Phase 1: Background Scoping Paper

For a Strategic Environmental Assessment of Proposed Hydropower Developments on the Mekong Mainstream in the Lower Mekong Basin

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This background paper has been prepared for the Mekong River Commission Secretariat (MRCS) as part of the initial preparations for a strategic environmental assessment (SEA) of proposed dams on the mainstream of the Lower Mekong Basin (LMB).

This paper is intended as a general briefing for government, non-government, civil society and private sector stakeholders in the four MRC Members States. It is specifically for people who will participate in the SEA process recently launched by the MRC considering the eleven proposed mainstream developments in the Lower Mekong basin. These are considered not only as individual projects, but also as a group to identify issues related to cumulative and transboundary impacts.

At the same time, the paper is intended to inform other regional observers, international organizations and donor partners who maintain an active interest in cooperation to achieve sustainable development of the Mekong River Basin.

1. Introduction

The development of mainstream dams in the lower Mekong Basin is perhaps the most important strategic decision the four counties of the LMB have to face since the signing of the Mekong Agreement in 1995. While the power and energy security benefits are considerable, the construction of one or more of the eleven hydropower schemes currently under consideration on the Lao, Lao-Thai and Cambodian reaches of the Mekong mainstream would have profound implications for the bio-physical environment and the overall development of the Lower Mekong Basin (LMB) and would affect the lives and livelihoods of millions of people in all four member countries of the MRC.

One of the principal findings of the 2006 (ADB-MRC-WWF) report on "The Current Status of Environmental Criteria for Hydropower Development on the Mekong Region" was that there are clear advantages in initiating environmental assessment early in the planning process. This will help ensure adequate and timely consideration of the cumulative and basin-wide impacts of multiple projects using SEA techniques to then inform project-specific EIAs. This view of the value added role of the SEA was shared by MRC Member States at the regional consultation meeting on the MRC Initiative on Sustainable Hydropower (ISH) in September 2008. The MRC, in considering the activities to be fast-tracked under its emerging ISH, which is a cross-cutting initiative with strong links to other MRC programmes, has therefore initiated the Strategic Environmental Assessment of Proposed Hydropower Development on the Mekong Mainstream in the Lower Mekong Basin.

Hydropower projects with a total installed capacity of 3,235 MW are now in operation in the Lower Mekong Basin, while projects with a further 3,209 MW are currently under construction. All of these projects are located on tributaries. Nearly half of them involve some degree of storage for the seasonal regulation of streamflow. The potential for over 20,000 MW of additional capacity has been identified in the LMB, predominantly in projects in Lao PDR and Cambodia. A number of developers are now investigating these potential projects on a private sector basis under licenses issued by the relevant governments. A number of the concession agreements for tributary projects are already at advanced stages of negotiation.

The SEA seeks to identify the potential opportunities and risks as well as the contribution of hydropower to regional development by assessing alternative mainstream Mekong hydropower development strategies, including the regional distribution of costs and benefits with respect to economic development, social equity and environmental protection and among different affected interests and sectors.

Separately the MRCS will initiate a macroeconomic and fiscal study of the proposed mainstream hydropower developments with a view to consider the implications for wider regional benefit sharing, considering the multi-purpose functions of these dams.

Specifically, the SEA of the proposed mainstream hydropower developments is intended to:

- Contribute to a shared understanding of the implications of mainstream hydropower development to inform decision processes on whether and how hydropower projects on the Mekong mainstream should best be pursued.
- Provide an initial baseline and assessment framework for individual mainstream project EIAs, thereby supporting the implementation of MRC's procedural framework, in particular the Procedures for Notification, Prior Consultation and Agreement (PNPCA).
- Serve as a methodological framework for sub-basin hydropower SEAs in the LMB, which will be carried out as inputs to MRC's Basin Development Plan.
- Include an element of capacity building to strengthen the respective analytical SEA capabilities in the concerned line agencies of the MRC Member States.

The eleven proposed hydropower schemes discussed here are the subject of Memoranda of Understanding (MOU) or Letters of Agreement (LOA) between developers and the respective governments with the projects currently at various levels of feasibility and EIA appraisal. In addition, the Government of the Lao PDR has commissioned an optimization study of the five proposed mainstream schemes in the northern Lao reach of the river (above Vientiane). The optimization study is scheduled to be completed in June 2009. The SEA has consequently to be conducted in a context where decisions on the development of some of the individual hydropower schemes are likely to be taken within the near future.

In response to this situation, MRC accelerated the preparation of the SEA by commissioning an initial scoping study using a collaborative process to set the context for the full SEA. This is the report of that initial scoping study. Specifically, the terms of reference for the scoping study state that the principal activities will include:

- Scoping, establishing the temporal and spatial boundaries, the institutional context and decision scope, and delimitations in terms of issue coverage and stakeholder participation. Identification of a limited number of key strategic issues, such as but not limited to (i)

Mekong mainstream hydropower development in the context of regional energy planning; (ii) affected people; (iii) fisheries and barrier effects of dams on fish migration; (iv) maintaining ecological integrity and biodiversity; (v) river morphology and sediment balance, and (vi) water quality and salinity intrusion. Conduct initial stakeholder consultations on scope and key strategic issues.

- Survey of baseline data availability and knowledge gap analysis on legal and policy framework and on social and environmental data and information.

- Identification of inputs to the SEA that can be provided by MRC programmes and scoping of those aspects that need to be investigated under additional studies that will be commissioned in Phase 2. Preparation of budgets and timelines for these MRC inputs and additional studies.

2. The Scope, Context and Approach to the SEA

The details of the methodology for the implementation of the SEA will, of course, have to be proposed by the consultant team implementing it and agreed by the MRC. It is not intended to pre-empt these decisions in this section; the focus is on defining the parameters of the SEA within which the detailed methodology should be set. The points raised in this section, and indeed throughout the report, reflect the perceptions and perspectives of the key stakeholders interviewed during the scoping work.

It acknowledges the key fact that the SEA must address issues that are contentious, highly political and highly divisive where, in a number of cases, entrenched views either for or against mainstream dam development already exist. One of the most important objectives of the SEA is to help understand what actions are needed to reconcile, as far as possible, these seemingly irreconcilable positions for or against the mainstream dams. In this, it is essential that the SEA is conducted in a manner that is overtly **balanced, objective and non-positional**: any perception that the SEA, and by implication the MRC, was advocating one position or another would be fatal to the prospects of the establishment of anything approaching a consensus through the SEA process.

Indeed, an important characteristic of the SEA, and indeed in general of SEA approaches, is that the team do not themselves overtly present "findings" or "conclusions": their job is to present balanced and objective evidence and analyses within a structured consultation process through which the stakeholders themselves reach conclusions and agree to the SEA recommendations. This is the heart of an SEA: a structured and informed process of consultation that facilitates and aims to establish consensus. As such, the quality and scope of the consultation process is as important as the quality of the analysis undertaken in the SEA. This is elaborated in further detail below through the presentation of detailed recommendations on the consultation approach for the SEA.

In the design of the SEA, it is essential that the character of the MRC as an inter-governmental advisory body is remembered. The MRC is governed by Member Countries through the MRC Council and Joint Committee, with the Secretariat functioning to inform and support this decision-making process. The SEA must inevitably address sensitive and complex trans-boundary issues, and must do so in a way that is premised on an understanding of the mandate and role of the MRC in decisions on the development of the LMB. It is

consequently essential that the inception phase of the SEA demonstrates the relationship between the details of the methodology to be adopted and the character of the MRC.

This is different in character to many SEAs, where the analysis is undertaken for and report is presented to the ultimate decision-making authority that has jurisdictional control over the subject of the planning being considered.

This is not the case here. The MRC has a role in initiating and facilitating discussions among Member Countries but ultimately the decisions on the mainstream developments is the sovereign decision of the individual governments within the framework of the Mekong Agreement (1995). These decisions are subject to the planning and regulatory processes of individual governments, which in all cases require the execution of Environmental Impact Assessments (EIAs) and in some cases also requires that the national regulatory bodies undertake SEAs, as well as the Prior Notification, Prior Consultation Agreement (PNPCA) process within the MRC framework.

The execution of the SEA must consequently understand and establish a close relationship with the individual national-level planning and decision-making processes, as it would obviously be contradictory and problematic if the SEA, conducted for an inter-governmental body, reached conclusions that were contradictory to those of the national planning systems.

Indeed, one of the main ambitions of the SEA should be to inform and improve these national-level planning and decision-making systems. This is reflected in the ToR of the SEA, which calls for a substantial and systematic effort in **capacity building** amongst the MRC member countries, with in particular attention paid to the enhancement of SEA processes in the regulatory bodies of the member states. Agreement with the national-level stakeholders on the nature, timing and scope of these capacity-building efforts must be established in the initial stages of the SEA. This should include both formal training exercises, for as wide a range of stakeholders as is practical, and "on-the-job" learning through the systematic engagement of staff from the national regulatory authorities in the execution of all aspects of the SEA as well as the related PNPCA process.

One important dimension of these capacity-building efforts is to ensure coherence and continuity with similar efforts on enhancing SEA capacities in the power sector in the region. Of particular significance here is the work being undertaken under ADB auspices, where two programmes are of particular significance. The first is the on-going technical assistance programme "Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the GMS" (TA no 6440-REG). This programme is under implementation and includes a component on training on SEA (along with on EIA and CIA).

The second is the proposed activity under the ADB GMS Core Environment Programme (CEP), managed through the Environmental Operations Centre (EOC). This includes proposals for SEA training for the hydropower sector that builds on the pilot activity undertaken in Viet Nam in 2007-2008. Firm plans for the scope, timing and orientation of this activity were not available when this report was written, but the EOC were clear that it would be implemented in 2009, and that it would include the same national-level agencies the MRC SEA will be collaborating with.

Detailed discussions were held with the EOC and it was agreed that both parties would actively seek opportunities to maximise synergies between the capacity building activities under their jurisdiction, though the EOC did of course emphasise that they would ensure the

integrity of their own activities. In particular the EOC is concerned to build on the successful implementation of SEA in the hydropower and other sectors in the Greater Mekong Sub-region and wish to ensure that the future activities they initiate or support reflects the approach adopted in the past SEAs. It is consequently essential that early relationships are established with the EOC and the in-principle agreement is followed through to ensure a pragmatic and integrated approach to capacity building across the two programmes: the MRC SEA and the activities of the EOC under the CEP of the ADB.

3. Data Needs and Availability

An effective SEA for the Mekong mainstream hydropower proposals is contingent upon the rigorous and comprehensive analysis of evidence on a wide variety of factors, but is must be emphasised that the data requirements for an SEA are not precise or pre-determined. It is an evidence-based approach, but not a rigid or prescriptive model that depends in specific data being available. The team who undertake and guide the SEA will inevitably need to determine their own specific data needs based on the methodology they use and the range of issues that are identified in the initial phases of the SEA as requiring in-depth analysis through the SEA process. There are certain minimum data needs, however, without which it is not possible to analyze the implications of the different hydropower development scenarios for the mainstream that will be the heart of the SEA. These basic data requirements, along with an assessment of their availability, are spelt out in this section.

The overall conclusion of the scoping of data needs and availability is that data availability should not present any problems for the implementation of the SEA. A significant proportion of the data needed in most fields is currently available within the MRC Secretariat's different programmes (outlined in more detail below). Where this is not the case, for example in relation to energy demand projections, then in most cases such data is available at a national level and should be readily accessed by the consultants. Where the source is an official source then, of course, the consultants will work through the NMC who can be expected to facilitate the official steps that accessing such data requires.

Indeed there some concern about information "overload", as so many analyses of different aspects of development in the Mekong region are being undertaken by a wide variety of organizations. Although not all of these analyses can be integrated into the core data analysis of the SEA (and in some cases, the analyses have been undertaken to advocate specific ideological positions), it is important that all stakeholders feel that they have some means to "make their case" on hydropower development within the consultation process of the SEA. A proposal on how to do this, through the creation of an "Evidence Platform", a mechanism through which stakeholders can share information and analyses and strengthen wider awareness of their perspectives on the key issues is made in the section on the consultation mechanism that follows later in this report.

Water Data & Information Needs

Information on different aspects of water flows, resources and uses are needed, as any hydropower development has potentially significant impacts on hydrological regimes and water resource availability. These impacts are greater where there are significant storage capacities and alterations to seasonal flows of water, but even run-of-the-river schemes may have some impacts.

Hydrological modeling of the impacts of different dams on river flows is essential and will be available to the SEA through the scenario modeling being undertaken as part of the Basin Development Plan and other MRC analysis. There is consequently no need to repeat this analysis and no reason for concern over the availability of this crucial set of data. A key issue, however, is the coordination of the scenarios analysis under the SEA with that of the BDP, with the terms of reference of the SEA reflecting the need to create alternative mainstream hydropower development scenarios that are based on an understanding of possible basin-wide and power sector development trajectories. This issue is considered in more detail below.

Water Demand Data for agriculture, industry, domestic/other and for the maintenance of environmental flows for areas downstream of the dam sites is needed. This should be based on the smallest available administrative units, but this can in practice mean largish areas: for example provinces in Viet Nam. The **environmental flows** issue on the mainstream is a complex one; the scoping identified very limited experience and approaches to environment flow assessment and provision in the Member countries, and those that exist are based on different and arbitrary assumptions. It must also embody the notion of providing river flows that maintain vital ecological functions that support to support livelihoods today as well as taking into account cumulative impacts of future development and the inter-generational aspects that are consistent with the accepted definition of long-term sustainability. The SEA should see what analyses are available on environment flow assessment (EFA) specific to the Mekong including the integrated basin flow methodology (IBFM) that the MRCS has prepared in pilot form, then decide on a strategy for dealing with this issue, but it is clearly of significance for the SEA.

The water demand and water availability data should include monthly/seasonal data, to indicate existing or future potential **water scarcity** information, with the work undertaken in the BDP and other MRC programmes a source of data here. Similarly, the data should indicate the location, frequency and severity of **flooding** in downstream areas, with the MRC's Flood Management and Mitigation Programme the first and best source of information on this issue. Although it is likely to be limited, any available data on **water quality** should be integrated into the SEA analysis: the MRC's Environment Programme will be a significant source of information on this issue. The scoping again revealed that the water quality information is limited in each country and variable in approach between the countries.

Energy & Power Demand and Supply Patterns & Projections (Including Alternatives to Hydropower)

Coherent and comparable data on overall electricity demand and supply sources is essential and is the most significant gap in the range of data available within the MRC's various programmes. The basic rationale of the proposed hydropower schemes is of course to generate electricity (and consequently export earnings). For the Mekong mainstream dam proposals this is overwhelmingly intended to be sold on regional electricity markets (especially to Thailand and also to Viet Nam), although some domestic sectors such as mining will also generate significant future demand and provision can be made to supply national demands as they grow from one or more generating units in these schemes.

The consultations undertaken during the scoping phase indicated that many stakeholders in the region regard the overall demand-supply issue as a determining one in the assessment of the feasibility and merits of the mainstream dams.

The view is that without a demonstration of clear and secure electricity markets the justification for constructing the dams is limited. Alternatively, the central role of electricity in diversifying and modernizing economies and the need to meet the region's future electricity demand through renewable, non-carbon generation to the maximum extent possible is seen as a critical issue for the overall development of the region and is a keystone of national energy policies for all of the riparian countries. This embodies the policy of regional energy security based on indigenous energy resource development and reducing vulnerability to international energy price shocks and the resultant debt burdens.

Scenario Development

The scenarios in the SEA, reflecting those of the BDP, will be based on different levels of dam construction and consequently power generation capacity, from none to all of the 11 proposed schemes. The ToR for the overall SEA propose that the focus of the scenario and alternative analysis in the SEA should be on alternative mainstream hydropower development scenarios based on the more general basin and sector-wise scenarios mentioned under BDP2, which encompass the current situation of no mainstream developments in the LMB to the full development of the eleven identified potential sites for mainstream dams. Within this scope, the analysis of these scenarios must be based on the assessment of the alternative sources of generation capacity to replace the dams not included in each scenario, so that future demand can be met. The predicted demand levels will also need to be carefully assessed so as to ensure that there will be a market for the power generated by the schemes.

The macroeconomic economic assessment of the proposed mainstream developments will also seek to get at some of these strategic issues impacting on the national affordability and economic and financial viability in the context of considering alternative mainstream dam schemes. This is in addition to the traditional sector-specific macroeconomic impact review and also strategically taking the question benefit sharing from a wider perspective. This will include benefit sharing in a regional context, as well as at national and sub-national levels and taking due account opportunity costs in the different sectors (e.g. fisheries, navigation, flood management, etc) which may paint a positive or very negative picture.

- The scenario analysis for the purpose of the SEA will focus on the alternative mainstream hydropower development scenarios using the current no-dam development in the mainstream LMB as the baseline. Various combinations of the proposed dams can be considered using BDP program criteria (e.g. fisheries, navigation, etc.)

- Consideration will also be made for scenarios that reflect existing, committed and propose hydropower on tributaries that would have a cumulative impact on the river, or a combination of mainstream and tributaries developments.

- The full range of positive and negative externalities of the various alternative scenarios for mainstream developments will be identified and, as far as is feasible, economically assessed and the assessed costs internalized in the overall economic assessment of the mainstream dam proposals.

- Alternative demand-supply scenarios are also a key in strategic assessment of the relative merits of hydro versus non-hydro alternative as well as the timing of any proposed mainstream developments. With regard to this issue, the SEA efforts will focus on documenting outcomes of key multi-stakeholder initiatives, such as GMS sub-regional studies and RTA's compiling (i) regional electricity demand scenarios that have

incorporated conservation and demand-side management, and (ii) non-mainstream hydro, thermal and other renewable electricity generation scenarios.

- A framework to explain and illustrate the range of strategic considerations in comparing these non-dam scenarios with the alternative mainstream development scenarios will be prepared to inform discussion. These will be based on a simplified indicators and trends concerning key basin development issues and externalities

This is a practical approach reflects the TOR, the scoping results and the desire to focus effort in the SEA on value added aspects related to the SEA objectives. It recognizes that there are several platforms already for ongoing multi-stakeholder discussion of alternative electricity futures for the member countries and the wider GMS region including demand forecast, power trade and transmission grid integration issues that will have an impact in different timeframes. These initiatives include the GMS Sub-regional Energy Sector Study for the Greater Mekong Sub-region and RTAs more focused on the potential of renewable energy generation options.

For the electricity demand forecast and demand-side management role in moderating the growth in demand it is already known that some of these data are available in member countries. For example in Viet Nam, from the Institute of Energy as part of the Power Development Plan (and indeed these data were used in the recent Hydropower SEA for Viet Nam). The new PDP is in the process of preparation, but the electricity demand projections for the old PDP were updated during 2008. Similar data is available from the Energy Generating Authority of Thailand (EGAT), and EGAT is in the processing of updating their demand projections (with initial results suggesting a significant reduction in predicted future demand from earlier forecasts, partly as a result of demand-side management and partly due to other factors linked to lower sector-specific economic growth forecast).

Data collection for each country

For Each Country:

- Key policies regarding hydropower and other renewable energy in the electricity supply mix and criteria for (i) the identification, selection and operation of hydropower; (ii) power import and export; and (iii) targets for equitable access to electricity among the urban and rural populations.
- Power Development Plans for each country that should include (i) Historical Electricity Demand with sources of power supply; (ii) Power Demand Forecast (including the identification and assessment of the risks and uncertainties in these forecasts and the factors that influence such uncertainties); (iii) Existing Generation System **with data on the power plants;** (iv) Options for expansion of the power supply systems (hydro, coal, oil, gas, renewable energy, etc.); and (v) Least Cost Expansion Plans **with data on projects**.
- Hydropower Master Plans **with data on projects** where available.
- Studies and **data** on the mainstream projects.
- Existing and planned expansion of the transmission systems of each country (especially on plans for the transboundary expansion of the transmission systems).
- Key regulatory policies for private sector participation in power development sufficient to enable an assessment of the scope and extent the regulations serve to inhibit or incentivize sustainable practices in selection, design and operation of mainstream hydropower.

To facilitate informed multi-stakeholder dialogue, it will also be helpful to explore with NMCs the value of making concise graphical information available for power supply-demand issues such as policies or projections on power imports / exports, electrification ratios, the extent of the indigenous energy resource base suitable for power generation, and the key sectors and drivers of demand. Where information exists, policies linking climate change adaptation and mitigation to the power sector should also be cited or characterized.

Alternative Scenarios Definition and Analysis

The scenario analysis for the purpose of the SEA will focus on the alternative mainstream hydropower development scenarios using the current no-dam development in the mainstream LMB as the baseline. Positive and negative externalities of the various alternatives will be identified. The scenarios undertaken in the SEA also need to link to and take account of scenarios and analyses being undertaken within the BDP and in other places. Figure 1 attempts to map out these relationships, showing the 'core' SEA scenarios that consider different patterns of mainstream and tributary hydropower development, but with links shown to the consideration of alternative power generation sources and related initiatives.

The assessment of the externalities associated with alternative power generation sources for each of the scenarios is a key step in the SEA. This will depend on the alternatives that are considered feasible; an issue over which there is much debate and sharply differing views. Many utilities and energy planners dealing with conventional energy regard thermal power sources (coal, gas & oil) as the principal alternatives to hydropower, whilst other stakeholders advocate for much higher commitments to and levels of investment in small-scale and decentralized renewable energy sources and demand-side management. One important alternative that must be considered (and is in particular seen as important by the Ministry of Mines and Energy of the Lao PDR) is the construction of further hydropower on the Mekong's tributaries, rather than on the mainstream.

It is consequently essential that the scenarios analysis provide a clear, justified and transparent set of assumptions for the identification of alternatives in each scenario and then undertakes a rigorous quantitative analysis of the full range of social, environmental and economic impacts of each set of alternatives.

It may well be necessary to consider different "sub-scenarios": that is, different mixes of generating sources to meet the generating gap for each of the main scenarios. The internalization of externalities, based on clear valuation criteria, is an indivisible and essential element of this alternatives analysis, for without this it is not possible to make a meaningful comparison of the full implications of the different scenarios.

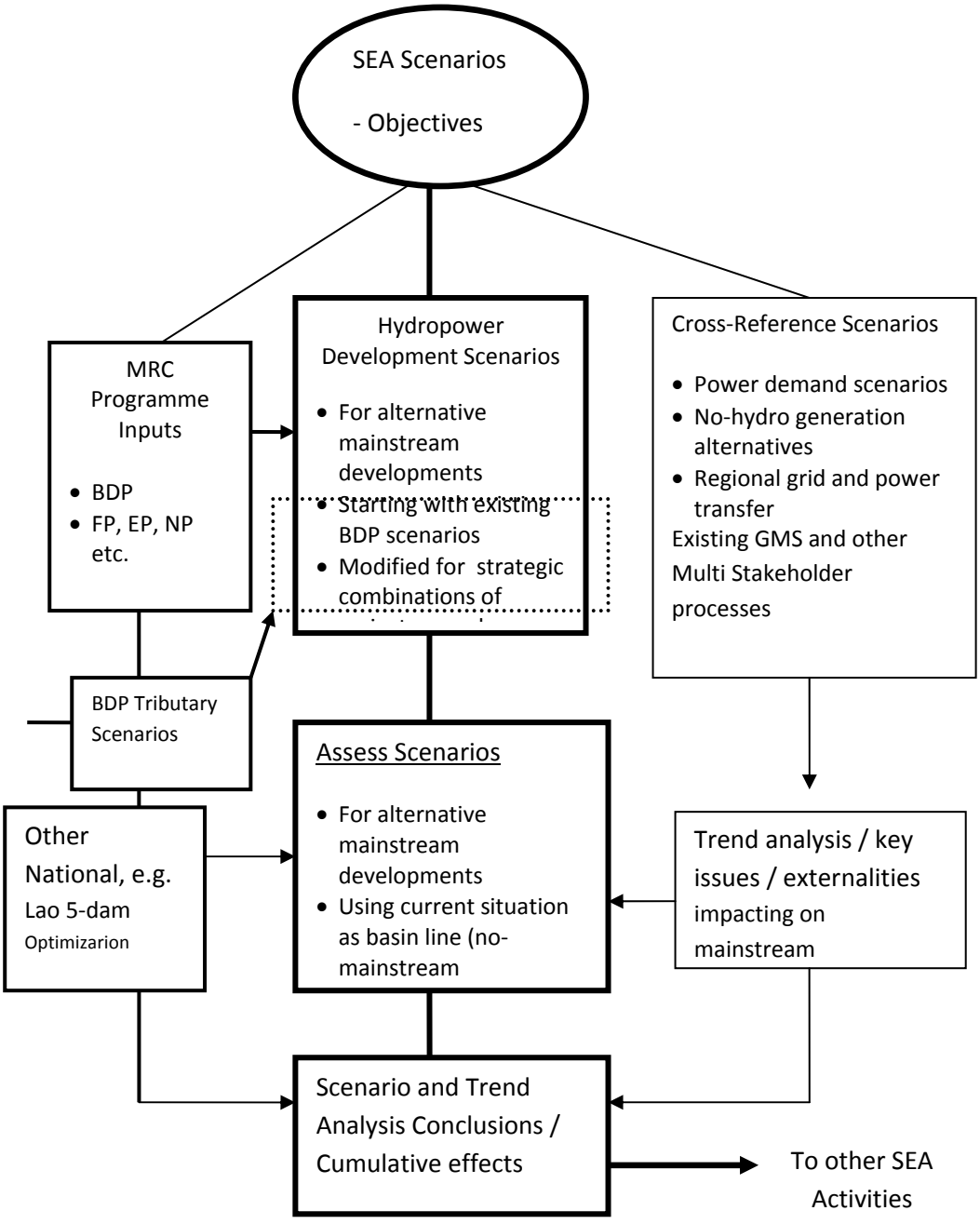


Figure 1: The Relationship between SEA Scenarios and Related Initiatives

Social & Economic Data

The SEA will require the availability of a wide range of social, demographic and economic data if it is to analyze the potential impacts on the lives and livelihoods of communities affected by the different schemes. The specific data used will depend on what is available and the particular methodology the SEA team adopts, but the following list indicates the areas in which social, demographic and economic data will be required (and the scoping indicated that these data are available for each of the riparian countries but an effort will have to be made to reconcile different temporal and spatial categorizations and the definitions used for key indicators such as poverty levels):

- **GDP**: structure, growth trends and projections up to 2025.
- **Demographic**: population by administrative unit (smallest possible), population density for administrative units along the Mekong River banks and connected waterways (e.g. Tonle Sap). % urban/rural. Population growth rates and projections, 5 years up to 2025.
- **Poverty Incidence**: % population below the poverty line(s) and definition of poverty line, by administrative unit (smallest possible).
- **Ethnicity:** % ethnic minority (specify which if possible) administrative unit (smallest possible) in areas affected by the hydropower development. If available, income and/or poverty incidence amongst ethnic minorities.
- **Livelihood Structure**: % income (including non-cash income) from agriculture, forestry & fishing – separate if possible (this is an issue where the availability of data is limited in terms of comprehensive coverage. It is one where the specially commissioned studies in the SEA should provide more detailed insights).

The assessment of impacts, positive and negative, should be based on the overall assessment of changes to livelihood patterns and opportunities. This will be very different for different people and communities, depending on (a) location; (b) capability to access livelihood opportunities that result from hydropower development; and (b) dependence in livelihoods on the natural resources affected by hydropower upstream and downstream. This is an important issue for this particular SEA, which differs from many similar hydropower assessments where the most substantial livelihoods and social impacts are on communities in the immediate vicinity of the dams or subject to involuntary relocation.

These dams are different, not having large reservoirs (and consequently more limited resettlement) but conversely likely to have substantial impacts at a distance from the dam site (for example through changes to fish availability or the impacts of changed downstream erosion, sedimentation and river morphology processes). There are also likely to be significant cross-border social and livelihoods impacts. The SEA must, to have credibility, provide a systematic, thorough and transparent analysis of who is likely to be affected where. This must include an assessment of the likelihood of impact (or severity of risk) and of both positive and negative factors in social and livelihoods terms.

This livelihoods assessment will need to be complemented by an assessment of social and cultural impacts, including in particular issues related to ethnic minorities. This is hard to generalize about or quantify, but some effects can be measured for communities who are substantially impacted (e.g. displaced people, communities in close proximity to the construction site). This is most effectively done on a case-by-case basis in the EIAs as the issues are very location-specific. As a general principle, however, the assessment of potential livelihood impacts should include the assessment of capacities within the communities at risk to restore their livelihoods where they are impacted by dam development. This includes the

ability to replace the affected resources or activities with new sources (for example, replacing lost fish protein with other sources of protein) or the capability to undertake new types of livelihood activities that substitute for ones that are no longer viable (for example, new types of income-generating activities to replace capture fishing should this no longer be possible). The assessment should recognize that such livelihood responses will often need support and investments, should provide estimates of the costs of this and should explore the scope of providing for these costs through a benefit sharing mechanism that incorporates them into the electricity tariff (there has been a recent successful pilot of such an approach in Viet Nam).

Natural Resources/Environment Data

This key area of data will again be contingent upon what is available, which varies considerably for each of the riparian countries. The data will/should be structured in relation to land use/land area categories, so the basic analytical unit will be the hectare coverage of particular land use types. The exception to this is for aquatic ecosystems, where riverine ecosystems are typically measures in terms of the length of river rather than the surface area (though lakes and wetlands are measured in surface area terms). As aquatic ecosystem impacts are likely to be of particular significance for this SEA, a systematic methodology for assessing these aquatic impacts must be presented during the inception phase of the SEA. In addition to that, where possible the data should also identify the inherent value of the different land areas and river stretches, with this divided into two main categories: resource values and inherent ecological values (which are conceptually different ways of viewing very similar things: this means that double counting needs to be avoided).

The **resource value**: that is the value expressed in terms of specific resource values (e.g. value of fish (money, nutritional value, etc). The focus is on analysing the ***changes*** that different dam combinations under the different scenarios bring. So, to make this easier to calculate, it is valid to assume the changes can take 3 forms: (i) change in land-use (e.g. felling of a forest for conversion to farmland); (ii) change in the productivity of existing land-uses & riverine ecosystems; (iii) introduction of new forms of economic activity.

A key component of the calculation is the assessment of the **resource values** of each land use and aquatic ecosystem category: Two ways to do this:

1. Through the calculation of the **"stock" value**: the value of the land or river ecosystems in its present form. Changes can then be expressed as a proportion (an increase or a decrease) in these resource values. The existing studies suggest that the issue of the values of, and likely impacts on, open water fisheries in the Mekong River and associated water ecosystems such as Tonle Sap will be of particular importance for the SEA, so data on the location and values of these stocks is crucial.

2. The annual **income potential** of the land and rivers – the value of crops from farmland, the value of forest products or fish catches if sustainably harvested. Both are technology and market-contingent. Data for farmland is relatively straightforward to calculate, based on existing yield and farm gate price data, so long as assumptions about types of crops and changes to yields/prices can be justified. Data for forest or river ecosystems product values can be based on existing patterns of livelihoods if one makes an assumption that the total potential value is that for the area if the ***total area*** was being harvested by local communities for their livelihoods.

The discussions with a wide range of parties undertaken during the scoping exercise identified the potential impacts of the mainstream dams on **fisheries** as being of pivotal importance. This also reflects the outcomes of a meeting in December 2008 during which potential dam developers, representatives of the Lao Government and other stakeholders participated. During this meeting, the contention that the impacts of the dams on wild fisheries can be mitigation by aquaculture development was raised. Evidence on this is limited and contentious, but it is essential that the SEA examines this in detail: taking an approach to fisheries that assesses ***both*** the extent and economic costs of impacts on fisheries ***and*** the costs, feasibility and social/livelihood impacts of advocated mitigation measures through aquaculture development. This must include a full economic assessment of both wild fisheries and aquaculture and, most importantly, an assessment of who loses and who benefits: answering the question whether the beneficiaries of aquaculture development are likely to be the same as the fishermen who lose access to wild fish stocks.

For the SEA, the impact on **inherent ecological values**, both for biodiversity and ecological integrity, needs to be estimated, including ecological niches of particular significance such as deep pools and wetlands. The SEA team will need to define (and justify) precisely which measures of ecological values are being used: with in particular a distinction made between (a) inherent biodiversity values, based on global biodiversity value norms (as indicated in the Convention on Biological Diversity, of which all riparian countries are signatories); (b) the integrity of particular ecosystems as a whole (as opposed to the condition of particular species), with criteria for measuring this indicated; and (c) the legislative designation of protected areas (the rationale for and extent of which varies greatly between countries). This is a particularly important issue for the aquatic ecology, which is not easily translated into spatial designations in riverine ecosystems.

Data Availability within MRC Programmes

The discussions **within the MRC** focused on identifying the data available within and potential contribution of different MRC programmes to the SEA. Several key conclusions emerged from these discussions with the different programmes. A very significant proportion of the data needs of the SEA can be accommodated in one form or another by the MRC's existing information resources.

In particular, the following data is available from the different programmes:

- **Environment Programme:** data on water quality, the location and classification of wetlands, some but not comprehensive information on environmental flows and on aquatic ecosystems in rivers, some information on livelihoods, especially related to vulnerability and dependence on natural resources and on the valuation of ecological resources. The EP has also established national working groups on EIA that include NMC representation, people from EIA agencies and someone from Foreign Affairs. These could be extended to include energy planners and provide a platform for reviewing the SEA and for national-level capacity-building (an issue elaborated upon below).

- **IKMP** is an important source of both capabilities and information and should be closely involved with the implementation of the analyses and data handling in the SEA. This includes, in addition to IKMP's role in coordinating all data handling across MRC, specific data compilations in the GIS system, data and analyses on sedimentation and river morphology (though this is not complete, it is the best available), data in most of the areas identified in the data needs assessment and some specific analysis currently being

conducted on the sediment impacts of the proposed dams. The capabilities of the IKMP in data management and analyses were discussed and it was agreed in principle that the IKMP should be closely involved in the execution of the analytical components of the SEA, including the modelling and GIS work for the scenarios and impact assessments. The full details of this in terms of timing and the allocation of internal resources will need to be planned with the SEA consultants but the IKMP is an essential resource for the execution of the SEA and a detailed workplan needs to be established with the programme during the inception phase of the SEA.

- **The Basin Development Plan** is similarly a major source of information and analyses for the SEA. The BDP scenarios will be the point of departure for those of the SEA and the inception stage of the SEA will need to look at these in detail with the BDP, but it is recognised that there will need to be some adaption of the scenarios for the SEA, to focus and deepen their analysis on hydropower within a power sector planning context (this includes integrating power development data into the scenarios). It has been agreed that the 2 sets of scenarios (BDP and SEA) will be linked and share many common features, but also are distinct in important aspects of their scope and purpose. It is essential that there is close coordination between these two, to avoid confusion and duplication amongst stakeholders.

  The Work Package for the BDP defined the scope of work on the three mainstream dam scenarios as follow: objective: to examine the social, economic and environmental trade-offs associated with the three mainstream dam scenarios regarding the benefits and costs relating to hydropower development, fisheries, irrigation and river transport**.** The three scenarios are defined as:

  1. LMB 20 Year Plan (+ 11 Mainstream Dams)
  2. LMB 20 Year Plan (+ 6 Middle and Lower Mainstream Dams)
  3. LMB 20 Year Plan (0 Mainstream Dams)

  It was agreed with the BDP team that the purpose and scope of the BDP scenarios is quite different from the purpose and scope of SEA scenarios, with the following distinction between the two identified in these discussions:

  The **BDP scenarios**, including the three scenarios related to the mainstream dams, are developed to define a water resources ***"development space"*** in the LMB, which would represent an acceptable balance between economic, social and environmental objectives (derived from national policies and plans, the 1995 Agreement etc.). The MRC Member Countries have agreed on nine basin-wide scenarios that represent increasingly higher combinations of sectoral water development. The question which of these scenarios would represent an acceptable balance between economic, social and environmental objectives will need to be answered in dialogues with stakeholder groups, and ultimately decided by senior government officials.

  The development space will be defined in the **IWRM-based Basin Strategy**. It can be best explained as a combination of the agreed amount water that can be used for development (not necessarily described as a volume but maybe as part of the annual flow regime); the sectoral guidelines, processes and procedures that water managers could follow in allocating and managing this level of water use; and the national planning processes that provide the policy and control for national water resources management.

The **SEA** is designed to improve decision making on and the design of the proposed LMB mainstream dams. It entails analyzing potential impacts of dams and also involves a broader process of policy analysis and decision support, including the setting of objectives, generating alternatives and scenarios (including alternative power generating options), impact analysis and weighting of different alternatives based on multiple development objectives. In the same way that the management of the development space will be directly related to national planning policies and processes, so should the SEA outcomes as these can have a major guiding influence on national water policies.

- **Fisheries Programme:** has good information on the overall fisheries resource of the Mekong Basin, on fish migration patterns in the mainstream, on the level and value of fish exploitation in the Mekong and a number of local-level studies on fishing practices and how they relate to livelihoods (though more detailed and comprehensive analysis on this is needed). It is currently undertaking a study, with consultants, on modelling the impacts of the proposed mainstream dams on fish migration patterns and the consequent distribution and value of the fish resources in the mainstream and a larvae study to help pinpoint breeding areas in different reaches of the river system for the many different species of resident and migratory fish. The FP also has extensive contacts with stakeholders including an expert group which the SEA can draw upon and should be actively involved in discussions and analyses on the fisheries aspects of the SEA. An area where further information and analysis is needed was identified as the detailed role of fishing in the livelihoods of communities along the Mekong and associated wetlands. There is general information on this, but the detailed understanding from a livelihoods perspective and including issues such as vulnerability and food security is not available and should be included in the studies commissioned by the SEA.

- **Initiative on Sustainable Hydropower:** has a key role in its capacity of coordinating arrangements between the SEA team and the MRC on a day-to-day basis and reporting to the internal SEA Working Group within MRCS consisting of senior programme staff, chaired by the MRCS CEO. The ISH will also be the source of important information based on the cross-cutting initiatives that it coordinates with other Programmes and dialogue with MRC stakeholders on sustainable hydropower, ranging from policy and regulatory options involving benefit sharing to design and operating practices. The BDP has prepared a data base on hydropower schemes in the Mekong (including mainstream and tributaries) that will form the starting point for acquiring basic data on the proposed dams for the SEA. The ISH will support the NMCs in the acquisition of information on individual scheme studies such as feasibility studies and EIAs. The ISH has also conducted meetings with the developers of the proposed dams and will facilitate contacts with this key stakeholder groups during the SEA and directly liaise with the four NMCs.

4. Key Strategic Issues

The initial scoping included interviews with a limited number of key stakeholders in each of the riparian countries, as well as discussions with representatives of regional organisations with the aim of identifying, amongst other things, their views on the key strategic issues that the SEA should address. The number of interviews and mode of selection of the respondents means that the results of these interviews cannot be taken as comprehensive or more widely representative. They do nevertheless provide important insights that should be taken into account in the initial stages of the SEA during which, it is assumed, the SEA team will undertake a structured and inclusive round of consultations to identify the key strategic issues that the SEA should address.

The informants in each of the Riparian Countries were asked the following question: "what are long-term issues that need to be taken into consideration when planning hydropower development on the Mekong Mainstream? Please rank them in relation to their importance for the long-term development and sustainability of the Mekong River and the Mekong riparian countries". Scores were given on a 5-point scale: ***** = Very Important, **** = Important, *** = Average/No Opinion, ** = Unimportant, * = Very Unimportant. These scores have been consolidated for each country to give the results presented in table 1.

Table 1: Synthesis Results of Key Strategic Issues Consultations

	Cambodia	Lao PDR	Thailand	Viet Nam
Economic development				
Generating foreign exchange revenue	***	****	****	****
Ensuring energy need	****	****	****	*****
National energy security	****	***	****	*****
Low cost power production	****	***	****	***
Social/Livelihood issues				
Relocation of affected people and their participation in the planning process	*****	*****	*****	*****
Cultural impacts (especially ethnic minorities)	*****	****	*****	****
Poverty reduction/livelihoods security/access to natural resources (e.g. fish, forests)	****	*****	***	****
Environmental sustainability				
Eco-system changes (land, air, water) and its consequences (health, diseases, etc.)	*****	****	*****	****
Impact on water resources	*****	****	***	*****
Biodiversity	****	****	****	****
Climate change mitigation	***	***	***	****

There were, of course, variations within these overall trends but these were not noticeably divided between different stakeholder groups such as government officials or NGOs. People, not surprisingly, did tend to give a higher priority to issues that were of direct concern to them: officials in energy utilities emphasized the importance of energy issues, those in environmental agencies the environmental concerns and so on.

Overall, however, some trends to emerge. One is that a wide range of issues are considered to be of strategic significance: the complex and multi-faceted nature of hydropower development is widely recognized. Within this, two issues stood out as having a strong consensus on their significance: the impacts on project affected people and the importance of likely ecosystems changes. This is again not a surprise given the attention paid to these issues in the debates on hydropower development but it is still a significant finding. The need for the type of analysis that should be at the heart of the SEA, and in particular the need to effectively integrate social and environmental concerns into hydropower planning and development, is accepted as important by all stakeholders in all countries.

The findings from the interviews revealed some significant trends that were largely shared but also some important variations between the different countries. All people interviewed regard the issue of mainstream dam construction as the most significant issue facing the river basin in contemporary times, and also the most challenging issue that the MRC will need to address for the foreseeable future. The irreversible nature of the impacts that the dams will have was widely recognised, leading to a general observation that it was important to "get it right" in relation to the decisions that are to be made in the near future.

This led to a further shared issue: the nature of the **decision-making process** through which the construction of the dams will be either approved or not approved. There are some uncertainties, which will need to be clarified, over the extent to which the transboundary implications of the dam development meant that there should or could be some measure of transboundary control or influence over the decisions. Some stakeholders expressed the view that this would represent a significant test to the effectiveness of the mechanisms for informing and influencing decisions that have been established under the MRC. Further clarification on the extent of these mechanisms is needed, as many stakeholders not directly engaged in MRC processes are making assumptions on this that may not be valid.

Similarly, all parties shared a concern that the **existing capacities** to implement regulations on social and environmental impact assessment and mitigation were not as strong as desired. This was an issue referred to by all parties consulted in Lao PDR and also a sentiment shared by others. Several respondents stated that this made the SEA of particular importance, so long as a meaningful relationship was established with the regulatory authorities in the member countries. The need for clarification on the nature and authority of transboundary EIAs and SEAs was stated as an issue by some parties. It also meant that the verifiable quality and credibility of the SEA analysis and recommendations and the transparency and comprehensiveness of the consultation process were both of crucial importance if the potential impact of the SEA was to be realised.

Every person consulted was concerned about the **cumulative effects** of several dams along a relatively short stretch of river, with the eleven proposed schemes being clustered in two blocks. It was clearly stated that the present process of feasibility studies and impact assessment does not take account of these cumulative impacts, with each proposal being considered in isolation. This view was shared by the regulatory authorities consulted in the riparian countries (WREA in Lao PDR, MoNRE in Thailand). The need for such an

understanding is appreciated and it is essential that the SEA provides a clear, balanced and evidence-based assessment of these potential cumulative impacts.

The potential impact on the **river's ecology and resource values** was seen as significant by all, with in particular most respondents identifying potential negative impacts on **fish habitats and migration** routes (and consequently on fish stocks and the livelihoods of fishing-dependent communities) as a key issue. Some respondents stated that they felt that this issue was too dominant in discussions, however, with the potential effect that other important social and environmental issues could be neglected. This included the impacts on terrestrial ecosystems, the effects on nutrient and sediment flows in the river, the issue of river bank erosion and others. It is consequently essential that the SEA finds the right balance between recognising fisheries as a key issue on the one hand but also ensuring that the full range of possible environmental and resource impacts are considered in the analysis.

The **demand (or market) for the power generated** was seen as a key issue and an area of great uncertainty at least in the short to medium term. This is obviously an important consideration for the financial viability of the dams and risk associate with return on investment. The sense of uncertainty was exacerbated by the general sense of economic uncertainty that characterises the region at this time. A comprehensive and credible analysis of future regional power requirements, related to specified assumptions on the wider economic development trends that drive demand, is essential as a starting point for the SEA, with the study drawing on existing studies to make this assessment. This must reflect uncertainties inherent in such projections, classically reconciled through the presentation of a range of demand trends based on clear assumptions; again this is a feature of the standard analyses being undertaken in the different countries. The consultants should use their judgments to identify the 'best fit' power supply and demand projections, recognizing that there will be alternative projections. It is not expected that the consultants will provide a full reconciliation of these different projections and the 'Evidence Platform' (see below) will provide a vehicle through which stakeholders can post alternative points of view on the power supply and demand futures for the Mekong region.

The need to give a comprehensive assessment of **alternative generation sources** was also stated, with this a view shared by both government and civil society respondents. Views and assumptions on the extent to which alternative sources, including tributary hydropower, could replace the mainstream dams varied greatly. Several people stated their opinion that the mainstream dams were not needed and that other sources of generation would be cheaper and less harmful in their impacts, but when questioned it was clear that this was an opinion not based on hard evidence.

Nevertheless, this is an important issue that needs careful analysis as clarity on this issue is essential if the overall SEA is to have any credibility for many stakeholders. It is beyond the feasible scope of the SEA to provide verifiable analyses of all energy alternatives for the Mekong region; not least because the existing assessment of all possibilities is partial at best. The SEA should, however, create a context through which these alternatives can be discussed and reviewed and should ensure a thorough compiling of the evidence that does exist on alternative generation sources.

These general strategic issues were identified by many stakeholders across the four countries. There were also, as noted above, specific issues that were seen as important in each of the countries. Verifying and reconciling these national positions is a key task for the consultation process during the initial phases of the SEA.

The key issues identified in **Cambodia** were a complex mix, as Cambodia is both a potential beneficiary from the construction of two of the dams, but also where many of the potential (or at this stage assumed) impacts will be most severely felt; in particular from the lower cluster of proposed dams. The government's position is in principle in favour of construction of the two dams on Cambodian territory should adequate safeguards exist, but Cambodian respondents were extremely concerned by the possible impacts on fisheries (for which many rural Cambodians depend as a source of nutrition and livelihoods), on possible changes to river flows, sedimentation and erosion and on the possible impacts on the integrity of the Tonle Sap system (including the nature of changes to flows and reverse flows into and from the lake). The key issues in Cambodia are consequently seen as a complex series of trade-offs and balances between economic, social and environmental issues: a classic subject for an SEA. There is a great deal of interest in the SEA in Cambodia and the participation of a broad set of stakeholders (including local level representation where possible) is essential. There is also a great deal of uncertainty over the exact nature of potential impacts on the livelihoods of communities along the river in Cambodia and this merits further investigation.

For the **Lao PDR**, the mainstream dams are seen as an issue of national development and foreign exchange earnings in a context where such few alternatives exist. This viewpoint is shared by most national-level stakeholders, and not just those with direct interests in power generation or foreign exchange income. The relevance of the internal market and electrification is far lower, as all recognised that this could be more effectively catered for from alternative generation sources. The issue of regulatory capacity is also a key issue for Lao PDR: it was stated by all parties that good regulations exist but that capacities to enforce these regulations is extremely limited. Concerns were expressed over social and, in particular, resource and environmental impacts but the general sentiment was that these could be adequately mitigated within the existing system should the dam construction be justified in economic and national development terms. The SEA will need to look at this issue of national development carefully, contextualising the analysis to national development policies and planning and assessing the long-term significance and reliability of foreign exchange earnings from the mainstream dam construction if the proposed schemes go ahead.

For **Thailand** the dominant issue is the possible impact on communities living along the river's course, with serious concerns over a wide range of potential negative impacts. This includes the issue of accelerated erosion, changes to sedimentation patterns, habitat changes and diminished ecological resource availability, changes to water quality and availability, impacts upon navigation and impacts on the communities in the vicinity of the dam sites. These concerns have already been strongly expressed through the formal Government of Thailand planning and consultation mechanism, the River Basin Committee. This includes representatives from local communities and local government, who have stated their strong opposition to the construction of these dams. The Thai respondents, from government and the very active civil society alike, also identified the wider environmental impacts (not just those affecting the Thai stretches of the Mekong but for the whole river basin) of mainstream dam construction as a key strategic issue. The issue of Thai energy demand and the role of the dams in providing future national energy security were, perhaps surprisingly, seen as of little relevance by most respondents. The general sentiment is that the dams will only play a small role in meeting future demand and that in any case current projections suggest that future needs have been significantly over-estimated.

Respondents in **Viet Nam** expressed strong concerns: the general sentiment is that Viet Nam will not benefit and may suffer negative impacts from dam construction. This particularly relates to the Mekong Delta, an area already experiencing multiple stresses. Changes to the

flow regime, to sediment and nutrient flows, on fish migration patterns and biodiversity, on the extent and severity of saline intrusion of surface and ground waters and other possible changes were all cited. The significance of already increasing uncertainties surrounding climate change impacts on the delta were referred to. The concerns in Viet Nam were consequently overwhelmingly seen as the basin-wide environmental and resource impacts of the mainstream dam development. Some correspondents stated their views that the SEA should undertake a specific and detailed analysis of the possible impacts of the hydropower schemes on the Mekong Delta; reflecting a concern that this may otherwise be neglected. The issue of decision-making on transboundary issues was also raised as a key strategic issue in Viet Nam, where, unlike the other three countries, there is no jurisdictional control over the decisions for any of the eleven proposed dam schemes.

5. Consultation and Communications Issues

The importance of an inclusive and comprehensive approach to consultation has been noted previously, and indeed is a basic characteristic of any credible SEA approach. It is a challenging issue for this SEA, which has to work across four countries in a relatively short space of time on a topic that divides opinions and that concerns an extremely wide range of stakeholders. Nonetheless, this is a challenge that must be met and the success or failure of the SEA will depend on how effective it is in doing this. This section reflects detailed discussions on this topic with many stakeholders (including within the MRCS and with the NMCs). A series of recommendations are made on the process that should characterise the consultation and communications aspects of the SEA, but of course the consultants implementing the SEA must, and will expect to have the freedom to, define the details of their own distinctive approach on this issue. The recommendations made in this section reflect the principles for the SEA's development discussed in section 2, above.

Effective **communications** before and during consultations is essential if the deliberations are to be informed and based on the same premises. It is recommended that the consultants define a clear and effective communications strategy for the SEA that will ensure that all stakeholders are fully informed throughout the process. Waiting to "present" at a workshop is ineffective and ill-advised. As part of this communications strategy, explicit actions to ensure that the analyses are presented in a manner accessible to non-experts and in the different national languages are essential. Although challenging, defining routes to inform and communicate with local communities (even if limited in scope) is similarly essential.

In defining this communications strategy, the consultants must note the distinction between the stakeholder engagement strategy for different countries, which should be managed by the NMCs, and the overall communication strategy for the SEA that has a wider purpose and reach and that must integrate the different national perspectives into a coherent whole. The SEA communication strategy should provide (an evolve as the study progresses) a set of key messages on sensitive issues and targeted to the key stakeholder groups, including the scope and boundaries to expectations for the SEA so that these are in line with the SEA's objectives as agreed by the NMCs. An important component of the communications process for the SEA will be the establishment of a **website**, perhaps linked to that of the MRC (the consultants should discuss this with the MRCS as soon as possible), for the SEA. This website should be structured to provide the capacity to both inform (through communicating key information and messages) and consult, so that stakeholders are able to use it to share their views and information on the SEA (see below).

The need to demonstrate the balanced neutrality of the SEA has been stressed. The importance of this has been reinforced in the scoping consultations, as some stakeholders interviewed said that there was a perception that the MRC (and by implication the SEA) was already biased, either for or against dam construction depending on the perspective of the stakeholder. The meeting with the Thailand NMC illustrated this clearly, where the representatives stated the need for intensive early consultations to establish trust and credibility that they were concerned were presently lacking. Similar sentiments were expressed in Viet Nam. It is also essential that the SEA is not seen to pre-empt or otherwise compromise the integrity of both national planning processes and the formal PNPCA process and effective communications on the relationship between the SEA and these processes need to be established at the very outset of the SEA, based on agreement with the individual NMCs and other relevant national authorities.

It is consequently recommended that the **initial stages** of the SEA contain **extensive consultations** with a full range of stakeholders. This should be through a five-stage process as follows:

1. **Preliminary discussions** with the NMC and with a limited number of key stakeholders (for example, the power generation regulatory authority) to define and agree the specific modalities of the national consultations (these will to an extent very between countries to reflect the national context), the key messages and communications media to be used (in particular to ensure that there is a clear understanding of the scope and boundaries of the SEA) and agreeing how it fits into the larger dialogue process and future formal mechanisms like the PNPCA process, the role the SEA can play in thinking through some the issues in these formal mechanisms, the capacity building and information needs for different stakeholders.

2. An initial set of **national consultations** in each of the four riparian countries. This should be an intensive effort, covering as wide a range of stakeholders as possible, and should both inform the stakeholders of the SEA process and solicit their opinions on the key issues and drivers that should direct the execution of the SEA. These consultations should also identify the areas and communities within the individual countries that are most likely to be directly impacted by mainstream dam development.

3. S**ub-national consultations** in those areas identified as most likely to be affected and including representation of the **communities** most vulnerable to dam development impacts. This should again both inform and establish the key issues and concerns at the sub-national level. It should include a focus on the impacts on the lives and livelihoods of local communities, and especially vulnerable groups such as the poor and ethnic minorities. The mechanism for this should be based wherever possible on existing consultative processes; an issue discussed further below.

4. A second round of **national consultations**, culminating in a national workshop, where the different stakeholders are brought together to establish a consensus perspective on the national position for the key issues to be addressed in the SEA. This workshop should also agree on the most appropriate mechanism for the representation of the national consensus at the regional level.

5. A **regional consultation**, where representatives from each of the national consultations are brought together and a facilitated process of dialogue and discussion

is undertaken to reconcile the national positions and establish an overall set of strategic issues and key drivers that will be taken into the development of the identification and assessment of the scenarios that are a core stage in the SEA and the subsequent analyses of impacts and identification of recommendations in the SEA.

This initial intensive effort will set the stage for the whole SEA and must be considered essential for success. The tone of the consultations is important: as has been stated, the team executing the SEA must be overtly neutral and not perceived to be driving any agenda. Their role is a facilitative one, whereby they must create an environment in which the different stakeholders and interest groups all feel that their interests and concerns are considered and they have an opportunity to articulate their position in the process.

One outcome of this initial consultation phase should be agreement on the full process of consultations throughout the rest of the SEA, with this written up into a detailed operational plan by the consultants and integrated into their inception report. As such, to avoid pre-empting this process, a detailed operational plan for consultations during the rest of the SEA is not presented here, but some basic characteristics of this process are suggested in the following paragraphs.

Further intensive consultations at sub-national, national and regional levels are essential at two further stages in the SEA: (i) the assessment and weighting of impact, ensuring that the perspectives of all stakeholders are taken into account and the trade-offs that any such impact assessment and weighting exercise entails are discussed in detail and agreed with key stakeholders (and especially with the people most likely to be affected by these impacts, both positive and negative); and (ii) at the final stage, where the full results of the SEA analyses are presented and the recommendations from the SEA are discussed.

The concern here is to indicate **appropriate** consultations, as it is a strategic level study with considerable scope as opposed to a project EIA. There will be a slightly different strategy in each country that will maximize the effect and value of different consultation approaches e.g. consultations with expert groups, consultations with interested and affect parties, consultation with the concerned provincial and local government agencies and consultations with the different line agencies concerned, as well as the wider civil society, non-government organization, developer and private sector and development partner (development finance institutions) engagements.

It is also essential that consultations are held with **local communities**, and that representatives of these communities are included in all national- and regional-level workshops and meetings. This is challenging as the identification of which are the affected local communities is not straightforward and the consultants should prepare a detailed strategy on how to address this issue in the inception phase of the SEA. Whilst it is challenging, the transparent and effective engagement of local communities in the SEA is essential and can be considered as a condition for success. These community-level consultations are not intended to parallel or replace the project-specific consultations that will take place with regard to individual dam proposals. Their scope is to look at the cumulative and regional implications of the SEA, but as many of these implications are directly linked to the lives and livelihoods of local communities it is essential that their voice is heard loudly and clearly throughout the SEA process.

The national-level consultations should be organised through and under the authority of the **National Mekong Committees**. It is essential that the nature of the MRC, as an inter-

governmental body, is remembered throughout the SEA. Any activities at a national level must follow correct procedures and be authorised by and managed through the NMCs. Where such mechanisms exist, the national and sub-national level consultation processes should be based on existing consultation mechanisms for SEA type studies. This is the case in both Viet Nam, where the NMC has a structured process for consultations that works through provincial authorities and down to the commune level, and in Thailand, where the existing River Basin Committee for the Mekong River is the established and legitimate mechanism for consultation on this issue.

This is not to suggest, of course, that the participation in the consultations should be limited to those stakeholders already involved in consultations: indeed a more comprehensive representation is essential. But this approach will ensure strong ownership of the consultation and reflects the jurisdictional authority of the NMCs as the focus for these issues at the national level. The national working groups established by the MRC's Environment Programme (see above) should also be considered as a mechanism for coordination and consultation at the national level should the NMCs think that this is an appropriate mechanism for this.

The discussions with both the Thai and the Vietnamese NMCs made it clear that they will require their active coordination of these consultations as a pre-requisite for their implementation. The consultants must consequently proactively establish an agreement for the consultation process with the four NMCs before any actions are taken to undertake consultations at the national level. Adequate resources to facilitate this process need to be agreed with the NMCs as part of these initial discussions.

The NMCs articulated their concerns over their ability to monitor and verify the detailed veracity of the analyses undertaken in the SEA. They also noted, as did others, that there is a far wider group of expertise available at the national level than that included in any consultant team, whatever its composition. To reflect this, and based on discussions with the NMCs, it is recommended that a **Technical Advisory Group** (TAG) be established consisting of independent experts from the riparian member states.

The composition of the TAG should be comprehensive, with in particular the inclusion of social, environmental and economic experts essential. A total of 2-3 experts per country is recommended and it is further recommended that these experts should be nominated by the NMCs. They should also report to the NMCs directly, in effect providing a means for monitoring the details of the SEA's analyses and ensuring that the methods, scope of quantitative assessment, assumptions and judgments made and conclusions drawn all meet adequate standards of balanced, rigorous and unbiased professionalism. The SEA team must allocate adequate resources for the TAG and must be required to establish detailed operational procedures to ensure that the TAG is able to effectively and independently assess the details of all stages of the implementation of the SEA.

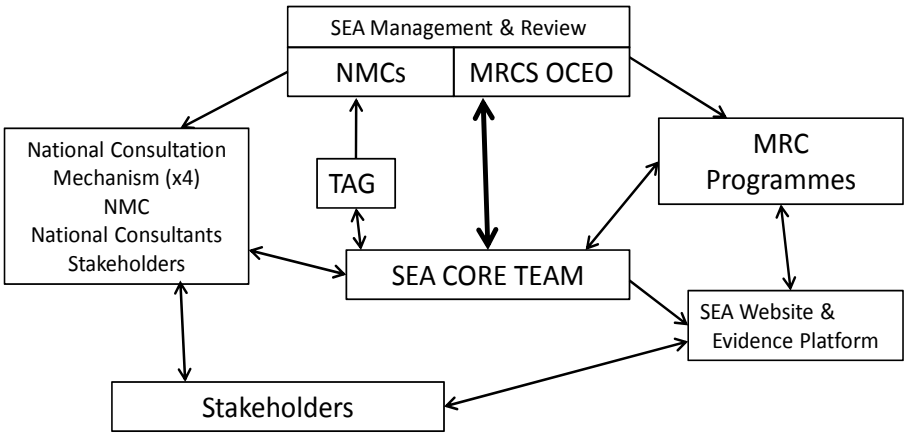
A number of stakeholders interviewed during the consultations undertaken as part of this scoping exercise voiced their concerns that the SEA must be able to provide a means through which concerned parties can present their own, often detailed, evidence and analyses to the SEA. It was stated that the SEA should not rely on the work done by the consultants alone, as there exists many years of detailed analyses on many of the core issues for the SEA. At the same time, it must be recognised that in some cases these independent analyses have been prepared based on certain assumptions or to advocate for particular pre-determined positions.

There is also a need to create a process through which stakeholders that hold strong positions can "make their case"; can present the evidence that leads them to certain conclusions.

It is consequently recommended that an **evidence platform** be established, including through a web-based medium, that is open to different groups and individuals to state their arguments and post their evidence to support these arguments. This platform must be actively serviced and summarised; it should not just be a passive "dumping ground" where the information posted just sits. The details of how it will work should, of course, be defined by the SEA consultants, but an effective web-based discussion and dialogue forum has the potential to be an active and important part of the SEA. The key information from and conclusions of this platform should be presented to the key workshops undertaken in the SEA and also reflected in the SEA reports.

The SEA consultants need to define and agree with the MRCS and the NMCs the overall organisational structure for the SEA. The details need to be worked out between these parties, based on the specific methodology the consultants intend to use, but the overall structure and management of the SEA should be organised in a form that is the same as or similar to that presented in figure 2. It is recommended that the MRCS discuss this structure with the SEA consultants and the NMCs as soon as possible and agree the overall management structure of the SEA before substantive work is undertaken on specific activities, and in particular before the consultation process begins.

Figure 2: Proposed Management Structure for the SEA



The scoping exercise included discussions with a number of existing regional knowledge and dialogue processes that are relevant to, but of course independent of, the SEA. The **IUCN** is presently conducting the Mekong Water Dialogue, which lasts until the end of 2010. This includes the establishment of National Working Groups in each of the four riparian states in the lower Mekong that incorporates the NMCs as well as other key national stakeholders. The focus of the Dialogue is on Water Governance, and has included a number of desk studies by national consultants. There have been rounds of stakeholder meetings that have identified key strategic issues in Lao PDR (Hydropower and Irrigation), Cambodia (Hydropower and Fisheries) and Viet Nam (Irrigation and Water Quality). This provides a valuable input into the initial scoping of strategic issues in the SEA and the establishment of the National Working Groups also provides a vehicle that can assist with the national-level consultations under the SEA.

The **M-POWER** research network, established with SIDA support, consists of a number of highly credible research and knowledge-based institutes throughout the Mekong region. This network has already undertaken a range of studies that are of relevance to the SEA and has an active programme on hydropower and on other aspects of sustainable water management that can inform key aspects of the SEA. Discussions with the network established their willingness to actively engage in the SEA, including an interest in providing analyses on some key issues. The evidence platform, discussed above, provides a means through which this can be provided and communicated, and it is recommended that the SEA team have discussions with M-POWER to establish the best relationship with the network that takes advantage of their capabilities but does not compromise the independence of the SEA.

The meeting with **IWMI** focused on their contribution to the SEA in terms of both information on irrigation and agricultural development/livelihoods and IWMI's contribution to discussions and analysis during the SEA consultations as an expert knowledge-based organisation. The IWMI Regional Director stated their willingness to actively contribute to the SEA in whatever capacity was considered useful.

The importance of ensuring good coordination with international development partners, in particular the World Bank and the ADB, concerned with or working in areas affected by the mainstream dam development is an issue identified by several persons met during the consultations. This could be achieved through establishing a coordination mechanism with this group of agencies, with this based on an initial meeting where the international development partners are brought together. Discussions with the **World Bank** established their strong support for the SEA. The World Bank feels that this is an essential exercise and that the MRC, as an inter-governmental agency established and owned by the riparian states, is the right vehicle for its execution. They will provide full support to the SEA.

This includes specifically the potential links to the design of the pipeline WB project on supporting IWRM in Lao PDR. This will be designed during the SEA period and it can be a means through which issues related to IWRM and water allocation issues can be addressed where they emerge from the SEA. The World Bank has also offered to facilitate the coordination and harmonisation of donor inputs to the SEA process, including convening an initial meeting of the international development partners as part of the first consultation phase of the SEA.