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MRC Council Study

Cumulative impact assessment of water resource development scenarios

Cumulative Impact Assessment Key Findings Report

Prepared by:
The Council Study Core Team

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Document history

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Executive summary

Introduction

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Initial assessment findings

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Abbreviations and acronyms

AIP	: Agriculture and Irrigation Programme (of the MRC)
BDP	: Basin Development Plan
BDP2	: BDP Programme, phase 2 (2006 –10)
BDS	: (IWRM-based) Basin Development Strategy
BioRA	: Biological resource assessment team (under Council Study)
CCAI	: Climate Change and Adaptation Initiative (of the MRC)
DMP	: Drought Management Programme (of the MRC)
EP	: Environment Programme (of the MRC)
FMMP	: Flood Mitigation and Management Programme (of the MRC)
FP	: Fisheries Programme (of the MRC)
IKMP	: Information and Knowledge Management Programme (of the MRC)
IWRM	: Integrated Water Resources Management
ISH	: Initiative for Sustainable Hydropower (of the MRC)
JC	: Joint Committee (of the MRC)
LMB	: Lower Mekong Basin
LNMC	: Lao National Mekong Committee
M&E	: Monitoring and evaluation
MIWRMP	: Mekong Integrated Water Resources Management Project (of the MRC)
MRC	: Mekong River Commission
MRCS	: Mekong River Commission Secretariat
MRC-SP	: MRC Strategic Plan
MWRAS	: Mekong regional water resources assistance strategy (of the World Bank)
NIP	: National Indicative Plan (C-NIP: Cambodia, L-NIP: Lao PDR, T-NIP: Thailand, V-NIP Viet Nam)
NMC	: National Mekong Committee
NMCS	: National Mekong Committee Secretariat
NAP	: Navigation Programme (of the MRC)
PMFM	: Procedures for Maintenance of Flow on the Mainstream
PWUM	: Procedures for Water Use Monitoring
RDA	: Regional distribution analysis
TCU	: Technical Coordination Unit (of the MRCS)
TNMC	: Thai National Mekong Committee
TRG	: Technical Review Group (of the MRC)
UMB	: Upper Mekong Basin
VNMC	: Viet Nam National Mekong Committee

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1 Introduction

1.1 Purpose of this report

The purpose of this report is to present the key findings of the cumulative impact assessment (CIA). The CIA integrates the findings of the social, economic and environmental assessments to identify the key impacts and benefits of selected water resources developments. Recommendations are made on measures or strategies to avoid or mitigate the most significant negative impacts.

The findings of the assessment are presented in three ways. First, in terms of impacts on people (social), the economy (economic) and the environment. Second, according to thematic areas: agriculture and land-use; irrigation; flood protection; hydropower; navigation; and industrial and urban water use. Third, in terms of trade-offs, synergies and other forms of interaction. In all cases an effort is made to separate the effects of water resources development from other exogenous processes.

1.2 Report contents

The report describes the water resources development scenarios considered, the assessment indicator framework used, as well as other features of the approach and methods adopted. The main body of the report is given to the presentation of the findings. The report concludes with recommendations on ways of reducing negative impacts.

The report contains a further five chapters as described below.

Chapter **Error! Reference source not found., Error! Reference source not found.**, describes how the Council Study (CS) is organised, its overall objectives, the responsibilities of other study components and the overall scope of the Cumulative Impact Assessment (CIA) called for under the CS.

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Chapter 4

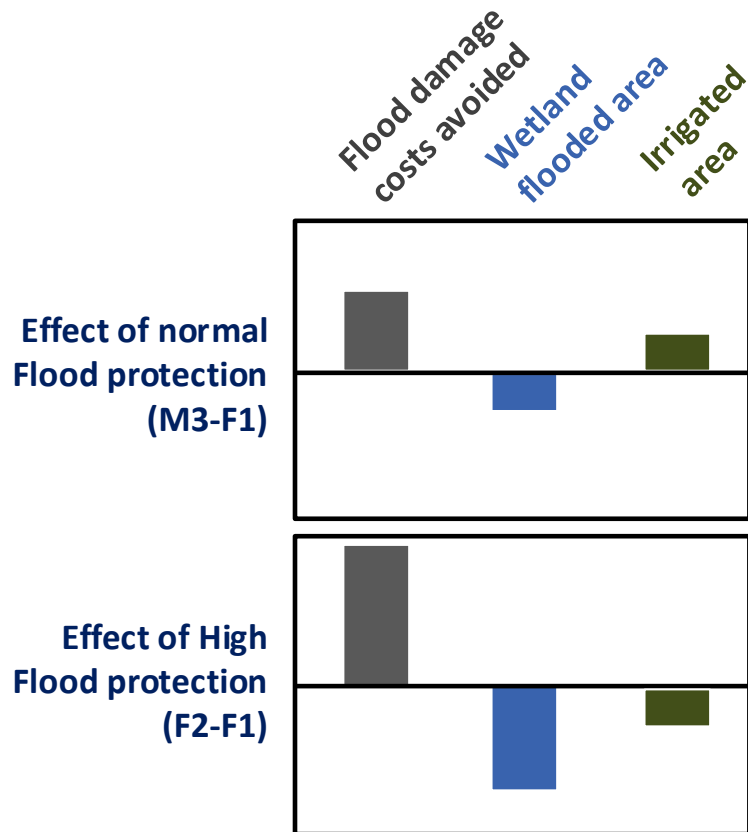
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Table 2 Candidate composite strategic indicators for use in the Cumulative Impact Assessment based on selected indicators from the disciplinary assessments.

Dimension	Composite Strategic Indicators	Disciplinary assessment Indicators
Social	Wellbeing	Water security Food security Income security Health security
	Employment	Employment in MRC sectors Employment satisfaction
	Social cohesion	Public participation Trust and public acceptance Social capital
	Equality	Gender inequality Income equality
	Resilience	Total flood protected area Total water storage Total irrigated area
Environmental	Water flow conditions in mainstream	Dry season flows – PMFM compliance Flood season peak flows – PMFM compliance Tonle Sap reverse flows – PMFM compliance Timing of onset of wet season flows Annual flooding
	Water quality and sediment conditions in mainstream	Mainstream water quality – PWQ compliance Sediment transport in the mainstream Salinity intrusion in the delta
	Status of environmental assets	Wetland area River channel conditions and habitats River bank erosion risk Aquatic biodiversity Ecologically significant areas
Economic	Net economic value of MRC sectors	Economic value of irrigated agriculture, recession agriculture, rainfed agriculture, hydropower production, flood damage, drought damage, capture fisheries, etc. Economic expenditure on tourism and recreation
	Contribution to national economy	Proportion of MRC sectors to overall GDP
Integrated	Resource sustainability	Economic value of sectors Wellbeing Employment Water flow Water quality Environmental assets
	Cross-sectoral synergies	Economic value of sectors Social cohesion Equality Resilience
	Transboundary balance	Water flow Water quality Environmental assets Economic value

Figure 4 Flood protection measures can reduce damage costs but may have other impacts as well. Comparison of scenarios in 2040 assuming all other water resource development proceeds according to the Planned Development scenario (M3) or there is even more investment in protection (F2) compared to no additional flood protection (F1).



4 Negative Impacts and Risks

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4.1 **Planned cascade of dams and diversions would drastically reduce fisheries production**

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4.2 **Planned cascade of dams and diversions would drastically increase problems from salinity intrusion in the delta**

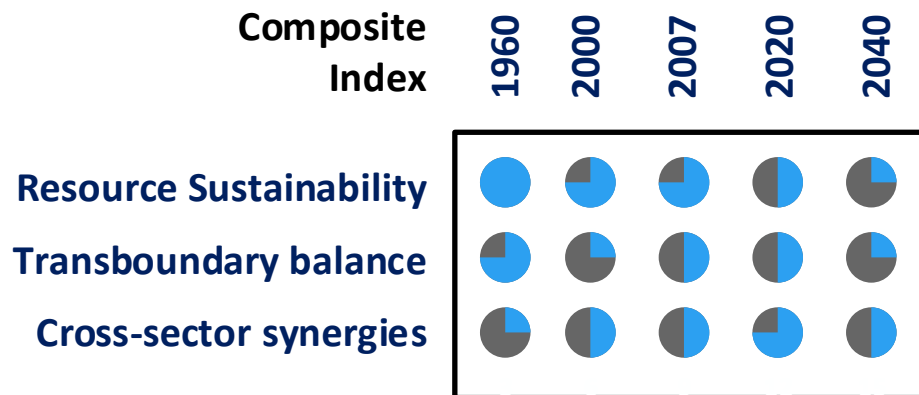
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5.3 Water resource development the hydropower and irrigation sectors can have major repercussions for other sectors.

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Figure 6 Historical and projected changes in composite indicators over time for the Lower Mekong Basin based on scenario assumptions about levels of water resource development and a few select trends.



6 Implications for Planning and Policy

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6.1 Development planning for water resources development in the Lower Mekong Basin should include analysis of cross-sectoral impacts

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6.2 Increased cooperation in planning of water resource development is needed as the transboundary impacts are significant

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7 Knowledge Gaps

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7.1 **Understanding of the social impacts of water resource development is improving but still insufficient for detailed cumulative impact assessment**

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