

***Mekong River Commission
Strategic Plan 2016-2020
Mid Term Review***

**Final version
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Review and Acceptance

This document has been reviewed and the following decision has been made:

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Comments

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Abbreviations and Acronyms

ADB	Asian Development Bank
ASEAN	Association of South-East Asian Nations
ASEC	ASEAN Secretariat
AWP	Annual Work Plan
BDS	Basin Development Strategy
BDP	Basin Development Plan
BF	Basket Fund
BFMS	Basin-wide Fisheries Management and Development Strategy
CRBMF	Core River Basin Management Functions
CSO	Civil Society Organisations
DP	Development Partners
DSF	Decision Support Framework
EF	Earmarked Fund
EG	Expert Group
EIA	Environmental Impact Assessment
ESCIR	Ecosystem Study Commission for International Rivers
EU	European Union
GMS	Greater Mekong Sub-region
HR	Human Resource
HYCOS	Hydrological Cycle Observing System
ICT	Information and Communications Technology
IS	Information Systems
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
JC	Joint Committee
JD	Job Description
JWG	Joint Working Group
KPI	Key Performance Indicator
KRA	Key Results Area
LA	Line Agency
LMB	Lower Mekong Basin
LMC	Lancang Mekong Cooperation
LMI	Lower Mekong Initiative
LMWRCC	Lancang Mekong Water Resources Coordination Committee
M&E	Monitoring and Evaluation
MA or 95MA	Mekong Agreement
MASAP	Mekong Adaptation Strategy and Action Plan
MC	Member Countries
MRC	Mekong River Commission
MRCs	Mekong River Commission Secretariat
MTR	Mid-Term Review
NIP	National Indicative Plan
NAB	Navigation Advisory Body
NGO	Non-Governmental Organisation
NMC	National Mekong Committee
NMCS	National Mekong Committee Secretariat
OR	Operational Review
PC	Prior Consultation
PD	Planning Division

PDG	Preliminary Design Guidance
PDIES	Procedures for Data and Information Exchange and Sharing
PMFM	Procedures for the Maintenance of Flow on the Mainstream
PNPCA	Procedure for Prior Notification, Consultation and Agreement
PWQ	Procedures for Water Quality
PWUM	Procedures for Water Use Monitoring
QA	Quality Assurance
QC	Quality Control
RFMMC	Regional Flood Management and Mitigation Centre
RSAT	Rapid Sustainability Assessment Tool
RTPCC	Regional Power Trade Coordination Committee
SDG	Sustainable Development Goal
SHDS	Sustainable Hydropower Development Strategy
SIMVA	Social Impact Monitoring and Vulnerability Assessment
SLD	Stakeholder Learning and Dialogue
SMART	Specific, Measurable, Achievable, Relevant, Time-bound
SOBR	State of the Basin Report
SP	Strategic Plan
TAB	Technical Advisory Body
TbEIA	Transboundary Environmental Impact Assessment
TOR	Terms of Reference
UNWC	United Nations Watercourses Convention
USD	US Dollars
WB	World Bank
WQ	Water Quality

Notes on terminology:

1. The report uses the generally adopted convention of referring to *The Study on the Sustainable Development and Management of the Mekong River* commissioned by the MRC Council in 2011 by the shortened name, '*The Council Study*'.
2. References to 'line agencies' is a generic reference relating to the ministries, departments, institutes and agencies of Member Country governments that have mandates relevant to MRC's work programme. This includes sector, thematic and regulatory agencies and the ministries of foreign affairs. Some Member Countries may also refer to these agencies as 'implementing agencies.'

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Executive Summary

This independent review of MRC's Strategic Plan 2016-2020 takes place at a time of significant change in the Basin:

- physical change from increased regulation of the tributaries and mainstream river;
- demographic and societal change as the economies of the region grow;
- management change resulting from the commitment to self-financing by Member Countries, decentralization and associated transition of the MRC Secretariat; and
- institutional change with new and expanding regional cooperation mechanisms.

In parallel with the development trajectory of the LMB, the role of the MRC is also gradually changing to focus increasingly on coordination of management and operational issues, supplementing its conventional role in planning processes. The balance between planning and management will continue to shift over the next SP period and beyond. Several of the recommendations in this report and the separate decentralisation report address that change. It is therefore particularly encouraging that the leaders of the Member Countries have reiterated their support to the MRC at the 3rd MRC Summit in Siem Reap and during other international conferences such as the ASEAN-World Economic Forum held in Hanoi in September 2018¹, where the Mekong was referred to as the '*river of sustainability*' and the '*lungs of the region*'.

It is against that backdrop of change that the Review team has considered its findings and made recommendations in line with the mandate of MRC. An accompanying report covers the status of the decentralisation of core river basin management function activities and provides detailed recommendations for each activity. Its summary findings and overall recommendations are included in this MTR report.

Overall Findings

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

Progress against the 44 Outputs in the SP is assessed with regard to 159 Output indicators of which 47% (75#) relate generally to product deliverables (e.g. a report, database etc.); 16% (26#) relate to approval or endorsement (e.g. by the JC or Council); and 36% (58#) relate to uptake of the work at national level. The assessment by the MTR of completion of Outputs is:

- None were fully completed by the time of the MTR
- 32% (14#) are on track to be completed in the remaining two years of the SP period
- 50% (22#) have some major issues to be resolved in order to be completed within the SP
- 18% (8#) are unlikely to be completed in the SP

¹ <https://www.weforum.org/events/world-economic-forum-on-asean/sessions/a-new-vision-for-the-mekong-region>; WEF ASEAN-Mekong meeting in Hanoi, 12 September 2018

The seven Outcomes of SP2016-2020 are relevant beyond a single five-year planning cycle and so the MTR has assessed the 'contribution' that the underlying Outputs have had, or are likely to make, towards the Outcomes within this five-year period. The MTR considers that:

- in two cases, based on the current trajectory, the combined Outputs are likely to contribute materially to the Outcomes.
- in five cases, the Outputs are likely to contribute to the Outcomes provided significant issues are addressed.

The MTR finds that the following issues, which relate to Outputs of 'high relevance' to achieving the Outcomes of the Strategic Plan, will need to be resolved:

- Member Countries are having difficulty accessing funds for decentralised monitoring activities on an activity-by-activity basis and this is putting the ongoing delivery of critical monitoring data at risk;
- The management and storage of data at the MRCS is poor with potential loss of data (indeed some has been lost), difficulty in public access and additional effort required to make data available, even internally, for analysis;
- There are some gaps in implementation of MRC Procedures, particularly PDIES and PWUM in relation to critical data requirements and their use;
- Approval processes for MRC Outputs are very lengthy even for technical studies that do not impose policy obligations on any party. These delays have flow-on effects to other elements of the Strategic Plan and are a significant inhibitor to the achievement of Outcomes;
- There is limited integration of MRC Outputs into national systems due in part to misalignment in the timing of MRC products relative to national planning, a lack of detailed awareness in relevant line agencies and insufficient ongoing dialogue about the national implications of regional work and how it can help Member Countries achieve national objectives;
- The limited involvement of MRC in early planning of major infrastructure projects, and hence discussion on potential alternatives, means that opportunities are likely being lost to enhance sustainable development outcomes through avoiding, minimising or mitigating harmful effects while improving livelihoods and economic conditions for the people of the LMB as envisaged in the BDS and 95MA;
- While critical work such as hydrological data sharing has begun, the relationship between MRC and the water resources priority area of the Lancang-Mekong Cooperation is still being defined, raising risks around duplication of effort and leading to uncertainty about long-term planning and where relevant bodies should invest.

Based on progress to date, the MTR Team considers there is potential for the Strategic Plan 2016-2020 to be substantially achieved in the next two years provided significant progress is made to address these issues by:

- implementing a more realistic approach to transitioning the decentralization of core river basin management function activities;
- improving the performance of priority monitoring activities and rebuilding open and robust systems for storage and sharing of data and information;

- streamlining the approval processes for studies and guidelines where no significant policy decisions are at stake;
- engaging more actively with line agencies on the implications and potential use of MRC products and services and in-turn receiving feedback to improve future MRC outputs;
- supplementing existing approaches for engaging with Member Countries and partners on the planning of major developments and thereby fulfilling the strategic priorities of the Basin Development Strategy; and
- articulating more clearly the MRC's comparative advantage *viz-a-viz* the water resources priority area of the Lancang Mekong Cooperation and therefore where the MRC should invest while advancing institutional cooperation.

This will involve proactively setting priorities and revisiting choices on the allocation of staff and financial resources. The future role of MRC beyond this SP period will depend on its ability to deliver effectively on its core functions and the relationship it develops with the rapidly evolving LMC. To consolidate the benefits of the work undertaken to-date, an area of particular focus over the next two years will need to be on developing a shared understanding of the results of the Council Study and the potential implications for national and sectoral plans and strategies.

Key Recommendations

The MTR has made 27 recommendations as summarised below, with more detailed explanation given in Section 5 of the report. Synergies with related recommendations of the recently completed Operational Review of the MRC are also noted in Section 5. The MTR has assigned 19 recommendations as short-term priorities (marked by †) and 8 recommendations where the priority is more medium-term.

Consolidation – from Outputs to Outcomes	
1.1†	MRC Procedures. Resolve outstanding issues of implementation of MRC Procedures, particularly for PDIES and PWUM in relation to a more operational focus and use of new technologies
1.2†	Benefit sharing. Prepare and socialize a high level policy paper on benefits, costs, impacts and trade-offs of major infrastructure projects as a precursor to possible benefit/cost sharing arrangements between countries at senior policy level
1.3†	Building uptake into work plans. Address uptake of Outputs early in the process through consideration of impact pathways, greater involvement of line agency staff and improved communication of meeting outcomes
1.4†	Prioritizing outstanding uptake. Prioritize uptake efforts for Outputs with high relevance including Basin-wide Fisheries Management and Development Strategy, Mekong Climate Change Adaptation Strategy and Action Plan, and Waterborne Transport Master Plan
1.5†	Expert Group sub-groups. Expedite the establishment of Expert Group sub-groups for key sectors to ensure engagement of key line agency specialists
1.6†	Alternative approval process for guidelines/studies. Consider an alternative form of wording for guidelines and studies to facilitate faster approval and use by Member Countries
1.7†	Using the TbEIA and PDG. Adopt the draft TbEIA and updated PDG as working documents and retain the scope of the TbEIA as originally intended
1.8†	Upgrade Information System. Prioritise the upgrade of the MRC-Information System over the next two years ensuring all historical data is uploaded and accessible to stakeholders by the end of 2019
1.9†	Upgrade flood forecasting capability. Commit to an upgrade of the regional flood forecasting capability and develop an enduring business strategy cognisant of the rapidly changing institutional and operating environment.

1.10	Upgrade modelling capability. Take a decision on the future modelling platform for the Decision Support Framework ensuring integration across time-scales reflecting increased operational focus
1.11	Funding and scope of NIPs. Better align the NIP process with national budgetary cycles and ensure all major national infrastructure projects at early planning stage are included
1.12†	Formulating the next BDS and SP. Follow a 'light touch' approach to development of the next BDS and SP to reflect continuity from this period
CRBMFS and Decentralisation – joint efforts and transitional arrangements	
2.1†	Finalise handover arrangements. Where they do not already exist, develop handover agreements for decentralised monitoring with Member Country contributions aligning more closely with the transition to self-financing
2.2†	Secure funding. Establish a Joint Decentralisation Support Facility potentially as a sub-account of the Basket Fund to fund capacity building, knowledge sharing, and maintenance support and to ensure ongoing availability of critical data for regional needs
2.3†	Capacity development. Prepare and implement capacity-building plans for each decentralised monitoring activity with maximum use of country-to-country learning and knowledge sharing
2.4†	Prioritise monitoring activities. Identify the highest priority monitoring activities and for those that are less than critical consider options to either suspend or substantially scale-back operations
2.5†	Review core monitoring network. Building on the work of this MTR, undertake an audit of all existing monitoring stations and sampling locations relative to current and planned mainstream and tributary dam operations and other development activities with potential transboundary impacts, and undertake a cost-benefit analysis of a re-designed core network
Partnerships for regional cooperation	
3.1†	Clarify MRC's role in the changing landscape of regional cooperation. Disseminate a clear view about MRC's mandate and comparative advantage in the changing basin context
3.2†	Cooperation with LMC. Advance cooperation with LMC through institutional arrangements, funding of NIP projects and building connections with national data centres
3.3	Involvement of strategic partners. Enhance dialogue and collaboration with broader stakeholders by inviting identified strategic partners to relevant technical and governance meetings
3.4	MRC role on Gender. Review gender issues in MRC's work and promote gender issues directly relevant to the regional mandate of MRC that complement interventions already supported by others
MRC operational focus – responding to increased river regulation in the Basin	
4.1	Cascade Operating Rules. MRC to be more closely involved in developing and monitoring implementation of Hydropower Cascade Joint Operating Rules for the Basin due to the basin-wide implications
4.2†	Flood routing. Agree on data sharing arrangements and communication protocols as part of a response action plan for flood releases and flood storage from reservoirs
4.3†	Dam safety warnings. Prepare and agree a draft communications protocol and action plan in relation to flooding from dam breaks
4.4	Water quality incidents. Prepare and agree a draft communications protocol and action plan for responding to water quality accidents
MRC systems	
5.1	Organisational capacity development for MRC: Prepare and implement an organisational capacity development plan
5.2	SMART indicators and M&E feedback loop. For the next SP, broaden adoption of SMART indicators in the M&E system based on agreed impact pathways and introduce feedback loop to management including for prioritization of resource allocation

† - denotes short term priority

MRCs is also encouraged to actively follow up on the Outputs characterized by the MTR in Section 4 as of 'high relevance' and which require specific actions to reach closure (i.e. those colour-coded orange and red).

1. Scope and Relationship with other Reviews

1. The objectives of the Mid-Term Review are to:
 - *Review the present state of the implementation of the MRC Strategic Plan 2016-2020 against the agreed outputs and indicative activities set forth in the Plan;*
 - *Assess the progress and achievement of the outcomes and desired results as specified in the Strategic Plan;*
 - *Make recommendations on how to improve the implementation of the Strategic Plan 2016-2020, on prioritisation and implementation of key outputs during the remaining two years of the current planning cycle, taking into account emerging opportunities and challenges, as well as budgetary and organizational constraints at the MRC.*
2. Details of tasks under the TOR are given in Annex 1. A major sub-component of the MTR is a review of the decentralisation process *'considering achievements and challenges of decentralisation [to] make concrete recommendations for MRC and its Member Countries in terms of what activities have been successfully decentralised or made steady progress in that direction and those that face challenges and should change course'*. This aspect of the work is presented in a separate volume with the main findings and recommendations incorporated into this MTR report in sections 4 and 5.
3. MRC's Basin Development Strategy is implemented at both regional and national levels through the MRC's Strategic Plan 2016-2020 and the National Indicative Plans of the four Member Countries. This Mid-Term Review of the Strategic Plan aims to review progress on delivering on agreed outputs and outcomes and to make recommendations for the remaining period and beyond, including the setting of priorities.
4. In parallel to the MTR, a separate group of consultants has been carrying out an Operational Review (OR) covering an *Assessment of the new organisational structure, staffing, processes, systems and main procedures of the Mekong River Commission*. Their final report was submitted in early December 2018. The two reviews are complementary as the focus of the OR was more internal examining the Secretariat's financial and administrative systems and procedures, while the MTR is more outward looking. Inevitably though there are several points of interaction and these are covered in the MTR in the respective sections.
5. Other reviews of relevance to the MTR in providing useful background information and insights include the reviews of implementing the NIPs undertaken for each country between February and June 2018; the recent Development Partner reviews;² the 2017 review of decentralized activities conducted by the MRCS that formed a basis for the MTR component on decentralisation; and the internal self-assessment undertaken by Divisions of the Secretariat in mid-2018.

² Including those by Denmark, Germany and SDC, the Australia Mekong Strategy, and Development Partner reviews of the previous SP 2011-2015 and the draft of SP 2016-2020.

2. Approach and Methodology

6. The emphasis of the MTR is on evidence-based findings and identifying causal links between activities, outputs and desired outcomes in the four Key Result Areas of the Strategic Plan. It involved review of an extensive set of documents in the MRC's shared drive, semi-structured interviews with a broad range of stakeholders (see Annex 2 for a complete list) and participation in a number of in-country briefing meetings organised by the National Mekong Committee Secretariats as well as numerous meetings with MRCS staff. The MTR Team was also able to attend the MRC Council, Dialogue Partner and Development Partner meetings in November 2018 as well as a regional meeting on the Sustainable Hydropower Development Strategy. Two additional riparian consultants were involved with information gathering for the decentralisation review.

7. At the outset, the Team identified a set of key attributes that it aimed to embrace during the work, namely that it would be:

- Progress oriented – with a focus on assessing the status of indicators and Outputs of the SP and their contribution to Outcomes, rather than on individual activities;
- Evidence based – adopting an objective assessment of documents provided and perspectives voiced;
- Consultative – extensive engagement with stakeholders;
- Inclusive of findings of associated activities;
- Responsive - incorporating feedback on successive drafts;
- Priority focused - setting recommendations for the remaining SP period and beyond.

8. The Team recognizes that for its recommendations to be of value they need to attract consensus. A short briefing document setting out the four main areas for the MTR recommendations was tabled at the MRC Council meeting in Halong Bay and received positive feedback from country delegations and Development Partners. With that feedback, the Team formulated detailed recommendations in Section 5 of this report. The draft MTR report was submitted for review on 8 January 2019 and discussed at a regional meeting of MRC Member Countries, Development Partners and MRCS staff in Luang Prabang on 18 January 2019. Written comments were subsequently received and taken into account in this final version of the report. The MTR Team Leader visited Beijing on 23-24 January for discussions with the Chinese Ministry of Water Resources and staff of the Lancang Mekong Water Resources Cooperation Center.

9. Undertaking the Review in late 2018/early 2019, provides time for any changes to be made to the work programme in the remaining two years of the Plan period, although any major re-prioritization of resource allocation would require MRCS to seek approval for changes to the Annual Work Plan approved at the November 2018 Council meeting. Longer term recommendations can be incorporated for the subsequent Annual Work Plans and the formulation process for the next Basin Development Strategy and Strategic Plan. Suggestions for that process are given in Section 5.1.

10. Responding to the development opportunities and challenges in the Basin in a rapidly changing context requires regular assessment of how things are going and how the MRC's work can be more effective and influential. This is the essence of the Review and the assessment of impact pathways from Strategic Plan Outputs to Outcomes. In addressing these questions, the Review team is aware that, in order to meet the aspirations of the 1995 Agreement and Summit Declarations, there needs to be a high level of trust in the role of the organization at working levels in Member Countries and for MRC to clearly demonstrate its added-value in terms of sustainable development.

3. Changing context of the Mekong Basin and the MRC

11. The Mekong Basin continues to be a highly dynamic region with socio-economic development bringing changes in the needs and values of the population; technological changes bringing in new opportunities and threats; climate change intensifying existing and introducing new challenges; and institutional change requiring the development of new relationships. The trends of the past cannot simply be projected onto the future. A critical review of foresight analyses undertaken by development agencies and think-tanks in the region will be an important input to the next BDS.

The Basin – physical and human dimensions

12. Construction of tributary and mainstream dams in the Lancang-Mekong Basin have significantly influenced the river flow and sediment regime. The CGIAR's Water Land and Ecosystem (WLE) Greater Mekong Program maintains an online mapping tool for dams in the basin. Summary data for 2015 indicated there were 241 completed dams for hydropower, irrigation and other purposes, with a further 29 under-construction and 91 planned.³ Existing electricity generating capacity quoted in the draft MRC 2018 State of the Basin Report is 10,017 MW out of a potential technical capacity of 28,543 MW in the Lower Mekong Basin.⁴ The first mainstream dam on the Mekong will be commissioned in early 2019 during this SP period. In the upper Lancang basin, the installed hydropower capacity is 19,285 MW with a planned total rising to 31,300 MW.

13. While bringing significant economic benefit to the region, this **infrastructure development results in a highly modified flow regime** (see MRC Council Study) that is influenced by dam operations. In the absence of sharing of real-time dam operation data, especially during flood conditions, an increasing element of unpredictability is introduced to supplement the natural variability. The expected transfer of flows from wet season peaks to supplement dry season low flows happens on a seasonal basis, but there remains considerable variability in the flow regime in the Mekong Delta in the dry season.⁵ Despite considerable modelling over the years, the influence of increased storage in reservoirs, combined with the changing 'in and out' flow pattern in Tonle Sap in response to reduced wet season flows remains a point of differing perspective between downstream and upstream riparians of the LMB. Coming to a common understanding of the changing flow regime will be essential for agreeing on any management regimes or future abstractions from the river.

14. **Changes in sediment flows have been more dramatic than in river flows.** Data from the draft SOBR for Chiang Saen show a reduction from 85 mt/year of suspended sediment to 10.8 mt/yr from 1994 to 2013, a reduction of 83%. At Pakse further downstream, the scale of reduction is less (55%) but still very significant, from 147 mt/yr to 66 mt/yr. The loss of sediment on this scale leads to extensive river bank erosion and risks to riverine communities as the river attempts to develop a new equilibrium. Sediment monitoring and management has become an increasingly important focus and priority for MRC since this issue was highlighted in the BDS 2010 and Strategic Environmental Assessment of mainstream hydropower projects. This priority for MRC will remain high.

15. Based upon 2015 estimates reported in the draft SOBR, there are approximately 65 million people living within the LMB, an increase of 23% from the 53 million quoted in 1995-2000. The **rate of population growth is slowing** as economies expand and living standards improve, with the national growth rates in Thailand now 0.67% and in Cambodia 1.85%, both significantly less than in the 1990s. The urban population of the LMB is relatively low, estimated at 10.9 million or about 17% of the LMB population. **Urbanisation rates are increasing.** The most urban riparian is Thailand, with

³ <https://wle-mekong.cgiar.org/wp-content/uploads/unnamed-11.jpg>

⁴ Draft MRC State of the Basin Report, version 3.03

⁵ For example, in the 2018-19 Dry season, the PMFM records at Kratie show well below average water levels in the early part of the dry season (mid- late December), increasing to 1.5 to 2.5m above average flows by late January. <http://pmfm.mrcmekong.org/monitoring/6a/kratie/>

urbanisation rates reported in the SOBR of 30.5%, increasing to 51.5% from 1996 to 2016. The largest percentage rise, although from a smaller base and with only 10% of the LMB population, is Lao PDR with 18.2% urban population in 1996 rising to 39.7% in 2016. Rural populations are reducing as a consequence although are likely to be relatively higher in the LMB than some other parts of MCs.

16. National poverty line data for the four LMB countries is reported in the draft SOBR using individual country poverty thresholds. ***'In all LMB countries the poverty rate has declined substantially over the last fifteen years'***. Poverty rates range from 10-11% in Viet Nam and Thailand to 18-23% in Cambodia and Lao PDR. The draft SOBR also shows improvements in food supply and nutrition indicators for LMB countries. Country data goes beyond basin boundaries, and although it gives an indication of trends, some of the more remote communities in the Basin have values lower than these averages. All four countries are reported to be in positions where food supply should be sufficient to meet dietary needs. The draft SOBR states that ***'the prevalence of undernourishment has declined in all LMB countries. Nevertheless, all three countries still have large populations experiencing undernourishment'***, with a range of 10% in Thailand to 17% in Lao PDR.

17. As such trends continue, diets will change affecting agriculture in the region as well as the underlying water requirements, particularly if the trends for a more meat- and dairy-based agriculture occur as experienced in China and India.

18. Analysis done for the MRC's Climate Change and Adaptation Initiative showed that although there are regional variations, average annual basin-wide temperatures and precipitation have increased over the historical record. Sea-level around the Delta is rising. ***Regional climate change is not a future phenomenon, it is already occurring.*** Individual monitoring stations generally show colder days and warmer nights with less intense periods of rainfall. Climate models project a wide range of potential future conditions, but impacts on agricultural yields are likely to be more negative than positive with warmer nights particularly problematic for rice. Although there is no evidence to-date of more frequent or intense tropical storm activity, roads and water supply infrastructure are at risk from more intense rainfall, increased flooding and landslides, while significant expenditure may be required to protect coastal infrastructure from rising sea levels and storm surges. Sediment and nutrient flows, navigation, fisheries and aquaculture could all be adversely affected by changing hydrological conditions.

19. Despite overall improvements in social conditions many households and communities along the Mekong corridor remain vulnerable to shocks, particularly droughts and floods which can have a material impact on their livelihoods. Future climate change is likely to exacerbate the losses from extreme events with greater numbers of people likely to be affected by larger flooding events. ***A capacity to respond to increased variability, use of infrastructure to offset potentially damaging effects and building in buffers and coordinated operations in development projects*** will be an important consideration in the next basin planning cycle.

20. ***New technology is changing the development options available to LMB countries*** and the way in which resources are managed. Reductions in the cost of solar power mean it is now expanding in the region,⁶⁶ as is wind power in some suitable locations. Viet Nam is introducing floating solar power projects on reservoirs to supplement existing hydropower generation at the Da Mi project in Viet Nam, which is supported by ADB. If such technology expands as expected, it will have a downward influence on the demand for new hydropower projects. Digital connectivity is transforming the way people in both rural and urban settings manage their lives and businesses. The availability of high resolution, low cost satellite imagery is revolutionising tools for the planning and

⁶⁶ <https://www.greatermekong.org/renewable-energy-greater-mekong-subregion-status-report>

management of natural resources for example, reporting of water balances and therefore is likely to have implications for MRC Procedures, particularly PWUM and PDIES.⁷

Regional cooperation and institutional landscapes

21. **National legal, regulatory and institutional landscapes are also changing** with implications for MRC and its planning processes. For example, the adoption of a new water law in Lao PDR includes provision for environmental flows and new standards on pollution control; Viet Nam's resolution 120 that introduces a shift in emphasis for agriculture in the Mekong Delta which is linked to discussions on salinity levels and will further boost aquaculture, although it will experience increased temperature risk due to climate change; and the introduction of a new water resources apex body in Thailand under the Office of the Prime Minister to improve coordination across sectors. In relation to international water law, the 1997 UN Watercourses Convention (UNWC) has now come into force and although the 95 Mekong Agreement has primacy, the future development of transboundary tributary projects could be influenced by the provisions of the UNWC.

22. **Evolutions in power master plans and power trade agreements have a major influence on the water and related resources** of the Mekong basin with a high level of hydropower in the energy mix. Despite extensive discussion on integrated water resources management over the past years and the recent introduction of strategic environmental assessments in the energy sector, decisions on power projects can still be conducted separately from water resources planning processes and on a project by project basis. The water sector finds itself in a more reactive than proactive position. Any changes in regional electricity interconnection and trade, for example in the future connectivity of China through Lao PDR and beyond, could have a significant influence on the market for new hydropower in the LMB. The participation of MRCS in the Regional Power Trade Coordination Committee of GMS is therefore important to keep abreast of future developments.⁸

23. **The role of other regional organisations and initiatives are well recognised by MRC and relationships with them are becoming increasingly important** as the decentralisation agenda progresses. MRCS is preparing a mapping of such organisations that include well-established political and economic cooperation under ASEAN and the sectoral and project-based investment and capacity development cooperation under the Greater Mekong Subregion (GMS) Program facilitated by ADB. For ASEAN, MRC already cooperates with relevant technical bodies including participation in meetings on climate change, has a proposal for cooperation on water quality and is working on a proposal for the 3S basin. It is a well-established stable mechanism seeking closer integration in the region, but progress is relatively slow. Opportunities for future cooperation with GMS are likely to be project and capacity focused. Further discussion with GMS could involve:

- coordination between MRC's regional water resources planning mandate and its sustainable hydropower development strategy with the GMS work on regional power trade;⁹
- ensuring GMS initiatives reflect MRC strategies and tools, e.g. TbEIA, and vice versa;
- capacity development in a number of sectors particularly on socio-economic aspects of IWRM; and

⁷ Water accounting, <http://www.wateraccounting.org/index.html>

⁸ Last year, MRCS presented the Sustainable Hydropower Development Strategy in the 24th Meeting of the Regional Power Trade Coordination Committee (RPTCC-24); <https://greatermekong.org/sites/default/files/Attachment%201.%20Agenda.pdf>

⁹ The SHDS has proposed establishment of a Joint Working Group to develop a regional coordination process for power sector planning specifically for LMB countries. It would comprise members from national energy ministries and/or electricity utilities and MRCS would provide a secretariat function.

- linkages between the GMS Core Environment Program and MRC initiatives on natural resources including the SOBR and environmental management strategy etc.

24. More recently in 2015, China initiated the **Lancang Mekong Cooperation (LMC)** through an agreement signed by Prime Ministers of the six riparian countries. It has three pillars of cooperation – Political and Security; Economic and Sustainable Development; and Social, Cultural and People to People Exchanges. There are five priority areas: Connectivity; Production Capacity; Cross Border Economic Cooperation; Water Resources; and Agriculture and Poverty Reduction. The water resources priority area is managed through a Joint Working Group of line agencies in the six countries supported by the Lancang-Mekong Water Resources Cooperation Center (LMWRCC) headquartered in Beijing. Joint projects are financed through a Special Fund of the LMC. Given the status and fast evolving nature of LMC activities, the MTR has made specific suggestions for cooperation in section 5.3.

25. MRC has a number of **bilateral relationships** such as Mekong-Japan that includes cooperation on data collection for basin management and environmental conservation and may cover flood management in the future; the Lower Mekong Initiative with the US which has recently been reformulated and includes cooperation on satellite-based data systems; and Mekong-Korea that will look at issues surrounding water security and hydropower management.¹⁰ There will inevitably be pressures to expand such cooperation initiatives, but with limited staff resources at MRCS and in country agencies, the MRC has to be selective and **prioritize** those that clearly contribute directly to achieving the objectives of the BDS and support implementation of the SP and NIPs.

26. At a global level, the development agenda has been influenced significantly by the 2030 **Sustainable Development Goals (SDGs)** which in turn increasingly influences setting of national priorities and the allocation of resources. MRC has undertaken a mapping exercise with the SDGs and a number of recommendations were made at the 2018 International Conference in Siem Reap.

The MRC as an organization

27. The past few years have seen **major steps in the ‘riparianization’** of MRC including agreement on increased funding contributions from Member Countries and the move to a riparian CEO.¹¹ However, the associated transition of the Secretariat in response to rapid reductions in overall budget (from an average of \$25.2m in 2014/2015 to a projection of \$12.4m for the Annual Work Plan 2019) has inevitably been disruptive as staff numbers dramatically reduced (from 150 in 2014 to 64 by the end of 2016) and new working structures were introduced. During this time, there has been a strengthened emphasis on stakeholder engagement with some notable successes as well as aspects to further improve.

28. **Increases in funding contributions from Member Countries** to 2030 are presented in Figure 1. By about 2025-2026, the increased contributions will cover the Secretariat’s staffing and running costs and cover an increasing share of activity costs up to 2030 when MC contributions will reach \$9.7m in-line with objectives for self-financing.

29. **Decentralisation of core river basin management function activities** has been a major focus of this first half of SP2016-2020 and is the subject of a separate report by members of the MTR team. Although there has been some good progress, the transition period has been challenging and resulted in calls from a wide-range of stakeholders to re-consider the approach, particularly the pace

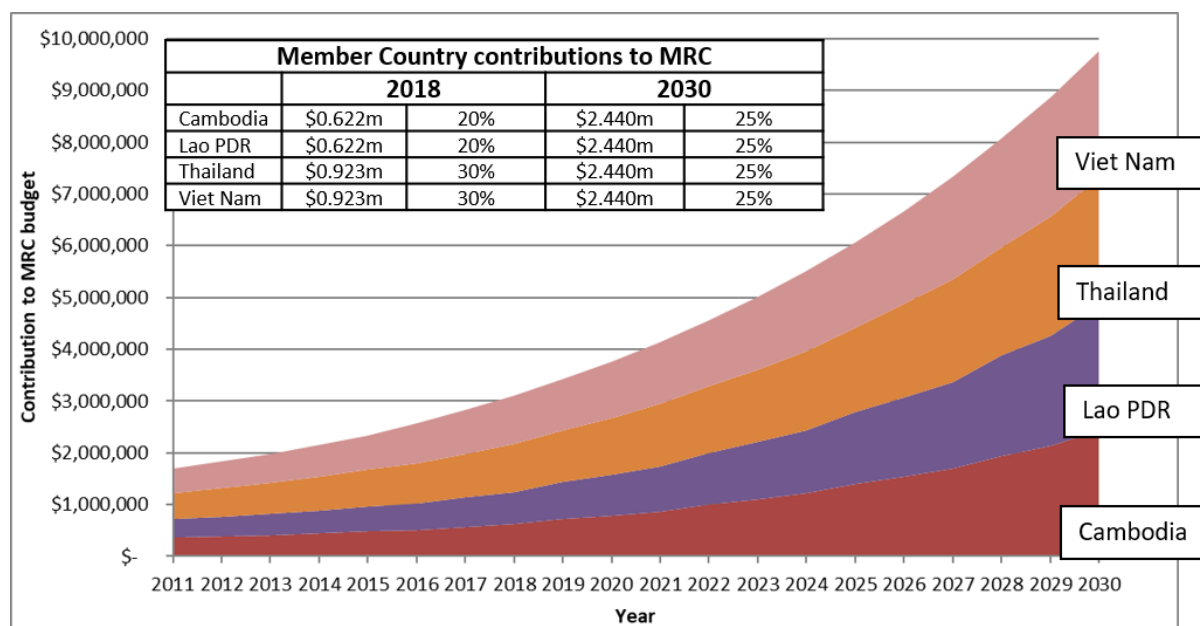
¹⁰ Note also the involvement of US-based organisations in multi-country, multi-stakeholder dialogues on sustainable hydropower through the Mekong Basin Connect Initiative of the Stimson Center involving the Nature Conservancy, UC Berkeley’s Energy Resources Group, The Nature Conservancy, and the International Union for the Conservation of Nature (IUCN).

¹¹ The handover from the first to the second riparian CEO took place during the MTR on 18 January 2019.

of the transition and the extent of decentralisation in particular activities. The issues and uncertainty around decentralisation that are outlined in that report have led to some tensions between the MRCS and MCs on fund allocation and implementation performance that have also spilled over into other areas of MRC’s work including delays on approval of key studies and guidelines. The MTR team is confident that these can be resolved in the short term.

30. The changes in MRCS are discussed in more depth in section 4.4 and there are some staff implications resulting from recommendations in section 5 of this report and in the recommendations of the recent Operational Review.

Figure 1: Projected contributions to MRC budget by Member Countries (source: MRCS)



4. Findings – *encouraging progress but at a critical juncture on core functions*

31. SP2016-2020 was prepared and approved in 2015, prior to the reorganization of MRCS when

Overall finding

1. There have been some impressive achievements in the first half of the Strategic Plan period in terms of outputs produced, including but not limited to, the Council Study, Basin-wide Fisheries Management and Development Strategy, Mekong Climate Change Adaptation Strategy and Action Plan and related reports/tools, improvements in implementing the PNPCA process with the Joint Committee Statement and Joint Action Plan for Pak Beng, Transboundary EIA guidelines, the update of the Preliminary Design Guidance for mainstream hydropower projects and Mitigation Guidelines for Hydropower Impacts.

2. Based on progress to date, the MTR Team considers there is potential for the Strategic Plan 2016-2020 to be substantially achieved in the next two years provided significant progress is made on critical areas, including:

- a more realistic approach to transitioning the decentralization of core river basin management function activities;
- improving the performance of priority monitoring activities and rebuilding open and robust systems for storage and sharing of data and information;
- streamlining the approval processes for studies and guidelines in situations where no significant policy decisions are at stake;
- engaging more actively with line agencies on the implications and potential use of MRC products and services and in-turn receiving feedback to improve future MRC outputs;
- supplementing existing approaches for engaging with Member Countries and partners on the early planning of major developments and thereby fulfilling the strategic priorities of the Basin Development Strategy; and
- articulating more clearly the MRC's comparative advantage *viz-a-viz* the water resources priority area of the Lancang Mekong Cooperation and therefore where the MRC should invest while advancing institutional cooperation.

3. This will involve proactively setting priorities and revisiting choices on the allocation of staff and financial resources. More details are provided in Section 5. The future role of MRC beyond this SP period will depend on its ability to deliver effectively on its core functions and the relationship it develops with the rapidly evolving LMC.

4. To consolidate the benefits of the work undertaken to-date, an area of particular focus over the next two years will need to be on developing a shared understanding of the results of the Council Study and the potential implications for national and sectoral plans and strategies.

staffing and budget levels were far higher. Although the future downsizing and reorganisation of the Secretariat was known, the speed and scale of downsizing was greater than initially planned and yet the ambition level for the Strategic Plan (and indeed the Basin Development Strategy) was suited more to the former scale of available resources. In developing the SP some prioritization of activities was attempted to align the work programme with the emerging reality of a smaller Secretariat and

budget but the scope remained very broad. It also did not fully accommodate the disruption of the downsizing process itself, including some loss of institutional memory.

Performance of Strategic Plan Outputs and their contribution to Outcomes

32. The first half of the Strategic Plan period has featured the delivery of some important foundational work from which the MRC can build. This includes the Council Study and several regional sectoral strategies and action plans (e.g. on fisheries and climate change adaptation). Importantly, the improvements in implementing the PNPCA process with the Joint Committee Statement and Joint Action Plan for Pak Beng, Transboundary EIA guidelines, update of the Preliminary Design Guidance for mainstream hydropower projects and Mitigation Guidelines for Hydropower Impacts illustrate the encouraging direction the MRC is taking to improve support to Member Country decision-making on critical development plans. These activities have been supported by a strengthened emphasis on stakeholder engagement as demonstrated by the information made available to support consultation processes, the open and transparent approach to regional stakeholder forums and the success of the third Mekong Summit in Siem Reap.

33. The seven Outcomes of SP2016-2020 are relevant beyond a single five-year planning cycle and so the MTR has assessed the 'contribution' that the underlying Outputs have had, or are likely to make, towards the Outcomes within this five-year period. The MTR team considers that:

- in two cases, based on the current trajectory, the combined Outputs are likely to contribute materially to the Outcomes (Outcomes #4 and 5).
- in five cases, the Outputs are likely to contribute to the Outcomes provided significant issues are addressed (Outcomes #1, 2, 3, 6, 7).

34. Compared to earlier versions, SP2016-2020 has embraced a more systematic approach to linking outputs to outcomes through the definition of indicators. This is an encouraging progression although in some cases the 'pathways to impact' are not clear and more thought is required on the formulation of indicators, both in terms of their relevance and the means of verification, in particular the extent to which data will be available to inform evaluations.

35. Details of the MTR assessment across the 44 Outputs included in the SP are given in the tables in Annex 3. Progress against the Outputs is assessed with regard to 159 Output indicators of which 45% (71#) relate generally to product deliverables (e.g. a report, database etc.); 236% (36#) relate to approval or endorsement (e.g. by the JC or Council); and 33% (52#) relate to uptake of the work at national level. The assessment by the MTR of completion of Outputs is:

- None were fully completed by the time of the MTR
- 32% (14#) are on track to be completed in the remaining two years of the SP period
- 50% (22#) have some major issues to be resolved in order to be completed within the SP period
- 18% (8#) are unlikely to be completed in the SP period

36. The assessment of Outputs is represented in the radar plots in Figure 2 according to the four categories above with the greatest level of achievement depicted by the outside scale. The larger the shaded area, the greater the MTR expectation of the completion of the Outputs. At this mid-point of SP implementation, the shaded area can be compared with 'level 3' of the radar plots, i.e. where the MTR considers the output is on track to be completed within the five-year period. Note that some Outputs were to be completed earlier than 2020 and this plot does not illustrate any such individual

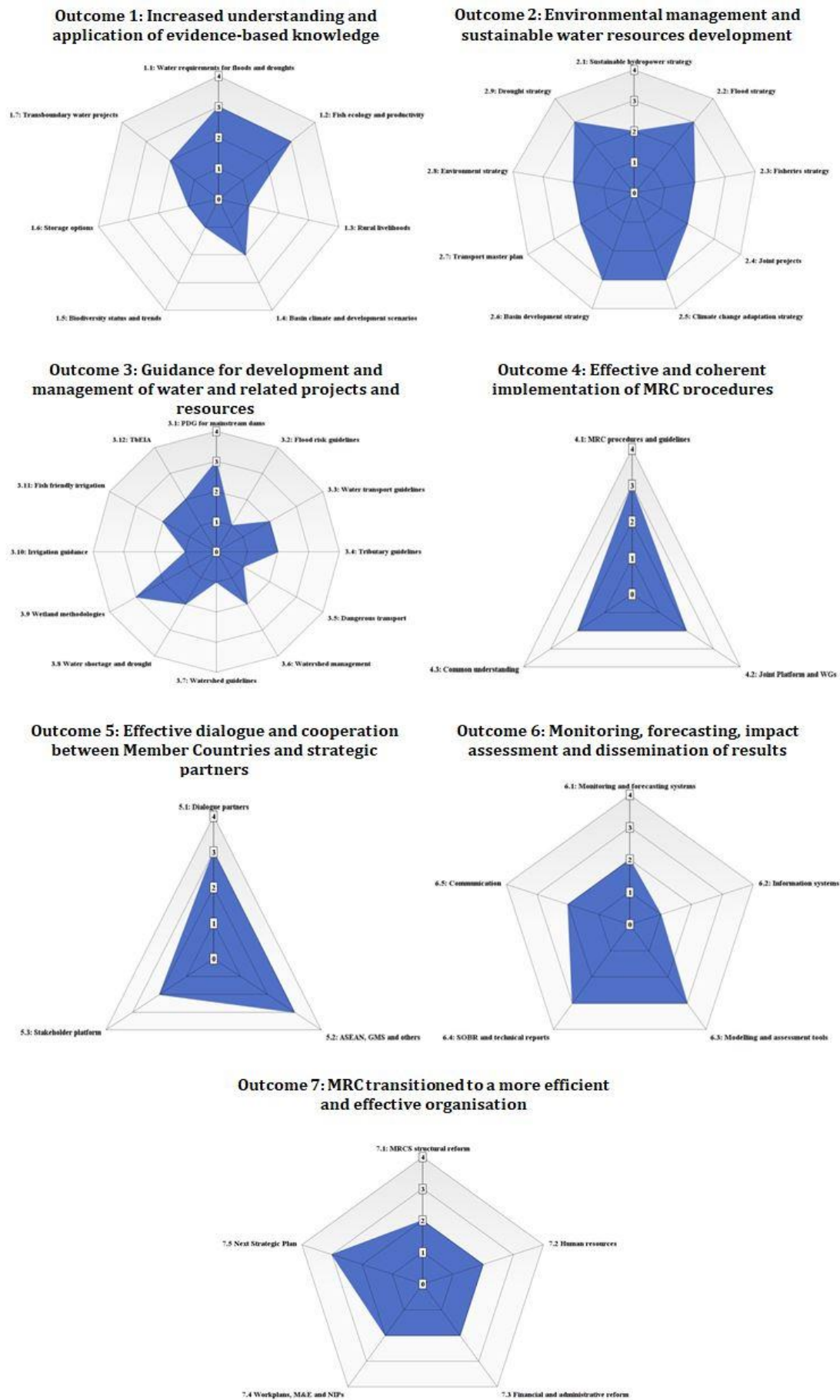
delays. An analysis of the indicator achievement under each output showed that it was those relating to uptake of MRC outputs where the least progress has been made, with 56% of those uptake related indicators rated as unlikely to be achieved within the SP period.

37. The seven SP Outcomes are assessed with regard to 24 indicators in the Outcome tables in Annex 3.2. Where there are divergences with the related Output indicators, these are noted in the text in the sections below on KRA findings.

38. Of the eight outputs that are unlikely to be completed, the MTR considers that one is highly relevant to the overall aim of the SP and the BDS, Output 6.2: *'Regional information systems and databases quality assured, standardised, improved and maintained'*. This shortcoming may appear surprising given data management has been a focus of significant attention and support over the years, but it demonstrates a real concern of the MTR team on an aspect that goes to the heart of the organization and which underpins so much of MRC's other work. The reasoning behind the assessment is given in section 4.3.

39. Within the 22 Outputs where 'major issues are to be resolved', there are some indicators of high relevance that the MTR also feels are at risk. These are covered in the respective sections of this chapter

Figure 2: Comparison of Output ratings by Outcome, Strategic Plan 2016-2020



Contribution to the Basin Development Strategy

40. As the role of the SP and associated NIPs is to implement the Basin Development Strategy, the MTR has looked at the linkages and points of intervention with the BDS strategic priorities as identified in the SP. Achieving the BDS depends both upon: (i) the extent the SP and NIPs provide sufficient knowledge and guidance to Member Countries; and (ii) the extent that this is taken up by relevant agencies (government, non-government and development partners) into implementation. Based on the primary linkages between BDS Strategic Priorities and SP Outcomes the MTR highlights a concern that there is still a substantial amount of effort required to ensure the BDS Strategic Priorities will be adequately addressed during this plan period. This is due to:

- a combination of incomplete or delayed Outputs in the SP and NIPs (Table 1);
- gaps where neither the SP or NIPs fully address key aspects of the BDS such as engagement in the early stages of planning and options assessment for major infrastructure; or
- situations where there is limited uptake at national or regional levels which may be for a variety of reasons. These are further discussed in sections 4.1 to 4.5.

41. Progress to-date has been strongest on Outcomes 4 and 5 which are mostly intended to contribute to BDS Priority 4: *Strengthen basin-wide procedures and national implementation capacity* and Priority 7: *Increase cooperation with partners and stakeholders*. All other Outcomes require significant issues to be addressed if they are to be realised and therefore deliver adequately on the strategic priorities of the Basin Development Strategy.

42. The BDS Priorities that are at greatest risk of not being delivered are:

- Priority 3: *Strengthen the protection of mutually agreed environmental assets*. This priority only has one main output aligned to it in the Strategic Plan and this output requires substantial further effort over the next two years if it is to be completed within the Strategic Plan period. In addition to the Basin-wide environmental management strategy the MRC may need to consider other ways in which to deliver on the environmental protection needs and challenges of the BDS, particularly where there are other outputs and outcomes that have secondary linkages to this BDS priority (e.g. the various strategies under Outcome 2).
- Priority 5: *Improve national water resources development and management*. Considerable information and guidance has been generated across various sectors relevant to MRC's mandate, but the main concern lies with the extent to which this guidance and information has been approved for use and the rate of adoption by national line agencies as envisaged in the BDS.
- Priority 6: *Enhance information and management, communication and tools*. The importance of regional information systems and databases to a regional knowledge organisation is substantial. The MRC is on the right track to improve its systems but these efforts need to be enhanced to ensure the quality and accessibility of data and information in support of basin planning and decision-making.

43. Although BDS Priority 1 has three outputs that are unlikely to be completed, only one of these is considered of high relevance. Given the considerable knowledge generated through the Council Study, the overall contribution to the BDS is significant. Efforts though are still required to complete the remaining outputs, particularly those categorized as of high relevance.

Table 1: Mapping SP Outcome and Output progress against the Strategic Priorities of the Basin Development Strategy (see para 48 for the Output and Outcome colour coding). A '*' denotes Outputs that the MTR consider are of high relevance.

BDS Priority	Strategic Plan Outcomes and Outputs (primary linkages to BDS priorities)							
1. Reduce remaining knowledge gaps to minimise risks	Outcome 1							
	1.1 Water requirements for flood & drought	1.2* Fish ecology and productivity	1.3* Rural livelihoods and change	1.4* Basin climate and development scenarios	1.5 Biodiversity status and trends	1.6 Storage options	1.7 Trans-boundary water project impacts	
2. Optimise basin-wide sustainable development and cost and benefit sharing	Outcome 2							
	2.1* Sustainable hydropower strategy	2.2* Flood strategy	2.3* Fisheries strategy	2.4 Joint projects	2.5* Climate change adaptation strategy	2.6 Basin Development Strategy	2.7 Masterplan for water transport	2.9* Drought strategy
3. Strengthen the protection of mutually agreed environmental assets	Outcome 2							
	2.8* Environment management strategy							
4. Strengthen basin-wide procedures and national implementation capacity	Outcome 4							
	4.1* MRC procedures and guidelines	4.2* MRC Joint Platform and working groups	4.3 Common understanding of procedures implementation					
5. Improve national water resources development and management	Outcome 3							
	3.1* PDG for mainstream dams	3.2* Flood risk management guidelines	3.3 Guidelines & frameworks on waterborne transport	3.4* Best-practice guidelines for tributary projects	3.5 Action plan for sustainable transport of dangerous goods	3.6 Sustainable watershed management	3.7 Watershed management guidelines	
	3.8 Guidelines for water shortage and drought	3.9* Methodologies for wetlands	3.10 Guidance on irrigation systems	3.11* Guidance on fish friendly irrigation	3.12* TbEIA			
6. Enhance information and management, communication and tools	Outcome 6							
	6.1* Monitoring & forecasting systems	6.2* Regional information systems and databases	6.3 MRC modelling and assessment tools	6.4* SOBR and technical reports	6.5* Communication and access to data, information and knowledge			
7. Increase cooperation with partners and stakeholders	Outcome 5							
	5.1* Partnerships with dialogue partners	5.2 Partnerships with ASEAN, GMS and others	5.3* Regional Stakeholder Platform					
	Outcome 7							
	7.1* MRCS structural reform	7.2* MRCS human resources reform	7.3* MRCS financial and admin reform	7.4* Annual work-plans, M&E and NIPs	7.5 Strategic Plan 2021-2025			

Cross-cutting findings

44. A number of findings emerged from the MTR that cut across the Key Results Areas of the SP. They include:

- **MRC has a unique role** emanating from its mandate under the 95MA, its agreed Procedures, role in facilitating the resolution of differences and disputes, and a long history of cooperation and joint working.
- The **MRC Knowledge base is a key asset** and is consistently referred to by a wide range of stakeholder groups, including Member Countries, as a vital source of information.
- **Member Countries have committed to increase funding for MRC** leading to greater sense of ownership. The budget forecast for 2030 envisages lower funding levels of approximately \$9m per year to match its future scope and reflects the expected reduction in Development Partner support.
- The creation of a **Basket Fund allows greater autonomy** for the MRC to set its priorities.
- **A mismatch between ambition in SP2016-20 and resources** means the scale of activities and future plans in the BDS and SP still need to adjust to the new reality of a smaller Secretariat and less funding. A distinction is needed between core work and major new knowledge generation activities that would require special funding.
- **Concerns by external stakeholders on the limited influence of MRC. This includes what is seen as a gap** between the MRC's focus on strategy development and knowledge generation while in the Basin, cumulative impacts resulting from ongoing infrastructure projects and other development interventions are already occurring.
- **MRC products are not yet integrated into national systems** and that additional emphasis to facilitate and follow through on recommendations is required.
- **Recognition of the implicit influence that MRC has had** due to its existence and the evolution of basin-wide thinking over the years. It can be argued that development proposals already to some extent take into account of the expectations of the Commission and other Member Countries before they are submitted for joint consideration. This 'soft' influence is difficult to quantify.
- **Concerns over lengthy approval processes** needed to get buy-in from all four countries that has caused significant delays on some key outputs.
- **Differing perspectives on what is meant by approval** of MRC products and specific concerns that are seen as supra-national or quasi-regulatory instruments. This raises the question of whether alternative approaches are needed for different types of product (e.g. Procedure, guideline, study, etc).
- **Communications and dissemination of material continues to improve** although there is a perceived limitation in terms of feedback provided to stakeholders on key development processes.
- **Recognition of different capacities** among Member Countries and need for differentiated support particularly for the decentralization transition.

Assessment by Key Results Area

45. Sections 4.1 to 4.4 provide an assessment of the seven Outcomes grouped by Key Result Area. More details for each Outcome are provided in the tables in Annex 3 both in terms of the status of delivering on the Outputs and their contribution to the respective Outcomes.

46. In some cases, there may be a difference between the MTR assessment and that provided in MRC's M&E system. These can be attributed in part to the MTR focus on relevance of an individual Output and the contribution it makes, rather than the physical production of a document or completion of a process.

47. For some Outputs, delays in achieving a milestone may not lead to a consequent constraint in achieving an Outcome as not all Outputs are of equal levels of importance and relevance to the BDS. The MTR Team has attempted to take this difference into account when assessing overall performance.

48. A four-level grading system as shown in the tables below has been adopted by the MTR for: (i) Outputs; and (ii) the Contribution of Outputs to Outcomes. Outputs that are considered by the MTR to be of high relevance for achieving the Outcomes of the SP are marked with an asterisk (*).

Output colour coding: (i) Achievement of Outputs	
Completed	
On track to be completed in the SP period	
Some major issues to be resolved	
Unlikely to be completed in the SP period	

Outcome colour coding: (ii) Contribution of Outputs to Outcome by end 2020	
Likely to substantially contribute	
Likely to partially contribute on current trajectory	
Likely to contribute provided significant issues are addressed	
Unlikely to contribute meaningfully	

49. Based on its analysis of Outputs and Outcomes, for each of the four Key Result Areas of the Strategic Plan, the MTR is of the view that each is likely to be partially achieved but that significantly more effort is required in a range of areas as discussed below. KRA2 *Strengthening regional cooperation* and KRA 4 *Leaner river basin organisation* are the two result areas most likely to be accomplished within the Strategic Plan period.

4.1 KRA 1 - Enhancement of national plans, projects and resources from basin-wide perspectives (Outcomes 1, 2, 3)

Outcome 1: Increased common understanding and application of evidence-based knowledge by policy makers and project planner												
Outputs	1.1	1.2*	1.4*	1.7	1.3*	1.5	1.6					
Outcome 2: Environment management and sustainable water resources development optimised for basin-wide benefits by national sector planning agencies												
Outputs	2.2*	2.5*	2.6	2.9*	2.1*	2.3*	2.4	2.7	2.8*			
Outcome 3: Guidance for the development and management of water and related projects and resources shared and applied by national planning and implementing agencies												
Outputs	3.1*	3.9*	3.3	3.4*	3.6	3.8	3.11*	3.12*	3.2*	3.5*	3.7	3.10

* denotes high relevance

50. The assessment of 'Contribution of Outputs to Outcomes' is the same for all three Outcomes under KRA1, namely that the Outputs are "*likely to contribute to the Outcomes provided significant issues are addressed*". These issues are described below and explained in more detail in Annex 3. This assessment is consistent with the MTR view that KRA 1 is likely to be partially achieved but that significantly more effort is required to attain the benefits of a regional approach to basin planning. This would require different approaches to facilitating integration and utilizing the extensive knowledge base that is already available.

KRA 1 - Summary of achievements of Outputs and pathway to Outcomes

51. Of the 28 Outputs in KRA1:

- None have been completed yet, but 29% (8#) are on track to be completed by end 2020;
- 46% (13#) could be completed provided some major issues are resolved;
- 25% (7#) are unlikely to be completed.

52. MRC has contributed significantly to raising awareness on some of the key development issues and choices facing the Basin, including through the Council Study and outputs from MRC's Initiative on Sustainable Hydropower. Filling the outstanding knowledge gaps and identifying appropriate ways to address the Basin challenges are key to MRC's future role in supporting Basin planning and highlights the importance of resolving constraints to completing the delayed Outputs.

53. For Outcome 2, there is a concern that those Outputs which still require '*major issues to be addressed*' tend to be the ones with higher levels of relevance and influence on the achievement of the intended Outcome. This may not be surprising as progress on more sensitive activities is inevitably more prone to delay in an inter-governmental setting, but it does raise the risk of under-achievement of the BDS if the delays become excessive.

54. The generic pathway to change for the type of output that characterize KRA1 (e.g. studies or action plans) involves a progression through various steps including:

- involvement of key agency staff in the preparation of the Output to ensure ownership and relevance to the national context and systems;
- awareness raising of the issues and possible solutions for more senior level policy makers; and
- translation of the recommendations, guidance or action points into national systems.

55. It is generally the second and third steps that have been found lacking and where the MTR considers alternative more facilitative approaches are needed to take the discussions forward.

56. The MTR highlights below the Outputs it considers to be of 'high relevance' in KRA 1. They illustrate where a contribution has been, or will be, made in fulfilling the SP and, for those coded orange or red, the types of issues that remain to be resolved. Full details for all Outputs are provided in Annex 3.

- Output 1.2 (*Study of fish ecology and productivity*): **On track**, with further steps on promoting the results of the technical work and its potential utility required.
- Output 1.3 (*Study of rural livelihoods*): **Unlikely to be completed**, as no resources have been made available in the AWP2019 and although the Council Study and SIMVA surveys partially fulfil this requirement, further work on measures to cope with transboundary changes would be of value and could potentially be explored through the Strategy for Sustainable Hydropower Development.
- Output 1.4 (*Climate and development scenarios and assessments*): **Major issues to be resolved**, through further work examining scenarios and trade-offs to inform the next MRC planning cycle to be relevant to national policy makers and project planners.
- Output 2.1 (*Strategy for sustainable hydropower*): **Major issues to be resolved**, with the MTR having concerns about the capacity to achieve the Outcome due to differences with country perspectives, a need to find new ways of making progress on highly sensitive and political decisions, and that the MRCS alone may not have the capacity to facilitate the 'water diplomacy' processes required.
- Output 2.2 (*Regional flood strategies*): **On track**, with the overall regional strategy to be started after the specific strategies are complete. Could be delayed if scope broadened to include drought.
- Output 2.3 (*Fisheries management strategy and action plan*): **Major issues to be resolved**, with the MTR considering the use of sub-groups to the Expert Groups will be necessary to achieve the type of ownership and engagement from specialists required to ensure inclusion of agreed actions in annual work plans of national agencies.
- Output 2.5 (*Mekong Climate Change Adaptation Strategy and Action Plan*): **On track**, with the focus over the remainder of the SP period on integrating actions into national systems and a need for greater coordination between those working on climate change and those on flood and drought management.
- Output 2.8 (*Strategy for environmental management*): **Major issues to be resolved**, as this is a considerable undertaking which requires an integrated whole-of-landscape approach to be successful. In a rapidly changing basin, there is a risk that national developments could compromise the process in some locations before its completion.

- Output 2.9 (*Regional drought strategy*): **On track**, with the focus now shifting to implementation particularly in relation to monitoring and forecasting and requiring consideration of exactly where MRC's value-add is in relation to drought management.
- Output 3.1 (*Preliminary Design Guidance for mainstream dams*): **On track provided JC approval is attained by 2020**. Significant improvement in engagement between mainstream hydropower developers and MRCS, and the PDG is available and already having influence even if not yet widely recognised.
- Output 3.2 (*Integrated Flood Risk Management Guidelines*): **Unlikely to be completed**. *This is a case where activities activities in this SP period were designed to follow up on outputs produced earlier. It is an example of the wider concern of the MTR on limited uptake of MRC products. In this case, it would be appropriate to verify with the MCs on their interest in following up and then design the next steps accordingly.*
- Output 3.4 (*Guidance on tributary projects of transboundary significance*): **Major issues to be resolved**, with considerable effort having been made in developing guidance for hydropower, but much less so for other sectors like irrigation. Consideration also needed on how guidance developed for mainstream projects has relevance for tributary projects.
- Output 3.5 (*Action Plan for sustainable transport of dangerous goods*): **Unlikely to be completed**, with the integration of proposals on the action plan yet to be implemented and coordination necessary with JCCCN to ensure harmonised approaches.
- Output 3.9 (*Methodologies for sustainable use and management of wetlands*): **On track**, with wetland maps updated, tools and methodologies being tested and capacity building to follow within the SP period.
- Output 3.11 (*Guidance on irrigation systems with transboundary implications*): **Unlikely to be completed**, with elements of the main activities yet to be carried out. MRC may need to consider narrowing the scope of its work on irrigation and identifying other mechanisms where transboundary irrigation issues could be addressed.
- Output 3.12 (*TbEIA*): **Major issues to be resolved**, with the MTR having concerns about proposed reductions in scope of the guidelines. If JC approval is not yet possible, MCs may wish to consider endorsing the guidelines for voluntary use, allowing experience to guide refinement and ratification by national governments at a later date.

57. The review of KRA1 has raised a number of general points to be considered in the remaining period of the SP2016-2020 and in preparation of subsequent SPs and the next Basin Development Strategy. These issues relate largely to the MRC's role in development planning and coordination.

MRC's role in development

58. MRC is perceived as effective in raising awareness of key issues, but **less effective in influencing planning and development decisions**. The predecessors of the MRC operated in an environment where master plans and project financing were essentially in the public domain, supported by bilateral and multilateral development partners. This was the case in 1994 when the run-of-river mainstream hydropower projects that are now being built were first proposed.¹² The introduction of private finance from Asia region sources in the mid-2000s changed this dynamic and there has been a shift in the basin planning processes of MRC since BDP1 to focus on less sensitive

¹² 1994 CNR report of Interim Mekong Committee. The report did raise concerns about the types of issues studied in the recent Council Study, particularly fisheries, and indicated that these would need to be addressed as part of any further investigation into the projects' viability.

aspects rather than a broader integrated benefit sharing framework and related trade-off discussions. The result was a gradual shift away from optimization at basin scale to what can be described as a 'first-in-time' approach for major developments, i.e. due to the incremental nature of cumulative impacts. Later projects may potentially be at a disadvantage and rejected because thresholds of acceptable impacts are already reached. In parallel, the MRC focus has been more on 'minimizing' and 'mitigating' impacts through application of its Procedures and preliminary guidance on project design rather than 'avoiding'.

59. Although proposed major development projects now feature regularly in the MRC sponsored discourses,¹³ there remain questions from Member Countries on whether MRC's focus on preserving key ecosystem functions in the basin is balanced with support to meet national development aspirations. In part, this is a shortcoming in the ability of MRC to convincingly present the benefits of a more balanced basin-wide approach as envisaged in Articles 2 and 3 of the 95MA.

60. **MRC has generated an impressive collection of studies and guidance material** but the overarching perception of some Member Countries is that they would constrain development rather than enable it to occur in a more sustainable manner. In part this could be seen as an inability to raise awareness at senior levels in government on the benefits of the Outputs and interventions. It may also be due to the prominent environmental focus of technical studies, particularly those related to hydropower, rather than on the socio-economic costs and benefits.

61. As time progresses and developments materialize, the scope for exploring options becomes less, but at the same time, new innovative technologies are entering the market and provide new opportunities. MRC will need to respond to the 'credibility gap' and challenges of being a facilitator of new ideas, both of which will require different ways of working.

62. Ensuring **uptake of MRC outputs** assumes that not only are they seen as relevant by the responsible national entities, but there are appropriate entry points into national systems. Both of which argue for involvement of the relevant national agencies at an early a stage as possible. Over the years, MRC has built up close relationships in several sectors, for example on water quality, fisheries and waterborne transport, areas where MRCs has had highly qualified in-house resources. In other sectors this has not been so successful and resulted in what is often seen as a mismatch between regional processes and national planning systems. This was the case for example in energy planning where the sensitivities mentioned above have put constraints on engagement but also where national planning systems tend to be less open.

63. MRC's support for **basin planning** is at the heart of the 95MA and provides an entry point to address the concerns raised in para 58. Similarly, it is an opportunity to take stock of the rapidly changing context of the Basin as discussed in Chapter 3 and the implications for water, energy and food demands as well as the value of natural capital, all in the context of SDG targets. For example, the recent Decree 120 of the Vietnamese government on development trajectories for the Mekong Delta is a major change in direction from intensive rice production to an enhanced focus on sustainable aquaculture. Technological innovations such as more efficient energy appliances and irrigation systems, and the rapid uptake of solar power including floating solar, can change demand projections and development choices.

64. The **National Indicative Plans (NIPs)** have continued to evolve as experience is gained in their formulation and implementation. The experience across countries is mixed although there is a general tendency for them to be ambitious in relation to the number of projects included for implementation. Different approaches are taken to funding the NIPs including applying for national budgets and the reallocation of existing budget lines by Thailand while others rely mainly on seeking

¹³ Except perhaps the proposed abstraction of water from the mainstream for irrigation in Thailand which does not have the same prominence in MRC discussions as mainstream hydropower.

external funds, leaving many ideas unfunded.¹⁴ Progress reviews of the current NIPs identify some lack of ownership amongst national line agencies of the projects and activities included in the plans and therefore insufficient integration of budgets and work-plans at the national level. The importance of ongoing coordination of NIP implementation is highlighted. Similarly, the inclusion of activities to implement agreed actions from MRC strategies and master plans is often missing.

¹⁴ Consider including a figure in final version that denotes funding status of NIPs

4.2 KRA 2 - Strengthening of regional cooperation (Outcomes 4, 5)

Outcome 4: Effective and coherent implementation of MRC Procedures by Member Countries				
Outputs	4.1*	4.2*	4.3	

Outcome 5: Effective dialogue and cooperation between Member Countries and strategic engagement of regional partners and stakeholders on transboundary water management				
Outputs	5.1*	5.2	5.3*	

* denotes high relevance

65. The assessment of 'Contribution of Outputs to Outcomes' is the same for both Outcomes under KRA2, namely that the Outputs are *"likely to partially contribute on the current trajectory"*. Any outstanding issues related to individual Outputs are described below and explained in more detail in Annex 3. This assessment is consistent with the MTR view that considerable progress has been made in strengthening regional cooperation such that KRA 2 is likely to be partially achieved but that significantly more effort is required.

KRA 2 - Summary of achievements of Outputs and pathway to Outcomes

66. Of the 6 Outputs in KRA 2:

- None have been completed yet, but 50% (3#) are on track to be completed by end 2020;
- 50% (3#) could be completed provided some major issues are resolved.

67. The pathways to change for the outputs under Outcomes 4 and 5 are quite different:

- For the Procedures under Outcome 4, it involves an iterative process of technical review and political buy-in across several different national agencies. It involves questions about alignment with national planning and monitoring systems, concerns over the relationship between regional and national decision-making, and the ability of MRC to facilitate resolution of sensitive discussions.
- Under Outcome 5, mechanisms for cooperation in the region more broadly include engaging with other regional bodies where priorities need to be set based on each other's comparative advantage, engagement with Dialogue Partners where information is increasingly shared but remains a challenge for critical parameters, and involving civil society meaningfully which requires high levels of openness and transparency.

68. The MTR highlights below the Outputs it considers to be of relatively 'high relevance' in KRA 2. They illustrate where a contribution has been, or will be, made in fulfilling the SP and for those coded orange, the types of issues that remain to be resolved. Full details for all Outputs are provided in Annex 3.

- Output 4.1 (*MRC Procedures and associated technical guidelines reviewed and updated*): **On track**, with further steps on ensuring Joint Environment Monitoring is effective and that implementation of PDIES and PWUM is improved.

- Output 4.2 (*MRC Joint Platform and working groups for MRC Procedures implementation supported*): **Major issues to be resolved**, with consideration on how the Procedures will be implemented in a more operational management mode, including PDIES, PWUM and the real time application of PMFM. As noted by a participant at the regional meeting on the MTR, the Joint Platform provides a less formal platform for resolving issues and has not yet been fully exploited.
- Output 5.1 (*Partnerships with MRC's Dialogue Partners further developed and implemented*): **On track**, with further progress on the implementation of cooperation agreement with the Lancang-Mekong Cooperation mechanism and potential further joint research and data sharing.
- Output 5.3 (*Regional Stakeholder Platform established and implemented for enhanced dialogue and collaboration with broader stakeholders*): **Major issues to be resolved**, with further consideration to establishment of a Regional Stakeholder Platform as a more formal institutional arrangement – as articulated in the SP - and continuing engagement with CSOs on providing feedback to their inputs.

69. The review of KRA2 has raised a number of general points to be considered in the remaining period of the SP2016-2020 and in preparation of subsequent SPs.

Procedures and mandated roles

PNPCA – Procedure for Notification, Prior Consultation and Agreement

70. Despite the inability of Prior Consultation processes to come to a consensus and formal conclusion in the cases of the first two mainstream dams, the subsequent process for Pak Beng has been more robust and in-line with agreed processes and schedules. This may not be too surprising as it is the second in the cascade of proposed dams north of Vientiane. It may be much more difficult to meet those timelines for the proposed dams in Cambodia as the nature and scale of potential impacts are likely to be far greater. This then raises the question about how the basin planning process of the MRC is intended to provide earlier engagement among Member Countries on such major infrastructure developments and the role of other tools such as RSAT and TbEIA that are both at advanced stages of development, but not yet approved or applied, therefore constraining the realisation of their full potential. This is similarly the case for the Hydropower Impact Mitigation Guidelines. Stakeholder engagement in the Prior Consultation process has improved significantly, although some groups raise concerns over lack of feedback (see next section).

71. The Prior Consultation process for a major mainstream dam involves significant resources and MRCS staff time. As the timing of consultation is not normally known well in advance, this can result in a diversion of resources and 'crowding out' of other activities with consequent delays in implementation.

PWQ - Procedure for Water Quality

72. Implementation of the PWQ appears to be relatively smooth in relation to routine water quality monitoring and ensuring Member Countries have access to information on the quality of Mekong water resources. However, the second part of the procedures, which relates to emergency water quality incidents is an area of ongoing consideration. The MRC's proposal for cooperation with ASEAN to develop joint mechanisms to deal with emergency water quality issues is a commendable example of efforts to avoid duplication. There is also specific sectoral work where this issue is particularly relevant. For example, concerning the harmonisation of rules between Lao PDR and Thailand on the sustainable transport of dangerous goods and anti-pollution measures. Progress on

these sectoral considerations may help inform joint work with ASEAN. The MRC also has some detailed technical material developed to inform the *Guidelines on Water Quality and Emergency Response* that could help inform this process.

PDIES – Procedure for Data Sharing, Information Exchange and Sharing

73. PDIES has been in place since 2001. The operation of these procedures appears at times constrained by difficulty reaching agreement among Member Countries any time data is required to be exchanged or shared, for example, in preparing the State of the Basin report or for the Council Study. This is in part due to the MRC Indicator Framework, under preparation since 2012, not having been finalised, but also due to a lack of agreements documenting exactly what should be provided by whom and when. There may be merit in a review and update of PDIES, including to consider whether they remain fit-for-purpose under decentralised modalities for data collection and the need for coordinated hydropower operations on the mainstream and tributaries.

PMFM - Procedure for Maintaining Flows on the Mainstream

74. Agreement on the minimum flow regimes through PMFM is critical to both the basin planning and basin management functions of MRC. While the focus until now has mainly been on hydropower development, the application of PMFM in a planning mode will become critical when major proposals for utilizing Mekong water for irrigation in the dry season are discussed within MRC. Earlier modelling scenarios suggest that the operation of dams in the Lancang River will release pressure on dry season low flows. Whereas this has been the case in the upper part of the Mekong river, there remains concerns about below average flows downstream of Kratie which is influenced less by the Chinese dam operations. Despite extensive modelling and scenarios being developed, this issue of dry season low flows in the Delta remains contested.

PWUM – Procedure for Water Use Monitoring

75. Little progress has been made on operationalising PWUM including providing clarity on what data are required and how it will be utilised. Data collection exercises were carried out for the basin modelling scenarios for the 2010 Basin Development Strategy, but PWUM is yet to be institutionalized. Given the challenges associated with routine data provision, it may be time to investigate alternative approaches to gathering proxy data including the use of remote sensing and water accounting tools that are now entering wider use.¹⁵

Freedom of Navigation (Article 9 of 95MA)

76. MRCs involvement in waterborne transport has diminished since the end of the Navigation Programme. Considerable achievements resulted from the Programme including facilitation of the Cambodia-Viet Nam agreement in 2009, guidance on minimum heights for bridge crossings, the advisory work related to navigation locks in the Preliminary Design Guidance and comprehensive guidance on dealing with safety issues and emergency spills. The Programme also built up a strong network for cooperation among line agencies.

¹⁵ Water Accounting – see <http://www.wateraccounting.org/>. NASA also has a new project to be launched in 2021 - <https://swot.jpl.nasa.gov/> that intends to provide a major improvement in the availability of surface extent and storage change for surface water bodies such as lakes, reservoirs, wetlands and rivers globally (including the Mekong).

77. The resources allocated to waterborne transport were significantly reduced both in terms of staffing and funding. Although a range of initiatives are being undertaken and relationships maintained with responsible authorities in Member Countries, the scope for influencing outcomes is limited with the current scale of MRC activities. A significant role remains to facilitate implementation of the Cambodia-Viet Nam bilateral agreement that MRC helped to broker in 2009. In the case of the upper basin, there is already a coordination arrangement under the Joint Committee for Coordination of Commercial Navigation (JCCCN). MRC's added value here is that it connects navigation issues to other broader aspects of sustainable development. Whereas JCCCN can be considered as a decentralised activity, there are linkages between the broader scope of the MRC that need to be maintained and strengthened. For example, the work that MRC has coordinated on safety and emergency response has relevance to the whole Basin and needs further support. The MRC has reached a point at which it will need to take a conscious decision on its future involvement in waterborne transport, the resources it mobilizes and its relationship to the two initiatives in the south and the north of the Basin.

Emergency Situations (Article 10 of 95MA)

78. Under Article 10 of the 95 Agreement, the Member Countries are required to notify each other through the Joint Committee in the event of '*any special water quantity or quality problems*'. This is currently separate to the routine data and information sharing activities under PDIES. As yet there is no agreed protocol for operationalising Article 10. Had this been in place, and it was supported by a capability to predict the progression of flow peak downstream, then it could have been used to notify downstream riparians in the case of the dam break that occurred in July 2018.¹⁶ Guidance in the form of a *Regional Action Plan for Sustainable Transport of Dangerous Goods* has been developed by the former MRC Navigation Programme for notifying others and dealing with chemical spills from ships or ports but this also is yet to be taken up widely by Member Countries.

Regional mechanisms

79. **Cooperation with China:** There is a strong positive trend on engagement with China as a Dialogue Partner. Chinese delegations to the annual MRC Dialogue Partners meeting continue to include relevant line agencies and institutions that are prepared to discuss with MRC possible future cooperation. China, for the first time, has agreed to review the Upper Mekong Basin section in the next State of the Basin Report. Joint research between MRC, China and IWMI, i.e. the *Joint Observation and Evaluation of the Emergency Water Supplement from China* and its effect of easing the drought situation in the Mekong Basin in 2016 is also a step towards strengthened cooperation. In addition, China and MRC have collaborated on a number of technical workshops during the first half of SP2016-2020 including on sediment control and managing river dams. More importantly, the Ministry of Water Resources, which is MRC's technical focal point for China, welcomed the MRCS to work with the Joint Working Group on Water Resources of the Lancang Mekong Cooperation (LMC). China created and is funding LMC, a regional mechanism coordinated at apex level by the respective ministries of foreign affairs. All MRC Member Countries as well as Myanmar are LMC founding members.

80. One of the hallmarks of China-MRC cooperation is the MoU between MRC and the Ministry of Water Resources on sharing hydrological data in the wet season. China has not yet agreed to expand the MoU to be year-round but, in drought conditions some information on upstream conditions has been shared and following a request from downstream countries, China released additional water in an emergency case in the dry season of 2016 to reduce salinity intrusion in the Mekong delta.

¹⁶ <http://www.mrcmekong.org/news-and-events/news/extent-of-flooding-and-water-level-rise-from-dam-break-in-southern-laos/>

81. On LMC, MRCS was invited to join the First Lancang-Mekong Cooperation Forum on Water Resources where the CEO gave a keynote speech. Moreover, MRCS has been encouraged to explore cooperation with the Lancang Mekong Water Resources Cooperation Center (LMWRCC), a center under the MWR and a platform created by the LMC JWG on Water Resources, for all six countries to “strengthen comprehensive cooperation in technical exchanges, capacity building, drought and flood management, data and information sharing, conducting joint research and analysis related to water resources”. LMWRCC has been supporting the JWG on various activities such as technical exchanges, capacity building and cooperative projects. MRCS has prepared two initiatives for strengthening cooperation: i) a draft MOU on MRCS-LMWRCC cooperation, which LMWRCC is currently reviewing; and ii) a request for MRCS to obtain observer status on the JWG on Water Resources.

82. Under the LMC framework, China has started providing the same hydrological information in the flood season to all five other members of the LMC as well as to MRCS by copy of that communication. Moreover, China also has an informal arrangement to provide advance notice to LMC members, (with copy to MRCS) of any releases from Jinghong dam that are supplementary to the prevailing reservoir operating regime. MRC members have voiced support of MRC’s cooperation with China through the JWG on Water Resources and the LMWRCC. From MRC’s side a new channel for cooperation is through the MRC Expert Group on Strategy and Partnership, whose role includes developing and reinforcing cooperation with partners and stakeholders. However, synergies and the technical focal point(s), and their roles for various issues need further clarification from China, especially on aspects like negotiations related to the MoU with the Ministry of Water Resources on hydrological data sharing and the operations of hydropower projects on the Lancang that fall under other Chinese agencies.

83. Although **MRC-ASEAN** have limited technical links, ASEAN is the primary Southeast Asia intergovernmental platform and influences overall relationships. It is a platform sometimes used by leaders e.g. the meeting of leaders on Xayaburi on the sidelines of ASEAN meetings and discussing MRC issues in the WEF-ASEAN Summit. MRC, ASEC as well as the ASEAN Ministerial Meeting on the Environment have already endorsed a new cooperation framework with ASEAN focusing on fields of common interests. MRCS and ASEC intend to meet “as necessary” to implement the Framework. ASEAN, as an observer, has always been invited to MRC’s annual Council Meeting in which regional coordination and information is shared. Side meetings between MRCS and ASEC representatives are organized around this period. Both MRC and ASEAN are receiving strong support from key ASEAN working groups. More joint activities in the past few years reflect strengthened cooperation between the two intergovernmental bodies. The Asia Europe Meeting (ASEM) is another potential forum for high level political engagement on Mekong issues, particularly as the 2020 ASEM Summit will be held in Cambodia.

84. **On multilateral development banks and their regional cooperation frameworks** MRC is playing to its technical strengths. The World Bank support to joint bilateral projects is coming to an end and a new relationship being considered. The Bank is conducting a hydropower review with informal MRC involvement and will support Lao PDR in providing an expert on dam safety and to co-host a dam safety forum. ADB’s cooperation with MRC is covered by the open-ended “2000 Partnership Agreement” and there is discussion of updating this to focus on two key areas: Energy/Hydropower and Environmental Management. There is linkage between MRC’s sustainable hydropower development strategy and GMS with MRCS staff being observers to the GMS Regional Power Trade Coordination Committee. MRC is developing the first basin-wide environmental management strategy for prioritised environmental assets covering the whole basin. MRC aims to explore synergies with GMS’s work in the environmental sector. In cooperation with the GMS Working Group on Environment, MRC plans to disseminate the recently approved Basin-wide Fisheries Management and Development Strategy and discuss implementation of its Project Based Action Plan. Cooperation between ADB and MRC has been relatively dormant in the last SP period and during MRCS restructuring and this may be an opportunity to revitalize the partnership.

85. For other regional cooperation frameworks on the Mekong - such as LMI, Mekong Japan, Mekong Korea - MRC has been strategically engaging by inviting their focal points or representatives to MRC International Conferences and attending their international conferences. This serves to showcase MRC's expertise and role in the region and portray MRC as supportive and engaged at the information sharing level. Synergies are also present with other initiatives such as Mekong Basin Connect which has sponsored a number of dialogues on system level water-energy planning, involving many of the stakeholders engaging with MRC.¹⁷

Dialogue and stakeholder engagement

86. Some demonstrable improvements have been made to communication and stakeholder engagement in recent years. The successful holding of the 3rd Mekong Summit, improvements in the PNPCA process since Xayaburi and the holding of regional stakeholder forums are all indicators of this. Technical reports on water quality and fish and dams, publication of *Catch and Culture*, and the completion of the Council Study are all noteworthy.

87. The challenge for the MRC now is how to improve communication and collaborative work with the Member Countries to ensure greater influence and uptake of this technical work in national strategies, plans and projects. This goes beyond data and information availability, to the application of regional knowledge to shared problems. It requires a more facilitative role from the MRCS and an emphasis on two-way communication and knowledge exchange.

88. There is substantial value in MRC Summits being held every four years. In addition to giving MRC the opportunity to underscore how the leaders value and are committed to the Commission, there is also the attendant International Conferences held before the Summit. They serve as a platform to showcase MRC's leadership in transboundary water resources management, its products and expertise. The International Conference is now an established flagship event in the region that brings together policy-makers, academics, CSOs and the private sector, particularly those related to hydropower development.

89. One issue to be resolved in relation to communication and dialogue is how to further include CSOs' input in MRC's processes, products and strategies and enhance feedback on their inputs.

¹⁷ The program is led by a multi-disciplinary team of experts from the Stimson Center, IUCN BRIDGE Program, University of California Berkeley's Energy Resources Group and involvement of The Nature Conservancy, see <https://www.stimson.org/programs/mekong-basin-connect>

4.3 KRA 3 - Better monitoring and communication of the Basin conditions (Outcome 6)

Outcome 6: Basin-wide monitoring, forecasting, impact assessment and dissemination of results strengthened for better decision-making by Member Countries						
Outputs	6.3	6.4*	6.1*	6.5*	6.2*	

*denotes high relevance

90. The assessment of 'Contribution of Outputs to Outcomes' under KRA3 is that the Outputs are "likely to contribute to the Outcome provided significant issues are addressed". These issues are described below and explained in more detail in Annex 3. This assessment is consistent with the MTR view that KRA 3 is likely to be partially achieved but that significantly more effort is required to strengthen systems, processes, tools and capabilities. This requires a focus on ensuring priority monitoring activities continue and that the data and information systems are fit-for-purpose and embedded in a culture of data stewardship.

KRA 3 - Summary of achievement of outputs and pathway to Outcomes

91. Of the five outputs in KRA 3:

- None have yet been completed, but 40% (2#) are on track to be completed by end 2020;
- 40% (2#) could be completed provided some major issues are resolved;
- 20% (1#) are unlikely to be completed.

92. Most of the outputs under Outcome 6 relate to ongoing services required to deliver the MRC's Core River Basin Management Functions (CRBMFs). This includes data and information collection, management, publication and dissemination in support of forecasting, emergency alert, implementation of MRC procedures and basin water resources planning. Maintaining existing standards and service delivery is not sufficient. The outcome and outputs identify that improvements are necessary.

93. There has been some good progress on delivering key products and services under this Outcome, in particular the various technical components of the Council Study, timely and regular flood forecasts, and the near final draft of the State of the Basin report. The generic pathway to change for the type of output that characterizes KRA 3 (e.g. delivery of monitoring, forecast or modelling results) involves a progression through various steps including:

- agreement amongst all relevant parties to the design of the activity and the operational delivery arrangements so that user needs will be met;
- delivery of the product or service in accordance with agreed standards; and
- supporting the use of the products and services in national and regional decision-making by Member Countries.

94. The MTR finds there are issues to address at all three of the above steps, with challenges in just maintaining existing systems, let alone making improvements. Basic supporting mechanisms, such as the data and information systems require serious attention, with further emphasis needed on prioritisation and joint efforts to deliver the CRBMF activities. Some critical problems are emerging

in relation to the decentralisation of river monitoring activities with funding and human capacity issues needing to be addressed. One Output, *6.2: Regional information systems and database quality assured, standardised, improved and maintained* presents a high risk of not being delivered to an acceptable standard by 2020.

95. There appears to be a considerable gap between the MRC making data and information available for use and the use of these data and information for improved decision-making. The link between MRC products and services and Member Country decisions is not always a direct one. Data and information are produced, used in various analytical studies and assessments, and then potentially considered among many other factors when developing new plans and projects at a national level. This pathway gap means the value of regional monitoring data is not always immediately obvious, and this is likely to inhibit Member Country capacity to allocate funding on an activity-by-activity basis given competing national priorities.

96. Work is underway through implementation of the Strategic Plan to strengthen mechanisms to monitor, forecast, assess impacts and disseminate results. This includes revisions to methodologies, improvements to data management systems and modelling tools, and design work on more integrated, joint monitoring efforts. However, considerable effort is being put just to maintain the existing (outdated) systems, raising questions about the viability of further monitoring and modelling effort and whether the current portfolio is already stretched beyond its resourcing limits. Some prioritisation may be necessary, both in terms of disciplines and of monitoring stations and parameters.

97. The MTR highlights below the Outputs it considers to be of relatively 'high relevance' in KRA 3. They illustrate where a contribution has been, or will be, made in fulfilling the SP and for those coded orange or red, the types of issues that remain to be resolved. Full details for all Outputs are provided in Annex 3.

- Output 6.1 (*Monitoring and forecasting*): **Major issues to be resolved**, with further consideration necessary on the level and the nature of support to the decentralisation process, the priority of different monitoring activities, and the capacity of the flood centre's systems and staff.
- Output 6.2 (*Regional information systems and databases*): **Unlikely to be completed**, due to slow progress with work insufficiently resourced. Improvement is necessary not only on the systems but in the implementation of protocols, staff procedures and guidance essential for supporting a culture of data stewardship.
- Output 6.4 (*SOBR and technical reports*): **On track**, with further steps needed on disseminating the Council Study results through a facilitative role from the MRCS.
- Output 6.5 (*Communication and access to data, information & knowledge*): **Major issues to resolve**, with improvements necessary in the accessibility of MRC data and information including within the organisation.

98. The review of KRA 3 has raised a number of general points to be considered in the remaining period of the SP2016-2020 and in preparation of the next Basin Development Strategy and SP.

Data and information management is a foundation stone

99. The **management and availability of data and information is a foundation of CRBMF delivery** and is often the first point of entry for stakeholder engagement with the MRC. Despite much investment over many years there are some very significant problems with data storage and management across the organisation, including:

- Some data exists only on divisional hard-drives or staff laptops and is not saved and backed-up in the central database (catalogue)
- Cumbersome and inefficient processes for staff seeking to access data and information from a different division than their own, let alone access by Member Countries and the public
- A small number of datasets having been quality assured and uploaded to the central database
- Most data not available for download or visualisation in the portal, or is not up-to-date
- Lack of integrated database capabilities to enable multi-factor analysis of different datasets (e.g. in relation to sediment and hydrology)
- Different and incompatible systems operating at national and regional levels

100. A December 2017 modelling review¹⁸ identified that the MRC data system is less a data management system, more data portal and **“is effectively a catalogue providing access to individual files, metadata is not well managed, associated QA/QC tools need improvement and management of rating curves critical for flow calculations for example is poor”** and that the MRC system was based on “2005 technology”. The authors suggested a need for appropriate tools to display, integrate and export data.

101. Not having a systematic process, and central storage, retrieval and publication arrangements for critical data is highly problematic. Potential loss of data (some Ecological Health Monitoring data has been lost), difficulty in public access, and additional effort required to make data available for analysis (even internally), presents **a very high risk to the credibility of the MRC as a regional knowledge hub**. As the Operational Review noted *“it is clearly evident that these methods of data sharing have exceeded their usefulness, and that wholesale re-imagining of how knowledge is stored, shared, disseminated and secured is considerably overdue”*.

102. **Inadequate systems also undermine support within Member Countries for the decentralisation effort**. If national agencies do not see where the data is going and how it is being used and shared, there is less motivation to continue to invest time and resources in its collection. Some national agencies apparently see themselves only as providers, not users, of MRC data¹⁹. In part this is because these primary data custodians often do not have access to the full regional datasets. This is highly problematic, as the regional datasets only have real value when considered in their entirety. When other national monitoring systems are in place there is marginal benefit to a country from the regional data produced from only its part of the basin.

103. **Some good initial steps have been taken** to improve data and information management including with a more user friendly portal interface and use of *Aquarius* software for hydrological data management and visualisation. However, with a concept note only approved in June 2018, minimal human resources assigned, and no evident project plan for what should really be a considerable infrastructure improvement process, **the MTR has concerns the work will not be delivered to an acceptable standard by the end of the Strategic Plan period**.

104. The Commitment made by Member Countries and Development Partners in their joint high-level statement on joint water data management and information sharing at Siem Reap provides the

¹⁸ Green, A. Podger, G.M. Hayes, J. Apirumanekul, C. and Browder, G. 2017. Water Resource Modelling in the Mekong River Basin: Developing Synergies among National and Regional Modelling Decision Support Systems. Observations and options. Joint World Bank and Australian Water Partnership project

¹⁹ Thu, H.N. and Wehn, U. 2016. Data sharing in international transboundary contexts: The Vietnamese perspective on data sharing in the Lower Mekong Basin, *Journal of Hydrology*, 536: 351-364 (cited in Green *et al.* 2017 referenced above)

impetus to make a step change in the way data and information is managed and it is one the organisation should seize. If performance does not improve so that the MRC's value-add is demonstrated, steps being taken to establish separate data centres in each country could render the MRC's role in data management and sharing obsolete.

Decentralisation of CRBMF monitoring activities is at risk of failure

105. The **availability of high quality data and information is critical** to the MRC's capacity to deliver on its CRBMFs. Time and again, through the consultations done for this review, participants identified the MRC's knowledge base and unique record of historical data as one of its most valuable assets. The data underpins the procedures, studies, assessments, scenario testing and planning on which the regional knowledge base is built.

106. **Many activities are already carried out nationally – the modality of funding is the central issue.** Changes to the initial plan of the 2014 Road Map and the narrowing down from 26 to nine activities indicates there was already a high degree of decentralised implementation within the operations of the MRC. For most activities the on-ground work was already conducted by Member Countries. Decentralisation mostly means a change in the way funding for the activities is sourced. Nevertheless, recognising the importance of the data and information to the CRBMFs, all Member Countries have made strong commitments to the decentralisation process and taken commendable steps to take on greater responsibility for the monitoring activities in difficult circumstances.

107. **Delays in the roll-out of decentralisation indicate the timing of the initial plan was too ambitious**, neither reflecting sufficiently the different capacities of country systems, nor accounting for the major restructuring upheaval and related lack of continuity of MRCS staff. A lack of integration between regional and national monitoring networks has also not helped, although this is something decentralisation should help improve over time, as national agencies take greater control and responsibility for more efficient operations. As at the end of 2018, three activities had been completely handed over²⁰. However, the performance of data collection and transmission for these activities has declined, mostly due to lack of resources for operation and maintenance of HYCOS stations (*near real-time hydro-meteorological parameters*), but also due to a lack of handover agreements specifying what is required by whom and by when (*ad-hoc provision of socio-economic data*).

108. **The HYCOS network appears inherently unreliable** with limited use being made of the data. The number of stations not working increased sharply between 2015 and 2017 because operation and maintenance budgets have been insufficient including factors beyond the control of relevant agencies such as changes in national telecommunications networks. The dramatic decline was addressed by an MRC recovery mission funded by AFD and completed by May 2018. However, performance issues remain. The need to fund this recovery mission through the MRC budget is a clear warning sign decentralisation is at risk of failure, notwithstanding that manual water level data continued to be reported by Member Countries while the telemetry system was not working. Member Countries have emphasised the importance they place on real-time hydrological data, especially Cambodia and Viet Nam where mainstream water levels have a big impact on flood levels. However, to-date the HYCOS data is largely being used only to cross-check and fill-in any gaps in the more reliable manual data for regional flood forecasting purposes.

109. As recognised by the MRCS in proposals it has made to the JC for joint funding of critical monitoring activities, countries are having **difficulty allocating budgets on an activity-by-activity basis**. Funding directly through line agencies can help crystallise the value national governments

²⁰ The three activities completely handed over to Member Countries as of December 2018 are: (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.

place on the work. However, risks include competing national priorities for funding and the need for greater coordination effort to ensure funds available for regional activities across multiple ministries continue to go toward the highest regional priorities. The coordination role of the NMCs throughout the budget process is critical in this regard. In any case a challenge for countries arguing for budget allocation is that, despite some exceptions, they often do not use the data from their component of the MRC monitoring directly. Its primary use comes through the full regional dataset and in the regional products and services, i.e. the value-added work produced by the MRC.

110. **2019 is an important year for decentralisation.** It will be the first year Member Countries are expected to finance part of both fisheries monitoring and ecological health monitoring. It is highly likely the financing objectives for these activities will not be met. Indeed, some countries are already indicating they will not have sufficient national budgets. Two activities proceeding reasonably well are the manual monitoring of rainfall and water levels and water quality monitoring. Both of these are activities for which countries already have well established national programmes and monitoring networks.

111. There has been **insufficient regional support to the decentralisation process.** The 2014 Road Map identified a number of risks associated with the handover of responsibilities. Principle among these was the level of readiness of the countries given gaps in both human and financial capabilities. Recognising this, one of the recommendations of the Road Map was to establish a 'kick-start' fund to support the transition. Ultimately, this fund was not established due to lack of financial commitments. Perhaps due in part, there has been insufficient focus on regional capacity building and transitional support, not only in relation to the MRCS's coordination and technical leadership role but also in terms of joint country-to-country efforts. A lack of regular basic training, manuals and supporting tools in local languages, mechanisms to manage staff turnover and encourage compliance with operations and maintenance procedures have all been a feature.

112. While the Basket Fund could have been used for joint efforts in this regard, there are **no specific outputs identified under this Outcome in the Strategic Plan as supporting the decentralisation of CRBMFs.** Instead, each division is responsible for overseeing relevant monitoring activities under Output 6.1. Having a dedicated Output in the Strategic Plan may have enabled greater regional focus on the transition support and capacity building that was identified as necessary in the 2014 Regional and National Road Maps.

113. Many of the challenges in achieving this Outcome relate to the **lack of a vision about what kind of leaner organisation the MRC should be in 2030.** While the decentralisation roadmap describes how the MRCS and the MCs are expected to operate in future and the staged approach to getting there, there is no clear articulation of the end point. Such a vision would involve consideration of issues such as:

- how much of a technical role will be retained at the MRCS as opposed to a more generalist coordinating role;
- the role and working arrangements of the Expert Groups relative to the MRCS;
- the extent to which the RFMMC should become a centre of excellence or instead provide a more facilitative role for national systems;
- whether a regional monitoring network should exist separate to national networks rather than having a completely integrated LMB network;
- what the absolutely critical monitoring needs are to support MRC's mandate in future, given budget constraints; and
- what role for regional modelling resources in a more operational environment.

114. This lack of vision may be contributing to a misunderstanding between some parties about what decentralisation actually means and what was expected in terms of transition support to get there. Agreeing this future state among all Member Countries and the MRCS would help inform priorities for resource allocation in an increasingly budget constrained world.

Flood and drought forecasting capacity has not kept pace

115. The flood forecasting services provided by the MRC's Regional Flood Management and Mitigation Centre (RFMMC) are highly appreciated by Member Countries. When asked by the review team about the products and services they valued, the river level flood forecasting service was consistently one of the first items mentioned. Responses to the MRC's survey on flood forecast services were also generally either neutral or positive for all of the products identified.

116. That said, Member Countries expressed a strong **desire for improved accuracy and timeliness** in relation to flood forecasting and potential impact zones and this was highlighted most notably following the dam break incident in southern Lao PDR in July 2018. The changing context of the basin to one more regulated by dams and other infrastructure and susceptible to more extreme weather events due to climate change means the requirement for the RFMMC to be nimble and responsive to events is only likely to increase. As identified in the 2017 modelling review, there is a need for enhanced multi-scale modelling products and new techniques and protocols for communicating with communities potentially affected by rapid fluctuations in water levels and more extreme floods and droughts.

117. At present, the **RFMMC is not sufficiently resourced for this future**. There is very limited capacity for the centre to deal with staff absences (due to leave or illness) and to manage succession and on-the-job training in what is a highly specialised field. The Operational Review recommended at least two additional positions at the Centre based on needs identified by the RFMMC including due to additional responsibilities for drought monitoring and forecasting. Relationships between all Member Countries and the RFMMC are critical to strengthening capacity. Building the pool of qualified human resources and improving systems will require a high degree of collaboration on sharing of additional data, exchanging information on dam operating rules on both the mainstream and tributaries, knowledge and technology transfer between regional and national centres and engagement with best practice outside the region.

118. Member Countries need to identify what they want from a regional flood and drought forecasting centre and resource it accordingly. At present, the use of outdated technology, insufficient data access to improve accuracy and a lack of human resources capability all need to be addressed.

4.4 KRA 4 – Leaner River Basin Organisation (Outcome 7)

Outcome 7: MRC transitioned to a more efficient and effective organisation in line with the decentralisation Roadmap and related reform plans						
Outputs	7.5	7.1*	7.2*	7.3*	7.4*	

*denotes high relevance

119. The assessment of ‘Contribution of Outputs to Outcomes’ under KRA4 is that the Outputs are “likely to partially contribute on the current trajectory”. Any outstanding issues related to individual Outputs are described below and explained in more detail in Annex 3. This assessment is consistent with the MTR view that considerable progress has been made in MRC’s restructuring and reform such that KRA 4 is likely to be partially achieved but that there are a few key issues to be addressed, that have been highlighted in the recently completed Operational Review.

120. Of the 5 Outputs in KRA4:

- None have yet been completed, but 20% (1#) are on track to be completed by end 2020;
- 80% (4#) could be completed provided some major issues are resolved;

121. The pathways to change for the outputs under Outcome 7 involve completing structural and operational reforms while also implementing a work programme that is a vehicle for implementation of the BDS and focused on the decentralisation of CRBMF activities – which was also being finalized in the year the reforms were being planned. The foundation has been set to achieve this Outcome, but there is further work to realize the efficiency and effectiveness envisaged and this will take more time. The reform itself required MRCS internal reflection process and political buy-in from Member Countries and Development Partners. It involves questions about budget allocation, alignment with national implementation via the NIPs, new M&E systems, reporting lines, job descriptions, concerns over the relationship and work flow between different divisions in the Secretariat, and staff morale during major changes and a sizable staff reduction.

122. The MTR highlights below the Outputs it considers to be of relatively ‘high relevance’ in KRA 4. They illustrate where a contribution has been, or will be, made in fulfilling the SP and for those coded orange, the types of issues that remain to be resolved. Full details for all Outputs are provided in Annex 3.

- Output 7.1 (*MRCS structural reform implemented and linkages with Member Countries further improved*): **Major issues to be resolved**, with the need to ensure new arrangements and processes are embedded, such as the four Expert Groups, strengthen national and regional linkages with strong engagement of line agencies to facilitate the delivery of CRBMFs, increased uptake of MRC products and the application of knowledge jointly produced; as well as better promotion of MRC Gender tools, particularly the adopting and applying of MRC Gender Tools by line agencies.
- Output 7.2 (*MRCS human resources reform implemented*): **Major issues to be resolved**, despite all the indicators met there is confusion over job descriptions, capacity gaps, application of the new PAR system and other key HR issues, as identified by the Operational Review. In addition, key positions are yet to be filled, a need for more open recruitment, and issues around contract lengths and ToRs have all been identified. Addressing these issues will require internal MRCS reflection and discussions with MCs prior to approval of the new HR Manual.

- Output 7.3 (*MRCS financial and administrative reforms implemented and operationalized*): **Major issues to be resolved**, with revised manuals and management tools, and upgraded accounting systems to help MRC transition to be a more efficient and effective organisation in line with a revised decentralisation roadmap and related reform plans. The MTR assumption is that the Operational Review's key recommendations on financial and administrative systems will be implemented and satisfy MC and donor requirements.
- Output 7.4 (*Annual work plans, and results-based monitoring, evaluation and reporting system for MRC SP and NIPs prepared and fully operationalized*): **Major issues to be resolved**, with greater effort needed to ensure the system and tools are used to support planning and decision-making on major national investments of a transboundary nature and not only for monitoring and reporting on the progress or completion of tasks or tools development.

Secretariat transition

123. The scale and pace of Secretariat transition was immense and delayed much of the SP implementation. Still, much has been done. This may be in part attributable to many key technical staff being retained after restructuring. It also points to the importance of having staff with previous experience working with or within line agencies. For instance, even with limited resources, the right MRCS staff could build on networks in the line agencies to address needed national inputs to the implementation of the SP. This is critical as much of MRC's work involves country buy-in and even more so if consolidation of existing products is prioritized in the near future. The linkages to MCs through national coordinators based in NMCSs are similar to previous SPs and helps with continuity and understanding of the changes in the organization. It is still early to assess how well the Expert Groups are performing. The MTR finds this would be an area that warrants further discussion with MCs. Recommendations can be found in section 5 of this report.

124. The HR reform plans have been implemented but inadequate systems and lack of accountability on financial management have been raised as major issues by the Operational Review. Although the organization restructuring has been mostly completed, the lack of clarity in some positions and the lack of a supervisory role for most Chiefs deserve attention. The latter is important to create stronger teams and also recognizes that a Director may not have the whole range of technical expertise relevant to the work as a consequence of the practice of frequent rotation of these positions and nomination, rather than open recruitment for such a key management position. The MTR supports the OR recommendation and earlier JC decision for open and competitive recruitment of Directors. Ensuring clear criteria, scoring guidelines and a minimum threshold for candidates to reach is good international practice.

125. The Performance Appraisal Review process and new tools are not yet being implemented as "360 degree" assessments as stated for some positions. Performance-appraisal data collected from 'all around' an employee would include his or her peers, subordinates, supervisors, and sometimes, from internal and external partners. Its main objective usually is to assess training and development needs and to provide competence-related information for staff development, not promotion or pay increase. From interviews conducted by MTR, there were sometimes distortions in applying the system. Continuing with this system would require training on giving and receiving feedback to gain the intended results.

126. MRC's core functions which are now at the heart of the MRC work programme are mostly on-going, long-term activities. One-year contracts at the MRCS could be too short to be attractive to qualified professionals who put a premium on job security.

127. Financial reforms have been developed and operationalized but key issues still need to be resolved such as the financial and accounting systems not meeting the MRC's and DPs' needs and not meeting the Basket Fund guidelines. Rapid action is needed to retain confidence of DPs in the Basket Fund arrangements. MRC can resolve these issues provided the relevant OR recommendations are implemented and the discussions with MCs on achieving the 2030 target start soon after this MTR and the OR.

128. On work programming and budget allocation, there is an issue of the lack of explicit priority setting that better aligns resourcing with the work programme.

129. Historically MRC has been focussing on the planning aspects of basin management (apart from the Flood Centre which is already more operational). Future staff planning for MRCS will need to be aware of the gradual shift towards MRC's role in coordinating operational aspects of Basin management as this will have implications for staff positions.

130. Being a leaner organisation means that secondment programmes take on more value. MRC will need to assess the benefits and costs of seconding line agency staff into MRCS (like associate modellers in previous SPs); the importance of JRPs and possibly also more senior Chinese experts, not only in terms of capacity development and contribution to AWP's but also building future commitment to MRC among a cadre of emerging professionals. MRCS could also consider short-term task-specific secondment of MRCS staff in line agencies.

4.5 Cross cutting aspects

Risk Management

131. Section 4.8 of the Strategic Plan outlines the nature of risks facing its implementation and the mitigation measures proposed to reduce those risks. The MTR view on the extent those risks are inherent and the effectiveness of management measures is outlined in Annex 4. While the MTR view is generally aligned with the SP, the MTR considers:

- the impact of Risk 2 (*insufficient collaboration of non-water sector agencies*) should be rated medium or high, particularly given the importance of sectors such as energy to the MRC's work;
- Risk 4 (*difficulty in reaching consensus among Member Countries on critical issues*) has a high likelihood of occurring, rather than medium as it is rated in the SP. This has already been demonstrated on a number of issues in the first half of the SP period;
- the impact of Risk 6 (*limited resources and capacity at national level to implement MRC's decentralised activities*) should be rated high given the issues identified in relation to decentralisation and the importance of the monitoring activities for delivery of all the MRC's CRBMFs;
- the impact of Risk 9 (*ineffective transition to Basket Fund arrangements*) should be rated high given issues raised in the internal audit and OR and the importance of maintaining confidence of all parties in the operation of the Basket Fund.

Gender

132. MRC has a high-level commitment to gender mainstreaming with the approval of the Gender Policy and Strategy by MRC Council in 2000. The MRC Gender Action Plan focuses both at institutional level within MRC as an organisation and in its work programme. It aims to promote a '*gender sensitive organizational culture and working environment*' while ensuring integration of gender in key MRC activities including '*sex-disaggregated data collection, monitoring, development of guidelines and strategies that address different impacts to men and women as needed*'. Evaluating the internal aspects of gender mainstreaming within the MRCS comes under the parallel Operational Review. In relation to its externally focused work programme, the MTR did not find a prominent emphasis on gender mainstreaming except in relation to collecting sex-disaggregated data. It has its roots in part to a lack of direction on the role to be taken up by a regional organisation like MRC over and above the interventions already supported by bilateral, multilateral and government agencies. The MTR considers that greater clarity is needed on the '*gender niche*' of MRC in relation to the specific elements of its work program and the identification of entry points for gender mainstreaming from the perspective of a regional entity focused on integrated water resources management.

Capacity Development

133. The issue of capacity development needs came up in many discussions both with MRCS and Member Countries. This included capacity needs for Secretariat staff and for national level staff, especially in relation to the decentralisation effort. Importantly, there was strong recognition that capacity development does not only involve training and workshops but can be achieved through a range of mechanisms including on-the-job learning, coaching, secondments and temporary transfers, and the availability of additional tools and information resources. Any capacity building needs to be

highly targeted to ensure value for money but should also be recognised as an ongoing process including because of the high staff turnover and restructuring inherent in public sector jobs.

134. During planning for decentralisation, a module-based IWRM Competency Framework was developed to guide MRCS, NMCs and line agencies in both individual and organisational development needs focused on the competencies required for designing and facilitating processes around transboundary IWRM. In the development of national Road Maps for decentralisation, Member Countries also undertook a comprehensive analysis of capacity building needs required to ensure effective handover of responsibilities.

135. The Competency Framework covered a range of important areas. The MTR believes that negotiation and mediation techniques at all levels of the MRC, not just at the MRCS, are particularly important and only becoming more so as further consideration is given to trade-offs, and cost and benefit sharing related to investment decisions. One development partner interviewed for this review suggested the MRC look to Norway for guidance on this subject given its evident specialty in conflict resolution around the world.

136. Another area of traditional weakness at the MRC has been socio-economic analysis. With increasing focus on trade-offs and identification of 'deals' in relation to investment decisions, joint projects and those that have trans-boundary significance, further emphasis on recruiting and retaining staff with an economics background would be beneficial. At present, this lack of in-house expertise and its reflection in MRC products may be contributing to the perception some Member Countries have about MRC work constraining development rather than promoting more sustainable approaches, as referred to in paragraph 60.

137. Capacity needs identified by Member Countries to support decentralisation of monitoring activities cover five main areas:

- Equipment procurement, set-up, handling, maintenance and repair
- Field sampling and laboratory testing, analysis and interpretation
- Data handling and management including QA/QC
- Scientific report writing and communication skills including to local communities
- Management, coordination and oversight of monitoring activities

138. The needs are largely known. However, the approach to capacity development needs careful consideration as to the kind of organisation the MRC aims to be by 2030. As noted in section 4.3, with the downsizing of Secretariat staff, how much technical capacity is retained by the MRCS as opposed to more generalist coordination skills has not been fully resolved. Similarly, in relation to the role of the Regional Flood Centre and how much this is to be a 'centre of excellence' in its own right or play a more facilitative role for national systems, will be an important determinant of the kind of capacity development needed at the MRCS relative to Member Countries.

139. The Operational Review highlighted the need to focus on 'organisational development' rather than 'organisational reform' and that is something the MTR supports. It will be important to consider this development for the organisation as a whole – including MRCS, JC and Council Members, NMCs and line agencies with regard to the future vision of the MRC by 2030 and recognising that the needs are variable across different countries. Different capacities among Member Countries provides an opportunity for greater use of country-to-country knowledge sharing and capacity building.

140. In addition to human capacity needs, there are substantial technical capacity improvements necessary right across the organisation. Principle among these are improved data and information systems (for which work is already underway), new modelling capacity with improved integration of

models across time scales (with the capacity for operational flow assessments), and new systems, techniques and tools for flood forecasting including better integration of near real-time data.

Sustainable Development Goals

141. MRC has prepared a chart demonstrating the multiple linkages and points of interaction between its operations and the individual SDG goals²¹ that also demonstrates the breadth of MRC's mandate. To make a meaningful contribution, it may help to be more targeted and focus on a narrower sub-set of SDGs. The MTR proposes that the next step in the analysis is to identify specific MRC activities across a smaller number of SDGs where MRC involvement can be seen to supplement national initiatives and that regular reporting linked to the MRC Indicator Framework would be limited to these rather than a wider more diffuse set. Some of the key SDG targets where concrete contributions can be defined and MRCS could assist MC's in aligning planning processes to achieve the SDGs and in SDG reporting are:

- 6.5 - implement integrated water resources management at all levels, including through transboundary cooperation as appropriate;
- 9.1 - develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all;
- 12.2 - achieve the sustainable management and efficient use of natural resources;
- 13.2 - integrate climate change measures into national policies, strategies and planning;
- 15.1 - ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements;
- 15.9 - integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts;
- 17.14 - enhance policy coherence for sustainable development.

M&E system

142. The M&E system is well designed and descriptions in the M&E manual are clear. The data is useful for regular progress reporting every six months and the dashboard is a good effort to better use technology - making the progress of MRC tasks and activities readily available to planners and staff. The system is much more streamlined and effective than the previous programme-based M&E system that reinforced the 'silo' way of thinking.

143. While the focus has been on better information flows and availability, there is less attention on the feedback loop from management in terms of addressing any shortcomings and ensuring better decisions and quicker interventions are made based on the evidence at hand. This is critical as an input to MRCS Management meetings that would normally address implementation issues as they arise, but which have not been held regularly nor methodically address programme implementation.

144. However, for this feedback loop to be effective, the indicators need to be relevant to the outputs, comprehensively cover pertinent aspects of the Outcomes, and must be measurable. Most of the Output indicators are logically designed and linked closely to the preparation of the Output and its uptake. Some however are not so well targeted, for instance the two indicators on gender

²¹ <http://www.mrcmekong.org/assets/Posters-leaflets/PRINT-SDG-v2s-final-LRes.pdf>

tools uptake – although very important activities that need to be implemented, would be better linked to a different output related to basin planning rather than Output 7.1. (See also findings and recommendations on Gender in paras 132 and 203). Two of the indicators for Output 2.7 on waterborne transport are more Outcome-oriented. Another relates to the indicator for Output 3.2 and the question of relevance as the number of enrolments in courses where MRC products are only a very small component does not shed much light on the influence of MRC's work. Now that there is a dedicated M&E capability in the Secretariat, and experience has been gained in reporting on outputs and indicators, the lessons can be learnt for the next round of strategy formulation.

145. Linkages between the Outputs and Outcomes tend to be assumed rather than made explicit. Indicators are focused either on completion of a product (e.g. strategy, guideline, etc.), or the adoption of the product at national level. The means of moving from product to uptake and required actions at the national level to achieve the desired outcome are not generally articulated through description of an impact pathway. Also, the 'quality' and 'acceptability' aspects of the Outputs are not captured in the indicators. There are various reasons why some MRC products are not taken up, including perceptions of quality, relevance, acceptability and sensitivity, or time and budget constraints. Recommendations for improving the design of indicators for the next SP and enhanced M&E reporting are provided in Section 5.

5. Recommendations – building on achievements

146. The following recommendations are primarily aimed at the remainder of the Strategic Plan period to end 2020 but also look forward to the next SP and beyond in terms of ensuring the advances already made are consolidated and provide the basis for a sustainable MRC beyond 2030. Recommendations relating to the decentralisation of core river basin management functions take the period 2019-2030 as the framing for a more orderly and effective transition.

147. The four main areas of the MTR recommendations are:

- **Consolidation – from Outputs to Outcomes**
- **Core functions and Decentralisation – joint efforts and transitional arrangements**
- **Partnerships for regional coordination**
- **MRC operational focus – responding to increased river regulation in the Basin**

148. A fifth area covers **MRC systems**, particularly internal processes relevant for capacity building, formulation of the next SP and improvements to the M&E system. Comments related to preparation of the next SP are incorporated with discussion of the next BDS in section 5.1.

149. MRCS is also encouraged to actively **follow up on the ‘high relevance’ Outputs** as characterized by the MTR in Section 4, particularly those that require specific actions to reach closure (i.e. those colour-coded orange and red).

150. The recommendations were presented as a draft for discussion with Member Countries, the MRC Secretariat and Development Partners in January 2019 and have been revised on the basis of feedback received. Based on its assessment and feedback, the MTR has assigned 19 recommendations as **short-term priorities** (marked by †) and 8 recommendations where the priority is more in the medium term.

5.1 Consolidation – from Outputs to Outcomes

151. Adapting the knowledge and guidance generated by MRC processes to enable more effective uptake at national level and support inter-country discussion on development issues is essential for achieving MRC’s mission. The MRC and Member Countries would benefit from a consolidation phase, prioritizing uptake and the use of key MRC outputs at a national level over new activities. This will require resource allocation for raising awareness, national uptake activities with relevant government agencies and a greater emphasis on facilitating a shared understanding of the key aspects to take forward. Priorities are identified based on the MTR assessment of progress in implementing the SP2016-20 and broader issues related to the Basin Development Strategy.

152. One other major area of consolidation is covered in section 5.2 on rationalising the monitoring network and ensuring the Joint Environmental Monitoring activity is fully effective (recommendation 2.5). In this section the MTR focuses recommendations in the following six areas:

- **Implementation of MRC Procedures**
- **The uptake and integration of major Outputs**
- **Upgrading the MRC Information System**
- **Upgrading the Regional Flood Management and Mitigation Centre**
- **Strengthening linkages with National Indicative Plans**
- **Nature of the next Basin Development Strategy**

153. Consolidation will require choices on:

- setting priorities in annual programming (which ideas to support and which new ideas to defer to a later date or drop);
- strengthening internal competency in key functional areas;
- a more facilitative process for the follow up of completed Outputs and resolution of disputed issues.

Implementation of MRC Procedures

154. As noted in the briefing note to the recently concluded 25th MRC Council meeting, it has been 23 years since the 95MA was signed and although many elements of the MRC Procedures are operational, there are still some elements of them to be finalised or implemented. Experience has been gained with implementation of many elements of the Procedures with the PNPCA process being most visible externally. After initial shortcomings in its implementation, the PNPCA process has evolved and was considered effective for the Pak Beng case with agreement on a Joint Action Plan. A review of the implementation experience and lessons from PNPCA is currently underway. The Procedures on Water Quality have also been considered effective. Limitations with the other three Procedures are discussed in section 4.2 and these need to be overcome to allow a full and balanced implementation of the full set of Procedures so that they work as intended as a group. There are other aspects of the 95MA legal framework that are covered elsewhere in the recommendations.

Recommendation 1.1: MRC Procedures. † *Particular emphasis is needed to resolve outstanding issues of implementation of Procedures and related Technical Guidelines, namely:*

PMFM: *Additional efforts are required to gain approval of the Technical Guidelines and ensure mechanisms are in place to provide notice to Member Countries in the event that the defined critical flow thresholds are being approached.²² Providing a Commentary like that done for PNPCA would help raise understanding of its role.*

PDIES: *Undertake a review to ensure the Procedure is responsive to the changing context of the Basin and needs of MRC, the decentralisation process and the forthcoming agreement on the MRC Indicator Framework. Explore ways to overcome difficulties in implementing PDIES and obtaining data for MRC activities.*

PWUM: *Reassess the role of PWUM in relation to basin planning and monitoring and explore whether alternative approaches can be adopted, including the application of remote sensing technologies to provide water accounting information.*

PNPCA: *Recognizing that a review of PNPCA is underway, explore ways to receive longer advance notice of a PC submission to reduce risk of crowding out and delaying other MRC activities in the work programme and identify improvements for providing feedback to stakeholders on their inputs to the process.*

† - denotes short term priority

²² The PMFM website needs to be updated with the latest draft of the Technical Guidelines to replace the previous 2011 version. Tracking of cumulative flow volumes into Tonle Sap and the dates of reversal of flows would be useful additions to the webpages. It would help if the PMFM site is accessed directly from the Procedures tab of the MRC main menu.

Uptake and integration of major Outputs

155. MRC has made significant achievements in the form of basin-wide studies, strategies, action plans and guidance material. Efforts are being made to follow up on their recommendations and agreed actions and in the past some of the major studies have influenced development thinking, including studies carried out by the previous Mekong Committee. However, more recently, the overall level of adoption and uptake at national levels has been limited. Multiple factors are behind the delays including constraints on resources; perceptions of bias towards 'conservation' rather than socio-economic development; concerns of one or more Member Country that hold up approval process; limitations on the modus operandi of MRC in facilitating resolutions; or the lack of a persuasive case that the additional workload for national agencies will bring commensurate benefits. Enhancing efforts on uptake is essential if the investments made in the MRC knowledge base and joint processes are to yield returns and the pathways strengthened between the outputs of the Strategic Plan and the outcomes envisaged in the Basin Development Strategy.

156. The MRC Council Study initiated in 2011 was a major undertaking. Although a response to the proposal for the first mainstream hydropower dam in the LMB, it examined a range of developments in other sectors and their potential impacts including from irrigated and non-irrigated agriculture, flood protection and industrial and domestic water. A compilation of Council Study recommendations is being prepared by the MRCS and taking these forward requires extensive national discussions with line agencies to assess the implications for them and the nature of follow up activities and support. For example, one high-level recommendation called for regional and national planning processes to consider benefit sharing and trade-offs, recognizing that costs and benefits accrue inequitably to different stakeholder groups. This recommendation is consistent with Strategic Priority 4.2.2 of the Basin Development Strategy, namely to '*Optimize Basin-wide Sustainable Development and Cost and Benefit Sharing*'.

157. The ongoing activity to prepare an updated Sustainable Hydropower Development Strategy is consistent with this BDS priority and aims to '*explore alternative hydropower development pathways that enhance benefits beyond national borders and minimise adverse transboundary impacts while supporting water, food, livelihood, and energy security*'. It has undertaken an analysis and initiated a discussion on alternative development pathways, but there are limits to how far this type of discussion can move forward within a technical forum. What is needed now to move forward the role that BDS envisages for MRC is a higher level policy paper. The paper would frame the issues from the perspective of Member Countries within the broader basin perspective and demonstrate how various alternative development paths can fulfil national as well as regional development aspirations. This may need to involve inputs from national policy think tanks in the MCs or adoption of a 'Track 1.5'²³ approach to help elevate the level of discussion to the highest level of national decision-making.

158. MRC's recent influence on hydropower development through PNPCA and the Preliminary Design Guidance has focused mainly on the mitigation aspects of individual project designs. Supporting basin-wide assessment of development alternatives and trade-offs as foreseen in the BDS would involve MRC earlier in the planning process when a broader set of options exist. It would be appropriate and consistent with the 95 Agreement not only for hydropower but also other major infrastructure interventions such as irrigation development. This is a discussion on benefit and cost

²³ 'Track 1.5' dialogues or diplomacy refers to processes that involve both state and non-state actors. For example, by involving national policy think tanks and exposing them to a full understanding of the underlying technical issues, there is more likelihood that there will be balanced consideration of sensitive and controversial issues.

sharing at a regional to national scale. For the national to local scale, MRC has already undertaken a review of mechanisms to transfer a part of the revenue stream of projects to local communities.²⁴

Recommendation 1.2: Benefit sharing.[†] Prepare a high-level policy paper for discussion with key national ministries involved in the benefits, costs, impacts and trade-offs of major infrastructure projects envisaged in the Basin's possible long-term development scenarios. The paper is proposed as a precursor to discussions at policy level that would agree on the scope of benefit/cost sharing and trade-off discussions such as those recommended by the Council Study and identify the role for MRC and its Secretariat.²⁵

159. Apart from the SHDS, several other follow up actions of relevance to the Council Study recommendations have been taken up through existing and new initiatives such as the Basin-wide Fisheries Management and Development Strategy and Joint Environmental Monitoring activity.

160. As well as 'monitoring' aspects in the BFMS which are covered under the discussion of decentralisation of CRBMF activities, the MTR highlights the importance of actions supporting the 'management' and 'development' related priorities in the Strategy. There is an urgency to go beyond completion of the necessary survey, database and analytical work identified in the BFMS so that progress can be made in promoting management of the resource. This includes management and restoration of key habitats and maintaining and restoring connectivity including floodplains and wetlands. External financing beyond the existing commitments in the BF may be required to fast track this work in parallel with ongoing planning processes in the basin for infrastructure development.

161. The MASAP has been a long time in preparation and to some extent country actions on climate change adaptation have overtaken it. There remains a need for the action plan to be implemented given its relevance across so many of the MRC's spheres of activity and links with national climate adaptation processes. Similarly, there are other outputs prepared under the former Climate Change and Adaptation Initiative that have not yet been widely disseminated or taken up.²⁶ The MRC needs to prioritise its role *vis a vis* national and ODA-supported activities of which there are many. The MTR suggests emphasis is given to practical applications including a screening tool for regularising the process of climate adaptation in MRC's sectoral and thematic work, including joint projects;²⁷ and upgrading forecasting capabilities for extreme events including flood and drought (included in recommendations 1.9 and 4.2).

162. There are other initiatives which have a long history and where consolidated efforts are needed in the next two years to facilitate uptake, including MASAP, TbEIA, Navigation Master Plan and the updated Preliminary Design Guidance.

²⁴ See 'National-to-Local Benefit Sharing Options for Hydropower on Mekong Tributaries' prepared under the MRC's former Initiative on Sustainable Hydropower, <http://www.mrcmekong.org/assets/Publications/Reports/Regional-Synthesis-Draft-Executive-Summary-FINAL.pdf>. Many of the benefit sharing experiences from around the world were presented at MRC's Mekong2Rio Conference in 2012, <http://www.mrcmekong.org/mekong2rio/>

²⁵ This will likely require involvement of national policy think tanks as well as other groups engaged in the energy sector and evolve into a Track 1.5 activity that brings alternative development pathways to the attention of policy makers, reflecting the benefits of such approaches from national perspectives.

²⁶ See <http://www.mrcmekong.org/about-mrc/completion-of-strategic-cycle-2011-2015/climate-change-and-adaptation-initiative/climate-change/about-ccai/> including the interactive climate atlas

²⁷ Similar to those used by the ADB, see <https://www.adb.org/publications/climate-risk-management-adb-projects>

Recommendation 1.3: Building uptake into work plans.† *Future regional processes need to consider uptake from the early planning stages including charting out the pathway to impact; involving the responsible line agencies at the requisite levels of seniority; and including resources to support capacity building during the development process and for eventual uptake processes at national level. After key regional meetings, MRCS to circulate a short briefing paper in local languages to Director-levels in MC line agencies that summarizes the meeting conclusions and the remaining issues from individual country perspectives.*

Recommendation 1.4: Prioritising outstanding uptake.† *For completed studies, strategies and guidelines, the MTR recommends priority is given to supporting uptake of those that have the greatest relevance to the BDS Strategic Priorities. This will require a process of prioritisation within BFMS and MASAP highlighted above and the Master Plan for Waterborne Transport.*

163. The **Expert Group** arrangements for supporting decentralised operations and ensuring greater alignment between national line agencies and the work of the MRCS Divisions is at an early stage and evolving. To be effective and attract the appropriate levels of involvement there has to be a perceived need, for example an activity that clearly has urgency and relevance, (the reasons why participation in the PNPCA process is successful). Meetings also need to occur sufficiently frequently to be responsive to the agenda before them. A concern about the current Expert Group arrangement is the sectoral and technical nature of MRC's work means that two or three disciplines may be involved per Division depending on the Output being developed. This argues for a sub-group arrangement which the MTR understands is being planned.

164. Proposed sub-groups include fisheries, energy, navigation, and a combined hydro-met and flood forecasting sub-group. The first three are relevant to progressing key issues on sustainable hydropower, actions for fisheries management at a national level and implementing the Master Plan for Waterborne Transport. A combined sub-group on hydro-meteorological monitoring and flood forecasting would be beneficial to progress issues related to the future of the RFMMC and the more effective use of hydro-meteorological data as referred to in Recommendations 1.9 and 2.5.

165. Lessons can be learnt from the former Fisheries and Navigation Programmes that were effective at creating uptake opportunities due to their linkages with line agencies through the Technical Advisory Body (TAB) and the Navigation Advisory Body (NAB). Meeting schedules of the Groups will need to respond to the timelines of specific tasks rather than a regular schedule and the format needs to be working in nature rather than a conventional regional meeting format. Getting ownership at early stage of developing recommendations through such working relationships will facilitate achieving uptake in countries afterwards. In some less-sensitive cases, as envisaged in the EG TOR, countries may take up chairing and leading the work of these groups with progress reported to JC and Council by them rather than the Secretariat as historically has been the case. These comments apply to the EGs associated with three MRCS Divisions. The Strategy and Partnership Group has a different set of challenges due to the broad base and diversity of MRC's stakeholders.

Recommendation 1.5: Expert Group Sub-groups.† *Expedite the establishment of sub-groups for the three thematic Expert Groups and define their mandate based on lessons learnt from earlier arrangements including the TAB and NAB and other successful arrangements, e.g. on water quality. Sub-groups proposed include Fisheries, Energy, Navigation, and a combined Hydro-met and Flood forecasting sub-group. In preparation, each Expert Group would agree a rolling 3-year work plan and identify a country or line agency lead for each sub-group that is assigned to progress particular actions. Continuity of personnel with each sub-group with technical expertise and appropriate level of seniority is important for the effectiveness of the sub-groups. Consider the trialling of a country chair of the groups, similar to the practice in ASEAN, supported by MRCS on technical issues.*

166. Official adoption of some studies, guidelines and strategies has been delayed due to the concerns from one or more MCs which in part relate to the status of those outputs and the extent they become mandatory or are considered advisory and their use voluntary. One perspective comes from a legal interpretation that such instruments cannot become mandatory unless ratified by the national authority. There is however a 'softer' perspective that emerges from the spirit of cooperation that the signatories to the 95 Agreement endorsed and which has been reiterated on a regular basis by subsequent MRC Council meetings and Summits. Here there is an implicit expectation that anything approved by Council or JC would be implemented.

Recommendation 1.6: Alternative approval process for guidelines/studies.[†] As a way to move forward on a number of stalled processes, consider an alternative form of wording to the current practice using 'approve' for all types of Outputs produced by MRC and submitted to the Joint Committee or Council. The MTR proposes that whereas strategies and plans require approval, a possible alternative for guidelines or studies is following finalization at the respective regional meetings for the JC to 'recognize' the Output for working purposes. This is stronger than both 'acknowledge' and 'take note' but less constraining than 'approve' or 'concur with'. Another option is to use 'agree without prejudice for working use' where the overall approach is accepted and the document can be used even though it is not mandatory and there may be caveats/limitations. This would allow publication of the Outputs, their use where individual countries agree, and further development and modification in light of the experience gained in applying it. Clear criteria would need to be included in the Rules of Procedure to avoid a situation where approval of policy recommendations is sought using this arrangement.

Recommendation 1.7: Using the TbEIA and PDG.[†] For the TbEIA and updated Preliminary Design Guidance, the MTR supports the use of the draft versions as working documents and encourages MRC to reach a conclusion that is acceptable to all MCs, for example based on a formulation such as 'agree without prejudice for working use'. The MTR is however concerned about the proposed change in scope of the TbEIA as this would undermine its utility in relation to the 95MA and contrast with international norms of good practice. Further clarifications on the status and intended use of TbEIA will be needed. One option is to retain the original scope and gain experience over the next two years in its use through application on the mainstream dam proposals after which it can be amended and applied more widely.

Enhanced support systems for collecting, transmitting and managing data

167. The quality of the systems used to collect, transmit and manage data at both a national and regional level are essential to a sustainable monitoring network and allowing effective use of the outputs. Data and Information management systems need to be urgently modernised and systematised across all activities. The MTR recommends the MRCS and MCs prioritise the completion of the upgrade of the MRCS information and database systems over the remainder of this Strategic Plan period, ensuring all historical data is uploaded and accessible to stakeholders by the end of 2019 and taking steps to reinvigorate a culture of 'data stewardship'. This would include:

- i) having all official and approved data available consistent with an MRCS Information Access Policy (OR Recommendation 28) and starting from the position that all its information assets are matters of public interest, public record, and have been developed using public funds. Ideally this would involve data being available for direct download through the website rather than on request;

- ii) enabling integration and cross interrogation of different datasets within the same database (e.g. sediment, hydrology and water quality);
- iii) updating protocols on the management, use and sharing of specific categories of data, as necessary;
- iv) ensuring linkages between national and regional databases so that a single source of truth can be established and all Member Countries are working from the same source data;
- v) providing guidance for all staff with data management responsibilities on their obligations to ensure quality assured datasets are kept up-to-date and maintained within the MRC-IS.

168. In addition, the MTR recommends the *Expert Group on Data, Modelling and Forecasting*, prepare a concept note on harmonising the operation of all like-for-like monitoring stations and sampling procedures over time in relation to data transmission and management systems (software, telemetry, QA/QC processes), and O&M procurement arrangements with a measured, incremental approach to achieving higher standards and more reliable operations across the entire LMB.

Recommendation 1.8: Upgrade Information System.† *The MRCS prioritise the upgrade of the MRC-IS over the next two years by establishing and resourcing a task-force of MRC staff and external IT support, and overseen by a senior executive project committee within MRCS, to ensure the MRC-IS upgrade is completed and all historical data is uploaded and accessible to stakeholders in accordance with an MRCS Information Access Policy by the end of 2019.*

Upgrading the Regional Flood Management and Mitigation Centre and MRC modelling capability

169. The MTR recommends the MRC commission an independent technical and operational review of the RFMMC's systems, infrastructure, products and services, capabilities and future needs in order to identify options for an enduring business strategy for the Centre, having regard to:

- The changing operational and institutional environment in the Lower Mekong Basin including effects of reservoir storage
- Adding new responsibilities for drought monitoring and forecasting
- Best practice in forecasting systems and processes in the region and globally including use of satellite observations
- The potential for implementing new cost-effective technology and forecasting techniques and improving reliability of 4-5 day forecasts
- Opportunities for improved integration with national forecasting centres and partnership opportunities with other regional bodies
- The availability of riparian technical expertise within the region and secondment opportunities to RFMMC

170. Such a strategy would identify the gap in the market the Centre is best placed to fill, what its primary value-add is within the region, the products and services it is best placed to provide given market demands, resource limitations and what others may be better placed to deliver, how it could better interact with national centres and other regional bodies to better serve the implementation of the 1995 Mekong Agreement, its internal structure and position within the MRCS, and the cooperative institutional arrangements and human and technical capabilities required for success. The OR also recognizes the need for upgrading the RFMMC systems (OR recommendation 19) however the MTR feels that further independent review is needed from specialists with flood

forecasting experience at this scale before detailed recommendations on software and staffing levels can be made. This includes consideration of compatibility with national forecasting systems in MCs and China. Also, the MTR is not convinced of the case for RFMMC to be a separate Division (OR recommendation 18).

171. The review would draw on existing proposals from the RFMMC and a review of modelling in the Mekong River Basin funded by the World Bank and Australian Water Partnership. One or more options for an enduring business strategy could then be put to the Council for consideration of investment in ensuring Member Countries have the RFMMC they want and are prepared to fund as well as an updated Decision Support Framework suited to the next decade and beyond.

Recommendation 1.9: Upgrade flood forecasting capability.[†] *The MRC commit to an upgrade of regional flood forecasting capabilities and commission an independent technical and operational review of the RFMMC within the first 6 months of 2019 in order to develop options for an enduring business strategy for the Centre that positions it to meet Member Country needs within a rapidly changing institutional and operating environment.*

Recommendation 1.10: Upgrade modelling capability. *Supplementing the recommended upgrade of flood forecasting capability, MRCS to make a firm proposal for upgrading the DSF taking into account recent reviews and MC agreement on modelling platforms, including to ensure integration across time-scales reflecting the increased operational focus in basin water management.*

National Indicative Plans

172. The National Indicative Plans are an integral part of delivering on the Basin Development Strategy and contain elements relating to implementation of MRC regional processes including recurrent decentralised activities, joint projects between two or more countries and national projects that have regional significance. Formulating the NIPs is an evolving process and there are considerable differences between them in terms of their coverage and resource requirements. Some projects are directly linked to outcome of MRC related activities while others have other origins. One question raised in the reviews was a concern over limited levels of ownership by respective line agencies.

173. Difficulties are experienced due to a mismatch between the time period for the NIPs and national budgeting processes meaning delays are inevitable unless other sources of funding are identified as in the case of Thailand. The MTR considers that a more rigorous process is needed for including the follow-up actions from MRC processes and outputs in the NIPs which may include strategy and policy interventions at national level. Also, for the basin development planning role of MRC to be more attuned to the major infrastructure projects and questions of trade-offs, (see Recommendation 1.2), then prospective projects would also need to feature in the NIPs. Their absence alludes to a mismatch between the BDS and the implementing vehicles of the SP and NIPs. Apart from a reference to irrigation in Thailand, the other major projects planned in Cambodia and Lao PDR are missing, which limits scope for discussion of them in a regional context until late in the planning process when PNPCA is initiated.

174. Given the different timeframes of components of the NIPs, (recurrent CRBMs that continue year by year; project specific timelines of generally 3-5 years; and periodic uptake initiatives as MRC Outputs reach maturity), there is a need for a more flexible formulation process.

Recommendation 1.11: Funding and scope of NIPs. *As part of the transition process, more emphasis is needed on aligning the process of formulating the NIPs with national budgetary cycles. An arrangement where different timeframes are used for different components of the NIPs may help, for example maintaining the overall 5-year horizon but including annual updates to accommodate new regional and joint initiatives. To better align the NIPs and the BDS, the list of national projects needs to reflect all major infrastructure projects that have regional significance and which are in various stages of planning in country. Funding of joint projects and regional follow up activities may come from multiple sources whether national, bilateral or regional. Each NIP should be accompanied by a funding mobilisation strategy which identifies target funding sources and the necessary steps to access those sources. Given its knowledge of individual Development Partner priorities, MRCS could assist in preparation of these national strategies. Where two or more countries agree, the LMC Special Fund may also be explored as a potential source of funding which would help to strengthen their cooperation with MRC.*

Nature of the next Basin Development Strategy:

175. The mapping of progress on the SP Outputs to the BDS Strategic Priorities in section 4 of this report demonstrates there is a lot still to do, particularly in relation to section 4.2 and 4.3 of the BDS. This is not too surprising given the disruption of downsizing the Secretariat, internal reorganisation, staff changes and decentralisation. If steps are taken in early 2019 to address the issues identified, then the MTR is confident that much can be achieved by the end of the SP period. This does though require a reassessment of priorities and the allocation of resources across the organisation.

176. One area where the MTR considers savings can be made is in the formulation of the next BDS and SP. In the past, these have been very resource intensive both in terms of generating the underlying analysis, drafting the documents and seeing them through the approval processes. BDS 2016-2020 remains relevant well beyond 2020 and so only a very 'light touch' update is recommended. This could be sufficient even for the next BDS to cover a ten year period 2021-2030 which then also coincides with the targets for SDG achievement and the decentralisation of CRBMFs.

177. The MTR considers that sufficient modelling has been carried out, for example in the Council Study and for various development pathways of the SHDS, and need not be updated unless dramatically different scenarios are proposed. The uncertainty over future climate impacts is so great that the envelope of existing modelling scenarios is sufficient to cover the next planning period. Similarly, the MTR is not enthusiastic about the formulation of an overall Indicative Basin Plan for the LMB. Experience with basin planning is that they become outdated very quickly and unless the Plan has elements to address all major infrastructure projects under consideration it will be dismissed by external stakeholders as irrelevant. A greater emphasis on joint projects (for example as identified in the various sector strategies and action plans) can be achieved within the BDS while also clarifying how MRC engages in the early stages of the major projects currently under consideration by Member Countries (see recommendation 1.2). This earlier engagement would then provide a better basis for any subsequent PNPCA process.

Recommendation 1.12: Formulating the next BDS and SP. [†] *Take a 'light touch' approach to updating the Basin Development Strategy for 2021-30 and Strategic Plan for 2021-25. The BDS has a scope broader than MRC alone and needs to be proactive in reflecting the changing context in the Basin as discussed in Section 3, for example using foresight analysis to identify emerging national and regional challenges and opportunities. The SP needs to reflect the following in support of BDS implementation:*

- MRC's core functions including monitoring and other priorities emerging from this Review;
- revised decentralisation roadmap;
- MRC's greater role in coordinating basin operations in parallel to its planning role.

5.2 CRBMFs and Decentralisation - joint efforts and transitional arrangements

Decentralised monitoring

178. The decentralised monitoring activities underpin the delivery of all the Core River Basin Management Functions of the MRC. They are essential to the MRC's role as a regional knowledge hub and a platform for water diplomacy. The basis for MRC monitoring systems to be effective in delivering the CRBMFs is largely in place. A substantial effort over many years has led to the design and establishment of high quality river monitoring activities covering environmental disciplines of relevance to the 1995 Mekong Agreement (hydro-meteorology, sediment, water quality, aquatic ecology and fish), as well as a uniquely targeted survey examining the wellbeing and livelihoods of water-dependent communities along the mainstream (i.e. SIMVA).

179. Maintaining these activities requires ongoing investment in basic data collection, analysis and reporting, support systems, and in ongoing capacity building and refinements to methodologies to ensure they continue to meet evolving basin needs and priorities. As resources decline, choices will need to be made about what to continue, what to cease and what to scale-back to a more sustainable form. The decentralisation process itself is intended to help crystallise this choice by encouraging Member Countries to consider carefully what is absolutely critical to support regional needs and what is a relative luxury in a more resource constrained world.

180. Member Countries have recognised the value the MRC provides through their commitment to complete riparian financing of the organisation by 2030 and have made good progress in increasing their contributions to the MRC budget in-line with that commitment. This progress stands in contrast to the evident difficulty countries face in obtaining funding support on an activity-by-activity basis through national agency budgets, and the risks this now poses to the continued delivery of MRC monitoring activities. National line agencies have a difficult case to make when finance ministries point to the national funds already committed to the MRC central budget.

181. It is apparent to the MTR that the implementation of monitoring activities for regional needs will require joint efforts to resolve, recognising the differing capacities between countries and the degree of readiness to take on complete responsibility for financing. The nature of these integrated monitoring activities is that if one country fails to secure sufficient budgetary resources it has the potential to undermine the whole regional effort – the value is in the whole, not the constituent parts. Recognising the substantial commitment Member Countries have made to self-financing of the MRC and that some activities are more efficiently delivered through joint arrangements, the MTR recommends:

- a more gradual transition process for decentralisation between now and 2030;
- greater emphasis on transitional support through a dedicated joint funding facility;
- a systematic and focused capacity building effort in support of decentralisation;
- hard choices are made about monitoring activities that could cease, be scaled-back or re-designed as informed by a comprehensive audit of monitoring activity across the LMB.

i. A more gradual transition process for decentralisation between now and 2030

182. The decentralisation of CRBMFs is happening at an extraordinary pace, given the level of readiness within Member Countries and their differing capacities and needs. The MTR is not convinced such a pace is necessary, and indeed is putting the continued availability of critical data at risk.

183. A more gradual transition process could mean the handover of financial responsibility to Member Countries would more closely follow the trajectory of self-finance of the MRC, from the 23 per cent it is today to the 100 per cent it is expected to be in 2030. The MTR recommends that existing handover agreements should stand but that a more gradual transition schedule could be applied to activities for which agreements have not yet been signed, in particular for fisheries abundance and diversity monitoring and discharge measurement and sediment monitoring. A handover schedule approximating 25% Member Country contributions in 2020, 50% by 2025 and 100% by 2030 might be appropriate. The SIMVA survey is already planned to have a longer transition arrangement along these lines and any additional activities identified for decentralisation should also have an appropriately long handover schedule.

Recommendation 2.1: Finalise handover arrangements.[†] *For decentralised monitoring activities that do not have existing handover arrangements in place, develop agreements with Member Country contributions of around 25% in 2020, 50% in 2025 and 100% in 2030 to align more closely with the transition to self-financing*

ii. Greater emphasis on joint transitional support and capacity building with dedicated regional funding

184. The key challenges to effective decentralisation are sufficient budgetary resources and the technical and managerial capacity of national staff to effectively integrate regional activities into their work. Both of these issues relate to the level of support that all parties provide each other through the process, recognising their differing capabilities and level of readiness.

185. With the focus over the past two years having been on establishing handover arrangements, implementing organisational and administrative changes, and resolving methodological issues with some activities, there has been insufficient focus on national level capacity building and transitional support to the decentralisation process. This is particularly so in terms of country-to-country support but also in relation to the MRCS's coordination and technical leadership role.

a. Regional Funding Support

186. The MTR recommends the Member Countries establish a **Joint Decentralisation Support Facility** using the Basket Fund and allocated under the decision-making authority of the JC to capacity building, knowledge sharing, and maintenance support where it is more efficient to do so at a regional level and to ensure ongoing availability of critical data for regional needs. This would involve setting aside an agreed quantum of funds each year as part of the annual work planning process for transition support activities and could be topped-up by Member Countries and Development Partners if desired. The implementation of this Facility by the MRCS could be through a sub-account of the Basket Fund and:

- i) would be supported by clear principles and criteria to guide the JC in allocating funds and their disbursement by the MRCS in accordance with the Annual Work Plan approved by the Council. The facility should not lead to a *de-facto* re-centralisation of decentralised activities. Criteria for allocating funding could include:

- the extent to which the expenditure of funds is more efficient at a regional level;
- the criticality of the data to the delivery of the CRBMFs;
- the role of knowledge sharing and capacity building associated with the use of funds;
- any supporting work required to transition from this financial arrangement over time.

The Facility would not be used for the MRC's agreed contribution to each activity during the transition period. This would continue to be budgeted by each division, as necessary.

- ii) would quarantine joint funding to a subset of critical monitoring activities. Based on the development challenges facing the LMB and the results of the Council Study in relation to potential future trade-offs, the MTR believes these critical activities are: (i) Hydro-meteorological monitoring; (ii) Discharge measurement and sediment monitoring; (iii) Water quality monitoring; (iv) Fisheries monitoring; and (v) regular provision of socio-economic data;
- iii) would effectively extend the transition period for decentralisation by allowing financial handover for these supporting functions to occur in-line with Member Country contributions to the Basket Fund, gradually reaching 100 per cent by 2030;
- iv) should reinforce the substantial coordination role which remains at MRCS by empowering a more proactive engagement of MRCS staff with NMCSs and line agencies on implementation of decentralised activities. The MRCS would coordinate the delivery of activities through the Facility and manage contractual arrangements or MoUs with national agencies and third party suppliers.

187. The rationale for a dedicated facility, potentially as a sub-account of the Basket Fund, is to ensure transparency and accountability in the allocation of funds to support the decentralisation process. Because of the potential use of funds for cross-financing of Member Country commitments, this arrangement with the oversight of the JC will help ensure that the use of Basket Funds in support of decentralisation does not become a de-facto re-centralisation of activities. The use of the Basket Fund also ensures flexibility to adjust the allocation of funds from year-to-year subject to need and other priorities.

188. The MTR estimates approximately US\$435,000 would be required each year from 2020 (more in SIMVA years) assuming human and technical capacity building costs of around 20% of total annual activity costs, spare parts for HYCOS stations of around 50% of maintenance costs, and use of funds to support equipment purchases and temporarily cross-finance part of the implementation for discharge measurement and sediment monitoring, Proficiency Testing and some consumables for water quality labs and that the other recommendations in this review as indicated in the table below are followed. This total amount is roughly 65% of the additional annual contributions Member Countries are expected to make between now and 2020 and 11% of the projected total 2030 budget (assuming 5% annual inflation in monitoring costs).

Recommendation 2.2: Secure funding.† *Establish a Joint Decentralisation Support Facility, potentially as a sub-account of the Basket Fund, to fund capacity building, knowledge sharing, and maintenance support where it is more efficient to do so at a regional level and to ensure ongoing availability of critical data for regional needs.*

b. Capacity Building Support

189. The MTR recommends MRCS, working with the *Expert Group on Data, Modelling and Forecasting*, develop and implement capacity building support plans for all decentralised activities. Plans should focus on human capacity development to address technical skills and staff turnover at a national level, and recognising differing levels of capacity between countries through substantial use of country-to-country learning and knowledge sharing. Capacity building activities could:

- i. be closely tied to the use of the funds from the Joint Decentralisation Support Facility such that any use of funds in relation to the Facility would have a capacity building element associated with it. For example, any station maintenance activities would involve training of national operators and country-to-country knowledge sharing at the same time;
- ii. draw on the existing expertise of national institutes, line agency experts and other regional bodies in establishing a community of practice around each monitoring activity. Online forums such as established under the HYCOS helpdesk do not work without an active and engaged community as knowledge resides with people not in online systems and databases.

Recommendation 2.3: Capacity development.† Prepare and implement capacity-building plans for each decentralised monitoring activity, supported by regional funds through the Facility proposed in Recommendation 2.2 and with maximum use of country-to-country learning and knowledge sharing. This would include identification of opportunities for knowledge sharing and capacity building support from Thailand and Viet Nam to Cambodia and Lao PDR.

iii. Prioritise monitoring activities and step-up the integration of regional and national monitoring systems

190. The MTR recommends greater delineation between monitoring activities that are absolutely critical and those that, while valuable, might more appropriately be considered ‘nice-to-have’. As noted above, in the first category would be hydro-meteorological monitoring, sediment, water quality, and fisheries monitoring along with the transmission of basin-scale socio-economic data. In the second category would be the ecological health monitoring and the SIMVA survey. The overall approach for each is proposed as follows:

Monitoring activity	Priority	Rationale	Recommended approach
Hydro-meteorological (automatic & manual)	1	Hydrological data is the basis of any river system analysis and necessary for implementing the MRC procedures, flood forecasting and flood response	Combine the two hydro-met activities. Redesign the overall network for cost efficiency and with regard to current and future hydropower; and support critical station maintenance with regional funding
Discharge measurement and sediment monitoring	1	In addition to physical barriers, sediment is the most critical transboundary matter affected by mainstream development	Longer transition period with regional funding of equipment replacement, training and maintenance. Clarify indicators and monitoring parameters
Water Quality	1	Water quality is necessary for implementing MRC procedures and is critical to human and aquatic health and agricultural use	Regional funding and procurement of Proficiency Testing and some consumables for laboratories
Fisheries	1	Fisheries are the key resource trade-off associated with mainstream development and critical to food security	Longer transition period with regional funding of equipment replacement and maintenance

Socio-economic data provision	1	Provides essential information for assessing the status and trends in condition and examining trade-offs	Clarify and formalise arrangements around an agreed set of indicators and monitoring parameters for transmission to MRCS once every 5 years as linked to the SOBR
Ecological health	2	Without integrated analysis, the utility of this data is limited, especially when key matters of interest are already being monitored (i.e. WQ and fish)	Consider suspending this activity pending a review of integrated multi-disciplinary assessment options that may enable more valuable use to be made of the data
SIMVA	2	Although the richness of SIMVA data cannot be replicated across the whole basin, the limited geographical scope limits the utility of this data; greater provision of broader scale socio-economic data at a sub-basin scale in accordance with the MRC Indicator Framework may be sufficient to inform future basin planning.	Scale back to only the full survey every 5 years with a small set of core indicators (~20-25) and no thematic studies

Recommendation 2.4: Prioritise monitoring activities.[†] *Distinguish between critical monitoring activities and those that are less than critical and for the latter group, either suspend or substantially scale-back operations to enable resources to be directed to higher priority needs.*

191. One of the key barriers to effective decentralisation is the perception in some cases there are (or should be) two separate monitoring systems, one in support of national needs and the other in support of regional needs with each having their own set of monitoring stations, financial obligations, and operating arrangements. This is unlikely to lead to a cost effective, sustainable monitoring effort.

192. To ensure effective decentralisation there should be as far as possible only one monitoring network in each country for each activity. While in the short-term there may be a distinction in who is funding and managing each station, in the long-term the only distinction should be the extent to which data is transmitted to the MRCS to support sustainable basin development and multi-lateral cooperation in the LMB.

193. The Joint Environmental Monitoring (JEM) activity provides the basis for a more integrated and coordinated monitoring effort including the collection of data according to agreed protocols and methodologies and its sharing amongst a range of actors. This is an activity that was not identified when each of the individual monitoring activities was designed but may turn out to be one of the most important monitoring initiatives. The JEM has the potential to lead to a more cost-effective monitoring effort overall. It is critical, however, that this activity does not become just an argument for more monitoring. The opportunities for more effective, targeted (and some cases less) monitoring are enormous. The MTR recommends:

- i) the MRCS and MCs, working through the *Expert Group on Data, Modelling and Forecasting (or a sub-group)*, undertake an audit of all existing and planned monitoring stations and sampling locations within the LMB, whether identified as supporting regional needs or not. This audit would encompass all stations and sampling undertaken by national line agencies and provincial authorities, as well as those established with bilateral development partner support or by dam developers on the mainstream and the tributaries (Attachment B to the separate Decentralisation Review Report provides a starting point to this review);
- ii) based on the above audit, the MRCS undertake a consultative process with expert technical support to identify gaps (especially in relation to the location of existing and new

hydropower dam and agricultural development projects), duplication and redundancy in the existing (and near future) network and develop a plan to address these issues based on the cost effectiveness of the network as a whole;

- iii) commission a consultant to undertake an independent cost-benefit assessment of several network designs to support the review including consideration of the use of automatic telemetry stations versus an upgraded manual system (with more stations and twice-a-day reporting where useful) for river level, flood and drought forecasting, flash flood guidance, and operational modelling needs;
- iv) as part of the above design work, investigate options to better align hydrological and sediment monitoring locations and water quality, and ecological health (if continued) monitoring locations to support integrated assessment methodologies and improved causal analysis;
- v) the MRCS, working with the *Expert Group on Data, Modelling and Forecasting* and National Statistics Offices from each Member Country, finalise and agree in 2019 the ongoing socio-economic data requirements to evaluate the status and trends in socio-economic conditions across the basin. The MRCS could then formalise acquisition, transmission and management arrangements through handover agreements with MCs consistent with the *Procedures for Data and Information Exchange and Sharing*; and upgrade the regional socio-economic database with linkages to national systems as is being done for environmental parameters in the MRC-IS.

Recommendation 2.5: Review core monitoring network.† *Building on the work of this MTR, the MRCS and MCs undertake an audit of all existing monitoring stations and sampling locations in the basin for three key environmental disciplines (hydro-meteorology, sediment, and water quality) and of existing socio-economic datasets and identify opportunities for synergies, re-alignment, enhancement and removal of redundancies to enable a more cost-effective overall monitoring effort. A cost-benefit analysis would then be conducted by the end of 2019 on options for a re-designed core network in order to meet future regional needs, having regard to current and future mainstream and tributary dam operations and other development activities with potential transboundary impacts. Require hydropower developers as part of Concession Agreements to share data for any stations they own that are part of this network.*

5.3 Partnerships for regional coordination

194. Over the years, the institutional landscape for regional cooperation has intensified, bringing new opportunities but also risks of overlap and duplication. The MRC is seen as having a unique role in the Basin as a consequence of the 1995 Mekong Agreement and the extensive knowledge base it has built-up over decades. That role can be made more effective through continuing a focus on coordination, joint working and complementarity with other regional bodies.

195. There is a need to develop a clear and common view about MRC's role and future focus in relation to other regional institutions because regional cooperation is multi-faceted and MRC's positioning is not always clear. MRCS is making a good start tackling this issue by developing a MRCS partner database and an outline of the MRCS partner guidelines – to make better use of current MRC partnerships; to identify appropriate new partners if needed; and to manage information and documents on MRC partners.

196. Further developing strategies for each of the key partners would involve framing them around how MRC can cooperate with each partner within the objectives of the 1995 Mekong Agreement and the CRBMFs including implementation of Procedures. This approach can be used whether it is relations with other regional cooperation mechanisms – LMC, GMS, Mekong Japan/Korea, LMI, Dialogue Partners, DPs, civil society/NGOs - or research institutes providing services and knowledge.

197. In an increasingly complex and changing landscape, MRC needs to be focused and strategic, not spreading itself too thin; ensure others are more aware of what MRC objectives are; and be aware and up to date of other's plans and strategies so that opportunities for cooperation are grasped early.

Recommendation 3.1: Clarify MRC role in the changing landscape of regional cooperation.[†] To disseminate a clear view about MRC's mandate and comparative advantage in the changing basin context (outlined in Section 3) and further develop strategies for engaging with each partner around implementation of CRBMFs, including the MRC Procedures.

198. After its initial period of establishment, the LMC is making plans and moving quickly with involvement and support of all riparian countries. MRC needs to continue to advance in a range of areas and demonstrate its role and ability to cooperate constructively. The MTR suggests the following in the short term:

- Institutionally – if MRCS is interested in becoming an Observer to LMC JWG on Water Resources, then MRCS could reciprocate with an invitation for the secretariat for LMC's JWG on Water Resource's to have Observer status in an equivalent platform. The LMWRCC may appear to be in a Secretariat role for the JWG but that has not been made official. In interviews China and LMWRCC portray the Center as a resource for all LMC members, and hence an emerging regional entity. The Dialogue Partner's Meeting may be the most appropriate forum as there is also an exchange of knowledge and discussions of possible cooperation. Having China as a Dialogue Partner already does not negate inviting the designated Secretariat of the JWG on Water Resources as an observer to the Dialogue Partner's Meeting. Further discussion would be needed on this with the JWG but it may be the LMWRCC becomes the designated body, which in any case should be treated as a regional entity and institutional arrangements for representation designed accordingly.²⁸

²⁸ Other initiatives to increase cooperation with China could include: requesting Dialogue Partners to present a statement to the MRC Council meeting closed session; arrange a series of technical side meetings between MRCS staff and representatives of the Dialogue Partners at DP meetings; encouraging Development Partners to have a side

- Developing further proposals for joint research, survey or mutual stakeholder engagement activities should be explored and provide a pragmatic way of building relationships.
- Continue to explore LMC Funding of NIP projects. This would require MRCS supporting MCs in developing short-term, small size joint projects that are derived from and follow up on regional studies conducted under the MRC work programme. They do not necessarily need to include all four MRC members. The project could be part of a multi-year series of projects on a given priority issue for the LMB that has emerged from an MRC study, strategy or action plan.
- Focus on building relationships with modelling and information (data) centres in MCs in order for MRCS to access data from China and play a coordinating role in data exchanges/sharing – as hydrological data from China is the key input to one of MRC's core products. It will be important for MCs to support the inclusion of MRC in data sharing initiatives of LMWRCC and for MRCS to ensure close coordination with national activities under LMC.

Recommendation 3.2: Cooperation with LMC.[†] *To advance on cooperation with LMC: 1) Institutionalize relations with the LMC JWG on Water Resources by reciprocating the invitation to MRCS to join the JWG's regional meetings as Observer by the JWG's designated representative or Secretariat joining the Dialogue Partner meeting as an observer, 2) Explore LMC funding for NIP joint projects; 3) Focus on building relationships, including data sharing, with modelling and information (data) centres in MCs in order for MRCS to access hydrological data from China.*

Recommendations on the Stakeholder Platform

199. To enhance dialogue and collaborations with broader stakeholders, there are calls from DPs and regional CSOs and national civil society networks to institutionalize their inclusion and input into the MRC's technical and governance meetings. This could help address concerns from CSOs that their inputs have not been well integrated into MRC products and processes but will inevitably raise the issue of representation.

200. Representation by any organization raises the issue of legitimacy. Although, key regional and LMB national Mekong-related networks are in the process of organizing themselves to address this issue, MRC would need once again to reflect on the benefits and opportunities of greater and formal inclusion. This should be included in ongoing discussions on the single unitary ROPs for MRCS, JC, Council. Currently, the ROPs for the JC and Council on governance meetings have a provision for the Chair to issue invitations to CSOs, which could be applied as a temporary measure.

201. A structured stakeholder survey/interview and partner database and the outline of the guideline on partners that MRCS is developing will help to identify specific stakeholders and CSOs that could be recognized as strategic partners suitable for inclusion in technical meetings. MRC could also develop guidelines and criteria for CSOs to apply to join MRC governance meetings as observers – a stakeholder inclusion measure adopted by other transboundary RBOs. It should be noted, however, that MCs, may also prefer having the opportunity to candidly discuss some sensitive matters among members only. Separating MRCS administration matters out of open sessions will address this issue.

meeting with China at DP meetings; arranging for more meetings on specific areas of cooperation as the JWG meeting agenda is too crowded to expect the type of brainstorming meeting needed to generate new ideas. On the technical side, recommendation 2.5 also includes a proposal for hydropower developers' concession agreements to include provisions for sharing data relevant to MRC's monitoring network.

202. To fill capacity gaps in technical discussions, non-governmental experts could be invited, for instance, to Expert Group meetings. The TORs of the EGs already allow for this inclusion.

Recommendation 3.3: Involvement of strategic partners. *To enhance dialogue and collaboration with broader stakeholders, MRC to invite identified strategic partners to relevant technical and governance meetings per the Rule of Procedures.*

Gender

203. The 2019 AWP Annex 3 Gender Action Plan Implementation already addresses how gender will be mainstreamed into MRC's products and processes. In order to provide greater clarity on MRC's niche and added value on gender issues, MRCS Gender focal points from each Division/Unit could discuss further how to tackle gender issues under the lens of what a regional water cooperation organisation should focus on, keeping the focus manageable and concentrating on value-added and building on salient points from the MRC's Gender toolkit. The internal discussion could be framed around the following issues and levels:

- **Work MRC does:** Review the Gender Action Plan how gender mainstreaming can be more substantively incorporated into existing MRC strategies, guidelines, action plans – beyond sex-disaggregated data collection.
- **Role of MRC in promoting gender equality in the basin:** Discuss the regional dimension of gender related to MRC's mandate. What is beyond what other national and regional organizations are doing so as to define the role of MRC as a regional RBO related to gender – that is over and above the interventions already supported by bilateral, multilateral and government agencies. For example, undertaking a review of social impact assessments, gender action plans and post completion evaluations of public and private development projects in the Basin to assess the different ways in which women and men access resources and the provisions adopted and available to ensure greater equity. Gender is a cross cutting aspect that can be mainstreamed across development activities.

Recommendation 3.4: MRC role on Gender. *In order to help further integrate gender dimensions into MRC's work MRC to review gender issues at two levels: MRC's work programme, MRC's role promoting gender issues over and above interventions already supported by bilateral, multilateral and government agencies.*

5.4 MRC operational focus - responding to increased river regulation in the Basin

204. As the Mekong basin becomes more developed and the tributaries and mainstream river more regulated, there is an increasing need for MRC to focus on coordination of operational aspects that have potential transboundary impacts. This supplements the strategy and planning role that has been prominent to date. Operational matters with regional influence go beyond maintenance of mainstream flows. Guidance has already been provided by MRC in relation to chemical spills from waterborne transport and this can be extended to other areas with an emphasis placed on coordinated actions, enhanced information exchange, and facilitating mutually agreeable outcomes.

205. Flood forecasting is the area where MRC is currently most operational with a dedicated Regional Flood Centre set-up to work on real time issues and having the modelling and communications links to transfer regional information to national bodies. Recommendations to strengthen the Centre including to incorporate a drought forecasting capability are covered in section 5.1. Other aspects of real time river flows are covered by the PMFM and recommendations to strengthen the operationalisation of that Procedure are also given in section 5.1. In this section, the MTR focuses on four additional areas of sediment management and river bank erosion; dam safety and warnings; contingency measures for water quality incidents; and coordinated reservoir operations in relation to flood events.

Flow and sediment management and river bank erosion

206. Sediment management of mainstream dams in the LMB is one aspect of MRC's Preliminary Design Guidance and calls for coordinated management approaches including the establishment of Cascade Joint Operating Rules governing sediment routing and flushing activities (see updated Preliminary Design Guidance section 3). There are implications for downstream water level fluctuations (with links to PMFM), ecosystem habitats, fisheries and water abstraction points for domestic and municipal use. The importance of a coordinated approach has been demonstrated in other river basin's including the Rhone River in France, visited by MRC representatives in 2018, and through preliminary analysis undertaken by MRC and presented at the 3rd Joint MRC-ESCIR symposium in Nanjing, China in 2017. The situation in the LMB is more complex than the Rhone due to the multiple actors involved including agencies from four national governments and the different hydropower developers, each with their own power purchase agreements and concession agreements. Compagnie Nationale du Rhone (CNR) is currently undertaking a feasibility study for the Lao government to establish a Coordination and Management Center. The MTR welcomes this initiative and, given the direct links with the mandate of MRC, considers that MRCS needs to be closely associated with this process.²⁹

207. As highlighted in the Council Study, sediment extraction or 'sand mining' is widely practised in the Basin, often in uncontrolled conditions and has significant impacts on bank erosion and stability downstream. The reduction in sediment supply to the region as a result of dams in the mainstream and tributaries has made this practice even more problematic for areas downstream. There is a need for greater regulation and enforcement at national levels and for monitoring at a regional level. Similarly, greater awareness of the occurrence and extent of river bank erosion on the mainstream will be needed to inform sediment management regimes upstream.

²⁹ A presentation on the role of the proposed Coordination and Management Center was made by CNR at the ASIA2018 hydropower conference in Da Nang.

Recommendation 4.1: Cascade Operating Rules. *MRC is involved more closely as a partner in the ongoing process of developing and monitoring implementation of Hydropower Cascade Joint Operating Rules by Lao PDR to facilitate incorporation of agreed MRC Procedures and relevant articles of the 1995 Mekong and the related reporting to other riparians. MRC is in a unique position to coordinate discussions to ensure the Operating Rules take into account the interaction with tributary dam operations as outlined in the updated Preliminary Design Guidance to avoid unanticipated high flows and flooding downstream (see also Recommendation 4.2). Techniques need to be explored for monitoring sediment extraction and river bank erosion at regional level for inclusion in the regional monitoring programme, possibly using remote sensing technology.*

Coordinated reservoir operations in relation to flood events

208. Short-term fluctuations in river levels are increasing and intensify as hydropower projects are commissioned and respond to electricity demands and grid stabilisation, reservoirs are managed during flood and in response to periodic sediment management releases. This has been witnessed in many tributaries, the most notable case being flood releases in the 3S basin in 2000 and more recently in the Lancang River following completion of the Xiaowan and Nuozhadu projects. An informal arrangement exists for the Chinese authorities to inform downstream countries of any abnormal releases through the Joint Working Group of the LMC Water Resources priority area with copy to MRCS. Requests from MRC to China for 3-5 day flood forecasts for the Jinghong station would significantly improve MRCS forecasts for the upper part of the LMB. Information on flood storage in mainstream and major tributary reservoirs in the LMB as well as the operating criteria that are followed for release of additional water during a flood event would also be extremely valuable for improving flood forecasts of the Regional Flood Centre. Given the regional nature of the issue and the potential loss of life and damage to property, the MTR considers this is a high priority area for MRC and is linked to the recommendation 1.9 on strengthening of the capability of the RFMMC. See also next recommendation on unplanned dam releases. The MTR understands that the five-year action plan of the LMC may include joint studies to better understand flooding and drought conditions in the LMB and how future data sharing arrangements from upstream and tributaries could help improve management capability. Given MRC's modelling capabilities, flood management experience and information database, this could be a joint activity with LMC and MRC involvement.

Recommendation 4.2: Flood routing.[†] *Agree on data sharing arrangements and communication arrangements for planned flood releases and flood storage from reservoirs on the mainstream and major projects on the tributaries as part of the strengthening of the RFMMC role. Develop a common understanding of what circumstances information should be notified and in what timeframe as part of a response action plan*

209. Operationalising Article 10 of the 95MA currently lies outside of the framework of MRC Procedures but needs an operating protocol of some type to make it effective. It is of particular topical relevance due to the recent dam break, but also has relevance for an accidental spill of dangerous or toxic substances from a ship or at a port (see next section). Although provision for real time notification of an emergency situation can be incorporated into PDIES in the medium term, because of the urgency, the MTR suggests that initially in the short-term a separate communication protocol is developed for immediate application and is then incorporated into PDIES. Up front modelling of dam break scenarios in various tributaries can be undertaken to provide a better understanding of the response times and management strategies needed.

Recommendation 4.3: Dam safety warnings.[†] *Prepare and agree a draft communications protocol for flooding resulting from dam break as part of a response action plan. For emergency flooding events, however they are caused, the MTR suggests responsibility in MRCS be assigned to the RFMMC as they are set up for real time operations and communications.*

210. For chemical spills related to waterborne transport, recommendations were already developed under the former Navigation Programme and in earlier drafts of the Technical Guidelines for PWQ³⁰ but are not yet fully operational. Provisions for notification and remedial action are included in PWQ (Clause 5.2). Other water quality incidents could result from conditions in reservoirs as noted in section 4 of the updated Preliminary Design Guidance. As the implementation arrangements and line agencies for a water quality related incident will be different from those for a dam-induced flooding incident, a separate communications and implementing protocol is proposed.

Recommendation 4.4: Water quality incidents. *MRC to prepare and agree a draft communications protocol and action plan for water quality incidents taking into account the provisions of PWQ, earlier drafts of the Technical Guidelines for PWQ, any joint work undertaken with ASEAN under the recently agreed Cooperation Framework, and recommendations prepared under the former Navigation Programme for chemical spills.*

³⁰ See part B, chapter 4 of the 2015 version: *Guidelines for Water Quality Emergency Response and Management (WQERM)*.

5.5 MRC systems

Capacity development

211. As noted in section 4.5, capacity development needs have been reviewed and documented through several exercises over recent years. What is now required is the development and implementation of plans to address those needs.

212. The MTR recommends the MRCS undertake a rapid review of existing work across MRC on capacity needs to ascertain that previous analyses and findings are still relevant and then develop and implement a plan for organisational capacity development. This plan would draw on the results of other recommendations of this review including the proposed technical review of the RFMMC (Recommendation 1.9) and the proposed capacity building plans for each of the decentralised monitoring activities (Recommendation 2.3) and have regard to an agreed vision of what the MRC should look like in 2030 including with respect to the balance of technical and generalists skills across the MRCS, NMCs and line agencies.

213. Importantly, such a plan should not only be about training courses and participation in workshops. The use of staff secondments and interchange of personnel between regional and national levels, different ways of working and more informal working groups between the MRCS, NMCs and line agencies, and requirements of consultants for knowledge sharing as part of their assignments as identified by the Operational Review, could all play a role. The supporting systems and tools and a coordinated effort are also critical.

Recommendation 5.1: Organisational capacity development for MRC. *The CEO, in consultation with the Expert Group on Strategy and Partnership and MRCS HR, prepare and implement an organisational capacity development plan considering both human and technical capacity needs. It would aim to support achievement of a shared vision of the organisation in 2030 reflect the principles of decentralisation and be inclusive of gender equality.*

M&E System

214. There have been welcome advances such as the use of the Dashboard for monitoring and evaluation. In addition to the OR's recommendations to encourage task/activity managers to undertake good project designs with clear statements of project development objectives, MRC should focus further on developing SMART indicators (Specific, Measureable, Attainable, Relevant and Timebound) to facilitate effective performance monitoring. SMART indicators provide managers with more specific options for course corrections when needed. A key improvement would be to distinguish between the relative importance of a particular Output, thus introducing some selectivity and common understanding among MCs in determining which Outputs are critical to a particular Outcome. This would also help future review processes.

215. Activities undertaken under the umbrella of a regional inter-governmental organisation will be far more complex and open to political influence than manufacturing or service industries and so there is a limit to the use of M&E indicators. But, even for a complex organisation like MRC, a more rigorous feedback loop would bring potentially problematic issues to the notice of senior management earlier, allowing more timely corrective measures to be taken. Similarly, it would allow prioritisation of resources in annual work planning to redress delays in critical Outputs.

216. After three years of implementation and a mid-term review MCs, MRCS and other key stakeholders have a better understanding of the reasonable level of progress that could be achieved – both quantitatively and qualitatively. As a prelude to preparing the next BDS and SP, MRC could hold a reflection workshop to assess experience with the current M&E system and learn from its

application in the current planning cycle including (i) identifying indicators that would need further refinement, and (ii) discussing how to improve the linkage between SP and BDS including how the indicators inform the pathway for change. Early discussion of impact pathways will also help the detailed design of activities, the linkage between outputs and outcomes, and the related needs for capacity development and early engagement with national agencies. On indicators, MRC should discuss setting "qualitative" targets/indicators for some Outputs to capture the quality and acceptability aspects of the Outputs to better reflect progress beyond completing a particular task or product. In this planning process discussions among stakeholders, especially with implementing agencies, could yield better common understanding among all parties - an invaluable outcome in itself. The conclusions from the workshop would also support setting of priorities for taking forward the recommendations from the OR and MTR.

For improving the feedback loop to Management, regular Division and inter-Division meetings would include a focus on the M&E system, picking up key areas of concern highlighted in the dashboard. Similarly, weekly senior staff meetings could include a regular agenda item that highlights selected information from the dashboard based on 'warning flags' that identify where interventions are needed to bring an Output back on course. The warning flags could be identified as concerns over the perceived quality, relevance, acceptability, sensitivity, or timeliness and budget issues. The MRC should avoid introducing overly bureaucratic processes and excessive demands on staff time on reporting. A balance is needed.

Recommendation 5.2: SMART indicators and M&E feedback loop. *For the next SP, to revise any poorly targeted indicators to be SMART indicators (Specific, Measureable, Attainable, Relevant and Timebound) based on agreed impact pathways to facilitate effective performance monitoring and management. Some outputs may include measures of qualitative changes. To improve the feedback from the M&E system to management decisions and the identification of corrective interventions and allocation of resources to specific activities, MRC would table dashboard information at regular Division and inter-Division meetings, and weekly senior staff meetings.*

Next Strategic Plan

217. Decisions taken on the scope of the next Basin Development Strategy, which may cover a ten-year period, will determine the nature of the next Strategic Plan and so it is too early to make firm recommendations here. The SP will incorporate recommendations and action points from the various sectoral and thematic strategies already agreed by MRC. The MTR considers a five-year duration for the SP remains appropriate and it will be useful to have a longer-term vision set out in the ten-year BDS. In addition to addressing the recommendations in this MTR and the Operational Review, there are some other aspects to consider for the next SP including:

- Prioritization across sectors becomes a reality:
 - questions about whether MRC has comparative advantage in areas of agriculture and watershed management over those of bilateral and multilateral organisations – the MTR considers these are more national issues where MRC needs to be aware of developments rather than coordinating them;
 - Waterborne transport – as the river becomes more regulated, deciding the precise role of MRC is in implementing Article 9 of the 95MA in relation to supporting the existing cooperative arrangements in the upper and lower parts of the Basin, other aspects not covered by those arrangements, and links to MRC's work on water quality and safety.

- Making the SP more strategic. Reducing the number of indicators will enable focus to be kept on those that are critical to making progress on implementing the BDS. Closer alignment with BDS strategic priorities and more explicit mapping of the pathways to change will make understanding MRC's role more clear.
- Decentralization of core function activities will remain fundamental to the next SP period. Given its importance and interconnected roles of line agencies, NMCSs, Expert Groups and MRCS, it needs a dedicated Outcome in the SP to reflect the revised transition arrangements.

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Annex 1 – Terms of Reference

Objective of the Consultancy:

The objectives are to:

- 1) Review the present state of the implementation of the MRC Strategic Plan 2016-2020 against the agreed outputs and indicative activities set forth in the Plan;
- 2) Assess the progress and achievement of the outcomes and desired results as specified in the Strategic Plan;
- 3) Make recommendations on how to improve the implementation of the Strategic Plan 2016-2020, on prioritisation and implementation of key outputs during the remaining two years of the current planning cycle, taking into account emerging opportunities and challenges, as well as budgetary and organizational constraints at the MRC.

TOR of the Overall assignment

1 Review of the present state of implementation of the Strategic Plan 2016-2020:

- a. Assess how the MRC is progressing in completing overall outputs planned (SP Annex B), and activities (Annual Work Plans 2016, 2017, 2018);
- b. Assess how the MRC is progressing towards the achievement of the Strategic Plan indicators (Annex A) with a focus on regional coherence and relevance as well as uptake/use by Member Countries at technical and policy levels;
- c. Assess how MRC, through its Strategic Plan, has addressed the Mekong Basin's issues, challenges, development opportunities and Strategic Priorities established under the IWRM-based Basin Development Strategy. What positive and negative development impacts that have been made because of the MRC's implementation of the BDS;
- d. Considering the Operational Review, assess whether and how MRC organizational reform has strengthened its long-term sustainable operations, greater relevance and increased Member Country ownership to respond to basin-wide challenges and opportunities;
- e. Considering the reviews of the implementation of the National Indicative Plans, assess how the NIPs have contributed to the implementation of the MRC SP;
- f. Assess the progress of decentralisation-related work, both at MRC and Member Countries' level, referring what has worked well and what has not;
- g. To the extent possible, how much has this Strategic Plan contributed to the implementation of the 1995 Mekong Agreement in this Strategic Plan period considering past achievements and challenges;
- h. To the extent possible, how MRC has contributed to the Sustainable Development Goals (SDGs) through the implementation of this Strategic Plan

2 Provide recommendations on prioritisation of the outputs and activities for the remaining period of the Strategic Plan

a. Considering implementation progress, ongoing institutional reforms, as well as emerging key water resources and related development opportunities and risks, recommend prioritisation of outputs and activities for the remaining of the Strategic Plan. The MTR may also make recommendations regarding the nature of the indicators of the MRC SP as well as the future implication for the next planning cycle of MRC SP.

b. Considering achievements and challenges of decentralization, make concrete recommendations for MRC and its Member Countries in terms of what activities have been successfully decentralised or made steady progress in that direction and those that face challenges and should change course. The consultants' team is also expected to provide measures and solutions for the long-term sustainability of monitoring activities;

c. Review funding for the current planning period (both secured and pledged), and assess overall earmarking level towards certain thematic areas, assess realistic funding perspectives in completing the SP and provide relevant recommendations, including desirable overall earmarking level.

Specific tasks under the IWRM Specialist's TOR

- Provide and assess from specific technical expertise in IWRM, environment and water monitoring, the progress and achievement of the MRC SP, in particular Key Result Areas 1, 2 and 3.
- Review the progress, achievements, use, and ongoing challenges with the decentralized monitoring activities, including hydrological (HYCOS), rainfall and water levels for flood forecasting, sediment, water quality, fisheries, ecological health, SIMVA, and provide specific recommendations regarding centralization and decentralization of monitoring stations, parameters and responsible agencies to ensure sustainability;
- Use the findings of the review of implementation of the NIPs.

Specific tasks under the M&E Specialist's TOR

- Examine the SDGs indicators & targets and create a matrix to verify the level of influence of MRC;
- Ensure the MTR report meets monitoring & evaluation international standard;
- Provide recommendations to enhance the M&E system at both regional and national levels.
- Facilitate an outcome reflection meeting using theory of change.

Annex 2 – Record of agencies and people met

Cambodia

HE Lim Kean Hor	Ministry, MOWRAM
HE Bun Hean	Secretary of State, MOWRAM
HE So Sophort	Advisor to Minister, MOWRAM
HE Te Navuth	Secretary General, CNMC; JC Member
HE Watt Botkosol	Deputy Secretary General, CNMC
HE Kol Vathana	Deputy Secretary General, CNMC
HE Hak Socheat	Deputy Secretary General, CNMC
HE Long Saravuth	Deputy Secretary General, CNMC
Ou Sophana	Director Finance and Administration, CNMCS
Hak Socheat	National Coordinator for PD, CNMCS
Sok Khom	National Coordinator for ED, CNMCS
Chheang Hong	National Coordinator for TD, CNMCS
Soth Vanna	Deputy Director of Mekong Cooperation Department, Ministry of Foreign Affairs and International Cooperation
Taing Sophat	Deputy General Director of Hydrology and River Works, MOWRAM
They Kheam	Director of Demographic Statistics Census and Survey Department, National Institute of Statistics, Ministry of Planning
Chea Narin	Deputy Director General, Ministry of Mines and Energy
Touch Bunthang	Acting Director of Research and Development of Inland Fisheries Institute, Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries
Kaing Khim	Deputy Director General of Fisheries Administration
Sin Viseth	Director of Research and Exploitation Monitoring Department
Tong Seng	Forecasting, Hydrology and River Works, MOWRAM

Lao PDR

Dr Sommad Pholsena	Minister, MoNRE, Council Member
Chanthanet Boualapha	Secretary General, LNMCS; JC Member
Mme Monemany Nhoibouakhong	Former Secretary General, LNMCS
Phetsamone Keovongvichith	Director of Inter-Governmental Organization Division, Department of International Organizations, MOFA
Phanthavong Keophilavanh	Deputy Director of Mekong Countries and Development Partners Division, Department of Economic Affairs, MOFA
Ketsana Xaiyasarn	Deputy Director, LNMCS
Dr Kaviphone Phoutavong	Deputy Director, LARReC
Viengsay Sophachanh	National Focal Point Planning Division, LNMCS
Phetsamone Khanopphet	National Focal Point Technical Support Division, LNMCS
Khamsone Philavong	National Focal Point Environment Division, LNMCS

Thailand

Bhadol Thavornkitcharat	Deputy Director General, MONRE
Dr Samran Chooduangngern	National Expert on NIPs
Chatnopdol Aksornsawad	First Secretary, Dept International Economic Affairs, MOFA
Vachara Pawutiyapong	First Secretary, Dept of Treaties and Legal Affairs, MOFA
Prof Chaivyuth Sukhsri	Member, TNMC
Satit Phiromchai	Senior Professional, Plan and Policy Analysis, DWR
Suchart Sirijungsakul	Acting Director, Bureau of International Rivers, DWR
Kanittha Poothong	Senior Professional, Plan and Policy Analysis, DWR
Kareema Wongsin	Professional, Plan and Policy Analysis, DWR
Sopa Nopsiri	Director, Water Quality Analysis Unit, Bureau of Research, Development and Hydrology, DWR
Dr Winai Wangpimool	Senior Professional, TNMCS
Thaninthorn Mangkhalakheeree	Practitioner, Plan and Policy Analysis, DWR
Supranee Runghiranviroj	Expert, Research and WR Development, DWR
Naree Intrawichoen	Senior Professional, DWR
Puttikul Tongneunsok	Senior Professional, Engineer, DWR
Pamut Manoonvoravong	Senior Professional, Geologist, DWR
Pisit Phumkong	Professional, Dept of Fisheries
Pinida Leelapanang	Professional , Environment
Somchai Sittidodykul	Senior Civil Engineer
Rattaphum Natkamphan	Professional, Scientist, DWR
Monsan Kemapratumsak	Legal Expert, Office of the Deputy DG

Viet Nam

HE Tran Hong Ha	Minister, MONRE and MRC Council Chair
HE Le Cong Thanh	Deputy Minister, MoNRE; Vice Chair VNMC
Dr Le Duc Trung	Director General, VNMC; JC Member
Nguyen Thi Thu	Official, Department of International
Trang	Organizations, Ministry of Foreign Affairs
Nguyen Cam Linh	Official, Department of International
	Organizations, Ministry of Foreign Affairs
Dr Truong Hong Tien	Deputy Director General, VNMC
Le Thi Huong	Head of Division, VNMCS
Nguyen Huy Phuong	Deputy Head of Division, VNMCS
Nguyen Trung Quan	Official, VNMCS
Tran Minh Dung	Official, VNMCS
Nguyen Anh Duc	Deputy Director General, Institute of Water Resources
Duong Quynh Anh	Deputy Head of Division, Institute of Water Resources, MONRE
Nguyen Viet Tung	Deputy Head of Division, National Center for Water Resources
	Planning and Investigation, MONRE
Nguyen Thanh Hien	Officer, International Cooperation, MONRE
Doan Thi Xuan Huong	Senior Official, International Cooperation, MONRE
Tran Minh Khoi	Head of Representative Office in HCMC, VNMC
Phung Tien Dung	Viet Nam Meteorological and Hydrological Administration, MONRE
Nguyen Huu Thang	Official, Viet Nam Environment Administration, MONRE
Hai Binh	Vice President, Diplomatic Academy of Vietnam

Dr. To Minh Thu	Director, Center for Security and Development Institute for Foreign Policy and Strategic Studies, Diplomatic Academy of Vietnam
Ta Ngoc Tan	Official, Vietnam Natural Disaster Management Authority, MARD
Le Thi Ngoc Quynh	Deputy Head of Division, Electricity of Viet Nam, MOIT
Truong Trong Doanh	Head of Division, Viet Nam Inland Waterway Administration, MOT
Vu Minh Thien	Deputy Head of Division, Viet Nam National Mekong Committee
Dao Thu Ha	Director of Center, Southern Institute for Water Resource Planning
Nguyen Nam Duc	Head of Division, Southern Regional HydroMet Center
Do Thi Bich Loc	Team Leader, Southern Institute for Ecology
Vu Ngoc Quy	Team Member, Southern Institute for Ecology
P R China, MRC Dialogue Partner	
Li Hong	Permanent Representative to UNESCAP and focal point for MRC
Dr Yu Xingjun	Consul, Dept of International Cooperation, Science and Technology, MWR
Wang Hongmin	Deputy Director General, Dept of International Cooperation, Science and Technology, MWR
Ms Zhao Xiaojuan	Program Officer, MWR
Myanmar, MRC Dialogue Partner	
Sein Htoon Linn	Deputy Director General, Environmental Conservation Department, MoNREC
Sein Aung Min	Assistant Director, Environmental Conservation Department, MoNREC
Lancang Mekong Water Resources Cooperation Center	
Dong Yanfei	Deputy Executive Director
MRCs	
Dr Pham Tuan Phan	CEO (to 17 January 2019)
Dr An Pich Hatda	Director, Planning Dept; CEO (from 18 January 2019)
Dr Anoulak Kittikhoun	Chief, Strategy and Partnerships, OCEO
Santi Baran	M&E Specialist, OCEO
Denise Staubli	M&E Program Officer, OCEO
Malinya Phetsikhiaw	M&E Assistant, OCEO
Dr. Naruepon Sukumasavin	Director of Administration Division
Somsanith Ninthavong	Chief Financial Officer, AD
Vu Thu Hong	Chief Human Resources Officer, AD
Dr Tran Minh Khoi	Director, Environment Dept (from Jan 19)
Dr So Nam	Chief Environment Management, ED
Dr Bountieng Sanaxonh	Director of Technical Support Division
Dr Janejira Chuthong	Chief Hydrologist, TD
Tuan Nguyen Duc	Water and Climate Modelling Specialist, TD
Suthy Heng	Former HYCOS Coordinator, TD
Dr Son Hung Lam	Head, Regional Flood Management and Mitigation Center

Dr Thim Ly	Chief River Basin Planner, PD
Ton Nu Thi Thanh Yen	Navigation Specialist, PD
Nguyen Thi Ngoc Minh	Socio-economic specialist, PD
Palakorn Chanbanyong	Sustainable Hydropower Specialist, PD
Nhu Duong Hai	Stakeholder Engagement Specialist, OCEO
Meas Sopheak	Communications Officer (Press), OCEO
Le Thi Huong Lien	Communications Officer (Outreach), OCEO

Development Partners

HE Pirkka Tapiola	EU Ambassador to Thailand
HE Jens Lütkenherm	German Ambassador to Lao PDR
Christian Olk	First Secretary, German Embassy, Lao PDR
Bertrand Mernier	GIZ, Program Director
Ana Felicio	GIZ-MRCS Advisor
Maria Koenig	GIZ-MRCS Advisor
Anne Chapponiere	GIZ
Sopangna Set	GIZ
Erinda Pubill Panen	GIZ
Jenni Lundmark	EU, Cooperation Attaché
Dominique Vigie	First Secretary, Embassy of Australia, Lao PDR
Matthieu Bommier	Head of Bureau, AFD, Lao PDR
Laurent Umans	First Secretary, Embassy of the Netherlands, Viet Nam
John Choi	US Embassy, Bangkok
Ounheuan Sayasith	Program Manager (Water), Embassy of Australia, Lao PDR
Barbara Jaggi Hasler	Deputy Director of Cooperation, SDC, Lao PDR
Phouthamath Sayyabounsou	National Program Officer, SDC, Lao PDR
Asa Heijne	Counsellor, Embassy of Sweden, Thailand
Darryl Fields	World Bank, Lao PDR
Marcus Wishart	World Bank, PR China
Alfredo Perdiguero	Director, Regional Cooperation SE Asia, ADB

Civil Society

Nguyen Thi Hong Van	Viet Nam Rivers Network Coordinator
Marc Goichot	WWF Greater Mekong Program
Dr Jake Brunner	Programme Coordinator, IUCN, Viet Nam
Gary Lee	Oxfam, Australia
Tek Vannara	NGO Forum of Cambodia

Academia / Institutes

Dr Yumiko Kura	WorldFish, Cambodia
Dr Chi Thai Hoanh	Sumernet
Dr Kim Geheb	CGIAR Water, Land and Ecosystem Program, Greater Mekong
Dr Matthew McCartney	Research Group Leader, IWMI, Vientiane

Consultants

Bill Monks	Financial Advisor, Operational Review of MRC
Daniel Malzbender (by Skype)	Team Leader, Operational Review of MRC
Dr Jeremy Carew Reid	ICEM, Hanoi
Dr William Derbyshire	ECA, Team Leader, SHDS
Knut Sierotzki	VP, Poyry SE Asia

Annex 3 – Progress in delivering Outputs and links to Outcomes

Annex 3.1: Summary of the assessment of output delivery and the basis for the assessment

Key:

Output colour coding: Achievement of Outputs	
Completed	
On track to be completed in the SP period	
Some major issues to be resolved	
Unlikely to be completed in the SP period	

Outcome 1: Increased common understanding and application of evidence-based knowledge by policy makers and project planners

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 1.1: Study on water requirement and availability for specific land uses completed for flood and drought management and impacts adaptation and mitigation purposes³¹</p> <p><i>1: Water requirement for each crop in drought prone areas of the LMB is assessed, water availability is modelled, and water requiring gap for each crop of the drought prone areas is calculated for drought management work</i></p> <p>Assumptions: Data information on water diversions by catchments is given by Member Countries (however there may be a limit of data availability)</p> <p>Scheduled Timeline: By 2017</p>	<p>This work is essentially complete and on track to be completed within the Strategic Plan period. A technical report has been prepared and shared with Member Countries for comments. However, The scope of the study appears to have changed from the initial description.</p> <p>Although crop factor is used to help determine the overall water availability gap, the water requiring gap for each crop in drought prone areas is not explicitly identified in the report as per the indicator; and neither is the water requirement and availability for different land uses as per the description of the output.</p> <p>It is also not clear how this output has informed the development of the regional drought management strategy. It may be useful to prepare some simple explanatory information relating the results to specific crop types and land uses in particular drought prone areas and articulating the link to the drought management strategy.</p>	<p>Although with a delayed start, Version 3.0 of draft technical report finalised in August 2018.</p> <p>Further consultation planned with Member Countries.</p>

³¹ Including existing commitment on drought study (ongoing funding)

Output and Indicators		Review Assessment	Basis for Assessment
Output 1.2: Study of fish ecology and capture fisheries productivity and value completed and promoted with a view to mitigating impacts from development		This output is essentially on-track and can be completed within the Strategic Plan period. It will require effort to consolidate and agree with MCs the fish yield assessment methodology as a basis for future assessments, including linking the fisheries value estimates to this work.	Fish habitat yield study undertaken in the previous Strategic Plan period has not yet been consolidated into a regional report and agreed with MCs. The bio-ecology of the main fish species was largely identified and documented in Council Study technical reports. MRCs reports that fish price surveys were undertaken in MCs in 2018. Estimates of Mekong fisheries values produced for the State of the Basin report.
	1: <i>The amount of fish yields in rain-fed and flood zones is documented</i>		
	2: <i>The bio-ecology of main trans-boundary fish species is documented</i>		
	3: <i>Mekong fisheries value is estimated</i>		
Assumptions: Field work in Member Countries is possible Scheduled Timeline: Survey and value estimation by 2018; bio-ecology descriptions by 2020			

Output and Indicators		Review Assessment	Basis for Assessment
Output 1.3: Study of rural livelihoods and measures to cope with transboundary changes by which sector development plans can adopt a pro-poor agenda completed and promoted		This output is unlikely to be completed within the Strategic Plan period. The Council Study socio-economic and cumulative impact assessments could be considered to partially fulfil this output. However, further work is required on measures to cope with transboundary changes in order that sector development plans can adopt a pro-poor agenda. No work is planned in the 2019 annual work plan. The MRC may wish to consider how the Council Study results and SIMVA pilot survey results, once available, can be used to inform further work in this area, including for example, the proposed scenario assessments on trade-offs to inform the next Basin Development Strategy. It may be beneficial for the MRC to articulate how the results of the Council Study and SIMVA surveys can be used to adopt a pro-poor agenda in sector development plans.	Council Study completed in late 2017 included work on social vulnerability and impacts on livelihoods Results of SIMVA pilot survey in 2018-2019 may help inform some aspects of this work This study is not listed in the 2019 Annual Work Plan
	1: <i>Evidence of water sector management plans pay due attention to rural livelihoods vulnerability</i>		
	2: <i>Measures to address changes to improve rural livelihoods vulnerability concerning water sector management are formulated and implemented</i>		
	3: <i>MRC report on social vulnerability published and disseminated among LAs</i>		
	4: <i>The number of people living in rural areas dependent on fisheries and other related resources as primary means of livelihoods documented</i>		
	5: <i>Contribution of fish and other related resources to food and nutrition security of the rural and poor people in the region is analysed and recorded</i>		

<p>Assumptions: Assessment teams are able to obtain reliable information and available in a timely fashion</p> <p>Scheduled Timeline: Study completed by 2017 with results promoted by 2018</p>		
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Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 1.4: Basin-wide development and climate change scenarios and related assessments including Council Study completed and findings agreed and disseminated</p>	<p>Some good work has been completed through delivery of the Council Study assessment results, but with further effort required to consider the findings and their further use in development plans.</p>	<p>Council Study scenario assessments complete. Findings were acknowledged by the JC and the Council.</p>
<p><i>1: Integrated assessment of development impacts of six thematic sectors under Council Study completed and findings endorsed by JC</i></p>	<p>A substantial amount of further work is proposed to be explored examining further scenarios and trade-offs to inform the next MRC planning cycle. This work can be completed within the Strategic Plan period but will require appropriate allocation of resources.</p>	<p>Basin-wide assessment of climate change impacts completed and summary document published.</p>
<p><i>2: Exploratory and alternative basin-wide scenarios (with and without climate change) are formulated and the assessment results endorsed by JC</i></p>	<p>Although sector strategies (e.g. fisheries) identify the need to take climate change into account and develop guidelines for adaptation it is not obvious how the results of MRC basin-wide assessments have been utilised in these strategies to-date.</p>	<p>Further scenario assessment work examining trade-offs and utilisation of results for the next planning cycle expected to be undertaken in 2019-20 and are included in the 2019 AWP.</p>
<p><i>3: Scenario assessment results used for the finalization of the regional and basin-wide sector strategies and for the preparation and negotiation of updated BDS for 2021-2025</i></p>		
<p>Assumptions: Countries provide the required data and information; political commitment for cooperation for considering changes in national plans; LMB countries continue to give high priority to climate change issues in their development agenda and budget; National government agencies use MRC assessment results for adaptation planning</p> <p>Scheduled Timeline: Scenario assessments completed in 2016-17; discussion of results in 2018-19 and use for next planning cycle in 2019-2020</p>		

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 1.5: Study of basin-wide biodiversity to establish baseline environmental conditions and trends completed</p>	<p>This study has not commenced and is unlikely to be completed within the current Strategic Plan period due to the time required to develop and agree appropriate cost effective biodiversity indicators and monitoring methodologies.</p>	<p>There is insufficient information currently available for a basin-wide biodiversity assessment with no monitoring arrangements agreed or in place.</p>
<p><i>1: Inventory and report of biodiversity including trends is published and disseminate among LAs.</i></p>	<p>The Council Study covered the general subject matter but did not have sufficient data or information to report on the status and trends in the condition of biodiversity other than by expert opinion. This output clearly envisaged a more systematic approach to data collection and analysis through links to the MRC Indicator Framework and identifying a baseline from which further change could be assessed.</p>	<p>The draft MRC-IF includes aquatic biodiversity indicators and information for draft SOB relies on IUCN Red List data on threatened species.</p>
<p><i>2: Indicator framework for biodiversity assessment is integrated into MRC Indicator Framework.</i></p>	<p>As implied by the second indicator for this output, the biodiversity indicators should first be developed to reflect a consistent approach with standardised methodologies, prior to their integration into the MRC-IF.</p>	<p>Some preliminary work was planned in the 2019 Annual Work Plan to document the current biodiversity status and develop standardised methodologies for biodiversity data collection. No budget has been approved.</p>
<p>Assumptions: All Member Countries agree to prioritise biodiversity monitoring; Local authorities and communities actively engage in field surveys</p>	<p>Given the financial challenges in maintaining current monitoring activities to an acceptable standard, the MRC may wish to consider delaying this activity indefinitely and focusing on the core disciplines of the Joint Environmental Monitoring initiative (i.e. hydrology, sediment, water quality, aquatic ecology, fisheries). In the short term, indicative biodiversity information could rely on the wetland health assessment work being undertaken under Output 3.9.</p>	
<p>Scheduled Timeline: Study and Indicator Framework by 2017</p>		

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 1.6: Study of options to increase storage within LMB for flood, drought and environment/ ecosystem management purposes completed and promoted</p>	<p>This output is unlikely to be completed within the Strategic Plan period. The review team did not receive any evidence of work having been undertaken for this output and it is not included in draft 2019 annual work plan.</p> <p>This is a subject that could be explored in developing the next basin development strategy from the perspective of mainstreaming climate change adaptation in sector development plans, although may be beyond MRC capacity.</p> <p>The MRC may wish to reconsider the necessity of this work and if necessary improve the articulation of the proposed intent and rationale from a regional perspective.</p>	<p>Not identified in the 2019 Annual Work Plan.</p>
<p>1: Inventory and database of all feasible storage areas created</p>		
<p>2: Long-list of storage opportunities and projects is prepared</p>		
<p>3: Shortlist of storage projects is prepared and taken up in regional sector strategies, national planning frameworks and NIPs</p>		
<p>Assumptions: Member Countries provide all relevant data</p> <p>Scheduled Timeline: A long list of projects to be delivered in 2017 and a short list in 2020</p>		

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 1.7: Study on transboundary impacts of water and related projects completed and promoted</p>	<p>This output is partly on track with the bulk of the irrigation component having been addressed through the Council Study including impacts on water use and availability downstream based on SIMVA zones notwithstanding substantial limitations due to data availability and modelling capacity.</p> <p>Work on groundwater management appears not to have started but there are plans to commence some aspects in 2019 and there remains scope to complete the work within this SP period, subject to other priorities.</p>	<p>A concept note and guidelines prepared on a pilot agricultural land-use monitoring project.</p> <p>MRCs reports work on groundwater delayed due to budget priorities. The 2019 Annual Work Plan includes conducting a survey on current groundwater use and potential new developments, and on developing guidelines for data collection.</p>
<p>1: Study report on trans-boundary impacts of irrigation project is completed</p>		
<p>2: Study report on groundwater management is completed</p>		
<p>3: Areas with potential on trans-boundary impacts of irrigation projects identified</p>		
<p>4: Areas with potential development for agricultural groundwater use identified</p>		
<p>5: Guidance for groundwater sustainable yield management for production is available</p>		
<p>Assumptions: Relevant senior government officials participate in study process; Trans-boundary impacts issues included in study report; Member Countries agreed on study sites</p> <p>Scheduled Timeline: By 2020</p>		

Outcome 2: Environment management and sustainable water resources development optimized for basin-wide benefits by national sector planning agencies

Output and Indicators		Review Assessment	Basis for Assessment
Output 2.1: Basin-wide strategy for sustainable hydropower updated and approved		The Discussion paper incorporates issues that are central to the mandate of MRC including insights into alternative development scenarios and potential for evaluating alternative development pathways in order to avoid or minimize impacts. Although initial progress for drafting the Strategy is generally on track, a number of fundamental questions have been raised that go to the heart of the approach for the Strategy. A benefit sharing approach to avoid the more severe impacts is an encouraging new concept but one that needs more time to socialize with MCs at both technical and policy levels. There is time to complete the Strategy by 2020 provided a very facilitative approach is adopted to introducing challenging new concepts in what are very sensitive areas of national planning. Such sensitive issues that are at the interface of national and regional planning may require some alternative dialogue avenues such as in the form of a Track 1.5 initiative. More time beyond this SP period will be required for influencing national plans.	Draft Technical Reference Paper on SHDS prepared on 16 October 2018 and discussed at a Regional workshop held in Phnom Penh on 30-31 October 2018. The paper identified alternative development pathways to reflect principles of integrated basin develop including more equitable sharing of benefits and minimizing major impacts. Concerns raised at the regional workshop by one MC on the basic assumptions underlying some of the scenarios (social, environmental) and on the lack of alignment with national planning processes. Revised draft of Technical Reference Paper to take into account feedback received was discussed at a regional workshop on 18-19 December. Next steps include additional interactions with Lao PDR and Cambodia to socialize the issues and facilitate a mutual understanding so that the Strategy documents can be finalized for JC endorsement in mid-2019 and Council approval in late 2019. The SHDS will then be reflected in the next BDS.
	<i>1: Basin-wide Hydropower Strategy is updated</i>		
	<i>2: Basin-wide Hydropower Strategy is endorsed by the JC and approved by Council to be incorporated into national plans</i>		
Assumptions: None given Scheduled Timeline: By 2019			

Output and Indicators		Review Assessment	Basis for Assessment
Output 2.2: Regional strategies for flood management updated, prepared and approved		Overall Regional flood management and mitigation strategy will be started in 2019 after the specific regional strategies have been completed. This raises a question whether it will be completed by the end of the SP period taking into account the time needed for iterative review by MCs. May slip to 2021. Estimated 80% of the specific studies have been achieved, but delay due to fund allocation and some MCs have requested to broaden the scope to include drought. There is still time to complete in the SP period.	Stage 2 of Initial Studies has been implemented in 2017 and will lead to Strategy. Assessment of Possible Future Flood Behaviour under CC - Draft report prepared with 70% scenarios run. Assess Future Flood Damage Estimation relationships: draft report is prepared - 70% scenarios assessed. Demonstrate the Formulation of Strategic Directions to Manage Future and Residual Flood Risks in Hotspots at initial stage and was modified through 'scoping'.
	<i>1: Regional flood management and mitigation strategy is updated</i>		
	<i>2: Specific Regional Strategies are prepared (for XBF, NMK, CAM-THA and CAM-VN floodplain-delta)</i>		
	<i>3: Regional strategies are endorsed by the JC and approved by Council to be incorporated into national plans</i>		

<p>Assumptions: Strong interest and cooperation from NMCs and LAs responsible for flood management in Member Countries</p> <p>Scheduled Timeline:</p> <ul style="list-style-type: none"> • Strategy for floodplain by 2018 • Other strategies by 2019 		<p>Member countries all expressed strong support for the cooperation on flood forecasting and flood management. LAO made reference to the support for XBF work and requested support for flood forecasting in the Nam Ngum basin.</p>
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Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 2.3: Basin-wide fisheries management and development strategy (BFMS) approved and action plan developed and implemented</p>	<p>BFMS approved by Council. Support from countries to work on action plan and guidelines but constrained by available financial resources. Some concerns raised on the role of the new MRC Environment Expert Group in comparison to the previous TAB that involved the relevant MC agencies and hence ultimately the ownership of the outputs and pathways to implementation at national level.</p>	<p>The BFMS 2018-2022 has been endorsed by the MRC JC at 46th MRC Joint Committee Meeting in August, Vientiane and MRC Council has approved the document at 24th MRC Council Meeting in November 2017 in Pattaya City, Thailand.</p>
	<p><i>1: BFMS endorsed by JC and approved by Council</i></p>	<p>The first draft of action plan being developed based on the regional consultation in December 2017 and will be available by end of January 2018 and used as a base document of 4-national consultation to be held in February 2018.</p>
	<p><i>2: BFMS action plan is agreed by TAB (Technical Advisory Body on Fisheries Management in the LMB)</i></p>	<p>Relevant guidelines have not been implemented yet due to low priority of implementation and limited budget allocation. These guidelines will be proposed to merge into PBAP as activity or sub-activity of relevant 10-key strategy and action priority of the BFMS 2018-2022.</p>
	<p><i>3: Relevant guidelines defined in the BFMS is endorsed by TAB</i></p>	
<p>Assumptions: Member Countries are able to mobilize national resources for BFMS implementation plan</p> <p>Scheduled Timeline:</p> <ul style="list-style-type: none"> • BFMS endorsed/approved by 2016 • BFMS action plan developed by 2017 • BFMS implementation supported throughout 2017-2020 • Documentation of lessons learned from capture fisheries management by 2016 • Guidelines agreed by 2018 • Implementation of guidelines supported throughout 2016-2020 	<p>MTR Team supports establishment of Expert Group sub-groups, e.g. on Fisheries. Current engagement with SEAFDEC and FAO to fund some projects emerging from BFMS, e.g. fish passages, fish monitoring. Question raised by Lao PDR on limited attention to aquaculture compared to the past and in relation to the demand in the country. Completion depends on allocation of resources and involvement of key line agency staff though an appropriate institutional arrangement linked to the Expert Group.</p>	

Output and Indicators		Review Assessment	Basis for Assessment
<p>Output 2.4: Joint infrastructure and non-infrastructure projects and mechanisms between two or more member countries initiated, further developed and carried out</p>		<p>Planning has moved ahead on 5 joint projects of which 2 have received funding and others partly funded or are in the process of seeking funding. This is a welcome initiative that supports bilateral cooperation in key areas identified from previous regional studies. It is not clear though that sufficient progress will be made to demonstrate the efficacy and outcome of the joint projects in the remaining SP period in particular in relation to what have been called 'deals' or what may also be considered as trade-off arrangements.</p> <p>Similarly, the projects have not yet reached the stage of demonstrating MRCS capability in acting as a facilitator of such discussions. MRCS also needs to ensure that all relevant sections of the organisation across divisional boundaries are involved in the projects.</p> <p>The main issue related to achieving the output is the ability and capacity of MRC to facilitate the next steps in supporting any recommendations involving trade off discussions.</p>	<p>Five joint projects had been identified and agreed by the MCs: #1: navigation safety between Lao PDR and Thailand (planning funded); #2: cross-border water resources development and management between Cambodia and Lao PDR (funded); #3: transboundary cooperation for flood and drought between Cambodia and Thailand (funded); #4: sustainable water resources development and management of the 3S between Cambodia, Lao PDR and Viet Nam; (seeking ASEAN funding); #5: integrated flood management in the Delta between Cambodia and Viet Nam (planning funded).</p> <p>#2 and #3 under National Indicative Plans (NIPs) were funded by Germany (GIZ) for implementation in 2018. Support mainly focused on planning components as the initial phase. #1 and #5 are funded (for planning component) from MRC Basket Fund for implementation in 2018.</p> <p>Joint coordination mechanism for the Sesan-Srepok and Mekong Delta transboundary projects have been drafted and agreed in 2018.</p> <p>Under the World Bank M-IWRMP Core Transboundary Projects that carried over from the previous SP period, two joint reports (wetland management and the IWRM for local water management) for the Nam Kam and Xe Bang Hieng transboundary wetland management project were completed and the project was closed. Coordination mechanism options paper on water resources management for the Sesan-Srepok and Mekong-Delta was completed. Songkhla - Tonle Sap lake communication outreach project completed their joint report on pilot area study. Mekong- Sekong transboundary fisheries management project has completed the fish monitoring and management plan is close to completion.</p> <p>No progress reported on Indicators 2 and 3 related to 'deals' identified and implemented.</p>
	<p>1: No. of benefit sharing projects in water and related sectors</p>		
	<p>2: Number of deals identified and further developed</p>		
	<p>3: Number of deals implemented as joint projects</p>		
<p>Assumptions:</p> <ul style="list-style-type: none"> Political commitment in the Member Countries for the development of joint projects Sufficient trust and confidence among the countries for negotiating deals MRCS can play the role of an 'impartial' facilitator. <p>Scheduled Timeline: Outputs in the form of joint activities, projects and deals will be delivered throughout 2016-2020</p>			

Output and Indicators	Review Assessment	Basis for Assessment
Output 2.5: Mekong climate change adaptation strategy and action plan finalised, approved and implemented	<p>There remains two years for Member Countries to integrate actions in their national systems and this will require active follow up and support. Some concerns were expressed in discussions with MCs and MRCS staff that delays in finalizing MASAP has meant that MASAP has lagged behind national system developed. There will inevitably be a lag time for influencing national planning although the involvement of riparian staff and agencies in the former CCAI and MASAP processes will already have influenced thinking.</p>	<p>MASAP was approved <i>ad referendum</i> by the MRC Council at its 22nd meeting on 29 November 2017.</p>
	<p>1: MASAP is endorsed by JC and approved by Council</p>	<p>MC comments on MASAP's Action Plan addressed by making reference to Nationally Determined Contributions (NDCs)</p>
	<p>2: National government agencies integrate actions of the MASAP into their national planning of climate change and adaptation</p>	<p>Implementation process started (<i>Concept Note and TORs for consultancy support</i>) for the "MASAP Mainstreaming at National Level".</p>
	<p>3: Basin wide and sector strategies incorporate relevant actions of MASAP</p>	<p>Implementation and preparation process started (<i>Concept Note and TORs for consultancy support</i>) for the "Operationalization of the Monitoring and Reporting System on Climate Change Impacts and Adaptation".</p>
<p>Assumptions: LMB countries continue to give high priority to climate change issues into their development agenda and budget for addressing transboundary impacts of climate change and the needs for transboundary adaptation</p>	<p>Riparian experts are to be recruited to review national strategies in light of MASAP. Some requests already received from MCs for support, e.g. on establishing climate change databases (CAM) and national adaptation planning (LAO). Activity to mainstream climate change considerations in the hydropower strategy included in AWP 2019 and subsequently for fisheries action plan and flood management strategy etc. MASAP will influence the preparation of the next BDS.</p>	<p>Finalization and submission of CCAI completion and evaluation reports.</p>
<p>Scheduled Timeline: Implementation supported throughout 2016-2020</p>	<p>The MTR Team identified that internal coordination could be improved for example in closer working relationship between those responsible for climate change adaptation and those working on drought management and flood management.</p>	

Output and Indicators		Review Assessment	Basis for Assessment
<p>Output 2.6: Basin Development Strategy, including a new Indicative Basin Development Plan, updated and approved for 2021-2025</p>		<p>The time required to carry a draft BDS and BDP through the approval process in MRC is significant. The MTR considers that this risks diverting staff and other resources from high priority activities delayed or already underway and under-resourced. The Team proposes two options to enable prioritization of staff time and resources on facilitating uptake of recent sectoral strategies: either (i) a delay in formulating the next BDS by a few years or (ii) a very 'light touch' review and update.</p> <p>No further modelling effort is seen as necessary at this stage given the already wide range of climate predictions and also the recent modelling work conducted for the Council Study. However a compilation of foresight work done by others would be welcome and help assess future demands based on the changing context of the basin and of technological advances. A delay in this output would free up resources for consolidating existing efforts and would also allow development of additional joint projects emerging from earlier MRC work that need significant resources for completion and uptake.</p> <p>The MTR is also concerned that Basin Development Plans are not suited to the type of rapidly changing contexts of the Mekong and an alternative approach may be needed. Any Plan would need to cover the contentious issues the Basin is facing as well as the less sensitive proposal for joint projects. See discussion in Section 5.1 of the main report. The 'light green' rating is given based on current plans, but the MTR is concerned about embarking on a basin planning process just now gradually expanding in scope and absorbing many resources despite all good intentions at the outset.</p>	<p>Preparations are being made to develop a new BDS, possibly with a ten-year planning horizon. Initial ideas are that it will include longer term development scenarios to 2060 (to align with existing climate scenarios) and a greater focus on sectoral joint transboundary projects and the Water, Food and Energy Nexus. In view of the extensive modelling work in the Council Study and recent development of regional strategies, it is expected that the BDS formulation will be considerably less resource intensive than in previous cycles. There is also consideration of formulating an Indicative Basin Plan to include a number of new 'bankable' joint projects and a focus on benefit sharing opportunities.</p>
	<p>1: Updated BDS, including a BDP, is prepared</p>		
	<p>2: Updated BDS is endorsed by JC and approved by the Council</p>		
<p>Assumptions: Emerging results and recommendations from new assessment of alternative basin-wide scenarios and sector and cross-cutting strategies are in place, as well as State of Basin Report 2018.</p> <p>Scheduled Timeline: By 2020</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 2.7: Master plan for regional waterborne transport implemented		<p>Master Plan was agreed by three countries (CAM, THA, VIE) and at a technical level by Laos. Laos has considered it important to submit to the National Assembly which requires processing through the Prime Minister's Office. This will increase ownership but has meant delays in JC endorsement. The approval delay has not however held up being able to promote the 10 priority projects which have been included into national plans. Funds are being sought from various development partners.</p> <p>Some funding is available in the MRC Basket Fund but this is very limited and will not permit implementation of all projects. No resources are allocated to promoting new associations (indicator 3) and there is no data collection to monitor although personal knowledge notes that some associations exist in Viet Nam but they are not necessarily linked to MRC activities. The CAM-VIE Agreement is awaiting implementation and so any change in port traffic is not attributable to the MRC involvement. There are no requests from MRC to LAs to get information on this indicator.</p> <p>The MTR raised an issue with the nature of the 3rd and 4th indicators which are more outcome oriented. But there is a more fundamental question for MRC over the extent it intends to support its future capacity for freedom of navigation and waterborne transport and the resources needed to maintain a credible role.</p>	<p>The Master Plan for Waterborne Transport was approved by Member Countries at technical level and JC members of Cambodia, Thailand and Vietnam. Lao JC member is waiting for the approval from the National Assembly before they can approve the Master Plan. Lao PDR and Thailand included the safety and emergency response actions in planned Joint Project under the National Indicative Plans 2016-2020 and Thailand has applied for national budget.</p> <p>Five top priority projects have been selected by MCs for urgent implementation. Concept notes have been shared with the stakeholders, but there is insufficient basket funding. Two have been selected to start with: (i) the Harmonization of the Waterway classifications for the Mekong River transportation and the harmonization of the Safety Rules and Regulations between Lao PDR and Thailand; and (ii) the implementation of the Vietnam and Cambodia Agreement on Waterborne transportation.</p>
	1: Master Plan is endorsed by JC and approved by Council		
	2: LAs include the Projects into their regular planning cycle for implemented		
	3: Number of Associations for ports, fleets are established		
	4: Cargo throughput through the ports increases at least 30% in 5 years' time		
<p>Assumptions:</p> <ul style="list-style-type: none"> Budget is available Member Countries are willing to fund the National Projects with Cross-border impact LAs and private sector have a better awareness and willingness to make Mekong Navigation "Green" <p>Scheduled Timeline: By 2020 and beyond</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 2.8: Strategy for basin-wide environmental management for prioritised environmental assets developed and approved		<p>The groundwork for the inventory is in place and could be completed within the SP period if resources are sufficient. The next stage of agreeing environmentally valuable assets and developing an agreed Strategy requires close engagement with national systems and is likely to take considerable time. In a rapidly changing basin, there is inevitably a risk that national developments could compromise this process in some locations before it is completed.</p> <p>This is a sensitive topic in relation to potential development projects, which raises the risk of delay, undermining the process.</p>	<p>The final draft review report on Existing Studies and Strategies for the Management of Environmental Assets (EAs) in the Lower Mekong Basin prepared by 2017.</p> <p>International consultant recruited to support ED prepare a regional report on environmental asset inventory and formulation of BEMS. Four national review reports on environmental assets and legal and institutional frameworks were drafted and revised by four riparian consultants based on the comments and feedback from MRC ED.</p> <p>A draft regional review report (v.4.1) on environmental assets with regional/transboundary significance and existing studies, policies, strategies and action plans for the management of environmental assets in the LMB was prepared and a draft prospectus of the first regional ED Expert Group Meeting on the draft national and regional reports on environmental assets prepared.</p>
	<i>1: Inventory of basin wide environmental assets prepared</i>		
	<i>2: Agreement on number and status of environmentally valuable areas basin-wide.</i>		
	<i>3: Strategy prepared</i>		
	<i>4: Strategy endorsed by JC and approved by Council</i>		
	<i>5: At least 1 transboundary protected area established.</i>		
	<i>6: Percentage of natural wetlands and hot spots having management plans.</i>		
<p>Assumptions:</p> <ul style="list-style-type: none"> Political will from member countries to select and protect key basin-wide environmental assets Agreement on site selection can be reached with key stakeholders <p>Scheduled Timeline: By 2020</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 2.9: Regional strategy for drought management and mitigation developed and approved		<p>The Strategy is delayed but extensive work done, and consultations mean it is ready for the final discussions and approval. It is not clear that a Strategy like this needs Council approval or whether JC approval and Council acknowledgement is sufficient. Drought management was repeatedly identified as a priority in discussions with MCs. The linkage with preparation of MASAP could have been stronger and synergies in implementation explored during the roll out of the two strategies. Drought forecasting website has been launched but is not fully operational with the latest entry from September 2018. This does not give a good impression and raises questions about whether it is ready for release. Developing a drought management strategy has taken considerable time raising questions about the approach and internal capacity.</p>	<p>Drought impacts and vulnerability assessment in all MCs was finished by November 2017. 3rd draft of the Regional Drought Management Strategy 2019-2023 was prepared and discussed at two regional meetings. The final meeting has been postponed several times due to scheduling clashes. It is now scheduled for Jan 2019.</p>
	<i>1: The regional strategy for drought management and mitigation is prepared, and endorsed by the JC and approved by Council to be incorporated into national plans.</i>		
<p>Assumptions: Member Countries consensus on adaptation options and mitigation strategies to adapt to and mitigate some specific drought impacts.</p> <p>Scheduled Timeline: By 2017</p>			

Outcome 3: Guidance for the development and management of water and related projects and resources shared and applied by national planning and implementing agencies

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.1: Preliminary design guidance for mainstream dams reviewed, updated and implementation supported		<p>The updated PDG was updated on schedule. Not yet endorsed by the JC yet due to reservations expressed by Lao PDR over additional elements for which they consider national systems already cover and concerns that application of the PDG is increasingly being seen by others as mandatory rather than advisory. There is evidence from the PNPCA processes that the earlier PDG is being used by developers for the design of mitigation measures.</p> <p>There has been a significant improvement in the level of engagement between mainstream hydropower developers and MRCS over the SP period. Further information is being gathered on the detailed scope of those changes. The MTR Team considers that the PDG has already had an influence that is unfortunately not widely recognized outside of MRC and that a resolution is foreseeable that would see finalization and application of an updated PDG for use within 2019. There are differences over the use of the word 'Preliminary' in the title. The MTR considers that it describes the stage of application well – namely as early as possible in the planning and design process. To denote a difference with the 2009 version, it could simply be referred to as the Preliminary Design Guidance (2018)</p> <p>Alignment between the updated PDG and other initiatives such as national dam safety reviews and previous World Bank capacity development assistance can be further explored.</p>	<p>Updated Preliminary Design Guidance prepared and ready for approval by JC although one country has raised concerns over its increased scope. Currently working draft available for use but not approved.</p> <p>Submitted project documents for PNPCA Prior Consultation process for Pak Beng Hydropower Project (November 2016) show the developer's intent to comply with the PDG. Similarly the Xayaburi project developers have used the guidance and an assessment of the extent of the design changes made in response to MRCS technical review report has been completed and is available on the MRC website.</p>
	1: The updated PDG is prepared		
	2: The updated PDG is endorsed by the JC		
	3: Proposed mainstream HP projects address principles and recommendations in the PDG		
<p>Assumptions: All Member Countries have common understanding and interests to update the PDG as needed and based on lessons learned.</p> <p>Scheduled Timeline: By 2020</p>			

Output and Indicators	Review Assessment	Basis for Assessment
Output 3.2: Integrated Flood Risk Management guidelines promoted and implementation supported	This is a case where activities in this SP period were specifically designed to follow up on outputs produced earlier (2010) and facilitate their uptake.	MTR meetings with NMCS and LAs referred positively to MRC's role in forecasting but little unsolicited mention of the IFRM guidelines and training materials.
	<i>1: Evidence of Member Countries use the IFRM guidelines in their flood risk management endeavours.</i>	NMCSs are requested to inform MTR if (a) training institutes have been designated and (b) whether their training modules have been influenced by the guidelines.
	<i>2: The training materials and modules are used by the institutes of higher learning and form part of the flood risk management curriculum.</i>	
	<i>3: The number of enrolments in courses that deliver training in the use of the BPGs and trans-boundary package.</i>	
Assumptions: <ul style="list-style-type: none"> • Sufficient resources and qualified staff are available to undertake the work. • Institutes of higher learning are interested in undertaking this work Scheduled Timeline: By 2020	Although a review of the Best Practice Guidelines (BPGs) and training guidelines was envisaged and designated training focal points were to be identified, there appears to have been little activity following the end of FMMP, probably due to resource constraints at the RFMMC. Focal points in MCs have also changed raising questions about institutional memory. The MTR team does not see any significant progress on this output either in terms of activities funded by MRCS or the MCs. The earlier training activities may though have led to some inclusion of FMMP materials in national training courses, but there is no reporting on this. There is no mechanism currently to provide insight on these indicators. This finding reinforces the need for a more proactive approach to uptake and related allocation of resources for uptake facilitation.	

Output and Indicators	Review Assessment	Basis for Assessment
Output 3.3: A set of guidelines and frameworks on waterborne transport management prepared and promoted	Slow progress on implementation of regulatory aspects under the bilateral Agreement due to security and other concerns regarding collection of fees.	In 2015, MRCS was asked to assist in the establishment and operation of the Bilateral Mekong Navigation Facilitation Committee (MNFC), and in harmonizing rules and regulations.
	<i>1: Number of Cross-border Transportation Permit issued by competent authorities of Cambodia and Vietnam</i>	Pilotage is used by Cambodia in Vietnamese waters but reciprocal service not yet available. Given the time needed for adopting new standards, it is unlikely that there is sufficient time left in the SP period to change statutory requirements and this will be carried forward.
	<i>2: Single stop formality for vessels engaged in transit transportation applied</i>	There are two sets of navigation standards in use – Chinese in the upper basin and Cambodian in the lower basin. Given the different physical and shipping conditions and lack of connectivity between north and south, this is workable and so does not appear that further work on harmonisation between upstream and downstream is warranted. However, this will be informed by a technical review that is examining the differences in the two systems.
	<i>3: Adequate pilotage services to vessels requesting assistance are provided basin-wide</i>	Discussion on the joint safety standards is progressing and is one aspects of the Navigation Master Plan.
	<i>4: Proposed standards for construction of ships and equipment on board, and the same standards for storing and carrying dangerous goods, crew certification, etc are legally adopted basin-wide</i>	For MRC to be effective in this sector would require a reassessment of its role in Navigation and determination of resource requirements including possible bilateral support.
	<i>5: Proposed technical guidelines are promoted and used basin-wide</i>	No progress has been made on adoption of ship construction and safety standards.
	<i>6: Lao PDR and Thailand use the same safety rules and regulations</i>	One cross border transportation permit issued by Viet Nam and Cambodia.
Assumptions: <ul style="list-style-type: none"> • Member Countries' decision makers understand the advantages and importance of waterborne transportation • LA s understand that they should work together with the shipping companies • Strong commitment to follow guidelines is required • Public awareness on necessity of proper waste management is essential Scheduled Timeline: By 2019		The regional standards for vessel classifications and river classification will be proposed in 2018 for MCs to consider for approval.
		Vietnam provides the single stop service, but not yet Cambodia. The regional standards for vessel classifications and river classification will be proposed in 2018 for MCs to consider for approval.
		No progress has been made on adoption of ship construction and safety standards.
		The JNIP between Lao and Thailand to harmonize Safety and Anti-pollution rules and regulations was set up in 2017. Due to the limited budget available only the safety part has been started. The approach and methodology for the harmonization have been agreed and the proposal will be introduced to the member countries early December 2018.

Output and Indicators		Review Assessment	Basis for Assessment
<p>Output 3.4: The sharing and learning of “best practice” guidelines and tools to support the development and operation of water and related projects on tributaries of transboundary significance</p>		<p>Feedback deals mainly with RSAT which has been used in a tributary context on the Srepok. Approval of RSAT was delayed due to concerns over its status by Lao PDR but the final draft is available for use. It could be approved within the SP period.</p>	<p>The guiding manual on RSAT Transboundary Dialogue finalized after the Regional meeting in March 2017. MRC has conducted training of facilitators from 6 countries and the facilitators have identified projects in each country. However, there is no funding in AWP 2019 to progress the work.</p>
	<p><i>1: Guidance for water projects on tributaries of transboundary significance are shared and jointly learned and updated</i></p>	<p>An orange rating is given for the first indicator as only the hydropower sector is covered albeit the most prevalent in terms of development activity. However there have been plans for irrigation abstraction for many years and no guidelines related to planning and design from a regional perspective exist. Some of the RSAT guidelines would be relevant. Similarly, the scope of the Output as noted in the SP includes flood management.</p>	<p>After several regional meetings and discussions on the shared Srepok River Basin, some recommendations have been made such as: (1) Joint Study between Cambodia and Viet Nam on the minimum flow and water demand / conservation/ protection measures for addressing loss of biodiversity and ecosystem services in Srepok river basin; (2) improving water resource monitoring and forecasting system e.g. Mechanisms for flood and drought (Early warning system) and more effective information sharing between two countries, via MRC’s Flood Bulletin; (3) Building capacity of water resource and reservoir managers to use reservoirs for better flood and drought risk reduction through inclusion of transboundary risks all the rules and regulations of HP Dam operation; and (4) strengthening Joint action to develop flood and drought management measures in the Srepok river basin. The guiding manual and RSAT will provide useful support to the countries during implementation of these recommendations.</p>
	<p><i>2: Existing and proposed projects on tributaries of transboundary significance address principles and recommendations from MRC guidance and tools</i></p>	<p>Although the PDG was prepared for the mainstream, elements of it would be equally valuable for major projects on tributaries and MRC has considered proposing supplementary advisory guidance for tributary projects. This could be in the form of best practice advice.</p>	
<p>Assumptions: Member Countries have interest to share and develop such guidance</p> <p>Scheduled Timeline: Continuous</p>		<p>The MTR does not have any explicit evidence that tributary projects have been materially influenced by MRC guidance and tools, although the continuing dialogue on regional issues among NMCs and LAs in MRC meetings over the years is expected to have had some implicit influence. Achieving the Output would require agreement on the precise role of MRC on tributary projects of transboundary significance and more explicit use of the guidance.</p>	

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.5: Regional Action Plan for Sustainable Transportation of Dangerous Goods implemented		Integration of proposals from the Regional Action Plan not yet implemented although some limited follow up in discussion of pilot projects. Would need coordination with JCCCN to ensure harmonized approaches.	CAM-VIE agreement facilitated by MRC has a provision for notification in emergencies but not yet implemented. Some discussions are taking place between Laos and Thailand on safety issues, but procedures not operationalised. The Quadrangle Agreement on Commercial Navigation includes an Annex on Emergency Plans to Handle and Coordinate the Navigation-related Unexpected Accidents in the Lancang River.
	1: LAs include the Regional Action Plan into their regular planning cycle		
	2: Shipping accidents are reported and analysed according to established procedures		
	3: Measures to collect wastes in ports are implemented.		
	4: Measures to control pollution caused by boats are implemented		
	5: Transboundary emergency response schemes are in place		
<p>Assumptions:</p> <ul style="list-style-type: none"> • Law enforcement is well enforced • Private sector must set aside enough resources to make adjustments to ships and ports • Public awareness on necessity of proper waste management is accepted • Public awareness on necessity of proper waste management is accepted • Public awareness on need for safety prevention, and impacts of oil pollution is accepted <p>Scheduled Timeline: By 2020</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.6: Sustainable Management of Watersheds in the Lower Mekong Basin Project supported		The website is complete and maintained as an archive site. There has been little new activity since the end of the project. New activities are not prioritized in current work-plan. Level of website activity based on a Google Analytics report is very limited. The scope of the pilot project is more targeted to sustainable forest management than those envisaged in the regional study. No resources allocated for MRCS and so this will be limited to providing linkages to countries. Given the current lack of focus on watershed management, the overall assessment is that although the 'administrative' aspects of this activity have been undertaken, the MRC is not in a position to provide the support envisaged in the output statement. The MTR does not consider this a major priority.	The website is operational with all materials/ documents/ reports/tool kits of MRC-GiZ watershed project. Final regional workshop organized and summary report of the workshop prepared and finalized; The Project Part 2 Completion Report (2010-2017) prepared and finalized; and Financial Audit Report prepared and finalized. KfW inspection mission successfully organized and the Minutes of the mission prepared, finalized and signed among all parties (MRC, DWR and KfW). An MRC-JICA project on conservation of environment has one pilot related to this output.
	1: Watershed management website is operational and actively used by stakeholders		
	2: Funding of pilot project is secured		
<p>Assumptions: None</p> <p>Scheduled Timeline: By 2017</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.7: The implementation of the guidelines for improvement of watershed management practices supported		<p>The website is available but is not easy to find (listed under 'Other sites' in the site map). No activity reports are collected and reported and there has been no update of materials. Dissemination has been limited and is not a current priority. There is no indication of training activities.</p> <p>Given the lack of capacity and attention to watershed management, it is unlikely that the aim of this output, namely support to WM practices, will be achieved. It raises questions about whether watershed management should remain a key area for MRC or if this is better implemented through other programs bilaterally.</p> <p>The OCEO rating of 'on track' relates mainly to progress on establishment of the website whereas the MTR has taken a broader view related to uptake and use including training. There are no activities or resources allocated to training or other uptake activities.</p>	<p>Final reports on the Sustainable Management of Watersheds in the LMB Project (SUMALOM Nam Ton Project) were uploaded on the interactive MRC watershed webpage. Memorandum of Cooperation on "Data Collection Survey on the Basin Management and Environmental Conservation in Mekong River Basin" between MRC and JICA was officially signed. This study has been considered as part of the watershed management in the LMB region. Inception Report on "Data Collection Survey on the Basin Management and Environmental Conservation in Mekong River Basin" was prepared by the JICA Study Team (JST), and uploaded on the interactive MRC webpage.</p>
	1: <i>The MRC interactive webpage on WM is kept up to date and evidence of visits/uses each month;</i>		
	2: <i>The planning frameworks are disseminated and the identified users are trained</i>		
<p>Assumptions: None</p> <p>Scheduled Timeline: 2018-2020</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.8: Guidelines to adapt to water shortage and drought impacts prepared and implemented		<p>Apart from timing and budget considerations, there may also be challenges in obtaining drought data from MCs to the extent envisaged and in the timeframe needed. Hopefully these data will be forthcoming given the priority that all countries have placed on drought management. Although guidelines may be agreed by the end of the SP period, there will be little time remaining for their implementation and it is not clear to what extent resources will be allocated for support to their implementation.</p>	<p>Activities not yet started. Budget of \$30k out of a total \$70k has reportedly been allocated for 2019 from the Basket Fund. Guideline preparation will involve consultant recruitment.</p>
	1: <i>The guideline is developed and agreed by Member Countries to be incorporated into national plans.</i>		
	2: <i>Guideline implementation are supported</i>		
<p>Assumptions:</p> <ul style="list-style-type: none"> Data information on changes of water diversion by catchments is precisely revealed by Member Countries (limit of data accessibility) Policy makers might see the guideline as significant enough to incorporate into the national planning. <p>Scheduled Timeline: By 2017</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.9: Methodologies for sustainable use and management of wetlands developed and implementation supported		This Output is generally on track to be completed in the SP period.	M&E reports indicate that: <ol style="list-style-type: none"> 1. The LMB wetland maps, information and database have been updated by the 4 MCs with technical assistance of a Regional (Riparian) GIS and Database Consultant. It is expected that the LMB wetland database will be in service for external partners by 2019. 2. Methodology and tool of WI, WEFASAM and WBIA has been agreed by MCs. Criteria for prioritizing wetland sites in preparation. Testing and improvement of methodology and tool at 10 selected wetland sites in 4 MCs is expected to be finalized in 2019 and followed by the capacity strengthening program in 2019-2020 to promote the use of assessment methodologies by relevant line agencies. 3. It is expected that the training of line agencies experts on wetland management which is considered as part of the capacity building and strengthening program will start in 2019-2020 after the finalization of the methodology and tool of WI, WEFASAM and WBIA.
	1: <i>The increasing use of LMB wetlands database by external partners</i>		
	2: <i>The increasing use of assessment methodologies by relevant LAs</i>		
	3: <i>The number of LA experts trained in wetland management</i>		
Assumptions: Political and policy support obtained Scheduled Timeline: By 2020			

Output and Indicators		Review Assessment	Basis for Assessment
Output 3.10: Guidance for design and operation of irrigation systems with transboundary implications prepared and implementation supported		Indications are that although preparatory work has been carried out, the main activities related to preparation of guidelines and their approval, have not yet started.	The basic information (including the results from the improved irrigation database and study of irrigation impacts under the Council Study) were concluded. The concept note was prepared and shared with the MCs; and comments were received. Guidelines not yet started. The study is postponed until the budget is available. It was ranked as the third priority project for activity on Agriculture and Irrigation.
	1: <i>The guidelines for the design and operation of irrigation system are agreed by Member Countries</i>	No resources have been allocated in AWP2019 except for fish friendly irrigation structures, which although related is under separate Output 3.11.	
	2: <i>The guidelines for the design and operation of irrigation system tested in MCs</i>	MRC may need to consider narrowing the scope of its work on irrigation to focus only on those aspects that have a transboundary impact, such as major abstractions and fish friendly design.	
	3: <i>Guidelines for design and operation of irrigation system are applied in national policy for irrigation planning, designing, evaluation and operation</i>	MRCs to assess: (i) linkage to related MRC work that may provide an opening for uptake of these aspects e.g. the Procedures, PDG and RSAT; and (ii) where MRC should take a more passive role on aspects that are more national in nature (but which MRC needs to keep aware of), e.g. irrigation studies and ADB's ongoing sector review of irrigation in Lao PDR.	
Assumptions: Cooperation from concerned line agencies Scheduled Timeline: By 2018			

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 3.11: Guidelines for fish-friendly irrigation schemes promoted and implementation supported</p> <p>1: <i>Guidelines for fish friendly irrigation schemes adopted and agreed by Member Countries to be adapted in national policy for irrigation planning, designing, evaluation and operation.</i></p> <p>2: <i>First round testing of draft guidelines in pilot areas in MCs completed and guidelines revised accordingly</i></p>	<p>Expect the updated guideline to be produced within the SP period. Achievement of the Output in terms of uptake will depend on resource allocation for the next two years and on overcoming any issues coming from the review by Member Countries.</p>	<p>Project is linked to a related activity funded by US and ACIAR.</p> <p>The guideline '<i>Prioritising Fish Passage Barriers and Creating Fish Friendly Irrigation Structures in LMB</i>' was produced by the Australian expert team with consultation of experts from MCs in the previous SP. In this SP, the guideline will be revised and refined based on the results from the testing.</p> <p>Under the collaboration between MRC and U.S. DOI/ACIAR on low-head fish passage inventory, training, and publication development, the testing (indicator 2) is being undertaken. Results from the testing will be used for refining the guideline</p> <p>Based on the testing results, the draft guidelines will be revised, refined, and finalized afterward</p>
<p>Assumptions: High ownership of relevant line agencies and local communities Timeline: By 2020</p>		

Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 3.12: Transboundary Environmental Impact Assessment (TbEIA) guidelines established, approved and promoted</p> <p>1: <i>TbEIA framework is endorsed by the JC</i></p> <p>Assumptions:</p> <ul style="list-style-type: none"> Perceived need for implementation of TbEIA in Member Countries TbEIA recognized as meeting both national interests and regional cooperation <p>Scheduled Timeline: By 2020</p>	<p>Lao PDR raised concerns on legal status of document and requested changes to the structure and time to evaluate through case studies. Cambodia questioned the scope of TbEIA which originally is intended to cover all projects requiring an EIA under the host national system that could have transboundary impacts. A revised draft is dated September 2018. Approval at JC is possible within the remaining SP period, but the MTR views the requested change in scope to cover only mainstream projects as 'major' and not in line with the original intent.</p> <p>The MTR notes the status of the TbEIA is different to the MRC Procedures which are subsidiary instruments under the 1995 Agreement and even after JC approval or consent, the TbEIA Guidelines will remain advisory in nature until such time as they are incorporated into national systems through national legislation. It could therefore be considered after JC approval to be on a voluntary basis.</p>	<p>By the end of 2017 the third or final draft of TbEIA Guidelines prepared and submitted to the 4 MCs for a final round of national consultations in Jan-March 2018, followed by a regional meeting of the ED Expert Group in May 2018 Final review draft including sections on TbEIA process, implementation and support prepared and submitted to 47th JC meeting in Aug 2018 for approval.</p> <p>Countries have raised concerns about the status of TbEIA when approved (whether it would be considered mandatory) and proposed that the scope be changed to cover only mainstream projects.</p>

Outcome 4: Effective and coherent implementation of MRC Procedures by Member Countries

Output and Indicators		Review Assessment	Basis for Assessment
Output 4.1: MRC Procedures and associated technical guidelines reviewed and updated		Given the prominence of proposals for mainstream hydropower, the main focus of the work on Procedures has been on PNPCA . Significant progress has been made in both implementing the Prior Consultation process since its first use on the Xayaburi project and it is welcome to see agreement on a Joint Action Plan for Pak Beng which is actively monitored and followed up. The continued focus on the Joint Environmental Monitoring is also encouraging. Compilation of lessons learnt and drafting of a Commentary on the PNPCA all help to clarify its implementation.	The Working Paper on Lessons Learnt from PNPCA Implementation has been updated including the lessons learned from the Pak Beng prior consultation process. The PNPCA Commentary Note has been prepared and extensively discussed at both national and regional level. The Joint Platform agreed to use them as a working document to be updated when new lessons arise.
	1: <i>The Technical Guidelines for the PMFM are updated, finalised and agreed</i>		
	2: <i>The Technical Guidelines for the PWQ are finalised and agreed</i>		
	3: <i>Relevant MRC Procedures and Technical Guidelines including PNPCA are reviewed as part of Joint Platform</i>		The Technical Guidelines for PWQ were finalised and agreed by the MRC JC on 22 November 2016. A Cooperation Framework between MRC and ASEAN finalised in October 2018 identifies joint activities on water quality emergencies as an area of cooperation. MRC submitted a revised concept note to ASEAN on emergency response cooperation in September 2018 and is awaiting further response from the ASEAN Secretariat.
<p>Assumptions:</p> <ul style="list-style-type: none"> • Willingness of Member Countries to review the MRC Procedures and make changes if needed to benefit Mekong cooperation • Agreement reaches on the pending issues • Positive perception of the benefits of the MRC Procedures <p>Timeline: 2016: Finalization of the Technical Guidelines of PMFM and PWQ</p>		<p>The PWQ is being effectively implemented in relation to routine water quality monitoring. On contingency planning for emergency incidents, the MRC's proposal for cooperation with ASEAN to develop joint mechanisms to deal with emergency water quality issues is a commendable example of efforts to avoid duplication. The MRC is also encouraged to explore how emergency water quality incidents might be prevented through work in this SP period seeking to harmonise rules between Lao PDR and Thailand on the sustainable transport of dangerous goods and anti-pollution measures.</p> <p>The PDIES has been in force since 2001 but implementation difficulties remain. A review and update is warranted, including to consider whether the procedures remain fit-for-purpose under decentralised modalities for data collection and the need for coordinated hydropower operations on the mainstream and the tributaries.</p> <p>Although significant progress has been made on PMFM with publication of conditions on a PMFM website, and it is being used in planning mode for PNPCA consultations, it is not clear how communications will actually be made in a management situation when any flow thresholds are transgressed. The explanation of how</p>	<p>Final draft Technical Guidelines for PMFM, Comprehensive Information Report, Implementation Report are completed and presented to the Member Countries in the 13th Technical Review Group (TRG) Meeting in October 2017 in Siem Reap and Regional Working Session on the PMFM in May 2018 in Vientiane.</p> <p>The PMFM website is operational and agreement reached that PMFM is used as a working version.</p>

	<p>PMFM will be applied in practice would benefit from a commentary document similar to that prepared for PNPCA. The linkage from the MRC main page to PMFM website is not very prominent and, at the time of writing, a superseded version of the Technical Guidelines was posted.</p> <p>Long standing questions remain over the provision and acquisition of data for PWUM. The MTR considers it an appropriate time to revisit the rationale of PWUM and how it fits together with other procedures and planning processes and whether other approaches including the use of remote sensing technology and water accounting tools offer a more viable alternative.</p> <p>The difficulty experienced by Cambodia and Viet Nam in accessing information on the dam break in southern Lao PDR in 2018 points to the need for a working protocol on emergency exchange of information in critical situations as required under Article 10 of the 95MA. This could be included in PDIES or as a stand-alone protocol.</p>	
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Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 4.2: MRC Joint Platform and working groups for MRC Procedures implementation supported</p>	<p>The work of the Joint Platform has been dominated by the PNPCA as noted under Output 4.1. This does mean though that outstanding issues on other Procedures such as PWUM and PDIES are not a priority. Issues related to PDIES are taken up under Outcome 6.</p> <p>There will always be stakeholders who wish to see PNPCA as more of a regulatory tool to prevent major mainstream investments rather than its current focus on process and consensus building. The fact that PNPCA takes place late in the planning process limits its influence and relies upon the discussion of major investment plans and their alternatives taking place in other fora, such as the Basin planning process.</p>	<p>The Joint Platform has been meeting regularly since its establishment in 2014. The MTR team is not aware of any issues involving more than one Procedure being tabled to the Joint Platform for resolution. As noted at the regional meeting on the draft MTR report, the Joint Platform has a considerable value as a less formal forum for resolving issues and developing consensus positions for endorsement by JC as needed.</p> <p>The final draft of Joint Action Plan (JAP) for Pak Beng Hydropower Project received approval from 3 JC members and is awaiting final go ahead from the last JC member. It was planned to have it endorsed in the JC Prep Meeting prior to the 25th Council Meeting.</p>
<p><i>1: The number of pending/challenging issues related to more than one procedure tabled and resolved by the Joint Platform</i></p>		
<p><i>2: The number of pending issues specific to each procedure resolved by respective technical working groups of each Procedure</i></p>		
<p>Assumptions:</p> <ul style="list-style-type: none"> • Solid understanding of the purposes and intent of the MRC Procedures in accordance with 1995 Agreement • Willingness of Member Countries to resolve pending issues 		

<ul style="list-style-type: none"> Adequate resources are assigned to facilitation and implementation support <p>Timeline: 2016- 2020 organized routine meeting of the Joint Platform (twice a year as indicated in the TOR)</p>		
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Output and Indicators	Review Assessment	Basis for Assessment
<p>Output 4.3: Common understanding of the Procedures implementation by Member Countries promoted</p>	<p>The MTR considers that awareness of the MRC Procedures, particularly PNCPA, has improved considerably over the past 8 years since first applied to the Xayaburi project. Provision of commentary documents on other important Procedures like PDIES, PMFM and PWQ would also raise understanding.</p> <p>The MTR rating for this output relates mainly to finalization and/or full implementation of the other Procedures, particularly PWUM and PDIES</p>	<p>A two-day regional meeting on 29-30 May 2018 was organized to discuss the handbook on "Understanding the 1995 Mekong Agreement and Procedures Linking". The Member Countries agreed to use the handbook for national capacity building.</p> <p>A one-day practical water diplomacy training workshop was organized in Lao PDR for the senior staff of the LNMCS by using the handbook on understanding of the 1995 Mekong Agreement and Procedures Linking.</p> <p>All four-member countries have applied their understanding and knowledge in their discussion and negotiation on Technical Review Report (TRR) and Joint Statement for the Pak Beng hydropower project. It is being applied for the 6-month PNPCA process for Pak Lay hydropower project from August 2018 to March 2019.</p> <p>Training of trainers for core MRCS staff involved in aspects of 'water diplomacy' was scheduled for late 2018. Workshops in MCs are yet to take place. A small allocation of funding has been made in AWP2019.</p>
<p>1: At least 1 Regional SLD (sharing and learning dialogue) is organised in one year.</p>		
<p>2: At least 1 national SLD is held in each Member Countries in one year.</p>		
<p>3: Record of Member Countries that applies to CDAP</p>		
<p>4: The number of orientation/training on 1995 Mekong Agreement that includes the content of the MRC Procedures and IWRM held per year.</p>		
<p>Assumptions: Adequate resources are assigned to implementation support</p> <p>Timeline: 2016-2020: Sharing and learning dialogue at once a year</p>		

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

Output and Indicators		Review Assessment	Basis for Assessment
<p>Output 5.1: Partnerships with MRC's Dialogue Partners further developed and implemented, including an additional agreement with China on cooperation for Mekong basin development and management</p>		<p>The overall status and outlook for partnerships with Dialogue Partners, particularly China, is on track not just for this SP but overall. However, this output might not be fully achieved by 2020 because of one key indicator, which is MRC reaching an agreement with China on dam operations.</p> <p>The issue of dam operations has been included in the draft MOU for LMWRCC-MRC, but this may not be the right platform as there is a different department in the Chinese Ministry of Water Resources responsible for hydrological data and dam operations. Nevertheless, China seems to prefer to discuss this, if at all, under the LMC framework – since China is not a member of the MRC and has also pointed out to the MTR that LMC includes both Myanmar and China in addition to the MRC MCs.</p> <p>This suggests the issue of hydrological data sharing may need to be considered under the LMC framework in addition to being pursued through MRC Dialogue Partner arrangements.</p> <p>Regarding sharing hydrological data beyond the wet season MRC may need to define “emergency” and “normal” and the level in between so that dry season data sharing can be regularized. This issue is part of the MLC-Thai project on hydrological data sharing. However, the first phase includes only China, Lao PDR and Thailand. Other LMC members are consulted in Regional JWG for Water Resources meetings.</p> <p>The pace of cooperation to go beyond attending each other's technical meetings has picked up with the LMC serving as an added avenue for cooperation. A more focused “mission” would be the way to go, for instance, research on the Joint Observation and Evaluation of the Emergency Water Supplement from China, which included IWMI as a key technical partner. Reviving the JRP programme should also serve efforts to deepen partnerships and build trust.</p>	<p>MRC-China MOU on water extended in 2018 and there is continued discussion on expanding the period for sharing of data during annual Dialogue Meetings. China has released water in “emergencies” when requested as a “supplementary” release, for example during the dry season of 2013 and 2016. MRC members are exploring how to define normal, emergency, disaster situation parameters and other data sharing related to fluctuations from dam operations via a Thailand project supported by the LMC Special Funds under the LMC framework.</p> <p>Discussions are on-going on the draft MoU between MRCS and LMWRCC which includes the exchange of dam operation information.</p> <p>MRC collaborated with China on four technical workshops and China agreed to the inclusion of a chapter on the Upper Mekong Basin in the 2018 SOBR.</p> <p>Since 2015 there have been no Chinese experts working at the Secretariat. The JRP programme ended at the end of the SP2010-2015 but talks at the latest Dialogue Meeting confirmed MRC will resume the JRP Programme in AWP 2019, which was welcomed by both China and Myanmar.</p> <p>There have been no joint technical workshops between MRC and Myanmar.</p>
	1: The agreement between the MRC and China is maintained and updated		
	2: Additional protocol/agreement with China on exchange of dam operation information concluded		
	3: The number of joint technical workshops held in collaboration with China		
	4: The number of Chinese experts working at the MRC		
	5: The number of joint technical workshops held in collaboration with Myanmar		
	6: The number of Myanmar experts working at the MRC		
<p>Assumptions: Stable political and regional relations</p> <p>Timeline: Continuous</p>			

	Discussions with Myanmar should start on plans for workshop collaboration. Pertinent issues include Basin Planning, setting up a Decision Support System and flood and drought management – as Myanmar develops its Basin Master Plan and DSS for the Ayeyarwady, its largest and most important river basin.	
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Output and Indicators		Review Assessment	Basis for Assessment
Output 5.2: Partnerships with ASEAN, GMS and other organizations updated and implemented		<p>This Output is on track and well on its way to reaching desired results. The new cooperation framework with ASEAN has already been endorsed by MRC and ASEC focusing on fields of common interests. Both sides receiving strong support from key ASEAN working groups.</p> <p>The updated plan to cooperate with ADB may focus on two key areas: Energy/Hydropower and Environmental Management.</p> <p>MRC continues to explore developing strategic partnerships with other organizations. MRCS is developing a MRCS partner database and an outline of the MRCS partner guideline - to make better use of current MRC partnerships; to identify appropriate new partners if needed; and to manage information and documents on MRC partners.</p>	<p>An updated “Cooperation Framework” has been endorsed by MRC, ASEC, AWGWRM, ASOEN and confirmed in an exchange of letters. MRC sent a letter to officially inform ASEAN about the endorsement of the framework to ASEAN on 23 Nov 2018.</p> <p>The MRCS has drafted a Concept Note with proposals on enhanced collaboration in the field of water quality monitoring for consideration by specific ASEAN bodies, including the ASEAN Working Group on Water Resources Management. The revised Concept Note was submitted to ASEC for circulation in September 2018. MRC has also submitted proposals to ASEAN for funding of the MRC Joint Project in the 3S-Basin.</p> <p>MRC applied for the JAIF 2 for the “Development of Operational Tools for medium- and long-range flood (& drought) forecasting, addressing special sectors, and analysis of extreme weather events & climate variability in the LMB for MRC’s RFMMC”.</p> <p>Based on the new Cooperation Framework with ASEAN the MRCS and ASEC intend to meet “as necessary” to implement the Framework. However, ASEAN, as an observer, along with other MRC-relevant regional organisations has always been invited to MRC’s annual Council Meeting in which regional coordination and information is shared. Side meetings between MRCS and ASEC representatives are organized around this period.</p> <p>MRCS participated in a number of ASEAN technical meetings related</p>
	<i>1: MOU with ASEAN updated in accordance with BDS directions</i>		
	<i>2: Yearly dialogue meetings with ASEAN held</i>		
	<i>3: MRC representatives participate in ASEAN meetings</i>		
	<i>4: ASEAN representatives participate in MRC governance/ technical meetings and stakeholder forums</i>		
	<i>5: MRC-ADB Partnership Agreement updated in accordance with BDS directions</i>		
	<i>6: Annual dialogue and regular technical meetings held between ADB and MRC</i>		
	<i>7: MRC representatives participate in GMS Meetings</i>		
	<i>8: ADB representatives participate in MRC governance/ technical meetings and stakeholder forums</i>		
	<i>9: The number of funded RIF water-related projects that are in line with BDS</i>		
Assumptions: <ul style="list-style-type: none"> ASEAN work and meetings place Mekong issues regularly on the agenda and MRC Member Countries place the ASEAN integration drive as a key feature in the Mekong Basin 			

<p>Development Strategy and MRC Strategic Plan</p> <ul style="list-style-type: none"> GMS supported by ADB value the basin-wide water related perspectives provided in the BDS and the opportunities to strengthen cooperation with MRC to build synergies and reduce duplications and overlaps <p>Timeline: MOUs updated by 2016 Implementation continuous</p>		<p>to Climate Change as well as meeting with the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Center).</p> <p>MRC aims to update the cooperation framework with an addendum to the “2000 Partnership Agreement between ADB and MRC”, which has no end date, to focus on two key areas: Energy/ Hydropower and Environmental Management.</p> <p>ADB has also been participating in the development of the SHDS. ADB Director for natural resources from HQ attended the MRC 2018 International Conference and Summit in Siem Reap.</p> <p>The MRC CEO was invited and attended the GMS Summit this year in Hanoi. The ASEAN Deputy Secretary General attended the Third MRC Summit.</p> <p>At the MRC International Conference, proposed potential collaborations with MRC on</p> <ul style="list-style-type: none"> -Application of Strategic Environmental Assessment (SEA) and related spatial and other analytical tools in basin development planning; -Adoption of transboundary EIA guidelines as part of country safeguard systems; -State of Basin reporting and environmental performance assessment (EPA) – which are under the MRCS Environment Division. <p>Further information would be required on the GMS RIF in relation to projects that are considered in line with the BDS.</p>
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Output and Indicators		Review Assessment	Basis for Assessment
Output 5.3: Regional Stakeholder Platform established and implemented for enhanced dialogue and collaboration with broader stakeholders		<p>This Output is on track in terms of RSFs regularly organized even more than once per year but some NGOs active in transboundary Mekong cooperation are not satisfied with the lack of clarity on how their inputs have been integrated or addressed in MRC products and processes particularly for the PNPCA.</p> <p>This despite strong recognition of the usefulness and quality of MRC products particularly those related to hydrological data, flood forecasting. Moreover, the SP states the platform would be institutionalized. Therefore, there is work to be done to address CSOs' concerns as well as adding and institutionalizing inclusion of specific groups like the private sector and research organizations.</p> <p>There has been a more ad-hoc approach for specific engagement – for example, for the update of the PDG, there were many meetings with private dam developers. For academics and research institutes, rather than organizing specific meetings MRC strategically participated in conferences that targeted MRC-relevant researchers and policymakers such as the WLE Forum and those held by MRC's partners such as SEI and IUCN.</p>	<p>Regional Stakeholder Platform as a body with ToR has not yet been established. However, the Regional Stakeholder Forums (RSFs) have been established as a platform for MRC-Stakeholders to exchange views and knowledge on MRC products and processes. They have been held more than once a year since 2016. PNPCA regional public consultations have also been counted as RSF.</p> <p>From a survey during the RSF for the PNPCA for Pak Beng in May 2017 the level of satisfaction with MRC's PNPCA processes was high. However, interviews with some key regional level CSOs and national level NGOs in Q4 2018 pointed to a low level of satisfaction in the process and some have made public statements to this effect.</p> <p>Based on a survey by the MRCS at the RSF for the PNPCA for Pak Beng the level of satisfaction with MRC's products and services and their use/reference made to the products and services were high (89 and 79 per cent respectively). Despite not being satisfied with MRC processes such as the PNPCA key CSOs still find MRC products very useful and of good quality.</p> <p>An annual "general" Regional Stakeholder Forum (RSF) has been ongoing since 2016. They focus on key MRC strategies and products presented to stakeholders (including MCs and DPs but expanded to include CSO as MCs and DPs already have dedicated governance meetings a few times a year). CSOs are also key participants at Regional PNPCA public consultation meetings. MRCS has explored setting up specific forums for each interest group such as NGOs and the private sector. However, this has not been formalized.</p>
	<i>1: Establishment of Regional Stakeholder Platform</i>		
	<i>2: The level of satisfaction of stakeholders with MRC process and procedures</i>		
	<i>3: The level of satisfaction of stakeholders with MRC products and services</i>		
	<i>4: Yearly common stakeholder forum held; specific working groups (for private sector, for research organisations, for CSOs) set up and meetings held</i>		
<p>Assumptions: Stakeholders maintain interest to engage with MRC</p> <p>Timeline:</p> <ul style="list-style-type: none"> • Establishment of Regional Stakeholder Platform by 2017 • MRC-wide stakeholder forum held in 2017, 2018, 2019, 2020 • Specific working group meetings held at least once a year 			

		<p>Another effort to include specific stakeholders is the Expert Groups under MRC divisions. Their TORs have specific provisions to invite non-governmental experts to participate in EG meetings. This has not been applied yet but the provision is in place.</p>
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Outcome 6: Basin-wide monitoring forecasting, impact assessment and dissemination of results strengthened for better decision-making by Member Countries

Output and Indicators	Review Assessment	Basis for Assessment
Output 6.1: Monitoring and forecasting for MRC Procedures and Indicator Framework developed and maintained	Monitoring systems have been established and are in place for key disciplines with three of eight monitoring activities fully decentralised. However, there are multi-year gaps in the data (especially for sediment and fisheries) and significant concern about the financial sustainability of decentralised activities.	Monitoring systems established for hydro-meteorological parameters, water quality, ecological health, and fisheries. Further design work and agreement is needed on sediment monitoring, socio-economic data provision and SIMVA monitoring.
<i>1: The MRC Monitoring and forecasting systems for required monitoring parameters established and maintained</i>	Where agreements have been reached with MCs, data is generally being provided according to agreed schedules and standards. A significant exception is the provision of near real-time hydro-meteorological data from HYCOS stations.	Sediment monitoring was not undertaken in 2016 and 2017; recommenced in 2018 although future beyond next year is uncertain. Concerns were raised by MCs about some parameters and equipment. Fisheries monitoring data was not available 2014-2016, except for Cambodia in 2014 and 2015; but recommenced in 2017. Water quality and ecological health monitoring undertaken 2016-2018, as required.
<i>2: Data for required parameters are monitored by Member Countries and when needed delivered to the MRCS according to agreed schedules and standards</i>	Further work is required to clarify arrangements and agree ongoing approaches to sediment monitoring and socio-economic data, and there have also been delays in reaching agreement to revised fisheries methods. The drought monitoring activity is only just commencing and further monitoring activities are under development (e.g. wetland health and biodiversity monitoring).	Hydro-meteorological monitoring is occurring, but there have been significant real-time station performance issues in 2016 and 2017. Issues were rectified by MRC recovery mission in 2018 but still only 84% of stations fully operational and further issues likely. Real-time hydrological data was reported as mostly being used to fill gaps and cross-check manual data for flood forecasting due to unreliability of the HYCOS network.
<i>3: Decentralisation of monitoring is implemented according to the Roadmap³²</i>	This output requires a continual focus on operations and maintenance, decentralisation transition support to countries, and resolution of budget issues given difficulties maintaining some mainstream HYCOS monitoring stations since decentralisation.	Manual data provision has been sufficient for implementing the PMFM (which does not rely on near real time data), and information is made available to the JC. Improvements are necessary for forecasting and modelling/planning/operations.
<i>4: The level of end-users satisfaction with quality of flash flood and river flood forecasting and drought warnings</i>	Next year will be important for ecological health monitoring, water quality monitoring and fisheries monitoring due to the current decentralisation handover schedule requiring MCs to make substantial contributions to the cost of these activities through national budgets for the first time.	Ongoing improvement works for flood forecasting and flash flood guidance in progress including new server for MRCFFGS installed and URBS model updated with new functions including rating curves and flow regimes considering dam
Assumptions: Member Countries have sufficient budget, tools and capacity to carry out all MRC decentralised activities according to required standards Scheduled Timeline: Continuous		

³² Note that changes to the implementation of decentralisation have been agreed by Member Countries since the Road Map was finalized including after the 2014 Review and at a regional meeting in 2017.

		<p>operations; capacity building undertaken with MCs.</p> <p>No socio-economic data provision other than through national consultants contracted for SOB; Council Study relied on SIMVA data.</p> <p>Design and data collection and transmission arrangements for socio-economic, wetlands, climate change, cooperation monitoring arrangements still to be finalised subject to MRC-IF.</p> <p>Drought monitoring and warning system designed but not yet implemented; 13 new HYCOS stations installed/upgraded.</p> <p>Survey on flood forecasting indicated neutral or positive views from stakeholders. High value placed on flood services by MCs, especially expressed by Cambodia and Viet Nam; although MCs want to see improved accuracy.</p> <p>Draft guidelines have been prepared for Joint Environmental Monitoring.</p>
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Output and Indicators		Review Assessment	Basis for Assessment
Output 6.2: Regional information systems and databases quality assured, standardised, improved and maintained		Overall there is a high risk this critical output will not be achieved due to insufficient resources and priority across the organisation. Without adequate focus this will continue to undermine MRC's role as a regional knowledge hub.	A concept note for information systems improvements published June 2018 and consultant contracted.
	<i>1: The percentage of regional datasets received that are quality assured</i>		Initial focus on Thailand for integration of MRCS and NMC data management illustrates alignment of national and regional systems is in progress; but unclear what has been achieved with the other three MCs.
	<i>2: The percentage of assured datasets which have been uploaded to MRC-IS</i>	There is good recognition of the need to improve regional information and data management and a workable concept note describing the preferred direction developed. While this appears to be a sound basis for moving forward there needs to be a comprehensive project plan and sufficient resourcing.	There are gaps in data for most monitoring activities. QA/QC of climate scenarios undertaken and data included within MRC-IS but much QA/QC still to do – large quantity of data and limited resources.
	<i>3: The level of quality, reliability and consistency of the MRC-IS datasets</i>		Most datasets included in MRC-IS are not readily accessible and downloadable; and what is accessible is not up-to-date (e.g. WQ).
	<i>4: The amount of new data shared by Member Countries for basin-wide assessments that are deposited into MRC regional databases</i>	Milestones for 2019 and beyond in the concept note do not provide much detail and it is unclear who is doing what to make the solution happen.	Aquarius software now being used for real-time data with plans to expand initially to other time series data.
	<i>5: The percentage of real-time data received that is used in forecasting</i>	The datasets that are included in the MRC-IS appear to offer reliability and consistency. However, work on data QA/QC, upload and accessibility is progressing slowly and is under-resourced.	Datasets are reported to have been shared by Member Countries but it is unclear how much of this has been uploaded and what the nature of the data is.
	<i>6: The records of shipping accidents are available among the Member Countries</i>	Use of Aquarius software appears to be a big improvement on data visualisation, although some functionality does not appear to be working.	Work on shipping information appears not to have started and unlikely to be completed in this SP period.
	<i>7: River Information Services (RIS) architecture is used by shipping operators and river authorities</i>		
	<i>8: All Member Countries use the same standard for collecting data on waterway traffic, dangerous goods, ship arrival times, etc.</i>	Some substantial issues to address with considerable work to do to improve information infrastructure and data management and distribution. Only limited quantitative data has been available on the indicators for this output.	
Assumptions: Sufficient and qualified staff to do work		Linkages with national databases is progressing but still at an early stage.	
Scheduled Timeline: Continuous			

Output and Indicators		Review Assessment	Basis for Assessment
Output 6.3: MRC modelling and related impact assessment tools updated and approved for use by MRC and Member Countries		Generally on-track although there is insufficient information available to evaluate use of MRC toolbox by MCs.	No information available on whether MRC toolbox has been updated and approved for use although MRCS reports line agencies are using for project water resource assessments
	1: <i>The number of agencies using MRC toolbox</i>	The toolbox has been used for key MRC studies including the Council Study but further work is required to update the baseline and approve data for use beyond 2008. Updates should be feasible in this SP period.	2017 Review of regional modelling identified agencies in Cambodia and Viet Nam using MRC DSF and FEWS for water resource planning and flood forecasting, including for M-IWRM projects, although DSF was not sufficient for Delta study, which required additional models.
	2: <i>Updated DSF/MRC toolbox version is endorsed and available for use</i>		
<p>Assumptions: MRC tools and analysis are accurate, timely and reliable</p> <p>Scheduled Timeline: Updates by 2017 with further improvements by 2020, as necessary</p>		<p>A review of water resource modelling in the LMB undertaken with the support of the World Bank and Australian Water Partnership in December 2017 identified a need for modelling capability that spans time frames. This will be increasingly important as the emphasis shifts from planning and scenario assessment to reservoir operations and responding to increased frequency of extreme events.</p> <p>The review also found that “without a new initiative to update and <i>sustain a basin level DSS the status quo is increasingly untenable</i>”. The MTR considers that MRC modelling capability as it relates to a greater operational emphasis should be addressed through a technical and operational review of the RFMMC as identified in the main report.</p>	<p>DSF Baseline for 2008 used for Council Study but agreeing the inclusion of data up to 2017 is a work in progress. Letters have been sent to MCs requesting data but so far no response. 2017 modelling review identified agencies not using DSF due to outdated data.</p> <p>Improvements being made to integrate the various model components and to integrate WUP-FIN and eWater Source models within the DSF as part of 2019 AWP; Upgrade to make compatible with updates to MS Windows 8 and 10 is reported as necessary</p>

Output and Indicators		Review Assessment	Basis for Assessment
Output 6.4: State of Basin, Status of Climate Change and technical reports based on MRC Indicator Framework prepared		<p>Generally on track. The SOB is well progressed and a final regional consultation on the MRC-IF occurred in November 2018. The inclusion of chapters on Myanmar and China is a welcome addition to the report, indicating a commitment to IWRM through consideration of whole-of-basin issues. This also opens up another avenue of potential cooperation and data exchange with China.</p> <p>A small number of technical reports and studies have been completed, although the Council Study is a significant achievement which encompasses much of the more specific work that might otherwise have been done.</p> <p>Technical reports on Water Quality and Ecological Health published although with some delays.</p>	<p>SOB is well advanced and likely to be approved, published and disseminated in first quarter 2019. There is a plan for a web-based interactive version to be completed at the same time the report is published.</p> <p>Unclear if any work has been undertaken on 2nd Status of Climate Change report.</p> <p>Indicator Framework is not yet approved; However, a number of technical reports prepared including for WQM and EHM and on the Mitigation of impacts of dams on fisheries.</p> <p>Catch and Culture Environment newsletter prepared and widely distributed, although reported that the print run will be cut from 1000 to 100.</p> <p>No evidence available on end-user satisfaction with bulletins, technical reports and publications. Some Member Countries expressed concern at the time it takes for regional reports (e.g. water quality and ecological health) to be produced.</p>
	<i>1: The State of Basin is prepared including a web-based interactive version</i>		
	<i>2: The State of Basin Report is endorsed by MRC JC and disseminated</i>		
	<i>3: 2nd Regional Report on Status of Climate Change is prepared</i>		
	<i>4: 2nd Regional Report on Status of Climate Change is endorsed by MRC JC and disseminated</i>		
	<i>5: The number of bulletins, technical reports and publications prepared and published</i>		
	<i>6: The end user satisfaction of bulletins, technical reports and publications</i>		
<p>Assumptions: Monitoring data as defined by the MRC Indicator Framework is made available; Cooperation with China on State of the Basin report is developed and agreed</p> <p>Scheduled Timeline: Continuous</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 6.5: Communication of and access to MRC data, information and knowledge developed and maintained		<p>Overall there has been some good work on improved stakeholder engagement and communication but the poor performance of data and information systems means that challenges remain in ensuring value from MRC products and services is achieved and that they have influence in MCs and more broadly.</p> <p>The website has improved but accessing key documents is still difficult as they are often in an obscure place and are not always up-to-date – e.g. agreed Technical Guidelines for PMFM not posted as of November 2018; only the 2011 draft is posted. Procedures and related Guidelines don't appear next to each other. The document search algorithm rarely works effectively.</p> <p>Progress on this output is also dependent on further development of data and information systems under Output 6.2 and resolution of ongoing data collection and transmission issues under Output 6.1.</p> <p>Improved clarity on information channels during emergencies could be beneficial.</p>	<p>Increased focus of MRCS on communication and stakeholder engagement including through Regional Stakeholder Forums and improved PNPCA implementation; Successful summit at Siem Reap in 2018.</p> <p>Access to MRC data remains difficult and cumbersome, although evident progress in usability of portal.</p> <p>57,491 visitors to the MRC-IS platform during 2018 to September although no information on user experience or whether visitors got what they needed.</p> <p>855 reported data transactions from the MRC data portal although unclear what this figure actually means.</p> <p>2016 data has over 400 organisations or individuals actively engaged with the MRC knowledge hub (Mekong Info, web portal and community website).</p> <p>Generally positive or neutral responses to survey on the value of the flood forecasting products.</p> <p>No information available on the delivery or satisfaction with MRC learning services.</p> <p>Catch and Culture delivered to over 650 subscribers world-wide.</p> <p>MCs reported considerable dissatisfaction with emergency information (water levels and impacts) available from Cambodia and Viet Nam during emergency dam break incident in southern Lao PDR, most likely due to confusion both within countries and between country and MRCS on where and how to get information. Although the Flood Centre reported that information was being provided to MC emergency warning/forecasting centres, the timeliness of this information provision was not sufficient, according to MCs.</p>
	<i>1: The number of visitors accessing the MRC-IS platforms</i>		
	<i>2: The number of data uploaded and downloaded</i>		
	<i>3: The level of satisfaction by the users with the system</i>		
	<i>4: The number of organisations and individuals actively engaged with the Knowledge Hub</i>		
	<i>5: The number of people benefitting from MRC learning services</i>		
	<i>6: The user feedbacks (positive and negative) on technical information dissemination and learning services</i>		
	<i>7: The number of national, regional and international fisheries organisations benefitting from MRC quarterly newsletter Catch and Culture</i>		
	<i>8: Functional and operational communication network is maintained for transboundary emergency alert response</i>		
<p>Assumptions: Timely availability of critical information and data</p> <p>Scheduled Timeline: Upgraded platform by 2017 with continuous maintenance</p>			

Outcome 7: MRC transitioned to a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans

Output and Indicators	Review Assessment	Basis for Assessment
Output 7.1: MRCS structural reform implemented and linkages with Member Countries further improved	This Output would have been on-track but for the lack of action on gender mainstreaming within the MRCS. At least one NMCS noted the lack of programming focused specifically on gender pointing to a need for attention.	New organigram created and approved in 2016 with 4 Divisions and OCEO There are clear linkages to Member Countries. Expert Groups were set up only in 2018 and have met once. There is concern from MRCS that some experts may not be at a senior enough level. The aim was for D-DG level. Members are not yet clear about roles and responsibilities.
1: <i>New organization structure is in place with clear linkages to Member Countries</i>	Although the organization restructuring has been mostly completed the lack of clarity of some positions and lack of a supervisory role for most Chiefs deserve attention – particularly when the Director may not have the technical expertise suited for the Division. When the MRCS was larger the Directors could take on a managerial role but in a much smaller Secretariat relevant technical skills become critical. Open recruitment for the right person with the right skills would better serve MRC.	National Division Coordinators are in place. The same person covers AD and OCEO so there are only 4/country + MRC-paid national assistants.
2: <i>TORs of the new organisational units and JDs of all staff positions are in place</i>	At the same time, the Divisions are small enough for the Chief Technical Officers to also have technical managerial roles and, thus, responsibility in delivering technical outputs, leaving Directors to have more time for strategic oversight and coordination roles with other Divisions and external technical partners.	Division Coordination Meetings together with NMCS national coordinators are held once a year (two days for each Division held in 2017. In 2018 the meetings were combined for some Divisions on AWP implementation and Outcome reflections.
3: <i>Work flows and processes are updated to reflect the structural and operational changes</i>	The scale and pace of Secretariat downsizing was too quick and delayed much of the SP implementation. Still, much has been done. This may be attributable to many key technical staff being retained after restructuring. It also points to the importance of having staff with previous experience working with or within LAs. This is critical as there are still capacity building needs in MCs (as mentioned under other Outputs). At the same time, however, MRC could benefit from fresh ideas. More information is provided under Output 7.2.	ToRs of new organizational units and JDs for all staff are in place but interviews with staff suggest the JDs are not specific enough and some similar to others leading to confusion. From interviews: There is mismatch between JDs and expectations.
4: <i>The number (or percentage) of MRC organizational units that adopt and apply MRC Gender tools</i>	There are clear designations of each MRCS position to SP Outputs. The workflow and reporting line are clear if somewhat flat with all staff within each Division reporting to the Director. Most technical Chiefs have no supervisory role.	On Gender: One NMCS staff involved with Gender activities in the past strongly suggested a plan and activities be put in place to encourage gender mainstreaming in MRC's work.
5: <i>The number (or percentage) of LAs that adopts and apply MRC Gender tools</i>	Some new positions (on consulting contracts) should be added as recommended in the OR.	
<p>Assumptions:</p> <ul style="list-style-type: none"> Change manager or change management advisor to the CEO has been mobilized and on board in 2015 In-depth analysis of the existing working groups, expert groups, steering committees, and proposal to streamline and reorganise these groups has been done in 2015 (reorganised groups with new TORs), as part of the operational reform <p>Timeline: By 2020</p>		

Output and Indicators		Review Assessment	Basis for Assessment
Output 7.2: MRCS human resources reform implemented		<p>The reform plans have been implemented but leaving some positions out has resulted in poorer oversight and accountability. Additional positions could be on consulting contracts or as needed. HR issues have mostly been covered in the Operational Review. Please see Output 7.1 assessment on Chief positions. They should have technical managerial responsibilities.</p> <p>Some new control measures and reporting lines point to lack of trust in staff and the length of contracts are short. Coupled with new performance evaluation mechanisms these create uncertainties for staff.</p> <p>The PAR process and new tools require trainings to have the effect intended. Introducing KPIs and linking to outputs will improve the evaluation process. MRC's core functions are mostly on-going long-term type of activities and one year contracts at the MRCS could be too short to be attractive to professionals looking for some security.</p> <p>Restarting the JRP programme is a good way to build partnerships with Dialogue Partners. Staff secondment from LAs and strategic partners could help fill some capacity gaps as well as strengthen cooperation with MCs and uptake of MRC products. MRCS should also consider short-term task-specific secondment of MRCS staff in LAs.</p>	<p>New staff plan approved by the JC in 2016 but there are key positions that could be added for better financial accountability and oversight – as observed by the Operational Review team, DP comments and interviews with staff.</p> <p>As mentioned in Output 7.1 some technical positions fear their JDs do not match the expectations on their positions and some feel over-worked. HR is concerned about overall staff morale going through the reform process</p> <p>PAR process adjusted and introduced a 360-degree feedback tool but in Divisions most people report directly to the Director so it cannot be “360 degrees” other than for the appraisal of Directors. Moreover, the tools were introduced without training on how to provide and receive performance feedbacks causing misuse and subsequent tensions.</p> <p>Staff turnover is at 11 per cent in 2018, down from a high of 20 in 2013.</p> <p>The HR manual is being revised. One Member Country Task Force meeting has been held but revisions would require one more TF meeting and this is expected to be approved at the next JC meeting (possibly in April) allowing the Manual to include relevant and implementable recommendations for HR from this review and the OR.</p>
	1: <i>New staff plan is approved</i>		
	2: <i>New Performance Appraisal Review is in-place</i>		
	3: <i>A reduction in staff turnover</i>		
	4: <i>HR policies and manuals are revised in accordance with the staffing reform plan (part of the overall reform implementation plan)</i>		
<p>Assumptions:</p> <ul style="list-style-type: none"> All positions for new organisational units have already been identified, described with detailed JDs/TORs by end 2015 Analysis of the existing staff structure/positions and positions of the new structure has already been carried out and results (plan for staff change/transition) available by end 2015 Qualified staff are recruited Capacity of selection/interview panel improved <p>Timeline: By 2020</p>			

Output and Indicators		Review Assessment	Basis for Assessment
Output 7.3: MRCS financial and administrative reforms implemented and operationalized		<p>The required reforms have been developed and operationalized but key issues still need to be resolved such as the financial & accounting systems not meeting the MRC's (and DPs') needs and not meeting the Basket Fund guidelines. However, MRC should be able to resolve these issues and the discussions with MCs on achieving the 2030 target should start soon after this MTR and the OR.</p> <p>That exercise should address the bigger issue of the lack of explicit priority setting that better aligns resourcing with the work programme.</p> <p>Annual Work Plan and the M&E system are well implemented and easy to follow.</p> <p>Attention should also be given to management reporting. There have been good advances such as the use of the Dashboard. However, MRC should avoid overly bureaucratic processes and excessive demands on staff time for reporting.</p>	<p>Basket Fund guidelines under discussion with DPs to take into account lessons learned in 2016-2018.</p> <p>Microsoft Dynamic has replaced the Solomon. It is a brand new system for MRC. The design of the software was done in 2015 in response to the restructuring plan. However, since early 2016, many requirements have changed. As a result, the system is not fully meeting the needs and does not meet the requirements of the Basket Fund guidelines. External consultants are currently investigating the issue in more detail.</p> <p>The accounting method has been questioned and the OR has made detailed recommendations which the MTR supports.</p> <p>Annual Work Plan aligned with the SP and M&E system in place with mid-year reports. Weekly and monthly division meetings are held.</p> <p>Administrative, Financial and Procurement manuals are under development. The draft manuals went to JC Task Force and will be submitted for approval at the next JC meeting in Q1 2019.</p> <p>Countries agreed on a revised national contribution formula to 2030 before the Third Summit in 2018 .</p>
	<i>1: Basket fund & overseeing committee (Budget Committee) is established</i>		
	<i>2: MS Dynamic Solomon is upgraded or changed with new accounting system and accounting method</i>		
	<i>3: New management reporting tools are in place</i>		
	<i>4: The MRCS administrative, financial and procurement manuals are revised in accordance with the new administrative and financial system</i>		
	<i>5: Increase in Member Country contributions to MRCS during 2016-2020</i>		
	<i>6: Financial plan for Member Country contributions to MRCS towards achieving the 2030 target adopted by Council by 2020</i>		
<p>Assumptions:</p> <ul style="list-style-type: none"> Funding mechanism/modalities and arrangements have been identified, agreed upon with Member Countries and Development Partners (including the establishment of a Basket Fund, and the Budget Committee established with agreed TORs) Appropriate level of ear-marking in the funding figures Cost-centre based Accounting System is established and ready for implementation in January 2016 Change Accounting Method from Cash Basis to Accrual Basis established (new standard chart of accounts established in 2015 and be ready for implementation in January 2016) Financial management and reporting tools improved in line with the changes to the financial management practices and system by January 2016 Administrative management tools, procurement management tools and document management tools improved in 2015 <p>Timeline: By 2020</p>			

Output and Indicators	Review Assessment	Basis for Assessment
Output 7.4: Annual work plans, and results-based monitoring, evaluation and reporting system for MRC SP and NIPs prepared and fully operationalized	<p>The M&E and reporting systems have been much improved into a coherent MRC-wide system rather than the separate systems used in the previous SP period. However, some indicators are not well targeted to Outputs. There are too many indicators in the M&E Framework.</p>	<p>(Same as above) AWP, NIP reviews + NIP annual work plans operationalized. M&E Dashboard set up and NMCSs trained.</p>
<p>1: RBM&E system manual is revised and approved</p>	<p>However, the main issue to be resolved is a more robust feedback loop to Management so the M&E system is used for management and decision-making rather than just a monitoring progress tool.</p>	<p>Regional RBM&E reports provide evidence to back up implementation status (Annual and mid-year report). They are used more for monitoring progress rather than for planning and management. Part of decision-making is setting priorities in the AWP based on evidence from the M&E system – which is well developed and more streamlined than in the previous SP period. As of November 2018 National NIP reports are not available from all countries. Those still being developed are delayed due to staffing issues.</p>
<p>2: The extent to which the RBM&E reports are evidence based</p>		
<p>3: The extent to which the national & regional RBM&E reports are used for management decision making</p>		
<p>Assumptions: Support from NMCSs is provided timely</p> <p>Timeline: Manual by 2016, thereafter continuous</p>		<p>Monthly division meetings refer to RBM&E system (task monitoring for each staff per their responsibilities) to guide implementation decisions. Directors use the risk register as a risk management tool.</p>

Output and Indicators	Review Assessment	Basis for Assessment
Output 7.5: MRC Strategic Plan for 2021-2025 prepared and approved	<p>Whether the MRC decides to develop a new BDS or review and revise the current one the development of an SP and NIPs to implement the strategy would be done afterwards – resulting in possibly not being approved in 2020. This kind of delay is usually the norm for SP development.</p>	<p>The SP is an implementation vehicle for the BDS at the regional level by MRC. Planning for next SP will start after the start of next BDS/BDP, which requires internal MRCS reflections, discussions with Member Countries and consulting widely with stakeholders.</p>
<p>1: MRC SP 2021-25 is endorsed by JC and approved by Council in 2020</p>	<p>Developing a BDS is a significant undertaking and could take-up resources over more than one year. The MTR Team is recommending a review of the current BDS to strengthen or refine it rather than developing a completely new BDS, and extending it to 10 instead of five years.</p>	<p>The NIPs are implementation vehicles for the BDS at the national level. Similar to requirements for the next SP above there will be a need to first discuss NIPs internally in each Member Country.</p>
<p>2: National Indicative Plans 2021-2025 are prepared and ready for national approval in 2020</p>		
<p>Assumptions: NMCs and key line agencies engage in NIP preparation process</p> <p>Timeline:</p> <ul style="list-style-type: none"> • MRC SP 2021-25 by mid-2020 • NIPs by end 2020 	<p>The SP would be for five years, but include a core component of routine activities and outputs that roll over from one SP to the next. Similarly NIPs need to be scheduled to take into account SP timing and national budget allocation processes, which could be a rolling three- or five-year NIP.</p>	

Annex 3.2: The impact pathway - from Outputs to Outcomes

Key:

Outcome colour coding: Contribution of Outputs to Outcome by end 2020	
Likely to substantially contribute	
Likely to partially contribute on current trajectory	
Likely to contribute provided significant issues are addressed	
Unlikely to contribute meaningfully	

Outcome 1

Outcome 1: Increased common understanding and application of evidence-based knowledge by policy makers and project planners	
<p>Indicators:</p> <ul style="list-style-type: none"> The number of national and regional agencies and organisations using MRC knowledge generated for research, planning and policy making Evidence of national and regional decision-making based on or referring to MRC knowledge products <p>Assumptions: Policy makers and project planners have confidence and trust in MRC knowledge products</p>	
Outputs	Contribution of Output to Outcome
<p>Output 1.1 Study on water requirement and availability for specific land uses completed for flood and drought management and impacts adaptation and mitigation purposes</p> <p>Indicators</p> <p>1: Water requirement for each crop in drought prone areas of the LMB is assessed</p> <p>2: Water availability in the area is modelled</p> <p>3: Water requiring gap for each crop of the drought prone areas is calculated for drought management work.</p>	<p>Common understanding of water requirements and availability including modelling results for different land uses, crop types and areas of the basin could provide a basis for common understanding and application of evidence-based knowledge in relation to drought management and mitigation.</p> <p>However, as the study has only just been completed and is still subject to consultation with Member Countries it is unlikely it has made any contribution to the application of evidence-based knowledge in policy or project plans.</p> <p>The contribution of this output to the outcome is also likely to depend on the completion and implementation of the regional drought management strategy, which requires further consultation and agreement.</p>
<p>Output 1.2 Study of fish ecology and capture fisheries productivity and value completed and promoted with a view to mitigating impacts from development</p> <p>Indicators</p> <p>1: The amount of fish yields in rain-fed and flood zones is documented</p> <p>2: The bio-ecology of main trans-boundary fish species is documented</p> <p>3: Mekong fisheries value is estimated</p>	<p>Common understanding of fish ecology, fisheries productivity and value could provide a basis for common understanding and application of evidence-based knowledge in development and conservation management decisions.</p> <p>The value of this work to evidence-based decisions will most likely lie in its use for regular monitoring of status and trends in fisheries abundance over time, and in considering trade-offs associated with development and management decisions. Therefore contributing to the outcome first requires agreement among Member Countries to the approach and use of the methodology to be incorporated into the MRC Indicator Framework.</p> <p>As proposed, 'promoting' the results of the technical work and its potential utility, is likely to be required.</p>

<p>Output 1.3 Study of rural livelihoods and measures to cope with transboundary changes by which sector development plans can adopt a pro-poor agenda completed and promoted</p>	<p>Common understanding of rural livelihoods and measures to cope with change could provide a basis for application of evidence-based knowledge in relation to development decisions and mitigating actions.</p>
<p>Indicators</p> <p><i>1: Evidence of water sector management and development plans pay due attention to rural livelihoods vulnerability</i></p> <p><i>2: Measures to address changes to improve rural livelihoods vulnerability concerning water sector management are formulated and implemented</i></p> <p><i>3: MRC report on social vulnerability published and disseminated among Las</i></p> <p><i>4: The number of people living in rural areas dependent on fisheries and other related resources as primary means of livelihoods is documented</i></p> <p><i>5: Contribution of fish and other related resources to food and nutrition security of the rural and poor people in the region is analysed and recorded</i></p>	<p>The Council Study socio-economic and cumulative impact assessments could be considered to partially fulfil this Output. However, further work is required on 'measures to cope' with transboundary changes by which 'sector development plans can adopt a pro-poor agenda'.</p> <p>Due to the additional work required on coping measures and the need for further engagement with Member Countries on the Council Study results, there is unlikely to have been any contribution from this output to the outcome to-date.</p>
<p>Output 1.4 Basin-wide development and climate change scenarios and related assessments including Council Study completed and findings agreed and disseminated</p>	<p>Common understanding of basin-wide development and climate change scenario assessments could provide a basis for common understanding and application of evidence-based knowledge in development and conservation management decisions.</p>
<p>Indicators</p> <p><i>1: Integrated assessment of development impacts of six thematic sectors under Council Study completed and findings endorsed by JC</i></p> <p><i>2: Exploratory and alternative basin-wide scenarios (with and without climate change) are formulated and the assessment results endorsed by JC</i></p> <p><i>3: Scenario assessment results used for the finalization of the regional and basin-wide sector strategies and for the preparation and negotiation of updated BDS for 2021-2025</i></p>	<p>Member Countries reported strong interest in exploring the Council Study results more fully at a national level and applying relevant parts to national and sector development plans. However, further steps on 'disseminating' the results of this work as planned (including through interactive web material), and developing and implementing national action plans will be required. It is too early to evaluate the contribution of the Council Study and Climate Change assessments to evidence-based policy and project planning decisions.</p> <p>Although the Sustainable Hydropower Strategy does some of it, the further consideration of trade-offs in relation to different scenarios and between sectors is likely to be important in enabling adequate consideration by Member Countries in policy decisions.</p>
<p>Output 1.5 Study of basin-wide biodiversity to establish baseline environmental conditions and trends completed</p>	<p>Common understanding of basin-wide biodiversity status and trends could provide a basis for common understanding and application of evidence-based knowledge in development and conservation management decisions.</p>
<p>Indicators</p> <p><i>1: Inventory and report of biodiversity including trends is published and disseminate among Las</i></p> <p><i>2: Indicator framework for biodiversity assessment is integrated into MRC Indicator Framework.</i></p>	<p>However, insufficient progress with the output means there is no contribution from this output to the outcome to-date.</p> <p>The Council Study covered the general subject matter through its Biological Resources Assessment but did not have sufficient data or information to report on the status and trends in the condition of biodiversity other than by expert opinion. This Output clearly envisaged a more</p>

	<p>systematic approach to data collection and analysis in accordance with the MRC Indicator Framework; and identifying a baseline from which further change could be assessed.</p> <p>The use of data from reputable international organisations including the IUCN and WWF may need to be considered due to the lack of broad scale and consistent government monitoring of this matter.</p>
<p>Output 1.6 Study of options to increase storage within LMB for flood, drought and environment/ecosystem management purposes completed and promoted</p> <p>Indicators</p> <p><i>1: Inventory and database of all feasible storage areas created</i></p> <p><i>2: Long-list of storage opportunities and projects is prepared</i></p> <p><i>3: Shortlist of storage projects is prepared and taken up in regional sector strategies, national planning frameworks and NIPs</i></p>	<p>Common understanding of options to increase storage within the LMB could provide a basis for common understanding and application of evidence-based knowledge in development and conservation management decisions, including through further scenario assessment and examination of trade-offs.</p> <p>However, insufficient progress with the output means there is no contribution from this output to the outcome to-date. Further consideration of storage options related to effective ecosystem management may in-part be covered under Output 2.8: Basin-wide environmental management strategy.</p>
<p>Output 1.7 Study on transboundary impacts of water and related projects completed and promoted</p> <p>Indicators</p> <p><i>1: Study report on trans-boundary impacts of irrigation project is completed</i></p> <p><i>2: Study report on groundwater management is completed</i></p> <p><i>3: Areas with potential on trans-boundary impacts of irrigation projects identified</i></p> <p><i>4: Areas with potential development for agricultural groundwater use identified</i></p> <p><i>5: Guidance for groundwater sustainable yield management for production is available</i></p>	<p>Common understanding of transboundary impacts of water and related projects could provide a basis for common understanding and application of evidence-based knowledge in development and conservation management decisions.</p> <p>It is too early to evaluate the contribution of the Council Study work on irrigation to evidence-based policy and project planning decisions. Lack of progress on groundwater management means that there has been no contribution to the outcome from this component of the output.</p> <p>Member Countries reported strong interest in exploring the Council Study results more fully at a national level and applying relevant parts to national and sector development plans. However, the review team has concerns with the significant limitations on data availability and modelling scenarios undertaken for irrigation in the Council Study. No new data on irrigation was provided.</p> <p>The further consideration of trade-offs in relation to different scenarios and between sectors under Output 1.4 is likely to be important in enabling adequate consideration by Member Countries in policy decisions, including in relation to irrigation.</p>

Outcome 2

Outcome 2: Environment management and sustainable water resources development optimized for basin-wide benefits by national sector planning agencies	
<p>Indicators:</p> <ul style="list-style-type: none"> • <i>Number of TB national and provincial policy and plans integrating MRC basin-wide analysis and strategies</i> • <i>Evidence that National Plans benefit from basin-wide strategies and action plans</i> <p>Assumptions:</p> <ul style="list-style-type: none"> • <i>Member Countries willingness to actively engage in the development of MRC basin-wide, regional sector strategies and action plans</i> • <i>Member Countries have confidence and trust in the MRC basin-wide, regional sector strategies and action plans</i> 	
Output	Contribution of Output to Outcome
<p>Output 2.1 Basin-wide strategy for sustainable hydropower updated and approved</p> <p>Indicators</p> <p>1: <i>Basin-wide Hydropower Strategy is updated</i></p> <p>2: <i>Basin-wide Hydropower Strategy is endorsed by the JC and approved by the Council to be incorporated into national plans</i></p>	<p>Agreement on a basin-wide sustainable hydropower development strategy that embraces the 95MA would significantly contribute to a broader distribution of benefits and improved environmental management.</p> <p>The Output statement and related indicators require approval by Council of a Strategy that can be incorporated into national plans whereas the overall Outcome indicators focus further down the pathway of change by expecting an influence on national plans and strategies. The Team has three concerns related to achievement of the higher level Outcome:</p> <ul style="list-style-type: none"> (i) that the current discussions on the Strategy are not yet aligned with key country perspectives on underlying assumptions and therefore risk not coming to agreement on the findings and recommendations; (ii) while the types of trade-off discussions being proposed are fully in line with the role of MRC and its focus on ‘avoid, minimize and mitigate’ possible impacts, the conventional approach of preparing consultant reports and holding regional meetings at mid-level expert level is unlikely to make progress on what are highly sensitive and political decisions; (iii) it is not clear that the MRCS has the capacity at the moment to facilitate the type of ‘water diplomacy’ processes at bilateral and regional levels that would be necessary to have the influence expected either in the outcome statement nor in the 95 Mekong Agreement. <p>The MTR Team suggests that the process is reviewed and consideration be given to including an additional parallel Track 1.5 type initiatives supported by and interacting with the technical work already underway.</p>

<p>Output 2.2 Regional strategies for flood management updated, prepared and approved</p> <p>Indicators</p> <p>1: <i>Regional flood management and mitigation strategy is updated</i></p> <p>2: <i>Specific regional strategies are prepared for XBF, NMK, CAM-THA and CAM-VN</i></p> <p>3: <i>Regional strategies are endorsed by the JC and approved by Council to be incorporated into national plans</i></p>	<p>Although there may be some delay in finalizing the regional strategies and gaining approval, there is strong support for this work and an expectation of the MTR Team that it will have an influence on national strategies and plans. This is an area where consolidation efforts are required and close working relationships with the respective line agencies.</p>
<p>Output 2.3 Basin-wide fisheries management and development strategy approved and action plan developed and implemented</p> <p>Indicators</p> <p>1: <i>BFMS approved by JC and endorsed by Council</i></p> <p>2: <i>BFMS action plan is agreed by the TAB</i></p> <p>3: <i>Relevant guidelines defined in the BFMS is endorsed by the TAB</i></p>	<p>There are some delays in finalizing and agreeing the action plan and guidelines. The influence from the BFMS to implementation of action points at national levels as expected in the Output statement and the Outcome indicators will depend on the extent that they have moved beyond endorsement by the former 'TAB' to inclusion in the annual work plans of national agencies (with budgets). The TAB mechanism has also transformed to come under the Expert Group arrangement. The MTR considers that sub-groups be established to allow the type of ownership and engagement seen in previous TAB meetings and which provides an effective pathway to adoption of key outputs in national systems. With the current level of priority and funding as well as institutional arrangements, the MTR is not confident that 'implementation' will be achieved and priorities would need to be reconsidered.</p>
<p>Output 2.4 Joint infrastructure and non-infrastructure projects and mechanisms between two or more countries initiated, further developed and carried out</p> <p>Indicators</p> <p>1: <i>No of benefit sharing projects in water related sectors</i></p> <p>2: <i>Number of deals identified and further developed</i></p> <p>3: <i>Number of deals implemented as joint projects</i></p>	<p>The Output indicators are aligned with the Output statement as well as the Outcome. Whereas there is considerable and welcome activity on joint projects that have their origins in MRC studies, the progress is at an early stage and it is unlikely that they will lead to achievement of the Outcome in this SP period but would carry over to the next. The MTR believe that the direction is promising and this approach needs continuing support. Relevance of the interventions in each area is also dependant on the planning and project development regime in that locality and so consolidated efforts will be needed to complete the ongoing and identified joint projects.</p>
<p>Output 2.5 Mekong climate change adaptation strategy and action plan, finalized approved and implemented</p> <p>Indicators</p> <p>1: <i>MASAP is endorsed by the JC and approved by the Council</i></p> <p>2: <i>National government agencies integrate actions of the MASAP into their national planning of climate change and adaptation</i></p> <p>3: <i>Basin-wide and sector strategies incorporate relevant actions of MASAP</i></p>	<p>The Output indicators are aligned with the Output statement as well as the Outcome. Considerable efforts will be needed to overcome the delays in implementation so far, but the MTR Team considers it is possible to have influence on national systems within the remaining period provided resources are allocated and effective working arrangements are adopted.</p>

<p>Output 2.6 Basin Development Strategy, including a new Indicative Basin Plan, updated and approved for 2021-2025</p> <p>Indicators</p> <p>1: <i>Updated BDS, including a BDP, is prepared</i></p> <p>2: <i>Updated BDS is endorsed by JC and approved by Council</i></p>	<p>The MTR questions whether it is the existence of a BDS that has influence on national systems as much as it is the constituent strategies, guidelines and studies. Therefore, the Team proposes that the next BDS, which may be for a ten year period to 2030, incorporate the MTR recommendations on consolidation and a greater operational perspective, while supporting national planning processes through targeted sectoral interventions emanating from the extensive strategy work already completed. In this way, the BDS (through the next SP and aligned NIPs) can be a more effective vehicle for influencing national plans and strategies to bring about the value-added expected of its regional activities and the expected Outcome.</p>
<p>Output 2.7 Master Plan for regional waterborne transport implemented</p> <p>Indicators</p> <p>1: <i>Master Plan is endorsed by JC and approved by Council</i></p> <p>2: <i>MCS include the Projects into their regular planning cycle for implementation</i></p> <p>3: <i>Number of associations for ports, fleets are established</i></p> <p>4: <i>Cargo throughput through the ports increases at least 30% in 5 years' time</i></p>	<p>MRC Support to waterborne transport in the region has historically been strong and close networks have been developed between MRCS and responsible Member Country agencies. There is significant goodwill because of this former engagement and personal connections. The current level of staffing and resource capacity at the Secretariat since the ending of the Navigation Programme, however, calls into question the future role of the MRC in implementing Article 9 of the 95MA and in contributing this Outcome. The third and fourth indicator for this Output are more outcome oriented but provide a challenge for attribution and raise a question whether these are the comparative advantage of the MRC rather than focusing on issues of freedom of navigation and safety. The MTR Team sees that the MRC has a choice to make – whether to continue to have a strong capability in the area of waterborne transport and navigation based on fulfilling its mandate or to seriously downscale expectations. In taking that decision, the scope and relationship with JCCCN and any emerging institutional arrangement under the Cambodia-Vietnam agreement that MRC brokered needs to be considered, including where there are gaps that MRC can fill to deliver on its mandate.</p>
<p>Output 2.8 Strategy for basin-wide environmental management for prioritized environmental assets developed and approved</p> <p>Indicators</p> <p>1: <i>Inventory of basin-wide environmental assets prepared</i></p> <p>2: <i>Agreement on number and status of environmentally valuable areas basin-wide</i></p> <p>3: <i>Strategy prepared</i></p> <p>4: <i>Strategy endorsed by JC and approved by Council</i></p> <p>5: <i>At least one transboundary area established</i></p> <p>6: <i>Percentage of natural wetlands and hot spots having management plans</i></p>	<p>The groundwork for the inventory is in place and could be completed within the SP period. The next stage of agreeing environmentally valuable assets and developing an agreed Strategy requires close engagement with national systems and is likely to take considerable time.</p> <p>Given the current progress and resource allocation, the MTR Team considers it unlikely that there will be significant contribution to the Outcome during this SP period, but that it is an important area to pursue. There is a risk, however, that without sufficient resources the intent behind this Output will be compromised by impacts of planned and emerging development projects.</p>

<p>Output 2.9 Regional strategy for drought management and mitigation developed and approved (by 2017)</p>	<p>Although delayed, this Output has potential to have influence in the SP period provided resources are allocated to targeted interventions.</p>
<p>Indicators</p> <p>1: <i>The regional strategy for drought management and mitigation is prepared and endorsed by JC and approved by Council to be incorporated into national plans</i></p>	<p>Member Countries express strong support for drought management activities but despite that, this Strategy has been a long time in the making. The time taken to reach this point raises a question whether sufficient capability exists with MRCS. This is particularly relevant to the future uptake stage, where MRC will need to carefully define where its regional added value exists to supplement national activities and the type of expertise needed to facilitate implementation – see also Output 3.8.</p>

Outcome 3

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: <ul style="list-style-type: none"> • <i>Number of TB national and provincial projects applying MRC guidelines</i> • <i>Evidence of national and basin benefits in using MRC guidelines and standards</i> Assumptions: National project planners and managers have confidence and trust in the MRC's guidelines	
Output	Contribution of Output to Outcome
Output 3.1 Preliminary design guidance for mainstream dams reviewed, updated and implementation supported Indicators 1: <i>The updated PDG is prepared.</i> 2: <i>The updated PDG is endorsed by the JC</i> 3: <i>Proposed mainstream HP projects address principles and recommendations in the PDG</i>	There is evidence from the PNPCA processes that the earlier PDG is being used by developers for the design of mitigation measures which has a significant influence on national project planning. There has been a significant improvement of the level of engagement between mainstream hydropower developers and MRCS over the SP period. The PDG has already had an influence that is not widely recognized outside of MRC. Finalization and application of an updated PDG is possible within the SP period. The update DG is available for use on a voluntary basis and will start to have influence for projects at planning stage although this will be difficult to quantify.
Output 3.2 Integrated Flood Risk Management guidelines promoted and implementation supported Indicators 1: <i>Evidence of MCs use the IFRM guidelines in their flood risk management endeavours</i> 2: <i>The training materials and modules are used by the institutes of higher learning and form part of the flood risk management curriculum</i> 3: <i>The number of enrolments in courses that deliver training in the use of the BPGs and transboundary package</i>	The MTR was not made aware of evidence pointing to the use of the IFRM guidelines by national agencies as envisaged on the Outcome statement. The MTR will request further information on whether the guidelines are utilized in the joint project between Cambodia and Viet Nam on flood management in the Mekong Delta (Output 2.5).
Output 3.3 A set of guidelines and frameworks on waterborne transport management prepared and promoted Indicators	Limited progress has been made on implementing the CAM-VIE bilateral agreement that was brokered with support from MRC. Without further resource allocation it is unlikely that there will be significant contribution to the Outcome during this SP period beyond what is being achieved independently by the two Parties to the agreement. Some progress is possible in the Lao/Thai safety sub-project.

<p>1: <i>Number of Cross-border Transportation Permit issued by competent authorities of Cambodia and Vietnam</i></p> <p>2: <i>Single stop formality for vessels engaged in transit transportation applied</i></p> <p>3: <i>Adequate pilotage services to vessels requesting assistance are provided basin-wide</i></p> <p>4: <i>Proposed standards for construction of ships and equipment on board, and the same standards for stowage and carrying dangerous goods, crew certification, etc are legally adopted basin-wide</i></p> <p>5: <i>Proposed technical guidelines are promoted and used basin-wide</i></p> <p>6: <i>Lao PDR and Thailand use the same safety rules and regulations</i></p>	
<p>Output 3.4 The sharing and learning of “best practice” guidelines and tools to support the development and operation of water and related projects on tributaries of transboundary significance</p> <p>Indicators</p> <p>1: <i>Guidance for water projects on tributaries of transboundary significance are shared and jointly learned and updated</i></p> <p>2: <i>Existing and proposed projects on tributaries of transboundary significance address principles and recommendations from MRC guidance and tools</i></p>	<p>Considerable effort has been made in developing good practice guidance for hydropower through RSAT and PDG but less in other sectors like irrigation. The focus remains on mainstream projects. Much of the guidance however, is also applicable to tributary projects including those with transboundary significance. Further discussions with MCs at a relatively senior policy level would be needed to demonstrate the value of adopting such guidance on major projects in tributaries of transboundary significance. To support this, MRC could prepare a briefing note on the elements of the guidance that would supplement national systems and lead to improved project outcomes.</p>
<p>Output 3.5 Regional Action Plan for Transportation of Dangerous Goods implemented</p> <p>Indicators</p> <p>1: <i>LAs include the RAP into their regular planning cycle</i></p> <p>2: <i>Shipping accidents are reported and analysed according to established procedures</i></p> <p>3: <i>Measures to collect wastes in ports are implemented</i></p> <p>4: <i>Measures to control pollution caused by boats are implemented</i></p> <p>5: <i>Transboundary emergency response schemes are in place</i></p>	<p>Limited progress has been made on implementation of the Action Plan. With the ending of the Navigation Programme and its bilateral support, this requires a major rethink on the role of MRC in navigation and waterborne transport and the extent resources will be allocated to support this important work. It is another case where high quality outputs need further support to ensure uptake at national level.</p>
<p>Output 3.6 Sustainable Management of Watersheds in the Lower Mekong Basin supported</p> <p>Indicators</p> <p>1: <i>Watershed management website is operational and actively used by stakeholders</i></p> <p>2: <i>Funding of pilot projects is secured</i></p>	<p>The commitments to earlier projects on watershed management have been completed but this is now a relatively low priority of MRC in relation to its core river basin management functions. Considerable outreach and training occurred earlier, but there was limited direct influence during the SP period. MRC needs to reconsider whether watershed management remains a priority area of involvement</p>

<p>Output 3.7 The implementation of the guidelines for improvement of watershed management practices supported</p> <p>Indicators</p> <p>1: <i>The MRC interactive website on WM is kept up to date and evidence of visits / uses each month</i></p> <p>2: <i>The planning frameworks are disseminated and the identified users are trained</i></p>	<p>Limited progress has been made on implementation of the guidelines and the MTR is not aware of evidence of this Output contributing to the Outcome during the SP period.</p>
<p>Output 3.8 Guidelines to adapt to water shortage and drought impacts prepared and implemented</p> <p>Indicators</p> <p>1: <i>The guideline is developed and agreed by MCs to be incorporated into national plans</i></p> <p>2: <i>The planning frameworks are disseminated and the identified users are trained</i></p>	<p>Despite considerable interest expressed in MCs, this is a delayed activity that is unlikely to contribute significantly during the SP period unless sufficient resources are allocated and working approaches on drought management issues are reconsidered within MRC. Drought management has been a feature of the work programme for about 10 years and the expectation is that more would have been achieved.</p>
<p>Output 3.9 Methodologies for sustainable use and management of wetlands developed and implementation supported</p> <p>Indicators</p> <p>1: <i>The increasing use of LMB wetlands database by external partners</i></p> <p>2: <i>The increasing use of assessment methodologies by relevant LAs</i></p> <p>3: <i>The number of wetland experts trained in wetland management</i></p>	<p>The piloting of methodologies and planned training during the remainder of the SP period are expected to contribute to uptake at national level. Significant resources have been allocated in AWP 2019.</p>
<p>Output 3.10 Guidance for the design and operation of irrigation systems with transboundary implications prepared and implementation supported</p> <p>Indicators</p> <p>1: <i>The guidelines for the design and operation of irrigation systems are agreed by MCs</i></p> <p>2: <i>The guidelines for the design and operation of irrigation systems tested in MCs</i></p> <p>3: <i>Guidelines for design and operation of irrigation systems are applied in national policy for irrigation planning, designing, evaluation and operation</i></p>	<p>Limited progress has been made on preparation of the guidance, and apart from the work on fish friendly irrigation covered in Output 3.11 the MTR is not aware of evidence of steps taken for this Output to contribute to the Outcome during the SP period.</p>

<p>Output 3.11 Guidelines for fish friendly irrigation schemes promoted and implementation supported</p> <p>Indicators</p> <p>1: <i>Guidelines for fish friendly irrigation schemes adopted and agreed by MCs to be adapted in national policy for irrigation planning, designing, evaluation and operation</i></p> <p>2: <i>First round testing of draft guidelines in pilot areas in MCs completed and guidelines revised accordingly</i></p>	<p>This is a delayed Output and therefore unlikely to have the full contribution envisaged during the SP period. Testing of guidelines in pilot areas is now underway and on the basis of the results, the guideline will be updated. National meetings have been programmed, but as with many other areas, support for the ensuing uptake processes at national level requires further time and resources to be built into the activity. Based on experiences with other outputs, the time needed for national agencies to adopt new or revised guidelines is considerable and some delay is expected before they will be applied on a widespread basis.</p>
<p>Output 3.12 Transboundary Environmental Impact Assessment (TbEIA) guidelines established, approved and promoted</p> <p>Indicators</p> <p>1: <i>TbEIA framework is endorsed by the JC</i></p>	<p>Although at an advanced stage, concerns raised by some MCs will delay its use and potentially significantly reduce its scope. Given the long history of this initiative, but also recognising the substantial progress made in recent years, it requires a concerted approach for MRC to work with MCs at various levels to overcome their concerns and get it adopted for use.</p> <p>The MTR notes that the status of the TbEIA is different to that of the MRC Procedures and that TbEIA Guidelines will remain advisory in nature until such time as they are incorporated into national legislation. 'Approval' of the TbEIA guidelines by JC can therefore be considered as endorsing their voluntary use and allow experience to be gained prior to ratification by national governments at a later date.</p>

Outcome 4

Outcome 4: Effective and coherent implementation of MRC Procedures by Member Countries. ³³	
<p>Indicators:</p> <ul style="list-style-type: none"> Evidence of adverse transboundary impacts that were mitigated, minimized or avoided in basin planning and management by using MRC Procedures Evidence of actions taken under PWQ and PMFM when water flows, levels and quality are at critical levels The number of data and information under the PDIES that are shared and used for basin development planning and management and research purpose The number of projects monitored under PWUM in both national and regional level Number of water utilisation projects notified, consulted and improved agreed under consultation and notification processes of PNPCA <p>Assumptions:</p> <ul style="list-style-type: none"> Member Countries approve all Technical Guidelines Member Countries willingness to apply the Procedures 	
Output	Contribution of Output to Outcome
<p>Output 4.1 MRC Procedures and associated technical guidelines reviewed and updated</p> <p>Indicators</p> <p>1: <i>The Technical Guidelines for the PMFM are updated, finalised and agreed.</i></p> <p>2: <i>The Technical Guidelines for the PWQ are finalised and agreed</i></p> <p>3: <i>Relevant MRC Procedures and Technical Guidelines including PNPCA are reviewed as part of Joint Platform</i></p>	<p>Effective implementation of MRC Procedures is fundamental to the mandate of MRC and so has a significant influence on the achievement of both the Strategic Plan and BDS. The MTR considers that after a problematic start, major improvements have been made in implementation of the PNPCA in recent years. These include reaching consensus among Member Countries on and a Joint Action Plan for Pak Beng and a Joint Environmental Monitoring program, but also in terms of the level and nature of stakeholder engagement.</p> <p>Implementation of PWQ is proceeding well, but questions related to implementation of PDIES are raised under Outcome 6 and are clearly an area of concern. The outstanding aspects of the other Procedures, including PWUM, PDIES and the operational aspects of PMFM, will become increasingly important and require resolution as MRC's role in facilitating basin-wide management increases.</p>
<p>Output 4.2 MRC Joint Platform and working groups for MRC Procedures implementation supported</p> <p>Indicators</p> <p>1: <i>The number of pending/ challenging issues related to more than one procedure tabled and resolved by the Joint Platform</i></p> <p>2: <i>The number of pending issues specific to each procedure resolved by respective technical working groups of each Procedure</i></p>	<p>Fulfilling the assumption under this Outcome to have all Technical Guidelines approved is a pre-requisite to formal implementation of the Procedures. The Joint Platform is already in an operational mode for the PNPCA, and approval of other Technical Guidelines will allow it to take more of an operational perspective on implementation of other Procedures and how for example, PMFM will work and what actions will be taken when thresholds in flow regime are crossed. This will require a greater emphasis on how monitoring data is used to support management of water resources, including full implementation of PDIES and PWUM.</p>

³³ The overall rating of 'on track' was assigned to this Outcome even though issues still need to be resolved for some Procedures including PDIES and PWUM. On balance, the MTR felt that measures are being put in place and it is moving in the right track.

Output 4.3 Common understanding of the Procedures implementation by Member Countries promoted	<p>Significant improvements have been achieved in the understanding of PNPCA among MRC's external stakeholders and this will be further enhanced as the Commentary and Lessons Learnt documents and the brochure on MRC Procedures produced by MIWRMP are more widely disseminated. This level of understanding is not yet widespread for all Procedures and although not as 'topical' as PNPCA, the others are similarly important in their own right and in the way the Procedures work collectively in support of MRCs mandate. PDIES and PWUM do not yet have the level of support needed to underpin the work of MRC. Better articulation of the need for the Procedures is needed from MRCS and the Member Countries can be more responsive in providing the required data.</p>
<p>Indicators:</p> <p><i>1: At least 1 Regional SLD is organised in one year.</i></p> <p><i>2: At least 1 national SLD is held in each Member Countries in one year.</i></p> <p><i>3: Record of Member Countries that applies to CDAP</i></p> <p><i>4: The number of orientation/training on 1995 Mekong Agreement that includes the content of the MRC Procedures and IWRM held per year</i></p>	

Outcome 5

Outcome 5: Effective dialogue and cooperation between Member Countries and strategic engagement of regional partners and stakeholders on transboundary water management	
Indicators: <ul style="list-style-type: none"> • Number of deals and agreements to secure specific cost and benefit sharing arrangements especially joint projects among riparian countries • Evidence of stronger engagement with China and Myanmar • Evidence of ASEAN and GMS Mekong related strategies, forums and meetings reflect MRC basin-wide perspectives • Evidence that the opinions/perspectives of academic/research institutions, civil society and private sector are taken into consideration by MRCS and Member Countries • Extent of continuing dialogue of MCs to resolve critical basin issues and challenges 	
Assumptions: Partners/Stakeholders recognize the mutual benefits and interest in cooperation with MRC	
Output	Contribution of Output to Outcome
Output 5.1: Partnerships with MRC's Dialogue Partners further developed and implemented, including an additional agreement with China on cooperation for Mekong basin development and management	<p>This Output contributes significantly to the Outcome, but with caveats on sharing of some data that is critical for management purposes, but still deemed sensitive by China.</p> <p>The renewal of the MOU between MRC-China's Ministry of Water Resources in 2018 and MRC being invited to the "1st Lancang-Mekong Water Resources Cooperation Forum" in November 2018 provides evidence of stronger engagement with China. Discussions on a possible MOU between LMWRCC-MRCS also point to stronger cooperation. These, as well as continued technical collaboration contributes to more effective dialogue and cooperation. Partnerships with Myanmar may not be as active due to its smaller share of the basin and comparably low levels of economic activity but there are many topics for MRC to engage with Myanmar to share its experience especially basin planning and developing decision support systems,</p> <p>The MRC-China cooperation has progressed over time and, as evident from the LMC cooperation framework, could also accelerate rapidly if the matter becomes a priority for China. It will be critical for MRC's relevance that MCs continue to be vocal in support of MRC's coordinating role for the Lower Basin and urging synergies with LMC, utilizing MRC's tools and knowledge base and cautioning duplication.</p>
Indicators <ol style="list-style-type: none"> 1: <i>The agreement between the MRC and China is maintained and updated</i> 2: <i>Additional protocol/agreement with China on exchange of dam operation information concluded</i> 3: <i>The number of joint technical workshops held in collaboration with China</i> 4: <i>The number of Chinese experts working at the MRC</i> 5: <i>The number of joint technical workshops held in collaboration with Myanmar</i> 6: <i>The number of Myanmar experts working at the MRC</i> 	
Output 5.2: Partnerships with ASEAN, GMS and other organizations updated and implemented	<p>The Output has progressively contributed to the Outcome with closer ties with ASEAN in particular. There is scope for closer cooperation with GMS.</p> <p>The new MRC-ASEAN cooperation framework focusing on fields of common interest has received strong support from key ASEAN working groups and MCs. The updated plan for cooperation with ADB focusing on two key areas of energy & hydropower and environmental</p>
Indicators <ol style="list-style-type: none"> 1: <i>MOU with ASEAN updated in accordance with BDS directions</i> 2: <i>Yearly dialogue meetings with ASEAN held</i> 3: <i>MRC representatives participate in ASEAN meetings</i> 	

<p>4: ASEAN representatives participate in MRC governance/ technical meetings and stakeholder forums</p> <p>5: MRC-ADB Partnership Agreement updated in accordance with BDS directions</p> <p>6: Annual dialogue and regular technical meetings held between ADB and MRC</p> <p>7: MRC representatives participate in GMS Meetings</p> <p>8: ADB representatives participate in MRC governance/ technical meetings and stakeholder forums</p> <p>9: The number of funded RIF water-related projects that are in line with BDS</p>	<p>management are evidence of MRC's strategic engagement with a key regional organization.</p>
<p>Output 5.3: Regional Stakeholder Platform established and implemented for enhanced dialogue and collaboration with broader stakeholders</p> <p>Indicators</p> <p>1: Establishment of Regional Stakeholder Platform</p> <p>2: The level of satisfaction of stakeholders with MRC process and procedures</p> <p>3: The level of satisfaction of stakeholders with MRC products and services</p> <p>4: Yearly common stakeholder forum held; specific working groups (for private sector, for research organisations, for CSOs) set up and meetings held</p>	<p>The Output, if fully achieved, would provide evidence that CSOs perspectives are taken into consideration by MRCS and Member Countries. However, with some CSOs active in regional Mekong cooperation voicing strong dissatisfaction in MRC's processes, especially the PNPCA, there is limited contribution from this Output to the Outcome of effective dialogue and cooperation at this point – despite strong appreciation from among the CSO group and other stakeholders of MRC's knowledge products.</p> <p>The text in the description section of the SP under this Output states that there will be a Platform and infers it is an institutionalised group with working group(s) and a Forum, i.e. an annual meeting. If that were the intention, then MRC would have to soon address institutionalizing the RSF. That could come after the on-going stakeholder survey and be part of the drafting of a unitary Rules of Procedures.</p>

Outcome 6

Outcome 6: Basin-wide monitoring, forecasting, impact assessment and dissemination of results strengthened for better decision-making by Member Countries	
<p>Indicators:</p> <ul style="list-style-type: none"> • Quality (timeliness and accuracy of MRC forecasting information in critical emergency situations); and • The extent to which line/implementing agencies use MRC reports and information systems for better decision-making <p>Assumptions: Member Countries and the wider MRC stakeholder groups share information as needed for the maintenance and development of regional information systems and tools</p>	
Output	Contribution of Output to Outcome
Output 6.1 Monitoring and forecasting systems for MRC procedures and Indicator Framework developed and maintained	Having effective monitoring and forecasting in place and disseminating accurate results in a timely and complete fashion is a necessary foundation for better decision making.
<p>Indicators</p> <p><i>1: The MRC Monitoring and forecasting systems for required monitoring parameters established and maintained</i></p> <p><i>2: Data for required parameters are monitored by Member Countries and when needed delivered to the MRCS according to agreed schedules and standard</i></p> <p><i>3: Decentralisation of monitoring is implemented according to the Roadmap</i></p> <p><i>4: The level of end-users satisfaction with quality of flash flood and river flood forecasting and drought warnings</i></p>	<p>Given the challenges MRC is facing just in maintaining the existing monitoring and forecasting systems as a result of decentralisation and the quality of the information and database management systems, it is unlikely there has been any contribution of this output to the outcome to-date. Substantial further strengthening of monitoring, forecasting and dissemination of results is required, with consideration given to the level and nature of support to the decentralisation process, the priorities of different monitoring activities, and the capacity of the RFMMC's systems and staff.</p> <p>Both Member Countries and the RFMMC have identified the need for improvements to flood forecasting services, but these have yet to be implemented and the level of end-user satisfaction is mixed.</p>
Output 6.2 Regional information systems and databases quality assured, standardized, improved and maintained	Quality assured, standardised and well maintained information systems and databases are essential for informing better decision-making.
<p>Indicators</p> <p><i>1: The percentage of regional datasets received that are quality assured</i></p> <p><i>2: The percentage of assured datasets which have been uploaded to MRC-IS</i></p> <p><i>3: The level of quality, reliability and consistency of the MRC-IS datasets</i></p> <p><i>4: The amount of new data shared by Member Countries for basin-wide assessments that are deposited into MRC regional databases</i></p> <p><i>5: The percentage of real-time data received that is used in forecasting</i></p> <p><i>6: The records of shipping accidents are available among the Member Countries</i></p>	<p>Encouraging improvements are being made to the MRC's information and database systems. However, it is too early to comment on the extent to which this has contributed to the outcome. The lack of up-to-date, quality assured datasets available for visualisation and download in the MRC-IS indicates the impact on the outcome is likely to be minimal and the cause of inefficiencies across the organisation.</p> <p>The MTR finds that the improvement work should be one of the highest priorities for the remainder of the Strategic Plan period. This improvement relies not only on the systems being available but on implementation of the protocols, staff procedures and guidance essential for supporting a culture of data stewardship.</p> <p>Raising awareness and supporting Member Countries on the use of the data and information in national processes should help improve decision-making, and greater clarity on the types of decisions made by Member Countries would</p>

<p>7: <i>River Information Services (RIS) architecture is used by shipping operators and river authorities</i></p> <p>8: <i>All Member Countries use the same standard for collecting data on waterway traffic, dangerous goods, ship arrival times, etc.</i></p>	<p>provide opportunities to identify further necessary improvements.</p> <p>There appears to be a gap between making data available for use and supporting its use for improved decision-making.</p>
<p>Output 6.3 MRC modelling and related impact assessment tools updated and approved for use by MRC and Member Countries</p> <p>Indicators</p> <p>1: <i>The number of agencies using MRC toolbox</i></p> <p>2: <i>Updated DSF/MRC toolbox version is endorsed and available for use</i></p>	<p>There appears to be a gap between making models and tools available for use and supporting the application of these models and tools for improved decision-making.</p> <p>Modelling and impact assessment tools should help improve decision-making by allowing consideration of a range of possible scenarios and the implications of certain choices as input parameters to the models. However, there is insufficient information to comment on the extent to which this output is contributing to the outcome.</p>
<p>Output 6.4 State of Basin, Status of Climate Change, and technical reports based on MRC Indicator Framework prepared</p> <p>Indicators</p> <p>1: <i>The State of Basin is prepared including a web-based interactive version</i></p> <p>2: <i>The State of Basin Report is endorsed by MRC JC and disseminated</i></p> <p>3: <i>2nd Regional Report on Status of Climate Change is prepared</i></p> <p>4: <i>2nd Regional Report on Status of Climate Change is endorsed by MRC JC and disseminated</i></p> <p>5: <i>The number of bulletins, technical reports and publications prepared and published</i></p> <p>6: <i>The end user satisfaction of bulletins, technical reports and publications</i></p>	<p>This knowledge base is a foundation of the MRC planning cycle and can support decisions on basin development planning. However, as the SOB is yet to be finalised and the 2nd Regional Report on the Status of Climate Change has not yet been prepared, it is too early to comment on the extent to which this output has contributed to the outcome.</p> <p>There appears to be a gap between making reports available for use and supporting the use of their findings for improved decision-making.</p> <p>Member Countries reported strong interest in exploring the Council Study results more fully at a national level and applying relevant parts to national and sector development plans. However, further steps on 'disseminating' the results of this work as proposed will be required. It is too early to evaluate the contribution of the Council Study to better decision-making by Member Countries.</p>

Output 6.5 Communication of and access to MRC data, information and knowledge developed and maintained	Communicating MRC data, information and knowledge is essential for improved decision-making based on that data, information or knowledge.
<p>Indicators</p> <p><i>1: The number of visitors accessing the MRC-IS platforms</i></p> <p><i>2: The number of data uploaded and downloaded</i></p> <p><i>3: The level of satisfaction by the users with the system</i></p> <p><i>4: The number of organisations and individuals actively engaged with the Knowledge Hub</i></p> <p><i>5: The number of people benefitting from MRC learning services</i></p> <p><i>6: The user feedbacks (positive and negative) on technical information dissemination and learning services</i></p> <p><i>7: The number of national, regional and international fisheries organisations benefitting from MRC quarterly newsletter Catch and Culture</i></p> <p><i>8. Functional and operational communication network is maintained for transboundary emergency alert response</i></p>	<p>Given the issues identified above in relation to Outputs 6.1 and 6.2, it is unlikely that this output has contributed substantially to improved decision-making by Member Countries to-date. Nevertheless, the MRC is on the right track and improvements to stakeholder engagement and communications have been recognised by Member Countries and other stakeholders.</p>

Outcome 7

Outcome 7: MRC transitioned to a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans
Indicators:

- Extent to which MRCS organization structure supports integrated water resources planning & implementation (IWRM Framework)
- Percentage of MRC SP outputs completed as planned
- CFs batches 1 & 2 successfully fully decentralized
- Percentage of Member Countries 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

Assumptions:

- A MRC reform implementation plan (including structural, operational, financial and staffing reform components) including risks management has been agreed by the Council in 2015, which stipulates the new internal structure of the MRC Secretariat, improved MRCS-NMCS-LAs arrangements, financial and staffing management and system changes.
- The MRC Strategic Plan for 2016-2020 which specifies the annual planning (work and budget) mechanisms has already been agreed upon by Member Countries in 2015
- Internal MRCS communication plan related to the reform has already been developed and approved by MRCS management and implementation started in 2015







Output	Contribution of Output to Outcome
<p>Output 7.1: MRCS structural reform implemented and linkages with Member Countries further improved</p> <p>Indicators</p> <p><i>1: New organization structure is in place with clear linkages to Member Countries</i></p> <p><i>2: TORs of the new organisational units and JDs of all staff positions are in place</i></p> <p><i>3: Work flows and processes are updated to reflect the structural and operational changes</i></p> <p><i>4: The number (or percentage) of MRC organizational units that adopt and apply MRC Gender tools</i></p> <p><i>5: The number (or percentage) of LAs that adopts and apply MRC Gender tools</i></p>	<p>Completing structural and programme management reforms based on IWRM framework, including linkages to Member Countries and addressing key issues to be resolved (jobs, roles, responsibilities and resulting work flow) in the next two years could lead to a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans.</p> <p>It is still too early to assess how well the Expert Groups are performing compared to the expectations of being strong links to LAs and their ability to promote country uptake of MRC jointly developed tools and outputs.</p> <p>For future SPs it would be more relevant to move the two gender-related indicators regarding MRCS and LA adoption of MRC Gender tools to KRA 1 outcomes which are more directly related to uptake of MRC outputs and tools.</p> <p>Nevertheless, incorporation of gender aspects is more evident in mainstreaming gender into MRC's sector work such as SIMVA, SOBR, SHDS, MASAP. From interviews with MCs there were calls for organizing activities in the country on applying MRC Gender tools. Doing so could help the tools being adopted at the country level.</p> <p>Also, for this Output to fully contribute to the Outcome, the increase in Member Countries' funding contributions to MRC, which is one of the Outcome indicators, needs to go hand in hand with technical/capacity building support to MCs to facilitate MC's uptake of MRC products and application of knowledge jointly produced by MCs and MRCS.</p>

<p>Output 7.2 :MRCs human resources reform implemented</p> <p>Indicators</p> <p>1: <i>New staff plan is approved</i></p> <p>2: <i>New Performance Appraisal Review is in-place</i></p> <p>3: <i>A reduction in staff turnover</i></p> <p>4: <i>HR policies and manuals are revised in accordance with the staffing reform plan (part of the overall reform implementation plan)</i></p>	<p>Implementing HR reform and related measures to attract and retain good staff would lead MRC to become a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans. Improving staff capacity could start with recruitments that are open and transparent with strong criteria for selection and a minimum threshold for shortlisting. Staff morale and satisfaction with the MRC management system and organizational direction still needs attention. Implementing key recommendations such as clearer JDs and introducing KPIs into the performance appraisal process would help. Giving Chiefs more supervisory responsibilities could boost efficiency. A more trusting management style and staff feeling they are making a difference – which is linked to greater uptake of MRC outputs and reduced delays - could boost morale.</p>
<p>Output 7.3: MRCs financial and administrative reforms implemented and operationalized</p> <p>Indicators</p> <p>1: <i>Basket fund & overseeing committee (Budget Committee) is established</i></p> <p>2: <i>MS Dynamic Solomon is upgraded or changed with new accounting system and accounting method</i></p> <p>3: <i>New management reporting tools are in place</i></p> <p>4: <i>The MRCS administrative, financial and procurement manuals are revised in accordance with the new administrative and financial system</i></p> <p>5: <i>Increase in Member Country contributions to MRCS during 2016-2020</i></p> <p>6: <i>Financial plan for Member Country contributions to MRCS towards achieving the 2030 target adopted by Council by 2020</i></p>	<p>Revised manuals, management tools, accounting systems and tools upgrade and increased MC contributions will help MRC transition to be a more efficient and effective organisation in line with the revised Decentralisation Roadmap and related reform plans. The MTR assumption is that the Operational Review’s key recommendations on financial and administrative systems will be implemented and satisfy MC and donor requirements</p>
<p>Output 7.4: Annual work plans, and results-based monitoring, evaluation and reporting system for MRC SP and NIPs prepared and fully operationalized</p> <p>Indicators</p> <p>1: <i>RBM&E system manual is revised and approved</i></p> <p>2: <i>The extent to which the national & regional RBM&E reports are evidence based</i></p> <p>3: <i>The extent to which the RBM&E reports are used for management decision making</i></p>	<p>Annual work plans, and results-based monitoring, evaluation and reporting system for MRC SP and NIPs have been prepared and could lead MRC to transition to be a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans. However, greater effort would be needed to ensure the M&E system and tools are used for influencing planning and decision-making and not only for monitoring and reporting on progress.</p>

<p>Output 7.5: MRC Strategic Plan for 2021-2025 prepared and approved</p>	<p>Preparing and getting the next MRC Strategic Plan prepared and approved could lead MRC to transition to be a more efficient and effective organisation in line with the Decentralisation Roadmap and related reform plans. Five year NIPs are workable for focusing on core functions and consolidation of existing strategies and products and their uptake in MCs. MRC could add a rollover element especially for core monitoring functions that continue year to year. A longer time-frame may be appropriate for the continuous work programme elements. MRC could add a provision for a shorter term review for the flexibility to include new or emerging aspects from time to time.</p>
<p>Indicators</p> <p><i>1: MRC SP 2021-25 is endorsed by JC and approved by Council in 2020</i></p> <p><i>2: National Indicative Plans 2021-2025 are prepared and ready for national approval in 2020</i></p>	

Annex 4 – Risk Management Matrix

Risk identified in the SP	Impact rating	Expected Likelihood	MTR comment
1. MRC expertise & impartiality not valued in the region 	Medium	Medium	In relation to its work programme and implementation of the 95MA, MRC has continued to maintain its independence and neutrality. The approach of wider stakeholder engagement and greater openness helps to maintain this independence. The challenge remains how to ensure that objective expertise of a neutral advisory organisation can achieve greater influence on major development decisions in the Basin.
2. Insufficient collaboration of non-water sector agencies 	Low	Medium	There are mixed results and various reasons behind lower than desired cooperation including budgetary constraints, but also concerns over MRC's role in what is often seen as national issues. The MTR considers the impact of this risk should be rated Medium or High. Mitigation measures noted in Table 3 of the SP are appropriate but, in many cases, a more effective facilitation role is needed at higher levels to reduce delays to finalisation of Outputs and their uptake.
3. Insufficient coordination and inputs to the preparation and implementation of national development plans from basin-wide perspective 	High	Medium	The MTR agrees that this is a high risk. Although implementation of PNCPA is improving, it comes very late in the planning process of a project. The Council Study and earlier studies have raised awareness of the issues and potential impacts of major infrastructure projects, but the MTR feels that there is little follow on engagement of MRC in the early stages of project feasibility and options assessment. RSAT and TbEIA are tools that could be applied but do not yet have full support of the MCs. There is still work to be done in mitigating this risk and, at this stage, it is not clear that the basin strategies are particularly influential.
4. Difficulty in reaching consensus among Member Countries on critical issues 	High	Medium	The MTR agrees that this is a high risk but that the likelihood is also high. This has been demonstrated on a number of issues in the first half of the SP period including approvals for key guidelines and strategies as well as finalizing of some Procedures that have been pending for a long time. The mitigation measures are appropriate but have not yet been fully effective at minimizing this risk. Alternative strategies for building the enabling environment to achieve consensus over time may be needed.

5. Difficulty in implementing cooperation mechanisms 	Medium	Medium	Considerable improvements have been seen in applying PNPCA but work is still needed to finalize some of the other Procedures and their implementation. Implementation of the BDS is considered partial (see Table 1). Efforts are being taken to resolve outstanding issues but these need to be intensified.
6. Limited resources & capacity at national level to implement MRC's decentralised activities 	Low	Medium	Serious issues have been experienced with the decentralisation of CRBMFs and implementation of the roadmap. These are covered in the MTR decentralisation report. As monitoring is at the heart of the MRCs planning and management operations, the MTR considers that this should have a High rather than Low impact rating . The transition has been too fast for the prevailing context and mitigation measures inadequate to take corrective action.
7. Insufficient leadership & management capacity for reform implementation 	Medium	Low	This aspect was covered in ore depth by the Operational Review. The organisational reforms involving major downsizing and changes in staff positions were implemented swiftly. Although inevitably disruptive, a considerable amount has been achieved in the initial half of the SP period. The main concern has been around the abruptness of the decentralisation process (Risk #6).
8. Qualified professional staff are not retained and not recruited during the reform process 	Medium	Low	Any reform of this scale will involve loss of experienced staff. The staff turnover rates have since stabilized. Some adjustments in staff positions will be needed in response to the OR and this MTR. Capacity varies significantly and a more robust application of the performance assessment system together with greater certainty on tenure for high performing staff should be considered as noted in the risk mitigation measures.
9. Ineffective transition to Basket Fund arrangements 	Medium	Low	The transition to the Basket Fund has been effective and it provides greater opportunities for MRC to set priorities. The issues raised in the internal audit and OR report need to be resolved quickly if DP confidence in the Basket Fund is to be maintained, The MTR consider that this is currently a High Risk to MRC.
10. Significant unexpected funding shortfall 	High	Medium	This is linked to the previous Risk. Development Partner interest in MRC is currently high, but the fundamental financial and administration issues need to be resolved.

Colour key (based on SP Risk Impact and Likelihood Matrix Fig 5)

Green – Low Risk; Yellow – Medium Risk; Orange – High Risk; Red – Critical Risk

Review of the Decentralisation of Core River Basin Management Function Activities to Member Countries

Appended as a separate file