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THE COUNCIL STUDY

Study on the sustainable management and development
of the Mekong River, including impacts of mainstream
hydropower projects

Socio-economic impact assessment

(Final)

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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)
CIA	: Cumulative Impact Assessment
CNMC	: Cambodia National Mekong Committee
CS	: Council Study
DMP	: Drought Management Programme (of the MRC)
EP	: Environment Programme (of the MRC)
FAO	: Food and Agriculture Organisation
FMMP	: Flood Mitigation and Management Programme (of the MRC)
FP	: Fisheries Programme (of the MRC)
HH	: Household
IBFM	: Integrated Basin Flow Management (MRC study)
IFAD	: International Fund for Agricultural Development
IKMP	: Information and Knowledge Management Programme (of the MRC)
ILO	: International Labour Organisation
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
MRC	: Mekong River Commission
MRCs	: Mekong River Commission Secretariat
MRC-SP	: MRC Strategic Plan
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
SEDB	: Socio-economic database (of the MRC)

SIMVA	:	Social impact Monitoring and Vulnerability Assessment (conducted by MRCS)
SoB	:	State of Basin report (of the MRC)
SocEc	:	Social Assessment team (of the Council Study)
TCU	:	Technical Coordination Unit (of the MRCS)
TNMC	:	Thai National Mekong Committee
UMB	:	Upper Mekong Basin
UN	:	United Nations
UNDP	:	United Nations Development Programme
VNMC	:	Viet Nam National Mekong Committee

1 Executive Summary

The social and economic assessment reports the results of the estimated consequences of the proposed development scenarios constructed for the Mekong River Basin corridor under the MRC Council Study. The analytical outputs are intended to inform the social and economic factors specific to each of the Thematic Teams engaged in the Council Study and provide data inputs for the Macroeconomic and Cumulative Impact Assessments of the Council Study.

The social and economic assessment report takes as its primary guidance the Inception Report of the Council Study and the ongoing comments and review provided by the MRC Member Countries' Technical Working Groups and National Committees. Discussions and individual consultations with members of the Thematic and Discipline teams of the Council Study (CS) have been integral factors in the overall design of the social and economic assessment.

A primary objective of the socio-economic assessment was the estimation of changes in social and economic conditions within the Lower Mekong Basin (LMB) associated with i) the three main water development scenarios and 13 sub-scenarios considered in the CS and ii) the socio-economic conditions associated with exogenous, or non-water development, factors and iii) estimated changes in socio-economic conditions expressed as a revised suite of socio-economic assessment indicators.

The three water development scenarios comprise: (i) the M1 2007 early development scenario, (ii) the 2020 M2 definite future scenario, (iii) and the 2040 M3 planned development scenario. The M1 scenario represents the 2007 baseline conditions and the reference conditions and attributes by which the other Council Study development scenarios are compared. The 2020 Definite Future Scenario (M2) includes all existing, under-construction, and firmly committed development in the six sectors which are expected to be in place by 2020. The 2040 Planned Development Scenario (M3) includes water resource developments, in addition to the M2 scenario, that are planned in the six sectors in the Mekong Basin and that would be in place in 2040 if fully implemented. The sub-scenarios address changes predicted by the CS Thematic teams to occur over a 24-year projection horizon. The changes focus on:

- Irrigated agriculture;
- Agriculture and land use change;
- Domestic and Industrial water use;
- Flood protection and management;
- Hydropower generation; and
- Mainstream navigation.

The M1, M2, M3 and M3CC main scenarios combine bundles of developments and investments to assess cumulative effects. Assessing cumulative effects has the advantage of accounting for synergistic effects in cases where outcomes of the combined effects differ compared to the sum of individual interventions. The assessment of larger bundles of investments does not however allow for the conclusive attribution of outcomes to either individual or combinations of individual investments. The Council Study (CS) introduced a set of thirteen sub-scenarios to assess the sector-specific variation of the M3 main scenario (as planned for 2040) to disaggregate the investment bundles of the main scenarios, improve the specificity of analysis and attribution of outcomes to specific investments and sector developments. That is comparisons were made when individual investments were switched on or off. The CS design logic focused on the comparison of the M3 main

scenario with all sub-scenarios to reveal the difference particular sector investment are likely to make. Each of the CS sectors are comprised of multiple projects and investments. The sub-scenario analysis assessment does not allow for project-specific attribution of outcomes and impacts. Additional disaggregation would require an assessment of individual projects (e.g. a specific hydropower dam or irrigation scheme) enabling a less granular assessment and the formulation more precise development strategies.

The attributes of the CS scenarios are based on recorded hydrological data from 1985-2008. The predictions of change estimated for the scenarios therefore rely on the same 24-year prediction horizon, regardless of the commencement year and independent of the level of development imposed on the Mekong River system.

The 13 corridor zones defined in the MRC SIMVA (2015) survey represent the primary spatial unit to establish the baseline conditions of the M1 scenario. The three primary regions assessed for the Council Study are i) the 15 km corridor on both sides of the mainstream from the Chinese border to Kratie (Cambodia) and continuing from Kratie to the Viet Nam border ii) the Cambodia Floodplains including the Tonle Sap River and Great Lake and iii) the Mekong Delta in Viet Nam.

The social and economic assessment considers changes in a suite of indicator dimensions in response to the development scenarios. Five dimensions comprise the strategic indicator of Living conditions and well-being defined by the four Member Countries. These are:

- **Water security** – relating to access to safe water supplies, water availability for domestic and agricultural use and flood exposure; effects of floods and drought.
- **Food security** – relating to the ability to meet Recommended Daily Intakes (RDI) of food grain (the primary source of Kcal/day/capita), protein and fat requirements through home production; and the ability to purchase food; proportion of the population undernourished and child wasting.
- **Income security** – relating to and having sufficient monthly income; diversity of employment and/or having sufficient income to pay for food and necessities; proportions of population below national poverty lines.
- **Health security** – relating to access to safe water, safe sanitation and access to health facilities.
- **Energy security** – the % of the rural population with access to electricity

Two additional strategic indicators were later addendums to the social and economic assessment:

- **Employment** – relating to the proportion of employment measured as Full Time Employment in MRC-related sectors; and
- **Gender equity** - relating to the favourable equity conditions brought about by achieving water, food, income and health security.

Two critical factors were required to effectively conduct the Council Study social impact assessment. First, data needed to be either specific to the corridor zones, ideally as time series to reflect the 24-year projection horizon, or could be reliably interpolated from recognized national and international datasets. Second, the analytical variables and parameters needed to have a direct relationship to the Discipline and Thematic Team analyses to detect differences in the social and economic indicators between the Development scenarios and provide useful outputs for further Thematic Team analyses. Methods and tools were developed to conduct the food security, income security, employment security and the drought and flood indicators of water security. These are detailed in the Annex and are available to the Member Countries. Energy security, health security the access to safe water were constrained by one or both of these factors and assessment relied on historical trend analysis and survey data.

Main findings

In addition to its iconic value, the Mekong River corridor as defined by the MRC is central to the social, cultural, ecological and economic status of the riparian countries. In conducting the Council Study, the near absence of social and economic data and information specific to the corridor and the 13 bio-zones has been evident. Two surveys have been conducted by the MRC that represent point data in time, although the differing survey focus and spatial boundaries limits their use as a panel data set. The data deficit severely limits the ability for National decision makers to understand the rapid and connected changes occurring in the Corridor and detect and manage points of effective intervention. **The riparian Member Countries could treat the Corridor as a defined administrative boundary, as part of their formal data collection activities, in addition to and complementing traditional census and natural resource management boundaries (Provinces, districts, eco-zones).**

Gender

Gender issues are relevant to water resource developments as women are more vulnerable than men during flood and drought due to their higher dependence on natural resources and the social barriers thought to limit their adaptive capacity. The lower median incomes of women compared to men vary from 22% in the Cambodian zones, 4% in Lao PDR, 14% in Thailand and 45% in Viet Nam. The equivalent dollar value of the subsistence incomes of women are from 3-5% higher than male counterparts. The incidence of women in the primary sector having incomes below national poverty lines is significantly higher than males except Lao PDR, varying by 12% in Cambodia, 4.6% in Thailand and 17% in Viet Nam. National aspirations of gender equity are generally not reflected in the Council Study assessment and indicate a need for sustained efforts to correct the imbalance.

Notably the MRC Social impact and vulnerability assessments (SIMVA) did not treat gender as a specific survey dimension and data class. **A central recommendation of the social and economic assessment is the future investigation of the status of gender equity in the corridor and the vulnerability and opportunities for women be undertaken by the MRC to correct this important omission.**

Capacity to maintain food security

Increasing food security is a priority for the Member Countries, particularly important to Cambodia and Lao PDR to graduate from LDC status. The analyses indicate that policies and initiatives to manage the potential for reduced food security will be one the most important deliberations to be undertaken by Member Country Governments. The analyses also highlight the interdependency between food water and energy security and the imperative for cross sectoral, collaborative decision making.

Differences between the M1 and main development scenarios revealed by the food security analysis are an indication of the main development scenario effects on fish and rice production and subsequent effects on food security. Daily food security/per capita needs for 100% of the population were kept constant across all development scenarios and the production surplus calculated as a measure of a countries capacity to meet predicted food shortfalls and maintain accepted levels of food security. The comparative aggregate reductions in surplus fish production after meeting food security across all corridor zones compared to the M1 baseline (year24) were summarized as reductions of:

M1-M2= -32%

M1-M3 = -43%

M1-M3CC = -40%

Aggregate fish surplus was estimated to be sufficient to provide essential protein and micronutrients for the corridor population, but subject to substantial regional variation and distributional factors.

Fish reductions were especially acute across all development scenarios in Lao PDR and Cambodia. Compared to the M1 baseline, the comparative aggregate increases in surplus rice production after meeting food security across all corridor zones were:

M1-M2= +6%

M1-M3 = +16%

M1-M3CC = +13%

Capacity to maintain food security, measured as food surpluses, declines in Lao PDR and Cambodia and remains relatively stable in Thailand and Viet Nam for the M2 and M3 development scenarios. The production of both rice and fish varies substantially across the 24-year projection horizon. EMRF **There is sufficient overall production and surplus in the Corridor to maintain 100% food security, but will require effective, willing distribution networks and cooperation of Member Countries to avoid significant increases in undernourishment.**

Increases in aquaculture production are likely to substitute protein deficiencies. Fish prices are likely to increase as fish catch declines, introducing an incentive to convert land to aquaculture. **Vigilance regarding the management of economic, social and environmental impacts of expanded aquaculture is recommended.** Current aquaculture production is capital and labour intensive and associated with widespread use of antibiotics, reductions in water quality and possibly water quantity due to the cumulative effect of dam impoundments.

Undernourishment as a measure of food security

The change in the level of household undernourishment was assessed according to the change in available rice production, which increases in M2 and M3, and fish production, which decreases. The number of undernourished people in Cambodia and Lao PDR increased in the M2 and M3 scenarios compared to the 2007 baseline, decreased in Thailand and remained relatively stable in the Viet Nam Delta. Reducing the level of hydropower development only (the H1a sub-scenario) improved the levels of undernourishment in Cambodia, Lao PDR and the Viet Nam Delta. Undernourishment generally increased due to the effects of climate change. Analysis of wasting in children under 5 could not be conducted due to very constrained data. **Child morbidity is an important indicator of food status and poverty. A concerted effort to improve the collection and availability of reliable data for the corridor is recommended.**

Consideration of the irrigation and land use scenarios suggests the reduction in fish catch is the primary factor in the change in undernourishment levels. A reduction of 380 tonnes of fish was estimated to correspond with an additional 1000 households defined as undernourished. An increase of 1250 tonnes of rice reduces the number of undernourished households by 1000.

Poverty

Poverty levels were measured as the proportion of people below national lines poverty lines. The changes in poverty levels across scenario comparison were not uniformly distributed both geographically and across the development scenarios. The M1 scenario corresponds to the lowest levels of poverty for all zones except 3C Thailand, 5B Cambodia and 6B Viet Nam. Poverty decreased in Lao PDR and Thailand, increased in Cambodia and remained relatively stable in the Viet Nam Delta. The latter are characterized by less than 0.2% difference across the scenarios. The highest levels of poverty were observed in the comparison of the M1 and M3 and M3CC scenarios, where poverty increases for Lao PDR were estimated at 1.7-3.7%. The increases in Cambodia ranged from -0.01% to 2.0%. Changes in Thailand and Viet Nam were estimated at less than 1%. The M3CC scenario corresponds to the lowest level of poverty for the 4A Cambodia zone.

Water security

Droughts and floods

The 1995-96 El Niño and 2000-2001 floods correspond to 2015-2017 and 2022-2024 of the projection horizon of the Council Study. The number of total people affected in a severe drought year ranged from M1: 700,527; M2: 745,593 and M3: 5387,288. The increase in the M2 scenario reflects the increase in some rainfed production and subsequent increase in the number of people with rice based livelihoods. The population estimated to be affected by the drought represents M1: 3.4%, M2: 3.3% and M3: 2.6% of the total corridor population in 2000 compared with 2003.

Rice production of a year in the CS projection horizon that corresponds with the 2000-2001 floods was compared with a non-flood year. The total number of people with rice based livelihoods affected in the corridor was estimated at 1,137,264 in the M1 development scenario, M2: 1,232,452 and M3: 818,887. The affected population represents M1: 4.8%, M2: 5.23% and M3: 3.5% of the total corridor population in 2000 compared with 2003.

The effects of flooding were not uniformly distributed across the corridor zones. The majority of affected people with rice based livelihoods were located in the Kratie to the Viet Nam Border (634,412 people) and the Tonle Sap River (419,376 people). Compared to the 2000 flood year, rice based livelihoods increased in the non-flood year by 50% and 105% in the Katie to the Vietnam border and Tonle Sap River zones respectively.

The social and economic assessment of the 1995-96 drought and 2000-2001 flood estimated a 10-11% decrease in rice production due to flood corresponds to 4.5-5% of the corridor population being affected; an 11% decrease in rice production due to drought corresponds to 3.1-3.3% affected.

A drought similar in severity to the 1995-96 or 2015 El Niño or the 2000 flood coinciding with years of significant fish declines introduces the prospect of acute food shortages and reduced food security throughout the corridor, particularly Lao PDR and Cambodia. The analyses conducted by the CS BioRA and Modelling Teams indicate this is likely in at least four years of the 24-year projection horizon. Culturally, Corridor households are less well adapted to severe droughts compared to the natural flooding cycle including low to moderate floods. **Cross sectoral and transboundary planning with a focus on effective distribution systems will be necessary to avert the consequences of the fish-rice-drought-flood coincidence, which are likely to more acute in M2 and M3 scenarios.**

Access to potable water

Access to safe drinking water in rural communities has improved substantially in Lao PDR and Cambodia. Household access in Thailand and Viet Nam is close to 100%. Developing functional relationships between drinking water access and the attributes of the development scenarios is constrained by a deficit of time series data specific to the corridor. The national trends of improved rural water access to safe drinking water were assumed to continue and be independent of the development scenarios. However, MRC corridor surveys conducted in 2014 indicate the quality of water supply varies widely across the LMB.

River water used for drinking water is most frequent in Cambodia and Lao PDR. In terms of inputs to MRC activities, the finding that river water is extensively used for drinking water points to the importance of water quality monitoring. **Recommendations from SIMVA (2015) include developing an inventory of drinking water extraction sites from the Mekong** would be a worthwhile exercise that could more precisely identify critical spots where potable water quality is most important. Current Mekong water quality meets MRC guidelines. The Domestic and Industrial Water Theme recommends **vigilance in water quality monitoring, especially Total Suspended Solids as urbanization, industrial waste water and untreated sewage discharge increases.**

Energy security

Electricity as part of the rural energy mix is one of the most important factors for economic growth and human development. Energy access as a means for productive use is of key importance for rural communities to improve livelihoods and for the opportunities created. There are also strong linkages between rural poverty and electrification rates. The indicators for CS Energy Security are the proportion of the rural population with access to electricity and rural electricity pricing. As of 2014-2025 rural electrification in Thailand was 100%, 98.9% in Viet Nam, Thailand 58% in Cambodia (possibly as high as 68% EDC pers. comm.) and 68.1 % in Lao PDR. Available data are generally at national and provincial level and not specific to the corridor zones however. As Thailand and Viet Nam are at or close to 100% of electricity access, the social and economy assessment focused on the corridor zones in Cambodia and Lao PDR.

Electricity fees are charged as block tariffs in Lao PDR from 4c-12c/kWh. Tariffs in Cambodia are currently 9c-17c/kWh. Both the Lao PDR Government and the Royal Government of Cambodia have planned rural electrification of 90% and 70% national connection by 2030 respectively, comprised of grid and off-grid (renewable) supply. Mini-hydro, solar and biofuels are identified as important parts of the energy mix for rural communities in both Lao PDR and Cambodia.

The mix of renewable and grid electrification, funding from sources such as the Global Environment Fund, the ADB and World Bank and ongoing institutional support are likely to have a far greater influence on rural electrification than the investments proposed in the CS development scenarios. The increasing national trends from 2000 to 2015 projected to 2024 indicate the rates of rural electrification are likely continue independently of the CS development scenarios.

Employment

The M1 comparison across the 24-year time horizon indicates, that at current levels of agricultural productivity, there are substantial increases in the secondary, tertiary and navigation sectors and relatively modest increases in the primary sector across the majority of corridor zones. That is, projected increases in the working population over the 24-year project time horizon are sufficient to meet potential labour demands associated with expanding secondary, tertiary and navigation sectors.

The assessment of sector employment across the development scenarios indicates a potential shortfall in meeting the labour demands required for planned agricultural expansion and increases in the secondary and tertiary sectors in the M2 and M3 development scenarios. Viet Nam is less affected as there is no agricultural expansion planned in the development scenarios.

Resolution within the constraints of the CS, requires either i) agricultural productivity to increase in the order of 30-35% in Lao PDR and Cambodia, ii) reducing the level of either agricultural expansion, industry or both, or iii) increased reliance on migrant labour. Corridor surveys indicate 5-15% of the corridor population are working away from their home village, although migration was a less preferred alternative livelihood adaptations. This a complex issue involving the assessment of multiple interacting factors, including changes in wages, labour conditions, increasing foreign investment, cultural norms, institutional settings and migration patterns. These apply to conditions both within and outside the corridor zones.

National economic planning for the four member countries focuses on jointly expanding the agricultural, manufacturing and service sectors of their respective national economies. These are capital and labour intensive. The joint agricultural and secondary sector expansionary strategies potentially introduce conflicting labour demands in the M2 and M3 scenarios introducing the potential of stranded and underutilized infrastructure. Developing a dynamic modelling approach capable of the joint inclusion of these factors, including migration patterns, is recommended as a central feature of trans-boundary planning.

Household incomes

Households in the Lower Mekong undertake a diversity of concurrent livelihood activities expressed as multiple income sources. Undertaking a diversity of livelihoods represents a widely implemented risk management strategy for poorer and more vulnerable communities and households where endowments, entitlements and capacities allow.

The BioRA (fish biomass) and IWRM (rice yields and production area) are the primary data inputs to the social and economic assessment, establishing the functional relationships between the employment indicators describing the corridor zones and the CS main development scenarios and sub-scenarios. The estimates of fish and rice production therefore establish the foundation data to estimate the relative proportions of primary, secondary and tertiary sector employment and incomes. Multiplier effects and employment differences in urban centres were not included in the income estimates and year 1 estimates of median wages held constant for comparisons.

The estimated total corridor household income increased by US\$ 6.4 billion when comparing year 1 with year 24 of the M1 baseline scenario. The gains in total income occur in the manufacturing sector, which increases by US \$7.9 billion offset by primary sector income declines of US\$ 1.48 billion.

The estimated M2 scenario total corridor income (year 24) declines by US\$ 245 million compared to the M1 baseline. The main losses are in the manufacturing sector (-US\$ 439 million) offset by a US\$ 194 million gain in the primary sector.

The estimated M3 scenario total corridor household income (year 24) declines by US\$ 630 million compared to the M1 baseline. The main income changes are in the manufacturing sector (-US\$ 1.5 billion) offset by a US\$ 881 million gain in the primary sector. The M2 and M3 scenarios are characterized by substantial declines in fish catch and increases in rice productions across the corridor zone.

Agricultural value

The mean fisheries value of the M2 and M3 scenario (year 1-24) was estimated to decline by US\$ 1.04 and US\$1.57 billion (-25% and -38% respectively) compared to the M1 baseline. The highest proportion of the decline in value occurs between the M1 and M2 scenarios (US\$ 1.04 billion); the additional decline from M2-M3 equals US\$0.52 billion or a further decline of 21%.

The mean value of rice production predicted to occur in the M2 and M3 scenarios (year 1-24) increases by US\$ 0.34 and US\$ 0.95 billion respectively compared to the M1 baseline. The predicted effect of climate change introduces a -6% decline in the value of the M3 scenario or US\$ 0.135 billion.

Accounting for **subsistence livelihoods** and production and monetary equivalence is an important measure in substantial, non-market and hybrid agricultural economies such as the Lower Mekong Basin. Monetary poverty measures often fail to reflect the multiple dimensions of poverty and failure to account for subsistence production underestimates the productivity of traditional agricultural systems and contributions to national GDP calculations. The monetized value of subsistence rice production in the corridor was estimated at US\$3.3 billion compared to a total value of US\$9.75 billion: subsistence fish consumption was estimated at US\$5.92 billion compared to a total production value of US\$10.03 billion. **Cross sectoral collaboration will be required to assess and mitigate the effect of increasing urbanization on the reliance of households on subsistence production, the effect on livelihoods and the potential reduction in effective household income.**

Health security

The assessment of health and access to safe water for the Council Study relied on the findings of the SIMVA 2015 survey. The noted increases in improved access to safe drinking water and access to

improved sanitation are expected to continue throughout the corridor independently of the development scenarios.

Income vulnerability

The reporting of the calculation and analysis of income related vulnerability was an additional indicator developed as part of the cumulative impact assessment. Income vulnerability was defined by a developed metric that classifies vulnerable households as those below the sectoral median income. The metric was developed to answer the question “do the development scenarios affect the numbers of (income) vulnerable people disproportionately across the corridor zones”?

Generally, vulnerability decreases in the Primary sector (that is less vulnerable people are employed) and increases mostly in in the Manufacturing sector, less so in the Service sector, but all zones are affected by both increases and decreases. The analysis revealed a disproportionate and non-uniform distribution of income vulnerability changes (both increases and decreases) across the corridor zones and the set of development scenarios. We caution against causal inference and attribution to the specific investments and initiatives that characterize the Council Study Development scenarios due to omitted key factors likely to influence household decision making and livelihood activities. A decrease or increase in income vulnerability in one sector, zone or country does not necessarily equate to net change in vulnerability within a zone or across the entire Mekong Corridor. **The categorization of income vulnerability points to changes in the corridor zones that warrant further investigation and deliberation regarding distributional equity and planned development trajectories. Although limited by data constraints, the analysis introduces a foundation for ongoing deliberations regarding the management of the Mekong Corridor where the imperatives of entitlement, distributional equity, benefit and cost sharing and procedural fairness are a priority.**

2 Introduction

2.1 Main purpose of this report

The purpose of this report is to present the results of the social and economic assessment the basin-wide development scenarios under the MRC Council Study¹. The report also updates refinements and revisions of the datasets, methods and analytical tools developed to conduct the assessment. In addition, the analytical outputs are also intended to inform the social and economic factors specific to each of the Thematic Teams engaged in the Council Study and data inputs for the Macroeconomic and Cumulative Impact Assessments of the Council Study.

The report forms part of a larger main report on the “Results for the cumulative impact assessment of water resource development scenarios” to which this report is appended.

The social and economic assessment report takes as its primary guidance the Inception Report of the Council Study² and the ongoing comments and review provided by the MRC Member Countries’ Technical Working Groups and National Committees. Discussions and individual consultations with members of the Thematic and Discipline teams of the Council Study have been integral factors in the overall design of the social and economic assessment.

The reported results rely on a revised and approved methodological approach described in the February 2017 “Approach and methodology for the socio-economic impact assessment of development scenarios”.

2.2 Report contents

The Social and Economic Assessment report has four main sections:

The Council Study water development scenarios

Section 3, Background to the socio-economic assessment, sets out the planned social assessments under the Council Study. The Section also identifies the water resource and relevant exogenous development drivers within the Mekong Basin that need to be taken account of in making the assessments, and discusses the scope of those assessments. The Section concludes with a discussion leading to selection of assessment indicators.

Methods and social and economic indicators

Section 4, Approach and methodology, commences with the objective of the social assessment and an overview of assessment approach. A revised approach for the socio-economic assessment has been developed in consultation with Thematic and Discipline teams and the regional Technical Working Group to address data gaps and deficits. The main components of the socio-economic assessment approach are described, being data assembly and analysis, projecting the social situation in the LMB without water resources development and assessing the impacts with water resources development.

¹ The full title of the MRC Council Study is: “Study on the sustainable management and development of the Mekong River, including impacts of mainstream hydropower projects”

² Inception Report of the MRC Council Study, Draft Final, 27 October 2014

Projected situation without water resource developments

Section 5 summarizes the estimates of population growth and distribution for the Council Study (CS) corridor zones over the 24-year time horizon, the calculation of food and nutritional security, estimates of livestock, fish (including aquaculture and other aquatic animals), rice production and prices over the 24-year period, the current and future status of water, income and health security for the CS corridor zones and current employment and income estimates. Details can be found in Annex C: trends and data assembly.

Development scenario analysis and Results

Sections 7 and 8 describe the development scenario impact analysis and the analytical results for the CS corridor zones. A description of the social and economic assessment tool and the employment and income tool developed specifically for the Council Study are summarized with details provided in the Annex. The results describe the analysis of Food Security (Agricultural production and food consumption) with a primary focus on meeting food security for the entire zone population and the residual food surplus for trade and food security improvement. The developed tools for the Council Study enabled a detailed Development Scenario analysis of the annual variance in rice and fish production over the 24-year period for each zone, the changes in the monetary value of agriculture and fisheries, the level of subsistence consumption compared to total consumption, levels of undernourishment and poverty and income vulnerability. Detailed analysis of sector employment and incomes for the corridor zones concludes the section. Details of the analytical tools and calculations are provided in Annex B: Assessment Tools.