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First version prepared by: Dr. Tue Kell Nielsen

This version prepared by: Dr. Tue Kell Nielsen
Dr. Vu Van Tuan

This version reviewed by: Chief of ICCS, FAS and CEO

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Address of MRC:
Mekong River Commission
PO Box 6101, 184 Fa Ngoum Road, Unit 18
Ban Sithana Neua, Sikhottabong
Vientiane 01000, Lao PDR
Telephone (+856-21) 263 263, telefax: (+856-21) 263 264
e-mail: mracs@mrcmekong.org, website: www.mrcmekong.org

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Acronyms and abbreviations

BDP	:	Basin Development Plan (of MRC)
CNMC	:	Cambodia National Mekong Committee
DSF	:	Decision Support Framework (of MRC)
EIA	:	Environmental Impact Assessment
EP	:	Environmental Programme (of MRC)
GWP	:	Global Water Partnership
IWRM	:	Integrated Water Resources Management
JPO	:	Junior Professional Officer
LMB	:	Lower Mekong Basin (the Mekong Basin parts of Cambodia, Lao PDR, Thailand and Viet Nam)
LNMC	:	Laos National Mekong Committee
MDBC	:	Murray-Darling Basin Commission
MRC	:	Mekong River Commission
MRCS	:	Mekong River Commission Secretariat
NA, n/a	:	not applicable
NMC	:	National Mekong Committee
PIN	:	Project Information Note
PIP	:	Project Implementation Plan
RAM	:	Resource Allocation Model (of BDP)
SEA	:	Strategic Environmental Assessment
SIA	:	Social Impact Assessment
RBC/RBO	:	River Basin Committee / River Basin Organization
TNMC	:	Thai National Mekong Committee
VNMC	:	Viet Nam National Mekong Committee
WUP	:	Water Utilization Programme (of MRC)

The MRC BDP Team

Mr. Chanthavong Saignasith, Director, Planning Division
Mr. Boriboun Sanasisane, Director, Planning Division
Mr. Cong Nguyen Chi, Team Leader
Mr. Vu Van Tuan, Team Leader
Mr. Stephen Carson, Senior River Basin Planner
Mr. Manfred Staab, Senior River Basin Planner
Mr. Iwami Yoichi, Senior Advisor on River Management
Ms. Robyn Johnston, Natural Resources Planner
Mr. Minoru Kamoto, River Management Expert
Ms. Solieng Mak, Environmental/Natural Resources Planner
Ms. Muanpong Juntopas, Socio-economist/Sociologist
Mr. Trinh Hoang Ngan, River Basin Planner
Mr. Nouanedeng Rajvong, Water Resources Development Planner
Ms. Susan Novak, Senior Social Development Specialist
Mr. Claus Aagaard Pedersen, Associate Social Economist
Ms. Petrina Rowcroft, Development Economist
Ms. Arounna Vongsakhamphouy, Junior Riparian Professional
Mr. Bountieng Sanazonh, Junior Riparian Professional
Mr. Sokhavuthea Phet, Junior Riparian Professional
Mr. Pich Sambo, Hydrogeologist, Junior Riparian Professional
Ms. Worawan Sukrarook, Junior Riparian Professional
Mr. Oulavanh Keovilgnavong, Junior Development Economist
Mr. Suparerak Janprasart, Junior Sociologist / Social Planner
Ms. Vongchanh Indavong, Administrative Assistant
Mr. Sytha San, Administrative Assistant
Ms. Chitlatda Keomuongchanh, BDP Secretary
Ms. Nalinthone Vissapra, BDP Secretary
Ms. Chittina Misaiphone, PLD Secretary
Ms. Kanha Douek, PLD Secretary
Ms. Phally Sok, BDP Secretary

Consultants

Mr. Richard Beecham, Numerical Modelling Specialist, MDBC
Mr. Peter Chaudhry, Sociologist
Mr. Hugh Cross, Numerical Modelling Specialist, MDBC
Ms. Colette Curran, EIA Specialist
Ms. Kit Dyer, Training Specialist, MDBC
Mr. Lieven Geerinck, Navigation and Inland Waterways Specialist
Mr. Brian Haisman, Training Specialist, MDBC
Mr. Jacob Hook, GIS Specialist
Ms. Fiona Lynn, Training Specialist, MDBC
Mr. Harry Nesbitt, Agricultural Specialist
Mr. Tue Kell Nielsen, Water Resources and Environmental Planner
Mr. Malcolm Wallace, Water Resources Management Specialist
Mr. Keith Avery Ward, Economist
Mr. Jan Hassing, Consultant, DANIDA
Mr. Jorn Rasmussen, Consultant, DANIDA
Ms. Penroong Bamrungrach, GIS specialist

Heads of National BDP Units and National Coordinators

HE Pich Dun, Head of CNMC/BDP Unit

Mr. Watt Botkosol, CNMC/BDP National Coordinator, Cambodia

Mr. Phetsamone Southalack, Acting Head of LNMC/BDP Unit and National Coordinator, Lao PDR

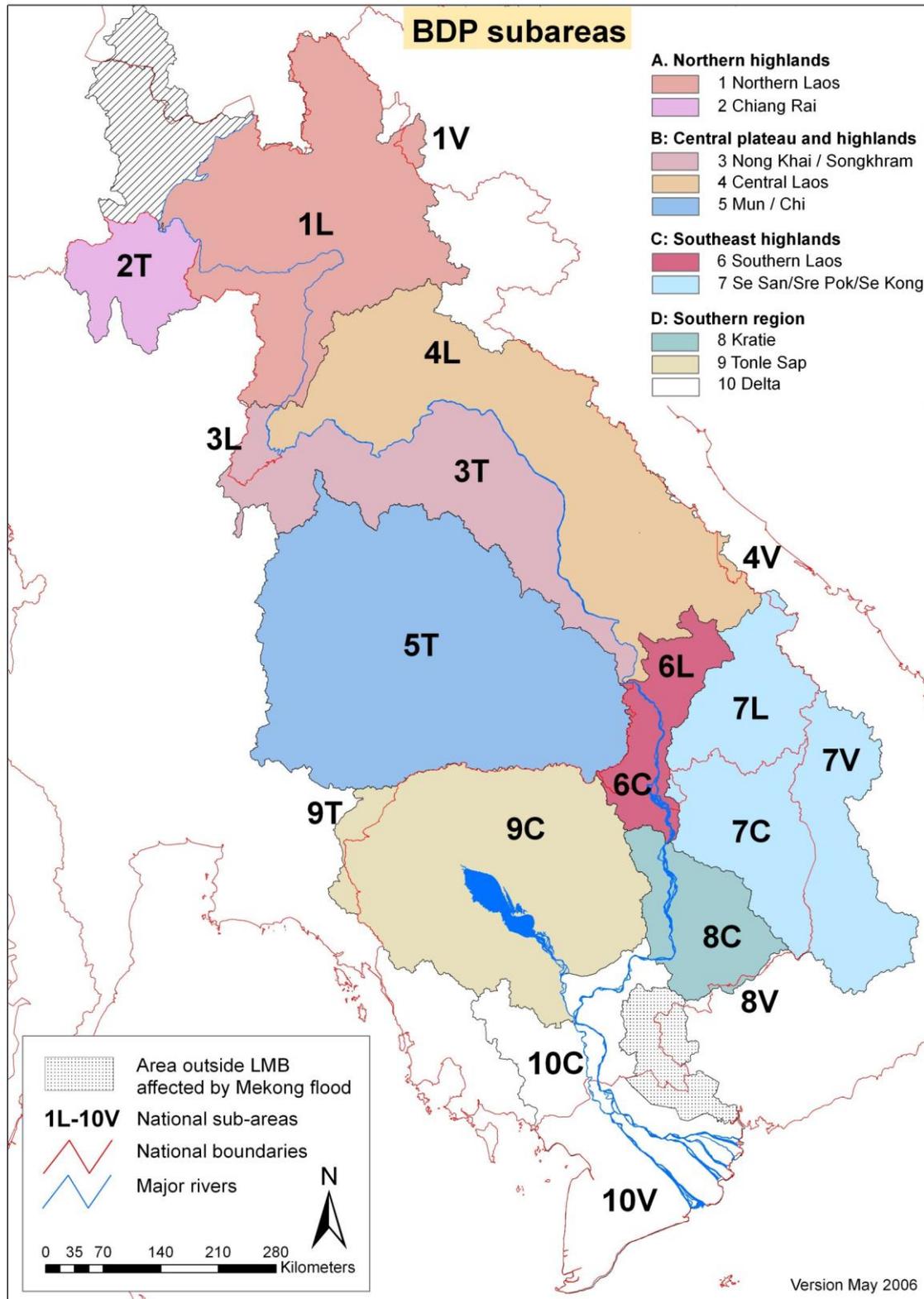
Ms. Pakawan Chufamanee, Head of TNMC/BDP Unit

Ms. Nuanlaor Wongpinitwarodom, TNMC/BDP National Coordinator, Thailand

Mr. Nguyen Nhan Quang, Head of VNMC/BDP Unit

Mr. Tran Duc Cuong, VNMC/BDP National Coordinator, Viet Nam

Map of BDP sub-areas



Summary

MRC's Basin Development Plan is instituted in the 1995 Mekong Agreement. The first meeting of MRC's BDP Sub-Committee took place in June 1995. Following preparatory work, Phase 1 of the BDP Formulation started on 1 October 2001 and completed by end of July 2006.

The work was supported by grants and contributions from Australia, Denmark, Japan, Sweden and Switzerland.

Among the milestones may be mentioned

- Feb 02 : Regional Launch Workshop in Bangkok
- May 02 : Delineation of sub-areas
- Jul 02 : Inception report approved by JC
- Nov 02 : Planning cycle guideline, 1st draft
- Jan 03: : 1st MDBC training module
- Jun 03 : Framework for stakeholder participation
- Apr 04 : National sector reviews completed
- Nov 04 : Transboundary meetings conducted
- Jan 05 : Sub-area studies completed
- Mar 05 : BDP scenarios tested
- Apr 05 : The 1st version of the Projects Database
- May 05 : Project Screening Toolkit prepared
- Aug 05 : The BDP's process of prioritization of joint projects and the 1st batch of screened projects to be placed on the BDP shortlist were endorsed by the JC
- Oct 05 : The Integrated River Basin Planning Training Package tested
- Dec 05 : '*Strategic directions for IWRM in the LMB*', '*The initial screening process on shortlist*' and '*The BDP Phase 2 Programme Document*' were approved by the MRC Council
- Jan 06 : The 2nd version of Project Database
- May 06 : BDP Planning Atlas completed
- May 06 : BDP Core Library completed
- Jun 06 : BDP 1 Completion Workshops
- Jul 06 : BDP 1 completed

Box 1: BDP at a glance

BDP Phase 1 began on 1 October 2001 and was completed by 31 July 2006.

The BDP formulation proceeded as a set of parallel, interwoven processes:

- A planning process carried out in five stages;
- development of tools and knowledge-base; and
- related capacity-building.

The stages in the planning process were:

- 1 comprehensive studies and analyses at sub-area and regional level;
- 2 scenario analyses of development options and constraints;
- 3 formulation of '*Strategic directions for IWRM in the Lower Mekong Basin*';
- 4 set-up of a database of projects and programmes; and
- 5 preparation of a shortlist priority projects and programmes.

The BDP is based on the principles of Integrated Water Resources Management (IWRM). The planning addresses water resources development and water-related development within irrigated agriculture; fisheries; hydropower; navigation; flood management; water supply; watershed management; and tourism.

The BDP implementation has given a particular emphasis to national participation and ownership. The NMCs have a strong implementing role, and more than 200 national agencies are participating in the planning jointly with the NMCs at central and provincial levels. Public participation forums at sub-area level have been conducted with representatives from central government, local government, mass organizations, research institutions, local user groups, NGOs and international organizations.

Due to its particularly broad scope, the BDP formulation took place as an iterative and highly interactive process within a comprehensive network of participating agencies, and in dialogue with internal and external stakeholders. The work was done by in-house capacity within MRCS and the NMCs, with occasional external specialist support.

At the end of Phase 1, the following products are available:

- Agreed '*Strategic directions for IWRM in the Lower Mekong Basin*'
- A comprehensive MRC Project Database of water-related development projects and programmes
- An agreed shortlist of priority development initiatives, to be maintained by the JC as a continuous activity
- Tools and routines for project identification, initial documentation, and screening of impacts and significance, classification and ranking
- An underlying comprehensive documentation, including a new Planning Atlas, readily available to users.
- Well qualified staff and relevant institutional capacities at MRCS and the NMCs

A fruitful interaction is emerging between the BDP and the national planning processes.

An attractive scope is seen for expanded links with the new or upcoming river basin committees/river basin organizations (RBCs/RBOs), such as they have already been established in Thailand and Vietnam. This would provide a powerful framework for IWRM at the basinwide level, the national level, and the sub-basin level. In particular, it would link (via the NMCs) between the predominantly regional perspective applied by MRC and the predominantly more local perspective applied by the RBCs/RBOs, who in turn have the

mandate and the capacity to link with provincial administrations, water user groups, service providers, and individual water users.

Some lessons learnt during BDP Phase 1 are summarised below.

- The national IWRM frameworks are - with differences from one country to another - in varying states of transition, development and consolidation. Continuous monitoring and adaptation (via the NMCs) is required in order to maintain and sharpen the impact and the institutional interfaces of the BDP
- The decision process during the 5 stages of BDP implementation turned out to be lengthier than originally anticipated. During BDP Phase 1, the project has put emphasis on a comprehensive participatory process. This experience was shared with other MRC programmes. In consequence, the preparation process became lengthy, with most documents being circulated in many draft versions, and some decisions being implicit rather than explicit. The positive side is that the member countries had a comprehensive influence and were, for that reason, in a good position to support the eventual outcome
- Scenario-based planning is not applied on a routine basis within national development planning in the Lower Mekong Basin. In consequence, the scenario formulations - at the sub-area as well as basinwide planning level - were new to the participants and took a much longer time than expected. For example, quite some time was spent with defining what a scenario is, with different definitions applied by different MRC programmes. The related time constraints were the reason why the ideal functional interaction between scenario formulation at sub-area level and at the basin level did not fully emerge.
- Practical modalities have been developed for project screening, including a reliable toolkit for initial impact screening at pre-feasibility level, covering social and environmental effects, including cumulative effects. Basically, the screening will not provide an assessment of various impacts, but will determine whether an assessment is required, and, if so, whether it has been made. If an impact assessment is required but has not yet been made, it will be included in the project cycle for the planned intervention. Strategic environmental assessment is still in a stage of early consolidation, both at strategy level and at the shortlist level, and may be further consolidated in collaboration with the MRC Environment Programme.
- A scope is seen for enhancing and streamlining the information flows via and among the NMCs about the national and the regional planning processes. Occasionally, visible changes occur within a short time. While a policy change at one time and one place should not necessarily immediately penetrate the whole BDP process, a fruitful gradual convergence can best be maintained when timely information is relayed about such changes. This consideration will be even more relevant once the upcoming river basin committees/river basin organizations come into full operation. It also relates to the promotion of short-listed priority projects, which must comply with (and preferably positively support) not only the basinwide '*Strategic Directions*', but also the national policies and preferences of the affected member countries.
- There is a scope for expansion and consolidation of the external participation in the planning process, including institutional partners (including donors, regional organisations and NGOs), the academic community, and the general public.

Lessons learnt about public participation are summarised in a separate section below.

- The actual implementation of projects identified under the BDP will add momentum, visibility and justification to the planning process and generate experience with its implementation aspects. Although project implementation will take place outside of the BDP, it is still a part of the BDP planning cycle, and experience from all stages of the planning cycle would support a consolidated BDP.
- During BDP Phase 1, important links existed between BDP and other MRC programmes (such as for example provision of basic information about water availability in the sub-areas). These links were realised from the onset and were duly observed during the implementation of both programmes. Still, a scope remains for extended inter-programme coordination, for example linked to milestone submissions.
- The implementation of quality management routines were impeded by a lack of capacity and working tradition for this kind of routines both at MRCS and at the NMCs. A consolidation can be achieved by a series of short introductory seminars to explain and discuss quality management modalities and their implementation.
- The applied sector structure may be re-considered in the context of water-related sectors (and themes) that was used throughout BDP Phase 1. There would be clear practical advantages of a gradual convergence between the '*BDP sectors*' and the MRC programmes; and there are some visible gaps in the present sector and theme structure, such as drought management; morphological management; and operational flow management. The sector structure of the BDP should link with the MRC Strategic Plan 2006-2010 in order to assure a comprehensive, holistic and IWRM-based planning process; and also because the benefits and impacts of the BDP depend on harmony and good links between the MRC programmes.

By the end of Phase 2, it is intended that the BDP process has become consolidated as a core activity of MRC, with clearly proven benefits, and with resource requirements that can be realistically sustained on a long-term basis and by in-house capacity.

Acknowledgement

BDP Phase 1 was implemented in a particularly active collaboration with the NMCs, many national line agencies, and the MRC programmes. The contributions, guidance and support received in connection with the work have been indispensable and are gratefully appreciated.

Financial support and contributions in kind to BDP Phase 1 has kindly been granted by Australia, Denmark, Japan, Sweden, and Switzerland.

1 Introduction

The MRC Basin Development Plan (BDP) was instituted by the April 1995 Mekong Agreement. Following a series of preparatory studies, the BDP project document was approved by the MRC Council in October 2000. The BDP formulation (Phase 1) started in October 2001 and is scheduled for completion in July 2006.

The vision of the Basin Development Plan (BDP) is to contribute to acceleration of inter-dependent sub-regional growth by establishing a process and framework conducive to investment and sustainable development (*BDP Inception Report*). To contribute to this vision, the BDP process being undertaken by the Mekong River Commission (MRC) should establish a planning framework for development programmes, capable of balancing efficient use of resources with protection of the environment and the promotion of social justice and equity.

There are two main outputs sought from the first phase of the BDP programme. First, the establishment of a more participatory form of basin planning than has previously existed in the Lower Mekong Basin for use in subsequent planning rounds. Second, an agreed short-list of high priority development projects with basin-wide or trans-boundary significance which have benefits that transcend national borders.

Financial support to BDP Phase 1 has kindly been granted by Australia, Denmark, Japan, Sweden, and Switzerland, in addition to the resources allocated by each member country.

This document is intended to provide an overview of achievements and lessons learnt during BDP Phase 1. It is structured in accordance with the MRC Programming Manual.

The document is based on

- The BDP Project Document (Nov 2000) and Inception Report (Jul 2002), which describe the BDP formulation as it was initially envisaged;
- The MRC Strategic Plan 2001-2005 and 2006 - 2010 (draft), which establish the context of the BDP
- Records of the BDP Coordination Meetings with detailed information about progress and related observations
- The 6-monthly progress reports, which incorporates progress reports from each NMC. These provide a continuous record of the progress, together with related observations
- The BDP Core Library (vol. 1-15), which provide details about the various outputs and products, together with comments on significance and lessons learnt

A draft version of the document was reviewed by the NMCs in June/July 2006.

2 Programme description

2.1 Context and background

2.1.1 Origin and mandate

Cooperation within cross-sector, basinwide and transboundary development is described in Article 1 of the Mekong Agreement: '*[The parties agree] to cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin, including, but not limited to irrigation, hydro-power, navigation, flood control, fisheries, timber floating, recreation and tourism, in a manner to optimize the multiple-use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities*'.

The BDP itself is instituted by Article 2 of the same agreement.

Box 2: Articles 1 and 2 of the 1995 Mekong Agreement

Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (5 April 1995):

The parties agree:

Article 1. Areas of cooperation

To cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin, including, but not limited to irrigation, hydropower, navigation, flood control, fisheries, timber floating, recreation and tourism, in a manner to optimize the multiple-use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities.

Article 2. Projects, programs and planning

To promote, support, cooperate and coordinate in the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs through the formulation of a basin development plan, that would be used to identify, categorize and prioritize the projects and programs to seek assistance for and to implement at the basin level.

2.1.2 Strategic planning in the Lower Mekong Basin

Strategic planning of water resources in the Lower Mekong Basin is characterized by ¹

- a high level of complexity in water resource management
- great variability in the hydrologic cycle
- the need to satisfy many different stakeholders
- issues often being highly political
- the context of water resources management undergoing rapid change, and
- a need of sustainable use of land and water

¹ MRC (Mar 2001), p. 6

Major development opportunities and important assets include:

- A vast immediate growth potential, notably within agriculture, hydropower, tourism, and navigation;
- highly valuable fisheries resources;
- a large scope for integrated, basinwide water resources development, including intra-basin and inter-basin transfers, improved water efficiencies, and improved economic efficiencies of water uses and water-related production systems;
- unique river, lake, wetlands, floodplain, and headwater habitats and ecosystems, many of which remain in a healthy state; and
- an opportunity for prevention (rather than mitigation) of adverse social and environmental impacts of urbanization and industrialization.

Tools and practices for basinwide management of water and water-related resources are in place or are being developed under several MRC programmes.

Major challenges comprise (in random order):

- A need of poverty alleviation, and of development and consolidation of rural livelihoods, most of which are water-dependent;
- an escalating demand of electricity;
- an escalating demand of water for irrigation;
- the need of conservation of wetlands and other important habitats, fisheries resources, and important icon species;
- preservation of the Delta as a freshwater regime;
- effects of changed lifestyles: Increased per capita consumption of energy, food and water, and increased per capita waste production;
- population pressure (notably including migration from the countryside to urban growth centres); imbalance between loss of employment in agriculture and employment generation in other sectors;
- deforestation due to timber logging and expansion of agricultural lands; and consequential changes of maximum flows, minimum flows, and silt transport, increasing the risk of both floods and droughts;
- agrochemical pollution, including contamination of edible fish;
- effects of regulation, such as (i) adverse land use consequences, including habitat degradation and loss of fish spawning grounds; (ii) blocking of fish migration routes; (iii) loss of flood plain storage capacity; and (iv) river bank erosion;
- an imperfect knowledge about important cause-effect relationships and related management options, such as for example groundwater resources, environmental flows, flood risk, droughts, morphological processes, etc.; and
- a set of ordinary upstream/downstream divergences of interests related to water uses.

The following aspects are of a particular relevance to water-related strategic planning in the Lower Mekong Basin:

New efficiency criteria

The present development towards lower trade barriers, as promoted by bodies such as ASEAN, AFTA and WTO, will provide new opportunities as well as new challenges.

In relation to water-related development in general, and water utilization in particular, an important challenge is the need of high efficiencies within the production systems. *'Business as usual'* is no option in this connection. The water efficiency (produced output per m³ of water) must be competitive by international standards, as well as the economic efficiency of water utilization (the value generated per m³ of water).

Apart from appropriate, integrated water resources management, this may in many cases require optimization of traditional technology, or gradual introduction of new technology, with due attention paid to unexpected side effects.

The long-term economic transition will inevitably, in the course of time, reduce the significance of primary production systems in favour of agro-industries and various services, including tourism. Therefore it is important to pay due attention to irreversible impacts of development efforts with a shorter time horizon. Examples of issues with a longer time horizon are groundwater preservation, wetland habitat preservation, and biodiversity preservation.

Balance between sectors and between stakeholder interests

The prospect for successful implementation of policies and development schemes are supported when the balance is observed between different stakeholders competing for water (or land or other finite resources). The interests can represent upstream/downstream uses, short-term/long-term value generated, urban/rural priorities, and a variety of in-stream and off-stream water uses.

Sometimes, economic development may seem inconsistent with an aim of environmental preservation, but often, a closer examination can reveal synergies that can support both aims.

Win-win solutions are not always available, but when they exist, they provide a clearly attractive course of action as compared with significant trade-offs where one goal is pursued at the cost of other, incompatible goals. Successful integrated development policies and schemes from within the Lower Mekong Basin can set an important example for similar applications elsewhere.

Among the sectors considered in the present report, there is some competition for the water, but there are also many synergies.

Poverty alleviation and rural livelihoods

Most sector development initiatives are in some way related to poverty alleviation. Direct and short-term effects are in particular found within irrigated agriculture, fisheries, and tourism. Apart from poverty alleviation as such, expansion and consolidation of rural livelihoods serve important social and economic purposes in their own right.

Related development efforts have a lot to do with water resources management, providing access to water, as well as protection against droughts and floods, but important synergies exist with parallel development of new technology (and extension services), development of transport infrastructure and financial infrastructure, access to fairly open markets, and supportive management of land tenure. This is a clear example where integrated

management has a value that exceeds the sum of otherwise prudent sector-wise management.

Public participation

It has been said² that '*integration and public participation are the keys to real IWRM. Without them, it is not IWRM*'.

Today, there is a clear tendency towards direct public participation in the decision-making process, as well as in the daily water management. Water user groups exist in all four MRC member countries, and stakeholder involvement in various decisions is gradually being introduced in some of the member countries, but is still a new modality, in need of consolidation, including generation of some sound traditions as a supplement to the formalities.

It is expected that public participation will be facilitated by the river basin committees / river basin organizations that are planned or being established in many places within the Lower Mekong Basin. Also, the ongoing decentralization/deconcentration efforts will assist in the involvement of the general public in decisions that affect their welfare and livelihoods.

Land use planning and conflict resolution

A variety of issues exist in connection with the interfaces between water resources management and land use management, as well as within related conflict resolution.

This will also improve the prospects for sustainable forestry, which is a somewhat overlooked development option with a particularly strong potential for generation of revenue as well as livelihoods.

Also, appropriate land management and clear land tenure rights can support the national economic development by making it possible for land owners to take loans (a somewhat controversial measure in the short term, but attractive in the long term), and as a basis for land taxation.

In some places, community-based land use management has been successfully introduced, with a particular ability of conflict prevention and conflict resolution.

2.1.3 Water-related development in the Lower Mekong Basin

Economics

The following trends can be expected:

- Increasing agricultural commercialisation and specialisation
- Increasing non resource-based industrial developments
- Increasing urbanisation and consumer spending, and
- Increasing subregional integration.

These trends are broadly-defined and aggregated phenomena, subsuming within them (to varying degrees across the four countries) many more minor and specific tendencies (e.g.

² by Prof. A. Apichart (Oct 2004): Network of Asian River Basin Organizations (NARBO) - working to make IWRM a reality. ADB's Water Champions website, <http://www.adb.org/>

towards rural industrialisation in Viet Nam and towards the development of flatland areas in Lao PDR). Some implications of each of these major trends are briefly discussed below.

The growth and economic sustainability of each of the economic activities considered in the study is largely dependent upon adequate supplies of good quality water. These activities are currently the main drivers of economic growth in the region although it is likely that agricultural production will remain a mainstay of the LMB economy for years to come. Even as crop and irrigation efficiencies improve, and agro-processing becomes a more important part of the value chain (i.e. becomes more widespread), the sector will continue to demand significant volumes of water.

Box 3: Water resources in the Lower Mekong Basin

The water resources of the Lower Mekong Basin are described in some detail in the MRC State of the Basin Report (MRC 2003). In strategic terms, important characteristics of Mekong water resources include:

Abundance: Annual runoff averages around 475 km³ / year. Per capita resources currently stand at over 8500 m³/person/year – compared with 2200 for the Nile; 1400 for the Rhine; 2265 for the Yangtze and 1700-4000 for the Ganges (WRI, 2003).

Low level of exploitation for extractive uses: Average annual withdrawals are estimated at around 60,000 million m³, or 12% of total annual flows; the total volume of regulated storage in the basin (including the Upper Basin) for hydropower and irrigation is less than 20,000 million m³ (less than 6% of annual flows).

High dependence on in-stream uses (particularly by the poor): The Mekong fishery is the largest inland fishery in the world, estimated to be worth at least \$US 2,000 million annually, and providing the major protein source for many people in the basin. Inland navigation is an important mode of transport for many areas where road access is limited. There is an urgent need to balance in-stream uses against extractive demands as agricultural production in the LMB is expanding rapidly.

Extreme seasonality: In most parts of the Basin, flows in the driest three months constitute less than 10% of total annual flows; while flows in the wettest three months make up over 50% of total annual flows (MRC DSF).

Importance of the flood pulse for the ecology of the floodplain and the Mekong fishery: During the wet season, between 1 and 4 million hectares of floodplain are submerged, including the Tonle Sap Great Lake.

Dry season water shortages: Dry season shortages occur as a result of the rainfall seasonality, concentration of extractions in the driest period and drought events during the onset of the wet season.

Water quality: Water quality in the mainstream is generally good, and is rarely a constraint to water use. The exception is saline intrusion, acid sulphate drainage and pollution in intensively used areas of the Mekong Delta

Groundwater: Groundwater resources are very widely used as a source for domestic and industrial supply. Use for irrigation is limited, but expanding. Groundwater systems in the flood plain are closely coupled to the river.

Upper Basin: Flows from China and Myanmar constitute around 18% of total Mekong flows. The proportion is higher in the dry season, when snow melt contributes a significant component of flow.

From MRC-BDP (Dec 05): *'Strategic directions for IWRM in the LMB'*

Water is an important – indeed crucial – contributor to macro-level GDP but is also fundamental to more local poverty reduction and livelihood support initiatives, especially among rural communities. For many of these communities, the Mekong and its tributaries not only provide the water required to satisfy basic human needs, but also support the aquatic resources upon which many of them depend for consumption and sale. Inland water

transport is another basin asset allowing Mekong countries to move heavy bulk goods around the region relatively cheaply.

Many other activities (e.g. industry) rely on affordable and reliable sources of energy, which the hydropower potential of the LMB may be able to support.

Agriculture

The Mekong River is capable of servicing all the agricultural needs of the Lower Mekong Basin if the water flow were even year round. However, the river flow is highly seasonal, flooding large tracts of land in all riparian countries during the wet season. In the dry season, severe effects of water shortages occur in the Delta and elsewhere.

Agriculture in the LMB is rice-based and likely to remain so for the next 20 years or more. Past increases in productivity and existing crop potentials indicate that production will improve over the next 20 years sufficiently to outstrip population growth. Improved crop production will come from an enlarged cultivated area, increased farming intensity, more area under irrigation and small increases in grain yield. The area devoted to higher value crops, such as vegetables and fruit, will expand at the expense of rice, but will remain a small proportion of the total and irrigated agricultural area. Forecasts predict that the number and surface area under fishponds will expand significantly.

Forecasts also anticipate that wet season rice and upland crop production will be the cause of much of the expected increase in consumption of water from Mekong. In order to cope with this increase new irrigation schemes in Cambodia and Lao PDR should include on-site storage systems. It will not be possible for consumption in the Mekong Delta to increase significantly above current levels despite pressure for farmers to raise cropping intensity, change to dry season crops and to install fishponds. Government control may be required to mitigate water shortages.

Without the placement of adequate controls of discharge of agricultural, domestic and industrial waste into the river introduced, water quality in the Mekong River is destined to deteriorate.

Poverty and livelihoods

Cash crop production and 'value added' agricultural processing: The economic returns of rice, the main agricultural product of the region, are limited. Both governments and farmers in the LMB recognize the potential for expanding into the production of cash crops, such as vegetables, coffee, rubber, fruits and other perennials. Also important in raising the value added in primary production, and therefore the income potential to households, is on-farm or localised processing for farm products and natural products, for national markets, and even for regional and international trade. Examples include the local processing and marketing of organic coffee and fruits, production of handicrafts from local materials, and furniture and wood processing using traditional methods and designs. Promoting both cash crops and value added processing would offer significant poverty reduction opportunities to poor communities, if supported on a long term basis with extension and credit facilities.

Subsistence agriculture: An expansion of irrigation support to small-scale agriculturalists, particularly in Cambodia and Laos, would significantly improve food security for the poor. Irrigation infrastructure, however, is not sufficient in itself, and a number of complimentary conditions would be required in order to make a significant impact upon poverty reduction. These include: support to small scale producers in securing or formalising land tenure rights; improvements in irrigation management, with greater development of water user associations and groups, and a process of empowerment of these groups in taking responsibility for water

management; effective agricultural extension support to raise productivity, and flexible credit mechanisms to extend investment opportunities to poor producers too, whilst limiting their exposure to risk.

Upland watershed management: Upland areas of the basin are critical to the ecological and environmental health of the region as a whole. National governments have taken steps to conserve upland watersheds by restricting what are seen as destructive traditional swidden agricultural practices by ethnic groups. These have had poverty inducing consequences for upland minority groups. Large scale deforestation and damage is also caused by logging, both legal and illegal, and there is nothing inherently unsustainable about traditional practices that have been in operation for centuries. An effective poverty reduction scenario in upland areas would require a more sensitive engagement with upland communities in seeking to ensure more effective watershed management practices, and a recognition of the role state land closure policies are having in upland areas on poverty for minority peoples. Traditional upland management practices do offer considerable potential for sustainable land, forest and watershed management practices, particularly if other harmful practices, such as large scale logging, can be restricted, and support can be provided in offering traditional cultivators supplementary opportunities for livelihood enhancement.

Capture and culture fisheries: Fisheries are immensely important to livelihoods in the region, and any measures that significantly curtail wet season water availability are likely to impact upon millions of the rural poor in the lower basin. Many fishing communities rely upon traditional or informal rights to common resources, but these rights are increasingly under threat from enclosure by private interests, and the sale of fishing concessions. Extending rights of access for rural communities to fishing areas would make a significant impact upon poverty, as would the promotion of community based aquaculture initiatives.

Hydropower: A 'pro-poor' hydropower scenario would involve developing only those schemes which would not significantly impact large numbers of people. Also important would be the development of effective and genuine processes of participation in decision making around hydropower development, with those who will be primarily affected playing a full role in discussion and decision making processes. Upland communities affected by reservoir inundation are often outside of mainstream discourses on state development, and become the 'objects' of development, rather than partners in development processes. Instead of providing cash compensation measures, another form of 'transfer payment' might be the development of micro-hydro schemes for upland communities who stand to lose land or livelihood opportunities. Micro hydro and smaller schemes offer the best safeguard against large scale resettlement and dislocation of vulnerable communities.

River navigation and transport: Improving river navigability opens access to markets for rural producers, and enables remote rural communities to access the services of the state. Improved navigation, though, also requires improved river transportation. There is a high correlation in the region between poor communities and remoteness from communications networks, and so improved navigation and transport offers the potential for poverty reduction in the region, if it is targeted at improved access for the poor. At the same time, current practices of rapid clearing in the upper basin will require continuous and high-standard EIAs, and without the participation of affected riverside communities, whose livelihoods are being destroyed by changes in river ecosystems resulting from the blasting of rapids.

Water borne health: Provision of safe drinking water supply and sanitation, to rural areas of the LMB particularly, would have an important impact upon health, quality of life, and thus poverty, for many of the regions poorest people.

Tourism: Promoting tourism, and particularly small scale and ‘eco-tourism’, offers a significant poverty reduction potential. National governments throughout the region recognize the economic potential that tourism development offers and, where benefits can accrue to rural communities particularly, tourism development could play an increasingly important role in decision making around water, through for example the protection of scenic sites of interest along the river, and the preservation of the minority cultures of people living in the upper basin.

Flood protection: Seasonal flooding has always been a feature of the lower basin, and livelihood strategies have evolved over centuries to adapt, and take advantage of this. Wet season flooding is particularly important for capture fisheries in Cambodia, and southern Laos. Flood protection measures may protect poorer farmers from the worst excesses of flooding, through preserving irrigation infrastructure, but may also harm the livelihoods of those who rely upon the flood. Any significant changes in the flood regime resulting from developments are likely to have a detrimental impact on the current livelihood practices of the poor; this target group therefore warrants special attention with regard to mitigating measures and inclusion in transboundary trade-off assessments.

Social protection policies for vulnerable groups: Increased prosperity, migration, mobility and off farm work opportunities in the region offer substantial opportunities for all, but also a heightened level of risk for those of the region’s poor who are least equipped to take advantage. These include rural migrants with low levels of education and training, and young rural women and children particularly who may be prone to being trafficked or exploited. Protection against trafficking and associated ills for vulnerable peoples resulting from improved communications and development in the region would be an important component in any regional ‘pro-poor’ development scenario.

2.2 Intervention measures

The BDP was conceived as a platform for '*sustainable development of the water and related resources of the LMB for the mutual benefit of the riparian countries and people living in the entire Basin*'. In a way, the BDP is an intervention to generate interventions.

2.2.1 The planning process and the BDP

The BDP formulation proceeded as a set of parallel, interwoven processes (Figure 2.1):

- (1) The development planning process, carried out in 5 stages;
- (2) development of tools and knowledge base; and
- (3) national and regional capacity-building.

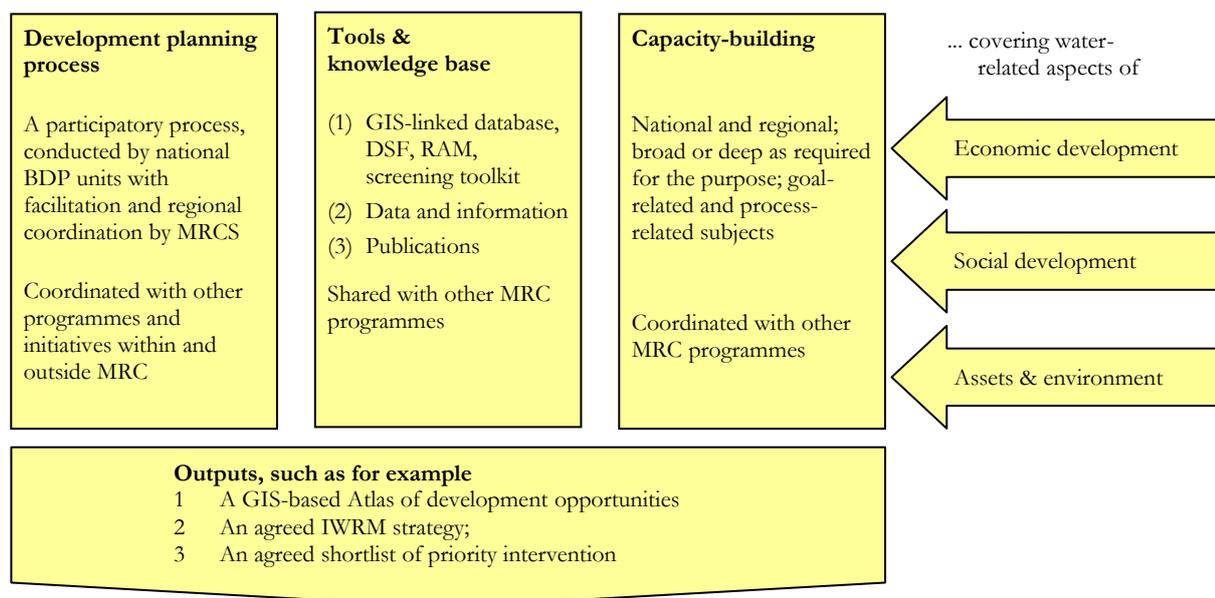
It is believed that these tracks form an entity, and that each track is required for progress along the other ones.

The stages in the planning process were:

- 1 comprehensive studies and analyses at sub-area and regional level;
- 2 scenario analyses of development options and constraints;
- 3 formulation of 'Strategic directions for IWRM in the Lower Mekong Basin';
- 4 set-up of a database of projects and programmes; and
- 5 preparation of a shortlist priority projects and programmes.

The BDP is based on the principles of Integrated Water Resources Management. (IWRM). The planning addresses water resources development and water-related development within irrigated agriculture; fisheries; hydropower; navigation; flood management; water supply; watershed management; and tourism.

Figure 2.1: The 3 processes of BDP formulation



The BDP formulation process has been characterized by

- Orientation towards the potential of cross-sector, basinwide and transboundary development opportunities
- Due observation of cross-sector, basinwide and transboundary synergies, linkages and dependencies
- Smooth and well functioning working relationships, including active participation and knowledge-sharing, between all actors and stakeholders involved in development of the LMB, at the regional, national and sub-basin levels
- Via the NMCs, collaboration with and support in many ways to the existing/upcoming RBCs/RBOs
- Continued dialogue with the upper riparian countries, aiming at an active collaboration wherever appropriate

The BDP implementation has given a particular emphasis to national participation and ownership. The NMCs have a strong implementing role, and more than 200 national agencies are participating in the planning jointly with the NMCs at central and provincial levels. Public participation forums at sub-area level have been conducted with representatives from central government, local government, mass organizations, research institutions, local user groups, NGOs and international organizations.

Examples of important interfaces are shown in the figure below. Some are predominantly maintained via MRCS and others via the NMCs. Notably, the interaction with the national planning processes and the national IWRM is maintained via the NMCs, as well as the interaction with the RBCs/RBOs.

Figure 2.2: Interfaces

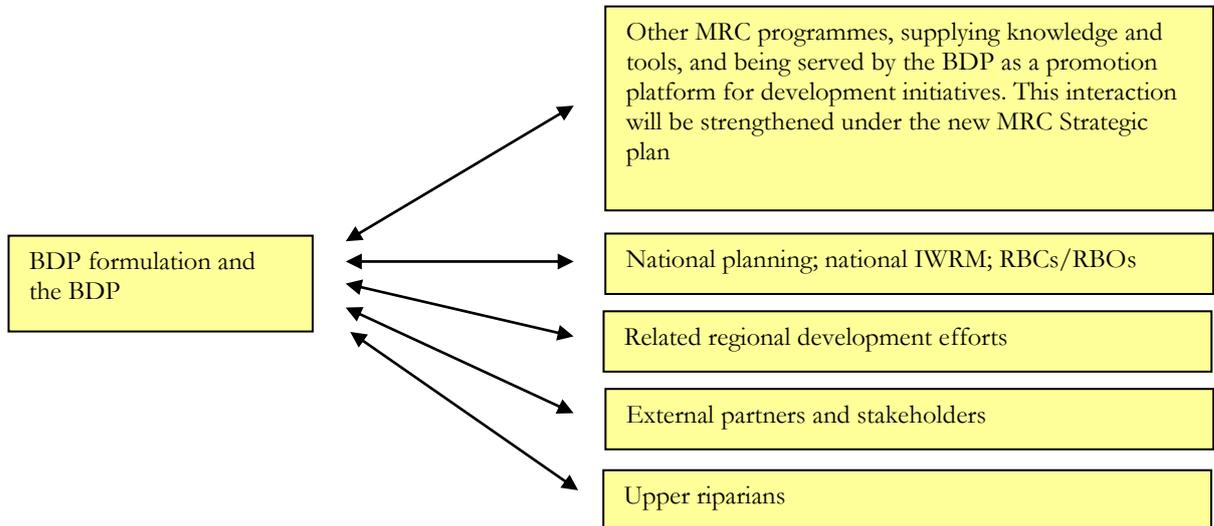
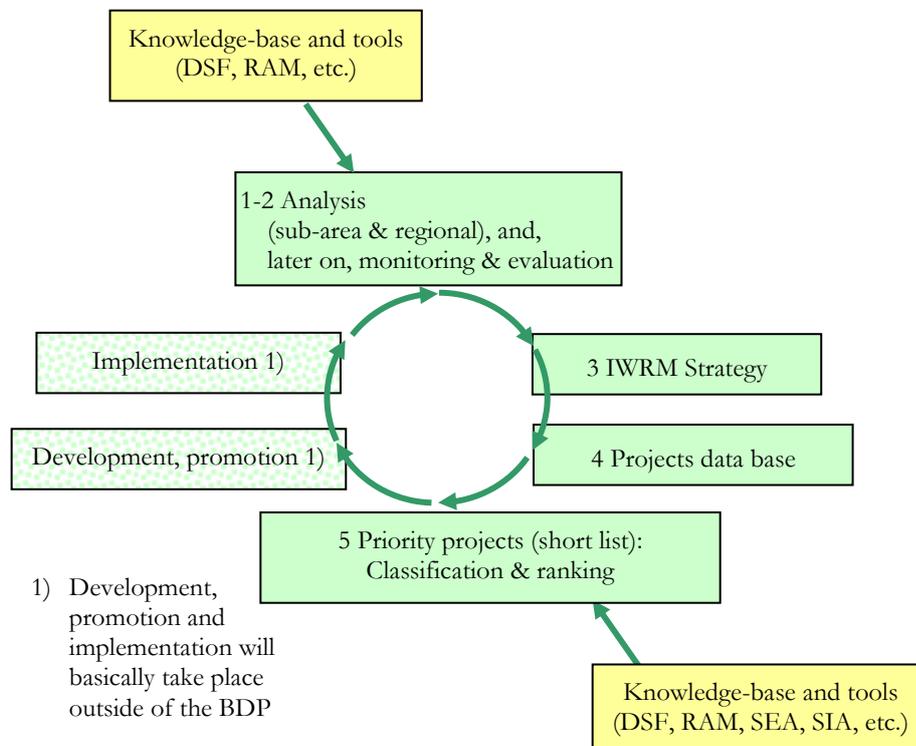


Figure 2.3: Illustration of the BDP planning cycle



Quality management

In response to a recommendation by a donor review mission, a short BDP Quality Plan was drafted in September 2003 and revised 6 February 2004.

The Quality Plan builds on the MRC Programming Manual (June 2002) and is aligned towards DANIDA modalities for quality management. It clarifies authorities and communication within the MRCS BDP team, and provides guidance on preparation and review of BDP reports.

2.2.1 Intervention generated by the BDP

The over-all development objective of the BDP will be achieved via development initiatives generated and/or promoted under the BDP, in line with the MRC mission '... to promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well being ...'.

Table 2.1: Priorities within water-related development in the LMB

Sector	Objective(s)	Development priorities
Agriculture and irrigation	Safe food production, high value and high employment generated by agricultural water use	<ul style="list-style-type: none"> Higher returns from irrigated agriculture, through improved farming practices, increased efficiency of water use, diversification of crop types and support to distribution and marketing Changes to farming systems in the Delta to reduce withdrawals in the critical dry season period Conjunctive use of groundwater to reduce pressure on surface water in critical periods Expansion of irrigation to utilize potentially higher dry season flows resulting from increased regulation and storage which will result from hydropower development Expansion of irrigation to utilize potentially higher dry season flows resulting from increased regulation and storage, particularly due to hydropower development in Yunnan Upgrade and improvement of existing infrastructure Support for farmer water user groups
Hydropower	The increasing demand for affordable electric energy in the MRC member countries is met with minimal negative impacts on the environment and local people, thereby promoting economic growth for the countries' mutual benefit	<ul style="list-style-type: none"> Sector planning and efficient integration of hydropower Ranking of regional projects in terms of efficiency, financial viability and social and environmental outcomes Efficient hydropower generation and distribution mechanisms Optimizing operation rules to minimize downstream environmental impacts Predicting and responding to changes in flow conditions due to hydropower development in the Upper Mekong (Yunnan) Assistance with Environmental Impact Assessments for proposed developments – in particular, incorporating processes proposed by the World Commission on Dams Consideration of environmental and socio-economic factors in hydropower development – in particular (i) cumulative impacts of hydropower development; (ii) impacts on

Sector	Objective(s)	Development priorities
		fisheries; and (iii) possible mitigation measures
Navigation	To increase the international trade opportunities for the MRC member countries' mutual benefit, and to assist in co-ordination and co-operation in developing effective and safe waterborne transport in a sustainable and protective manner for the waterway environment (Article 9, 1995 Mekong Agreement)	<ul style="list-style-type: none"> • Design, feasibility and impact studies related to ports, river works and regional waterways development • Implementation of ports, river works and regional waterways development • Morphological studies and bank protection schemes • Basin-wide institutional capacity-building; development and implementation of education programs for pilots, skippers, and administrative officers • Regional standardisation schemes (navigation aids, navigation rules, certification, pilotage, monitoring, statistics) • Streamlining of border regulation in general and transit regulation in particular • Promotion of "clean" river transport; prevention of environmental damage
Fisheries	Coordinated and sustainable development, utilization, management and conservation of the fisheries	<ul style="list-style-type: none"> • Management and protection of the capture fisheries: (i) Protection of vulnerable habitat important for fisheries, such as floodplain, flooded forests, deep pools; (ii) maintenance of major migratory paths (including Tonle Sap system and deep pools in mainstream); and (iii) co-management of fisheries involving local communities, as well as provincial and national authorities • Improved management and development of reservoir fisheries and aquaculture; in particular, small scale aquaculture for rural households and aquaculture of indigenous Mekong species. • Opportunities for value-adding through marketing and processing • Improving the information base for fisheries, in particular • Economic value and nutritional importance of Mekong fishery • Ecological studies of Mekong fisheries and basis for productivity • Improved integration of fisheries into catchment planning
Tourism	Regional water-related tourism further developed, with due regard to social and environmental impacts	<ul style="list-style-type: none"> • Promotion of water-based tourism, particularly in the context of promoting the Mekong countries as a joint destination • Promotion of community-based eco-tourism and cultural tourism • Monitoring and prevention of environmental degradation related to increased human activity in ecologically sensitive areas • Raising awareness and capacity to deal with social issues arising from increased tourism • Provision of adequate water supply and sanitation infrastructure
Domestic and industrial water supply	Water available to people and industries in sufficient quantity and quality	<ul style="list-style-type: none"> • Urban water supply (particularly for the poor) – maintenance, rehabilitation and expansion of existing water supply and sanitation infrastructure • Rural water supply • Efficiency of water use and distribution systems

Sector	Objective(s)	Development priorities
		<ul style="list-style-type: none"> • Prevention and mitigation of pollution (both urban and rural) • Monitoring access for equity, sustainability and impact • Innovative mechanisms for financing water supply (e.g. through public – private partnerships)
Flood management and mitigation	People’s suffering and economic losses due to floods are prevented, minimized, or mitigated, while preserving the environmental benefits of floods	<ul style="list-style-type: none"> • Flood preparedness (flood forecasting and regional flood warning system, community based preparedness) • Strengthening flood emergency management • Improved delineation and land-use planning for flood hazard areas • Development and operation of hydraulic structures to reduce flood risk from inappropriate structural intervention • “Flood-proofing” to reduce vulnerability (rather than aiming at full structural flood protection)
Watershed management	Effective management of watersheds by relevant institutions in accordance with the maintenance of relevant ecological, economic and social watershed functions	<ul style="list-style-type: none"> • Development and promotion of watershed-related knowledge, awareness and attitudes among stakeholders and decision-makers in the public and private sectors • Creation of relevant and effective watershed management related institutional framework • Integrated spatial planning at local, national and basin levels • Improved farming systems and agricultural practices in upland areas (particularly with regard to shifting cultivation) • Support to sustainable commercial forestry, agro-forestry and traditional forest-related livelihoods, including reforestation and greening schemes • Support to appropriate management (including land management plans and monitoring) of important habitats, including restoration and partial protection where necessary. Such habitats could be forests, wetlands, and floodplains, including inundated forests and other unique LMB ecosystems • Measures to improve traditional forest-related livelihoods, such as mountain agriculture and non-timber forest production; including awareness and education programs, and scientific research • Related education, capacity-building and awareness-building

Origin: Strategic directions for IWRM in the LMB, Appendix 2

2.3 Institutional setting

2.3.1 Administrative levels

The four member countries have individual, yet comparable administrative frameworks. A range of ministries are involved in water-related administration, with financial coordination by an over-all national planning body. All countries have, apart from the central level, province and district levels of administration (while the structure below district level varies

from one country to another). Also the planning practices are comparable, comprising a hierarchy of long-term policies, 5-years strategic national social and economic development plans, and action-oriented rolling public investment plans governing the actual implementation of the policies and strategies. Lao PDR, Thailand and Viet Nam have national bodies for coordination of water resources management.

There is a substantial expertise within water management and water-related disciplines in all four member countries, generated within universities, other research/knowledge-centres, organizations and service institutions that link with the international scientific community. The Southeast Asia Technical Advisory Committee of Global Water Partnership (GWP-SEATAC) is promoting and facilitating the concept of IWRM. Transboundary liaison and networking within water-related research and development is facilitated by several bodies apart from MRC and GWP-SEATAC, such as for example the Greater Mekong Sub-region Academic and Research Network, and several others.

Example of important institutional trends are:

- Ongoing preparations for water legislation in Cambodia and Thailand;
- ongoing de-centralisation in Thailand;
- formation of River Basin Organizations/Committees in Cambodia and Lao PDR, and consolidation of such organizations/committees in Thailand and Viet Nam; and
- a rapidly growing knowledge, generated by riparian knowledge-centres and service institutions, about development potentials, management options, and effects of intervention.

The BDP, with its predominantly basin-wide perspective, links into a context of IWRM at different levels, and across a variety of water-related sectors.

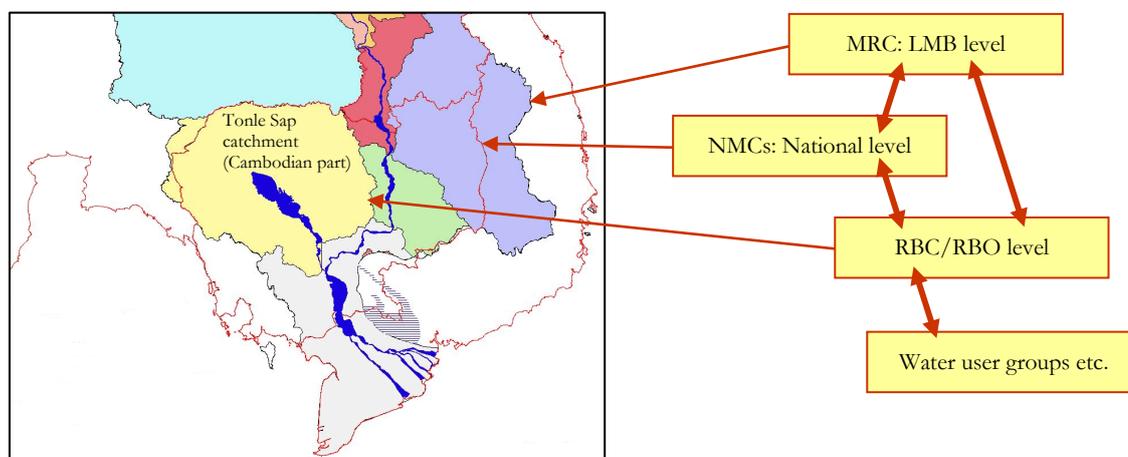
In due time, it is anticipated that at least a major part of the Lower Mekong Basin will be covered by 3 levels of IWRM:

- The basin-wide level, within the mandate of MRC, and covered by the BDP and the MRC sector plans;
- the national level, within the mandate of the governments; and covered by national over-all development policies and specific sector policies and investment plans; and
- the sub-river basin level, managed by the RBCs/RBOs, in accordance with their mandate in each country.

The value, and indeed the feasibility of planning and management at each level depends on a close harmony between the planning levels. For example, MRC applies a basinwide perspective, while the RBCs/RBOs have the mandate and capacity to liaise with the provincial administrations and water user groups, and directly with service providers and individual users.

The BDP links into this context via the NMCs, who represent the relevant national institutional stakeholders.

Figure 2.4: Illustration of IWRM levels



2.3.2 Information flows

With the many participants in the BDP formulation process (and the work taking place in 5 languages), maintenance of smooth information flows is important. A large part of the work within the BDP, both at MRCS and at the NMCs, has been collection, relay and dissemination of information.

3 Objectives, outputs, and inputs

3.1 Objectives

The BDP, like the other MRC programmes, support the MRC vision of

An economically prosperous, socially just and environmentally sound Mekong River Basin.

... and the MRC mission

To promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's well-being by implementing strategic programmes and activities and providing scientific information and policy advice

The over-all development objective of BDP Phase 1 has been

Sustainable development of the water and related resources of the LMB for the mutual benefit of the riparian countries and people living in the entire Basin.

The related immediate objectives are:

- 1 *A participatory basin planning process established and ongoing*
- 2 *A BDP aiming at a balanced mix of social, economic and environmental factors drafted and agreed on*

3.2 Outputs and activities

3.2.1 Overview

The BDP implementation has been characterized by a particular national participation and ownership, and a strong support has been expressed for the BDP by all four countries. The NMCs have been key agents throughout the implementation, and more than 200 line agencies have been involved at the national and the provincial level.

The BDP has contributed visibly to consolidating the collaboration between the countries. The BDP is institutionalizing a participatory planning process necessary for the responsible management and sustainable development of the water and related resources in the Lower Mekong Basin. The BDP planning approach assists to negotiate a balance between socio-economic and environmental concerns based on cooperation and collaboration between the MRC member countries. A total of 45 transboundary planning and negotiation meetings (bilateral, trilateral and multilateral) have been held. Although slow in its process, the successful implementation of these transboundary meetings clearly marks an evolving joint and riparian owned planning framework and shows the path for future institutionalization of the BDP process, based on national strategies and policies related to IWRM in the LMB.

Box 4: Overview of outputs of BDP Phase 1

Outputs related to immediate objective 1: *A participatory basin planning process established and ongoing*

- 1.1 Planning process
- 1.2 Guidelines
- 1.3 Data system
- 1.4 Trained staff
- 1.5 Reporting
- 1.6 Workshops, meetings and forums

Outputs related to immediate objective 2: *A BDP aiming at a balanced mix of social, economic and environmental factors drafted and agreed on*

- 2.1 Sub-area studies
- 2.2 20-year scenarios
- 2.3 Sub-area strategies
- 2.4 Basin-wide strategies
- 2.5 Long-list of projects and programmes
- 2.6 Short-list of projects and programmes
- 2.7 Implementation plan

The BDP Planning Cycle document was endorsed as a working document by the JC meeting in March 2005, and an amendment spelling out the process of prioritization of joint projects was endorsed in August 2005.

A comprehensive consultation process took place at different levels for initial screening and prioritization of projects. The MRC Project Database was developed in the beginning of 2005 to compile the identified projects/programmes, with data fields based on the PIN format for outlining the initial proposal and listing of project ideas in a central MRC database.

River basin organizations (RBOs) have been or are being established within the LMB, and close collaboration with the BDP is pursued. Collaboration with other MRC programmes has been significantly strengthened in particular with regard to scenario analyses, impact assessments and economic valuation. Many MRC programmes are being redesigned to further match BDP implementation requirements.

The Sub-area Planning Atlas is an information and planning tool for potential use by riparian River Basin Organizations (RBOs), line agencies, and public institutions, and it provides an overview of BDP Phase 1 achievements at the sub-area scale.

The BDP analyses of scenarios using the Decision Support Framework (DSF) have been published as a part of the BDP Library. The same is the case for the Resource Allocation Model (RAM), which has clearly demonstrated the value of resources allocation modelling for MRC.

Sub-area study reports have been submitted for all BDP sub-areas, and (with the exception of Mun/Chi sub-area in Thailand) public forums have been conducted in all sub-areas. The analysis of transboundary issues within BDP and identification of project ideas were carried out as part of the BDP sub-area studies and discussed during five transboundary sub-area meetings in November 2004. A total of 69 joint projects were identified, and joint meetings have been conducted to strengthen the collaboration between member states, and to further develop and prioritize the joint project ideas.

The BDP team worked in close collaboration with the World Bank (WB) mission to provide first set of scenario simulations in Oct/Nov 2004. Five BDP scenario simulations have been reviewed, refined and completed including initial assessments of environmental and social impacts by using the initial assessment tools. The analysis is an attempt to look at a range of feasible large-scale developments that may take place in the Mekong Basin over the next twenty or so years, and the trans-boundary and cross-sectoral impacts of these developments.

An overview of achievements during BDP Phase 1 is given in the text box below.

Box 5: Overview of BDP1 achievements	
BDP Phase 1 has produced	
(1)	<p>A planning process, consisting of</p> <ul style="list-style-type: none"> • A functional, comprehensive network of participants and information flows, consolidated during an active dialogue involving some 200 institutional stakeholders; • routines for identification, scoping, and screening of recommended projects and programmes; and • initial practices for promotion and facilitation of priority projects and programmes.
(2)	<p>An IWRM plan, consisting of:</p> <ul style="list-style-type: none"> • Broad, integrated analyses, at sub-area, national and basinwide level, of baseline conditions, water demand projections, development opportunities, linkages and constraints, and development scenarios; • an agreed '<i>Strategic directions for IWRM in the Lower Mekong Basin</i>', reflecting values shared by the member countries, and addressing immediate, medium and long-term water-related development; and • a portfolio of useful and bankable projects and programmes that will support the strategic directions and the MRC vision of '<i>an economically prosperous, socially just and environmentally sound Mekong River Basin</i>'.
(3)	<p>Practical and innovative tools for basinwide IWRM, together with a knowledge base, comprising data, information, and decision-support tools for impact prediction and feasibility analyses. Hereby, the knowledge base for strategic planning has been widely expanded, as exemplified by the following cross-cutting key publications:</p> <ul style="list-style-type: none"> • MRC State of the Basin Report (June 03) • MRC Social Atlas (May 03) • MRC People & Environment Atlas (Aug 03) • The BDP Planning Atlas, produced by a GIS-linked database, with a wealth of data and information, and listings of development projects and project ideas (May 2006) • The BDP Core Library (May 2006)
(4)	<p>Enhanced capacity in IWRM and multi-disciplinary river basin planning at the regional, national and sub-area level, provided by</p> <ul style="list-style-type: none"> • dedicated training sessions and on-the-job training; • the MDBC training programme and curriculum; and • 6 riparian MSc candidates educated under BDP-related grants.

The results of the scenario simulation and analysis using the DSF represents an important milestone for BDP and MRC, and a significant step towards understanding the impact of development in the basin. The work has comprised examinations of a variety of impacts, as well as the value added by water in the LMB by country, by various type of activity and by sub-area under various design and resource allocation assumptions.

Another important milestone was the "*Strategic Directions for Integrated Water Resources Management in the Lower Mekong Basin*" that was approved by the MRC Council in December 2005.

The BDP long-list (derived from the MRC Projects Database) contains at present joint projects (69), national priority projects (250), MRCS projects (25), on-going projects / programmes (40), notified projects (24) and joint groups projects (7).

The JC meeting in August 2005 took note of the initial screening process and endorsed the first batch of screened projects and the JC meeting in April 2006 took note of the second batch of projects to be placed into the BDP shortlist.

Thailand has invited, through the MRC/BDP, the neighbouring countries (Lao PDR and Cambodia) to submit project proposals for support through the Thai Development Trust Fund. Seven irrigation projects were identified from the MRC Projects Database and from the respective national line agencies, and two projects were proposed for funding – one in each country. One of these, a feasibility study in Lao PDR, was selected for funding.

3.2.2 Outputs related to immediate objective 1

Immediate objective 1 is '*a participatory basin planning process established and ongoing*'. The outputs produced to achieve this objective are summarized below.

Output 1.1: Planning process

BDP Phase 1 has developed a number of planning features that are available for generalisation, application and integration either within the MRC Secretariat, the NMCs, and/or selected national line agencies, and other partners in the LMB.

Interfaces between BDP and national planning processes

The BDP seeks to provide additional value to existing and future national development policies, development plans and development planning. The aim to support and integrate the regional, national and sub-basin planning levels is observed throughout the BDP formulation:

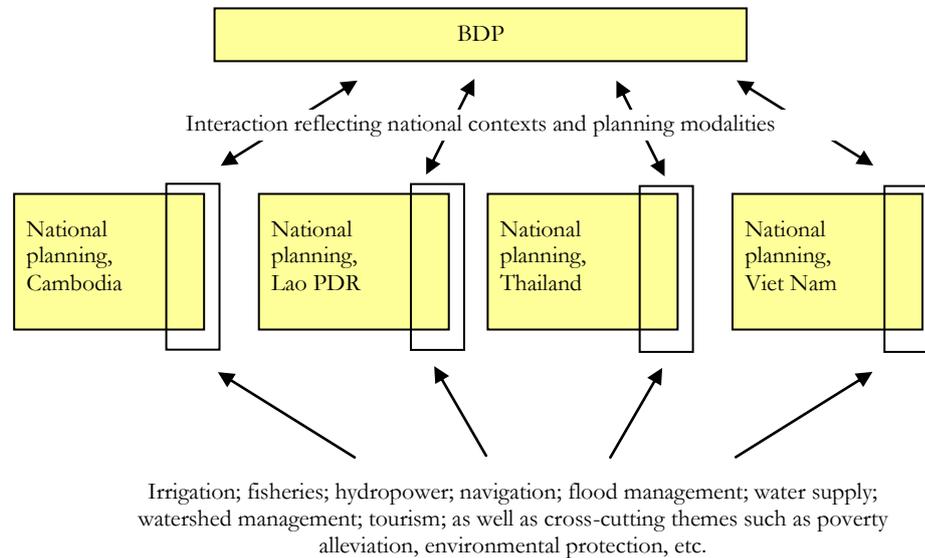
- The regional sector overviews (conducted in 2002, with subsequent extensions) consider the national development planning in a regional context;
- the national sector reviews (reported in 2003/2004) describe the national development planning within water resources and water-related sectors;
- the sub-area studies (reported in 2003/2004), conducted by NMCs and national line agencies (with participation by other stakeholders) have been carried out in full harmony with the national development planning of each country;
- all major BDP studies and submissions, including the '*milestone submissions*', are screened by the NMCs for compliance with related national policies and planning. Inconsistencies, if any, are sorted out in order to maintain the harmony between the national and the regional planning levels:
- project identification and prioritisation in line with national and sub-area preferences

It is envisaged that the regional development goals and priorities (once agreed under the BDP) will be reflected in the national planning during the next Phases of BDP.

Significant support has been provided to the BDP project by all four countries, and BDP implementation has given emphasis on national participation and ownership. The NMCs have a strong implementing role, and more than 200 national agencies are cooperating with the NMCs at central and provincial levels. Public participation forums at sub-area level have been conducted with representatives from central government, local government, mass

organizations, research institutions, local user groups, NGOs and international organizations. Involvement of civil society organizations is most prominent in Thailand and Cambodia.

Figure 3.1: Relation between national planning and the BDP in the water sector



In Thailand, River Basin Committees (RBCs) have been established within all Thai BDP related Lower Mekong areas. In each RBC, a BDP sub-area working group has been setup, which contributes to the successful implementation of BDP in Thailand. TNMC is actively coordinating activities between the local level of the RBCs and the multilateral level of the BDP programme. Furthermore, the Department of Water Resources has established a network between RBCs and the national policy level in which TNMC is participating.

In Cambodia, a Management Organisation is being established for the Tonle Sap Basin supported by the ADB under the national coordination of CNMC. The project time frame is 5 years, and by that time, BDP would be fully integrated with the Tonle Sap Basin Management Organisation (TSBMO), with mechanisms in place to identify transboundary issues to be taken up by CNMC within the MRC cooperation framework. The evolving TSBMO will collaborate closely with the CNMC BDP Unit. A mini workshop on technical cooperation regarding development and management of the Tonle Sap Basin was conducted at the MRC Secretariat in June 2005 between TSBMO representatives and the MRCS. As an example of BDP and national planning interfaces in Cambodia, BDP projects identified during the sub-area studies in Cambodia are now being included in the national and provincial development plans.

In Lao PDR, a pilot project entitled "Nam Ngum River Basin Development" is being implemented with support from ADB and jointly executed and implemented by Ministry of Agriculture and Forestry (MAF) and the Water Resources Coordinating Committee (WRCC), Prime Ministerial Office. This project was launched in 2002 and expected to be completed by 2008. The main objective is to introduce an Integrated Water Resources Management (IWRM) approach in the Nam Ngum River Basin by (i) institutionalizing a river basin resources assessment and action agenda in consultation with stakeholders, implementing a medium-term basin management strategy, and strengthening a River Basin Organization (RBO); and (ii) implementing a water resources investment project with components that focus on institutional development, environment management, economic

growth, and poverty reduction. The Board Management Committee, Secretary and Deputy Secretary General of the WRCC are members of National BDP Sub-Committee and National Working Group member respectively.

In Viet Nam, a River Basin Planning Management Board (RBO) has been established for the Cuu Long Delta (Viet Nam Mekong Delta, Sub-area 10V), of which 9 members are also represented in the BDP Sub-area Working Group 10V. The proposed institutional restructuring of responsibilities within the water sector among key ministries has effected the functioning of the RBOs in Vietnam. The Institute for Water Resources Planning in Vietnam is the administrative body of the River Basin Organizations in Vietnam and much involved in the BDP implementation in Vietnam. In the Sre Pok River Basin (part of sub-area 7V), an integrated water resource management project is being implemented, which will include, among other things, the establishment of a river basin organization, and development of a river basin planning process. A meeting was conducted in April 2005 between the BDP and the national IWRM project for collaboration and exchange of information.

The national RBC/RBOs do not have authority to deal with transboundary matters, but they can play a key role in the national planning process. The collaboration between NMCs and RBC/RBOs is extremely important for the successful implementation of the BDP.

Interfaces between BDP and MRC programmes

Water Utilization Programme (WUP): The Decision Support Framework (DSF) is used by the BDP to predict flow and other impacts of potential development. The Integrated Basin Flow Management (IBFM) programme is building on the BDP scenario development and analyses, and attempts to ensure consistency in the related economic analyses (i.e. the macro-economic assessments and the water uses valuation). It is fully intended that the IBFM results will feed into future BDP activities, including economic impact analysis.

Environment Programme: EP contributes to ensure that environmental concerns are incorporated in the BDP planning process, and EP will provide relevant information on the environmental and social status and trends in the Basin. More specifically, the EP contributes, among other things, to BDP with Strategic Environmental Assessment and Cumulative Environmental Assessment (SEA/CEA) technical guidelines; a wetland inventory; and the identification of ecological sensitive areas. The BDP on the other hand identifies economic trends and areas in the basin where there is a high potential for further developments and type of projects. Collaboration is also taking place on the wetland valuation component, and the BDP Development Economist has a role in coordinating and overseeing the work of national environmental/natural resource economics specialists and in ensuring that the resulting valuations are useful for future BDP activities.

Fisheries Programme: There are three principal areas of direct and current cooperation between BDP and the Fisheries Programme (FP): 1) Scenario testing: FP provided a considerable amount of input into both the World Bank and the more recent BDP scenario testing. At this stage, fisheries information is the only real extension of the scenario results to social and economic impacts; 2) Resource Allocation Model (RAM): FP provided input to realistic fisheries values into the model, and further collaboration is envisaged for the mutual benefits of the programmes; and 3) IBFM - operating outside BDP, but still very relevant to BDP. As the formulation of FP

Phase 2 was directly linked to the requirements from BDP, more generally, most of FP activities will contribute to overall BDP implementation.

Flood Management and Mitigation Programme (FMMP): BDP was represented in the task force during the formulation stage of the FMM Programme in 2001 and 2002. Future prospect of FMMP involvement in the BDP Phase 2 is stated in the FMMP Overall Programme Description and Outline for 2004-2010, including: i) Provide input to the IWRM Strategy; ii) Supply with project ideas and iii) feed information into the BDP scenario analysis. In addition, the FMMP, component 3 “mediation of transboundary flood issues” will develop generic technical expertise with transboundary mediation, and thereby assist other MRC programmes in connection with resolving transboundary issues. BDP is represented in a working group under the FMMP to assist in the preparation of ‘An Integrated Flood Risk Management Strategy for MRC’. BDP has provided input to the document and participated in national consultations.

Other collaboration issues include:

- Regular collaboration with the Technical Support Division (TSD) on the production of maps and posters. Direct collaboration was established for the preparation of the CD-ROM based BDP Sub-area Planning Atlases.
- BDP is represented in the conflict management task force under the EP programme.
- A Hydropower Project Database has been established under the BDP Programme. BDP is contributing to the initial preparation of the MRC Hydropower Development Programme. The BDP Team Leader is Chairman of a Hydropower Development Programme Taskforce. Under BDP’s sector strategy development work, BDP has undertaken the preparation of a Hydropower Development Concept Paper for the MRC.
- MRC Sector Programmes have been involved in the initial screening of BDP joint project proposals as part of the process from long-listing to short-listing.
- Collaboration between BDP and the Agriculture, Irrigation and Forestry Programme on the identification and preparation of irrigation projects to be supported by Thailand.

Interfaces between BDP and international organizations

Regular reporting of progress and achievements takes place at the 6-monthly Donor Consultative group meetings. Direct interaction has taken place as follows:

- Information exchange with IUCN and WWF, for example in connection with the Hydropower Project Database
- Several liaison meetings with ADB (including one meeting about the Tonle Sap Basin Management Organisation project)
- Information sharing with the World Bank in connection with a programme covering Sesan, Srepok and Sekong (July 2005), and active support to the World Bank's scenario analyses and strategic planning for the Lower Mekong Basin
- Comprehensive active collaboration with MDBC, including and related to the MDBC training programme for the BDP
- Discussion Workshop on National Interests and Trans-boundary Water Governance (Danida-AMRC Collaborative Study on Mekong Water Governance)

- Consultation Meeting with World Bank on BDP phase 2 and an interaction between WUP and BDP
- Meeting with Japanese Bank for International Cooperation (JBIC) representative on project promotion for investments.
- Meeting with ADB on possibility of funding for further projects preparation.
- Presentation BDP achievements to SIDA during MRC-SIDA Annual Consultation Meeting
- Discussion with AusAID consultant on an independent assessment of the Murray Darling Basin Commission's Completion Report for Phase 2 under MDBC-MRC Strategic Program and planning for Phase 3.

Liaison with the development agencies that are involved in the BDP has taken place in connection with regular donor reviews and the pre-appraisal and appraisal of BDP Phase 2.

The BDP Planning Cycle

The BDP Planning Cycle document was endorsed as a working document by the 21st JC meeting in March 2005, and further clarification on the steps leading from long-listing to short-listing was required. These steps were then developed further and presented to the 22nd JC meeting in August 2005 as an amendment to the Planning Cycle. The Meeting endorsed the amendment including the process of prioritization of joint projects, and agreed that the same process should be applied to national projects. Hence, version 9 of the BDP Planning Cycle (May 2005) is considered a final draft for the purpose of BDP Phase 1.

Projects/programmes for implementation were identified as part of the extensive sub-area studies and are documented in the sub-area study reports. National consultants were recruited to assist NMCs in the preparation of project proposals. In addition, national and sub-area activities to build up capacity in project identification and programme formulation are carried out in some countries. At MRCS, identification and collection of project proposals were carried out in collaboration with Sector Programmes.

A comprehensive consultation process took place at different levels for initial screening and prioritization of projects (planning meetings, orientation meetings, national and regional working sessions, stakeholders forums, and trans-boundary meetings).

The BDP Project Database was developed in the beginning of 2005 to compile the identified projects/programmes, with data fields based on the short (PIN) format for outlining the initial proposal and listing of project ideas in a central MRC database.

A project screening toolkit was initially developed in connection with the initial project screening process, and was subsequently improved and streamlined. It includes environmental, social and economic screening checklists and provides guidance on how to use and interpret it. It uses check lists based on numerous discussions of SIA, SEA and RAM and relies on project information stored in the MRC Project Database. The purpose of the screening is mainly to safeguard the projects regarding economic, social and environmental issues, and to make recommendations to the JC for initial project classification. In this way the screening process assists the project proponents in further project preparation. The result of each project screening is summarized in a screening summary sheet.

For short-listing, all candidate projects have to be screened following the project screening toolkit. Proposed national priority projects should be screened by the NMCs. Projects screened and endorsed by the JC will gradually establish the shortlist of projects, which will

be continuously refined and updated. As it has been stated earlier, the process of screening and classification is continuously ongoing as new projects are identified and forwarded for short-listing.

The planning cycle and screening process have been developed in a close collaboration with the NMCs, including exchange of numerous draft documents and many consultation and coordination meetings at the national and regional level.

From long-listing to short-listing

The proposed process from long-listing to short-listing was presented to the 22nd JC meeting in August 2005 as an amendment to the Planning Cycle. The Meeting endorsed the amendment, which is outlined below:

- 1 Projects and programmes are entered in the MRC Project Database, which will be continuously updated, and which will gradually contain all water-related projects in the LMB, and are initially checked within MRCS
- 2 (Optional) negotiations through transboundary meetings
- 3 Regional working sessions are convened regularly to agree on the list of projects/programmes that need to be screened or maintained in the short-list of priority projects
- 4 Screening of projects/programmes by applying the 5 criteria of the BDP Planning Cycle, by using the Screening Toolkits (social, environmental and economic checklists) by BDP MRCS, together with sector experts (in MRCS, NMCs, and other organizations)
- 5 Classification of these projects/programmes leads to the draft short-list prepared by BDP MRCS (considering recommendations of the regional working sessions)
- 6 Reviews by NMCs, readjustments by BDP MRCS; agreement by NMCs
- 7 Submission of the draft Short-list to JC for decision-making
- 8 JC decision on the short-list and follow up of decisions made by JC

Examples of BDP Phase 1 products

- A functional network of participants and information flows, consolidated during an active dialogue involving some 200 institutional stakeholders
- Agreed, functional routines for project identification, screening, and classification

Output 1.2: Guidelines

Following several meetings between the riparian countries (national consultation, regional consultation, and eventually the JC) it has been decided to endorse documents intended for guidance as '*working papers*' rather than '*guidelines*', which would add flexibility and which was regarded as more appropriate than seeking approval of a '*final*' version of each document.

The list of '*live*' BDP documents contains more than 100 technical reports and papers, 8 progress reports and 19 BDP Coordination meeting records.

A number of BDP products remain in a '*draft*' stage, mainly due to

- their diminished importance due to progressing development (overtaken by history),

- the need for regular changes and improvements (adaptation to progress),
- the absence of a clear protocol dealing with different sorts of documents.

Relevant BDP documents are included in the BDP Archive, version 3 (May 2005), which currently contains 281 documents. The BDP Archive is regularly updated and available on CD-ROM and through the MRC intranet. It serves as an important means to sharing information among BDP stakeholders.

The sub-area study reports and national sector reviews produced by each country have been put into the Mekong-Info (<http://www.mekonginfo.org/>), the special platform established in MRC website for sharing and public discussion. Figures obtained show that there is a regular and strong interest on BDP publications by the visitors of the webpage.

In terms of published documents, BDP has already published the “Social Atlas of the Lower Mekong Basin”. Additional documents may not be published in glossy quality due to budget limitations.

Nine posters illustrating BDP data and maps, which support the BDP Knowledge Base, have been produced. In addition, a number of GIS based maps have been prepared under the BDP programme, as shown in the table below. The material is available to interested parties upon request, according to normal MRC procedures.

Table 3.1: Maps and images

Theme	Number
Sub-area maps (for each sub-area)	Approx. 25
Basinwide maps	12
BDP project maps	4
Hydropower project maps	3
BDP social atlas maps	14
Transboundary impact map	1
Irrigation project map (notified projects)	1
Hydro-power project map (notified projects)	1
RAM map	6
Sub-area images (for each sub-area)	Approx. 10

General information – of interest to the public - about BDP activities and achievements is available on the MRC website (<http://www.mrcmekong.org/programmes/bdp/bdp.htm>).

Regarding publication quality assurance, key NMC documents such as sub-area reports have been produced by professional consultants and gone through a number of reviews by BDP working group members and MRCS-BDP staff followed by revisions and editing before final submission to MRCS. Ad-hoc in-house MRCS meetings have been conducted and MRCS task-forces have been established to discuss key information and documents prepared under the BDP (e.g. scenario and RAM analyses; IWRM Strategy, and the BDP Phase 2 Programme Document). Key BDP documents are submitted to relevant national line-agency experts and reviewed through national consultations (often also through regional consultations). Furthermore, BDP has established at network of international experts for the preparation and review of key BDP documents.

All documents, information, data generated or compiled through BDP Phase 1 project implementation has been prioritized and has been consolidated into a single and comprehensive BDP Library with core documents, maps, support data etc. ready for distribution to and orientation of stakeholders by the end of the project. The library contains 15 reports covering different themes within the BDP.

Examples of BDP Phase 1 products
<ul style="list-style-type: none">• Planning cycle document• Project screening toolkits• 3 public participation guidelines• Data system guidelines• Core library (15 volumes)

Output 1.3: Data system

An MRC Project Database has been developed to compile the identified projects. The database is now operational and currently contains information in PIN formats of more than 400 water-related project proposals from the Member States, the MRC programmes and other sources. Additional projects will be added continuously. The database is built in Access and fully compatible with the MRC Information System, allowing for a variety of sector and cross-sector planning activities. The projects in the database are in the form of simplified PIN format, and project information need to be updated on a regular basis. Coordination with NMCs and relevant sectoral line agencies is maintained. All projects have been categorised and mapped by sector and type. A draft project database user manual was prepared in May 2005. It intends to familiarise users of the BDP Database with the application's user interface. A consultant assisted BDP to accommodate new issues in the Database and to make refinements to the existing structure. In addition, BDP has recruited a short-term riparian specialist as operator of the BDP Project Database.

A GIS-based Sub-area Planning Atlas has been developed jointly by BDP and TSD. The Planning Atlas integrates, for each sub-area, the results of sub-area studies and consultations; scenario analysis; and project listing and prioritization. It is developed in web-page format with a short summary for sub-area water related topics and with linkages to additional data, statistics, maps, diagrammes and other background information. Its structure is fully integrated in the MRC Information System, assuring full in-house compatibility. Work is in progress with incorporating a wealth of data and information from various MRC programmes and from the BDP sub-area studies. CD-ROMs for each sub-area have been completed and more than 25 GIS based maps were prepared for each sub-area. Draft Sub-area Planning Atlases have been reviewed through sub-areas workshops, and feedback was provided for revision and update of the initial drafts.

The MRCS-BDP established an initial Hydropower Project Database in March 2005 of existing and proposed hydropower projects in the Mekong River Basin. The hydropower project database complements the BDP project database as it provides detailed technical information for analysis. The main purposes of the database are to i) share information ii) to be able to run impact simulations and iii) to promote projects for donors' support. All NMCs can access the information in the database through the MRC Information System. The database contains at present 90 existing and planned hydropower projects from the Member Countries.

Compatible data management systems have been implemented at each NMC. At the national level, the data systems serve the purpose of linking national and regional development efforts, as well as providing a platform for inter-sector and inter-agency collaboration.

Examples of BDP Phase 1 products

- MRC Project Database, presently with more than 400 projects
- MRC Hydropower Database, presently with 90 projects
- Data systems are established and maintaining in 4 riparian countries

Output 1.4: Trained staff

A series of training needs assessments (TNAs) was conducted in 2000 (as a bridging activity), and another one between December 02 and May 04. The TNAs were conducted jointly for Cambodia and Lao PDR, and separately for Thailand and Viet Nam. This was in order to adapt to the national institutional frameworks (which resemble each other, but which still have some individual features).

In each case, the TNA comprised

- (i) an assessment of required competencies for the various BDP bodies;
- (ii) an assessment of the training that is recommended in order to meet the requirements; and
- (iii) suggestions on scope and implementation modalities.

The MDBC Training Programme was targeted to the needs of the BDP. It was carried out under the Murray-Darling Basin Commission and Mekong River Commission Strategic Liaison Programme with AusAid funding.

The training programme was delivered by the Murray-Darling Basin Commission and the MRC Secretariat during 2003 and 2004, and it consisted of the following four modules:

Module 1: Introduction to basin planning

Module 2: Application of basin planning principles

Module 3: Scenario-based planning for the Mekong Basin

Module 4: Study tours of Lower Mekong Basin and the Great Lake of Tonle Sap

Detailed documentation of the training is available and has been broadly disseminated with the *'BDP Archive'* CD.

Afterwards, an MDBC/MRC training curriculum of 8 modules has been prepared and the testing course was conducted on November 2005)

One Orientation Workshop on apply BDP Screening Toolkit was conducted on October 2005 for participants from all 4 NMCs

Examples of BDP Phase 1 products

- Training needs assessment in each country, followed by comprehensive training, including 11 dedicated regional training sessions and numerous national training sessions
- The MDBC training programme (4 modules) and curriculum of 8 modules for integrated river basin management
- 6 M.Sc. candidates

Output 1.5: Reporting

Initially, the so-called '*BDP Archive*' CD served as a reference platform shared by the many participants in the BDP formulation. By April 2005, it contained 281 documents produced under the BDP, under other MRC programmes, or from external sources.

It has been replaced by the '*BDP Library*' CD, which contains only documents produced by or for the BDP during Phase 1:

- 15 core library documents
- 75 working and technical papers
- 56 OH presentations
- 28 drafts reports and notes
- 8 progress reports
- 19 coordination meeting records

A list of these reports and documents is attached as Annex 5. Brief summaries of the BDP core library reports are given in Annex 8.

Examples of BDP Phase 1 products
<ul style="list-style-type: none">• BDP Library (15 core library volumes, more than 100 reports, papers and drafts, 56 OH presentations, 9 progress reports and 19 coordination meeting records)• Social Atlas• People and Environment Atlas• BDP Planning Atlas

Output 1.6: Workshops, meetings and forums

Workshops, meetings and forums have been held throughout BDP Phase 1 for the sake of communication, review of progress and draft submissions, fact-finding, capacity-building, scenario and strategy formulation, project identification, and development of a joint orientation among the many participating bodies.

A distinction can be made between the following categories:

- National and regional consultations
- Sub-area working sessions and forums
- Transboundary sub-area and bilateral meetings
- Training sessions
- BDP coordination meetings

A summary table of meetings during BDP Phase 1 is presented below.

Table 3.2: Meetings conducted in BDP Phase 1

Type of meeting	No.
Regional meetings/consultations	13
BDP coordination meetings	19
Regional training sessions	12
National sub-committee/working group/consultations	119
Sub-area meetings	120
Transboundary/bilateral meetings	14

(By end of Phase 1)

Notably, a total of 46 transboundary planning and negotiation meetings (bilateral, trilateral and multilateral) took place since 2002. Although slow in the process, the successful implementation of these transboundary meetings clearly marks an evolving joint and riparian owned planning framework and shows the path for future institutionalization of the BDP process, based on national strategies and policies related to IWRM. An initial set of national and joint projects and programmes has been identified and this process will continue. Lessons learnt from it will feed into the design of BDP Phase 2 aiming to strengthen this successful element of the BDP planning process.

Examples of BDP Phase 1 products
<ul style="list-style-type: none"> • 1-2 stakeholder forums in each sub-area except one • More than 200 national working sessions and sub-area meetings • 14 transboundary meetings • 46 regional consultations and coordination meetings

3.2.3 Outputs related to immediate objective 2

Immediate objective 2 is 'A BDP aiming at a balanced mix of social, economic and environmental factors drafted and agreed on. The outputs produced to achieve this objective are summarized below.

Output 2.1: Sub-area studies

Stage 1 of the BDP planning process (analysis of the Lower Mekong Basin and Sub-areas) is tasked with determining objectives, and key options and constraints for development. Sub-area Studies and National Sector Reviews were carried out under the NMCs, whereas the MRCS-BDP team conducts regional information collation and analysis. Sub-area forums are seen important to BDP public participation, which is one of three parallel processes under the BDP.

With the exception of 5T, sub-area forums were conducted in all sub-areas.

Outside Thailand, sub-area meetings have been conducted to review draft sub-area planning atlases. In Thailand, BDP working groups under the River Basin Committees have conducted meetings to discuss BDP joint project proposals, ways to improve the linkage between BDP and the Watershed Management Programme of MRC, and to establish so-called river basin pilot areas and conducting surveys for IWRM. BDP/TNMC seeks to link the BDP Programme and the Watershed Management Programme, and to draft IWRM

implementations plans for each of the Thai BDP sub-areas. Sub-area study reports have been prepared in a uniform format as official MRC publications.

Findings have been carried forward to the BDP Planning Atlas, which is a series of CDs, one for each major sub-area. The Planning Atlas is an information and planning tool for potential use by riparian River Basin Organizations (RBOs), line agencies, and public institutions, and it provides an overview of BDP Phase 1 achievements at sub-area scale including scenarios for development, SWOT analysis taking into consideration environmental and social issues, and projects identified to accommodate development objectives and transboundary issues.

Examples of BDP Phase 1 products
<ul style="list-style-type: none">• 2 core library volumes, 13 sub-area reports, 1 working paper and 2 consolidated reports• BDP Planning Atlas for 10 sub - areas

Output 2.2: 20-year scenarios

Scenarios have been applied for examination of the limits within the development is likely to take place, in terms of water allocation and water utilization, and to assess the related social, economic and environmental consequences.

The results of the scenario formulation and analysis using the DSF represent an important milestone for BDP and MRC, and are a significant step towards understanding the impact of development in the basin.

'Modelled Impacts of Scoping Development Scenarios in the Lower Mekong Basin' is a benchmark publication that describes the formulation, modelling and analysis of five development scenarios for the LMB. The scenarios were formulated in consultation with the NMC BDP teams and WUP, based on the information from sub-area reports, and national and regional sector reviews. The models were technically run by the TSD/WUP modelling team, with guidance and assistance from two BDP consultants, a hydrologist and a hydro-ecologist.

A report on *'Likely infrastructure developments in the Mekong floodplain in Cambodia and their significance in changing flow patterns'* has been prepared to provide an analysis of likely impacts of future floodplain development. Consultation with the NMC BDP teams and others indicated that possible floodplain development is very complex, and could best be dealt with using a qualitative approach at this stage. In the future, BDP may wish to consider more detailed analysis of floodplain developments, including modelling of particular scenarios.

Apart from the physical impact, separate studies have been made of the social and economic perspectives and implications of projected developments.

Example of BDP Phase 1 products
<ul style="list-style-type: none">• Development scenarios formulated, analyzed and reported in several publications

Output 2.3 Sub-area strategies

Strategies at sub-area level are being considered in conjunction with sub-area scenarios, to serve as useful building blocks for the IWRM basin-wide strategy. At this stage of BDP implementation, sub-areas are mainly seen as analytical units rather than planning units. SWOT analyses have been prepared for all sub-areas and are included in the BDP Planning Atlas.

Example of BDP Phase 1 products

- SWOT analyses and development perspectives for each sub-area included in the BDP Planning Atlas

Output 2.4 Basinwide strategies

The '*Strategic directions for IWRM in the Lower Mekong Basin*' was approved by the MRC Council in December 2005 as a major BDP milestone. It presents a basin wide perspective on IWRM based on national plans and strategies, drawing on BDP activities over the past 3 years. The strategic directions will correspond to the MRC Strategic Plan 2006-2010, and will serve as guidance during BDP Phase 2.

Box 6: Strategic directions for IWRM in the Lower Mekong Basin

Following several years of preparatory work, the key document '*Strategic directions for IWRM in the Lower Mekong Basin*' was approved by the MRC Council in December 2005.

The document builds on a set of goals and values shared between the MRC member countries, and gives directions on how to pursue these goals and values in relation to water-related development :

Economic growth and development

- Realising the economic value of the Mekong for development
- Poverty alleviation
- Maximizing water productivity
- Freedom of navigation
- Regional integration
- Protection of productive Mekong resources
- Dealing with climate variability (floods and drought).

Social development and equity

- Access to water for basic human needs
- Preservation of cultural values and heritage values
- Reasonable and equitable water use (between countries, social groups, and generations)

Environmental protection

- Protection of ecosystems
- Prevention of pollution
- Protection of important habitats
- Maintenance of flows

Governance

- National sovereignty
- Regional cooperation
- Watershed-based management
- Supportive, consistent institutional and legal frameworks
- Monitoring and evaluation
- Stakeholder participation

Human resource development

Examples of BDP Phase 1 products

- Agreed '*Strategic directions for IWRM in the Lower Mekong Basin*', reflecting values shared by the member countries, and addressing immediate, medium and long-term water-related development

Output 2.5: Long-list of projects and programmes

The BDP long-list (derived from the MRC Projects Database) contains at present joint projects (69), national priority projects (250), MRCS projects (25), on-going projects / programmes (40), notified projects (24) and joint groups projects (7).

Each of the riparian countries have identified and provided MRCS with a number of national projects to be included in the Project Database. As an example, Lao PDR had identified more than 600 national project ideas. However, through national consultation meetings, 91 prioritized projects were submitted to the BDP's Project Database. Of these projects, 34 are now being developed by national working group members in more detail.

BDP has recruited a national consultant to continuously update the Project Database with additional information on existing projects and to include incoming project proposals.

7 joint groups projects and 2 joint projects were screened in the 1st batch; and 11 joint projects were screened in the 2nd batch, by using the Project Screening Toolkit.

The long-list was presented to the JC in August 2005 for information. The JC suggested that information in the BDP Project Database is made available to outside parties with a view to promote the projects.

A summary sheet of the content of the MRC Projects Database was prepared in September 2005, including information provided in tables, charts and maps.

Example of BDP Phase 1 products

- More than 400 projects included in the MRC Project Database

Output 2.6 Short-list of projects and programmes

7 joint groups projects and 2 joint projects were presented to the JC in August 2005. The JC meeting took note of the initial screening process and endorsed the first batch to be placed on the shortlist. The Council approved the initial screening process resulting on the first programmes and projects to be placed on the BDP short list in its twelfth meeting in 2005. During 2006, 10 more joint projects were screened. The 23rd JC meeting (April 2006) took note of the progress of the BDP Phase 1 and of the second batch of projects to be placed into the BDP shortlist.

This is regarded as a key milestone of the BDP formulation.

New batches of candidate projects will be submitted to the JC continuously.

Box 7: Project screening and classification

Projects and programmes in the MRC Project Database are screened by the JC according to 5 criteria:

- 1 Harmony with potential strategic options of the MRC
- 2 National priority and support from member countries
- 3 Potential value, costs, side effects, risks, uncertainties
- 4 Completeness of decision basis
- 5 Implementation aspects

Following the screening, the various suggestions can be ranked in the following classes:

- | | | | |
|---|-------------|---|--------------------------------|
| A | Fast-track | } | Priority projects (short list) |
| B | Promote | | |
| C | Develop | | |
| D | Wait | | |
| E | Reformulate | | |

Examples of BDP Phase 1 products

- 1st shortlist submitted to the JC in August 2005
- 2nd extended shortlist submitted to the JC in April 2006

Output 2.7 Implementation plan

Short implementation plans – as described in the BDP Inception Report – will be part of the further development of the project proposals. The NMCs are identifying names of implementing agencies for the 9 projects and programmes presented as the draft short-list (1. batch).

One of nine first batch short-listed projects, entitled “Capacity Building in Integrated River Basin Planning” classified in level A (Fast track, uncontroversial, low-risk with obviously attractive benefits) was selecting for preparing an Initial Project Implementation Plan (PIP). An initial PIP was given as one example and guidance on the process for further preparation of project proposal.

Thailand has invited, through the MRC, the neighbouring countries Lao PDR and Cambodia to submit project proposals for support in connection with the *'Prioritization Study of Cooperation Projects between Thailand and Neighbouring Countries'*. Seven irrigation projects were identified from the MRC Projects Database and from the respective national line agencies, and a feasibility study for one project in Lao PDR was approved for funding via the Thai Development Trust Fund.

3.3 Inputs/costs

By July 2006, the costs of BDP Phase 1 is known, and a good estimate is available of the total costs.

3.4 Assumptions and risks

3.4.1 Assumptions

Assumptions in relation to a successful completion were made before the start of Phase 1 and were reviewed during the inception phase. The assumptions have been continuously monitored and commented upon in connection with progress reporting and donor reviews.

The following table lists the assumptions, together with comments on their significance as seen at the end of Phase 1.

Table 3.4: Assumptions on progress, outputs and usefulness

Assumption	Comments
Overall assumptions	
Continued riparian collaboration and joint orientation within the MRC framework	<ul style="list-style-type: none"> This assumption has obviously been met, as seen from many JC and MRC Council statements and decisions, including the recent approval of the '<i>Strategic directions for IWRM in the Lower Mekong Basin</i>'
Continued riparian acceptance of the general BDP objectives, scope and approach	<ul style="list-style-type: none"> Poverty reduction is a key objective of national planning in all four countries. River basins are perceived as appropriate spatial planning units. Working papers '<i>in progress</i>' rather than '<i>approved</i>' guidelines are found appropriate for planning and coordination. Information sharing regarding planned national developments is improving but could be improved further. Support to scenario based planning by member states is subject to different opinions. Public participation is in some countries limited to the involvement of government officials at central and local levels.
Continued support to, and active participation in the BDP process by NMCs and line agencies	<ul style="list-style-type: none"> In general, there is a strong commitment to BDP implementation, and an extensive coordination and exchange of information between NMCs and the MRCS-BDP team. More than 200 government agencies in the riparian countries at different levels are involved in BDP implementation The direct involvement of line agency representatives is to some extent hampered by limited time, resources and human capacity.
Adequate (national and regional) cooperation between involved agencies, including adequate exchange of data and information	<ul style="list-style-type: none"> There is a scope for further harmonisation and expanded exchange of data. This is seen as a continuous effort of MRC that cuts across its various programmes. The linkages and information exchange between regional partners and BDP could be improved. It is believed that the BDP formulation process has been particularly open, with broad access to information.
National formulation and implementation of supportive policies as required for achievement of the development goals agreed on in connection with the BDP, for example for basin-wide sector development	<ul style="list-style-type: none"> Thailand has established River Basin Committees in all Thai areas of the LMB. Cambodia and Viet Nam have taken the initial steps in the same direction.

Assumption	Comments
<p>Orderly progress of WUP and other MRC programmes; including consolidation of tools and skills developed under WUP for subsequent routine applications for strategy revisions and impact analysis.</p>	<ul style="list-style-type: none"> • Delays did actually occur both within WUP and the BDP itself. For example, information about the basic water availability in each sub-area could not be provided at the time when it was needed for the sub-area studies. Also, the DSF was delayed. (In turn, the information from BDP about water demands was not available on time). These delays were a part of the reason for the required extension of Phase 1. • There is a long term challenge for both MRC and BDP to ensure that there is sufficient technical capability within the NMCs to make effective use of the DSF. • The scenario simulation results are quite complex and it is not quite clear whether their significance is well understood, even within MRC and the NMCs. Further promotion, dissemination and explanation is advisable, including emphasizing that the scenarios represent hypothetical possibilities, not plans. • There is a move to see procedures agreed under the WUP less as regulatory and more as enabling mechanisms in support of basin development.. • The RAM has demonstrated the value of resources allocation modelling for MRC, but the spreadsheet based model is limited. Extension of the work would benefit from use of a more detailed and more robust model.
<p>Assumptions related to the BDP formulation process (immediate objective 1)</p>	
<p>National willingness to establish inter-active interfaces between BDP and national planning and to adjust planning practices accordingly, if required.</p>	<ul style="list-style-type: none"> • More than 200 government agencies in the riparian countries at different levels are involved in BDP implementation • BDP sub-groups have been established under the RBCs in Thailand.
<p>Continuity of stakeholder orientation and priorities, to an extent that it does not impede formulation, implementation and monitoring of agreed regional development goals and strategies</p>	<ul style="list-style-type: none"> • Close collaboration has been established with government agencies at central and sub-area level. • The involvement of women in the BDP planning process is still limited. • The involvement of external stakeholders in the BDP implementation is still limited. • The involvement of regional stakeholders and other MRC programmes is evolving but has to be improved.
<p>Practical management (and preferably resolution) of traditional water-related conflicts of interest among key stakeholders, such as e.g. upstream/downstream issues, cross-border issues, national versus local level issues, etc.</p>	<ul style="list-style-type: none"> • An MRC Projects Database contains more than 400 identified projects for promotion but also for sharing information between countries. A separate Hydropower Project Database contains 90 existing and planned projects for information sharing • A total of 46 transboundary planning and negotiation meetings (bilateral, trilateral and multilateral) took place since 2002, with 13 meetings organized in 2005 alone. In the reporting period, one trilateral and three bilateral meetings were conducted to enhance collaboration on transboundary issues and to further develop and prioritize joint projects proposals • Although slow in process, the successful implementation of transboundary sub-area meetings and tri/bi-lateral NMC meetings clearly marks an evolving joint and riparian owned planning framework and shows the path for future institutionalization of the BDP process, based on national strategies and policies related to IWRM

Assumption	Comments
Timely availability of basic data and information, and adequate knowledge-sharing among key stakeholders	<ul style="list-style-type: none"> Sub-area studies were delayed and information for scenario developments are still inadequate for a number of simulations and scenarios
Timely development of adequate capacity of NMCs and line agencies to participate actively in the planning process, including orientation and priorities, required skills, and adequate allocation of counterpart staff. (The BDP Programme will in turn contribute training and HRD according to identified needs)	<ul style="list-style-type: none"> Training of BDP officials on the application of DSF and other BDP tools is needed. BDP was more complex and capacity building more resource intensive as originally envisaged. Therefore while the training activities were intensified, more needs to be done still. Capacity building activities have high priority for the consolidation period if budget is available.
Adequate decision-making capacity of key stakeholders, allowing for timely formulation and relay of priorities, aims, and concerns	<ul style="list-style-type: none"> MRC is in a transition period between two five-year strategic plans
Timely identification of practical and valid indicators for progress monitoring	<ul style="list-style-type: none"> Indicators were developed during phase 1 but need further developed in BDP Phase 2
Maintenance of momentum in the planning process. (This key concern will be addressed in different ways by the BDP Programme)	<ul style="list-style-type: none"> Strategic reorientation of MRC has influenced BDP implementation.
Assumptions related to the BDP itself (immediate objective 2)	
Adequate knowledge-sharing among participating agencies and other key stakeholders	<ul style="list-style-type: none"> Completion of national sector overviews and sub-area study reports with information from a wide range of national agencies. Information gaps have been identified and integration of information is new in the countries and could be improved.
Existence of such overlaps of interests and priorities (among the member countries, line agencies and other key stakeholders, including the general public) as is required as practical, operational platforms for joint development of regional goals and strategies. This involves (but is not limited to) a continued joint orientation among riparian nations towards consensus on sector objectives and strategies, and towards 'rules' and practices for regional water sharing and water quality maintenance	<ul style="list-style-type: none"> The <i>'Strategic Directions for IWRM in the LMB'</i> was approved by the MRC Council in December 2005, to serve as platform for MRCS, NMCs and others to frame ongoing and future IWRM activities in the basin. A common orientation toward poverty reduction exists but its application can be strengthened. Increasing orientation toward the concept of environmental sustainability Thailand has established River Basin Committees in all Thai areas of the LMB. Cambodia and Vietnam have taken the initial steps in the same direction. IWRM principles are being acknowledged in all four countries MRC has prepared regional sector programmes and strategies (i.e. FMMP, Fisheries, Navigation, Hydropower) and updates are being prepared as necessary to reflect new priorities. Draft procedures for flow and water quality are in the final drafting stages under WUP
The usefulness of the BDP depends on:	
Maintenance, throughout the BDP formulation, of concordance between the BDP and its stated mission	(See above)

Assumption	Comments
Identification of (and agreement on) suitable regional development options that represent added value of joint action	<ul style="list-style-type: none"> • After a long and intense process of participatory planning the Projects Database was consolidated and shows now an increasing number of projects identified by the countries for investment and implementation. • The BDP Planning Cycle has been verified as a suitable tool for trans-boundary project identification and prioritization. The first two batches of projects has been placed by the JC on the shortlist of priority projects. This is a major achievement for the BDP project, and potentially of utmost importance for the whole of the MRCS.
Maintenance of balance between stakeholder interests, as a prerequisite for implementation.	(Too early to comment)

3.4.2 Risks

Some of the initial assumptions emerged as risks, and new risks appeared in the course of implementation.

The BDP was based on the former (2001-2005) MRC Strategic Plan. The need to adapt to the new strategic orientation within MRCS (2006-2010) and the derived changes in priorities and direction required a major re-alignment towards the end of Phase 1, both of BDP Phase 1 itself and of the scoping of BDP Phase 2.

Delays occurred for several outputs and activities. First, the sub-area studies were delayed, as well as the availability of the DSF, the RAM, and other assessment tools. In consequence, the scenario analysis were delayed and were not fully linked to the sub-area studies, and the LMB strategy formulation was delayed by 2 years as compared with the original time schedule. The 1st batch of short-listed projects was not established until August 2005.

These risks are history now, but they impose a set of new risks related to the required consolidation of tools and procedures, and hereby to the value of the outputs.

While the over-all achievements of BDP Phase 1 are regarded as successful, they are still in an initial stage of implementation for their intended useful purposes by MRC as well as at the national level.

In the BDP Project Document it was foreseen that major results would be not be available until towards the end of Phase 1, and that consolidation (and further development) would be required and would take place following a smooth transition into Phase 2.

The risk in this connection is a discontinuity between Phase 1 and Phase 2, that may in turn cause a lack of consolidation of tools and procedures, and a loss of institutional capacity at MRCS and the NMCs.

4 Assessment of the achievements

In accordance with the MRC Programming Manual, the present chapter provides a short assessment of achievements during BDP Phase 1.

4.1 Assessment of the quantitative achievements

All scheduled outputs were produced.

The resource allocation had occasional visible deviations from what was originally anticipated. In particular, output 2.1 (sub-area studies) required more time and more resources than was anticipated, which was one of the reasons for the initial time extension by 6 months. In return, these studies provided a particularly comprehensive description of the sub-areas, that was carried forward to the planning atlas. Even more important, the work of the sub-area study groups instituted a successful inter-agency networking and collaboration that highly supported the role of the NMCs in general and the prospects for multi-disciplinary IWRM in particular - not only at the basinwide level, but also at the sub-basin level of management.

The net difference between the original budget (for a 36 months period) and the actual expenses (for a 58 months period) was 725,700 USD including secretariat support costs. A summary of budget deviations is given in the table below.

Roughly half of the overspending on national and regional experts is off-set by a corresponding underspending on sub-contracts.

The highest deviation is related to training and workshops, where a higher level of effort was agreed on, with a view to the desired high level of active stakeholder involvement in the planning process.

The deviations have been continuously reported and commented on in connection with the progress reporting, and have been discussed during the donor reviews. The required additional funding was granted in early 2005 as a basis for the second extension of Phase 1 that was agreed in June 2005. The first extension for a period of 6 months was fully covered within the original budget.

LNMC has commented that the budget allocation for international experts has been too high, while a higher budget would have been in place for national activities, such as data and information collection and updating.

Table 4.1: Budget deviations

Budget line	Item	Difference between original budget and estimated actual expenses	Difference in percent of original budget
		<i>USD</i>	<i>percent</i>
11	International experts	-122,116	-5.3
13	Support staff	52,900	60.1
15	Official travel	34,800	17.4
18	Regional/national experts	331,420	36.8
21	Sub-contracts	-166,160	-39.6
30	Training/workshop	585,160	87.3
41	Equipment-expendable	4,570	5.1
42	Equipment-non-expend	12,170	9.4
52	Reporting costs	25,560	55.6
53	Miscellaneous	57,210	66.1
57	Contingency	-161,730	-100.0
	Total excl. support costs	653,784	12.8
	Secretariat support costs 11%	71,916	12.8
	Total incl support costs	725,700	12.8

The BDP Phase 1 has been a singular, non-routine exercise, and there is no fully valid reference for evaluating the relation between costs and benefits. Considering the scope and the innovative character of the BDP - covering 4 countries and all water-related sectors - it is evaluated that Phase 1 has observed a fully satisfactory ratio between inputs (or costs) and outputs (or benefits).

It is believed that the end-of-project situation complies well with the assumptions made in this regard in connection with the Project Document and the Inception Report.

4.2 Assessment of the suitability of the programme strategy

During Phase 1, the scope, context, and orientation of the BDP were developed in parallel with the formulation of the 2006-2010 MRC Strategic Plan. During Phase 2, it is expected that programming of all MRC's projects will be based on the BDP planning process of identification, categorization and prioritization - which was the role of the BDP that was originally foreseen.

For historical reasons (that included practicalities and availability of funds) it happened that several MRC programmes - like the Fisheries Programme, the Environment Programme, the Water Utilization Programme, the Flood Management and Mitigation Programme, and others - were in a healthy state of progress before the BDP was in place. In consequence, these programmes saw little need of the BDP. On the contrary, an undue lack of harmony would be counterproductive, and a particular effort was made to maintain '*seamless interfaces with existing MRC programmes*'.

The governing principles for programme implementation during Phase 1 are listed in the text box below.

Between them, these governing principles have provided a practical framework in support of the relevance and the usefulness of the BDP.

Box 8: Governing principles for implementation of BDP Phase 1

Preparation of the BDP is specified in the 1995 Mekong Agreement and is a core activity in MRC's Strategic Plans.

The Basin Development Plan is *'the general planning tool and process that the Joint Committee would use as a blueprint to identify, categorize, and prioritize the projects and programs to seek assistance for and to implement the plan at the basin level'*.

The BDP shall *'contribute to acceleration of inter-dependent sub-regional growth by establishing a process and a framework conducive to investment and sustainable development'*.

The BDP is intended *'to promote, support, cooperate and coordinate in the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs'*, aiming to *'optimize the multiple use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities'*.

Implementation of BDP Phase 1 has been detailed by subsequent MRC JC and Council decisions, for example by approval of the Programme Implementation Plan, the BDP Inception Report, and various revised work plans. The following principles have been observed:

- The planning is based on the principles of Integrated Water Resources Management (IWRM). Hereby, the approach is holistic, covering relevant sectors and themes, building on the Dublin Principles, and strongly participatory
- The principles stated in the MRC Strategic Plan (2001-05) under the headers of neutrality, openness, learning, teamwork, quality, and dialogue. Hereby, the planning process has taken place with coordination, knowledge-sharing, and willingness to active collaboration with relevant regional and national institutions, organizations, development agencies, universities and knowledge-centres.
- Promotion of balance between national interests; between upstream/downstream interests; between economic, social and environmental aspects; and between sectors
- Seamless interfaces and active collaboration with other MRC programmes
- Full conformance with related national development policies and strategies
- Full conformance with (existing and forthcoming) WUP rules or guidance for flow and water quality, and other agreed regional provisions, development policies and strategies
- The planning process builds on consensus about values shared by the member countries (as reflected in the 'Strategic directions for IWRM in the LMB', to serve as a platform and a reference for identification, ranking, promotion and implementation of projects and schemes
- The basic analysis of development needs and opportunities has been carried out at sub-area level, national level, and regional level
- The plan and the planning process aim to promote synergies and added value relative to national development and sector development
- The BDP will produce and maintain a *'live'* shortlist of agreed, bankable development projects and programmes
- Decisions on physical interventions will consider immediate as well as long-term implications, including cumulative effects. Actual implementation of physical interventions will be subject to an adequate decision basis

The perspective of the BDP is regional, but there are obvious links between regional and national development efforts, and the BDP Phase 1 has had effects not only at the regional, but also at the national and sub-basin levels. This is exemplified in Box 9, which is quoted from the BDP Phase 1 completion report of CNMC. The effects have been different in each country, depending on the national development agenda and the institutional context for water resources management.

Box 9: Achievements recorded by CNMC

- Frameworks for IWRM planning and development process established and functional at the basin-wide and national level, with broad participation;
- reintegration of the country into the regional planning process, especially providing opportunities for formulation of joint projects of common interest dealing with trans-boundaries issues;
- national concerns related to transboundary issues of the Mekong water and related resources have been voiced and built in the joint projects for joint implementation;
- national line agencies in the country actively contributed and built up support to the principle of IWRM planning ; and the NMC can play a more visible and effective coordination role in the project planning process;
- the integration of the national planning process into the regional planning process and vice versa is ongoing and steadily reinforced;
- tools and knowledge base developed and strengthened at national and regional level and the improvement is ongoing. The CNMCS projects databases will promote closer cooperation and synergies among line agencies concerned;
- the national projects formulated by BDP are accepted by line agencies to be included in the national planning process; and
- the institutional capacity of CNMC at sector and provincial level is improving.

(CNMC, July 2006)

4.3 Assessment of the suitability of the institutional arrangements

Institutional arrangements for the BDP and its implementation were in place well before Phase 1. They are summarised in the text box below. They have not been questioned, and it is evaluated that there have been no reasons to do so.

During Phase 1, the BDP has interacted positively with the MRC institutional framework. It is expected that this interaction will develop further in parallel with useful and tangible benefits '*on the ground*' will be produced as a consequence of the BDP process.

Box 10: Institutional framework for the BDP

The BDP is developed and implemented within existing institutions:

- Agreement on the cooperation for the sustainable development of the Mekong River Basin, 5 April 1995, Article 2 of which institutes the BDP
- MRC, its Council, and its Joint Committee (JC), the latter being the implementing body of the BDP. Formulation and periodical review and revision of the BDP is undertaken by the JC.
- The MRC Strategic Plans (2001-05 and 2006-2010)
- The NMCs and line agencies
- Via the NMCs, coordination, knowledge-sharing, and willingness to active collaboration will be maintained with existing as well as forthcoming River Basin Committees or Organizations

4.4 Ex-post risk analysis

At the end of BDP Phase 1, two major (and related) risks are evident:

- The risk of inadequate implementation and consolidation of the Phase 1 achievements; and
- the risk of discontinuity between Phase 1 and Phase 2.

These risks can be met by starting Phase 2 as early as ever possible, and by assuring an adequate continuity of staff from Phase 1 to Phase 2, within both MRCS and the NMCs.

A bridging period could be a useful measure to close the time gap between Phase 1 and Phase 2.

5 Lessons learnt

The role of the BDP has been clarified in connection with the formulation of the MRC Strategic Plan 2006-2010 and is much more visible towards the end of BDP Phase 1. In the process, the strategic focus has been sharpened, while the role has become more comprehensive than anticipated at the initial stages of formulation. Towards the end of BDP Phase 1 it is hoped that a planning process has been designed that can accommodate a broad range of relevant development initiatives, ranging from very '*soft*' capacity-building to very '*hard*' infrastructural intervention; and that can, at the same time, adjust flexibly to new knowledge and new challenges.

Some lessons learnt during BDP Phase 1 are summarised below.

5.1 General

The following general observations can be made:

- The national IWRM frameworks are - with differences from one country to another - in varying states of transition, development and consolidation. Continuous monitoring and adaptation (via the NMCs) is required in order to maintain and sharpen the impact and the institutional interfaces of the BDP
- The decision process during the 5 stages of BDP implementation turned out to be lengthier than originally anticipated. During BDP Phase 1, the project has put emphasis on a comprehensive participatory process. This experience was shared with other MRC programmes. In consequence, the preparation process became lengthy, with most documents being circulated in many draft versions, and some decisions being implicit rather than explicit. The positive side is that the member countries had a comprehensive influence and were, for that reason, in a good position to support the eventual outcome
- Scenario-based planning is not applied on a routine basis within national development planning in the Lower Mekong Basin. In consequence, the scenario formulations - at the sub-area as well as basinwide planning level - were new to the participants and took a much longer time than expected. For example, quite some time was spent with defining what a scenario is, with different definitions applied by different MRC programmes. The related time constraints were the reason why the ideal functional interaction between scenario formulation at sub-area level and at the basin level did not fully emerge.
- Practical modalities have been developed for project screening, including a reliable toolkit for initial impact screening at pre-feasibility level, covering social and environmental effects, including cumulative effects. Basically, the screening will not provide an assessment of various impacts, but will determine whether an assessment is required, and, if so, whether it has been made. If an impact assessment is required but has not yet been made, it will be included in the project cycle for the planned intervention. Strategic environmental assessment is still in a stage of early consolidation, both at strategy level and at the shortlist level, and may be further consolidated in collaboration with the MRC Environment Programme.

- A scope is seen for enhancing and streamlining the information flows via and among the NMCs about the national and the regional planning processes. Occasionally, visible changes occur within a short time. While a policy change at one time and one place should not necessarily immediately penetrate the whole BDP process, a fruitful gradual convergence can best be maintained when timely information is relayed about such changes. This consideration will be even more relevant once the upcoming river basin committees/river basin organizations come into full operation. It also relates to the promotion of short-listed priority projects, which must comply with (and preferably positively support) not only the basinwide '*Strategic Directions*', but also the national policies and preferences of the affected member countries.
- There is a scope for expansion and consolidation of the external participation in the planning process, including institutional partners (including donors, regional organisations and NGOs), the academic community, and the general public. Lessons learnt about public participation are summarised in a separate section below.
- The actual implementation of projects identified under the BDP will add momentum, visibility and justification to the planning process and generate experience with its implementation aspects. Although project implementation will take place outside of the BDP, it is still a part of the BDP planning cycle, and experience from all stages of the planning cycle would support a consolidated BDP.
- During BDP Phase 1, important links existed between BDP and other MRC programmes (such as for example provision of basic information about water availability in the sub-areas). These links were realised from the onset and were duly observed during the implementation of both programmes. Still, a scope remains for extended inter-programme coordination, for example linked to milestone submissions.
- The implementation of quality management routines were impeded by a lack of capacity and working tradition for this kind of routines both at MRCS and at the NMCs. A consolidation can be achieved by a series of short introductory seminars to explain and discuss quality management modalities and their implementation.
- The applied sector structure may be re-considered in the context of water-related sectors (and themes) that was used throughout BDP Phase 1. There would be clear practical advantages of a gradual convergence between the '*BDP sectors*' and the MRC programmes; and there are some visible gaps in the present sector and theme structure, such as drought management; morphological management; and operational flow management. The sector structure of the BDP should link with the MRC Strategic Plan 2006-2010 in order to assure a comprehensive, holistic and IWRM-based planning process; and also because the benefits and impacts of the BDP depend on harmony and good links between the MRC programmes.

5.2 Development planning

5.2.1 Sub-area analysis

Over-all, the sub-area analyses as made are regarded as highly successful. They have been indispensable for the BDP process and highly useful for several other applications within and outside MRC. Lessons learnt include the following:

- The sub-area delineation took place as an iterative and highly participatory process. The agreed delineation proved itself practical and useful. It was a right decision to observe the national borders as well as the hydrological ones.
- The sub-area approach (including the concluding transboundary dialogues) is seen as highly successful in its own right, from a technical as well as an institutional point of view. The sub-area analyses as made have been indispensable for the BDP process and highly useful for several other applications within and outside MRC. The sub-area working groups had participation by more than 200 line agencies and other institutional stakeholders and achieved an inter-agency collaboration that is regarded as a model for IWRM implementation in the Lower Mekong Basin. The working groups are temporary in principle, but the valuable outputs produced as well as the routines applied can serve as an important and useful example for de-central integrated planning, as undertaken by the provinces and/or the upcoming river basin committees/river basin organizations.
- The scenario analyses turned out to be particularly difficult, because this method was new to the participants (who were otherwise well familiar with resource planning), and also because its justification was initially not entirely clear to the participants. More time than expected was required to make the DSF operational, so that the scenario analyses were not available until a late stage of the sub-area analyses. The sub-area and the basinwide scenario analyses had different orientations and were not fully linked. Consolidation is required (both at MRCS and the NMCs) of the use of scenario analysis for multi-sector and multi-disciplinary development planning.
- There is a scope for further expansion and consolidation of the participation in the planning process, including the general public participation. Considering the broad and general scope of the BDP, some patience is required in this connection.
- The sub-area studies will get gradually outdated and should be regularly revised. Their maintenance should be regarded as an ongoing routine rather than a once-off exercise. This work may be accommodated under BDP Phase 1 and may conveniently be linked to both the BDP process and the state of the basin reporting. Also, the links to de-central planning should be maintained, in the interest of all parties involved.
- The sub-area working groups have set a good example in connection with streamlining and interfacing the institutional water resources management framework at the transboundary, as well as the national and the (sub-) river basin committee/organization level. This is partly related to their demonstrated ability to facilitate a positive interaction between regional and national water resources management and across sectors.

5.2.2 Transboundary meetings

From the five transboundary meetings, it was observed that:

- The meetings proceeded well and achieved a substantial progress in a short time (in contrast to the basic sub-area analyses that took a much longer time than anticipated).
- The participants could raise their issues and interests in a friendly way. This means that everyone was clear about the purpose of the dialogue were determined to achieve the intended outcome.

- It was possible to engage the participants in the discussion, and to make commitment for achieving the objectives and expected outputs of the meeting. This means that cooperation across national borders was possible and useful at the sub-area level.
- Good preparations were supporting the proceedings of the meetings, together with clear objectives and a clear intended outcome.
- Orientation, good preparation and commitment from all riparian countries contributed to the success of the transboundary meeting.
- Regarding the transboundary project ideas, the strategic significance of the various potential development initiatives can be further highlighted, partly with reference to the new MRC IWRM Strategy for the LMB, and partly in relation to the national socio-economic and sector development plans and policies. Also, there is a scope for an early screening of interfaces and overlaps with related parallel development initiatives.

5.2.3 Strategy formulation

The strategy formulation during BDP Phase 1 took place as an explorative process with numerous iterations and a comprehensive dialogue. In this connection, an active collaboration was maintained among the MRC programmes, the NMCs, and the national line agencies. The work took its starting point in the national development plans, and incorporated results from the BDP sector reviews, sub-area studies, and scenario analyses, as well as many indispensable contributions from other MRC programmes and external sources.

The work was supported by DSF-based analyses of alternative development scenarios, and by analyses of social and economic perspectives and implications.

The following observations were made in connection with the strategy formulation:

- An important feature of the Strategic Directions is that the values expressed must be shared by the member countries, and that the development goals must be accordingly agreed between them. Although the formulation took 2 years, the part of the work that related to these key features was not complicated, and no significant divergences or other obstacles occurred during the establishment of what can be regarded as the 'core' of the Strategic Directions. This is regarded as a strong demonstration of the commitment of the member countries, given the particularly broad scope of the Strategic Directions.
- The interaction between the development of BDP and WUP did not reach its full potential, since both programmes, for a variety of reasons, failed to meet their milestones in time. It is believed that the BDP has been sufficiently robust to proceed in a useful way even if some initial assumptions about its context and basis were changed during the preparation process.
- While the Strategic Directions have been formulated in a smooth dialogue among the MRC programmes and the NMCs, there is a scope for expanding the external dialogue in connection with its initial implementation and further development. This need was emphasized by the Joint Committee (in March 2004), but was not fully pursued during BDP Phase 1. While the BDP process has been entirely open, only a few initiatives were taken to activate a dialogue with external stakeholders and development partners.

- At a late stage of BDP Phase 1, the strategy formulation (that was hitherto based on the 2000-2005 MRC Strategic Plan) was visibly influenced by its interaction with the parallel formulation of a new (2006-2010) MRC Strategic Plan. This required a certain re-alignment, but will add to the relevance and usefulness of the BDP in the years to come, via better harmonization between the various MRC programmes, as well as with other regional development initiatives.
- A scope is seen for continued dialogue with the upstream riparians, also in connection with the BDP process, for example during the initial implementation and subsequent adjustments of the Strategic Directions.

The Strategic Directions have already provided valuable guidance for identification of useful development initiatives, not only at the regional level, but also at the national and sub-basin levels. There is a clear scope for enhancement, streamlining and consolidation during Phase 2, in a continued and expanded collaboration, building on the good experience gained.

5.2.4 Stakeholder participation

Public participation is the second of the so-called Dublin Principles³, which form the basis for IWRM, as promoted by for example Global Water Partnership: *'Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels'*.

Several particular aspects have characterized the stakeholder participation in the BDP formulation process:

- The four member countries have quite different policies and modalities regarding stakeholder participation in public planning. MRC must strictly observe the national policies and practices, and all activities at the national level (including a large part of the stakeholder dialogue) is taking place by or via the autonomous National Mekong Committees;
- a stakeholder dialogue about transboundary, multi-sector, strategic development efforts is technically more difficult than a dialogue about a single sector in a single country, not to speak of a specific intervention. A particular challenge is the public participation in the sub-area scenario and strategy formulation, interactively with plan formulation and maintenance at the sub-area and basinwide level;
- stakeholder participation based on documentation that is predominantly in English is not at all effective in this region;
- on the other hand, it can reasonably be claimed that all or most people living in the Lower Mekong Basin have some potential interest in one or several elements of the BDP;
- national routines for stakeholder participation are not fully consolidated, as well as the confidence between the actors that are a precondition for a fruitful process with a useful outcome.

While the process has been fully open to any external participation, with all key documents broadly published and disseminated, it has mostly involved institutional stakeholders, and only to a limited extent. Reasons include a lack of promotion, and perhaps also the subject matter being partly of a conceptual rather than a tangible character.

³ International Conference of Water and the Environment, Dublin 1992

TNMC has suggested a regional forum in which people and stakeholders of 4 countries can share their experiences and discuss ways to truly promote the public participation.

5.2.5 Project screening, shortlisting, and PIPs

It was found that the information provided about each candidate project was adequate for shortlisting, but not for a detailed ranking in Class A, B, C, D and E. Also, the information did generally not allow for preparation of specific Project Implementation Plans (PIPs). For these purposes, more comprehensive information is required, for example about:

- How the project fits into national and/or regional development plans, and how it supports official national and/or regional development policies (notably including MRC's Strategic Plan, and BDP's Strategic Directions for IWRM in the Lower Mekong Basin)
- Whether the project supports important general development goals, like the Millennium Development Goals, poverty alleviation, gender mainstreaming, management of natural resources and the environment, capacity-building, etc.
- Whether there are any related projects or programmes, and perhaps a need of coordination

An initial PIP was drafted as an example and guidance on the process for further preparation of project proposals.

BDP Phase I has created expectations on MRC for support, including support to funding, to implementation of the priority projects, including the national projects. In support of national as well as regional development goals, funds for implementation of projects identified under BDP phase I should continue to be sought. Several NMCs have requested the MRCS BDP Team that the MRC assist to facilitate dialogues with donors on possible funding opportunities.

Following comprehensive consultations in March and April 2005, it is assumed that the BDP will normally not involve itself in preparation of full project proposals. The BDP will promote the projects until they have been shortlisted and until an implementing agency(/ies) and a funding source have been identified.

5.3 Tools and knowledge base

Good knowledge will enhance the value of integrated management in various ways:

- overview of options and constraints (as influenced by inter-sector linkages);
- beneficial interaction between economic development and resource conservation;
- realistic and consistent scenarios;
- early identification of sub-optimal scenarios and solutions (and, hereby, less waste of time and resources) (or, in other words, reduced opportunity costs);
- prediction of full impact and 'downstream' side effects (positive as well as negative);
- timely and appropriate response to opportunities and threats; and
- improved knowledge about causes, effects, risks and opportunities.

The basinwide overview provided by the BDP provides a useful perspective to the national sector development planning, both by illustrating (and offering quantitative estimates) of options and constraints, and by placing the national development initiatives in a basinwide

context. The regional and sub-area analyses describe the basin-scale relations that can expand the scope of the national development efforts, and (via the subsequent planning activities) add value to these efforts.

5.3.1 Data system

Some observations from BDP Phase 1 may be summarised as follows:

- The knowledge and in particular data system are evanescent. Most of the data and information require a steady maintenance, updating, and revision, adapting to new knowledge, new developments, and new information needs
- The national IWRM frameworks are - with differences from one country to another - in varying states of transition, development and consolidation. Continuous monitoring (via the NMCs) is required in order to maintain and sharpen the impact and the institutional interfaces of the BDP
- There is a scope for enhanced inter-programme coordination of knowledge base development. One example is the basic IWRM requirement of some knowledge, or at least concrete assumptions about the water availability. At the start of BDP Phase 1, it was anticipated that this knowledge would be produced under the WUP and would be available as a basis for the BDP sub-area studies, but for various reasons, including both technical issues and political sensitivity (the hydrological analyses being tied up with the critical water-sharing negotiations), this was not the case. At a late stage of BDP Phase 1, knowledge became available about unallocated water, but the basic water availability remains a subject of discussion and dispute.
- There is a scope for improved awareness-building about the BDP, including dissemination of data and results, including Internet dissemination, using the MekongInfo platform, and various ways of liaison with external partners, stakeholders, and the academic community.
- There is a scope for improvement of the quality of a part of the data and information already available.
- There is a scope for improvement of the data and information available about IWRM-related institutional frameworks (that are in a state of transition or early consolidation in several MRC member countries); and about IWRM-related development policies, plans and initiatives (in order to assure harmony and identify and prevent inconsistencies, for example related to water utilization).

5.3.2 The DSF

The DSF modelling complex was developed under the WUP and was applied for a variety of analyses within the BDP. These applications have demonstrated

- the value of detailed and comprehensive information about flow rates, water levels and water balances in connection with multi-sector decision-making;
- the open-ended need of knowledge about basic cause-effect relationships; and
- the value of a holistic perspective of the diverse advantages and trade-offs in connection with physical interventions.

It is recommended to

- expand and consolidate the DSF knowledge-base and tools inter-actively with practical applications;
- streamline the linkages between the DSF and the other components of the MRC information system;
- further promote and support the national use of the DSF, for the sake of broadening the knowledge-base and enhancing its value.

In an institutional perspective, the use of the DSF should be consolidated, with continued efforts to make the tools practical and accessible, improved documentation, and continued training.

In any river basin there is a need of continued expansion of the basic data. In this connection, the MRC monitoring of flow and water levels provides a critical contribution. A need of improved flood information (for example about inundation areas and depths) is being produced under the MRC Flood Management and Mitigation Programme, and should, in time, be applied for an upgrading of the DSF. Similarly, new data are produced under the MRC water quality monitoring programme.

Regarding basic cause-effect relationships, improved knowledge would be highly valuable about various aspects of basin-wide importance, such as (for example)

- salinity intrusion in the Delta;
- consumptive and '*semi-consumptive*' water use for irrigation;
- sediment balances and morphological dynamics of the entire river system, and of the Tonle Sap in particular; and
- a broad range of relations between hydrology, habitat quality, fish productivity, biodiversity, and social and socio-economic implications.

There is a scope for continuously improving the validity of the baseline reference.

Many studies are in progress that will contribute to the general understanding of such complex, yet important relationships. In parallel, an effort must be made to synthesize and assemble the various achievements, in order to span the discrete disciplines and facilitate the integrated analyses that can further extend the basis for decision-making.

5.3.3 The RAM

The Resource Allocation Model (RAM) combines hydrological and economic data to allow users to explore feasible solutions for allocating water to meet different planning objectives. It is particularly useful as an analytical tool for assessing the significance of potential water allocation trade offs in quantitative terms. It also provides a means for evaluating alternative development scenarios using a standardized unit of measurement (i.e. money).

The BDP RAM was initially developed with an optimization component (using a *What's Best?* Excel add-on) and was known as the Resource Allocation and Optimization Model (RAOM). However, optimization was not a key model requirement and conflicted with the requirement to assess scenarios against a baseline and was thus removed.

The RAM has been developed to assist the BDP in scenario-based planning such that a number of combinations of external conditions and interventions can be modelled and their outcomes analyzed. It is not intended as a substitute for the more comprehensive Decision

Support Framework (DSF) that has been developed under the Water-Utilization Programme (WUP) but is rather an analytical tool for the rapid appraisal of various development options. Unlike the DSF, the RAM facilitates identification and quantification of some of the main economic trade offs that will result from changes in water allocation patterns. Within the basin development planning process, it is used for questions like the following:

- 1 What are the main economic activities (that rely on water from the Mekong) in the LMB?
- 2 Where are these activities located (on a sub-area basis)?
- 3 What is the significance (value) of these activities:
 - (a) To the sub-area?
 - (b) To the country?
 - (c) To the basin as a whole?
- 4 What are the internal and external driving forces that might result in changes to the intensity in which different economic activities are undertaken?
- 5 What are the major trade-offs (at LMB level) that will result from changes in the way that water is allocated among competing uses?
- 6 What is the economic significance (monetary value) of these trade-offs?
- 7 Who bears the costs/enjoys the benefits?
- 8 What activity-based development projects can add most economic value to the LMB without contravening water use rules (i.e. feeds into project selection)?
- 9 Apart from the extractive/revenue-earning economic activities, what can be said about the value of latent environmental resources or important ecological services?

Once various issues have been identified through the RAM, these can then be subjected to more detailed investigation and analysis.

Unlike all other resources currently available to MRC in general and BDP in particular, the RAM explicitly links water usage to economic outcomes. As a clearer picture has emerged of the way various major sorts of economic activities (e.g., agriculture, fisheries, hydropower, municipal and industrial demands, tourism, navigation, environmental uses, etc) are related to water demands, the nature of major resource development opportunities and possible choices at the LMB level is also becoming more explicit. Ideally, the RAM will be able to assist with identifying strategies for rational basin-wide economic growth in general and identifying 'win-win' resource-based development opportunities in particular.

The next step will be to refine the values and functions for modelling the various environmental and instream water demands – wetland productivity, flooding, saline intrusion and navigation. Further analyses can then be conducted using the RAM to show, for example:

- The nature of trade-offs, in terms of their location and value, between directly productive activities (e.g. irrigated agriculture, hydropower, etc) and instream and/or environmental demands
- How the nature of trade-offs changes under different valuation assumptions

Ultimately, the analyses facilitated by the model should be able to assist with:

- Providing a picture of overall value-added by water in all its uses under varying sets of assumptions (including depiction of alternative scenarios)

- Better integration and co-ordination of national planning efforts
- Identifying where MRC efforts (as a source of techno-economic advice, as an *'honest broker'* between countries) should be best located to assist countries to employ 'win-win' national development planning, and
- Identifying and justifying specific development opportunities (national and transboundary) which may be worthy of promotion

5.3.4 SEA/SIA

The SEA process is similar to the steps followed in project-level EIA for which each of the LMB countries have legal procedures. For BDP however, it is determined to apply a simplified procedure to avoid complexity and reduce the level of time and effort required.

The procedure broadly prescribes the assessment of development interventions against environmental and social criteria. These criteria reflect the objectives that have been established for development of the basin. These in turn will be derived from a consideration of existing environmental conditions and trends in the basin (from e.g. sub-area analysis) and from a review of national environmental, sustainable development and poverty reduction policies and strategies.

Upon completion of Phase 1, it is believed that

- practical modalities have been developed for project screening, including a fairly reliable initial impact identification at pre-feasibility level, covering social and environmental effects, including cumulative effects;
- strategic environmental assessment is still in a stage of early consolidation, both at strategy level and at the shortlist level;
- while the environmental assessment tools and routines were largely oriented towards consumptive (off-stream) water uses, indications are that a number of the priority development initiatives identified initially do not represent significant off-stream water consumption. This does not mean that the routines and tools are not relevant - on the contrary - but it is mentioned as a main reason why they have not yet been applied to their full potential in this respect;
- while the processes - which were developed separately - have become fully streamlined and consistent, a scope remains for full integration of the strategic environmental and social impact screening.

5.3.5 The Planning Atlas

The following lessons were learnt during preparation of the BDP Planning Atlas:

- There is a scope for identification and implementation of a set of practical and useful development indicators for basinwide monitoring within water-related sectors, for the sake of water resources management support and for appropriate and timely response to new challenges
- Knowledge gaps about basic cause-effect relationships need to be filled
- There is a scope for consolidation of the inter-sector dialogue and knowledge-sharing, at all planning levels
- There is a scope for further consolidation of the regional dialogue and knowledge-sharing within the BDP framework and among the MRC sector programmes
- Ideally, the preparation of the Planning Atlas should proceed as a continuous process. Most of the work should be done by the NMCs, with coordination and

support from MRC. The work could conveniently be linked with a continuous state of the basin reporting process.

5.4 Capacity-building

During BDP Phase 1, the capacity-building efforts are regarded as successful. They largely achieved their purpose, which was the availability of well qualified participants, using shared concepts and shared terminology, and with a shared sense of direction.

Still, there is always a scope for improvement - even things well done can often be done even better. Examples are:

- More comprehensive use of national languages, particularly at sub-area level.
- More comprehensive documentation - manuals, guidelines, lecture notes, and overheads - in national languages as far as practical, and broadly disseminated.
- Better coordination with related training efforts under other MRC programmes and outside MRC.
- Adaptation to new training needs, such as for example imposed by the emerging river basin organizations/river basin committees.
- Expansion of the training capacity by increased emphasis to training of trainers.
- Maintenance of the training needs assessments (the needs are likely to change over time), and introduction of training impact monitoring and impact assessment.
- Improved coordination, quality assurance, monitoring and documentation. The implementation of formal quality assurance routines may be considered in connection with the training activities.
- There is a clear scope for continuation, consolidation and expansion.

The following priority subjects were identified during the Training Needs Assessment conducted in the member countries between December 02 and May 04. They are only to a small extent confined to BDP-specific applications. On the contrary, most of the training will be of a more general value.

Box 11: Training priorities

Process-related training:	Communication, negotiation and presentation skills Workshop management Facilitation, conflict prevention and conflict resolution Action research and participatory survey techniques Stakeholder analysis and public participation
Technical issues:	Strategic planning and management IWRM and Integrated River Basin Planning Information analysis and sector review Decision-support tools (including the DSF) Transboundary issues & cause-effect analysis Project identification and formulation Project cycle management and Logical Framework Environment management IT training

The priority subjects are time-dependent and context-dependent and are likely to evolve in the time to come.

It has been emphasized by all NMCs that continued capacity-building is a priority during Phase 2, and it is anticipated that the training activities in phase 1 will be carried forward as an important part of the Phase 2 activities, continuously and dynamically adapted to new requirements and new opportunities.

In particular, the many close interfaces and overlaps between the training needs of each MRC programme can be better managed under the MRC Capacity-building Programme. A thorough coordination was not achieved during Phase 1, because this programme was not fully operational due to lack of funding.

5.5 Summary

By mid 2006, guidance on lessons learnt has been provided by the NMCs as listed in the text box below.

Box 12: Synthesis of lessons learnt, as provided by the NMCs

- More capacity building needed in general, and for the sub-area level BDP stakeholders in particular
- More support from MRCS and international consultants to NMCs on technical issues
- Transboundary and bilateral meeting have provided a good framework of trust building and cooperation between countries
- Regional activities should be increased for more coordination and participation
- BDP coordination should strengthen the open flow of information between riparian countries
- Utilization of the national imprest account systems could be improved
- Strengthening the information flows between national planning agencies and BDP.

By the end of Phase 1, the following key products are available:

- An agreed '*Strategic directions for IWRM in the Lower Mekong Basin*'
- A comprehensive MRC Project Database of water-related development projects and programmes
- An agreed shortlist of priority development initiatives, to be maintained by the JC as a continuous activity
- Tools and routines for project identification, initial documentation, and screening of impacts and significance, classification and ranking
- An underlying comprehensive knowledge base and documentation, including a '*Social Atlas*', a '*People and Environment Atlas*', '*the Core Library*' and a '*Planning Atlas*', readily available to users.
- Well qualified staff and relevant institutional capacities available at MRCS and the NMCs

Phase 1 was characterized by participation, exploration and innovation. It is believed that the achievements have a strong potential for adding a valuable regional perspective to the national water-related development planning, hereby contributing visibly to the MRC vision of '*an economically prosperous, socially just and environmentally sound Mekong River Basin*'.

References

- CNMC (July 2006): Completion report, Basin Development Plan Phase 1 (BDP 1)
- Danida and Sida (Nov 00): BDP Project Document
- MRC (June 2002): Programming Manual. Final updated working document
- MRC (July 02): MRC Strategic Plan 2001-2005
- MRC (April 06): MRC Strategic Plan 2006 - 2010 (draft)
- MRC-BDP (June 02 - July 06): Records of BDP Coordination Meetings 1-19
- MRC-BDP (July 02): BDP inception report. 22 July 2002
- MRC-BDP (July 02): BDP inception report, summary. 12 July 2002
- MRC-BDP (September 02 - Mar 06): 6-monthly progress reports no. 1-8
- MRC-BDP (February 04): Quality plan. Draft guideline, September 2003, revised 6 February 2004
- MRC-BDP (July 06): BDP Programme Phase 2 (2006 – 2010), revised programme document. 14 July 2006
- MRC-BDP (December 05): Strategic Directions for IWRM in the LMB

Annex 1: Chronology

Background events

1957	:	Committee for Co-ordination of Investigations of the Lower Mekong Basin
1970	:	Indicative Basin Plan
1978	:	Interim Committee for Co-ordination of Investigations of the Lower Mekong Basin
1987	:	Revised Indicative Basin Plan
5 April 1995	:	The Mekong Agreement, and foundation of the Mekong River Commission
19-20 June 1995	:	1st meeting of the MRC BDP Sub-Committee
1996	:	BDP specifications, country reports, BDP Insight Workshop
1997	:	BDP project proposal, appraised by Danida and Sida in Aug/Sep 97
1998	:	MRC public participation study
1999	:	BDP, detailed planning phase; bridging phase initiated
2000	:	BDP country studies and HRD assessments
25 October 2000	:	BDP Project Document approved by the MRC Council
17 November 2000	:	BDP Project Document, final version

BDP formulation (Phase 1)

1 October 2001	:	Start of the BDP Formulation Programme (BDP Phase 1)
30 October 2001	:	BDP consultation with TNMC
1 November 2001	:	MRC Council Meeting in Bangkok
14 November 2001	:	BDP consultation with LNMC
16 November 2001	:	BDP consultation with VNMC
29 November 2001	:	BDP consultation with CNMC
17 December 2001	:	BDP National Launch Workshop in Hanoi
21 December 2001	:	BDP National Launch Workshop in Vientiane
30 Jan – 1 Feb 2002	:	Regional Consultation Workshop on Public Participation, Phnom Penh
12 February 2002	:	BDP National Launch Workshop in Phnom Penh
15 February 2002	:	BDP Regional Launch Workshop in Bangkok
13-14 May 2002	:	Regional Inception Workshop in Ho Chi Minh City
May 2002	:	Delineation of sub-areas
24-25 June 2002	:	1st BDP Coordination Meeting in Phnom Penh
10-11 July 2002	:	Inception report approved by JC
November 2002	:	Planning cycle guideline, 1st draft
Nov/Dec 2002	:	Joint donor review
January 2003:	:	1st MDBC training module, Can Tho

June 2003	:	Framework for stakeholder participation
June 2003	:	The JC decides to proceed with the various BDP activities in parallel, rather than in succession, in order to boost the progress
September 2003	:	BDP quality plan
October 2003	:	Donor desk review
October 2003	:	The 1 st draft of SEA Framework
Nov/Dec 2003	:	A 6 months extension, within the original budget, approved by MRC Council and donors
Jan/Feb 2004	:	Joint donor review
February 2004	:	1st draft concept proposal for BDP Phase 2
April 2004	:	National sector reviews completed
May 2004	:	MDBC study tour of the LMB
June 2004	:	1st draft IWRM Strategy
July 2004	:	1st draft SIA framework
August 2004	:	Draft IWRM strategy submitted to JC for guidance
November 2004	:	A series of Transboundary meetings were conducted
December 2004	:	MDBC study tour to the Tonle Sap sub-basin
December 2004	:	BDP Phase 2 proposal approved ' <i>in principle</i> ' by the MRC Council
January 2005	:	Sub-area studies completed
April 2005	:	Pre-appraisal of BDP Phase 2 by Danida and Sida
April 2005	:	The 1 st version of Projects Database and the 2 nd draft of SEA Framework
May 2005	:	The Project screening toolkits was prepared
June 2005	:	BDP Phase 1 extended until 31st July 2006
August 2005	:	The BDP's process of prioritization of joint projects and the 1st batch of screened projects to be placed on the BDP shortlist were endorsed by the JC
October 2005	:	The Integrated River Basin Planning Training Package (Joint between MDBC / MRC) tested
December 2005	:	' <i>Strategic directions for IWRM in the LMB</i> ', ' <i>The initial screening process on shortlist</i> ' and ' <i>The BDP Phase 2 Programme Document</i> ' were approved by the MRC Council
December 2005	:	Revised BDP Phase 2 proposal approved by the MRC Council
January 2006	:	Donor appraisal of BDP Phase 2
January 2006	:	The 2 nd version of Project Database and the 3 rd draft of SEA Framework
April 2006	:	The 2 nd batch of shortlist
May 2006	:	BDP Planning Atlas and Core Library completed
June 2006	:	Completion Workshops for BDP Phase 1
31 July 2006	:	Completion of the BDP Phase 1

Annex 2: Logical framework

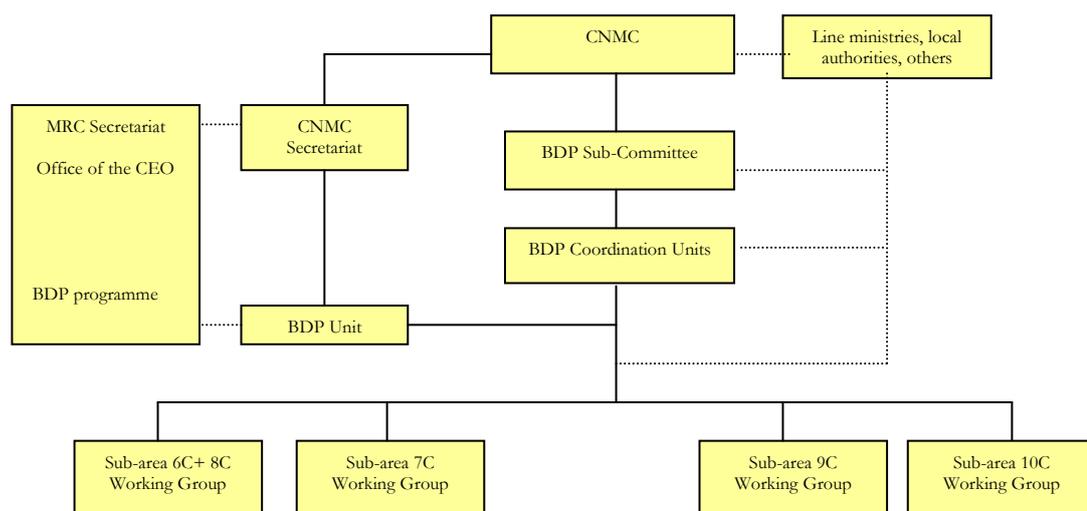
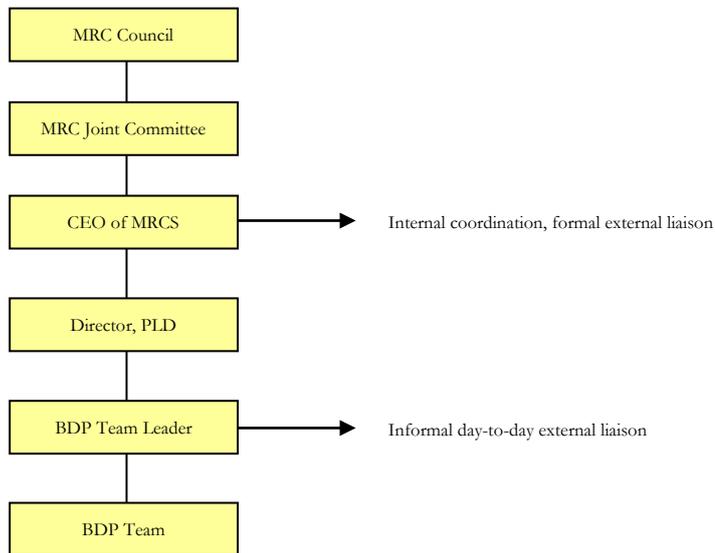
The logical framework for BDP Phase 1 is described in the Inception Report (final version, 22 July 2002).

Development objective	Indicator(s)	Means of verification	Assumptions/risks related to achieving the development objective
Sustainable development of the water and related resources of the LMB for the mutual benefit of the riparian countries and people living in the entire Basin. In the medium-term, the outcome of this project is expected to provide a framework for regional co-operation among the riparian countries to develop the LMB through implementation of a well-defined and established BDP	Economic growth	Macroeconomic monitoring	Continued riparian collaboration and joint orientation within the MRC framework National formulation and implementation of supportive policies
	Reduced poverty	Socio-economic monitoring	
	Sustainable utilization of water and related resources	Water resources monitoring	
	Reduced environmental degradation	Environmental monitoring	
<i>Note</i> This development objective reflects the vision of ' <i>an economically prosperous, socially just and environmentally sound Mekong River Basin</i> ' expressed in the MRC Strategic Plan, 1998			
Immediate objectives			
1 A participatory basin planning process established and ongoing	MRC Secretariat BDP Team operational	Progress reports Technical reports	Continued riparian acceptance of BDP objectives, scope and approach
2 A BDP aiming at a balanced mix of social, economic and environmental factors drafted and agreed on	NMC BDP sub-committees operational BDP functions operational at the NMCs Agreement between member countries on technical planning issues and procedures (training programmes, guidelines, sub-areas, etc.) Functional concordance between member countries on political planning issues (scenarios, strategies, priority projects)	Guidelines Working papers Workshop Proceedings	Continued active support of the planning process from NMCs and line agencies Adequate cooperation between involved agencies, including adequate exchange of data and information Orderly progress of WUP
<i>Note</i> According to the 1995 Mekong Agreement, the BDP ' <i>would be used to identify, categorize and prioritize the projects and programs to implement at the basin level</i> '			<i>Note</i> The assumptions/risks listed below do also relate to the development objective
	1st BDP submitted to JC for endorsement by end of year 3	Minutes of JC meetings	

Outputs related to immediate objective 1	Indicator(s)	Means of verification	Assumptions/risk related to achieving immediate objective 1
1.1 Planning process	Entire BDP organization and network in place and functioning by late June, 2002. This comprises the MRC Secretariat organization, the national organizations, and linkages with GMS and other key actors	Inception report Progress reports Technical reports Guidelines Working papers Workshop proceedings BDP website	Adequate institutional capacity of NMCs and line agencies to participate actively in the planning process, including adequate allocation of counterpart staff National willingness to establish inter-active interfaces between BDP and national planning and to adjust planning practices accordingly
1.2 Guidelines	Draft ToR for Working Groups by late March 2002 Full set of guidelines drafted by late September 2002		
1.3 Data system	Data system implemented and operational by September 2002 Development (process and state) indicators and framework for impact analysis and monitoring agreed by September 2002		
1.4 Trained staff	Training plan agreed by late June 2002 Training initiated by August 2002 6 MSc candidates identified by June 2002		
1.5 Reporting	Final Inception Report June 2002 Progress Reports by November 2002, May 2003, November 2003, May 2004 Completion Report September 2004		
1.6 Workshops, meetings and forums	By September 2004: 16 national workshops 4 regional workshops 2 regional expert forums 36 national BDP sub-committee meetings 80 national BDP Unit/working group meetings 40 sub-area working group meetings/forums 10 meetings between sub-areas		

Outputs related to immediate objective 2		Indicator(s)/due date	Means of verification	Assumptions/risk related to achieving immediate objective 2
2.1	Sub-area studies	<p>Sub-areas agreed by June 2002</p> <p>Working groups at national level established by June 2002</p> <p>Links established with regional programmes by August 2002</p> <p>One sub-area working group established in each country by August 2002</p> <p>Overview of LMB issues prepared by September 2002</p> <p>Public participation fully initiated by end of 2002</p> <p>Sub-area studies drafted for one sub-area in each country by end of 2002</p> <p>Sub-area studies drafted for all sub-areas by April 2003</p> <p>Detailed overview of LMB issues completed by June 2003</p>	<p>Progress reports</p> <p>Technical reports</p> <p>Working papers</p> <p>Workshop proceedings</p>	<p>Adequate data and information shared among participating agencies and other key stakeholders</p> <p>Adequate operational overlap of interests and priorities among countries, line agencies and other key stakeholders, including the public</p>
2.2	20-year scenarios	<p>Scenarios formulated for one pilot sub-area by January 2003</p> <p>Scenarios formulated for all sub-areas by July 2003</p> <p>LMB scenario formulation completed by September 2003</p>		
2.3	Sub-area strategies	Strategies for all sub-areas formulated by October 2003	Minutes of JC and Council meetings	
2.4	Basin-wide strategies	Strategies for LMB formulated by end of 2003	Technical reports Working papers	
2.5	Long-list of projects and programmes	<p>Long-list prepared by March 2004</p> <p>Effects, impacts and mitigation analysed by June 2004</p>		
2.6	Short-list of projects and programmes	<p>Selection criteria submitted to MRC JC by July 2003, and the Council by October 2003</p> <p>Short-list compiled by September 2004</p>		
2.7	Implementation plan	Implementation plan drafted by September 2004		

Annex 4: The BDP organization



BDP Sub-Committee

Cambodia National Mekong Committee
Ministry of Agriculture, Forestry and Fisheries
Ministry of Environment
Ministry of Foreign Affairs and International Cooperation
Ministry of Industry, Mines and Energy
Ministry of Interior
Ministry of Land Management, Urbanization and Construction
Ministry of Planning
Ministry of Public Works and Transport
Ministry of Rural Development
Ministry of Tourism
Ministry of Water Resources and Meteorology
Ministry of Women and Veteran Affairs
National Committee for Disaster Management

BDP Coordination Unit

Cambodia National Mekong Committee
Ministry of Agriculture, Forestry and Fisheries
Ministry of Environment
Ministry of Foreign Affairs and International Cooperation
Ministry of Industry Mines and Energy
Ministry of Interior
Ministry of Land Management, Urbanization and Construction
Ministry of Planning
Ministry of Public Works and Transport
Ministry of Rural Development
Ministry of Tourism
Ministry of Water Resources and Methodology
Ministry of Women and Veteran Affairs

Working Group 1 (sub-area 6C+8C)

Ministry of Public Works and Transport
Ministry of Tourism
Department of Agriculture, Forestry and Fisheries, Kratie Province
Department of Agriculture, Forestry and Fisheries, Stung Treng Province
Department of Environment, Kratie Province
Department of Environment, Preah Vihear Province
Department of Industry, Mines and Energy, Kratie Province
Department of Industry, Mines and Energy, Stung Treng Province
Department of Planning, Kratie Province
Department of Planning, Preah Vihear Province
Department of Planning, Stung Treng Province

Department of Public Works and Transport, Kratie Province
Department of Public Works and Transport, Preah Vihear Province
Department of Tourism, Kratie Province
Department of Tourism, Preah Vihear Province
Department of Water Resources and Meteorology, Kratie Province
Department of Water Resources and Meteorology, Stung Treng Province

Working Group 2 (sub-area 7C)

Ministry of Environment
Ministry of Industry, Mine and Energy
Department of Agriculture, Forestry and Fisheries, Mondulakiri Province
Department of Agriculture, Forestry and Fisheries, Rattanakiri Province
Department of Environment, Mondulakiri Province
Department of Environment, Rattanakiri Province
Department of Environment, Stung Treng Province
Department of Industry, Mines and Energy, Rattanakiri Province
Department of Industry, Mines, and Energy, Mondulakiri Province
Department of Planning, Mondulakiri Province
Department of Planning, Rattanakiri Province
Department of Public Works and Transport, Mondulakiri Province
Department of Public Works and Transport, Stung Treng Province
Department of Tourism, Mondulakiri Province
Department of Tourism, Rattanakiri Province
Department of Tourism, Stung Treng Province
Department of Water Resources and Meteorology, Mondulakiri Province
Department of Water Resources and Meteorology, Rattanakiri Province

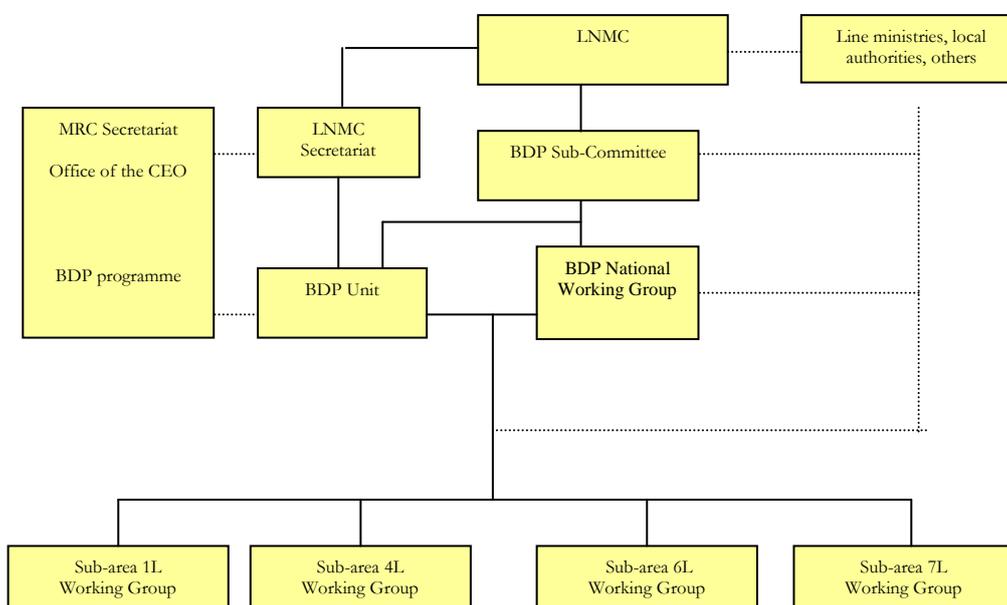
Working Group 3 (sub-area 9C)

Ministry of Agriculture, Forestry and Fisheries
Ministry of Environment
Department of Agriculture, Forestry and Fisheries, Battambang Province
Department of Agriculture, Forestry and Fisheries, Kampong Chhnang Province
Department of Agriculture, Forestry and Fisheries, Kampong Thom Province
Department of Agriculture, Forestry and Fisheries, Pursat Province
Department of Agriculture, Forestry and Fisheries, Siem Reap Province
Department of Planning, Banteay Meachey Province
Department of Planning, Battambang Province
Department of Planning, Kampong Chhnang Province
Department of Planning, Kampong Thom Province
Department of Planning, Oddor Meanchey Province
Department of Planning, Pailin Municipality
Department of Planning, Preah Vihear Province
Department of Planning, Pursat Province

Department of Planning, Siem Reap Province
Department of Public Works and Transport, Battambang Province
Department of Public Works and Transport, Kampong Chhnang Province
Department of Public Works and Transport, Kampong Thom Province
Department of Public Works and Transport, Pursat Province
Department of Public Works and Transport, Siem Reap Province
Department of Water Resources and Meteorology, Battambang Province
Department of Water Resources and Meteorology, Kampong Chhnang Province
Department of Water Resources and Meteorology, Kampong Thom Province
Department of Water Resources and Meteorology, Pursat Province
Department of Water Resources and Meteorology, Siem Reap Province

Working Group 4 (sub-area 10C)

Ministry of Agriculture, Forestry and Fisheries
Ministry of Water Resources and Meteorology
Department of Agriculture, Forestry and Fisheries, Kampong Cham Province
Department of Agriculture, Forestry and Fisheries, Kampong Speu Province
Department of Agriculture, Forestry and Fisheries, Kandal Province
Department of Agriculture, Forestry and Fisheries, Prey Veng Province
Department of Agriculture, Forestry and Fisheries, Svay Rieng Province
Department of Agriculture, Forestry and Fisheries, Takeo Province
Department of Planning, Kampong Cham Province
Department of Planning, Kampong Speu Province
Department of Planning, Kampot Province
Department of Planning, Kandal Province
Department of Planning, Koh Kong Province
Department of Planning, Phnom Penh City
Department of Planning, Prey Veng Province
Department of Planning, Svay Rieng Province
Department of Planning, Takeo Province
Department of Public Works and Transport, Kampong Cham Province
Department of Public Works and Transport, Kampong Speu Province
Department of Public Works and Transport, Kandal Province
Department of Public Works and Transport, Prey Veng Province
Department of Public Works and Transport, Svay Rieng Province
Department of Public Works and Transport, Takeo Province
Department of Water Resources and Meteorology, Kampong Cham Province
Department of Water Resources and Meteorology, Kampong Speu Province
Department of Water Resources and Meteorology, Kandal Province
Department of Water Resources and Meteorology, Prey Veng Province
Department of Water Resources and Meteorology, Svay Rieng Province
Department of Water Resources and Meteorology, Takeo Province



BDP Sub-Committee

Ministry of Agriculture and Forestry

Ministry of Foreign Affair

Ministry of Communications, Transports, Posts and Constructions

Ministry of Industry and Handicraft (Ministry of Energy and Mining)

National Committee for Planning and Investment (CPI)

National Mekong Committee (NMC)

Science Technology and Environment Agency (STEA)

Water Resources Coordination Committee Secretariat

BDP National Working Group

Ministry of Agriculture and Forestry

Ministry of Communications, Transports, Posts and Constructions

Ministry of Industry and Handicraft (Ministry of Energy and Mining)

Ministry of Public Health

National Committee for Planning and Investments (CPI)

National Tourist Authority (NTA)

Science Technology and Environment Agency (STEA)

Water Resources Coordination Committee Secretariat

Ministry of Education

Ministry of Labour and Social Welfare

Sub-Area Working Group, Northern Laos (sub-area 1L)

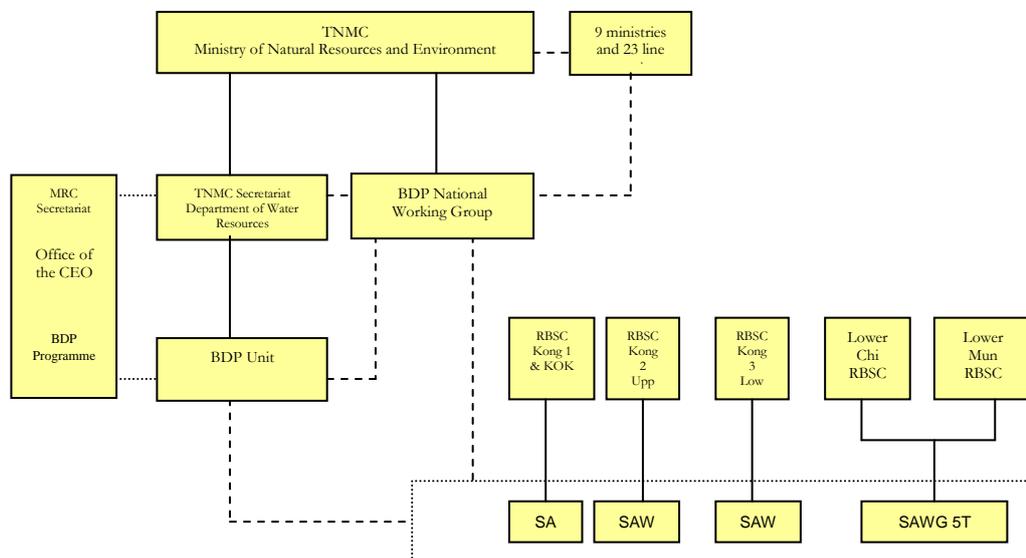
- Department for Planning and Investments, Bokeo Province
- Department for Planning and Investments, Houaphanh Province
- Department for Planning and Investments, Luangnamtha Province
- Department for Planning and Investments, Luangprabang Province
- Department for Planning and Investments, Oudomxay Province
- Department for Planning and Investments, Phongsaly Province
- Department for Planning and Investments, Xayaboury Province
- Department for Planning and Investments, Xiengkhuang Province

Sub-Area Working Group Central Laos, (sub-area 4L)

- Department for Planning and Investments, Borikhamxay Province
- Department for Planning and Investments, Khammouane Province
- Department for Planning and Investments, Savannakhet Province
- Department for Planning and Investments, Vientiane Capital
- Department for Planning and Investments, Vientiane Province
- Department for Planning and Investments, Xaysomboune Special Zone

Sub-Area Working Group Southern Laos (sub-areas 6L & 7L)

- Department for Planning and Investments, Attapeu Province
- Department for Planning and Investments, Champasack Province
- Department for Planning and Investments, Saravane Province
- Department for Planning and Investments, Sekong Province



BDP National Working Group

Ministry of Agriculture and Cooperatives
Ministry of Foreign Affairs
Ministry of Interior
Ministry of Natural Resources and Environment
Ministry of Public Health
Department of Fisheries
Department of Treaties and Legal Affairs
Department of Water Resources
Department of Water Transport and Maritime Commission
Electricity Generating Authority of Thailand
High-level Educational Institutes in the Lower Mekong Basin
Meteorological Department
Office of National Economic and Social Development Board
Office of Natural Resources and Environmental Policy and Planning
Policy Control Department
Royal Irrigation Department
Water Resources Association in Thailand
1 NGO representative
2 representatives from the academic community

Sub-Area Working Group 2T

Ministry of Natural Resources and Environment
Agricultural Group, Phayao Province
Chiang Rai Irrigation Project, Regional Irrigation Office 2
Chiang Rai Rajabath University
Department of Water Resources
Disaster Prevention Mitigation Center 10, Lumpang
Inland Fisheries Station, Chaing Rai Province
Marine Office 1, Chiang Rai
Naraysuan University, Phayao Campus
Natural Resources and Environment, Phayao Province
Protected Area Management Administration
Provincial Waterworks Authority, Regional Office 9, Chiang Mai
Public Society Representative, Chiang Rai Province
Public Society Representative, Phayao Province
Tourism Authority of Thailand Northern Office, Region 2
Water Resources Regional Office1, Lumpang Province

Sub-area Working Group 3T - 1

Academic Institution Representative , Udon Thani

Agriculture and Cooperative Society, Udon Thani Province
Coordination and Basin Management Unit R-3, Udon Thani
Department of Public Works and Town & Country Planning
Disaster Prevention and Mitigation Center 6, Khon Khaen
Inland Fisheries Research and Development Centre, Udon Thani
Irrigation Region Office 5, Royal Irrigation Department
Local Administration Representative, Loei Province
Local Administration Representative, Nongkhai Province
National Park, Wildlife and Plant Conservation Department
NGO Representative, Loei Province
NGO Representative, Nongkhai Province
NGO Representative, Udon Thani Province
Office of Natural Resources and Environment, Udon Thani Province
Organization/Agricultural Water User Representative, Nongbua Lamphu Province
Organization/Business Water User Representative, Nongkhai Province
Provincial Waterworks Authority, Regional Office 7
Rajabhat University

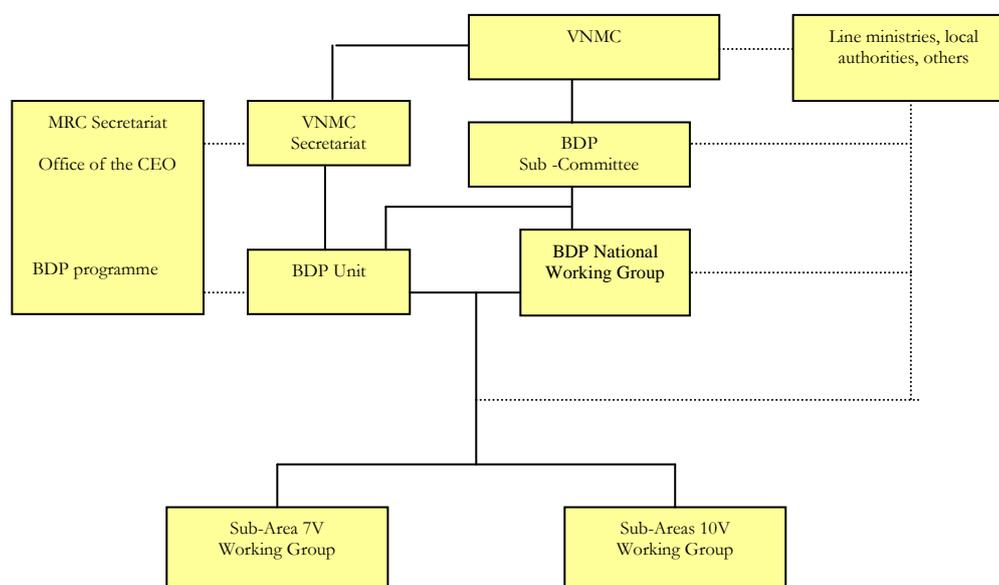
Sub-area Working Group 3T - 2

Academic Institution Representative, Nakhon Phanom Province
Business and Factory Representative, Mukdahan Province
Cultural Organization Representative, Mukdahan Province
Department of Water Resources, Udon Thani
Nakhon Phanom College of Agricultural Technology
National Park, Wildlife and Plant Conservation Department
NGO Representative, Amnat Charoen Province
NGO Representative, Sakon Nakhon Province
Office of Natural Resources and Environment, Mukdahan Province
Office of Water Resources, Mukdahan Province
Organization/Agricultural Water User Representative, Nakhon Phanom Province
Organization/Business and Industry Water User Representative, Sakon Nakhon Province
Province Fisheries Office, Mukdahan Province
Public Works and Town & Country Planning Office, Nakhon Phanom
Regional Irrigation Office 7, Ubon Ratchathani Province
Representative of Agriculture, Mukdahan Province

Sub-area Working Group 5T

Civil Society Representative, Yasothon Province
Community Development 3, Ubon Ratchathani Province
Coordination and Basin Management Unit, Lower Mun Basin
Department of Water Resources

Irrigation Regional Office 7, Ubon Ratchatani Province
 Local Administration Representative, Kalasin Province
 Local Administration Representative, Roi Et Province
 NGO Representative, Roi-Et Province
 Office of Natural Resources and Environment, Roi Et Province
 Organization/Agricultural Water User Representative, Roi Et Province
 Organization/Agricultural Water User Representative, Srisaket Province
 Organization/Agricultural Water User Representative, Ubon Ratchathani Province
 Organization/Agricultural Water User Representative, Yasothon Province
 Organization/Agricultural Water User Representative, Yasothon Province
 Rachaphat Ubonratchathani
 Ubon Ratchathani University
 Water Foundation
 Water Resources Regional Office 5
 Water Transportation Regional Office 7, Ubon Ratchathani Province



BDP Sub-Committee

Department of Agriculture and Rural Development, MPI
 Department of Hydraulic Work and Irrigation Management, MARD
 Institute for Water Resource Planning

Sub-Institute for Agricultural Planning and Projection
Sub-Institute for Forestry Inventory Planning

BDP National Working Group

Ministry of Agriculture and Rural Development (MARD)
Ministry of Fishery
Ministry of Planning and Investment
Ministry of Transportation
Development Strategy Institute
Forestry Inventory and Planning Institute
Institute of Water Resources Planning
National Institute for Agricultural Planning and Projection
Power Engineering Consulting Company I, Ministry of Industry
Sub Institute for Forestry Inventory and Planning
Sub-Institute for Agricultural Planning and Projections
Sub-Institute for Water Resources Planning

Sub-Area Working Group 7V

Ministry of Agriculture and Rural Development (MARD)
Ministry of Fishery
Ministry of Industry
Ministry of Planning and Investment
Department of Agriculture and Rural Development, Dac Lac Province
Department of Agriculture and Rural Development, Kon Tum Province
Forestry Inventory and Planning Institute
Institute for Water Resources Planning, MARD
Institute of Water Resources Planning
Irrigation Section, Gia Lai Province
National Institute for Agricultural Planning and Projection
Power Engineering Consulting Company I
Yali Hydropower Plant, Gia Lai Province

Sub-Area Working Group 10V

Ministry of Agriculture and Rural Development (MARD)
Ministry of Planning and Investment (MPI)
Department of Agriculture and Rural Development, An Giang Province
Department of Agriculture and Rural Development, Ben Tre Province
Department of Agriculture and Rural Development, Can Tho Province
Department of Agriculture and Rural Development, Dong Thap Province
Department of Agriculture and Rural Development, Long An Province
Department of Agriculture and Rural Development, Tien Giang Province

Department of Agriculture and Rural Development, Vinh Long Province
Department of Agriculture and Rural Development, Tra Vinh Province
Department of Water Resources and Hydraulic Work Management, MARD
Development Strategy Institute, MPI
Inland Waterway Administration, Ministry of Transportation
Southern Economic Research Center
Sub-Institute for Agricultural Planning and Projections
Sub-Institute for Forestry Inventory and Planning
Sub-Institute for Water Resources Planning

Annex 5: BDP documents

The '*BDP Library*' CD contains documents as listed below prepared by or for the BDP. The list includes final versions or the latest drafts, most of which are dated in 2005 and 2006. Many of the documents, however, were initially drafted in the preceding years.

Core library

- MRC-BDP (2006): The BDP planning process. BDP Library Volume 1. Mekong River Commission, Basin Development Plan. May 2005, revised February 2006
- MRC-BDP (2006): Sub-area analysis and transboundary planning. BDP Library Volume 2. Mekong River Commission, Basin Development Plan. December 2004, revised January 2006
- MRC-BDP (2005): Scenarios for strategic planning. BDP Library Volume 4. Mekong River Commission, Basin Development Plan. March 2005, revised November 2005
- MRC-BDP (2005): Stakeholder participation. BDP Library Volume 5. Mekong River Commission, Basin Development Plan. July 2004, revised November 2005
- MRC-BDP (2005): Data system and knowledge base. BDP Library Volume 6. Mekong River Commission, Basin Development Plan. March 2005, revised December 2005
- MRC-BDP (2005): MRCS Decision Support Framework (DSF) and BDP applications. BDP Library Volume 7. Mekong River Commission, Basin Development Plan. March 2005, revised September 2005
- MRC-BDP (2005): Economic valuation of water resources (RAM Applications). BDP Library Volume 8. Mekong River Commission, Basin Development Plan. June 2005, revised December 2005
- MRC-BDP (2005): Social and environmental issues and assessments (SIA, SEA). BDP Library Volume 9. Mekong River Commission, Basin Development Plan. July 2004, revised December 2005
- MRC-BDP (2005): IWRM strategy for the Lower Mekong Basin. BDP Library Volume 10. Mekong River Commission, Basin Development Plan. December 2005
- MRC-BDP (2005): Monographs. BDP Library Volume 11. Mekong River Commission, Basin Development Plan. March 2005, revised December 2005
- MRC-BDP (2005): Project implementation and quality plan. BDP Library Volume 12. Mekong River Commission, Basin Development Plan. January 2006
- MRC-BDP (2005): National sector reviews. BDP Library Volume 13. Mekong River Commission, Basin Development Plan. October 2004, revised November 2005
- MRC-BDP (2005): Regional sector overviews. BDP Library Volume 14. Mekong River Commission, Basin Development Plan. November 2002, revised September 2005
- MRC-BDP (2005): Training. BDP Library Volume 15. Mekong River Commission, Basin Development Plan. December 2004, revised December 2005

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- Beecham, Richard (2004): Developing inputs for Resource Allocation and Optimisation Model. Technical Report 1, February 2004. Mekong River Commission, Basin Development Plan
- Beecham, Richard (Mar 04): Analysis of alternate baseline conditions. MRC BDP Working Paper
- Beecham, Richard (May 04): Modelling support for Basin Development Plan (with analysis of Chinese dam cascade). MRC BDP Working Paper
- Beecham, Richard and Hugh Cross (Mar 05): Modelled Impacts of Scoping Development Scenarios in the Lower Mekong Basin. MRC-BDP Working Paper
- Chaudhry, Peter (2004a): Social Impact Assessment - consultancy report for the Mekong River Commission (MRC) Basin Development Plan (BDP). May 2004
- Chaudhry, Peter (2004b): Social Development & Social Impact Assessment in the Basin Development Planning process. Orientation Paper for NMCs, July 2004
- Chaudhry, Peter and Muanpong Juntopas (Jan 05): Water, poverty and livelihoods in the Lower Mekong Basin. Mekong River Commission, Vientiane, Lao PDR
- CNMC (Jun 03a): Irrigated agriculture. National sector review prepared by Ministry of Water Resources and Meteorology in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03b): Fisheries management. National sector review prepared by Ministry of Agriculture, Forestry and Fisheries in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03c): Flood mitigation and management. National sector review prepared by Ministry of Water Resources and Meteorology in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03d): Hydropower. National sector review prepared by Ministry of Industry, Mines and Energy in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03e): Navigation, transport and river works. National sector review prepared by Ministry of Public Works and Transport in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03f): Tourism development. National sector review prepared by Ministry of Tourism in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03g): Watershed management. National sector review prepared by Ministry of Agriculture, Forestry and Fisheries in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Jun 03h): Water supply: Domestic water and sanitation, and industrial water use. National sector review prepared by Ministry of Water Resources and Meteorology in association with CNMC in connection with the MRC Basin Development Plan
- CNMC (Sep 03): Integrated water resources management in Cambodia, national sector review. Basin Development Plan Programme. Phnom Penh, Cambodia
- CNMC (Oct 04): Basin Development Plan Programme, sub-area analysis. The Tonle Sap Sub-area (9C)
- CNMC (Dec 04): Sub-area analysis and development. The Delta, Cambodian Part (10C)

- CNMC (Jan 05a): Sub-area analysis and development. The Northern Cambodia-Southern Laos and Kratie Sub-areas (6C and 8C)
- CNMC (Jan 05b): Sub-area analysis and development. The Se San/ Sre Pok(Se Kong Sub-area (7C)
- Cross, Hugh (Jun 04): Hydrologic analysis for basin planning using the MRC DSF: Spatial flood relationships to river flows, dai fish catches and inundated populations. MRC BDP Working Paper
- Cross, Hugh (Mar 04): DSF outputs from ISIS model simulations for basin planning. MRC BDP Working Paper
- Cross, Hugh (Mar 05): A report on likely infrastructure developments on the Mekong floodplain in Cambodia and their significance in changing flow patterns. MRC BDP Working Paper
- Danida and Sida (Nov 00): BDP Project Document
- Geerinck, Lieven (Jan 05): Incorporation of navigation into the integrated water resources management and development strategy (IWRD). Mekong River Commission, Basin Development Plan
- Haisman, Brian (Dec 03): Hydrology simulation modeling in river basin planning - an introduction for non-hydrologists. MRC, BDP, MDBC Training Module 3
- Haisman, Brian (Sep 03): Draft guideline on sub-area scenario formulation. MRC-BDP discussion paper
- Halcrow Group (Mar 04): Strategic framework for BDP. Mekong River Commission, Basin Development Plan
- LNMC (Feb 04): Basin Development Plan, national sector overviews. Vientiane, Lao PDR
- LNMC (Mar 04): Past and future analysis for the Mekong BDP, Sub-Area 1L (Northern Laos). 4 March 2004
- LNMC (Apr 04a): Key outcomes of all sub-area studies and analysis carried out in Lao PDR
- LNMC (Apr 04b): Report on the outcomes of studies and analysis carried out in Sub-area 4L (Central Laos)
- LNMC (Apr 04c): Report on the outcomes of studies and analysis carried out in Sub-area 6L (Southern Laos)
- LNMC (Apr 04d): Report on the outcomes of studies and analysis carried out in Sub-area 7L (Se Kong)
- MDBC (Oct 03): Principles of basin planning – application of basin planning principles. Murray-Darling Basin Commission – Mekong River Commission Strategic Liaison Program Phase II
- MDBC and MRC (Dec 04): Tour report. Basin Development Planning - Tonle Sap Great Lake study tour 13-15 December 2004. Mekong River Commission - Murray-Darling Basin Commission Strategic Liaison Programme Phase II
- MDBC and MRC (May 04): Tour report. Basin Development Planning - Mekong River Basin study tour 2-11 May 2004. Mekong River Commission - Murray-Darling Basin Commission Strategic Liaison Programme Phase II
- MRC-BDP (Sep 03): Quality plan. BDP guideline (draft). Mekong River Commission, Basin Development Plan, revised February 2004
- MRC-BDP (2003): Development of Resource Allocation and Optimisation Model. Final report on the development of the BDP RAOM. Prepared by Halcrow Group Ltd., October 2003. Mekong River Commission, Basin Development Plan
- MRC-BDP (Dec 02): Training needs assessment & BDP indicative training plan for Cambodia and Lao PDR. Prepared by Sucht Katima for Cambodia

National Mekong Committee, Laos National Mekong Committee, and Mekong River Commission Secretariat under the MRC Basin Development Plan

- MRC-BDP (Jul 02): BDP Inception Report. 22 July 2002
- MRC-BDP (Jul 02): BDP Inception Report, summary. 12 July 2002
- MRC-BDP (Jul 02): Report on BDP workshop on scenario formulation, Phnom Penh, 24-25 July 2002, with contributions by Brian Haisman, Mingsarn Kaosa-ard, and Malcolm Wallace
- MRC-BDP (Jul 03): Sub-area Forum 2: Approach and process for stakeholder participation. BDP Stakeholder Participation Working Paper # 4
- MRC-BDP (Jun 03): Assessment framework for the BDP. Discussion Paper
- MRC-BDP (Jun 03a): Framework for stakeholder participation in the formulation of the Basin Development Plan. BDP Stakeholder Participation Working Paper # 1
- MRC-BDP (Jun 03b): Sub-area Forum 1: Approach & process for stakeholder participation in sub-area analysis. BDP Stakeholder Participation Working Paper # 3, revised July 2004
- MRC-BDP (Mar 03): Scenario formulation and assessment. Discussion Paper
- MRC-BDP (Feb 04): Initial outline of basinwide development objectives & elements of an LMB Strategy. May 2003, revised 6 February 2004
- MRC-BDP (May 04): Sub-area transboundary meeting, BDP guideline (draft)
- MRC-BDP (Dec 04): Report on sub-area transboundary meetings
- MRC-BDP (May 05): The BDP planning cycle following principles of Integrated Water Resources Management (IWRM). November 2002, revised 26 May 2005
- MRC-BDP (May 05): Project screening toolkit
- MRC-BDP (Dec 05): Strategic Directions for IWRM in the LMB. Final version
- Nesbitt, H.J. (Feb 05): Lower Mekong Basin: Future trends in agricultural production. Mekong River Commission, Vientiane, Lao PDR
- Nesbitt, H.J. (Mar 05): Water used for agriculture in the Lower Mekong Basin. Mekong River Commission, Vientiane, Lao PDR
- Rowcroft, Petrina (2004): The application of the Resource Allocation and Optimisation Model to economic analysis of water-use trade offs within the Basin Development Plan. Resource document. February 2004. Mekong River Commission, Basin Development Plan
- Rowcroft, Petrina (2005a): Resource Allocation Model (RAM), user guide. 21 June 2005. Mekong River Commission, Basin Development Plan
- Rowcroft, Petrina (2005b): Methodologies and sources for valuation of water resource demands in the Lower Mekong Basin. 27 June 2005. Mekong River Commission, Basin Development Plan
- Rowcroft, Petrina (2005c): Economic dimensions of water resource planning in the Lower Mekong Basin: An initial analysis based on the Resource Allocation Model (RAM). 29 June 2005. Mekong River Commission, Basin Development Plan
- TNMC (Apr 04a): National sector overview. Prepared by the BDP Unit, Thai National Mekong Committee Secretariat, Department of Water Resources, Ministry of Natural Resources and Environment
- TNMC (Apr 04b): National sector overview. Executive summary, integrated report. Prepared by the BDP Unit, Thai National Mekong Committee Secretariat, Department of Water Resources, Ministry of Natural Resources and Environment

- TNMC (May 04): Training and capacity support assessment of BDP organizations and human resources in Thailand. Prepared for Thailand National Mekong Committee under the MRC Basin Development Plan
- TNMC (Oct 04a): Sub-area study and analysis. Sub-area 2T (Chiang Rai). BDP Unit, TNMC, Department of Water Resources, Ministry of Natural Resources and Environment
- TNMC (Oct 04b): Sub-area study and analysis. Sub-area 3T (Nong Khai/Songkhram). BDP Unit, TNMC, Department of Water Resources, Ministry of Natural Resources and Environment
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- VNMC (May 2003): Basin Development Plan, national sector overviews. Hanoi, Viet Nam
- VNMC (Jun 03): Training needs assessment and BDP indicative training plan for Viet Nam. Prepared by Cao Dat Khoa for Viet Nam National Mekong Committee under the MRC Basin Development Plan
- VNMC and IWRP (Jul 03): Basin Development Plan, analysis of sub-area 7V (Se San/ Sre Pok). Report prepared by VNMC and Institute of Water Resources Planning, Hanoi
- VNMC and SIWRP (Nov 03): Basin Development Plan, analysis of sub-area 10V (Delta, Vietnamese part). Report prepared by VNMC and Sub-Institute of Water Resources Planning, Ho Chi Minh City
- Ward, Keith (Oct 02): Economics in the BDP: Macroeconomic overview of the Lower Mekong Basin, and the BDP project cycle. Mekong River Commission, Phnom Penh, Cambodia
- Ward, Keith and Petrina Rowcroft (Jun 05): Economic Development And Water Resource Demands In The Lower Mekong Basin. Mekong River Commission, Vientiane, Lao PDR

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- BDP-1 - outputs and lessons learned. January 06, by Vu Van Tuan
- BDP-2. January 06, by Manfred Staab
- Strategic directions for IWRM in the LMB. January 06, by Yoichi Iwami
- BDP planning cycle and project prioritization. January 06, by Yoichi Iwami
- Social Impact Assessment (SIA). January 06, by Muanpong Juntopas
- The social development perspective to LMB planning. January 06, by Muanpong Juntopas
- Institutional involvement and support during BDP-1. January 06, by Nouanedeng Rajvong
- Public participation in BDP-1. January 06, by Nouanedeng Rajvong
- Economics of resource allocation and modeling (RAM). January 06, by Oulavanh K.
- Economic assessment toolkit. January 06, by Oulavanh K.
- The trans-boundary process in the BDP. January 06, by Solieng Mak
- Strategic environmental assessment. January 06, by Solieng Mak
- Sub-area studies. January 06, by Solieng Mak
- The BDP Planning Atlas. January 06, by Yoichi Iwami
- The BDP Project Database. January 06, by Bountieng Sanazonh
- The hydropower database. January 06, by Yoichi Iwami
- The hydropower programme concept note. January 06, by Yoichi Iwami

BDP: From long-list to short-list. January 06, by Vu Van Tuan

Capacity building in BDP-1: Summary and lessons learned. January 06, by Nouanedeng Rajvong

GIS based BDP maps. January 06, by Yoichi Iwami

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History of Mekong cooperation. MDBC training programme, Module 1, Can Tho, January 2003

Integrated catchment management, key elements. MDBC training programme, Module 1, Can Tho, January 2003. By Julie Burke

Introduction to the LMB. MDBC training programme, Module 1, Can Tho, January 2003. By Cong Nguyen Chi

Refining objectives and developing scenarios. MDBC training programme, Module 1, Can Tho, January 2003. By Brian Haisman

The art of scenario evaluation. MDBC training programme, Module 1, Can Tho, January 2003. By Brian Haisman

Basin planning principles. MDBC training programme, Module 2, Phnom Penh, May 2003. By Brian Haisman

Flow management. MDBC training programme, Module 2, Phnom Penh, May 2003. By Ian Campbell

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Scenario-based planning. MDBC training programme, Module 2, Phnom Penh, May 2003

Stakeholders involvement in BDP. MDBC training programme, Module 2, Phnom Penh, May 2003. By Muanpong Juntopas

Status of aquatic biodiversity in the Mekong. MDBC training programme, Module 2, Phnom Penh, May 2003. By Chumnarn Pongsri

Using the DSF to assess scenarios - some things it will do for you - and some things it won't. MDBC training programme, Module 2, Phnom Penh, May 2003. By Robyn Johnston

Formulating indicators for assessing scenarios. MDBC training programme, Module 3, Napakuang, Lao PDR, December 2003. By Brian Haisman

Hydrology terms and models (explained for non-hydrologists). MDBC training programme, Module 3, Napakuang, Lao PDR, December 2003. By Brian Haisman

MRC Interactive Atlas. MDBC training programme, Module 3, Napakuang, Lao PDR, December 2003

Nam Ngum. MDBC training programme, Module 3, Napakuang, Lao PDR, December 2003

Overview of social aspects of the LMB. MDBC training programme, Module 3, Napakuang, Lao PDR, December 2003

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Defining basin assets - the concept of Total Economic Valuation (TEV). 2005. By Petrina Rowcroft

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Resource allocation and optimisation model (RAOM). October 2003

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The BDP needs for capacity building & training. 2003. By Muanpong Juntopas

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Strategic environmental assessment (SEA) - impact assessment tools in BDP. Presented by Muanpong Juntopas at the regional meeting in Khao Yai, Thailand, December 2003. By Petrina Rowcroft

The BDP planning cycle. September 2003. By Tue Kell Nielsen

Transboundary process in the BDP. December 2005. By Solieng Mak

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Curran, Colette (2003): Application of Strategic Environmental Assessment (SEA) to the MRC's Basin Development Plan. Discussion Paper, 17 October 2003

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MDBC (Jan 03b): Background Paper 2 - Lower and Upper Basin case studies. Mekong River Commission - Murray-Darling Basin Commission Strategic Liaison Programme Phase II

MDBC (Jan 03c): Background Paper 3 - Scenario formulation and assessment in river basin planning. Mekong River Commission - Murray-Darling Basin Commission Strategic Liaison Programme Phase II

MRC-BDP (Mar 02): BDP20: Working groups for basin development plan. Draft guideline

MRC-BDP (Mar 04): Identification of sub-areas of the LMB for the Basin Development Plan

MRC-BDP (Mar 05): BDP Projects Database, Version 1.2 (listings as at 11 March 2005)

MRC-BDP (Nov 02a): Regional sector overviews, executive summary. Working paper

MRC-BDP (Nov 02b): Regional sector overviews, fisheries. Working paper

MRC-BDP (Nov 02c): Regional sector overviews, tourism development. Working paper

MRC-BDP (Nov 02d): Regional sector overviews, agriculture and irrigation. Working paper

MRC-BDP (Nov 02e): Regional sector overviews, watershed management. Working paper

MRC-BDP (Nov 02f): Regional sector overviews, hydropower. Working paper

MRC-BDP (Nov 02g): Regional sector overviews, navigation. Working paper

MRC-BDP (Nov 02h): Regional sector overviews, domestic water and sanitation. Working paper

MRC-BDP (Nov 02i): Regional sector overviews, industrial water use. Working paper

MRC-BDP (Nov 02j): Regional sector overviews, flood management and mitigation. Working paper

MRC-BDP (Nov 03): Sub-area reports (draft format, indicative)

MRC-BDP (Sep 02): BDP 004a: National development policy review

MRC-BDP (Sep 02): BDP 004b: National development policy review, Cambodia

MRC-BDP (Sep 02): BDP 004c: National development policy review, Lao PDR, overview and socio-economic development plans

MRC-BDP (Sep 02): BDP 004d: National development policy review, Thailand, the 9th National Socio-Economic Development Plan (2002-2006)

MRC-BDP (Sep 02): BDP 004e: National development policy review, Viet Nam

MRC-BDP (Sep 02): BDP 004f: Relevant laws and regulations

MRC-BDP (Sep 02): BDP 004g: Decision process

MRC-BDP (Sep 02): BDP Data System. (i) Summary; (ii) draft guidelines on data sharing; (iii) draft guidelines on national data management; and (iv) information needs assessment and information held by MRCS

MRC-BDP (Sep 02): BDP sub-area analysis. Draft guideline

Wallace, Malcolm (Jun 03): Defining a basin development strategy. Mekong River Commission, Basin Development Plan

Progress reports and records of coordination meetings

BDP progress report 1, Sep 02

BDP progress report 2, Mar 03

BDP progress report 3, Sep 03

BDP progress report 4, Mar 04

BDP progress report 5, Sep 04

BDP progress report 6, Mar 05

BDP progress report 7, Sep 05

BDP progress report 8, May 06

1st BDP coordination meeting, June 02

2nd BDP coordination meeting, Aug 02

3rd BDP coordination meeting, Oct 02

4th BDP coordination meeting, Nov 02

5th BDP coordination meeting, Mar 03

6th BDP coordination meeting, May 03

7th BDP coordination meeting, Jul 03

8th BDP coordination meeting, Aug 03

9th BDP coordination meeting, Oct 03

10th BDP coordination meeting, Dec 03
11th BDP coordination meeting, May 04
12th BDP coordination meeting, Aug 04
13th BDP coordination meeting, Oct 04
14th BDP coordination meeting, Jan 05
15th BDP coordination meeting, Apr 05
16th BDP coordination meeting, Jul 05
17th BDP coordination meeting, Jan 06
18th BDP coordination meeting, Mar 06
19th BDP coordination meeting, Jul 06

Annex 6: Core library abstracts

Volume 1: The BDP planning process. May 2005, revised February 2006

This volume presents a summary of national development policies and development planning of the MRC member countries. It describes the BDP planning cycle, with its 5 stages: (1) Analysis of the LMB and of sub-areas; (2) analysis of development scenarios; (3) strategy formulation; (4) set-up of database of projects; and (5) prioritization of programmes and projects. A description is given of the Project Identification Note (PIN), which is used for identification of project ideas and suggestions and for their entry in the MRC Project Database. Agreed criteria are listed for classification and ranking of potential development initiatives together with an agreed procedure for shortlisting of priority projects. The volume includes detailed criteria for screening of economic, social and environmental implications, as well as interfaces and overlaps with related development initiatives. A summary is provided of issues, priorities, and lessons learnt.

Volume 2: Sub-area analysis and transboundary planning. December 2004, revised January 2006

The BDP sub-area analyses were conducted and reported between late 2002 and early 2005 by working groups established for the purpose under guidance by the NMCs and with technical support by MRCS. Subsequently, a series of 5 transboundary meetings was held in late 2004 between adjacent sub-areas in neighbouring countries. This volume describes how the work was done (while its results are reported in Volume 3). The background for the work is summarised, and the organizational set-up is outlined, together with a framework for the technical approach and a guideline for reporting. A summary is provided of issues, priorities, and lessons learnt.

Volume 3: Sub-area studies. May 2006

For the purpose of the BDP, the Lower Mekong Basin has been divided into 10 sub-areas that are basically delineated by major watersheds, but in such a way that between them, the sub-areas cover the entire basin (which is why the word sub-area is used, rather than a sub-basin). Most of the 10 sub-areas are sub-divided into national parts in order to facilitate the important interfaces with the national planning processes. In many cases, the sub-areas reflect or resemble the administrative areas of the River Basin Committees/River Basin organizations that have been formed after the start of the BDP, or which are in the process of being established. While a full study report has been prepared for each major sub-area, and details have been published in the BDP Planning Atlas, this volume provides an essence of the findings.

Volume 4: Scenarios for strategic planning. March 2005, revised November 2005

A set of scenarios have been defined that between them delineate the likely space for water-related development in the Lower Mekong Basin in terms of (i) water availability (as determined mainly by the precipitation, and as influenced by upstream regulation and by possible climate fluctuations); (ii)

off-stream (consumptive) water utilization, mainly for irrigation in terms of volume, but also for a variety of other uses; and (iii) physical intervention: Storage, bank and flood protection schemes, dredging of waterways, and other regulation that changes the flow itself or the flow resistance within the river network. The applied scenarios are (1) a Chinese Dams scenario (high development in hydropower with low development in irrigation); (2) a Low Development scenario (low development in hydropower with low development in irrigation); (3) an Irrigation scenario (low development in hydropower with high development in irrigation) and (4) a High Development scenario (high development in hydropower with high development in irrigation). Each scenario is evaluated in terms of a variety of hydraulic and environmental effects relative to a baseline that illustrates year 2000 conditions.

Volume 5: Stakeholder participation. July 2004, revised November 2005

This volume is a compilation of three BDP guidelines on stakeholder participation that were prepared between June 2003 and July 2004. MRC stakeholders are often referred to as either 'internal to the MRC' or 'external to the MRC' and this classification is also used in the BDP. Internal stakeholders include the numerous line agencies that are represented by the NMCs, while external stakeholders can be individual or institutional, such as the private sector; civil society organizations; donor agencies; policy research institutes; universities, service institutions and individuals with a particular relevant knowledge; and the media. Both internal and external stakeholders are to be given genuine opportunity to participate in all stages of the BDP. The volume provides guidance on general stakeholder involvement in the BDP, together with detailed recommendations on the so-called stakeholder forums 1 and 2 that have been held in most sub-areas. A summary is provided of issues, priorities, and lessons learnt.

Volume 6: Data system and knowledge base. March 2005, revised December 2005

Because of its broad scope, the BDP has considerable data and information requirements. While it is essential that the information is adequate to describe the impacts of proposed development scenarios, it must also be feasible to collect and process the information within the timeframe of the BDP. This requires careful scoping of information requirements. The BDP draws on existing national plans and policies, and is supported by a wide range of programs both within MRC and in the national line agencies. An important function of BDP is to synthesise information from MRC and national programs (while it should not be heavily involved in primary data production). The volume describes the data and information needs of the BDP. It introduces the MRC Information System and provides guidelines on its use. Details are provided about the MRC data sharing procedures and about the new MRC Project Database and its use.

Volume 7: MRCS Decision Support Framework (DSF) and BDP applications. March 2005, revised September 2005

The MRC Decision Support Framework (DSF) was developed under the MRC Water Utilization programme (WUP) and is applied for a variety of purposes. It is a tool for investigating the impacts of changes in the quantity and the quality of flows in the Lower Mekong river system brought about by

changing circumstances within the basin in support of appropriate planning decisions on how best to manage its water and related natural resources. Current levels of water use and regulation in the LMB are very low compared to most other large rivers in the world. Irrigation diversion account for less than 10% of the total water available and most tributaries in the LMB remain unregulated. Dam projects recently completed or under construction in China's Yunnan province, however, are rapidly changing that, at least for the upper reaches within the LMB. Within five years Xiaowan will come on line providing another 9.9 km³ of active storage, followed by Nuozhadu with another 12.4 km³. These two dams in Yunnan provide a substantially different pattern of flows in the lower Mekong and thus development opportunities and constraints. The volume provides a brief introduction to the DSF and describes analyses of baseline conditions as well as the impacts of possible future regulation.

**Volume 8: Economic valuation of water resources (RAM applications).
June 2005, revised December 2005**

The Resource Allocation Model (RAM) was developed under the BDP to assist in the rational management of LMB water resources. The RAM is first and foremost a planning tool. The model shows the activity-based composition and the geographical distribution of economic benefits from any particular pattern of water use in the LMB, and the economic consequences of changes to that water resource use. It thus allows users to consider various development opportunities and to understand the structure of their costs and benefits vis-à-vis changes from that original situation. Essentially, it is an analytical tool for the rapid assessment of various development options; its overall technical and representational design is explicitly predicated on the existing economic and natural resource conditions, observed economic trends and potential developments. The volume introduces the economic dimensions of water use planning in general and the RAM in particular. It describes RAM-based analyses of various in-stream and off-stream water uses, and provides economic summaries of the BDP planning scenarios.

Volume 9: Social and environmental issues and assessments (SIA, SEA). July 2004, revised December 2005

The vision of MRC (and of the BDP) is to achieve '*an economically prosperous, socially just and environmentally sound Mekong Basin*'. Thus, related planning efforts must address all of the economic, the social and the environmental perspective of development. Social Impact Assessment (SIA) and Strategic Environmental Assessment (SEA) are applied at different stages of the BDP planning cycle: Scenario assessment; strategy development; and project selection and implementation. SIA has evolved in response to the need for a holistic understanding of the impact of development initiatives. SIA is concerned with predicting change, and managing the risks associated with change processes in relation to poverty, vulnerability and conflict. Similarly, the value of SEA applied to the BDP is that it provides a systematic process to identify potential environmental concerns early and therefore enable the incorporation of appropriate precautionary measures into the plan or strategy to address them. This volume describes and evaluates ways to incorporate SIA and SEA in the BDP planning process.

Volume 10: IWRM strategy for the Lower Mekong Basin. December 2005

Strategy formulation is the 3rd of the 5 planning stages applied by the BDP. Building on the preceding baseline and scenario analyses (stages 1 and 2 in the planning process), the strategy formulation aims to provide an operationalization of the over-all development goals, together with practical guidance on how to achieve these goals, as well as a reference for identification of agreed priority development initiatives during stages 4 and 5 of the planning process. The strategy formulation during BDP Phase 1 took place as an explorative process with numerous iterations and a comprehensive dialogue. In this connection, an active collaboration was maintained among the MRC programmes, the NMCs, and the national line agencies. The work took its starting point in the national development plans, and incorporated results from the BDP sector reviews, sub-area studies, and scenario analyses, as well as many indispensable contributions from other MRC programmes and external sources. This volume presents various basic considerations in connection with the strategy formulation, and contains the full '*Strategic directions for IWRM in the Lower Mekong Basin*', as approved by the MRC Council in December 2005.

Volume 11: Monographs. March 2005, revised December 2005

This volume is a collection of monographs prepared for the BDP between October 2002 and June 2005: (i) Water, poverty and livelihoods in the Lower Mekong Basin, by Peter Chaudhry and Muanpong Juntopas; (ii) Lower Mekong Basin - future trends in agricultural production, by Harry Nesbitt; (iii) Water used for agriculture in the Lower Mekong Basin, by Harry Nesbitt; (iv) Economic development and water resource demands in The Lower Mekong Basin, by Keith Ward and Petrina Rowcroft; and (v) Economics in the BDP: Macroeconomic overview of the Lower Mekong Basin, by Keith Ward. The studies are based on (i) information from previous studies and literature; (ii) information from national and regional sector reviews; (iii) data and information received from other MRC programmes; and last but not least (iv) data and information received from the NMCs and national line agencies. Between them, they add substantially to the BDP knowledge base for scenario analysis and strategy formulation, as well as for the screening and ranking of viable specific development initiatives.

Volume 12: Project implementation and quality plan. January 2006

BDP Phase 1 was implemented in pursuance of two immediate objectives: (1) A participatory form of Basin Planning Process established and ongoing; and (2) A BDP aiming at a balanced mix of social, economic and environmental factors drafted and agreed on. The BDP formulation proceeded as a set of parallel, interwoven processes: (a) A planning process carried out in five stages; (b) a knowledge and capacity-building process, and (c) a dialogue with the public, stakeholders and political levels. The BDP implementation has given a particular emphasis to national participation and ownership. The NMCs have a strong implementing role, and more than 200 national agencies are participating in the planning jointly with the NMCs at central and provincial levels. This volume provides an overview of the BDP formulation, together with examples of lessons learnt during Phase 1. It includes the BDP Quality Plan as an annex, and provides summaries of the 17 BDP coordination meetings held between June 2002 and January 2006.

Volume 13: National sector reviews. October 2004, revised November 2005

This volume is a synthesis of the national sector overviews that were prepared between May 2003 and April 2004. They provided an important part of the knowledge base for subsequent planning activities. They were based on (i) national social and economic development plans (5-years plans); (ii) national sector development policies and plans, as prepared by the sector ministries and line agencies; (iii) specific sector studies, as available from case to case; and (iv) data and information made available from sector ministries and line agencies. For each of the MRC member countries, the volume provides short descriptions of baseline conditions, concerns, development opportunities and related national policies for each of the sectors addressed under the BDP: Agriculture and irrigation; fisheries; hydropower; navigation and waterways; water-related tourism; domestic and industrial water supplies; flood management; and watershed management.

Volume 14: Regional sector overviews. November 2002, revised September 2005

A series of regional sector overviews was prepared in 2002 in connection with stage 1 of the BDP planning cycle. The work was done in parallel with (and fully coordinated with) the preparation of MRC's State of the Basin Report that was published in June 2003. The sector reviews covered (i) agriculture and irrigation; (ii) fisheries; (iii) hydropower; (iv) navigation; (v) water-related tourism development; (vi) domestic water supply and sanitation; (vii) industrial water use; (viii) flood management and mitigation; and (ix) watershed management. The regional sector overviews were prepared before the closely related national sector overviews and the sub-area studies. Since their publication in 2002, the knowledge base has been applied in connection with various subsequent activities (scenario analysis and strategy formulation), and the sector overviews have been re-visited during preparation of the BDP Planning Atlas. While each NMC and each line agency have full insight into their own national sector issues and development agendas, the regional sector overviews provide a basin-scale context that can expand the scope of the national development efforts, and (via the subsequent planning activities) add value to these efforts.

Volume 15: Training. December 2004, revised December 2005

Throughout BDP Phase 1, training and capacity-building have been integral parts of the BDP formulation. The activities comprised (i) training needs assessments conducted in each member country in 2000 (during the bridging activities prior to BDP Phase 1) and again in 2002-2004; (ii) a comprehensive set of dedicated training activities in each member country, as well as jointly on the regional scale; and (iii) on-the-job training in connection with the broad active participation in the BDP formulation. A separate parallel (and highly appreciated) training programme was delivered by the Murray-Darling Basin Commission. It consisted of the following four modules: 1 - Introduction to basin planning; 2 - Application of basin planning principles; 3 - Scenario-based planning for the Mekong Basin; and 4 - Study tours of Lower Mekong Basin and the Great Lake of Tonle Sap. Continued training will contribute to well-informed, timely and appropriate analyses and decisions at all stages of the BDP planning process, hereby facilitating the

process and its identification and promotion of useful water-related development initiatives.

Annex 7: BDP Phase 2

In the BDP Project Document it was foreseen that major results would not be available until towards the end of Phase 1, and that consolidation (and further development) would be required and would take place following a smooth transition into Phase 2.

BDP Phase 2 is described in a draft project document that was submitted to the MRC Council in December 2005, and which was subsequently reviewed by a donor appraisal team in January 2006. The appraisal team advised on certain modifications of scope and resource allocation.

It is obviously of critical importance that the BDP processes are continued and further developed. Four good reasons for this are:

- BDP is a strong support for the strategic goals of MRC, which aims to assist a move towards *'an economically prosperous, socially just and environmentally sound Mekong River Basin'*
- BDP is a mechanism through which the four riparian countries can *'promote, cooperate and coordinate in the development of the full potential of sustainable benefits'*
- A BDP will be able to identify, formulate and assess regional, trans-boundary and shared projects and programmes that will benefit more than one country.
- BDP can be developed into a framework for the cooperative management of the basin by giving the full picture of the water resources availability, use and development options

BDP Phase 1 has developed many useful planning tools, has set up mechanisms for participatory planning and has initiated project development through a project cycle. The riparian nations have come forward with many project ideas and proposals and expect that MRC/BDP can assist them in facilitating and promoting the projects towards donors and financing agencies leading to an eventual implementation of the projects.

IWRM and the principles behind are the keys to sustainable water resource management. Developing awareness on these principles and knowledge on how to apply them in practice is important also seen in the light of the Strategic Directions for IWRM, which the four countries support and agree on. Knowledge generation and management and capacity building will be needed to get the full benefit of the IWRM approaches.

BDP Phase 2 will become an essential framework for well coordinated water resources development and investment in the basin, in harmony with the MRC 2006-2010 Strategic Plan. At the same time, the BDP will assist generation and management of knowledge needed for the water resources management and develop associated institutional competences through capacity building.

The BDP Phase 2 has been designed with 3 immediate objectives, each reflecting a programme component:

- 1 A rolling IWRM-based Basin Development Plan produced in support of sustainable development in the Mekong River Basin
- 2 Knowledge base and assessment tools further developed and utilized effectively in MRC and the NMCs

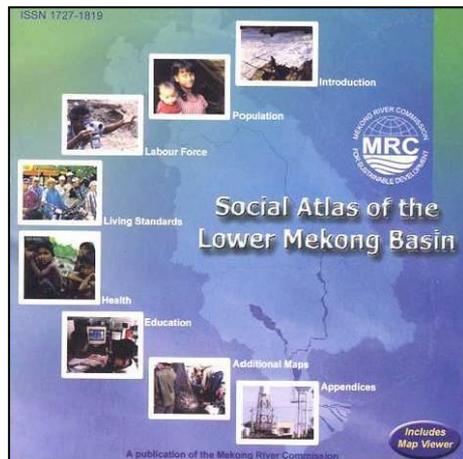
3 Capacity built at MRC and NMC levels for IWRM planning and for facilitation/mediation in areas where trade-offs are required

Steps towards Phase 2 (by mid 2006) include the preparation of a revised programme document/proposal, based on a new series of national consultations, to be submitted to the JC in August 2006. A road map is being agreed on with interested donors on the further processing and eventual funding.

BDP Phase 2 will start in December 2006 and follow the MRC strategic planning period (2006-2010). The programme will be implemented through the existing BDP structures within MRC and within the NMCs. The budget has been estimated to 11 million USD

By the end of Phase 2, it is intended that the BDP process has become consolidated as a core activity of MRC, with clearly proven benefits, and with resource requirements that can be realistically sustained on a long-term basis and by in-house capacity.

Annex 8: BDP - CDs

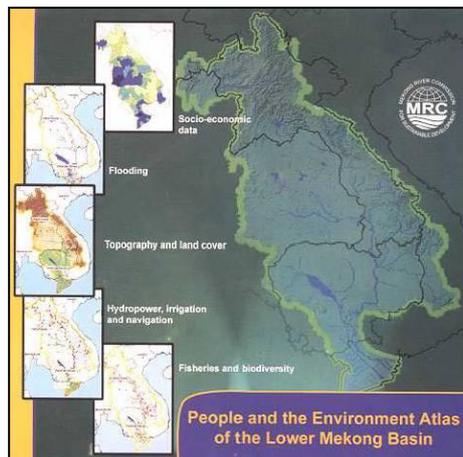


Social Atlas of the LMB

May 2003

Contents: Maps and data about social conditions in the LMB

Distribution: Internal and external

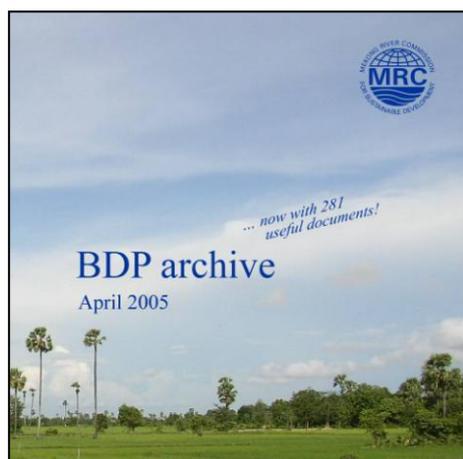


LMB People and the Environment Atlas

August 2003

Contents: Maps and data about social and environmental conditions in the LMB, produced in a collaboration between BDP and the MRC Environment Programme.

Distribution: Internal and external

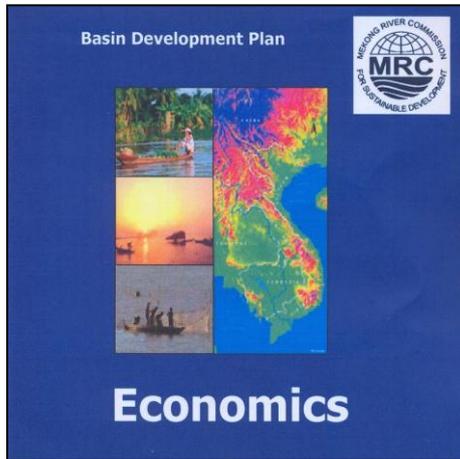


BDP - Archive

April 2005

Contents: Documents, data and OH presentations produced by or for BDP Phase 1, together with a collection of external reference documents

Distribution: Internal

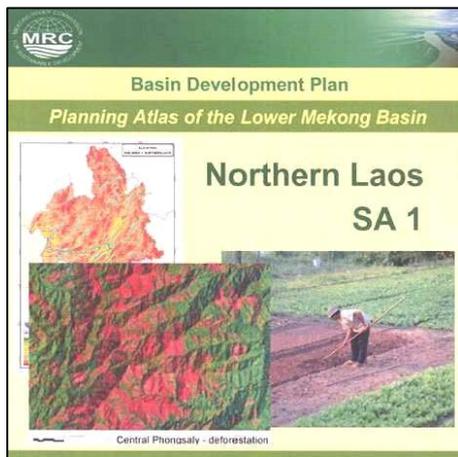


BDP - Economics

September 2005

Contents: Documents, data and OH presentations about development economics studies undertaken under the BDP, and the BDP Resource Allocation Model (RAM)

Distribution: Internal

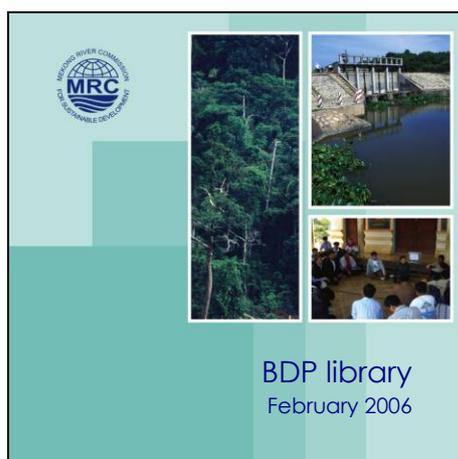


LMB Planning Atlas

May 2006

Contents: Planning information (documents, maps and data) for each sub-area under the BDP

Distribution: Internal and external



BDP library

February 2006

Contents: Documents produced by or for BDP Phase 1, including the BDP Core Library, reports and working papers, OH presentations, and various drafts and supporting documents

Distribution: Internal and external

Annex 9: BDP - Posters



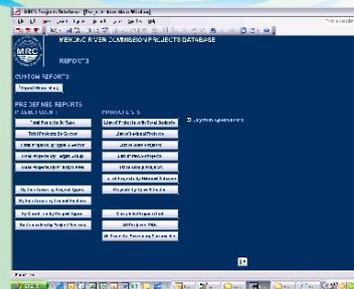
Under the Basin Development Plan, MRC has compiled a database of over 400 proposed projects relating to water resource development. Projects in the database will be screened and ranked, as the basis of a coordinated programme of agreed high priority projects to investment agencies and donors.

The projects have been submitted by the

- National Mekong Committees
- National and provincial agencies
- MRC programmes
- Other agencies, such as international and non-government organisations.

The database will be regularly updated as information and new projects are submitted

The database has been constructed in Microsoft Access.



BDP Projects Database

Project Identifications	Number of projects
Joint projects	69
National Projects:	
• Cambodia	115
• Lao PDR	91
• Thailand	09
• Vietnam	35
MRC Projects	65
Notified Projects	24
Group Projects	07
Total	415





"BDP Planning Atlas is a formatted visible planning tool which contains relevant available information on Lower Mekong River sub - basins following the principles of Integrated Water Resources Management"

Atlas example: Central Laos: Sub-area 4

Sub-area 4 covers Central Laos, comprises the catchment of the left-bank Mekong tributaries from Chiang Khong to the confluence with the Mun. It falls mainly within the central provinces of Lao PDR, with the small areas (790 km² total) of Quang Tri and Quang Binh provinces of Viet Nam (which make up less than 1% of the sub-area).

Sub-area 4 covers the area of central Laos which is home to almost half of Lao PDR's total population, including the two largest cities of Vientiane and Savannakhet. It is agriculturally an important region, producing 55% of the total Lao rice crop, and it contains for a significant proportion of flat-lying land suitable for further agricultural development. Two of Lao PDR's main hydropower stations (Nam Ngum and Nam Theun Hinboun) are in this sub-area, and many more hydropower developments are proposed.

The main information in this Sub-area is:

- Population and social and economic conditions

- Population density
- Poverty
- Ethnic minorities
- Living standards

- Water resources

- Climate
- Catchments
- Dams and Reservoirs
- Wetlands

- Physical features and environment

- Topography and land cover
- Soils
- Ecosystems
- Wetlands
- National biodiversity conservation area

- Major water use sectors

- Irrigated agriculture
- Hydropower
- Fisheries
- Navigation
- Tourism
- Municipal and industrial supply
- Flood management

- Watershed management

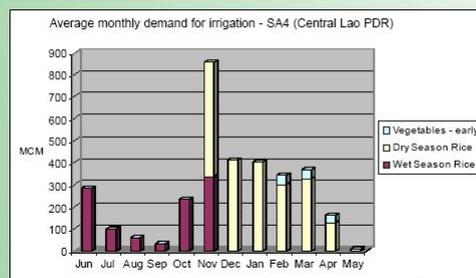
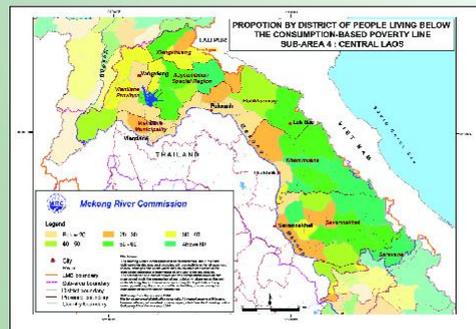
- Planning and the BDP

- Scenarios for development

- Proposed projects

- Case study: River-based livelihood of Xe Bangfai Basin

- Sources of information/references



BDP Planning Atlas



BDP Scenarios for change

Development scenarios are a structured way of asking "What if?" and describe possible futures. They are options, not predictions.

Scenario analysis is a way of analysing possible outcomes of different development options. Scenarios can be used to:

- compare development options at a strategic level;
- identify benefits and trade-offs; and
- provide an understanding of the sensitivity of the water resources system to change
- help formulate strategies for sustainable development of Mekong water resources.

Different scenarios are formulated to capture the impacts of different combinations of:

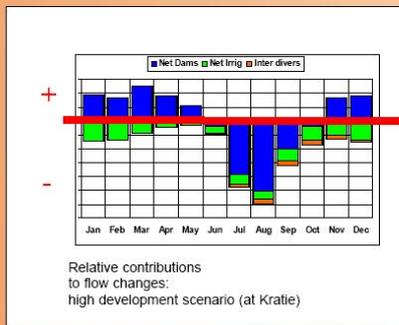
- increased withdrawals from the river for irrigation, domestic, industrial and other uses
- storages which redistribute flow between wet and dry seasons (for hydropower or irrigation)
- diversions of water either within or outside the LMB.

Some significant conclusions emerging from scenario analysis include:

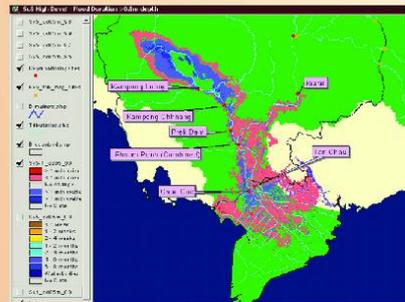
Construction of large storages (whether in the Upper or Lower Basin)

- will significantly increase dry season flows, with opportunities for increased dry season irrigation.
- will reduce the total extent and duration of flooding in Tonle Sap and the floodplain slightly, but within historically observed ranges. However, this decrease may have impacts on fisheries productivity.
- is not likely to significantly mitigate peak floods.

Without offsetting storage, extraction and diversion of water for irrigation development will significantly decrease both wet and dry season flows and increase the area in the Delta affected by salinity intrusion.



Area flooded for 1-4 weeks less than current conditions, under a scenario with high irrigation development and low storage development



Area flooded for 1-4 weeks less (pink) and 1-4 weeks longer (blue) than current conditions, under a scenario with high development of both irrigation and storage.



BDP Resource Allocation Model (1)

The Basin Development Plan has been developing a Resource Allocation Model (RAM) that links water resource use and associated economic returns to the Lower Mekong Basin.

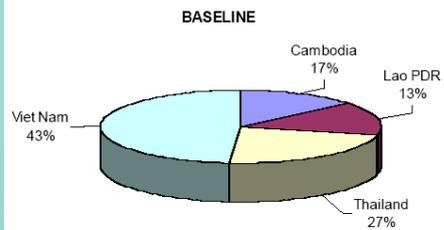
It can provide an indication of:

- the net benefits of major extractive water uses in the LMB under different development scenarios
- the nature of the relationships between extractive uses and instream water uses including possible environmental impacts
- the distribution of economic costs and benefits resulting from sets of actual or potential water development activities on a spatial basis (i.e. between sub-areas and countries)

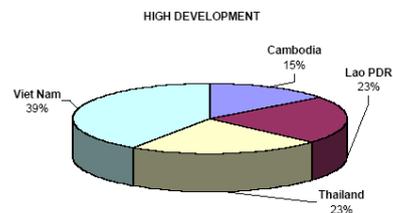
Some of our initial findings are presented here.

Values are presented as net returns (ie revenues less costs at point of first sale)

Comparative total value added by water by each country to the LMB economy



Comparative total value added by water by each country to the LMB economy



Cambodia	356	381	399	391	10	2.1
Laos	279	551	561	569	104	39.0
Thailand	569	596	648	602	6	1.1
Viet Nam	904	930	932	992	10	4.1
TOTAL	2107	2458	2540	2553	21	6.0

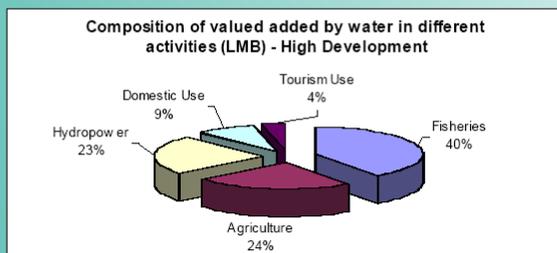
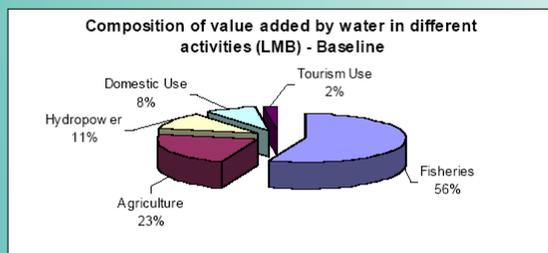
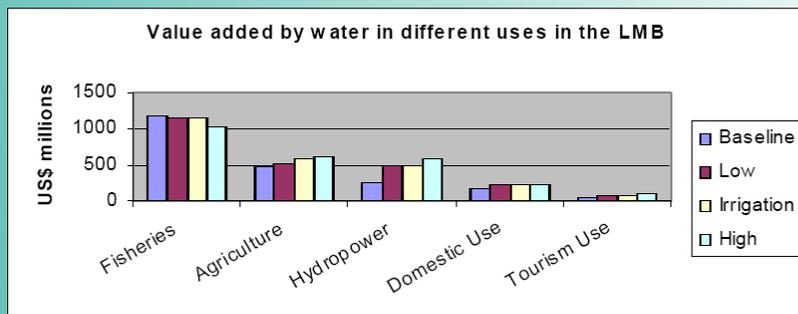


Environmental Impacts

BDP is also trying to value some of the environmental impacts resulting from different development scenarios. These include:

- Fisheries
- Saline intrusion
- Flood damages, and
- Wetland productivity

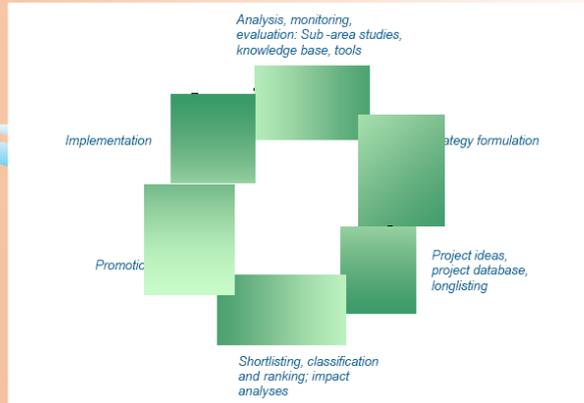
The value of environmental impacts will then be compared with the value of extractive uses (including hydropower) to provide a clearer picture of the total water-related economic impacts of possible future levels of development in the Lower Mekong Basin.



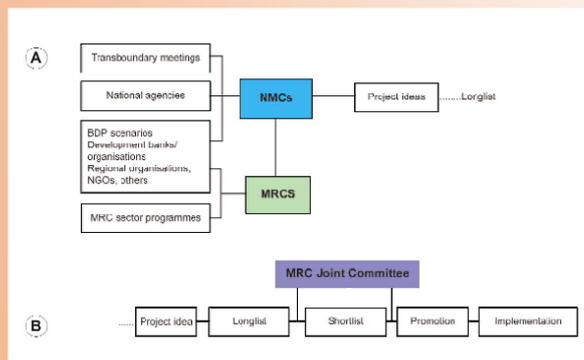


BDP Planning Cycle

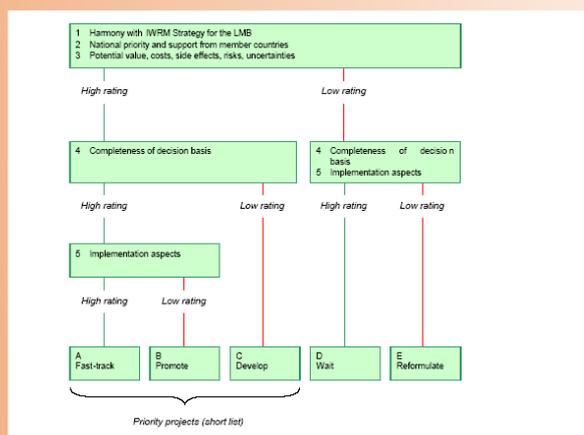
General BDP Planning Cycle

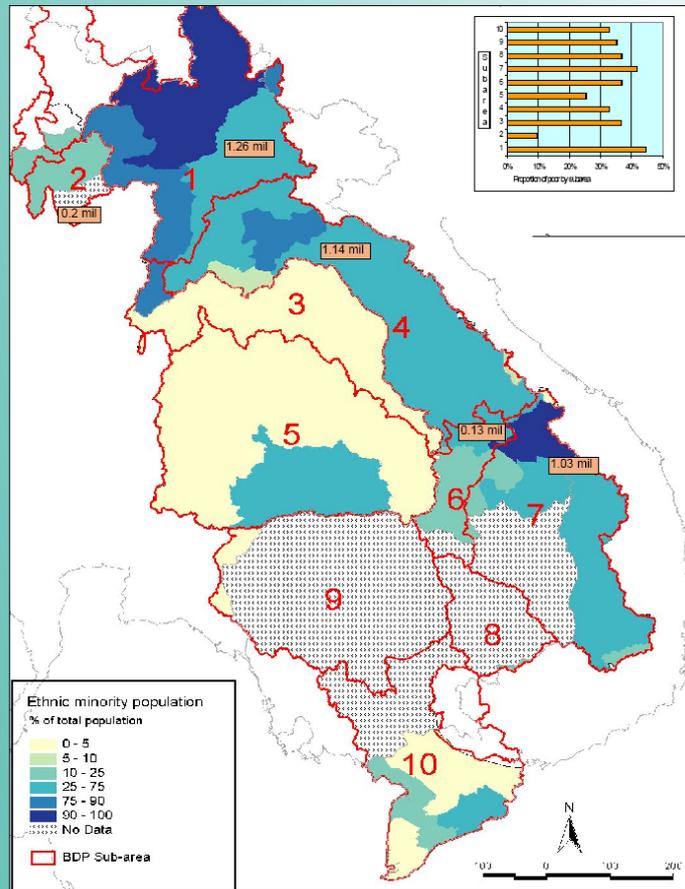


Processing of project proposals



Project classification and ranking





Sources: MRC Social Atlas (2003) and World Bank report on minorities (2000)

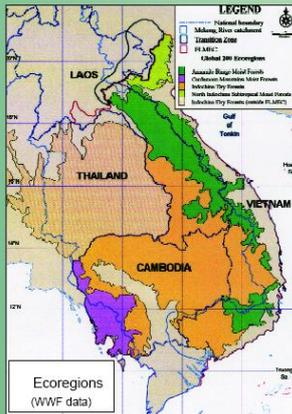
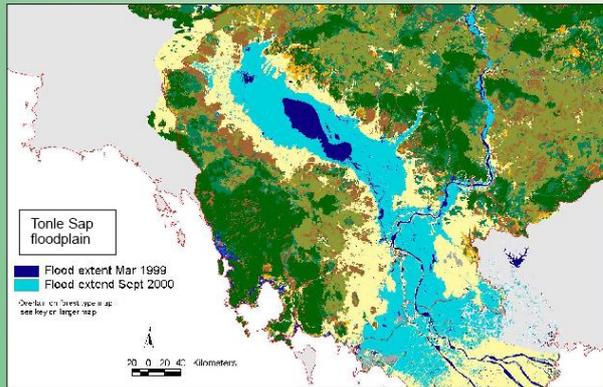
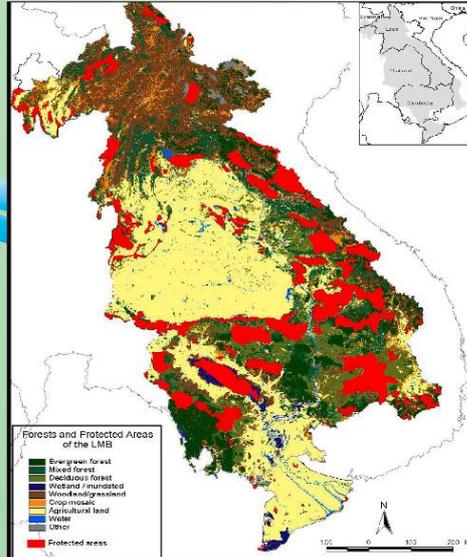
Ethnic Minorities and Poverty

In the LMB 3.8 million people are classified as ethnic minorities.

Ethnic minorities are described as: *"Indigenous peoples with a social/cultural identity distinct from the dominant/mainstream society which makes them vulnerable to being disadvantaged in the process of development"* (ADB 1998)

- The LMB Region has a rich history of culture and ethnic diversity, with over 70 ethnic groups. Highland ethnic people account for about 50% of the Lao population.
- As shown on the map, ethnic minority people are concentrated in highland/mountain areas in northern and eastern Laos with a total of 2.6 million in SA1 and SA4, and 1 million people in the southern tip of Laos, NE Cambodia and the Central Highlands of Vietnam (SA 7). Highland ethnic people make up 87% of SA 1.
- **Ethnicity and poverty are closely linked.** The highest poverty rate in the LMB is in SA1, SA7 and SA6, with poverty ranging from 45%-66% in most provinces. This where the poor work and live.
- All indices on human development of ethnic minorities show much poorer living standards. Participatory Poverty Assessment (PPA) in the region reveals that natural resource and environment matter greatly to the poor, especially the poorest.
- These poor themselves in PPAs say that their wellbeing is strongly tied to the environment in terms of health, earning capacity, security and energy supplies. Non-timber forest products and foraged aquatic products make up 40% of the income among the poor and 90% among the poorest in Lao PDR.

BDP Environmental Assets





Summary

BDP main outputs (1)

- ❑ A network of participants involving more than 200 institutional stakeholders
- ❑ MRC Project Database: more than 400 projects (69 joint projects; 250 national projects; 25 MRCS planned projects; 40 ongoing projects; 24 notified projects; 7 group projects)
- ❑ MRC Hydropower Database: 90 projects
- ❑ Established Data system in all four countries
- ❑ More than 100 reports, technical papers; eight six-monthly progress reports, 19 coordination records
- ❑ Convened 47 regional (bilateral, trilateral, multilateral meetings), consultations and transboundary meetings; 123 National sub-committee or working group meetings and consultations; 121 Sub-area meetings and forums and 12 regional training sessions.



Summary

BDP main outputs (2)

- ❑ Five 20-year development scenarios for basin-wide developments have been formulated and analysed using DSF and RAM.
- ❑ Country agreement on criteria for long and shortlisting of projects (five criteria).
- ❑ BDP Core library with 15 volumes.
- ❑ Atlases produced: The Social Atlas, the People and Environment Atlas and the BDP Planning Atlas (for 10 sub-areas).
- ❑ Established Projects Screening Toolkits.
- ❑ The IWRM Strategic Directions for the Lower Mekong Basin and the BDP's process of prioritisation of joint projects to be placed on the BDP shortlist (eight steps) were approved by JC and Council.
- ❑ 33 joint projects were initially screened to be placed on the BDP shortlist.
- ❑ One project was initially conceptualised in P.I.P format.

