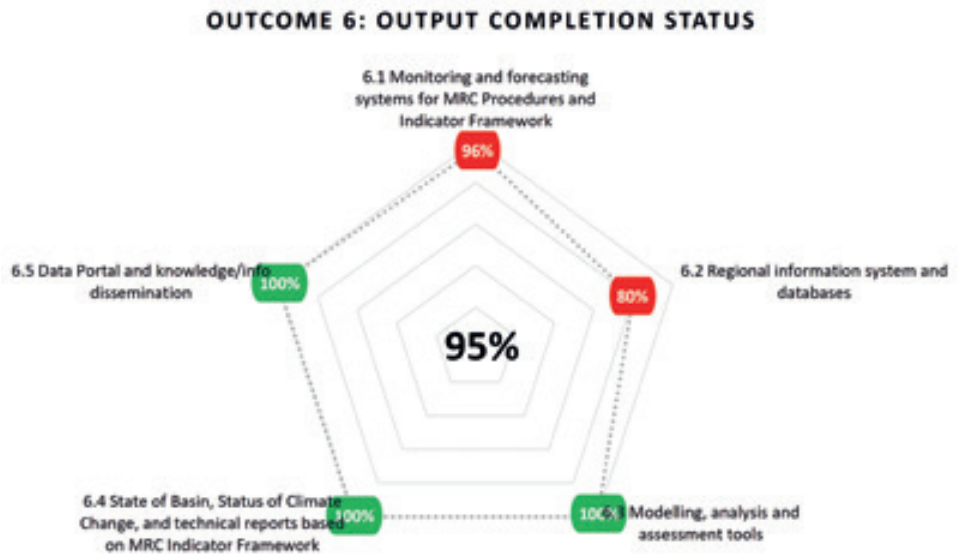


Figure 37. Output completion status under Outcome 6

OUTCOME 6

THE MRB INDICATOR FRAMEWORK

In 2019, the MRC finalized and published the final version of the Mekong River Basin Indicator Framework, or MRB-IF, which prescribes a comprehensive set of indicators in five dimensions (i.e. environmental, social and economic conditions, climate change, and cooperation). It provides a basis for a consistent and streamlined approach for data collection, analysis, and reporting of the conditions and trends in the Basin. The work on the MRB-IF, previously known as the MR Indicator Framework, actually began in the previous MRC SP period. Through a number of further review and consultations, it was finally agreed in this period. As its underlying framework, the MRB-IF enables SOBR to present and report basin information in a comprehensive and replicable manner (as described in more detail under Outcome 1).

RIVER, ENVIRONMENTAL, AND SOCIO-ECONOMIC MONITORING

In support of **river monitoring**, the MRC has upgraded and expanded the Mekong-HYCOS Hydromet Network, which provides basin-wide automated and near real-time water level and rainfall data.[8] The network now includes 51 HYCOS stations and 13 new drought stations on the Mekong mainstream and major tributaries: 13 HYCOS stations in Cambodia, 17 in Lao PDR, 11 in Thailand, and 10 in Viet Nam. Corresponding numbers for drought stations are 3 in Cambodia, 5 in Lao PDR, and 5 in Viet Nam. The new Xiang Kok station, which is located downstream of China's Jing Hong station, is important because it gives the MRC more lead-time to monitor and prepare in case of emergency flood situations. In conjunction with China's Jing Hong station, the new Xiang Kok station will also provide additional data for monitoring the flow contribution of the Upper Mekong basin. The Ban Pakhoung station, downstream of Xayaburi, was added as part of the JEM Programme pilot testing.

The network includes rainfall and water level data manually shared by China for two stations in the upper Mekong (i.e. Lancang River) as part of a data sharing agreement with the MRC that began in 2002. MRC flood forecasting also benefits from 124 rainfall stations across the lower reaches of the basin. The expansion plan of the Hydromet network includes adding five stations: 1 station in Cambodia located at Koh Key; 2 in Thailand located at Bung Karn and Amnat Charoen; and 2 in Viet Nam located at Tra Vinh and Dai Ngai, which were delayed due to the COVID-19 pandemic.

Senior officials from the MRC Member Countries and UNEP meet to discuss a joint project to assess and monitor plastic pollution in the Mekong River (February 2020).

[8] Its near real time data is accessible at: http://monitoring.mrcmekong.org

Throughout 2016–2020, the MRC performed its routine **environmental monitoring** services, which include WQM, EHM, and FM. It also prepared reports such as the annual regional WQ reports, biennial routine EHM reports, the regional report on status and trends of ecological health in the LMB during 2011–2019 (planned to be published as MRC Technical Paper), and a technical paper on the status and trends of fish abundance and diversity in the LMB during 2007–2018 (also planned to be published as MRC Technical Paper). The MRC is monitoring monthly a total of 48 WQ stations: 17 mainstream stations, 5 stations in Bassac River, and 26 stations in tributaries. A total of 41 EHM stations (8 stations in Lao PDR, 17 stations in Cambodia, 8 stations in Thailand, and 8 stations in Viet Nam) are monitored on a biennial basis during March-April of each monitoring year. For fish monitoring, the MRC is monitoring 38 sites for fish abundance and diversity, 8 sites for fish larvae and drift, and 15 rows for Dai fishery.

The MRC also completed a concept note in 2020 for a new long-term riverine monitoring programme for plastic and debris pollution.

In recognition of the need to determine project-specific impacts and distinguish them from the cumulative basin-wide impacts of all other developments, with all MCs in agreement, the MRC initiated the work on **MRC's JEM Programme** in 2016, and after a series of regional and national consultations, produced the JEM Programme document in 2019. The JEM Programme has elevated joint cooperation and is enabling MCs to monitor, assess, and mitigate with more certainty impacts of specific mainstream HPPs. Together with the JEM Programme document, the MRC produced two pilot project proposals, for Don Sahong and Xayaburi HPPs. These pilot projects involve testing the proposed monitoring approaches for the five key environment disciplines: hydrology and hydraulics, sediment and geomorphology, water quality, aquatic ecology, and fish and fisheries. The implementation of the JEM pilot projects was launched in late 2019 and is scheduled to be completed in 2021.

JEM is also expected to contribute towards better decentralization of MRC river monitoring activities. The results of JEM development and pilots at Don Sahong and Xayaburi dams will be used to review, assess, and re-design the core river monitoring network (CRMN) in the LMB in order to meet future regional needs. The expected outputs of the CRMN are: (i) an audit of existing and planned monitoring stations and sampling locations within the LMB; (ii) a gap analysis based on water use and existing networks; (iii) a cost-benefit analysis of four different CRMN scenarios; and (iv) a redesigned CRMN.

H.E. Mr Jens Peter Lutkenherm, German Ambassador to Lao PDR, addresses the Handover Ceremony of the JEM project equipment from GIZ to the MRC Secretariat and the Lao National Mekong Committee (15 September 2020).

OUTCOME 6

The MRC's SIMVA monitoring system enables the organization to assess the status and trends of the socio-economic conditions of the people in the Basin. Following the various national and regional meetings to review and analyse the results of the SIMVA 2018–2019 survey on households and communities in the Mekong mainstream, the Tonle Sap and the Mekong Delta, the SIMVA Regional Report was drafted and consulted with MCs. This allowed to highlight the main changes in the Mekong corridor livelihood options, their level of dependency on the river, and coping strategies to changes in the river water-related resources. The Regional Report also compared the livelihood and well-being situations, and respective coping strategies in 2018–2019 with those in 2014 and 2011.

The results of the SIMVA survey with 2,800 households in 200 villages indicated that communities in the Mekong mainstream corridor were still largely dependent on the river water-related resources for their livelihoods, income, and well-being. As such, they were still vulnerable to changes in the Mekong water resources. However, the overall dependency decreased with other, non-water resources-related livelihood activities, such as wage employment and business/trading, which play increasingly important roles in their overall livelihood strategy. The survey results also showed that, while government support and provision of basic infrastructure services (e.g. roads, schools, community health clinics, and water and sanitation) are critical in helping households to cope with vulnerabilities, there is still significant room for improvement in the production-related support services. This is an important policy implication for the governments if communities are to be protected from water- and climate-related vulnerabilities.

In 2019, the MRC initiated the Land Use Land Cover (LULC) Mapping 2019/2020 project. The project aims to produce an updated 2019/2020 LULC map and related information catalogue for the LMB. By 2020, the MOUs for field data collection and map classification were signed by the MCs. Capacity building on the use of ArcGIS software to support national map classification was also completed.

Decentralization of CRBMF activities, including river, environmental and socio-economic monitoring (i.e. HYCOS, WQM, EHM, FM, and SIMVA), has been a major focus of SP 2016–2020. Although there has been some good progress, the transition period has been challenging and resulted in calls from a wide range of stakeholders to reconsider the approach, particularly the pace. Nevertheless, recognizing the importance of the data and information to the CRBMFs, all MCs made a strong commitment to the decentralization process and took commendable steps to take on greater responsibility for the monitoring activities in difficult circumstances. Three of the eight monitoring activities had been completely handed over to MCs as of December 2018: (i) near real-time monitoring of hydro-meteorological parameters (HYCOS stations); (ii) manual rainfall and water level monitoring (other hydro-met stations); and (iii) ad hoc provision of socio-economic data for basin planning. While there were early performance issues, for example, between 2015 and 2017, partly as a result of the transition, these issues were addressed, resulting in a significantly improved performance beginning 2018. The MRC Secretariat has also continued to provide technical support to NMCs to address performance issues and further strengthen data and information exchanges and decision-making. However, many questions remain regarding the decentralization approach: how much of a technical role will be retained at the MRC Secretariat as opposed to a more generalist coordinating role; whether a regional monitoring network should exist separate to national networks rather than having a completely integrated LMB network; and given the budget constraints, what monitoring activities are absolutely needed.

FLOOD AND DROUGHT FORECASTING

The MRC RFDMC, which was established in 2006 in Phnom Penh, and overseen and supported by the MRC Secretariat in Vientiane, was expanded to include drought forecasting in addition to flood forecasting services. The Centre, aptly renamed the RFDMC, provided river monitoring, flood and drought forecasting and early warning information throughout the year to MCs and potentially impacted communities. The Centre completed the development the flood forecasting website[9]

[9] Visit here for detail: http://ffw.mrcmekong.org

and the drought forecasting and early warning (DFEW) website.[10] It also provided flood and drought forecasting services through forecasting traditional bulletins, reports, and other advisories (see Figures 38 and 39). In addition to providing the forecasts and advisory services year-round, the MRC Secretariat and the RFDMC continued to enhance, operate, and maintain the database and modelling systems that underpin such services.

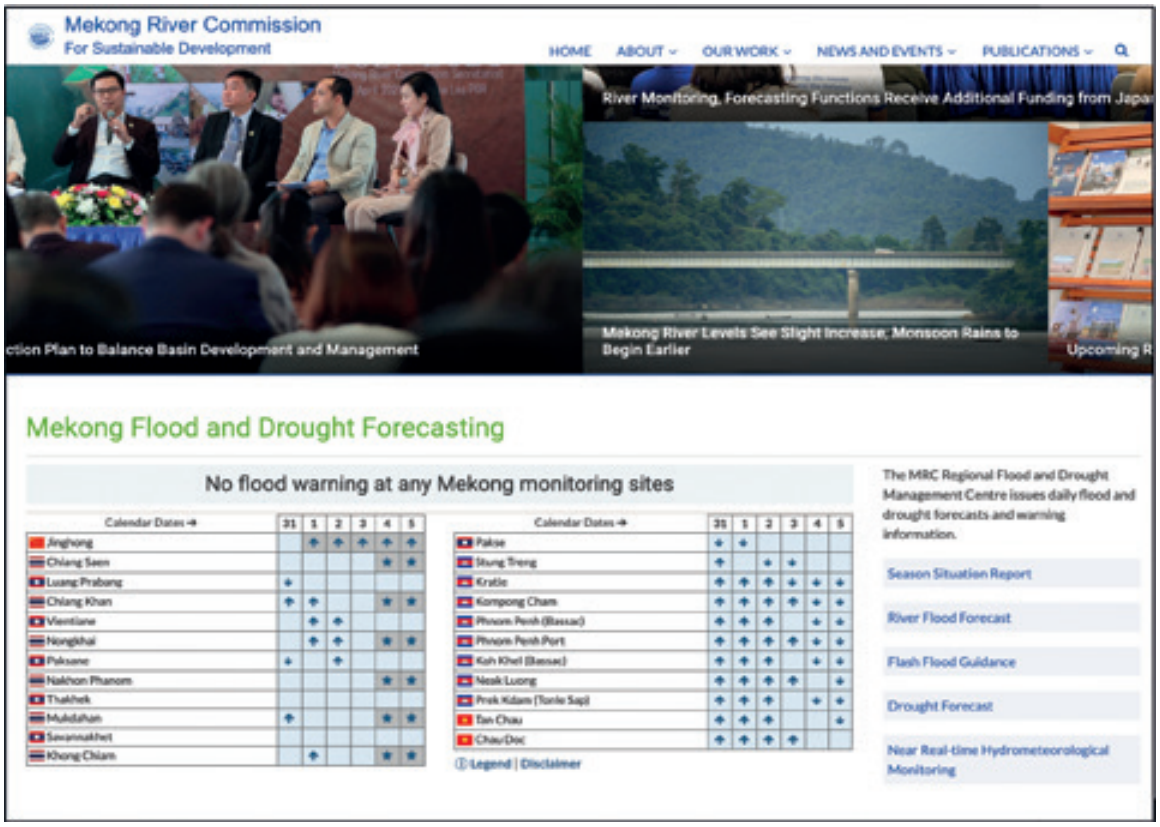


Figure 38. MRC home page showing daily flood forecasts during the wet season (June – October)

Figure 39. The MRC Drought Forecasting and Early Warning website shows weekly drought conditions in the Lower Mekong Basin

[10] Visit the DFEW website here for detail: http://droughtforecast.mrcmekong.org/maps

OUTCOME 6

DATA AND INFORMATION MANAGEMENT, ASSESSMENT AND MODELLING SYSTEMS

In addition to river monitoring and flood/drought forecasting, over the years, the MRC has provided technical support services to the MCs in data and information management, modelling, and assessment. These services include the continuous operation and maintenance of the MRC-IS, the Data Portal, the DSF and related tools. The Data Portal, which represents the online presence of the MRC IS, allows MCs and others to retrieve regional data and information to support informed regional sustainable basin planning and decision-making. In March 2020, MRC deployed a new improved version of the Data Portal,[11] hosting over 10,000 datasets.

The MRC has also continued to maintain the MRC DSF, including: the addition in 2016 of water quality (Sediment, N and P) simulation in the baseline situation; the conversion of ArcSWAT to QSWAT as part of the continuing effort to improve the core DSF models; and the integration of other models and tools, such as eWater Source (i.e. for the simulation of sediment and nutrient routing in reservoirs) and WU-FIN 3D model and impact assessment tools (i.e. for modelling Tonle Sap and crop yield impacts in the Cambodian and Viet Nam Delta floodplains). For the Council Study, the DSF was also loosely linked with the DRIFT software to provide the values for a given set of hydrologic, hydraulic, WQ indicators that were subsequently used to estimate corresponding ecosystem changes in response to these changes in hydrology/hydraulic and water quality conditions.

In relation to the Council Study, the MCs participated in four national workshops in May 2019 in mapping and visualizing the Council Study findings using the U.S. Army Corps of Engineers Shared Vision Planning (SVP) tool to facilitate common understanding and identify trade-offs and management options through a consensus-based forum. This workshop demonstrated how SVP and similar visualisation tools can be used effectively in conjunction with the DSF and related tools to facilitate consensus building and decision-making. Finally, the MRC has continued to provide technical support as needed for the DSF's application in studies, notably, for example, the Council Study, the Initiative on Sustainable Hydropower/SHDS, and project assessments.

The 2nd Meeting of the Expert Group on Data, Modelling, and Forecasting discusses hydrologic modelling and basin-wide water use monitoring, July 2019.

[11] Visit the MRC Data Portal for detail: https://portal.mrcmekong.org/home

SYSTEM REINVIGORATION

There are notable gaps and challenges, however, in these core functions of the MRC. In 2019, largely for the response to the Siem Reap Declaration, which called for the strengthening of the MRC basin-wide monitoring networks and forecasting systems, and the data and information management systems underpinning them, the MRC embarked on an initiative to reinvigorate these systems.

The MRC Secretariat worked with partners and countries to review the current MRC systems and related tools, and to prepare a high-level design concept for a reinvigorated and integrated system (see Figure 40). After several national consultations in September and October 2019, and a meeting of the Expert Group on Data, Modelling and Forecasting (EGDMF) in November 2019, the team completed the Design Concept for reinvigorating MRC's Data, Information, Modelling, Forecasting, and Communications Systems, and received endorsement from the MRC Joint Committee.

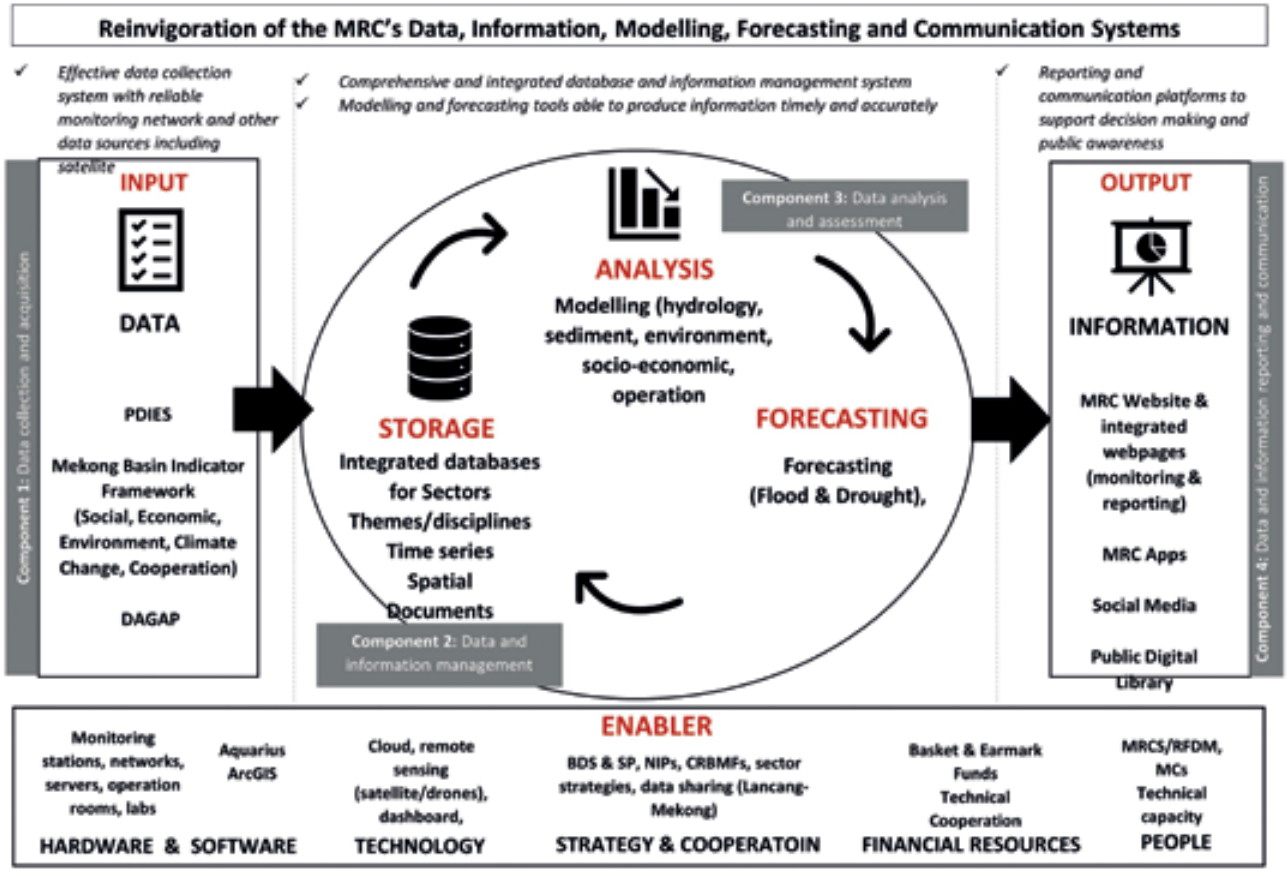


Figure 40. Architecture of main elements of the reinvigorated MRC's data, information, modelling, forecasting, and communication systems

EVIDENCE OF CHANGE

Based on the outputs completed under this outcome and the level of change that they produced as shown in Figure 41, Outcome 6 is rated 'partially achieved'. The progress made by MRC in the maintenance, upgrade, and operation of its data and information management, monitoring, assessment and modelling, and flood and drought forecasting, enables MCs to make better decisions.

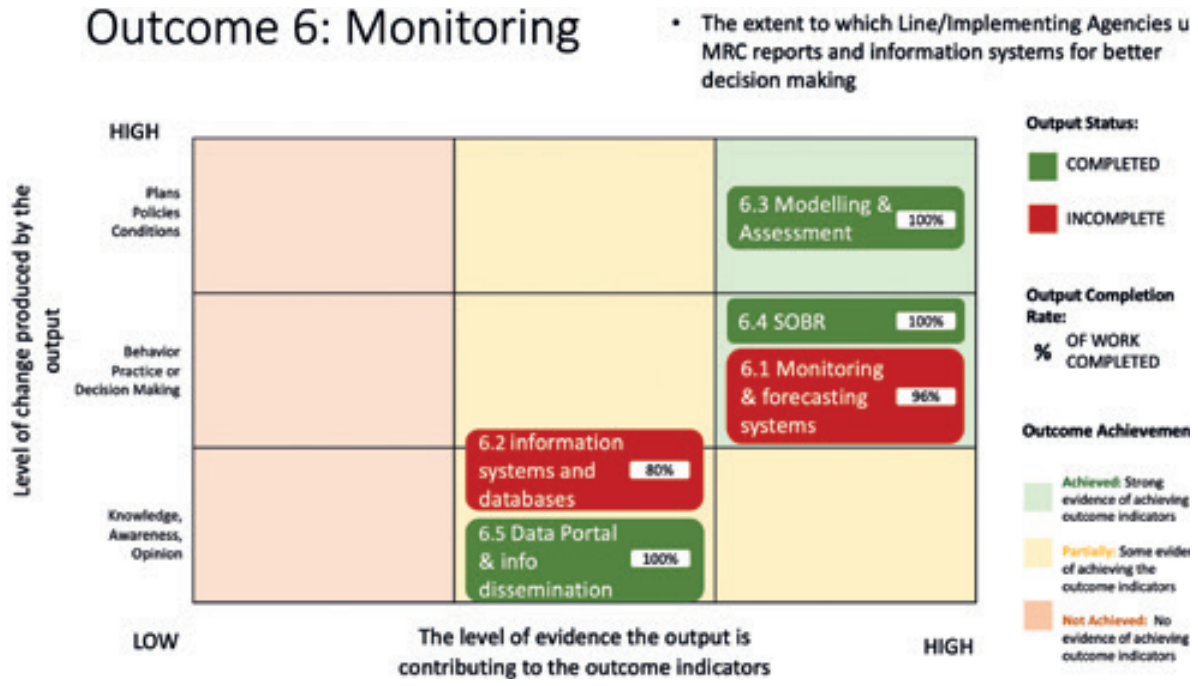


Figure 41. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the type of change that occurred – Outcome 6

USE IN REGIONAL AND NATIONAL PLANNING AND DECISION-MAKING

There is ample evidence of the use of MRC systems to access basin and river monitoring data, and flood and drought forecasting information. At the regional level, the data collected and assessed were used in the MRC's activities, including critical ones such as the preparation of the State of Basin Report, the Council Study, and PNPCA assessments. There is strong interest in flood forecasting information, as indicated by the number of times that the flood forecasting website has been accessed. River communities are beginning to use hydrological monitoring data upstream of the river to determine potential for flooding or extremely low flow conditions that may impact agriculture and water use. MC's use of the MRC's food forecasting services is further evidence of their increasing mainstreaming. On a routine basis, the MRC Secretariat shares flood information via email to the national focal points of relevant national line agencies. In turn, these agencies disseminate information to a wider audience at the national, sub-national and local levels.

To illustrate, during the rainy season (June to October), the RFDMC issues around 150 daily flood forecasting bulletins. These daily bulletins are distributed to 190 stakeholders including national line agencies, educational institutions, NGOs, the private sector, and the public. Around 30 weekly river monitoring bulletins are distributed during the dry season (January – May, and November – December). Around 310 flash flood bulletins are uploaded on the FFGS website[12] during the rainy season. Based on the performance evaluation of FFGS in 2020, the Probability of Detection is 60% accurate, indicating that 40% of the forecast flash flood events did not occur.

The weekly drought conditions presented in the DFEW website have been incorporated into the weekly flood situation report and widely shared with the public since September 2020. This integrated report is an essential source of information not only for the NMCs and line agencies, but also for research organizations, academic institutions, and other national and regional organizations.

[12] The FFGS website is accessible at: http://ffw.mrcmekong.org/ffg.php

The MCs, through review meetings of SIMVA primary data and the Regional Report, have gained a better understanding of community dependency on the Mekong River, which is still significant. However, the support available and useful to impacted communities has decreased as well as additional measures that would be required to help them cope more effectively with changes in the river resources. This enhanced understanding is beneficial for project planning and decision-making.

The Data Portal is used not only by the MCs, but also by a wide range of stakeholders including research and educational institutions, NGOs, the private sector, and the public. Based on the number of visits by users, its usage rate has remained steady, although the rate of data downloads flattened in 2016 (see Figure 42). The latter is expected since most of the end users had already downloaded in bulk the historical data they needed, and new data sets and reports made available in the Data Portal are few and far between, and were largely dependent on the completion of studies. In 2020, which was the final year of the SP 2016–2020, there appeared to be a renewed interest as indicated by an acceleration in the rate of the data downloads. It should be also noted that an improved version of the Data Portal was launched in 2020. This version features enhancements of the data search and download functionalities, which have likely contributed to the substantial increase in data downloads. These enhancements are expected to greatly benefit the MCs' line and implementing agencies that have relied heavily on data available in the MRC-IS.

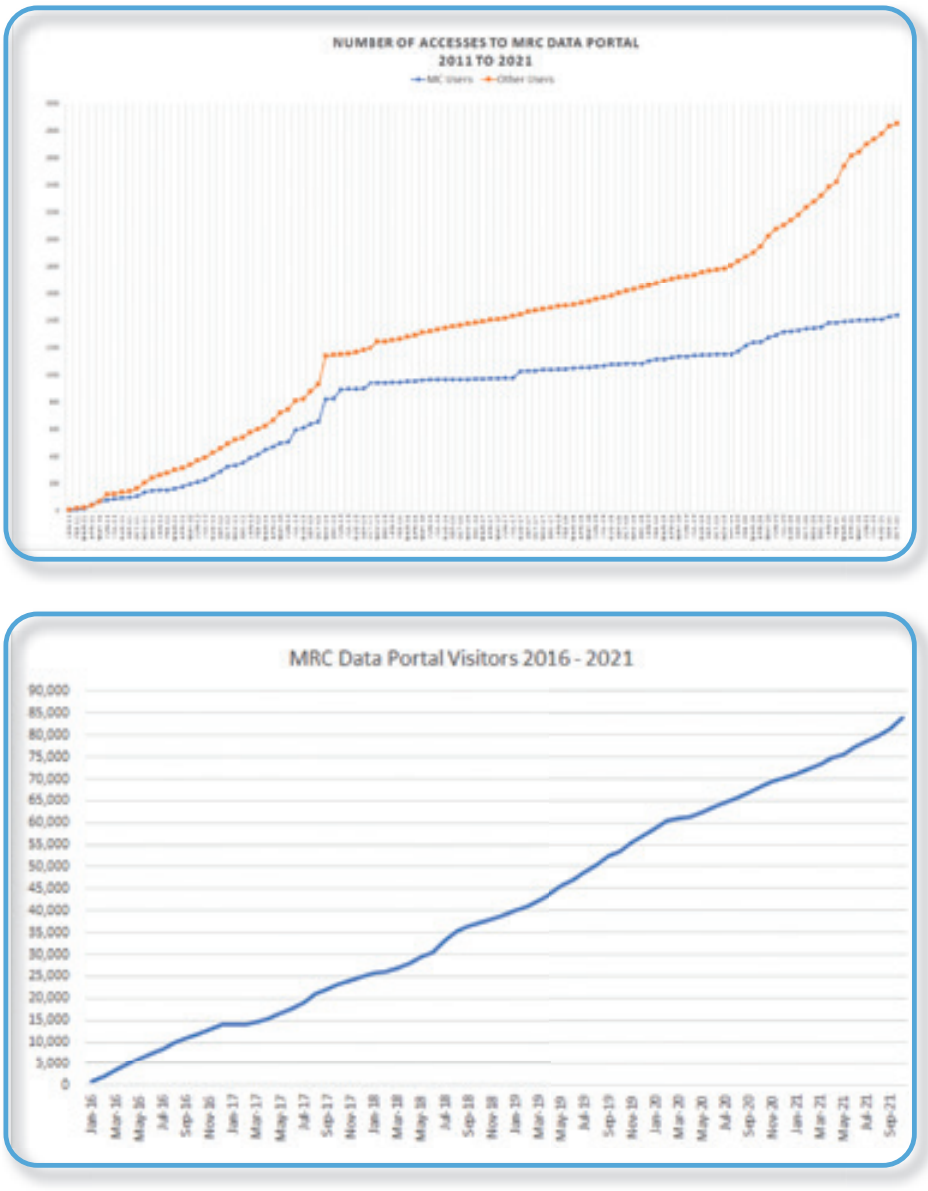


Figure 42. Number of accesses (above) and visitors (below) to the Data Portal, 2016--2020

OUTCOME 6

Recent high-profile studies on the Mekong situation and impacts of water infrastructures use MRC's data and information.The MRC Secretariat's own report is also widely quoted in the media and the public, discussed and referred to it. It helps inform debates on the facts and fiction of the situation, illustrating the knowledge brokerage role of the MRC.

The MRC DSF models and tools are continuously being used by MCs in national projects and studies. The Lao Natinal Mekong Committee (LNMC), for example, has used the DSF models, which included data and results from the Council Study, to support the development of river basin management plans in key tributaries of Lao PDR. The MCs have continuously applied DSF in national pilot projects to build and maintain their modelling capacity, and benefited from the Associate Modeller Programme, whereby young modellers from the countries were trained and worked in the MRC Secretariat. Finally, the acceptance of the JEM programme and its anticipated benefits are noteworthy. For instance, during the two RSFs for the proposed Luang Prabang Hydropower Dam, Vice Minister of the Lao Ministry of Natural Resources and Environment made references to JEM and its importance in improving the management and operation of hydropower dams. The overall positive feedback on the JEM Programme benefits greatly from the strong support and proactive nature of the Lao Government, including for the identification, survey and approval of monitoring locations for the two pilot projects, and on the recognition by the MCs of the importance of the JEM Programme in improving the management and operation of dams.

RELIABILITY AND QUALITY OF INFORMATION

The ability of the MRC to maintain the reliable performance of its systems so that users can access them readily is helping sustain the interest of the user community because the information they obtain is accurate, timely and highly relevant. MRC's concerted efforts since 2018 to address the operation and maintenance issues that plagued the proper functioning of the HYCOS stations in prior years, in particular during the 2014–2017 period, have dramatically raised the level of performance of the Mekong-HYCOS Hydromet from its low in 2017 (see Figure 43). Moreover, the increased maturity in the workflow processes for field maintenance visits and related operation and maintenance tasks, combined with improved capacity of the national routine monitoring teams, were crucial in keeping the system operational and functioning properly. These improvements in the level of performance of the HYCOS stations may be also attributed to the MRC and MCs, which eventually resolved many of the operational issues that beset the early implementation of decentralization activities.

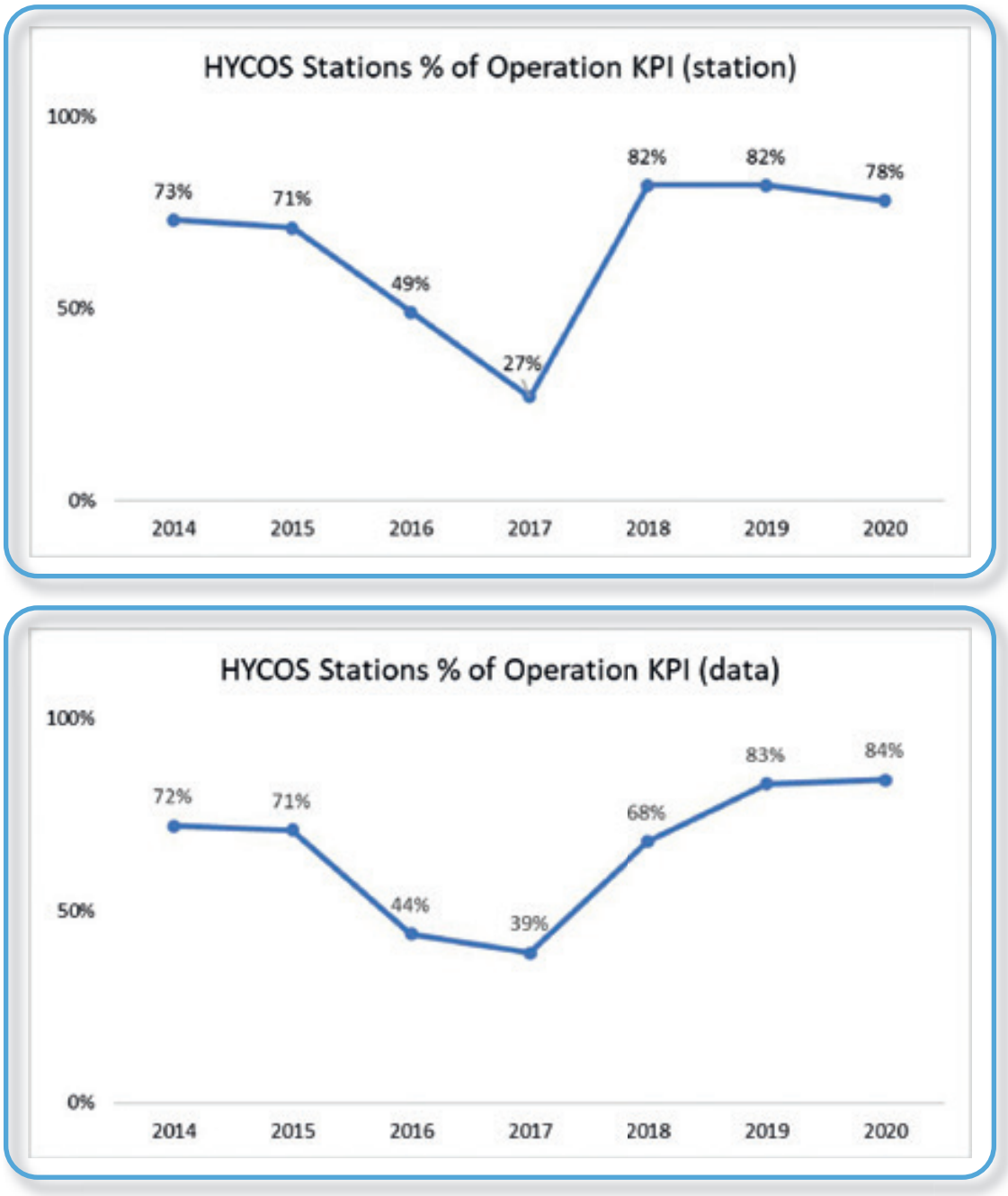


Figure 43.* Annual average level of performance of the Mekong-Hycos Hydromet Network in the Lower Mekong Basin from 2014 to 2020 (percentage of stations in operation and of data transmitted automatically)

In an effort to improve the accuracy of the forecasts, the RFDMC has continued to evaluate and disseminate their accuracy. In general, the accuracy of Day 1 to Day 3 forecasts are within 80–90 percent of the observed values, except for the areas between Paksane and Mukdahan, which have been influenced by the Nam Ngeum hydropower operation since 2011. Except for the areas between Chiang Khan and Nong Khai, the accuracy of the Day 4 and Day 5 forecasts are within 30–60% of the observed values.

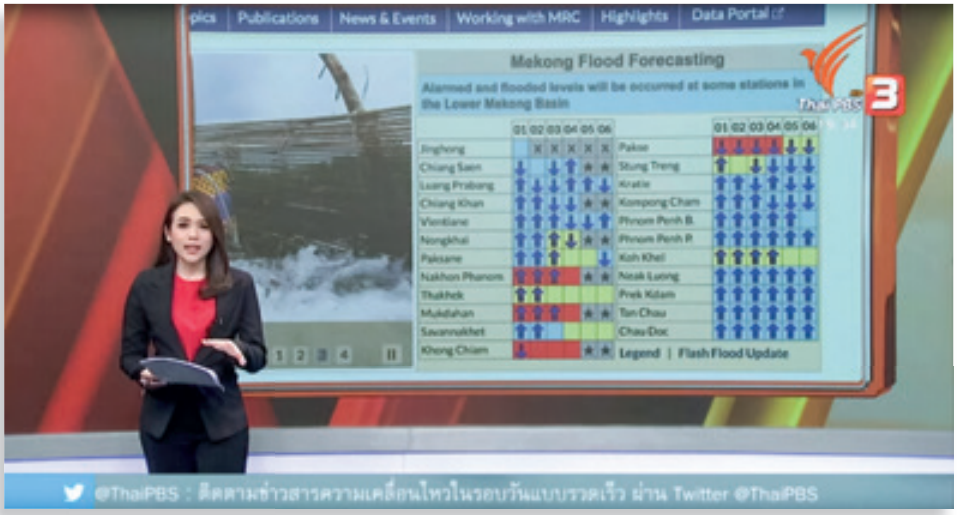
NOTE:

100% of the data are recorded and transferred manually.

OUTCOME 6

Finally, the increasing quality and amount of detail of the information presented are certainly improving the confidence of the users in these forecasts. The interactive graphs and maps that are now standard content elements of the forecasts further enhance the quality and effectiveness of the reporting because they illustrate more clearly the magnitude and spatial extent of flooding or drought conditions.

This has led to the more mainstream use of these products by relevant agencies in the MCs, news agencies, and social media. This improved ability by MRC to disseminate timely and quality forecasts and warning advisories of extreme basin and river conditions such as flooding, low flows, and droughts is protecting properties and saving lives in the Basin during these extreme conditions.



The Thai Public Broadcasting Service uses the flood forecasting from the MRC's website during its news reporting on the flood situation in the aftermath of tropical storm Son-Tinh (1 August 2018).

VALUE FOR MONEY

The total cost incurred under Outcome 6 mostly covered the output on the monitoring and forecasting system (i.e. 68% of the total cost) and the 2018 SOBR (i.e. 15% of the total cost) (see Figure 44). Both these outputs proved cost-effective since they resulted in high evidence of use for regional and national planning and decision-making. The 2018 SOBR (as discussed under Outcome 1) was used in the development of basin-wide sectoral strategies and the BDS 2021–2030 and the MRC SP 2021–2025, and has influenced the national plans (e.g. hydropower development plans in Cambodia and sub-basin management planning in Lao PDR). The investments in MRC's monitoring and forecasting systems have resulted in the improved ability by the MRC to disseminate timely and quality forecasts and warning advisories of extreme basin and river conditions such as flooding, low flows, and droughts. This allows MCs' responsible agencies and the public to be more prepared in terms of protecting properties and possibly saving lives during these extreme events.

The three other outputs under Outcome 6 represented about 17% of the total cost incurred. The output on modelling and assessment, and the output on information dissemination and maintenance (i.e. Data Portal) both proved to be high VfM undertakings for the MRC since they have shown medium to high evidence of benefiting the countries and the user community. The MRC's DSF models and tools are continuously being used by the MCs in national projects and studies. The Data Portal is being used steadily not only by the MCs, but also by a wide range of stakeholders. Finally, the output on information systems and databases (i.e. MRC-IS) has the potential to become a high VfM product for the MRC with additional interventions. Although the MRC-IS as a regional knowledge hub that contains an extensive amount of Mekong data, the data quality remains uncertain since quality assurance/quality control work is not performed consistently and according to industry standards across all data sets. While improvements in the data search and download functionalities of the Data Portal have recently contributed to the increase in

the rate of data downloads the overall performance of the MRC-IS/Data Portal will certainly benefit by enhancing the systems and database infrastructure. Implementing the Design Concept for MRC Systems Reinvigoration (noting that it is a significant additional investment) could make this output a high VfM undertaking.

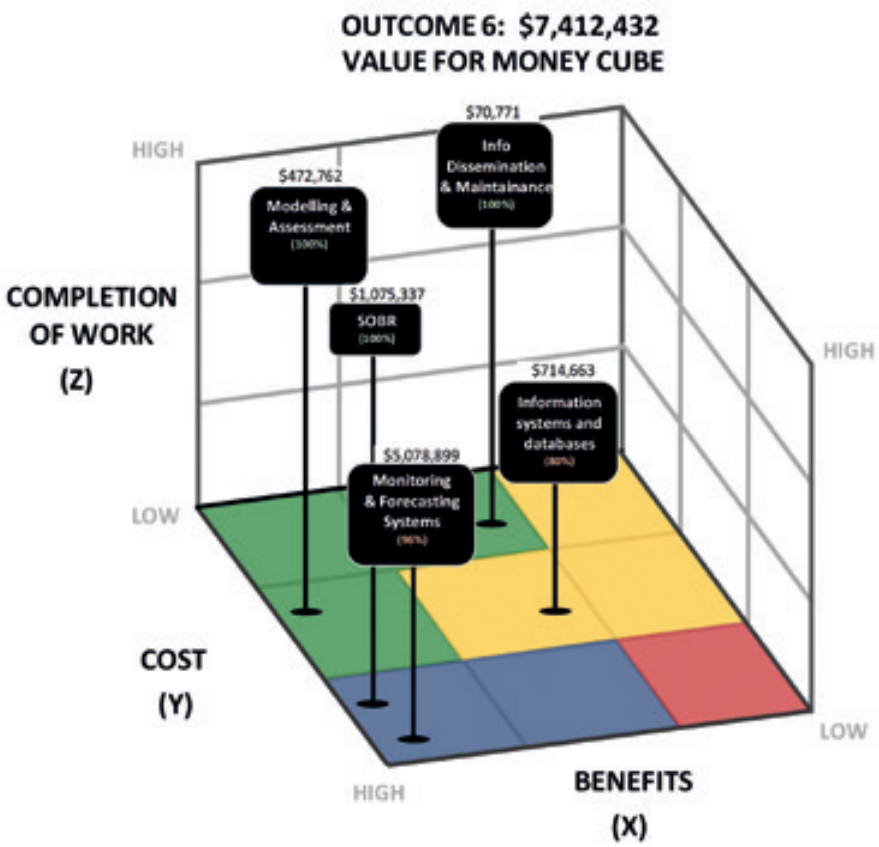


Figure 44. Value for Money Multidimensional Analysis for Outcome 6

LESSONS LEARNED

The increasing awareness of the MRC leadership and the MRC Secretariat's staff on the critical role of data and information on the changing flow regime and water quality, climate conditions, operation of water infrastructures and impacts, and their associated monitoring, assessment, modelling, and forecasting systems provides an opportunity to continue and sustain the MRC's initiative to reinvigorate these systems. Over the years, the MRC and the MCs have collected, produced, and compiled a substantial amount of data and information; however, their usage was difficult, inefficient, and not optimal, largely due to antiquated and/or ineffective systems, and the lack of integration and harmonization between the MRC-IS and national information systems of MCs. In addition, data in some key areas are insufficient, including in the Upper Mekong, on the tributaries and on the operation of water infrastructures.

The results of the SIMVA survey demonstrate its importance. It is recommended that the SIMVA survey be continued given its uniqueness in providing primary data on communities' direct dependency on water-related resources. The next SIMVA surveys on social vulnerability (particularly food and livelihood vulnerability) linked to changes in water resources (agriculture, aquaculture, fish, OAAs/Ps) should remain unchanged to allow for a comparison of past events and predictions of future trends. Surveys should be carried out every four years to track changes over time.

OUTCOME 6

SIMVA data can be used more rigorously by the MCs to monitor the social and economic dependency on the river resources over time. Several members of the PNPCA technical working group, for example, have suggested that SIMVA data be used for PNPCA-related assessments. The data can be used in conjunction with river monitoring data (e.g. hydrology, sediment, ecology, fisheries, etc.) to better correlate these changes with the corresponding social and economic changes of communities living along the Mekong mainstream, the Tonle Sap Lake, and the Mekong Delta.

Due to the difficulties faced in implementing the current decentralization approach for CRBMF monitoring activities, the approach must be rethought, and the feasibility of a regional approach to managing and funding the core monitoring network combined with the fully decentralized data collection functions must be considered. Disruptions in the agency's capacity to continue to perform its monitoring functions as a result of staff turnover or retirement should be also addressed under the decentralization approach, perhaps through succession planning and long-term capacity building.

Implementing the Design Concept would put the MRC in a more capable position to fulfil its mandate, tackle these issues, and achieve the priorities of the next strategic planning cycle. It should be noted that a properly functioning system that relays accurately and in a timely manner to the public information about low flows, drought, and flood conditions could be more efficient in saving lives and protecting properties and the environment in the Mekong region. This certainly would not only help propel the Mekong Basin to become an economically prosperous, socially just, and environmentally sound one, but would also lead to a more climate-resilient region.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The increased capacity of the MRC to monitor its basins hydrologic conditions and provide timely and quality forecasting and early warning services contributes greatly to protecting the well-being and livelihoods of the people of the Mekong Basin and its economy. The reinvigoration of the MRC information system and related tools will enable the MRC and MCs to have access to the most recent data and information to support informed and timely decision-making. The JEM Programme as a decision framework will facilitate the determination of impacts of HPPs and subsequent adaptive management approaches to minimize the impacts. All these will contribute to the achievement of the following SDGs:

SDG 6: Water and Sanitation, specifically Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

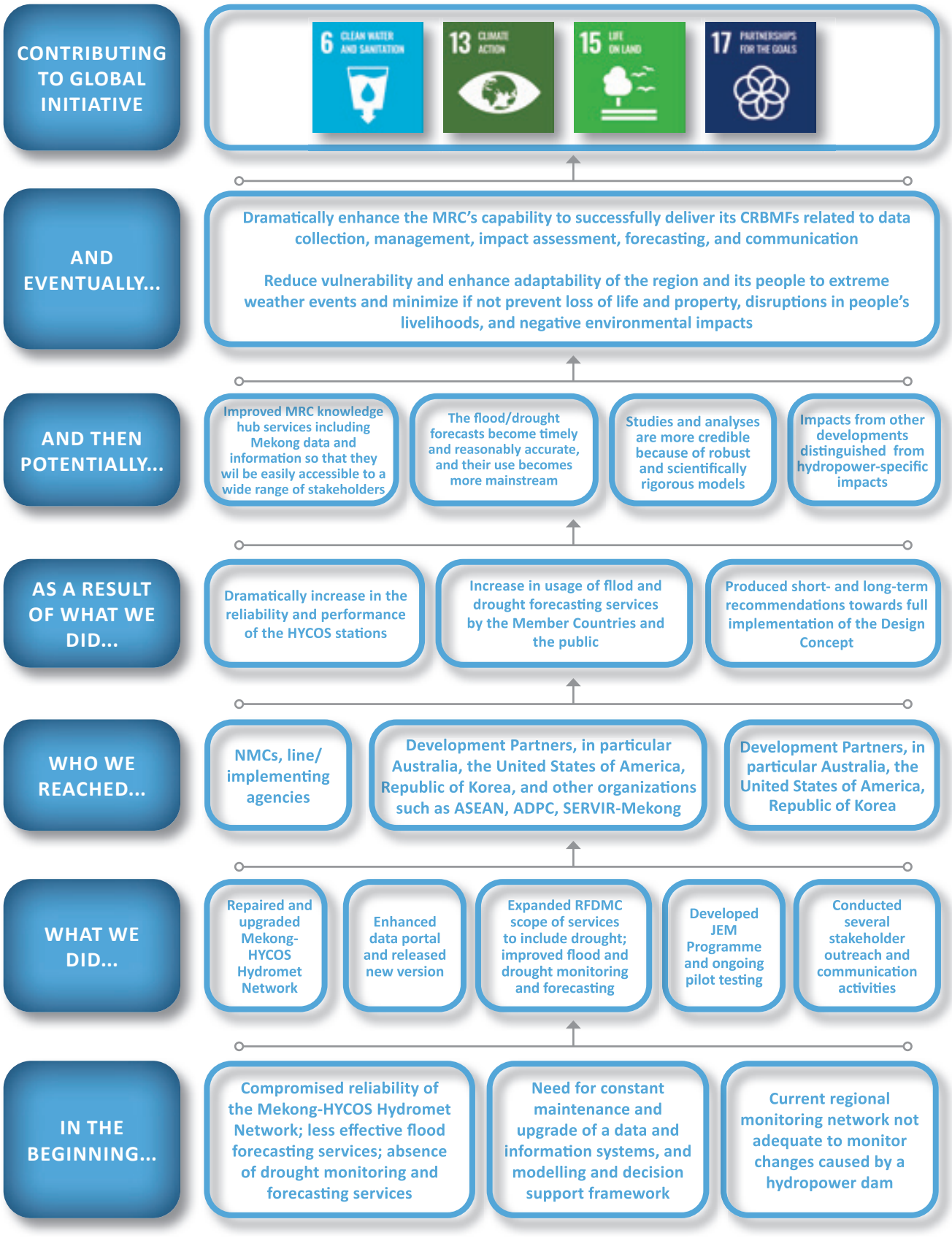
SDG 13: Climate Action, specifically Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries; and Target 13.3: Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

SDG 15: 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.

SDG 17: Partnership 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 SDGs, including through North-South, South-South and triangular cooperation; Target 17.16: Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the SDGs in all countries, in particular developing countries; and finally, Target 17.18: By 2020, enhance capacity building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location, and other characteristics relevant in national contexts.

PATHWAY TO CHANGE

Basin-wide Monitoring, Forecasting, Impact Assessment, and Dissemination of Results Strengthened for Better Decision-making by the Member Countries



OUTCOME 7: TME MRC TRANSITIONED TO A MORE EFFICIENT AND EFFECTIVE ORGANIZATION IN LINE WITH THE DECENTRALIZATION ROADMAP AND RELATED REFORM PLANS

INDICATORS

- *The extent to which the MRC Secretariat's organizational structure supports integrated water resources planning and implementation (IWRM Framework)*
- *Percentage of MRC SP outputs completed as planned*
- *Core function batches 1 and 2 fully decentralized*
- *Percentage of MCs funding contributions*
- *Extent of staff morale and satisfaction with the MRC management system and organizational direction*
- *Percentage (10%) of reduction in operating costs achieved over period of the plan*

The MRC made great strides during 2016–2020 in strengthening and transforming its Secretariat to a leaner and more transparent, accountable, and cost-effective organization – indeed, taking another leap towards world-class status as a direct result of reforms in human resources, administration, and finance systems. This began in 2016 when the MRC completed its restructuring, which involved: (i) consolidation of its multiple programme planning processes into one (i.e. the MRC SP); (ii) development of a new M&E Framework, which established a mutual accountability framework and streamlined the number of indicators; (iii) decentralization of CRBMFs); (iv) the establishment of a leaner structure of the MRC Secretariat with one Headquarters located in Vientiane and the RFDMC in Phnom Penh, after consolidating 13 Programmes into four Divisions and the Office of the CEO; (v) recruitment of 64 full-time staff (reduced from almost 200 in the previous period); and (vi) a shift to a more flexible and countries-driven pooled funding mechanism of a BF instead of separate donor-dependent programmes. For the first time in the MRC's history, a riparian CEO took charge from 2016, with all staff of the Secretariat coming from the MCs.

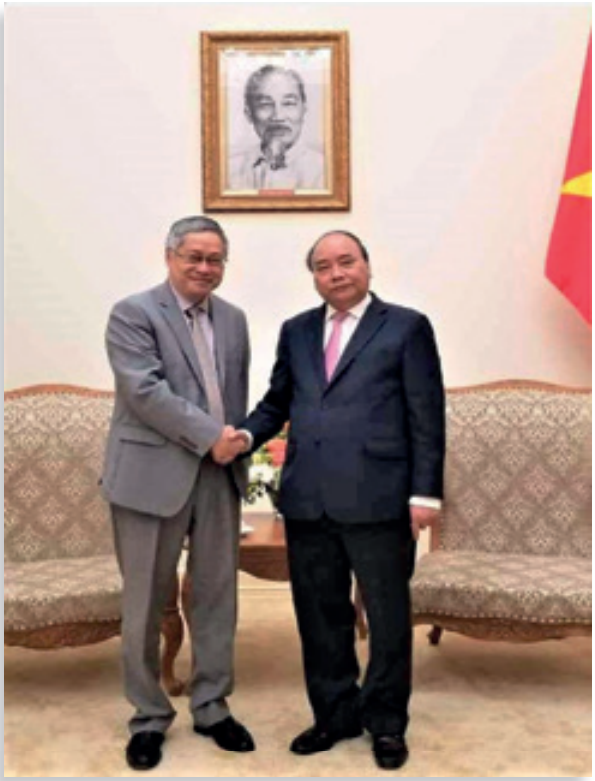
With the new structure, processes, and operations in place, the MRC subsequently embarked on and successfully completed the strengthening of its internal operations by first subjecting itself to several independent reviews including the EU Pillar Assessments in 2017 and 2019, the Operational Review in 2018, and the MTR, also in 2018, and addressing the resulting recommendations. The strengthened internal operations features an independent Audit Committee, an Internal Auditor, revised operations manuals (i.e. Administration, Finance, Procurement, Fixed Asset and Human Resources manuals and Fraud Prevention and Anti-Corruption Mechanism), and the development of guidelines to support the implementation of the manuals. The achievement of these milestones has culminated in the MRC Secretariat's passing of EU Pillar Re-Assessment in November 2019, which provides reasonable assurance that the MRC meets international standards with regard to internal control, accounting, external

auditing, and procurement. This further boosted the confidence of the MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner.

The strengthened operations have also provided the specificity and clarity that the MRC Secretariat's staff members need to perform their tasks more deliberately according to approved rules and procedures, thereby improving the individual and collective efficiency and accountability of the workplace. The increasing confidence and trust of the MCs in the MRC are also demonstrated by the fact that their annual financial contributions, which increased to USD 15.7 M for the period, are now being remitted in a timely manner. This commitment is indubitably helping reduce uncertainty, improve the MRC Secretariat staff's morale, enhance the organization's standing with Development Partners and the broader community, enable the organization to perform its functions according to plan, and keep its pledge that it will be a world-class, financially self-sustainable organization by 2030.

INTRODUCTION

At the First MRC Summit in 2010, the political leaders of the four MCs committed to an ambitious MRC organizational reform and development vision to meet the roadmap objectives of financial self-sufficiency by 2030 and a leaner yet highly effective Secretariat focused on core functions to support the Mekong cooperation. In the critical path of this vision is the timely completion of reforms related to the structure and operation of the Secretariat and its linkages with MCs. Heading into 2016, the MRC Secretariat was in the midst of restructuring itself from 13 Programmes into four Divisions and one office, and reducing staff from about 200 to 64 full-time staff. Under Outcome 7, the MRC planned to complete the necessary MRC Secretariat's structural reforms with a special emphasis on strengthening human resources, administration, and finance operations. In addition, the MRC was tasked to revamp and fully operationalise its result-based monitoring, evaluation and reporting system, in particular for reporting on implementation of the IWRM-based BDS, the MRC SP, and the National Indicative Plans. Finally, the MRC needed to prepare the MRC SP for the next strategic planning cycle 2021–2025 as an output under Outcome 7.



Dr Pham Tuan Phan, first riparian CEO of the MRC Secretariat, meets with Viet Nam Prime Minister H.E. Nguyen Xuan Phuc at a side event of the World Economic Forum on ASEAN in Hanoi (13 September 2018).[13]

[13] At the meeting, Dr Phan briefs the PM on the achievements of the MRC, including ongoing organizational strengthening, and on the need for the highest level of attention and commitment to Mekong cooperation through the MRC.

OUTCOME 7

COMPLETION STATUS OF OUTPUTS

The MRC made great strides during the strategic planning cycle 2016–2020 in strengthening the organization and transforming its Secretariat to a leaner and more transparent, accountable, and cost-effective entity. As illustrated in Figure 45, the overall output completion rate is 96%, with three of the planned outputs, including the SP 2021–2025, 'completed', and the two remaining outputs 'partially completed' both with a completion rate of 90%.

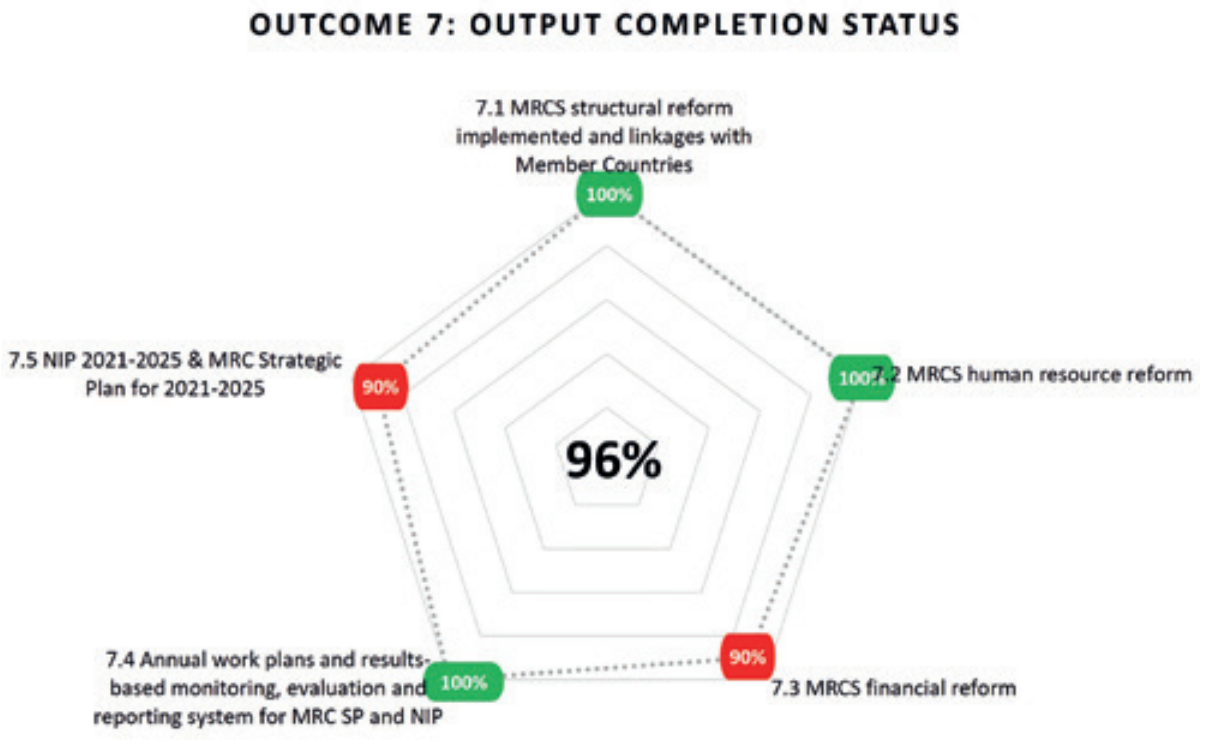


Figure 45. Output completion status under Outcome 7

STRUCTURAL REFORM AND RIPARIANIZATION

The MRC Headquarters in Vientiane (left), and the MRC Regional Flood and Drought Management Centre in Phnom Penh (right).

The reforms focus on strengthening the ownership of the MCs and the riparianization of the MRC Secretariat. In 2016, MRC completed its restructuring, which involved: (i) consolidation of its multiple programme planning processes (multiple programme documents) into one (i.e. the MRC SP as one plan for the organization); (ii) the development of a new M&E Framework, which established the mutual accountability framework (between the MRC Secretariat and MCs) and streamlined the number of indicators (from almost 2,000 in the previous period to over 100); (iii) decentralization of core river basin management function activities mostly related to routine monitoring from the MRC Secretariat to the MCs (see Outcome 6); (iv) the establishment of a leaner structure of the MRC Secretariat with one headquarters located in Vientiane, and the MRC Regional Flood and Drought Management Centre in Phnom Penh, following the consolidation of 13 programmes into four Divisions and the Office of the CEO; (v) recruitment of 64 full-time staff (reduced from almost 200 in the previous period); and (vi) a shift to a more flexible and countries-driven, pooled funding mechanism of a basket fund instead of separate, donor-dependent programmes. The first riparian Chief Executive Officer, Dr Pham Tuan Phan of Viet Nam, took charge from 2016 to 2018, followed by the second riparian CEO, Dr An Pich Hatda of Cambodia, from 2019 to 2022. Also, from 2016, all staff of the MRC Secretariat came from MCs, openly and competitively recruited as international civil servants.

IMPROVING LINKAGES BETWEEN THE MRC SECRETARIAT AND MCS THROUGH EXPERT GROUPS

With respect to the desired output of improving the linkages of the MRC Secretariat with MCs, especially at the level of line and implementing agencies, while reforming the organization to support cross-cutting coordination of its IWRM work, in 2017, the MRC established four Expert Groups (EGs) (see Figure 46). These groups, as recommended in the Regional Roadmap on Decentralization, replaced the steering committees, technical working groups, and advisory bodies of the former MRC Programmes. Each EG is chaired by a senior official from the MC in an annual rotational basis, co-chaired by a director from the relevant MRC Secretariat Division, and coordinated by a relevant chief.

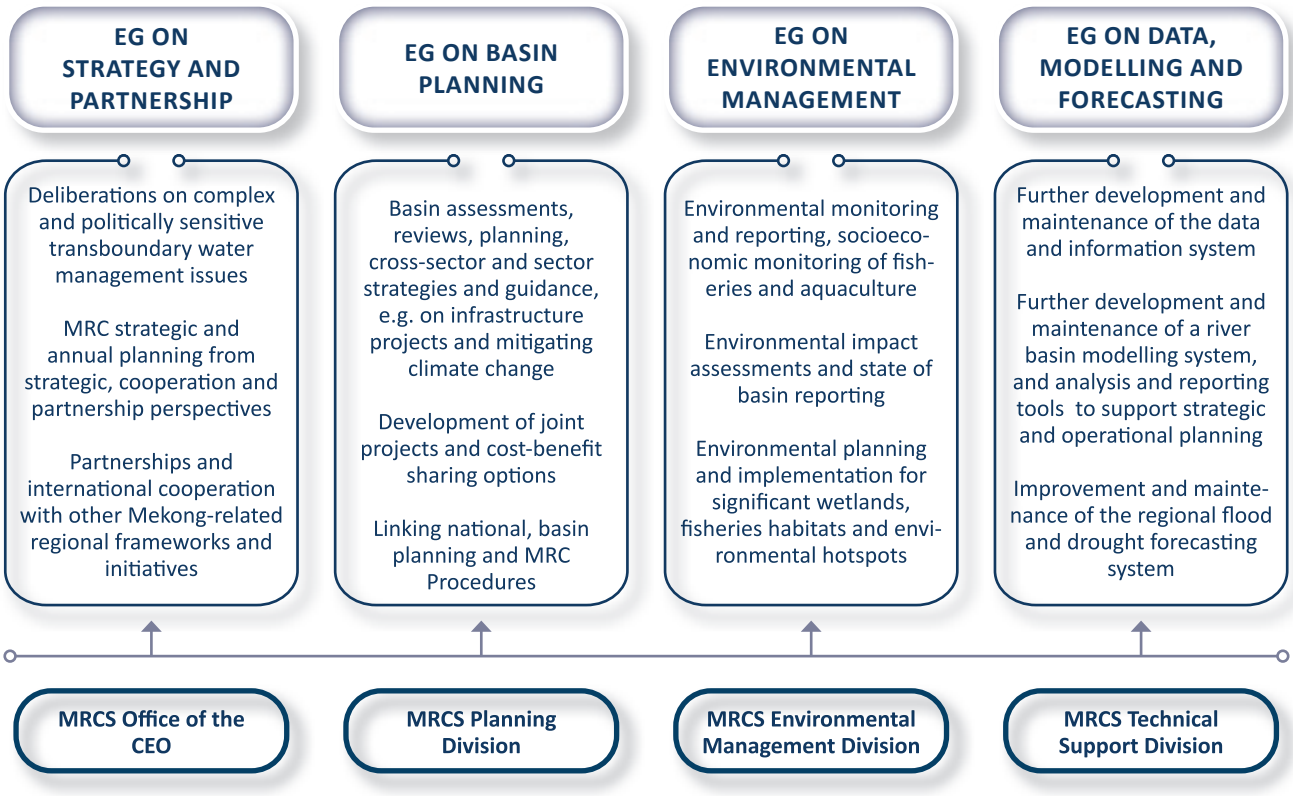


Figure 46. MRC Expert Groups (EGs) with their roles and responsibilities

OUTCOME 7

STRENGTHENING INTERNAL OPERATIONS

With the new structure in place, most staff recruited, funding secured, operating out of one Headquarters, and a new enhanced M&E system focusing on results and mutual accountability, the MRC's objective moving forward was to further strengthen the organization towards improving efficiency, transparency, and accountability. In order to achieve this, the MRC underwent several independent reviews, including the EU Pillar Assessments in 2017 and 2019, the Operational Review in 2018, which was commissioned by Development Partners, and the MTR of the MRC SP 2016–2020, also in 2018.

MRC Member Countries meet at the Preparatory Meeting of the MRC Joint Committee for the 26th MRC Council Meeting (November 2019). The Joint Committee provides guidance to the organizational reform and implementation of the MRC SP, among others.

The Cambodian Delegation was led by H.E. Mr Te Navuth, Permanent Vice Chairperson of the Cambodia National Mekong Committee (middle, pictured above), and the Thai Delegation was led by Dr Somkiat Prajamwong, Secretary General of the Office of National Water Resources and Vice Chairperson of the Thai National Mekong Committee (second left, pictured below). H.E. Mr. Te Navuth was the Chairperson of the MRC Joint Committee for 2018, and Dr Somkat for 2020.for 2018, and Dr Somkiat for 2020.

The EU Pillar Assessment provides reasonable assurance that the organization that is receiving EU's financial assistance fulfils the applicable requirements with regard to the four pillars: internal controls, accounting, external auditing, and procurement. In addition, the Operational Review consisted of an assessment of the new and reformed MRC, its organizational structure, staff resource capabilities, planning and workflow processes, and internal controls and systems at multiple levels: at the strategic and policy level with respect to implementing its mandate; at the organizational level with respect to its ability to deliver its products and services; and at the operational level, which includes internal controls and management systems for administration, finance, procurement, human resources, and information. The MTR, which reviewed the full scope of MRC SP 2016–2020, primarily reiterated the recommendation of the Operational Review in terms of internal organizational strengthening needed.

In 2017, the MRC Secretariat passed all aspects of financial management of the EU Pillar Assessment, except internal controls. In response, the MRC achieved several important milestones with respect to strengthening MRC's internal controls, include the following:

- The establishment of an independent Audit Committee (AC) as part of the governance structure of the MRC to monitor compliance with applicable institutional policies, and legal ethical, and regulatory requirements. A full-time internal auditor was also hired and reports directly to the AC, and shares annual reports and key actions taken with the Budget Committee.

- The adoption of a three-year mandatory rotation policy for the re-selection of external auditors

which is consistent with international standards such as the International Public Sector Accounting Standards (IPSAS) and as proposed by the Audit Committee.

- The update of the Finance Manual (version November 2019) together with other operation manuals (Human Resources, Administration, Procurement, and Fraud Prevention and Anti-Corruption Guidelines) and the subsequent agreement of the Finance Manual by the Budget Committee and approval by the MRC Joint Committee. The revised finance manual incorporates relevant international best practices and step-by-step guidelines for the MRC Secretariat's staff and those at the NMCS on financial procedures, reporting, auditing, and accountability requirements by the MRC. These include the update of the BF guidelines, detailed financial procedures with the new organizational structure, a new chapter on financial controls, and a new chapter om internal auditing.

By addressing the deficiencies identified to improve internal controls including reforms of the financial and accounting systems, the MRC Secretariat finally passed the EU Pillar Re-Assessment in 2019. This has boosted the confidence of MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner.

IMPROVING IMPLEMENTATION OF MRC SP 2016–2020 THROUGH ANNUAL WORK PLANNING AND M&E

The MRC completed the results-based M&E system (and its manual) and prepared five AWPs to effectively implement the MRC SP 2016–2020. The MRC's commissioned 2018 MTR was subsequently used by the MRC Secretariat's senior management and MCs to inform the decisions they made with respect to AWPs 2019 and 2020.

To enhance M&E, the MRC used dashboards. The financial dashboard developed in 2016 has been used regularly in senior management meetings at the Secretariat to report financial performance and recommend management actions. The 2018 MTR has indeed recognized the value of dashboards for M&E.

Since then, the MRC has embarked on expanding the application of the dashboards and other visualization tools to improve not only the MRC SP and organizational performance, but also the monitoring of selected conditions and trends in the Basin. M&E dashboard training workshops by MRC Secretariat's staff members were held in Vientiane, Lao PDR in August 2018, and in Bangkok, Thailand in December 2019 for MCs. During these workshops, conceptual designs for dashboards were developed for water level and discharge monitoring data in Cambodia, Nam Ngum reservoir operation in Lao PDR, salinity intrusion in Viet Nam, reservoir storage volumes in Thailand, and financial performance monitoring for the MRC Secretariat. Since then, Lao PDR has implemented both mobile application and web-based dashboards for monitoring the operations of 49 HPPs including the two cascade dams at Nam Ngum and Nam Ou.

This achievement was made possible through several working sessions: with the Joint Committee from Lao PDR to specify features and functionalities of the proposed dashboards; with the Lao MEM, Department of Meteorology, and the LNMC Secretariat to review the mobile application prototype and discuss data flows, work flows, and roles and responsibilities; and finally, with LNMC Secretariat for the handover training. The dashboards provide alerts on potential flood and drought levels, and monitor reservoirs inflow, outflow, and storage volume in comparison with HYCOS stations precipitation and water level data.

Moreover, the dashboards send these flood and drought alerts to the Lao government officials (including Council and Joint Committee members) through mobile/social media applications LINE and WhatsApp (see Figure 47).

In summary, this dashboard capability strengthens Lao PDR monitoring with respect to hydropower operation for flood and drought management in key tributaries of the Mekong.

OUTCOME 7

Participants pose for a group photo during a regional training session of Monitoring Dashboards conducted by MRC Secretariat's in-house experts (December 2019).

Figure 47. Mobile application and web-based dashboards for monitoring the operations of 49 HPPs including the two cascade dams at Nam Ngum and Nam Ou

IMPLEMENTATION OF THE NATIONAL INDICATIVE PLANS 2016–2020

The NIPs 2016–2020 were formulated to support BDS implementation at the national level and contribute to the MRC SP outcomes. NIPs have two parts: the promotion of development opportunities through joint projects and national projects of basin-wide significance, and the contribution to the MRC SP outcomes through national activities and decentralized activities. Since its approval in 2016, the NIPs have been implemented by national line/implementing agencies under the coordination of the NMC Secretariat.

Through multilateral cooperation and funding, various projects have been implemented and are ongoing including three of five joint projects. These include flood and drought management in the Cambodia-Thai Border Area for 9C-9T sub-basin, cross-border water resources development and management in the Khone Falls region between Cambodia and Lao PDR, and Lao-Thai safety regulation for navigation. The projects enable the establishment of a high-level steering committee and national working group for implementation, which facilitate the exchange of information, joint assessments, and development and implementation of joint action plans. Other national projects of basin-wide significance were funded from multilateral donors and banks in MCs, and are being implemented, including, *inter alia*, integrated water resources management, watershed, biodiversity conservation, the establishment of the Mekong Delta Centre, the strengthening of the hydro-meteorological information network, and the establishment of a water resources monitoring network. To improve implementation, annual reviews of NIPs' implementation have been carried out together with national line/implementing agencies through the facilitation of NMC Secretariat.

MRC STRATEGIC PLAN 2021–2025 AND NIP 2021–2025

As part of the preparation of the new BDS (see outcome 2), the MRC prepared its SP for the next strategic planning cycle 2021–2025, which was enforsed by the MRC Joint Committee and approved by the MRC Council in November 2020. The SP 2021–2025 includes a chapter on GAP 2021–2025.

In 2020, the NMCs also began preparing the first draft of the NIPs. In addition, the MRC successfully completed the SP 2021–2025, and in order to implement the new MRC SP, subsequently prepared the Multi-Year Work Plan (MWP) for 2021–2022.

EVIDENCE OF CHANGE

Based on the outputs completed under this Outcome and the level of change that they produced as shown in Figure 48, Outcome 7 is rated 'achieved'. The achievements of MRC in transforming itself into a leaner organization and in strengthening its internal operations have resulted in an MRC organization that is more efficient and effective.

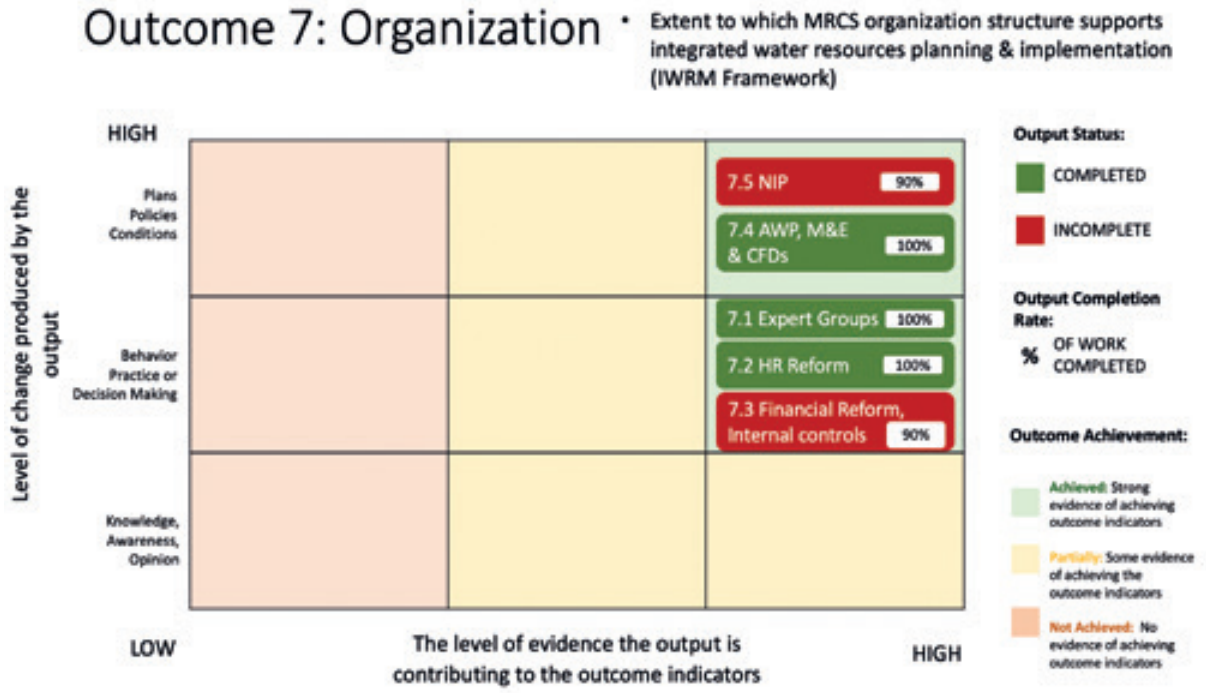


Figure 48. Outcome Evaluation Matrix

Note: The Matrix assesses outcome achievement based on output completion and the type of change that occurred – Outcome 7

EFFICIENT AND EFFECTIVE ORGANIZATION

The MRC's achievement of several key milestones in strengthening its internal operations, including updating its manuals, have provided the specificity and clarity that MRC Secretariat's staff members need to perform their tasks more deliberately according to approved rules, thereby improving the individual and collective efficiency of the workplace. These positive changes are anticipated to increase substantially and become more ingrained in the culture of the organization, thereby transforming the organization into an even more effective and efficient one.

The following are remarkable set-ups that the MRC succeeded in strengthening its financial management and control mechanism to promote its Secretariat as one of the most efficient and effective river basin organizations in the LMB.

- **Organization reform:** The organizational structure of the MRC Secretariat was reformed and strengthened towards a more efficient and effective river basin organization by reducing the number of staff from 200 positions to 64 positions in 2016. It is also the first time that all the 64 staff members are also from riparian countries.

- **The Basket Fund (BF):** The BF was established in 2016. It has been used as the pool financing by merging separate budgets of many operational programmes into one overall budget for implementing the MRC SP. The uniqueness of the BF is that the MCs and Development Partners contribute to its pool of funds. For promoting transparency, accountability, and compliance for the use of the BF, it has been monitored

and supervised by the Budget Committee (BC) Members who represent the MCs and Troika (representative of Development Partners who contribute to the BF).

- **The Earmarked Fund (EF)**: The EF has been used to manage financial agreements with a specific purpose and specific scopes of works agreed on between the MRC Secretariat and specific Development Partners. Hence, the designated funding amount is earmarked for specific scopes of works as agreed by the two parties. All transactions can be tracked by a specific code linked to output, outcome, activity, or core function level under the current structure of the MRC Secretariat.

- **Manuals and guidelines:** The MRC's financial manuals have been revised and are in line with the BF guideline and international practice. The administration manual, the procurement manual and the human resources manual have been revised and implementing.

- **The Audit Committee and Internal Auditor Functions** were established in 2019 and systematically operational.

Armed with the BF arrangement, the MRC's leadership ability to ensure balanced implementation of the MRC priorities and also flexibly address emerging needs of MCs in a timely manner is enhanced. The BF arrangement also inherently improves financial transparency and management efficiency, and allows the mechanism to transition easily from a primarily donor-funded to an MC-funded organization.

> "Significant achievements of the MRC in recent years […] have increased the reputation and relevance of the organization considerably and consolidated its standing as one of the premier river basin commissions worldwide." – *Independent Operational Review, November 2018*

The MRC's strong commitment to becoming an even more transparent and accountable organization has increased the confidence of MCs and Development Partners. The MRC's successful assessment of the EU Pillar Re-assessment is expected to attract – and make it easier for – the EU and other potential Development Partners to financially contribute to the MRC in the next MRC SP. In addition, the confidence of MCs is highly evident not only in their pronouncements and affirmations of support, notably expressed in the 2018 Siem Reap Declaration, but also by the fact that their annual contributions have continued to increase and being remitted in full and on time. This commitment is indubitably helping reduce uncertainty, improve the Secretariat staff's morale, enhance the organization's standing with Development Partners and the broader community, enable the organization to perform its functions according to plan, and keep its pledge that it will be a world-class, financially self-sustainable organization by 2030.

VALUE FOR MONEY

The output on financial reform and internal controls, and the output on AWPs, M&E and CFDs constituted the bulk of the level of effort under Outcome 7, given that they represented about 54% of the total cost incurred (see Figure 49). Both outputs proved cost-effective because they have achieved their intended outcomes. The financial reform and strengthening of internal controls have resulted in the MRC's passing of the EU Pillar Reassessment. This has galvanized the confidence of MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner.

The MRC Secretariat's results-based M&E and the use of dashboards (including for financial monitoring) and five successive AWPs have allowed the MRC to continuously improve the implementation of the MRC SP 2016–2020 and address challenges and any other issues early in the process, for instance, those identified in the 2018 MTR. The three other outputs under Outcome 7 (Structural Reform/Expert Groups, Human Resources Reform, and SP/NIP 2021–2025) proved to be high VfM because they addressed highly focused needs for low to medium costs. The establishment of

the Expert Groups as part of the MRC structural reform has improved the linkages between the MRC Secretariat and MCs. The human resources reform as part of the larger effort of strengthening internal operations has improved the staff morale, and the individual and collective efficiency of the workplace. Finally, the SP 2021–2025 was completed with the endorsement of the MRC Joint Committee and approval by the MRC Council in time for the next strategic planning cycle. The NMCs have also began preparing the first draft of the NIPs. Overall, the achievements under Outcome 7 have transformed the MRC into an effective and efficient organization towards becoming a world-class, financially self-sustainable organization by 2030.

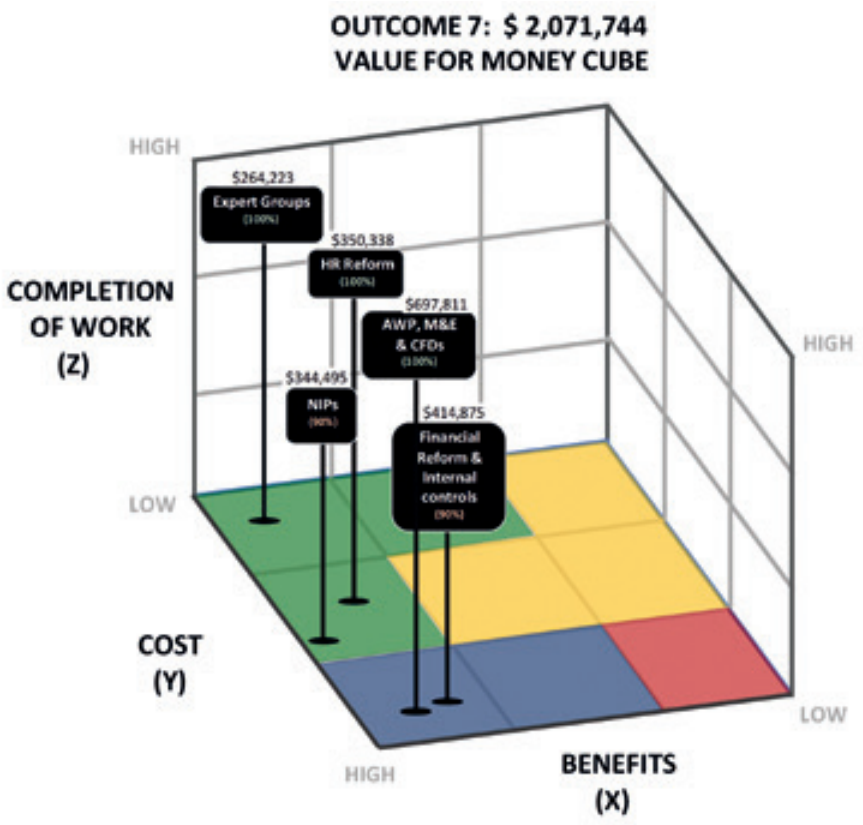


Figure 49. Value for Money Multidimensional Analysis for Outcome 7

LESSONS LEARNED

The Expert Groups were established to strengthen the linkages, alignment, and collaboration between MRC Secretariat Divisions and the national line and implementing agencies. While they have adequately performed their role in providing technical expertise so that MRC's products and services meet the national needs and are fit for purpose, their role in terms of promoting national uptake of these products and services could be more effective.

With the increased emphasis on national uptake in the next strategic planning cycle, it is therefore important to provide the Expert Groups with the clarity and specificity on the exact role that they have to play to promote national uptake, for example, in enhancing the national political, technical and financial ownership of the MRC's products and services. This may involve reviewing the role of the Expert Groups within the MRC structure and the need for long-term capacity building and financial backing. The consistent and quality memberships of the Expert Groups are also key to ensuring that MRC's products meet MCs' needs and will be used consistently nationally.

OUTCOME 7

NIPs aim to support BDS implementation at the national level and to align regional planning with national planning by the MCs to promote and increase regional benefits of the national plans. However, NIPS for 2016–2020 were not necessarily consistent with the intended purpose and varied widely in terms of scope, budget, funding approaches, and ownership by national line agencies in different countries. In the new BDS, the NIPs have been rethought and agreed on regarding their purpose and content. These necessary changes will make them more effective in supporting the BDS implementation at the national level during the next strategic planning cycle 2021–2030 and beyond.

CONTRIBUTION TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The MRC's commitment for the continuous improvement and strengthening of its internal operations including its financial and accounting systems enhances the organization's wherewithal to implement its mandate and deliver the outputs and services according to its strategic plans. Indeed, organizations tend to flourish after establishing adequate internal controls, which lead to the efficient execution of operations to deliver value to their stakeholders and achieve their strategic objectives while aligning with industry best practices, laws, and regulations to manage risks. Therefore, a river basin organization such as the MRC that has strengthened its capability to deliver its mandate will contribute to the achievement of the following the SDGs:

SDG 6: Water and Sanitation, specifically Target 6.5: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate.

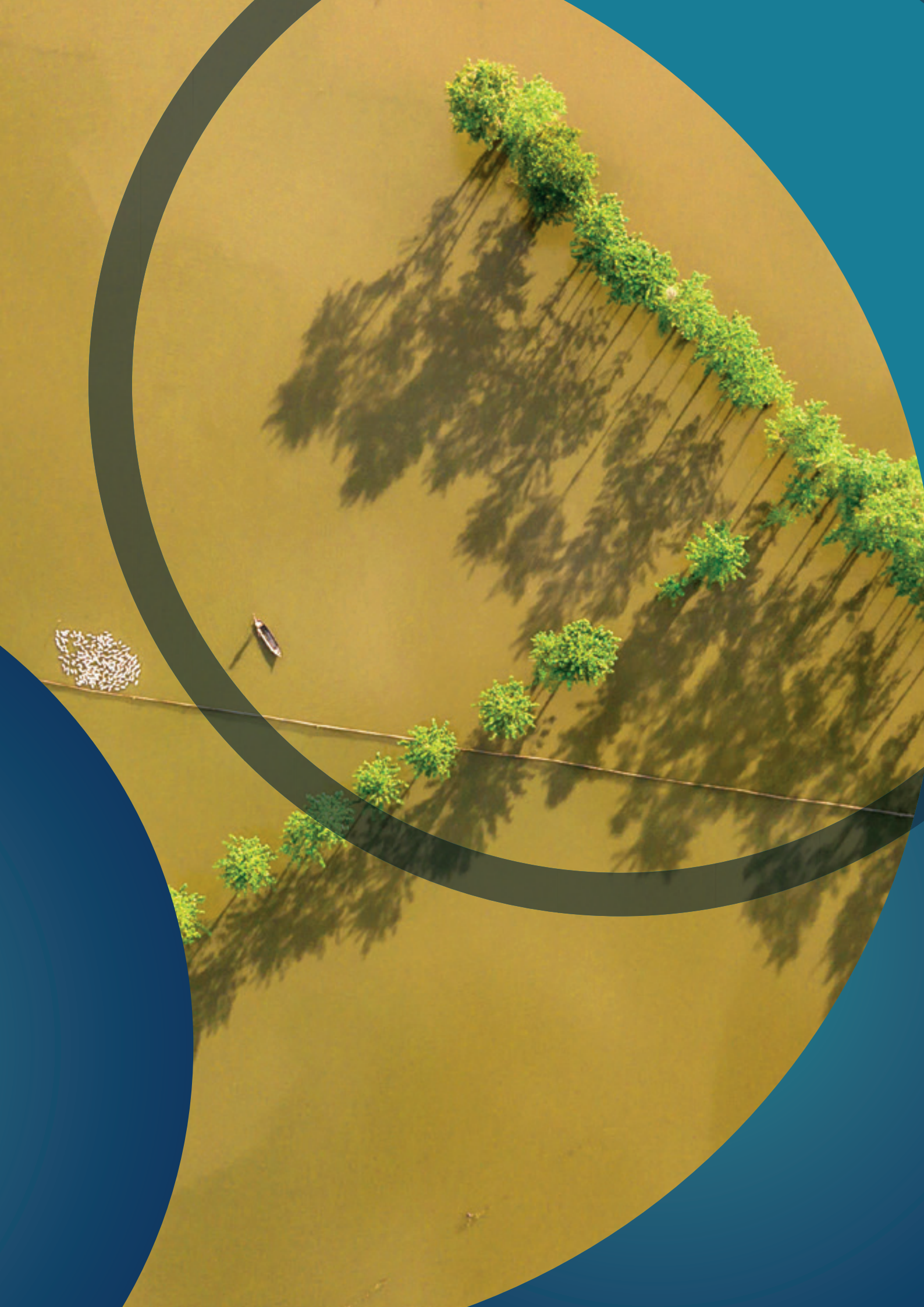
SDG 16: Peace, Justice and Strong Institutions specifically Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels.

SDG 17: 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 SDGs, including through North-South, South-South and triangular cooperation.

PATHWAY TO CHANGE

MRC Transitioned to a More Efficient and Effective Organization in the Line with the Decentralization Road Map and Related Reform Plans

CONCLUSION AND WAY FORWARD



CONCLUSION AND WAY FORWARD

The MRC's implementation of the SP 2016–2020 through its AWPs over the five-year period 2016–2020 resulted in the completion or near completion of most of the planned outputs, of which 23 of outputs were 'completed', 15 were 'incomplete', and 6 were 'discontinued' (see Figure 50). The 15 'incomplete' outputs were mostly nearly completed with completion rates at or above 90%. An assessment at the output level of the type of change and the level of evidence supporting this change has occurred shows three outcomes (Outcomes 4, 5 and 7) rated as 'achieved' and the remaining four outcomes (Outcomes 1, 2, 3 and 6) as 'partially achieved', as shown in Figure 51.

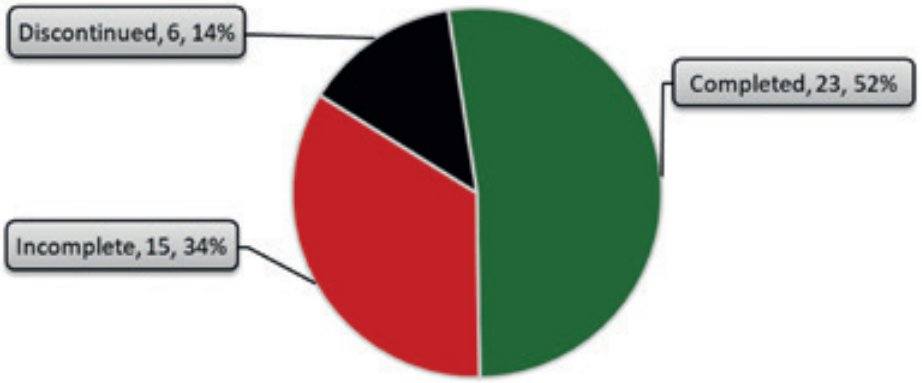


Figure 50. Completion status of SP 2016–2020 outputs

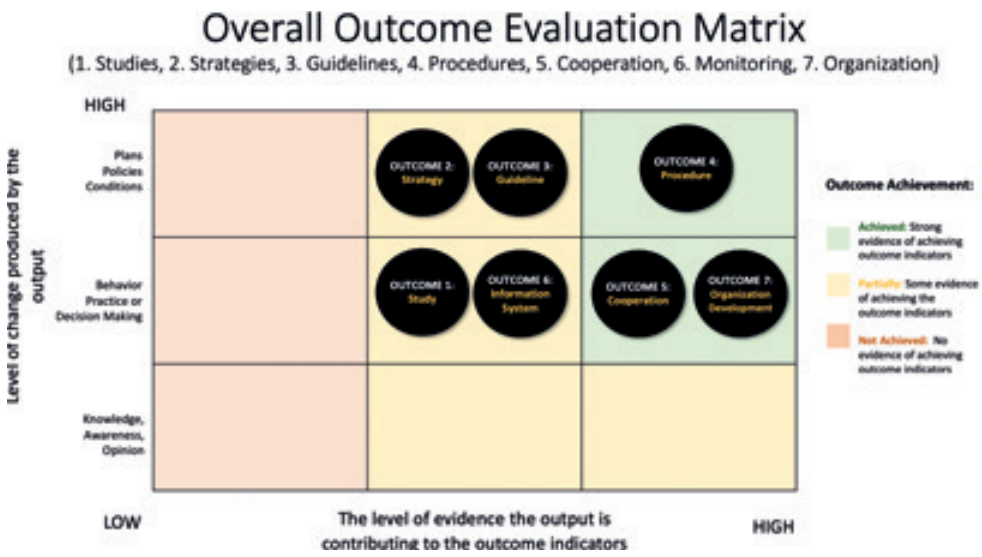


Figure 51. Overall outcome achievement rating based on the analysis at the output level of the type of change and the level of evidence supporting the change that has occurred

Based on the VfM analysis (see Figure 52), 45% of the outputs proved to be high VfM for the MRC, 29% were cost-effective, 18 percent needed additional interventions to either complete the output and/or to achieve its intended outcomes, and 8% (i.e. two outputs) were low VfM. Among the seven outcomes, Outcomes 4, 5, and 7 produced the highest percentage of outputs with high VfM. This is consistent with the Outcome Evaluation in which these three outcomes were assessed as having achieved their intended outcomes. In contrast, the rest of the outcomes (Outcomes 1, 2, 3, and 6), which were assessed to have partially achieved their intended outcomes, include outputs that will

benefit from additional technical and management interventions. With the proper interventions (e.g. to effectively promote national uptake), these outputs may become high VfM products or undertakings thereby, allowing these four outcomes, overall to achieve their intended outcomes.

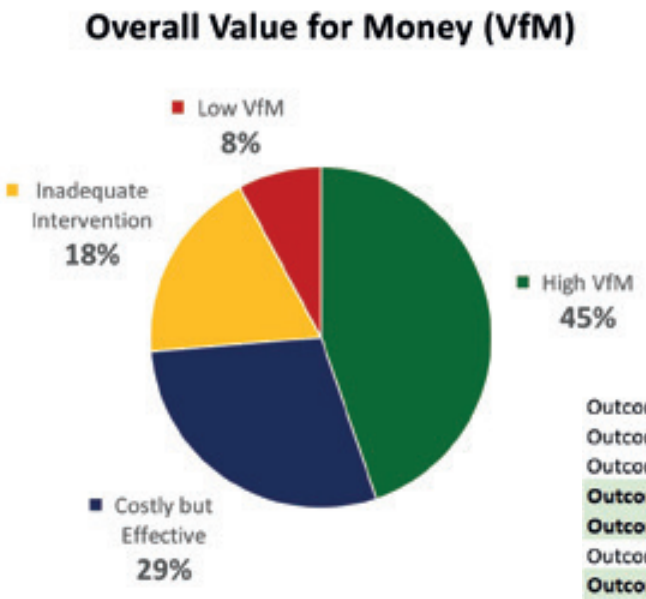
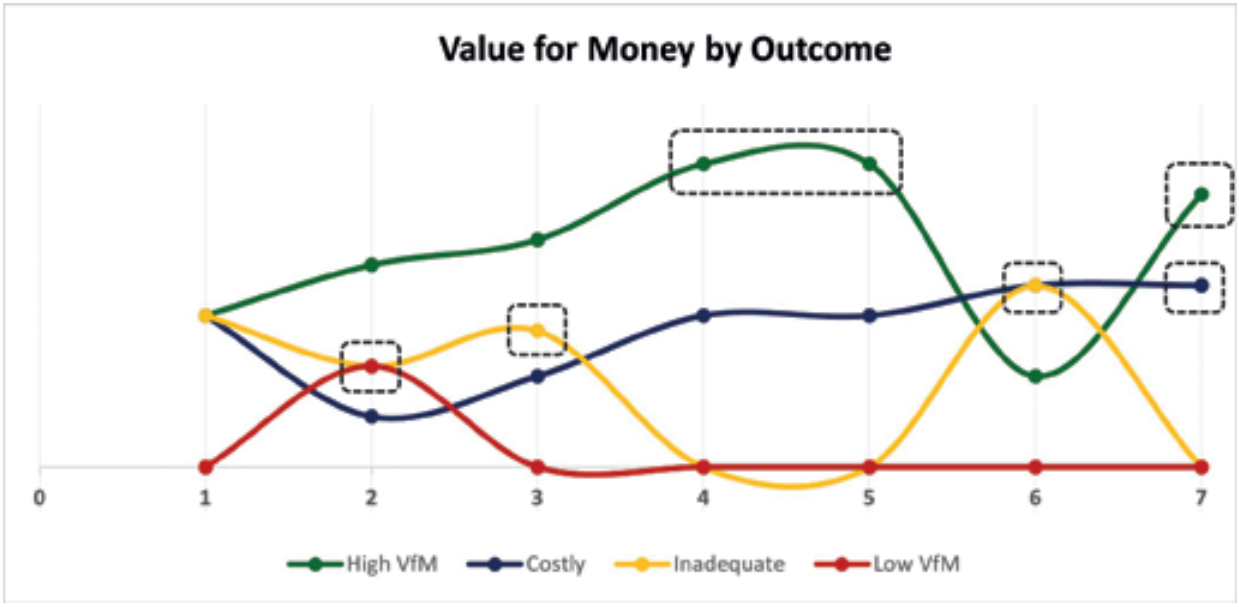


Figure 52. Overall value for money

	High VfM	Costly	Inadequate	Low VfM
Outcome 1	33%	33%	33%	0%
Outcome 2	44%	11%	22%	22%
Outcome 3	50%	20%	30%	0%
Outcome 4	67%	33%	0%	0%
Outcome 5	67%	33%	0%	0%
Outcome 6	20%	40%	40%	0%
Outcome 7	60%	40%	0%	0%



Finally, except for two outputs under Outcome 2, all the large outputs (i.e. with high costs) proved to be cost-effective (i.e. the Output is effective and/or productive in relation to cost). The outputs, the MASAP, and the Flood Strategy under Outcome 2, were rated as low VfM because they failed to achieve their desired outcomes, most likely as a result of significant deficiencies in the implementation and delivery mechanisms for these outputs. To address these deficiencies, a combination of re-evaluating and redesigning their mechanisms and/or providing significant additional technical and management interventions may be needed. For instance, developing an integrated flood and drought management strategy is a potentially sound technical intervention needed to propel the Flood Management Strategy to be completed. Technical and management

interventions through the Expert Groups and using NIPs as delivery mechanisms may result in a more effective mainstreaming of MASAP within the national systems.

Regardless of the size of the project, its likelihood of success is increased significantly with the following: (i) a good project plan with clear objectives, scope, timeline, and activities sufficiently detailed with respect to time, cost, and human resources; (ii) strong leadership (e.g. project manager) and proactive team work and communication (i.e. within the MRC Secretariat's team); (iii) buy-in of the MCs ensuring their strong cooperation early and throughout the process; (iv) adequate project controls, monitoring, and evaluation to sustain progress and mitigate project implementation issues as they occur; and (v) a sense of urgency by all project members to deliver the products and services, and close the project as planned.

Table 3 summarizes the key results, outcomes, lessons learned and potential mitigation measures by the MRC SP 2016–2020 key result area.

Table 3. Summary of key results, outcomes, lessons learned and potential mitigation measures

	OUTCOMES 1, 2, 3 ARE PARTIALLY ACHIEVED
Key result area 1: Enhancement of national plans, projects and resources based on basin-wide perspectives	**Key results:** The important knowledge gaps were mostly addressed, and a comprehensive and evidence-based state of the basin was assessed and reported. New and updated basin-wide sectoral strategies and associated action plans such as the Environment Strategy, the Fish Management Strategy, DMS, the MASAP, and the Navigation Master Plan were completed and approved by the MRC Council. New and updated guidelines such as the PDG, TbEIA, RSAT, Fish-Friendly Irrigation Systems, and Waterborne Transportation Guidelines were completed, and were either endorsed or scheduled for endorsement by the MRC Joint Committee. The BDS 2021–2030 for the next strategic planning cycle was completed. **Outcomes**: There are regional applications of the new body of knowledge, strategies, and guidelines, but at the initiative of the MRC and as planned according to the MRC SP 2016–2020. In contrast, joint and national applications remain largely at the initiative of individuals or organizations rather than part of an agency-wide effort. The NIPs could be more effective in incorporating and applying these regional products to achieve basin benefits both nationally and regionally. **Lessons learned and potential mitigation:** The development of regional strategies and regionally applicable guidelines usually requires a significant level of effort and time. It is important that such a large multisectoral, multidisciplinary undertaking that typically requires coordination and consultation with various stakeholder groups be implemented early, with supporting and complementary activities on its critical path identified, and completed on time. For example, ineffective intervention caused long delays in completing the SHDS and the Initial Studies. Since the Initial Studies were not complexly as planned, their findings could not be incorporated in the 2018 SOBR. This situation resulted in the subsequent postponement of the completion of the MRC Flood Strategy for the next strategic planning cycle. The non-systematic uptake at the national level of the regional strategies and guidelines remains a challenge and is preventing the full realization of their potential national and regional benefits. The next strategic planning cycle should increase the emphasis on the systematic, deliberate, and effective uptake of these regional products by the MCs to achieve their mainstream use, including by

taking advantage of mechanisms in place such as the NIPs and the Expert Groups. When appropriate, the strategies and guidelines will have to be adjusted to adapt with the changing national context and meet both the urgent and long-term needs of the users.

OUTCOMES 4 AND 5 ACHIEVED

Key result area 2: Strengthening regional cooperation

Key results: MRC Procedures, a key tool of water diplomacy and cooperation among countries, was implemented with the MRC Joint Platform and strengthened to improve procedures coordination and improvement of certain technical guidelines. Several dialogue meetings, data and information sharing, exchange visits, joint studies, conferences, and outreach were conducted to promote regional cooperation with Dialogue Partners, in particular China, as well as new or renewed agreements with these partners and other regional (such as ASEAN) and international partners and broader stakeholders.

Outcomes: The routine activities under PMFM, PWQ and PDIES were implemented and continuously improved. The PNPCA Prior Consultations for the three most recent Mekong mainstream HPPs were regarded by the MCs, Development Partners, and some stakeholders as a major success with formal agreements among the MCs and the post-PC engagement mechanism (JAP).

Cooperation with China was strengthened, resulting in the achievement of several important milestones such as China's agreement to share year-round Lancang hydrological data, the granting to the MRC Secretariat the right to attend meetings of the LMC Joint Working Group on Water Resources, and the signing of the MOU between LMC Water Center and the MRC Secretariat.

Broader collaboration was achieved with a growing list of strategic and technical partners with over 30 MOUs by the end of 2020. The trust and strong support of Development Partners were maintained, both financial and technical cooperation. Active communication with and meaningful participation by the broader stakeholders were recorded.

Lessons learned and potential mitigation: The successful conclusions of the Prior Consultations for the PBHPP, the PLHPP, and the LPHPP were the results of lessons learned from the Prior Consultations of the first two hydropower dams that did not end with formal agreements among the MCs. The use of innovative tools such as the Joint Statement and JAP increases the likelihood of success of cooperation among the MCs, and should therefore be applied in the Prior Consultations for other major infrastructure investments, notwithstanding the unique challenges of each case. The need to implement the agreed JAP is of high priority in order to demonstrate the effectiveness of this mechanism and instil confidence and value in the PC process. The MRC's increasing emphasis on an open and inclusive PC process provides greater clarity to developers and key stakeholders, allowing them to participate proactively and effectively, and should therefore be continued. Implementation of other procedures, such as PMFM, PWQ, and PWUM, including when agreed monitoring thresholds are not in compliance, needs to be strengthened.

The MRC has clearly demonstrated its central and leadership role in the region, as evidenced by the reaffirmation of its mandate by Heads of Governments in the 3rd MRC Summit, and its increasingly strategic and productive partnership with

its Dialogue Partners, in particular, China.From this success, a very positive lesson can be learned, i.e. when the MRC makes wise and sustained efforts, can achieve its best performance and influence others in the region. The next challenge is to further strengthen key partnerships and together bring practical and meaningful positive changes in the region that directly benefit its people, communities, and the environment

OUTCOME 6 PARTIALLY ACHIEVED

Key result area 3: Better monitoring and communication of the Basin conditions

Key results: The Mekong-HYCOS hydromet network was improved and expanded, and together with the routine environmental monitoring through WQM, EHM, and FM, the operation and maintenance were continuously improved, and results reported. The JEM Programme for Xayaburi and Don Sahong dams was another breakthrough for Mekong cooperation. The RFDMC was expanded to include drought with flood forecasting services. The MRC-IS, the Data Portal, the DSF, and related tools were improved and applied. In response to emerging needs, the Design Concept for the reinvigoration of the MRC's systems related to data, information management, modelling and forecasting, and communication was completed.

Outcomes: The continuous operation of the MRC's hydrometeorological and environmental monitoring has provided the region with critical data on the conditions of the Mekong River, and enabled the MRC to complete its other work such as the SOBR, assessments, and strategy preparation. The JEM Programme is expected to enable the MCs to jointly monitor, assess, and mitigate with more certainty impacts of specific mainstream HPPs. The RFDMC has provided countries and communities access to timely flood and drought forecasting, and early warning information throughout the year, and thereby contributes to better preparation and prevention of the loss of lives and properties. The MRC IS, Data Portal, DSF, and related tools have provided project planners and implementers with the required data and the tools to make informed and scientifically based decisions.

Lessons learned and potential mitigation: The increasing awareness of MRC leadership and the MRC's Secretariat staff of the critical role of data and their associated monitoring, assessment, modelling, and forecasting systems provides an opportunity to continue and sustain MRC's initiative to reinvigorate these systems. Over the years, the MRC and the MCs have collected, produced, and compiled a substantial amount of data and information; however, their usage remained difficult, inefficient, and not optimal, largely due to antiquated and/or ineffective systems, and the lack of integration and harmonisation between the MRC-IS and national information systems of MCs (and to some extent, integration with global and other regional systems such as that with its Dialogue Partners). Implementing the Design Concept would put MRC in a more capable position to fulfil its core functions, address urgent needs, and achieve the priorities of the next strategic planning cycle.

OUTCOME 7 ACHIEVED

Key result area 4: A leaner river basin organization

Key results: The MRC restructuring was completed, which involved establishing one headquarters in Vientiane, and the RFDMC in Phnom Penh, following the consolidation of 13 Programmes into four Divisions and an Office, among many other structural changes. Multiple programme planning became one MRC SP

preparation, with a new consolidated M&E framework in place. The first and second riparian CEOs took charge, and all staff of the Secretariat hailed from the MCs. MRC Expert Groups became operational. The MRC internal operations were strengthened with the addition of an independent Audit Committee, an Internal Auditor, and the revisions of operation manuals for administration, finance, procurement, and human resources. The MRC SP 2021–2025 preparation was completed, endorsed by the MRC Joint Committee, and approved by the MRC Council. NMCs have also began preparing the first draft of the NIPs.

Outcomes: The strengthened internal operations, in particular the revised manuals and its operational guidelines, have enabled the MRC Secretariat's staff members to perform their tasks more deliberately according to the approved rules. This resulted in improved individual and collective working efficiency and effectiveness of the workplace.

The MRC's passing of the EU Pillar Re-Assessment that the MRC meets international standards with regard to internal control, accounting, external auditing, and procurement. This has further boosted the confidence of the MCs and Development Partners in the MRC's ability to perform its functions in the most transparent, accountable, and cost-effective manner. This confidence, trust, and corresponding increase in commitment is indubitably helping reduce uncertainty, improve the MRC Secretariat staff's morale, enhance the organization's standing with Development Partners and the broader community, enable the organization to perform its functions according to plan, and keep its pledge that it will be a world-class, financially self-sustainable organization by 2030.

Lessons learned and potential mitigation: The Expert Groups were established to strengthen the linkages, alignment, and collaboration between the MRC Secretariat and the national line and implementing agencies. While they have reasonably performed their role in providing technical expertise so that MRC's products and services meet the national needs and are fit for purpose, their role in terms of promoting national uptake of these products and services could be more effective. With the increased emphasis on national uptake in the next strategic planning cycle, it is therefore important to provide the Expert Groups the clarity and specificity on the exact role that they have to play to promote national uptake, for example, in enhancing the national political, technical and financial ownership of the MRC's products and services. Consistent memberships of key Expert Groups are also important.

The NIPs aim to support BDS implementation at the national level and to align regional planning with national planning by the MCs to promote and increase regional benefits of the national plans. However, the NIPS for 2016–2020 were not necessarily consistent with the intended purpose and varied widely in terms of scope, budget, funding approaches, and ownership by national line agencies in different countries. In the new BDS, the NIPs have been rethought and agreed regarding their goal and content. These necessary changes will make them more effective in supporting the BDS implementation at the national level during the next strategic planning cycle 2021–2030 and beyond.

CONCLUSION AND WAY FORWARD

The MRC Secretariat stafff participates in a team building session (2017).

Based on the lessons learned and the proposed potential mitigation measures, the following next steps were incorporated in the SP 2021–2025 for the next strategic planning cycle:

- Facilitate national uptake by implementation of the new NIPs and integrating impact pathways in MRC's multi-year work planning, NIP preparation, and the MRC's M&E (from Outcome 1, 2, and 3).
- With the basin-wide sector strategies complete, embark on a more proactive planning approach that focuses on joint investment projects and national projects of basin-wide significance (from Outcome 2).
- Increase emphasis on the coordination of basin management operations. This is in recognition of the increasing importance of cascade operations with Xayaburi, Pak Beng, Pak Lay, Luang Prabang, and Sanakham dams representing a cascade of dams (from Outcome 4).
- Further strengthen key partnerships and together bring practical and meaningful positive changes in the region that directly benefit its people, communities, and the environment (from Output 5)
- Modernize fragmented water-related monitoring, modelling and information systems to support proactive regional planning and coordination of basin operations, and stakeholder communication. Promote a more integrated entire river basin information management system, especially between MRC and LMC Water (from Outcome 6)

The MRC Secretariat staff participates in a team building session (2019).

- Consider an alternative approach to the current decentralization approach for CRBMF for monitoring that would involve the complete decentralization of water-related data collection functions while maintaining a regional approach to the management of a core monitoring network with financial support provided by the MRC (from Outcome 6).

- Further improve the MRC Secretariat's structure to align with the core functions, and further strengthen the financial management to support planning, implementation and reporting for accountability, transparency, and cost-effectiveness of the implementation (from Outcome 7).

- Establish joint basin expert groups with representation from the six countries to contribute technically to support proactive planning, integrated monitoring/information systems, and coordination of basin operations (from Outcome 7).

- Prepare the new NIPs based on the BDS directions so they become more effective in supporting the BDS implementation at the national level during the next strategic planning cycle 2021–2025 (from Outcome 7).

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OVERALL FINANCIAL INFORMATION FOR THE MRC SP 2016–2020

As projected in 2015, the **budget of** the MRC SP 2016–2020 **was approximately USD 65,000,00**0. The MRC uses the AWPs as detailed operational plans to implement the MRC SP at the regional level during the five-year period. The AWPs contain the activities and tasks together with their associated budgets to implement the outputs and achieve the outcomes of the MRC SP 2016–2020.

During the five-year period, based on actual planning yearly, **the cumulative budget of the AWPs was USD 86,082,315. The total actual funds received was USD 62,433,320, and the total actual expenditures was USD 56,284,667** (see Figure 53).

For the five-year period, the MRC estimated the budgets of AWPs to be 32% higher than the projected roadmap. For the first four years (2016–2019), the MRC planned for an annual budget of at least USD 16 million, which turned out to be significantly higher than the actual funds received.

Moreover, based on the actual annual expenditures, the highest expenditure was in 2018 for USD 12.5 million. This indicated that the MRC's actual financial and human resources capacity is equivalent to an average amount of USD 12 million a year. Based on experience, the MRC budgeted more realistically during the later years of the MRC SP

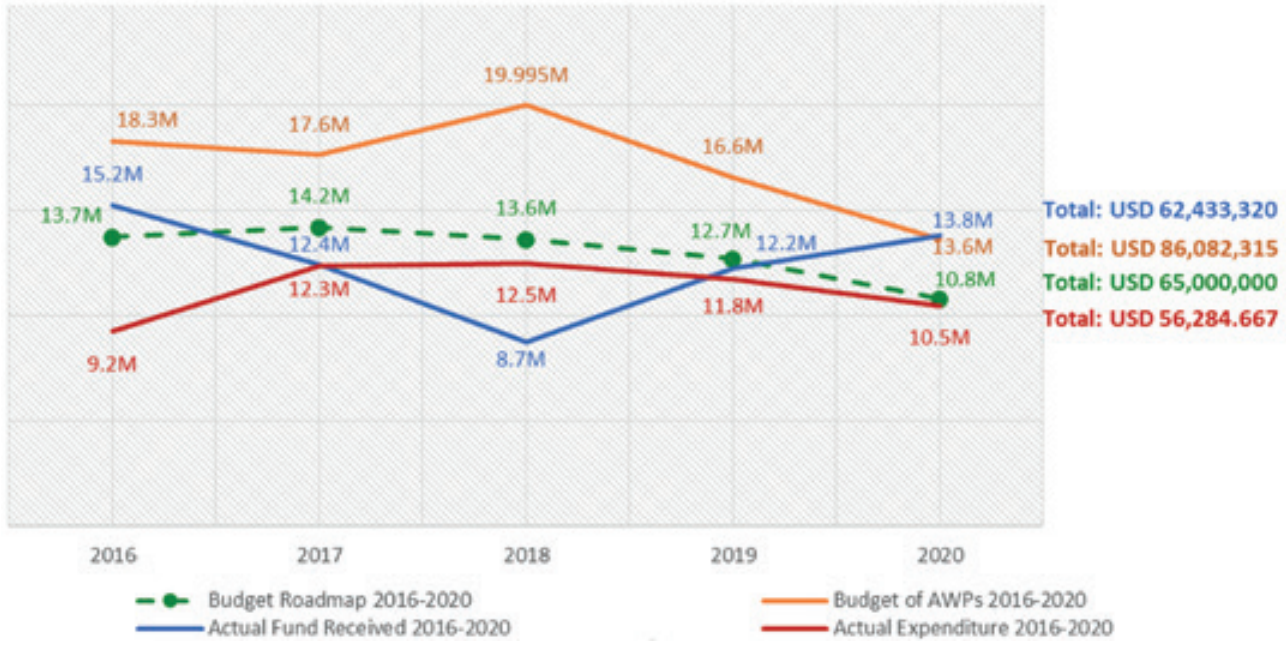


Figure 53. Budget roadmap, budget of AWPs 2016–2020, actual fund received 2016–2020, and actual expenditure 2016–2020

OVERALL BUDGET FOR THE MRC SP 2016–2020

Figure 54 shows that the total budget of AWPs (USD 86,082,315), comprising 60% (USD 50,777,581) for the Basket Fund (BF), 33% (USD 28,587,879) under the Earmarked Funds (EF), 6% (USD 5,591229) for the EU Fund; and 1% (USD 1,125,626) for the ARF.

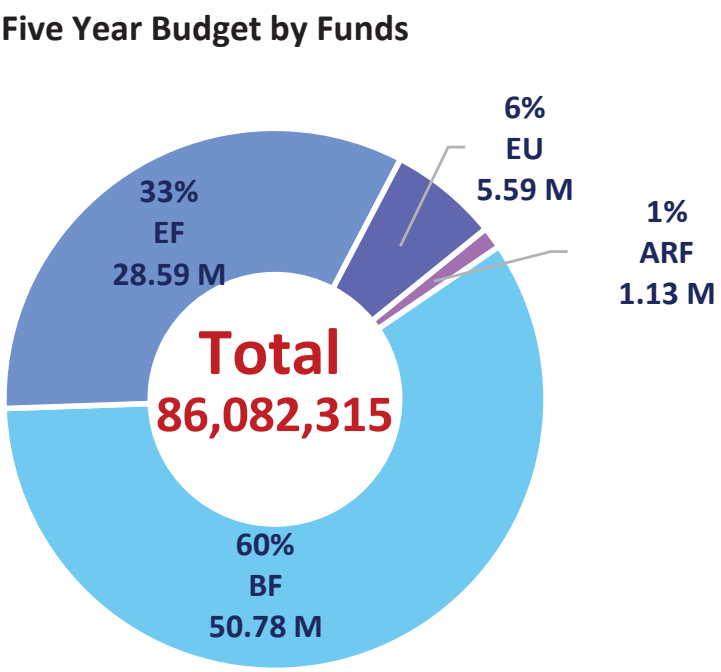
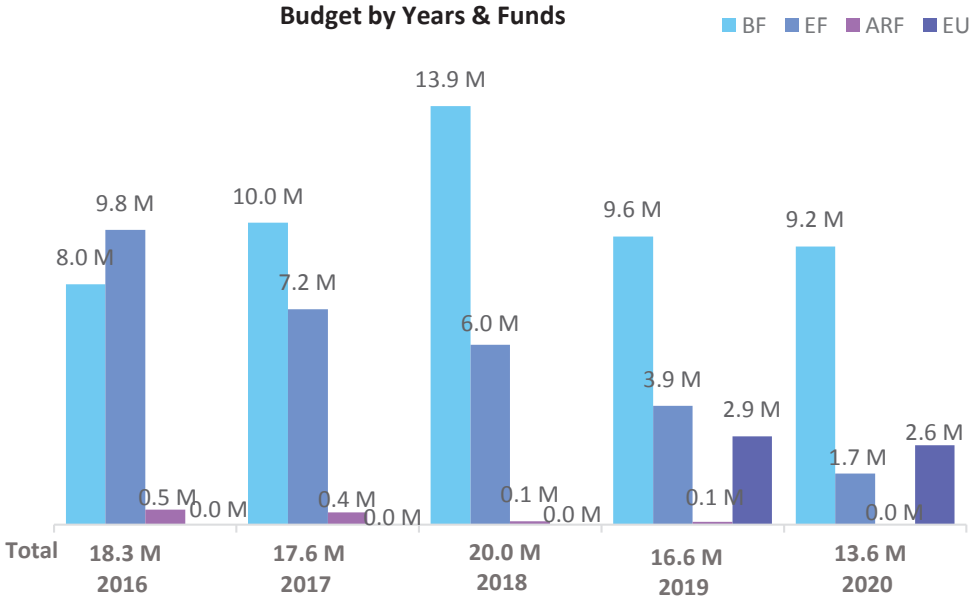


Figure 54. Budget of the AWPs, by fund amount for the MRC SP 2016–2020



OVERALL INCOME FOR THE MRC SP 2016–2020

The MRC's overall income for the implementation of the MRC SP 2016–2020 included the fund balance that carried over from 2015 and actual funds received during the period of 2016–2020. The total income from 2016 to 2020 was USD 74,077,211 in total, which includes:

i. USD 68,941,781 for the MRC SP 2016–2020 (fund balance in 2015 of USD 6,508,461[14] and actual funds received of USD 62,433,320 for the MRC SP 2016–2020).

ii. USD 5,135,430 for the new MRC SP 2021–2025 (see Figure 55).

[14] The total BF income for USD 41,674,271 included USD 40,973,493 for the SP 2016–2020, and USD 700,778 from New Zealand for the new SP 2021–2025.

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The fund balance at the end of December 2015 of USD 6,508,461 included: USD 788,721 for the BF; USD 1,088,046 for the EF; and 4,631,694 for the ARF (see Figure 56).

The actual funds received for the MRC SP 2016–2020 (USD 62,433,320) were from three major sources: USD 43,758,550, or 70% from the Development Partners; USD 15,688,624, or 25% from the MCs; and the rest from the MAF and other sources. The BF accounted for most of the income USD 40,973,493, or 66%. The EF accounted for USD 14,682,996, or 23%, the EU for USD 6,233,771, or 10%, and the ARF for USD 543,059, or 1% of the total five-year income.

Mekong River Commission (MRC)
Consolidated Statement of Fund Balance
Period : 2016-2020

Description	2015	2016	2017	2018	2019	2020	TOTAL
Incomes (Contribution)							
BF Fund Transfer, Interest and MAF		8,781,600	9,389,831	6,100,987	6,910,954	10,490,899	41,674,271
EF Fund Transfer, Interest		6,468,204	2,998,702	2,539,761	2,187,981	6,038,255	20,232,903
EU Fund Transfer, Interest		-		-	3,052,513	2,066,003	5,118,516
ARF Interest			40,739	90,473	91,500	320,348	543,060
TOTAL INCOMES (CONTRIBUTION)		15,249,804	12,429,272	8,731,221	12,242,948	18,915,505	67,568,750
Expenditure							
BF Expenditure		5,160,245	7,682,679	8,827,062	7,156,856	7,089,849	35,916,691
EF Expenditure		3,983,703	4,444,779	3,644,467	2,319,987	1,350,955	15,743,891
EU Expenditure		-	-	-	2,177,300	2,032,063	4,209,363
ARF Expenditure		94,367	210,085	9,671	100,581	18	414,722
TOTAL EXPENDITURE		9,238,315	12,337,543	12,481,200	11,754,724	10,472,885	56,284,667
Internal Fund Transfers							
BF		-	7,399	-	-	(180,517)	(173,118)
EF		(5,166)	(165,697)	(24,964)	(148,812)	269,486	(75,153)
ARF		-	-	-	-	(137,912)	(137,912)
		(5,166)	(158,298)	(24,964)	(148,812)	88,969	(386,183)
Balance Fund at 31 December							
BF (at the end of the Months)	788,721	4,410,076	6,124,627	3,398,552	3,152,650	6,373,183	6,373,183
EF (at the end of the Months)	1,088,046	3,567,381	1,955,607	825,937	545,119	5,501,905	5,501,905
EU (at the end of the Months)	-	-	-	-	875,213	909,153	909,153
ARF (at the end of the Months)	4,631,694	4,537,327	4,367,981	4,448,783	4,439,702	4,622,120	4,622,120
Balance Fund at 31 December	6,508,461	12,514,784	12,448,215	8,673,272	9,012,684	17,406,361	17,406,361
Audit Report	6,508,461	12,514,784	12,448,215	8,673,272	9,012,684	17,406,361	17,406,361

Figure 55. Consolidated fund balance statement, 2016–2020

NOTES:

- The EU is also defined as the EF fund. Thus, the EF fund balance is USD 6,411,058 (6,373,183) in total.
- Diff USD 25 of bank charge of fund received from the Netherlands.
- Diff USD 2 was rounding amount of interest of the BF.

As noted from the source-distribution of the funds received above, the MCs made significant financial contributions for the transboundary water cooperation and development in the LMB, which is in line with their commitment to increase financial contribution for the MRC per the decentralization roadmap 2030. The bulk of the financial contribution and technical assistance was provided by the Development Partners and account for more than 70% of the overall income. In the next MRC SP, Development Partner funding is projected to be reduced to 60% of the overall budget, while MC contribution will increase to 40%.

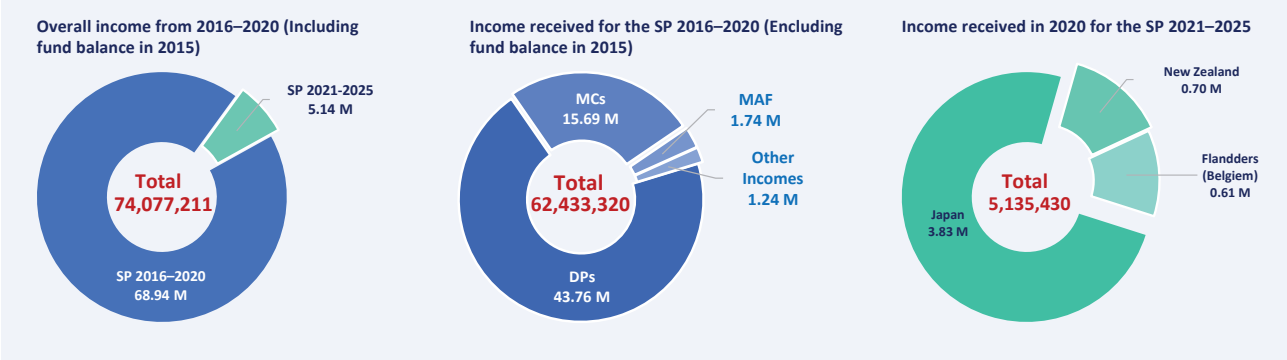

Figure 56. Overall income for the MRC SP 2016–2020

OVERALL EXPENDITURE FOR THE MRC SP 2016–2020

The total expenditure over the last five years was USD 56,284,668, or 65% of the AWPs budgets of USD 86,082,315. However, when compared to the original MRC SP budget of 65 million, the expenditure is equivalent to an 87% disbursement rate. Most of the expenditures, USD 35,916,689, or 64%, are from the BF; USD 15,743,892, or 28% for the EF; USD 4,209,363, or 7% for the EU Fund, and USD 414,722 or 1% for the ARF (see Figure 57).

Figure 51 indicates that the MRC had the capacity to disburse on average around USD 12 million annually over the five-year period. During the first three years from 2016–2018, the disbursement rates were lower than the subsequent two because of the very ambitious AWPs budgets. The MRC made gradual improvements over the last two years in 2019 and 2020 with a disbursement rate of 71% and 77%, respectively, as a result more realistic AWPs budgets, USD 16.57 million in 2019, and USD 13.6 million in 2020. The MRC will gradually improve its annual disbursements and adhere to the operational work plan if the AWP is more realistic with budget, reflecting the capacity of the human resources available, and more focus on MRC priorities.

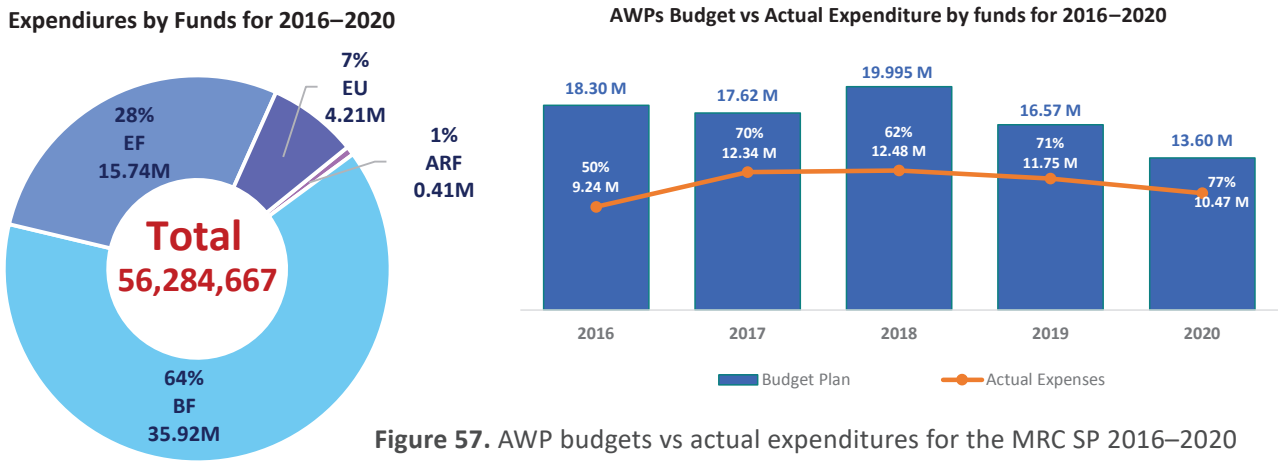

Figure 57. AWP budgets vs actual expenditures for the MRC SP 2016–2020

BREAK-DOWN EXPENDITURES BY CATEGORY FOR THE MRC SP 2016–2020

As shown in Table 4, the top five budgets vs expenditures by category of the MRC SP 2016–2020 include the consultants' renumeration, staff salary fixed costs and fees, the costs of meetings and workshops, fixed cost on secondary employment benefits, and cost of MOUs with MCs.

• **Consultants:** This category includes both international and national consultants. The expenditures for the consultants over the five years were USD 16,294,825, or 29% of the total expenditure of USD 56,284,667. This is the major expenditure item of the entire five years. Based on experience and the increased the MRC

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Secretariat and NMCS capacity, and increasing use of the MRC Expert Groups, it is expected that expenditure on consultants will reduce in the next MRC SP. Consultants will be required for highly specialized expertise that is not available at the MRC Secretariat in order to bring new ideas and technologies, support the heavy workload at key periods, and support the NMCS with data collection and inputs for key products.

• **Salary and fee:** The salary and fee payments are fixed costs of the MRC, a requirement for keeping the organization functioning. It accounted for USD 11,591,162, or 21% of the total expenditure for the five years. Expenditures of this category are necessary to attract and maintain skilled professionals in the organization and effectively run the operation and the MRC core functions. It is noted, however, that while the MRC Secretariat's salary and benefit package are competitive, recent recruitment experiences for key chief and specialist positions failed to attract the best candidates because, as the latter pointed out, the MRC Secretariat's salaries and benefits are less than those offered by the other international organizations in the region, and are much less than those in the private sector or major institutes for similar positions. This issue will need to be addressed for a major recruitment exercise coming up in 2022.

• **Meetings and workshops:** These expenditures included the national and regional meetings and workshops organized by the MRC Secretariat and MCs. Over the last five years, the expenditures for meetings and workshops were USD 8,883,089, or 16% of the total expenditure. It is a necessary cost for any intergovernmental body like the MRC, where work progresses through consultation at different levels in order to gain understanding, resolve issues, and bring new ideas and methods. During the COVID-19 pandemic in 2020, the MRC Secretariat and MCs conducted several activities online, which contributed to a reduction in the cost of travel, meetings, and workshops. Although virtual meetings can be quick and effective in ensuring communication, they cannot replace face-to-face and physical interactions, especially for meetings that require negotiation or facilitation of large groups of people such as stakeholder forums.

• **Secondary employment benefits**: The actual expenditure was USD 5,569,559, or 10% of the total expenditure. The employment benefits included all the benefits paid to the MRC Secretariat's fixed-term staff members, including rental subsidies, education grants, and others. This is fixed cost is similar to the salary and fee category, and is necessary for the MRC operation.

• **MOU with the MCs:** Expenditures on the MOUs with the MCs over the last five years accounted for USD 3,905,911, or 7% of the total expenditure. MOUs mostly account for the support to countries on data collection, monitoring, and other inputs to key works of the MRC.

BREAK-DOWN EXPENDITURES BY OUTPUT AND OUTCOME FOR THE MRC SP 2016–2020

During the five-year period, the MRC expenditures covered 37 outputs under the 7 outcomes, and one fixed cost, as summarized in Table 5. Several outputs had disbursement rates equal to or higher than 70%:

OUTPUT 5.3	Establishment of a Regional Stakeholder Forum with an 81% disbursement rate.
OUTPUT 3.10	Guidance for design and operation of irrigation systems with an 81% disbursement rate.
OUTPUT 2.7	Promote and implement the Master Plan for Regional Waterborne Transport with a 74% of disbursement rate.
OUTPUT 2.9	Drought Management Strategy with a 72% disbursement rate.
OUTPUT 2.6	Basin Development Strategy (BDS) with a 70% disbursement rate.

These are the outputs with expenditures close to the amount planned. The cost-effectiveness of these expenditures is discussed in the VfMMA for each output and outcome in the Achievement section.

Table 4. Budget and expenditure by category for the MRC SP 2016–2020

Budget Plan & Expenditures	2016		2017	
Category codes	AWP	Expenses	AWP	Expenses
Salary and fee	2,895,675	2,530,377	4,582,157	2,141,599
Secondary employment benefits	1,138,585	879,732	1,600,000	1,281,659
Recruitment and selection	116,000	48,067	67,933	35,681
Corporate training	10,000	-	73,304	8,555
Official Travel	452,432	77,483	599,120	182,610
Other short-term staff	-	-	24,015	9,406
Consultants	7,000,448	3,535,739	4,930,518	3,823,908
Office costs	523,844	309,721	920,699	488,364
Maintenance and Running cost of equipment	132,802	33,145	54,528	141,569
Publication, Printing and Others	348,877	59,317	33,416	131,370
Financial cost	23,337	21,821	99,688	47,199
Property and equipment	140,274	26,494	204,778	239,383
MRC Summit	-	-	-	-
Governance meeting expense	343,703	241,179	340,699	327,594
Meeting and Workshop expense	3,690,951	1,096,971	1,019,329	2,383,889
Support to Decentralization & NIP	72,000	69,118	144,000	34,839
Integrated capacity building	40,000	-	-	-
MOUs with member countries	1,155,860	97,422	2,754,514	522,534
Management and Administration Fees (MAF)	211,728	211,728	168,786	537,384
TOTAL	18,296,517	9,238,314	17,617,485	12,337,543

Budget Plan & Expenditures	2018		2019	
Category codes	AWP	Expenses	AWP	Expenses
Salary and fee	3,498,047	2,262,484	2,483,141	2,273,585
Secondary employment benefits	500,000	1,366,032	1,385,683	1,027,715
Recruitment and selection	70,000	25,060	66,808	29,535
Corporate training	-	92,193	131,166	89,079
Official Travel	459,866	334,135	540,992	375,119
Other short-term staff	-	17,734	24,379	4,364
Consultants	7,531,756	3,647,576	4,735,700	2,921,077
Office costs	934,041	457,700	439,244	363,890
Maintenance and Running cost of equipment	90,000	134,526	170,593	123,685
Publication, Printing and Others	110,000	142,955	163,787	78,278
Financial cost	67,823	49,069	147,246	53,300
Property and equipment	437,085	441,399	371,898	269,295
MRC Summit	800,000	399,204	7,418	7,418
Governance meeting expense	315,196	98,994	338,529	303,922
Meeting and Workshop expense	2,990,006	1,804,820	3,014,434	2,318,421
Support to Decentralization & NIP	406,455	51,103	105,206	91,284
Integrated capacity building	-	-	48,842	39,419
MOUs with member countries	1,421,183	810,041	1,714,905	1,010,877
Management and Administration Fees (MAF)	363,945	346,176	678,960	374,462
TOTAL	19,995,401	12,481,201	16,568,932	11,754,724

Budget Plan & Expenditures	2020		Total 2016 -2020		
Category codes	AWP	Expenses	Budget Plan	Expenses	%
Salary and fee	2,439,244	2,383,567	**15,898,264**	**11,591,612**	**21%**
Secondary employment benefits	1,214,055	1,104,421	**5,838,323**	**5,659,559**	**10%**
Recruitment and selection	36,849	36,243	**357,590**	**174,586**	**0%**
Corporate training	35,643	20,541	**250,113**	**210,367**	**0%**
Official Travel	240,404	90,646	**2,292,815**	**1,059,993**	**2%**
Other short-term staff	5,200	1,200	**53,594**	**32,704**	**0%**
Consultants	3,412,237	2,366,525	**27,610,658**	**16,294,825**	**29%**
Office costs	726,125	477,614	**3,543,953**	**2,097,289**	**4%**
Maintenance and Running cost of equipment	162,605	95,382	**610,529**	**528,307**	**1%**
Publication, Printing and Others	311,133	158,538	**967,213**	**570,458**	**1%**
Financial cost	82,351	43,979	**420,445**	**215,369**	**0%**
Property and equipment	455,381	433,572	**1,609,416**	**1,410,143**	**3%**
MRC Summit	-	-	**807,418**	**406,621**	**1%**
Governance meeting expense	278,250	134,958	**1,616,377**	**1,106,647**	**2%**
Meeting and Workshop expense	1,911,717	1,278,988	**12,626,438**	**8,883,089**	**16%**
Support to Decentralization & NIP	113,856	108,373	**841,517**	**354,716**	**1%**
Integrated capacity building	-	-	**88,842**	**39,419**	**0%**
MOUs with member countries	1,800,824	1,465,036	**8,847,287**	**3,905,911**	**7%**
Management and Administration Fees (MAF)	378,105	273,302	**1,801,524**	**1,743,052**	**3%**
TOTAL	13,603,980	10,472,885	86,082,315	56,284,667	100%

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Table 5. Budget vs. Expenditure by Output and Outcome for the MRC SP 2016–2020*

Item	Expenditures Output-outcome		Budget 2016-2020 (1)	Actual Expenditures up-to-date by Funds				Total Expenses (6)=(2)+(3)+(4)+(5)	Remaining Budget (7)=(1)-(6)	Budget VS Expenses (%) (8)=(6)/(1)
				BF (2)	EF (3)	EU (4)	ARF (5)			
1	1.1	Drought / Crop production study	198,920	-	87,886	-	-	87,886	111,034	44%
2	1.4	Finalize scenario assessments (incl Council	5,285,776	1,586,992	1,861,145	-	-	3,448,137	1,837,639	65%
3	1.7	Study on transboundary impacts	625,803	40,518	348,332	-	-	388,850	236,953	62%
4	2.1	Review regional power demand and integr	753,662	471,443	-	-	-	471,443	282,219	63%
5	2.2	Update flood management strategies	2,959,349	20,375	980,198	-	-	1,000,573	1,958,776	34%
6	2.3	Basin-wide Fisheries Management & Devel	549,143	264,643	58,662	-	-	323,305	225,838	59%
7	2.4	Regional benefit sharing & transboundary	8,355,040	254,657	4,905,809	-	-	5,160,466	3,194,574	62%
8	2.5	Mekong Adaptation Strategy and Action Pl	1,989,918	366,875	959,759	-	-	1,326,634	663,284	67%
9	2.6	Basin Development Strategy (BDS)	405,726	283,243	-	-	-	283,243	122,483	70%
10	2.7	Promote and implement Master Plan for R	428,114	164,383	150,309	-	-	314,692	113,422	74%
11	2.8	Prepare Strategy for basin-wide environme	507,036	244,592	-	-	-	244,592	262,444	48%
12	2.9	Drought management strategy	391,272	-	282,616	-	-	282,616	108,656	72%
13	3.1	Review Preliminary Design Guidance for M	2,189,102	1,514,673	23,431	-	-	1,538,104	650,998	70%
14	3.10	Guidance for design & operation of irrigati	623,808	42,225	462,158	-	-	504,383	119,425	81%
15	3.11	Guidelines for fish-friendly irrigation	502,895	1,111	271,224	-	-	272,335	230,560	54%
16	3.12	Transboundary EIA guidelines	948,424	146,996	381,914	-	-	528,910	419,514	56%
17	3.3	Waterborne transport guidelines	516,281	195,630	118,078	-	-	313,708	202,573	61%
18	3.4	Support sustainable hydropower on tributa	189,200	95,708	-	-	-	95,708	93,492	51%
19	3.6	Watersheds management	150,152	-	63,705	-	-	63,705	86,447	42%
20	3.8	Drought adaptation guidelines	296,876	14,948	26,710	-	-	41,658	255,218	14%
21	3.9	Wetlands management	2,354,727	-	1,137,211	-	-	1,137,211	1,217,516	48%
22	4.1	Support implementation of Procedures an	426,298	132,817	36,628	-	-	169,445	256,853	40%
23	4.2	Support Joint Platform and Procedures Wo	2,345,913	1,103,836	113,253	-	-	1,217,089	1,128,824	52%
24	4.3	Common understanding of the Procedures	74,951	19,236	-	-	-	19,236	55,715	26%
25	5.1	Strengthening cooperation with Dialogue P	461,942	217,022	29,807	-	-	246,829	215,113	53%
26	5.2	Partnerships with ASEAN, GMS and other c	465,905	191,695	62,013	-	-	253,708	212,197	54%
27	5.3	Regional Stakeholder Forum establishment	1,507,882	988,866	-	240,026	-	1,228,892	278,990	81%
28	6.1	Routine monitoring and forecasting	10,529,650	2,003,547	1,758,948	1,316,404	-	5,078,899	5,450,751	48%
29	6.2	Information system and database manager	1,160,538	434,585	-	280,078	-	714,663	445,875	62%
30	6.3	Update modelling, analysis and assessment	1,142,641	332,316	140,447	-	-	472,763	669,878	41%
31	6.4	SOB and technical reporting	2,271,840	867,808	207,529	-	-	1,075,337	1,196,503	47%
32	6.5	Data portal management and knowledge/i	163,346	70,771	-	-	-	70,771	92,575	43%
33	7.1	MRCS structural reform	554,409	250,862	13,362		-	264,224	290,185	48%
34	7.2	MRCS human resource reform	606,908	302,581	-	47,757	-	350,338	256,570	58%
35	7.3	MRCS financial reform	1,021,120	197,366	-	217,510	-	414,876	606,244	41%
36	7.4	M&E and reporting system	1,029,782	433,751	-	264,060	-	697,811	331,971	68%
37	7.5	SP preparation and support of finalisation	522,093	169,090	-	175,405	-	344,495	177,598	66%
38	A.1	Operational costs	31,575,872	22,491,530	1,262,757	1,668,123	414,722	25,837,132	5,738,740	82%
			86,082,316	35,916,691	15,743,891	4,209,363	414,722	56,284,667	29,797,649	65%

Mekong River Commission

COMPLETION **REPORT**
MRC STRATEGIC PLAN
2016–2020