

Integrated Water Resources Management in a rapidly-growing private sector development context: the Mekong Basin

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IWRM Context

The principles of Integrated Water Resources Management (IWRM) underpin the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. Right from the outset of the document there is recognition of the need for coordination in sustainable development across a range of sectors including irrigation, hydropower, navigation etc to optimise multiple uses for the benefit of all riparians and avoid any harmful effects (Article 1). The concept of cooperation and coordination is further linked to the principle of sustainable and equitable development (e.g. Articles 2 and 5). The maintenance of certain flow regimes important for fisheries productivity and other environmental considerations such as salinity control is set out together with a need for developing detailed management procedures (Articles 6 and 26). And the protection of water quantity and quality as well as the ecological balance of the river system is also clearly articulated (Article 7).

Responsibilities for delivering on these commitments are defined in the governance arrangements for the Commission through the MRC Council, Joint Committee and Secretariat (Articles 18, 24 and 30) including responsibilities for addressing differences or disputes between member countries.

Although not specifically articulated in the 1995 Agreement, the MRC's work plans for its various programmes are increasingly incorporating a broader interpretation of stakeholder participation that goes beyond involvement of government agencies to include representatives of civil society and the private sector. A recent example of this is the regional consultation for the Basin Development Plan (BDP) Programme held in March 2008.

The Dublin Principles were almost four years old when the 1995 Mekong Agreement was signed. The Agreement can therefore be considered as an early example of embodying such principles into an international agreement. It has inevitably taken over a decade to see how such principles will be translated into practice and still there is further work needed in some areas. We need therefore to recognize that institutional change of this nature will take many years to achieve and cannot be realised within the time horizons of individual project interventions.

The mid-1990s also saw a significant emphasis placed on social and environmental concerns. The Asian Development Bank (ADB) for example introduced its first environment guidelines in the early 1990s and its involuntary resettlement policy in 1995. The importance of stakeholder participation was institutionalised through a number of operational procedures dating from a similar period and in 2006 a resource

guide was published to further improve application of participatory processes in project design. Now, in 2008, it is very easy for us to take such environmental and social policies for granted as a normal element of the planning system. As I will mention later, the planning period for many of the major projects in the Mekong basin have a history that predates such policies by many years.

Regional development adds to the opportunities and the complexities for basin management. For example, new drivers of change have recently emerged in the Mekong region due to possibilities arising from regional trade in electricity, improved road and rail connections and the easing of barriers to trade and customs procedures that also promotes increased water borne trade.

For an international river basin organisation, such as the MRC, integration needs to occur at a range of levels. The most obvious is an integrated dialogue and planning framework that can influence planning systems in the member countries. Some of the important elements here for the MRC are developing a common understanding of development needs; of crafting a planning framework and set of procedures within which individual projects of a transboundary nature can be assessed; and establishing a common systems for data collection and analysis within which member countries have confidence. One example of such modelling capability is the MRC's Decision Support Framework that underpins basin development planning by providing feedback on the consequences of various development scenarios.

Then there is the integration required across sectors – perhaps to promote multiple benefits from individual investments or to optimise water resource and land use against a set of previously defined objectives. Inherent is the consideration that resource use for single sector purpose activities should not compromise other uses. This inevitably involves trade-offs, but not necessarily losers. Equitable distribution of benefits is a fundamental principle that supports the view that gains in one area should not take place at the expense of others, but rather be used as a stimulus to identify options for mutual sharing of benefits.

Integration across administrative boundaries is a fundamental tenet of IWRM. At the level of the Lower Mekong Basin, it is clear that the 1995 Mekong Agreement sets out a framework for cooperation and that significant efforts have gone into establishing effective institutional arrangements.

At sub-basin level, the situation has not yet developed to the same extent. Water resources professionals, and here I include myself, have for a long time advocated institutional mechanisms in the form of river basin organisations to encourage provinces, districts, sectoral agencies and civil society to interact more closely and develop an overall framework for basin management. But have they been successful? Have they influenced basin planning and management decisions?

It is hard to identify many successful examples of river basin organisations (RBO) at national level despite the tremendous efforts put into institutional design and encouraging confidence for dialogue over the past ten years. The status quo of political dynamics has seen limited change and, when external support ends, so invariably does the experiment in institutional reform.

Rather than concentrate too much on permanent institutional arrangements, maybe more of a step-by-step approach is needed initially that focuses on bringing people together around specific development issues on a case-by-case basis and thereby gradually building up experience and confidence of working together. One promising vehicle for this is the implementation of Strategic Environmental Assessments (SEAs) for specific policy, sector or programme initiatives. For example, a recent successful pilot SEA in central Viet Nam supported by the Ministry of Natural Resources and Environment and ADB resulted in significantly greater involvement of provincial and local level agencies – one of the aims of an RBO.

Current Development Context

Private sector-led development and investment is having a considerable influence on the Lower Mekong Basin and in the next five to ten years will reach levels hitherto unseen. It will involve significant changes in water flows and water quality, the related natural resources such as fisheries, and changes in land use. The influx of private sector capital to the region is unprecedented and particularly in the case of the Lao PDR already far exceeds official development assistance (ODA). Projections for 2007 estimate about US\$770 million of foreign direct investment (FDI) inflows, compared to net ODA inflow of \$364 million in the previous year. With studies for the new projects reaching an advanced stage, their implementation will involve a rapid increase in FDI in the near future.

For example, most of the current proposals for hydropower development in the Lower Mekong Basin will be led by the private sector. In the Lao PDR, approximately 60 memoranda of understanding (MOU) have been signed for tributary projects to possibly develop up to 25,000 MW until the year 2020. Proposals for up to eight mainstream run-of-river projects are also being considered at feasibility stage under MOUs or Project Development Agreements (PDAs). Two of these are located on the border with Thailand and would be joint projects. In Cambodia, a master plan is being completed that identifies 5,300 MW of promising capacity in 14 projects. Similar emphasis on hydropower development is occurring in Viet Nam following development of a National Hydropower Master Plan with 2,500 MW being planned for the next 12 years. Recent deregulation of the industry there is seeing more involvement of semi-government and private sector entities.

Land use changes are also occurring at a rapid rate, not only with expansion of urban areas that accompanies strong growth in the region, but also the award of a large number of concessions for agricultural land and open cast mining.

Partly due to their comparative advantage in low-cost labour and low demographic pressures, Cambodia and the Lao PDR have emerged as bulk suppliers of agricultural commodities and industrial tree crops (e.g. rubber, eucalyptus, acacia). The past few years have seen a proliferation of large scale land concessions, mostly to foreign investors, to develop export-oriented agriculture and forestry projects in both countries. In the Lao PDR for instance, rubber cultivation reached about 12,000 ha in 2006 and there are plans for this to increase to nearly 200,000 ha by 2010.

Other than commercial agriculture, it is clear that individual, community and government developments in fisheries, irrigation, livestock water supply, drainage, flood control will continue. The recent rise in food prices and transport costs are

likely to see a resurgence in more intensive irrigation and agricultural development, and the consequent demand that this could place on the basin's water resources.

A similar pattern of rapidly accelerating development emerges when looking at mining concessions. In the Lao PDR 181 mining concessions have been awarded to 118 companies. 74 of those are foreign companies undertaking some 101 projects. The majority of them have initiated surveys and explorations with a few already in operation. The two largest projects involve gold and copper extraction and the next major project is expected to be a \$2 billion investment for bauxite and aluminium mining in southern Laos.

The case of hydropower development

Driving financial flows for hydropower development as a renewable energy source are considerations of rapidly rising oil and gas prices and concerns over climate change and emissions reductions. In addition, the recent interest in hydropower projects on the Mekong are influenced by increases in dry season flows that will shortly be experienced as a result of reservoir development in the upper basin in Yunnan province, China. The MRC Secretariat is currently analysing the extent of these changes, but preliminary work carried out in 2004 for the World Bank suggest that dry season flows in northern Laos may increase by as much as 40%

In response to the renewed emphasis on mainstream dam proposals, but also realising that feasibility studies were still under preparation, the MRC Joint Committee at its meeting in April 2008 encouraged member countries to share preliminary information. This was seen as a precursor to formal notification and prior consultation under Article 5 of the 1995 Agreement. In June 2008 the Lao National Mekong Committee provided such information on eight potential run-of-river dams on the mainstream in the Lao PDR, of which two are located on the border with Thailand and so would be joint projects. Cambodia has been encouraged to follow this lead. Such projects are based on preliminary studies undertaken by the Mekong Secretariat – a predecessor of the Mekong River Commission – in 1994, and this reinforces the earlier point made about the longevity of the planning process, which is inevitably affected by changing political and economic circumstances.

It is often said that the Mekong River has not yet been developed. From an engineering perspective and consideration of exploiting the vast energy potential of the river, this is indeed true. There are currently relatively few dams and control structures. But that should not be interpreted to mean that the resources of the basin are not being extensively utilised. Irrigated agriculture, predominately rice production is practiced on approximately 3.2 million ha, of which 47% is in the Mekong Delta. In 2000 the total fisheries production consumed in the basin amounted to 2.6 million tonnes of which some 90% is from capture fisheries. It is valued at approximately \$2.5 billion annually. Recent years have also seen a dramatic increase in aquaculture, mostly in the Vietnamese Delta. Exports from the Delta could be as high as a million tonnes per year.

These underlying developments in agriculture and fisheries contribute significantly to the character of the Mekong, but also to the broad distribution of benefits to a large sector of the rural population. For fisheries in particular, only minor investments in fishing gear are required to tap into this renewable resource. The key for the more

macro-development projects in the future, such as hydropower and mining, will be to find ways that they can be undertaken in harmony with such traditional uses and that the development benefits and foreign exchange revenues earned by the countries are accompanied by a sharing of those benefits to the wider community. A number of innovative mechanisms are currently being introduced to meet this aim. One of the important but as yet unanswered questions facing the basin is the extent to which the important migrations of fish up and down the mainstream can be maintained and continue to underpin the annual fish harvests.

Although formulated at a time when public sector investment supported by finance from development agencies was more prevalent than private sector finance, the procedures of the 1995 Mekong Agreement are equally relevant to this new setting. To a large extent the foundation has been laid within which the new proposals outlined above can be assessed. But knowledge of these procedures and requirements and the readiness and capacity of the MRC to provide relevant scientific analysis and advice to project promoters remains relatively limited to water and environment ministries. Energy ministries and developers are relatively unaware of the role that the MRC can play in terms of strategic assessment and providing advice on best practice. Also on the requirements that the Agreement places on them in terms of consultation and discussion among member countries on the all important issues of water flows, water quality, fisheries mitigation measures and freedom of navigation. Some may say that the MRC is seen as more of a hindrance and potential obstacle. Whereas in practice adopting a more integrated approach through early engagement with the MRC offers an opportunity to improve project planning, design, operation and sustainability and to optimise returns across a broader range of sectoral interests.

One potential limitation of the current procedures for formal notification under the 1995 Agreement, is the apparent 'case by case' approach to prior consultation – for example, the trigger for entering into a process of prior consultation for each mainstream dam proposal is reached at a point prior to project implementation once the necessary level of feasibility and environmental studies have been undertaken. If this were the only extent of MRC involvement, indeed it could be considered as a limitation and a rather *ad hoc* assessment of a project's suitability within the terms of the Agreement.

However, the MRC Strategic Plan for 2006-2010 recognises the importance of a more integrated assessment and requires the MRC, through its Basin Development Plan (BDP) Programme to undertake a cumulative impact assessment of various development scenarios including mainstream dams. In addition, the MRC Hydropower Programme will undertake an SEA for mainstream dams in Lower Basin. Together with related activities from other MRC Programmes, these will provide an overall framework of understanding and trends within which to review individual proposals as and when they are initiated for prior consultation.

How the private sector planning cycle differs

With such private sector-led development, it is essential to recognise that the planning cycle for a project promoted by an independent power producer differs significantly from that of a public sector project supported, for example, by more conventional loans from a multilateral development bank or bilateral development agency. Also, how such differences affect decision-making processes, the conduct of social and

environmental evaluations, and the opportunities for stakeholder participation at a range of different levels.

Although predominantly focusing on regional power trading, a number of the current hydropower projects also cater for increasing domestic demand, including increased demand from the mining sector. Potential projects are included in national power development plans and often reflect the bilateral agreements between countries on future power purchases. Experience differs across the region regarding the extent to which such power development plans incorporated multi-criteria planning considerations as opposed to the more conventional least-cost power considerations. The advent of SEA to such macro planning studies is still at an early stage.

Planning for individual projects then follows a generic process of a memorandum of understanding (MOU) between a promoter and energy ministry to investigate the feasibility of the project, perhaps of one to two years duration,. If viable, a project development agreement (PDA) is entered into, covering a similar period of time, for more detailed studies. A PDA gives a promoter the exclusive right to negotiate the terms of a concession agreement. The detailed feasibility study and environmental impact assessment (EIA) are undertaken within this process, but as they are prepared in parallel with negotiating terms of the concession agreement for which a firm timeline exists, there is inevitably a fine balance between allowing flexibility to incorporate changes and securing corporate interests.

It is at a relatively late stage within the PDA period that disclosure of information on the project becomes more open, with sharing of the draft feasibility studies and EIAs. Concurrently there are time pressures to sign a concession agreement and power purchase agreement and commence preliminary construction works. Potentially this then sets up a tension between those responsible for reviewing project proposals according to prevailing regulatory requirements, such as national environment protection agencies or other riparian countries under the prior consultation provisions of the 1995 Agreement. Early sharing of information and wider involvement in the earlier stages of planning would therefore help to limit the scale of such tensions.

National environmental and social policies need to be fully incorporated whether for public or private sector developments. In general though, private sector projects, the availability of information typically tends to be more restricted due to the complex interaction of commercial and non-commercial interests referred to above. The geographic extent of impact areas that private sector promoters consider their responsibility may also be more restrictively interpreted – and there may be reluctance to internalise externalities of development by taking a basin-wide perspective.

A more integrated approach with the private sector

Private sector-led investments in the region have opened up tremendous opportunities for member countries and offer a scale of development and foreign exchange incomes that would not have been considered possible ten years ago. The question then is how to promote sustainability and incorporate best practice, including considerations of impacts that go beyond the immediate geographic area of a project's location, in what is a relatively fast-tracked private sector planning cycle.

A couple of key principles need to be borne in mind. Firstly, there is a need to ensure the early involvement of a wide group of actors, including the MRC. Also more open discussion of project parameters is required, as part of including sustainability assessment from an overall understanding of the basin's water resources. In doing so, it will be important for the MRC to address any remaining concerns that line agencies and project promoters may have about its role and their apprehensions of delay.

Second a realisation that the optimal solution is unlikely to be established by taking a case-by-case approach to project development. Additional financing and resources may need to be mobilised to address some of the broader environmental management and social development issues that go beyond the remit of any one project. A range of financing opportunities may exist including complementary loan projects facilitated by international finance institutions, placing a levy on the revenues of commercial developers, making specific budget allocations at government level on the royalties received and the possibility of introducing carbon financing.

For the MRC, this means we need to accelerate our activities and assessment of various development scenarios and be more pro-active in our engagement with line agencies and project promoters. The broad principles of sustainable and equitable development have been interpreted by the Council in the Strategic Plan 2006-2010 to mean that through its Programmes, the MRC will provide a framework of analysis and understanding within which each of the individual proposals can be assessed. The following activities provide an indication of how in the near term we are addressing that challenge:

- Fast tracked assessment of the hydrological and morphological changes expected under a range of development scenarios including cumulative impacts (Basin Development Plan Programme)
- Strategic Environmental Assessment of mainstream dams (Hydropower Programme)
- Development of guidance on sustainability assessment of hydropower projects based on industry developed standards (Environment Programme / Hydropower Programme)
- Applied research on migration patterns in the Mekong mainstream and linkages between migration, feeding and spawning grounds (Fisheries Programme)
- Modelling of the cumulative impact of a cascade of dams on the survival of fish populations (Fisheries Programme)
- Expert Group Meeting of world-renowned ecologists and engineers to determine the most appropriate mitigation measures to overcome the barrier effect of dams to fish migration (Fisheries / Hydropower Programme).
- Guidance on transboundary environmental impact assessment (Environment Programme)
- Facilitation of dialogue with line agencies and private sector developers (Hydropower Programme)
- Standard design specifications for navigation locks (Navigation Programme)

- Further development of procedures for notification, prior consultation and agreement under the 1995 Agreement and dissemination to concerned parties (International Cooperation and Communication Section)
- Examining additional financing options for basin-wide mitigation measures (Hydropower Programme).

Making the results of these activities available to line agencies and project promoters as early as possible in order to influence the planning process will help the process of decision making based on informed choices. As an initial step, the MRC is convening a regional multi-stakeholder consultation on its Hydropower Programme on 25-26 September in Vientiane at which an initial briefing on these activities will be given.

Taking a medium- to long-term perspective, the BDP planning framework developed jointly by Member States will provide the basic IWRM strategy to guide public and private sector promoters of transboundary projects. Similarly, it will be the basis for member countries to undertake their assessments of such initiatives through the MRC's formal notification and consultation procedures.

Current hydropower development plans in the Mekong Basin provide an opportunity for the MRC and line agencies to demonstrate how a planning framework based on the principles of IWRM can be used to influence development of individual projects driven by the private sector. The ultimate test is to demonstrate this approach can add value and improve outcomes, taking into consideration the joint interests of member states and of the people of the Mekong Basin.