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**MEKONG MANAGEMENT AT A WATERSHED - IWRM IN THE GLOBAL CRISIS?**

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**Abstract**

Water resources development is being accelerated in the Mekong Basin, where millions of people depend on the basin's ecosystem for their food security and livelihoods. Although the concept of integrated water resources management (IWRM) holds the promise of reconciling goals of economic efficiency, social equity and environmental sustainability, there is no consensus yet on how to weigh these priorities or how best to ensure their realization in a complex, interdependent system with sovereign countries and a large range of water related sectors, actors and stakeholders.

This paper discusses how the Mekong River Commission (MRC), as an inter-governmental river basin organization of the four Lower Mekong Basin countries, is addressing these challenges by facilitating a joint basin development planning process, complemented by an integrated assessment response to the countries' ambitious water and related development plans and proposals. The results may lead to a shared vision and strategy of how the basin's water and related resources will be developed, and a planning framework that brings basin perspectives into the national planning, amongst others through MRC's sector and sub-area activities.

Through these and other activities, the MRC is growing into an integrative platform for multi-stakeholder consultation and a facilitator of dialogue on the development and management of the water and related resources in the Mekong Basin to enhance the mutual benefits of the riparian countries and the sustainable management of the river's natural resources.

*Key words: IWRM, Mekong River Commission, joint basin development planning, integrated assessment*

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## **Introduction**

This paper discusses how the Mekong River Commission (MRC) is addressing the challenges that accelerating water resources development poses to the rich riverine resources in the context of the 1995 Mekong Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. The Agreement was signed between the four sovereign riparian countries in the Lower Mekong Basin (LMB): Cambodia, Lao PDR, Thailand and Vietnam.

The paper first summarizes existing and planned water resources development and the main factors that currently drive water resource development. It then identifies the key IWRM challenges, and how they can be addressed at the basin, national and local levels. Subsequently, the paper focuses on the role of the MRC and how it is responding to these challenges. Finally, the paper describes how MRC's basin planning process would bring basin perspectives into the national planning, and how this effort is being complemented by an integrated assessment response to the countries' ambitious hydropower plans and other water resources developments.

## **Accelerating Water Resources Development**

While millions of poor people use the natural resources of the Mekong Basin for their food security and livelihoods, water infrastructure development is limited compared to most other large river basins in the world. The most downstream end of the Mekong Basin, the Vietnamese Delta, is by far the largest water using area in the basin. Diversions from the mainstream above the Vietnamese Delta are so far negligible. Laos and Cambodia hardly divert 1% of their annual water resources. Seasonal regulation of river flow through storages behind dams is still insignificant. Therefore, the Mekong retains most of its natural flow characteristics upstream of the Vietnam Delta.

Currently, water resources development is being accelerated, in particular for the generation of hydro-electricity. In the Upper Mekong Basin, China is completing its hydropower cascade on the Lancang. In particular the Xiaowan and the Nuozhadu hydropower projects, with 9,800 and 12,400 million m<sup>3</sup> of active storage, respectively, are likely to cause the most significant seasonal redistribution of flow of any of the foreseeable water resources developments in the basin. In the four countries that share the Lower Mekong Basin (LMB), about 10 large (> 10 MW) hydropower projects are under construction and almost 150 projects are planned, including up to 11 projects on the mainstream. The main projects are shown in Figure 1.

The LMB countries have also plans in place to increase irrigated agricultural production, improve navigation, reduce damages of floods, and improve public water supply. For example, Lao PDR plans to increase wet season irrigation from the current 250,000 ha to 450,000 ha and dry season irrigation from 120,000 to 200,000 ha by 2020. Cambodia has considerable scope for agricultural development; large irrigation expansions are being studied, in particular in the largely undeveloped Cambodian Delta, linked to major investments in flood control, and elsewhere, linked to hydropower development. Water transfers from the Mekong system have been considered for a long time by Thailand to complement national approaches to alleviate droughts. While the most favourable lands in the Vietnam Delta are utilized, plans are in place to expand irrigation in the Central Highlands.

A range of factors is driving this development. At the global level, fluctuating oil and natural gas prices make hydropower development financially more attractive, and sharp rises in the rice price make irrigation more profitable. At the basin level, the financial attractiveness of the run-of-river dams on the mainstream in the LMB is further enhanced by the large storage dams that are being developed in the

Upper Mekong Basin. At the national level, the Governments increasingly recognize that developing some of the economic potential of the water resources in the Mekong Basin for hydropower, navigation, irrigation, and flood management can contribute to increasing economic growth, alleviate poverty, improve livelihoods, and meet the UN Millennium Development Goals.

### **Near-term IWRM Challenges**

Accelerating water resources development in the Mekong Basin needs to be complemented by effective management of water and related resources to ensure that development of the water resources is sensitive to the maintenance of vital ecosystems and capture fisheries productivity, on which most of the poor population depend for their livelihoods. Therefore, the development of the Basin becomes a question of integration, which should synthesize the differing positions and conflicting interest of the various countries, sectors and the population. This would require the improvement of the application of IWRM principles and practices at the basin, national and project level. In the LMB, consensus is emerging that the following approaches are relevant to the implementation of IWRM.

*At the basin level*, there is growing demand for a scenario-based and participatory planning approach to inform joint decision making by the LMB countries on an acceptable balance between resource development and resource protection. Subsequently, the resulting basin perspectives need to be reflected in the national policies and plans, and implemented through various collaborative and coherent actions at the basin and sub-basin levels. There is also the need for a more strategic implementation of the agreed water utilization procedures as part of the implementation of the 1995 Mekong Agreement, in particular the Procedures for Notification, Prior Consultation and Agreement, (PNPCA, approved in 2003). The PNPCA would offer an opportunity for the MRC to demonstrate its range of experiences and skills by reviewing project preparation reports of significant and possibly controversial projects that do not comply with agreed basin perspectives, and discuss its findings with the respective government.

*At the national level*, there is considerable scope for institutional development and capacity building for IWRM. This is especially timely for the recently established national water and (related resources) management agencies and their affiliations at the sub-basin levels<sup>2</sup>. These agencies must become the primary authority for water resources management in their country. The aim must be to strengthen their coordination, steering and monitoring role for IWRM, while the long established line agencies do most of the on-the-ground planning, but in a way that maintains an acceptable balance between resource development and resource protection. The strengthened resource management agencies will then be in an excellent position to support the MRC in the joint management of the basin's resources, including an improved implementation of the water utilization procedures and other guidelines, methods, tools and processes that are being developed under MRC Programmes.

*At the project level*, the main IWRM issue is the central and sector oriented planning and development of large projects, in particular hydropower projects. The resulting single-purpose projects may be less economically beneficial and efficient than multi-purpose projects and they often have larger adverse effects downstream and upstream of the project. There is a need to increase the capacity of line agencies to work together to assess projects from a multi-purpose perspective, and learn to appreciate the benefits of multi-purpose projects.

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<sup>2</sup> They are the Ministry of Water Resources and Meteorology (MOWRAM) in Cambodia, the Water Resources and Environment Protection Agency (WREPA) in Lao PDR, the Department of Water Resources in Thailand and the Ministry of Environment and Natural Resources (MONRE) in Vietnam.

At all three levels set out above, there is a need for improved data and information exchange between agencies, greater public awareness of issues and opportunities, and more public consultation and participation in planning and decision making. These challenges are obviously not exclusive to the water sector. Various capacity building programmes in these areas are being implemented or planned, directed at the planning and line agencies.

### **Role of the MRC**

In the 1995 Mekong Agreement the four LMB countries agreed to cooperate in the management and development of the water and related resources of the Mekong Basin. This offers the opportunity for each country not only to gain benefits through cooperation, but also to ensure that the basin's resources will be managed in a sustainable manner. The Agreement establishes the MRC to act as a focal point for the cooperation, and to assist the member countries in achieving their aims through provision of shared information, technical advice and facilitation of cooperation. Moreover, the Agreement establishes a forward-looking framework and mechanisms for pursuing the concept of IWRM at the basin level.

The following Articles provide directly (Article 2 and 5) or indirectly (Articles 3, 4, 6 and 26) a role for the MRC in basin planning and project planning:

- Article 2 calls for the formulation of a Basin Development Plan to promote, support, cooperate and coordinate the development of the full potential of sustainable benefits to all member countries, and to prevent wasteful use of the Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects;
- Article 3 calls for the protection of the environment, natural resources, aquatic life, and ecological balance of the basin from pollution or other harmful effects resulting from any development plans and uses of water and related resources in the basin;
- Article 4 calls for the cooperation on the basis of sovereign equality and territorial integrity in the utilization and protection of the water resources of the Mekong Basin;
- Article 5 ensures the right of each country to develop a certain category of projects (those under notification to the MRC Joint Committee) without establishing a non-objection right for the other countries (providing these are within the agreed limits of basin-level sustainability and do not cause harm to others), whilst recognizing that other types of development are of basin-level significance and require prior consultation and/or agreement; and
- Article 6 and 26 call for: 1) the establishment of water utilization procedures and guidelines that both facilitate interaction between the member countries consistent with their stated aims, as well as provide a mutually agreed basis for defining the sustainable limits for water basin development at any one time, and 2) the establishment of a monitoring system and procedures that both ensure that the sustainable limits are not being exceeded, and also to provide information that will help guide future development of the Mekong Basin.

MRC has made good progress since its establishment, with member country agreement to a procedural framework for cooperation and the development of regionally recognized knowledge base. It also established a participatory process for basin planning. However, MRC has also struggled to define what exactly a basin plan is. The absence of a basin plan may have contributed to the perception held by some national agencies that the water utilization procedures are restraining mechanisms instead of enabling and

facilitating mechanisms, as intended by the 1995 Mekong Agreement. The MRC Strategic Plan 2006-2010 places new emphasis on development promotion via the Basin Development Plan, within the context of the water utilization procedures and sustainability initiatives.

During the last few years, the role of the MRC has been criticized by international NGOs and others on the grounds that the organization: 1) does not make sufficient efforts to engage the stakeholders and beneficiaries of the Basin's natural resources in its work and learn about their needs and interests and 2) does not seem to play an active role in influencing national planning and decision-making on water and related resources. Some have questioned the relevance and purpose of the MRC.

At the start of the Basin Development Plan Programme Phase 2 (BDP2, 2007-2010), the MRC has taken Article 2 as an entry point to define and increase its role in the actual national planning and monitoring of basin developments. The BDP2 does not see the Basin Development Plan as a separate plan over and above the national plans. Therefore, it is designed to bring all existing and planned water and related resources development projects in the basin planning process, through a combination of participatory sub-basin and sector activities and a basin-wide integrated assessment framework. This would offer an integrative platform for the MRC to engage in transboundary assessment and multi-stakeholder consultation to facilitate a broad and informed dialogue on sustainable water resources development and management.

The resulting basin perspectives would be brought back into the national planning through sector and sub-area activities to help ensure that large structural projects would not create transboundary conflict. Some aspects of how this vision is being implemented are described in the next sections.

### **Joint Basin Development Planning**

At the basin level, a common vision and strategy needs to be developed that describes how the basin will be developed, based on an agreed acceptable balance between water resources development for economic growth and poverty reduction, on the one hand, and the protection of riverine ecology on which many people rely on for their livelihoods, on the other. Although the concept of IWRM holds the promise of reconciling goals of economic efficiency, social equity and environmental sustainability, the BDP2 faces several pertinent questions, including:

- How to achieve these goals given that China and Myanmar are not yet involved in collaborative planning while China is developing very significant hydropower developments within its territory?
- How to achieve these goals in a context where national decisions in many sectors may affect the Basin's water and related resources, while MRC has no direct mandate for economic and social planning at the national level?
- How to achieve these goals, given that the LMB is a complex, interdependent system with a range of water related sectors, actors, stakeholders and interests?
- How best to ensure the realization of the goals at the national and sub-basin levels in the LMB (i.e. how to bring basin perspectives into the national planning)?

## Development Space

A sensible way to approach this complexity is to define an agreed “development space for water and related resources”, within which the LMB countries can plan and work, taking into account the impact of foreseeable developments in the upper part of the basin. The previous Section shows that the 1995 Mekong Agreement is implicitly framed in this way, with its emphasis on maintenance of agreed flows in the mainstream; reasonable and equitable utilization; and recognition of sovereign equality and territorial integrity in the utilization and protection of the water resources.

The question, then, is how to define the LMB development space for water and related resources in a way that is mutually beneficial to the LMB countries, sustainable from a basin perspective, and practical to implement. One option is to set boundaries for acceptable cumulative changes due to development and define the share of that space available to each country and sectors. However, such a rigid and prescriptive definition is most likely not feasible in the complex context of the LMB with four sovereign countries and a high natural year-to-year hydrological variability, which might increase further due to climate change.

A more sensible option is to define the LMB development space through a basin-wide dialogue on the results of a comprehensive assessment of basin-wide scenarios that represent different, hypothetical levels of water resources development in the Mekong Basin. Each scenario would be framed to represent different combinations of sectoral development, recognizing the synergies and trade-offs between sectors. The main sectors considered for scenario formulation are those that can significantly change the hydrological regime of the river, such as irrigation, hydropower, and flood control. Other water-related sectors such as fisheries, tourism, navigation and the environment will be considered in the assessment of the scenarios.

Previous studies demonstrate that it is important for planning purposes to distinguish between: 1) the impact of water resources developments that definitely will be fixed parts of the Mekong system in several years from now, such as the planned dams in the upper part of the basin, as well as ongoing water developments in the LMB and 2) the impact of planned and potential water resources development in the LMB. The latter impacts over and above the impact of the former are in particular relevant to decision making on the development space for water and related resources in the LMB.

### Formulation of Basin-wide Water Resources Development Scenarios

Recently, the MRC Joint Committee (JC) has approved the definition of possible water resources development scenarios, which are developed in collaboration with a Regional Technical Working Group that comprises staff from line agencies, planning ministries, MRC Programmes, and academia. The definition of scenarios and assessment indicators are also discussed with planning partners, such as IWMI, WWF, WorldFish, SEI and others. The scenarios include a baseline scenario, a definite future scenario, which includes the planned Chinese dams and ongoing water resources developments in the LMB), a twenty-year LMB plan scenario, alternative development scenarios that explore the basin’s potential and limitations), and longer term scenarios that will examine the impacts of climate change and land use changes.

The input data for the modeling of the scenarios are derived from existing sub-area reports and still ongoing sector work. Working with a team of national hydropower specialists of the responsible line agencies, the BDP2 has developed a comprehensive hydropower database that is currently being populated with the relevant physical and operating characteristics from about large 150 hydropower

projects. Two applications of the database are under way. The first is an economic screening of the hydropower projects and the second is a procedure to calculate reservoir operation guidelines, also known as rule curves. A similar type of activity is being implemented for the irrigation sector that will result in a database with the required characteristics of the existing and the planned and potential irrigation developments in the basin.

#### Assessment of Water Resources Development Scenarios

The BDP2 has drawn on the vast amount of research and practical application experience that is available within MRC to select appropriate assessment indicators that are policy relevant, user driven, sensitive to water resources development, and can be appraised within a short time frame. Two types of assessment indicators are distinguished:

- Policy indicators, which measure how well specific policies and objectives derived from current national policies and plans, as well as the 1995 Mekong Agreement and MRC 2006-2010 Strategic Plan, are met by a particular water resources development scenario; and
- Impact indicators, which show the hydrological, environmental and social changes caused by a particular water resources development scenario. The assessment of impact indicators addresses the information demand of various stakeholder groups and supports the appraisal of the policy indicators.

The selected policy indicators, which were recently approved in principle by the JC, cover the triple bottom line of economically beneficial, socially just, and environmentally sound development, as well as equitable development with respect to being mutually beneficial to the LMB countries (see Table 1). The policy indicators are as much as possible expressed in the same unit to facilitate a meaningful comparison and trade-off analysis and decision-making on the preferred scenario(s). For the appraisal of the indicators, proven tools and methods will be used, which have been tested under previous MRC activities. These include the simulation models of the Decision Support Framework (DSF) and some of the expert appraisal methods that were tested in an Integrated Basin Flow Management (IBFM) process.

Previous studies indicate that the most effective approach is to first assess the water resources development scenarios on a range of direct hydrological impact indicators (such as flow and level changes at different locations at various times of the year) and indirect hydrological indicators (such as changes in sediment transport). The nature and level of these changes will drive the design of the broader assessment of economic, environmental and social impact indicators. In addition, development impacts need to be assessed that are not driven by hydrologic changes, such as the barrier effect of dams on the shortening of fish migration routes, which may result in decreases in capture fisheries production and possibly changes in habitats. An overview of the assessment process is given in Figure 2.

Meanwhile, the BDP2 is implementing the hydrological impact assessment in collaboration with MRC's modeling team and national modelers from each of the four LMB countries. The preliminary results indicate that in the foreseeable future the main flow changes in the LMB will come from the large storage projects that are being developed on the Lancang in China. These developments, if constructed and operated in accordance with their current preliminary designs, will significantly increase the dry season mainstream flows in the upper part of the LMB and marginally reduce the wet season flows. Possible scenarios for water resources development during the next 20 years in the LMB result in relatively small flow changes in the mainstream over and above the changes caused by the developments on the Lancang and already existing or under-construction developments in the LMB. The calculated changes constitute a

fraction of the historically observed natural year-to-year variability. An example of the predicted flow changes is shown in Figure 3.

Table 1: Policy Indicators for the Assessment of Scenarios<sup>3</sup>

Goal	Primary Objectives	Specific Objectives	Associated Indicator	
Sustainable development	Optimal development (triple bottom line)	Economic development	Increase irrigated agricultural production	Net value (million USD/year)
			Increase hydropower production	„
			Improve navigation	„
			Decrease damages by floods	„
			Improve water supply and wastewater management	„
		Social development	Maintain productivity of fishery sector	Net value (million USD/year)
			Create employment and incomes	Number of jobs created
			Maintain local livelihood opportunities	Number of lost subsistence livelihoods
		Environmental protection	Maintain wetland productivity	Net value (million USD/year)
			Manage salinity intrusion in the Mekong Delta	„
			Maintain water quality	„
			Minimize channel effects (bank erosion, infilling of deep pools, inundation of river margins etc.)	„

<sup>3</sup> Shown is the table that was discussed in the Joint Committee Meeting of August 2008. It is being updated in consultation with various planning partners.



	<b>Equitable development</b>	Ensure that all four LMB countries benefit from development of water and related resources	Net value (million USD/year/country)
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It is expected that in a system as large as the Mekong, the various countries, sectors and stakeholder groups will have differing positions on what would be commonly preferred scenario(s). A sensible approach is to first discuss and synthesize different positions and conflicting interests at the national level in an open and transparent process. Subsequently, the consolidated national positions would be discussed at the basin level, where the interests of the basin as a whole needs to be represented appropriately. The regional discussions may result in reconciliation of the national positions in the spirit of cooperation within the 1995 Mekong Agreement. The entire process is planned in accordance with available guidelines for Strategic Environmental Assessment (SEA).

#### IWRM –based Basin Development Strategy for Lower Mekong Basin

The results of the above basin-wide dialogue on the various considered basin-wide water resources development scenarios will be the basis for senior government officials of the four LMB countries to provide guidance on which scenario (and thus which level of basin development) most likely would achieve an optimal balance between economic, environmental, and social outcomes in the LMB and would bring mutual benefits to the LMB countries. It is noted that in choosing a water resources development scenario, the LMB countries are not committing to a particular set of projects (which are in any case subject to feasibility studies, EIAs etc.), but are identifying a development space within which they can plan and work.

At the end of this negotiation process, the MRC Council would adopt a vision for the development of the basin that would allow the elaboration of clear directions for the development monitoring, evaluation, and reporting of water and related resources in the LMB in an IWRM-based Basin Development Strategy. The latter would also provide directions for a rolling planning framework that aims at bringing basin perspective into the national planning and vice versa, amongst others through the MRC sector programmes and BDP’s sector and sub-area activities. Meanwhile, the BDP2 is discussing a detailed outline of the strategy with the aforementioned Regional Technical Working Group and with planning partners.

#### IWRM Strategy for Sub-basins

Currently, the four National Mekong Committees are organizing the teams that will further develop the process and capacity for collaborative, bottom-up planning in the BDP Sub-areas. The BDP2 Sub-area activities will be implemented in two phases. The first phase is aimed at the preparation of tributary basin profiles and the analysis of possible conflicts between: 1) projects and the maintenance of vital river ecology and 2) possible conflicts and synergies between projects. The second phase aims at development of an IWRM-based Sub-area strategy, which is consistent with the IWRM-based basin strategy, and provides guidelines and checklists that usefully guide national sector planning by line agencies and area-based socio-economic planning by provinces. The process will be supported by a training programme that strengthens the process and capacity for IWRM planning in each of the member countries.

Thus, the Sub-area strategies will not impose another level of planning to the existing planning system in the LMB countries. It will provide opportunities for the national resource management agency and its local representations to coordinate and guide sector planning and project development (“they steer the boat”). Sector agencies continue to do the on-the-ground planning (“they do the heavy rowing”), but in a more integrated and participatory way, with a view to maintaining the most acceptable balance between resource development and resource protection. Moreover, the Sub-area activities offer opportunities to bring basin perspectives into the national planning, and facilitate a dialogue around key (emerging) IWRM issues in each Sub-area, such as the assessment of multi-purpose projects, as opposed to the traditional single-purpose projects.

### **Integrated Assessment Response**

The above described basin planning process strengthens the role of MRC in transboundary assessment and multi-stakeholder consultation. Recently, the basin planning process is complemented by an integrated assessment response to the countries’ ambitious water and related resources development plans and proposals, comprising a range of coordinated activities of MRC sector programmes, such as:

- The development of environmental considerations for sustainable hydropower development, using the IHA Sustainability Guidelines and Assessment Protocol and other frameworks as a basis for adaption and contextualization to the Mekong region. The results would be tested in one or two strategic environmental assessments of hydropower development, such as a catchment in the Sekong Sub-basin where many hydropower projects are in the early stages of planning. This activity is being implemented the Environment Programme in collaboration with the WWF and ADB.
- The assessment of the cost of blocked fish migration routes caused by the barrier effect of dam. This is a major activity, including the identification of spawning sites; the modelling of the barrier effect of mainstream dams; fisheries impact assessment, forecasting and mitigation; and the assessment of appropriate mitigation measures, and periodic meetings of experts from around the world on fisheries ecology and hydropower development (the first meeting was convened September 22-23, 2008). This activity is being implemented by the Fisheries Programme in collaboration with WorldFish.
- The assessment of the impact of mainstream hydropower projects on navigation and the development of standard specifications for navigation locks, based on international practices and the needs of all six riparian countries. This activity is being implemented by the Navigation Programme in consultation with various stakeholders, including China.
- The MRC Hydropower Regional Consultation, scheduled for 25-26 September 2008. The consultation aims at bringing stakeholder groups together to discuss key challenges facing hydropower development in the Mekong region, learn of best practices worldwide, solicit feedback on the scope of MRC’s emerging Hydropower Programme, and promote MRC’s role in facilitating dialogue on aspects of hydropower development that require an integrated basin perspective.
- A strategic environmental assessment of the eleven proposed mainstream dams in the LMB, which builds on the above described activities to add value to the ongoing individual studies of the project developers, and supports the implementation of the procedures for notification and prior consultation that leads to reaching an agreement on mainstream dam development proposals.

### Assessment of Projects

It is anticipated that the agreed IWRM-based Basin Development Strategy will incentivize the implementation of the earlier agreed water utilization procedures, in particular the Procedures for Notification and Prior Consultation and Agreement (PNPCA). Through its monitoring programmes, the maintenance of its project data bases and by more strategic implementation of the water utilization procedures, the MRC can seize opportunities to review project preparation reports of significant projects that could stretch the development space agreed in the current basin development strategy. In addition, the MRC could assist the responsible line agencies to implement public consultations on controversial projects. This would offer an opportunity for the MRC to demonstrate its wide range of experiences and skills, and add value to the identification, preparation, implementation of projects.

### **Monitoring and Evaluation and Rolling BDP Process**

MRC's transboundary monitoring programmes includes water quantity, water quality, aquatic ecosystem health, socio-economic impacts and vulnerability to aquatic ecosystem change, and wetland distribution, function and values. The resulting monitoring information and the information obtained through the implementation of the water utilization procedures can be used to continually check on the condition of the basin's transboundary water resources. The reporting process includes periodic updates of the State-of-Basin Report, which provides an overall assessment of the basin's status and trends, including evidence whether or not there is a need to update the water resources development scenarios and the IWRM-based Basin Development Strategy.

It is anticipated that the scenarios and the IWRM-based Basin Strategy will need to be updated every five to ten years as new data and information become available that may necessitate a review of the basin dynamics, basin needs and potential, and the national development needs. In this way, each successive basin development strategy can be updated in an informed way, adjusting as necessary the strategy design to ensure that the LMB countries stay within the agreed development space and are on track towards achieving the strategy's long term policy objectives. Therefore, time-bound, quantified indicators and procedures for monitoring and evaluation will be set out under the IWRM-based Basin Development Strategy.

### **Challenges**

The MRC and its BDP2 have gone through a long process to establish a participatory planning process and to define its scope in the context of accelerating water resources development in the Mekong Basin. Yet, there are still different understandings amongst the national line agencies and other non-government stakeholders on what a Basin Development Plan should be, as well as the role of the MRC and its Secretariat in national water resources planning, in accordance with the 1995 Mekong Agreement and the emerging development context.

The main challenge MRC faces is to make the joint basin planning process and the results of its integrated assessment response relevant to the national planning and project identification and preparation

The essence of this is the added value of incorporating basin perspectives in national considerations, which is required by the 1995 Mekong Agreement for sustainable utilization of the riverine resources and cooperation. For the MRC and its Secretariat to demonstrate this relevance, critical priority requirements are:

- MRC should strengthen the engagement of appropriate line agencies in the joint basin planning process and in the integrated assessment response. The National Mekong Committees (NMCs) are housed in the ministry responsible for natural resources management, while the planning and decision-making that will affect water resources most is being done by the line agencies responsible for energy, mines and agriculture. The role of the MRC Secretariat and the NMCs in the integration and engagement of the appropriate planning partners is being addressed in the organizational review of the MRC.
- The commitment of the LMB countries to the MRC needs to be translated into visible willingness to engage in a dialogue with the other riparian countries on their distributional effects and trade-offs, and agree on the most appropriate water resources development scenario(s) to guide the IWRM-based Basin Strategy. The MRC is in an ideal position to promote dialogue among the various countries, sectors and other partners, but it needs clear guidance from senior decision makers in each of the countries.
- The MRC needs to critically review its programmes, with a view to making sufficient resources (funding and staff) available to provide the information that line agencies need to incorporate basin perspectives and appropriate sustainable standards into plans and projects. There is a sense of urgency, since 1) construction of the first mainstream hydropower dam(s) could be approved within a year from now and 2) the 11 mainstream dams are already being studied at (pre)feasibility level while key mitigating measures, such as fish passages, need to be integrated into the concept and design of each dam.

While stakeholder participation is increasingly recognized as essential in MRC activities, and some successful events with stakeholders were recently organized, there remain major challenges to engage the actual beneficiaries of the river's natural resources: the representatives of the local communities. For this, the role of the NMCs to advocate and influence practices of the line agencies is crucial to complement the MRC Secretariat's recent efforts at the basin level. Also, MRC needs to agree on the ways and means to engage partners, such as international NGOs, more fully in its planning process. The latter would require the sharing of relevant data and information between the countries, the MRC and planning partners. Given the above described sense of urgency for the MRC to produce relevant information for decision-making, and the associated tight timeframe of BDP2, the recent BDP2 participation and communication plan will be a stepping stone in a longer term participatory planning and assessment process.

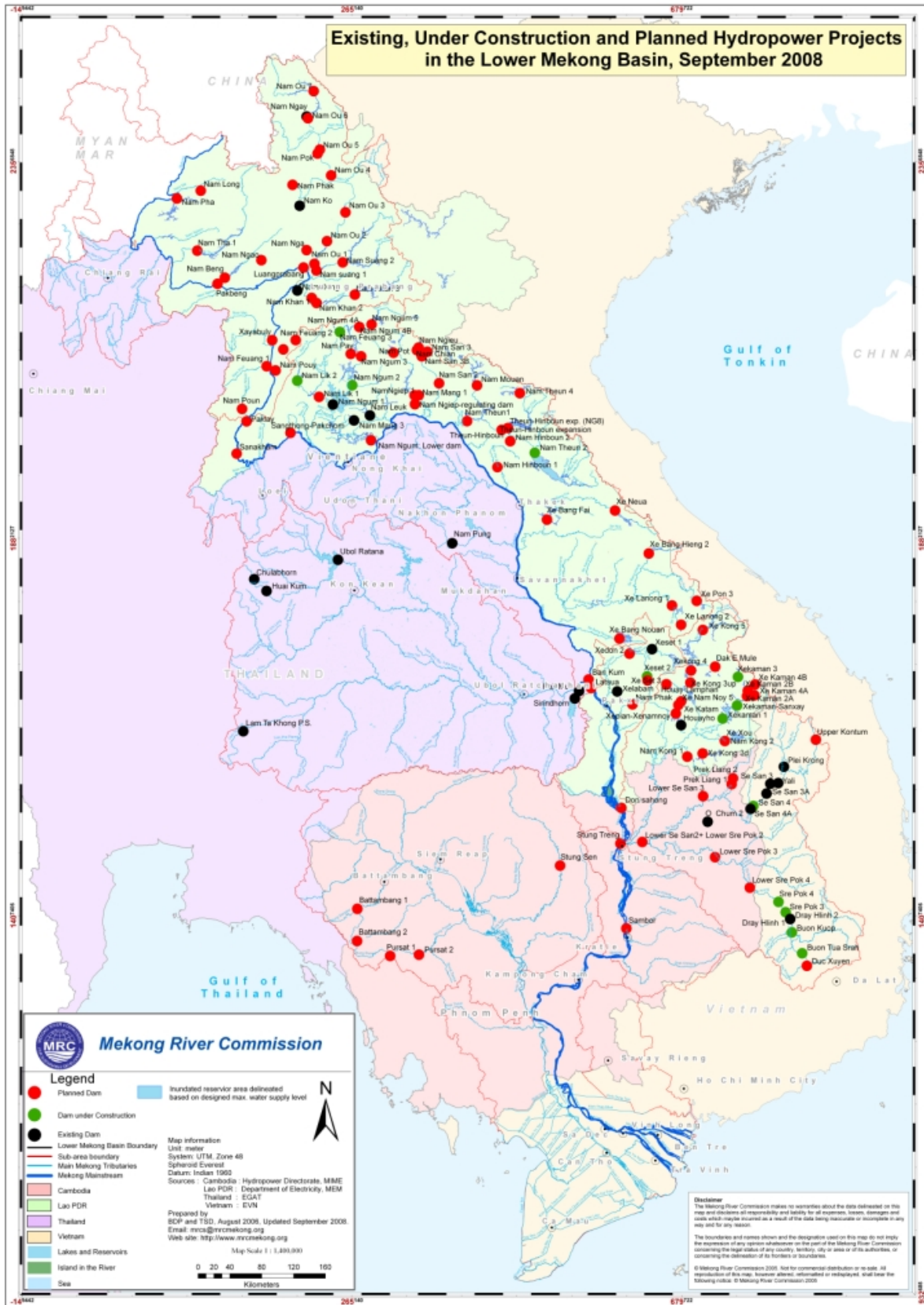
## **Conclusion**

The 1995 Mekong Agreement provides the MRC with a role in basin and project planning. Good progress was made in the establishment of agreed water utilization procedures, the development a regionally recognized knowledge base, and the development of participatory processes for basin planning. However, MRC has also struggled to define what exactly a basin plan is. Some held the view that a basin development plan would exclude the significant projects that are planned nationally to develop the basin's water and related resources. This situation may have contributed to the modest role of the MRC in the planning and decision making of significant national water related projects.

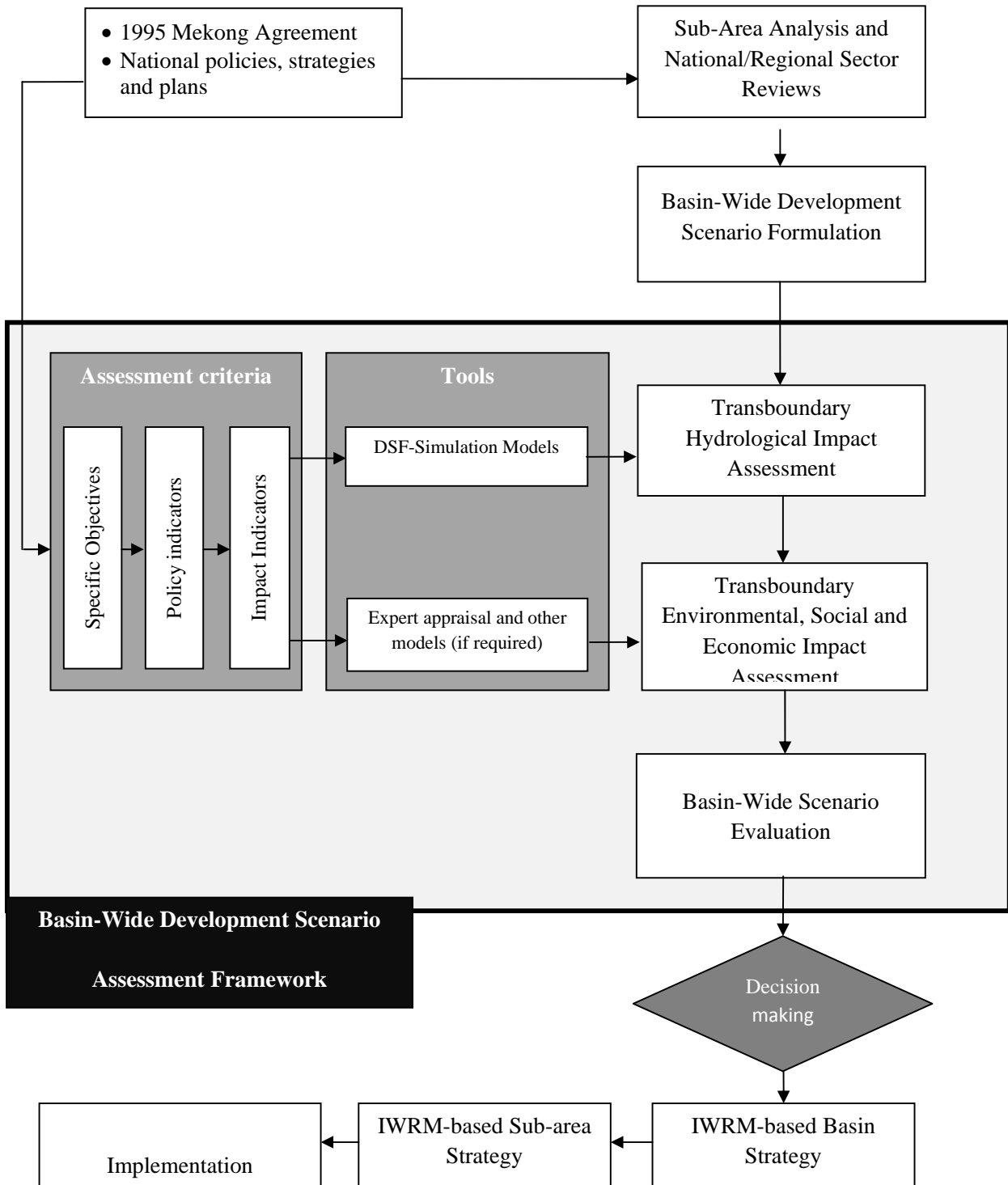
Virtually all significant structural water development projects are national projects, which, at the technical level, can be implemented by each of the four countries individually, within its borders and with its financial partners. The MRC's Basin Development Plan Programme Phase 2 is bringing all existing and planned national water and related resources development projects in the basin development planning process, which offers a platform for MRC to engage in transboundary assessment. This process is

completed by the recently launched MRC's integrated assessment response to the countries' ambitious water and related resources development plans. The assessment response will add basin perspectives as well as the views of the many stakeholders to the national planning and decision making processes.

**Figure 1 – Map of major hydropower projects in the Lower Mekong Basin**



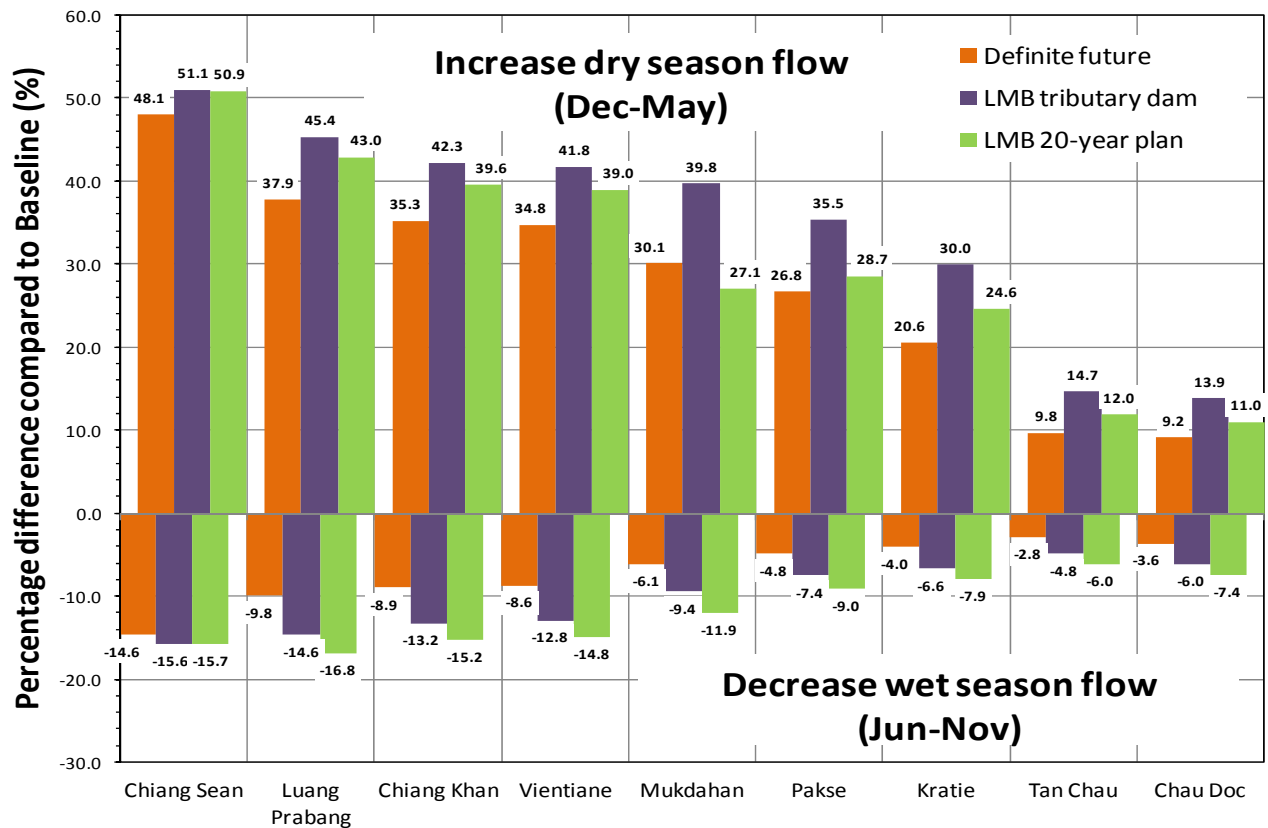
**Figure 2 – Assessment of basin-wide water resources development scenarios**



**Remark:** Intermediate results are subjected to basin-wide discussions with stakeholder groups to obtain their views and inputs.



**Figure 3 – Average flow changes of some scenarios in the dry and wet seasons compared with the Baseline scenario**



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