

FOREWORD

It is a pleasure for me, on behalf of the Mekong River Commission (MRC), to present this Work Programme for 2003.

With the Work Programme for 2001, MRC launched its programme approach. All activities became part of comprehensive programmes supporting basinwide strategies. To support the programme approach, the structure of the MRC was changed in June 2000 – from a sectoral structure to one based on cross-cutting functions required to plan and implement programmes and to carry out the core activities of the organisation. Sector programmes would remain an important part of the activities in the short and medium term. In the longer term, however, the focus of the MRC would be shifting from project execution to monitoring and management of the Mekong River Basin. The MRC would develop better capacity to cope with political, economic and social changes in the basin, establish and maintain essential databases, and to develop planning tools for all important aspects of the river basin.

The programme approach is maintained in this Work Programme for 2003. The programmes are updated in the light of developments and adjustments since last year's Work Programme. Major changes affect the following programmes: the Capacity Building Programme, the Fisheries Programme, the Agriculture, Irrigation and Forestry Programme, and the Water Resources Management Programme. The Work Programme also includes a new Flood Management Programme.

The Mekong River is one of the least spoiled and least developed great rivers of the world, where the potential is far from utilised and negative impact of environmental degradation is not irreversible. However, considerable challenges lie ahead if sustainable economic development is to be realised. These challenges, which are addressed by the Work Programme, include:

1. To manage greater pressure on water resources from a growing population's needs for clean and adequate water, food and energy supplies to support economic development, without causing damage to the environment and ecological system.
2. To achieve reasonable sharing of available resources to satisfy the requirements of the riparian countries and its people.
3. To ensure that funds are used effectively and that programmes are being implemented in co-ordination with other national, bilateral and international development efforts in the basin.

The MRC has always accorded high importance to international cooperation. Traditionally, resources from international donors have constituted the largest part of the operational and programme budget. It is expected to remain so in the short and medium term, but in the longer term the MRC administrative costs is to be funded mainly through contributions from the member countries. Donors have encouraged the MRC to adopt a programme approach and are now placing renewed trust in the organisation's ability to handle the challenges ahead in an efficient and coordinated manner. These are reflected in increased support to MRC and commensurately lower funding needs as compared to last year's Work Programme.

I take this opportunity to express, on behalf of the Commission, our sincere gratitude and appreciation of the support from donors, partner agencies, NGOs and other friends around the world to our efforts to ensure sustainable development of the Mekong River Basin for the benefit of its people.

Joern Kristensen
Chief Executive Officer

PREFACE

MRC Programmes are grouped under three categories: Core, Support and Sector Programmes:

- **Core Programme:**
 - Basin Development Plan.
 - Water Utilisation Programme.
 - Environment Programme.
- **Support Programme:**
 - Capacity Building Programme.
- **Sector Programme:**
 - Fisheries Programme.
 - Agriculture, Irrigation and Forestry Programme.
 - Water Resources Management Programme.
 - Flood Management Programme.
 - Navigation Programme.
 - Tourism

The Work Programme contains brief descriptions of the programmes and explains how they are contributing to the MRC Strategic Plan. It also includes a budget and activity plan for 2003 as well as status of activities carried out in 2002.

Compared to the Work Programme for 2002, major changes are the following:

The Integrated Capacity Building Programme has been extensively revised. It will focus on ensuring availability of sufficient expertise in river basin management within the Secretariat and among the riparian governments and the required level of communication and stakeholder participation in MRC activities. Only five out of the eleven programme components have been kept as result of the revision. Two new components have been included: 1) Integrated Training Programme (Management) and 2) Environmental Governance. The first of these components is to raise the level of competence in river basin management among MRC staff and staff in the riparian governments through a systematic, modular training programme. The second component will contain the envisaged package of support to MRC announced by UNDP. It will aim to increase the effectiveness and timeliness of the MRC core programmes.

Fisheries Programme

The Fisheries Programme has been revised, and re-focussed to better reflect the changing realities in the basin and to take stock of eight years' achievements under the programme.

Agriculture, Irrigation and Forestry Programme

Due to likely availability of funding, an investment sub-component for forest rehabilitation has been included in this Programme under the Catchment Management component with about US\$ 4.5 million over a five-year period, starting from 2003.

Flood Management Programme

At the request of the Council, the Flood Management Programme, which is to implement the Regional Flood Management and Mitigation Strategy, approved by the Eighth Council Meeting, has been designed as a programme on its own rather than being a component of the Water Resources Management Programme.

Water Resources Management Programme

In addition to the separation of the Flood Management and Mitigation Component from the Water Resources Management Programme, the hydropower component has been revised and aligned to the Hydropower Development Strategy launched in October 2001. The objectives of the revised hydropower component are: (i) to identify best options in the Lower Mekong Basin for sustainable development in the hydropower sector, based on the MRC Hydropower Development Strategy and the process and criteria for identifying and short-listing development projects under the BDP (ii) to enhance the capacity of the riparian countries in hydropower planning and development, based on the MRC Hydropower Development Strategy.

Navigation Programme

There are minor changes of the budget for the Navigation Programme, due to more clarity of the funding situation. Funding for development of the Programme has now been secured and this process is ongoing and is expected to complete by May 2003.

The Work Programme is made available, after approval of the MRC Council, to interested agencies upon request. Copies of detailed comprehensive programme proposals are also provided upon request. For this purpose, kindly contact the MRC Secretariat, at the following address:

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Interested readers are invited to visit the MRC home page at <http://www.mrcmekong.org>

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1. Introduction to the MRC

1.1. Background

On the 5th of April 1995, Cambodia, the Lao PDR, Thailand and Viet Nam, signed the "Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin". This agreement formed the Mekong River Commission (MRC) which replaced the Committee for Coordination of Investigation of the Lower Mekong Basin (the Mekong Committee) and the Interim Mekong Committee, which were established in 1957 and 1978; respectively. The MRC also holds an official dialogue with the two other states of the Mekong River Basin, China and Myanmar, which are not signatories of the 1995 Agreement.

The purpose of the 1995 Agreement is to achieve an optimum use and prevention of waste of the waters.

1.2. Areas of Cooperation

Article 1 in the 1995 Agreement obliges the signatories "To cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin..."

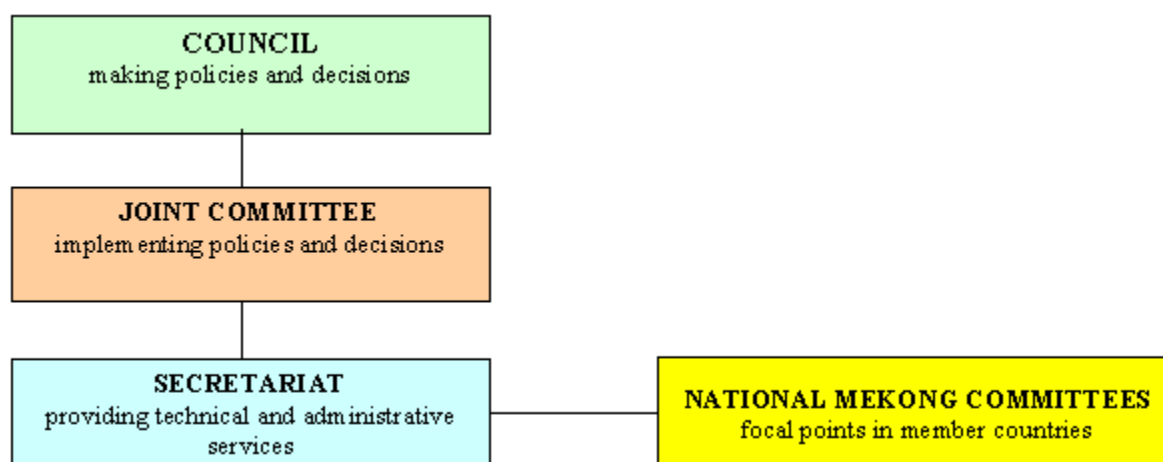
Article 2 stipulates the promotion of sustainable development of the full potential and prevention of wasteful uses of the Mekong River Basins waters for the benefit of all riparian states.

Article 3 charges the signatories with protection of the environment, ecological balance and natural resources from harmful effects from the development of the basin's water and related resources.

These three articles set the scope for the work of the Commission.

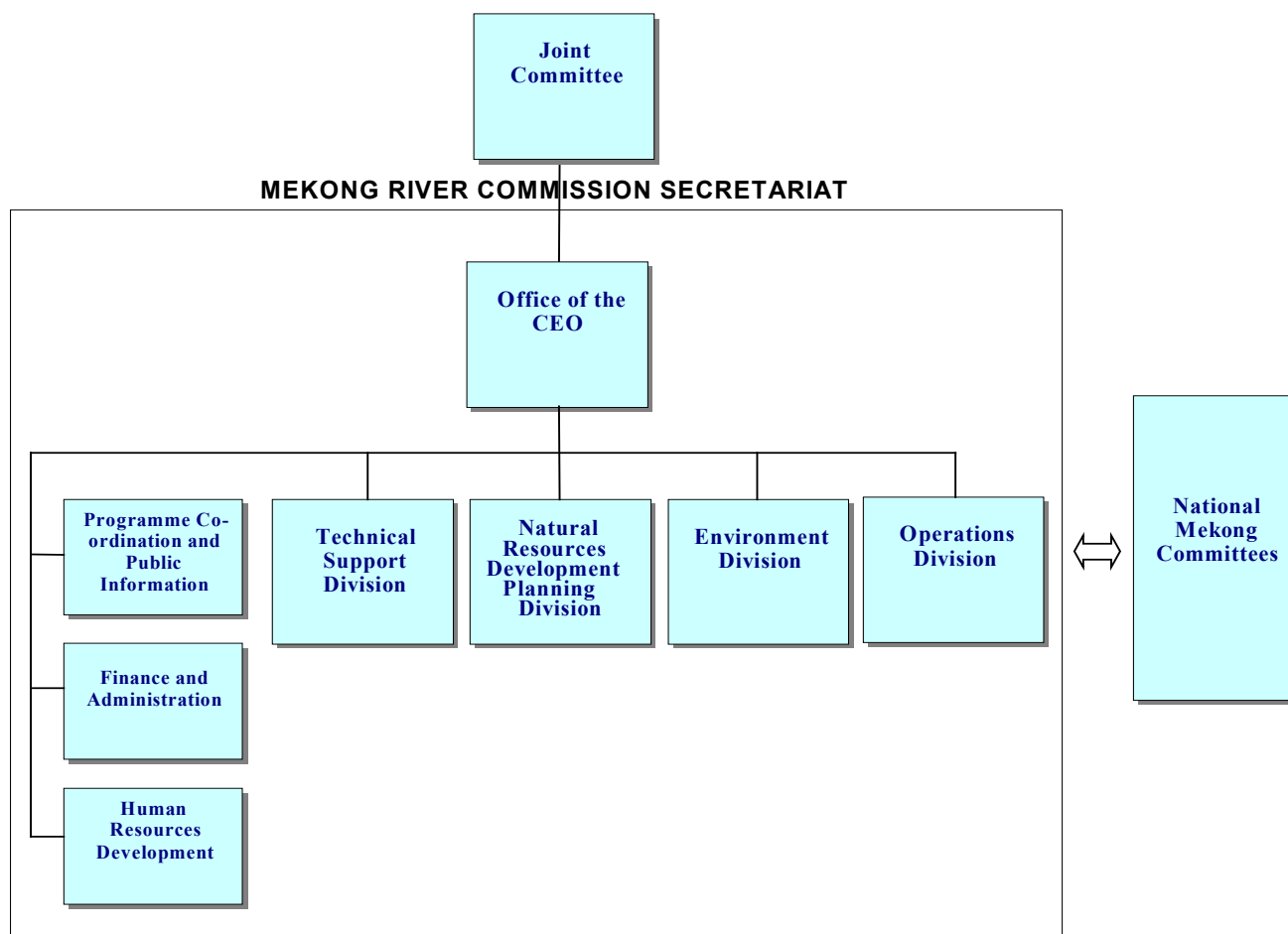
1.3. Structure

The MRC enjoys the status of an international body. It has signed several agreements and holds obligations with the donors and the international community. The MRC consists of three permanent bodies; Council, Joint Committee and Secretariat. Acting as focal points for the Commission in each of the member countries are the National Mekong Committees (NMCs).



The MRC Secretariat is the executive arm of the MRC with Headquarters in Phnom Penh, Cambodia. The Secretariat is working closely with the NMCs of the riparian countries. The structure of the Secretariat is presented in the diagram below. The structure was introduced in June 2000, to support the MRC programme approach.

Figure 1: MRC Organisational Structure



The budget of the Commission consists of contributions from its members and the donor community. Formal consultation with the donor community is processed through the Donor Consultative Group meeting.

The Commission have formal agreements for cooperation with regional and international organisations, e.g. ADB, AIT, ICLARM.

1.4. Development Opportunities and Challenges

Development of the vast resources of the Basin must be economically, socially and environmentally balanced. Only through sound management will it be possible to ensure long-term sustainability of the natural resources, the environment and the quality of life of the Basin's people. Key development opportunities and challenges for the MRC Work Programme are:

- Approximately 40% of the population in Cambodia, Lao PDR and Viet Nam live below the poverty line, and the Thai population living within the Mekong watershed area lag far behind the rest of the country in socio-economic status. The population growth rate in the region is high, leading to ever-increasing demand for food and jobs. Changes in the flow pattern brought about by proposed development can have a major impact on fragile social and economic systems.

- The Mekong River Basin supports one of the most productive and diverse ecosystems in the world. But the Basin's environment is degrading due to unsustainable development practices such as forest exploitation and intensification of agriculture. At the same time, the institutional capacity to deal with these types of environmental problems and cumulative impacts is weak throughout the region.
- **Agriculture** is the predominant economic sector. In order to be able to feed the rapidly growing population, it is a key element in each riparian country's development strategy. Because of the long dry season, the further development and expansion of irrigation is essential for the long-term growth of the agriculture sector and the key element to support intensification.
- **Inland fisheries** is vital for food security. The MRC estimates that the market value of the lower Mekong fisheries is US\$ 1.4-1.7 billion. Fish is the single most important source of animal protein for the people in the region. Together with rice, it forms the basis of the food security.
- In many areas, **inland river transport** on the Mekong River system constitutes the most important way of communication. In the delta, maritime navigation provides significant revenues from international trade. Changes in the flow regime, sedimentation and construction of reservoirs may affect river transport. Co-operation and proper agreements between the riparian countries are required to ensure safe passage, also across borders.
- The Basin has a considerable potential for the generation of hydropower that could be used to meet the growing demand for power. Yet, the construction of large dams must be undertaken with care. Negative side effects on the overall flow regime on other resources, such as fisheries, or communities living up-stream or downstream of dams, are to be avoided or minimised.
- The water quality of the Mekong River is affected by factors such as industrial production, urban waste disposal and sewage, use of fertilisers and pesticides, water reservoirs, soil erosion, and salt water intrusion in the Mekong Delta. Maintaining good water quality is critical for agriculture as well as for domestic and commercial water supplies.
- Also of major concern for the riparian countries is flood management and mitigation. Excessive flooding during the wet season can cause great economic and human loss in the Basin, as witnessed during the floods in year 2000. But floods are also important to replenish the wealth of the aquatic ecosystems.
- The use of water and related resources in one country can have negative effects for other countries, for example in terms of adverse effects on navigation, fisheries, scarcity of irrigation water, and seawater intrusion. Prevention and resolution of potential conflicts arising from the increasing pressure on the natural resources in the Basin is therefore a key task of the Mekong River Commission.

1.5. The MRC Strategic Plan

In order to better fulfil its role, MRC developed a first Strategic Plan for the period 1999-2003. Although considerable progress had already been made, many areas of MRC's work still needed improvement. Consequently, the first Strategic Plan was reviewed in a participatory process in late 2000. The fundamental strategic direction of MRC, its **vision and mission statements** remained unchanged. But the programme approach launched with the Work Programme for 2001 meant that the objectives of the three Core Programmes, five

Sector Programmes, and one Support Programme needed to be better reflected in the Strategic Plan. In turn also the Goals, supported by the objectives, required updating.

Figure 2: MRC Vision

VISION for the Mekong River Basin:

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

VISION for the Mekong River Commission:

A world class, financially secure, international river basin organisation serving the Mekong countries to achieve the basin Vision

MISSION

in accordance with the 1995 Agreement:

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

1.6. Strategic Goals and Objectives

Four Goals have been identified that MRC should strive to achieve progressively over the next five years or so. MRC's four Goals and the respective Strategic Objectives are:

Figure 3 : Strategic Objectives

		Strategic Objectives
GOAL 1:	<i>to establish and implement “rules” for water utilisation and inter-basin diversions;</i>	1.1 Information for water use “rules” identified, and information exchange established; 1.2 The data, information, and knowledge base developed, maintained and shared; 1.3 Modelling package developed and maintained; 1.4 “Rules” for water utilisation developed; 1.5 Institutional capacity (for modelling and rule formulation) strengthened;
GOAL 2:	<i>to establish a dynamic basin development planning process as a framework for natural resource management and sustainable development; and to plan and execute corresponding priority sector programmes and projects;</i>	2.1 A basin planning process established; 2.2 A data, information, and knowledge base established; 2.3 Prioritised list of natural-resources-related basin development projects established; 2.4 MRC sector programmes in support of the Basin Development Plan are formulated and implemented;
GOAL 3:	<i>to establish and promote MRC environmental and socio-economic management systems, recommendations, and policy guidelines;</i>	3.1 Capacity in environmental monitoring and assessment strengthened; 3.2 Data and knowledge base on environmental and socio-economic issues established; 3.3 Systems for environmental information exchange in place; 3.4 Guidelines for environmental policies and legislation set up; 3.5 Awareness and capacity of MRC and key stakeholders on trans-boundary environmental issues strengthened;

GOAL 4:	<i>to establish an effective organisation, capable to promote, in partnership with other institutions, basin-wide development and co-ordination;</i>	<p>4.1 MRCS/NMC/LA staff qualification and experience strengthened;</p> <p>4.2 MRCS/NMCS project management, planning and execution systems improved;</p> <p>4.3 Financial, administrative, personnel, logistics and information and communication technology systems upgraded;</p> <p>4.4 Regular meeting of a panel of international/regional experts on river basin/natural resources management organised;</p> <p>4.5 Quality information provided to the public;</p> <p>4.6 Strong partnerships with relevant institutions established and maintained;</p> <p>4.7 MRC assuming role as effective facilitator and mediator for conflict prevention and resolution;</p> <p>4.8 Relations with Upper Mekong River Basin Countries improved.</p>
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1.7. Criteria for Prioritising MRC Activities

All MRC Programme activities or components should contribute centrally to the goals and strategic objectives of the MRC Strategic Plan. They should also, as far as possible, incorporate crosscutting themes of environment, gender, poverty, employment and people-centred development generally.

In order to remain quite distinct from country-based programmes or projects, while being complementary to them, MRC initiatives should conform to the following criteria:

- Promote the sharing and/or joint management of resources;
- Be trans-boundary in nature;
- Contribute to or promote regional institutions, norms and policies;
- Foster research that cannot be adequately or effectively undertaken nationally;
- Create or sustain networks or contacts among governmental or non-governmental organizations in different member countries.

Programmes, projects or activities should actively seek linkages to global and inter-regional initiatives as well as build on national programmes, which reinforce the strategic direction of the MRC.

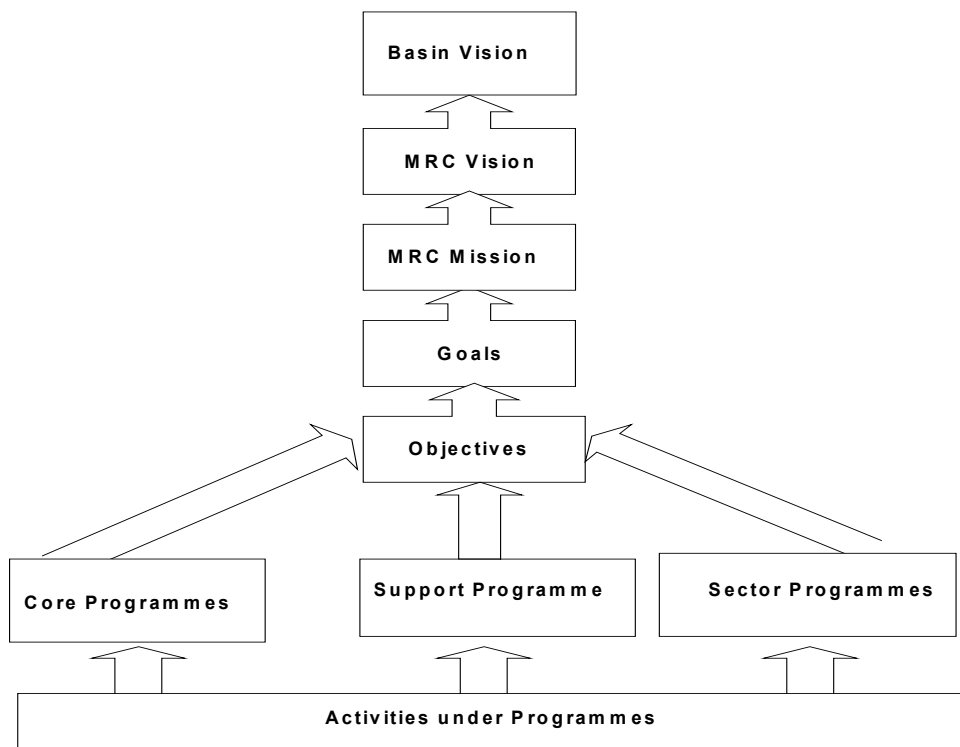
Programmes, projects or activities should help to develop capacity of line agencies, NMCs and MRC, and should draw, whenever possible, on region-based expertise.

Programmes should help riparian countries to respond to the challenges generated by rapidly evolving development needs.

1.8. Implementation of the Strategic Plan

The relationships between the visions, objectives, programmes and activities when the Plan is being implemented are illustrated below.

Figure 4 : Links between the Basin Vision, MRC Vision and Programmes Development



Progress towards the achievement of the goals is accomplished through achieving the objectives. Progress on the objectives is measured through indicators, which measure achievements made through various activities.

These sets of linkages will ensure that activities undertaken by the MRC under the various programmes are contributing measurably towards the achievement of the objectives in the Strategic Plan, which in turn will ensure that the MRC is progressively working towards the achievement of the five goals, fulfilling its organisational Mission and Vision and contributing significantly to the Basin Vision.

2. The MRC Programmes

The change from a “project” to a “programme” focus is perhaps the most significant recent change in MRC. The new approach considers MRC activities as part of comprehensive programmes supporting basin-wide strategies of the riparian countries.

An essential element of adopting a programme approach is the shift of focus away from the activities to the objectives, i.e. away from what is to be done towards what is to be achieved. The programme approach provides flexibility and avoids time-consuming and expensive planning cycles with detailed scheduling of activities several years into the future.

Through adopting this approach the MRC will be able to remain focused on what it is aiming to achieve and adopt strategies and undertake activities to do so in the most appropriate and efficient way. This is in line with the Strategic Plan and will develop the MRC's capacity to meet the challenges in a rapidly changing political, social and development environment.

The MRC has three types of programmes: **core, support and sector programmes**. These represent three current and future needs for the riparian countries. The core programmes are those central to the purpose of the Commission, and are intended to be the ones remaining in the long term. They are addressing central issues in the 1995 Agreement in line with the Strategic Plan directly addressing Goals 1 to 3. The activities under these programmes are, in the long term, to be funded by the contributions of the member countries, thus ensuring sustainability.

The support programme is directly addressing Goal 4 of the Strategic Plan. This programme is important in the short and medium term to address capacity building needs of the MRC and the riparian Governments. As capacity increases, the support programme will diminish in size.

The sector programmes are addressing important sectoral issues in the basin within the mandate of the 1995 Agreement and in line with the Strategic Plan. The programmes have a regional focus intended to address development needs in the sectors from a basinwide perspective, complementing and supporting national and bilateral development initiatives.

2.1. Brief Description of the Core, Sector and Support Programmes

Core Programme

Water Utilization Programme (WUP): Goal 1 - The WUP commenced in early 2000 and is planned to run for 6 years. It will help establish permanent and functional mechanisms to support Mekong Basin water resources management consistent with the 1995 Agreement. Its aim is to achieve “reasonable and equitable” water use among member countries while maintaining the Basin’s ecological integrity. Development of "Rules" for Water Utilisation through the WUP is central to the achievement of Goal 1 of the MRC Strategic Plan.

The WUP comes from member countries’ recognition, in the 1995 Agreement, of the seriously damaging impacts that can occur through uncontrolled economic development or environmental exploitation. For example, if water quality deteriorates through industrial or agricultural pollution, or other actions, then there are threats to the basin’s vital fish stock, to domestic water supplies, and to food production generally. Likewise, if uncontrolled land clearing, large hydropower development, or irrigation development would take place, flooding could increase, low river flows could fall further, navigation could be disrupted, salt water intrusion could occur and fish breeding patterns arrested. The impacts on agricultural production, poverty, food security, social harmony and environmental degradation are apparent. The WUP, and its resultant water sharing arrangements, are specifically designed to afford agreed means of conflict prevention and resolution between member countries. The

WUP covers planning, data collection, development of a basin modelling and knowledge base, establishment of monitoring systems and river basin management. The overriding principle governing the WUP process is that the member countries own it, with the Secretariat acting as a facilitator.

Basin Development Plan (BDP): Goal 2 - Formulation of the Basin Development Plan commenced in October 2001 and will run until late 2004. The expected output is both a general planning tool, and an enduring, dynamic process, for use by the Joint Committee to help identify and prioritise development programmes and projects that meet the cooperative and sustainability criteria of the 1995 Agreement. The BDP units/working groups that have been established in each country by the National Mekong Committees are mainly carrying out the BDP formulation process. Line Agencies, especially those directly concerned with national and regional planning, are increasingly becoming involved. BDP will progressively rely on substantial inputs from WUP, Environment and Sector Programmes, with regard to information and assessment tools for issues such as water quantity, water quality, environment and socio-economic impacts. A coordination mechanism comprising issue focussed working groups has been established at the MRC Secretariat to ensure close integration of all MRC programmes and support sections. The BDP aims to identify trans-boundary economic development activities that balance the Basin peoples' development needs with sustainable water quality, quantity and long-term environmental integrity.

Environment Programme (EP): Goal 3 The Programme has a two pronged approach in that it is aiming to fulfil the articles in the Agreement related to the protection of the environment and maintaining the ecological balance of the basin. It is also supporting the other Core Programmes through provision of environmental data and development of tools for environmental planning and management. Assessment and monitoring of water quality and ecosystem health form an important basis data provision. The Programme also aims to improve environmental policy and management through advice to and promotion of cooperation among environmental agencies, directly supporting the BDP process. Through compilation of existing knowledge and facilitation of research activities it also promotes a better understanding of the environmental and ecological aspects of the Basin. The Programme is central to the achievement of Goal 3 of the Strategic Plan 2001 to 2005.

Support Programme: Goal 4

Integrated Capacity Building Programme - This Integrated Programme is to ensure availability of sufficient expertise in river basin management and the required level of communication and stakeholder participation in MRC activities. The level of competence in river basin management among MRC staff and staff in the riparian governments is to be raised through a systematic, modular training programme. The future pool of expertise available within the region is to be broadened through on-the-job training of young professionals to work at the MRC Secretariat. The ability of MRC to carry out communication, public participation and partnership activities is to be ensured through expert services. Capacity and resources of MRC to respond to priority needs and changing conditions is to be strengthened through a facility to draw on external support on an *ad hoc* basis. Through a twinning arrangement between MRC and the Murray-Darling Basin Commission in Australia it is intended to enhance MRC capacity in integrated water resources management, modelling and data management, basin planning, development of water sharing guidelines, and building community awareness and strengthening at the strategic level.

Sector Programme: Supporting Goal 2 (BDP)

Fisheries Programme – The programme development objective is "*Coordinated and sustainable development, utilisation, management and conservation of the fisheries of the Mekong Basin*". The Programme contributes directly to all four goals of the MRC Strategic Plan 2001-2005. The primary focus of activities is on trans-boundary issues affecting fisheries, so that appropriate fisheries information is available for the BDP, WUP and EP. Information produced within the Programme is incorporated into national and regional management and development plans, with a view to a continuously increasing fisheries productivity and maintaining a healthy ecosystem.

Agriculture, Irrigation and Forestry Programme - Formulation of the new, fully integrated and comprehensive, MRC "Agriculture, Irrigation and Forestry Programme (2001-2005)" was completed in October 2000. Based on a catchment approach, it focuses on activities to promote the sustainability and further development of food production from the land and water resources of the Basin where cooperation between member countries is required for success. The overall programme development objective is to achieve "cooperative sustainable development and utilisation of land and water resources to the benefit of the basin community, and to contribute to poverty alleviation and food security". The programme will be undertaken using a collaborative learning approach to effect change in resource use. It too will contribute to development of the WUP and the BDP.

Water Resources Management Programme – The programme aims to "*promote sustainable development of the Mekong River Basin's water resources for social and economic development for the benefit of the basin's inhabitants*", in line with the second article of the Agreement. This is to be achieved through appropriate hydropower development and a hydro-meteorological network for the collection and analysis of information. An integrated information system providing information on water resources and hydrological status will also support the WUP and the Flood Management Programme. Best options in the Lower Mekong Basin for sustainable development in the hydropower sector will be identified, based on the MRC Hydropower Development Strategy.

Flood Management Programme- This Programme aims to "*promote sustainable development of the Mekong River Basin's water resources for social and economic development for the benefit of the basin's inhabitants*", as stated in the second article of the 1995 Agreement. This is to be achieved through hydropower development, flood management, and a hydro-meteorological network for the collection and analysis of information. A basinwide-approach through regional management of the Mekong floods will be primordial for the benefit of the people in the flood-prone areas. Preparing people for floods and issuing warnings will be part of the operational services of the MRC.

Navigation Programme – This Programme aims to "*promote freedom of navigation on the Mekong River system*", as stipulated in Article 9 of the Agreement. A common interest to facilitate river transport and increase international trade is the underlying reason for this article. On a national level, the programme aims at improving the access facilities to the remote communities along the Mekong River and tributaries to enable the integration of the rural and local communities to be part of the national economic market and provide mobility to reach essential services such as schools and hospitals. This will contribute to poverty reduction by reducing vulnerability, opening new economic opportunities, creating new employment, enhancing democratic process, developing skills, and facilitating and improving the delivery of rural services. Simultaneously, changes in river morphology and study of its impacts will be dealt with under the Navigation Programme. Environmental monitoring, integration of social considerations and conflict prevention will be permanent trans-sectoral aspects. The programme directly addresses issues related to the development of the Mekong

River Basin's resources. It will contribute to Goal 3 of the Strategic Plan through promoting the natural navigation potential whilst preserving the ecological balance.

Tourism Programme- This programme has not yet been developed.

3. MRC Programme, Programme Costs and Funding Status

Table 1 below presents an overview of the programme and their components. It also provides information on the total budget and funding needs for each programme and every programme component. Table 2 provides the same information for calendar year 2003.

The total, multi-year budget for MRC programmes comes to **US\$ 137 million**, with funding requirements amounting to **US\$ 82.8 million** or approximately **60%**.

Total planned expenditures under MRC programmes in 2003, amount to **US\$ 20.3 million**. Funding requirements come to **US\$ 7.0 million**, corresponding to **35%**.

Table 1: MRC Programme, Programme Costs and Funding

Programme	Programme Components	Total Budget (1,000 US\$)	Funding Needs*) (1,000 US\$)	Funded/Pledged (1,000 US\$)
Core Programme				
Basin Development Plan	3 Years	6,156	0	6,156
Water Utilization Programme	6 Years	16,300	0	16,300
	Basin Modelling and Knowledge Base	9,100	0	9,100
	Rules for Water Utilization	1,200	0	1,200
	Institutional Strengthening	4,700	0	4,700
Environment Programme	5 Years	23,458	16,358	7,100
	Environmental Monitoring and Assessment	11,331	8,160	3,171
	Environmental Decision Support	3,016	1,407	1,609
	Strategic Networking and Coordination	1,222	1,002	220
	Capacity and Awareness Building	5,112	3,068	2,044
	Support Studies and Research Facilitation	2,777	2,721	56
Support Programme				
Capacity Building	5 Years	7,244	4,081	3,163
	Integrated Training Programme (Management)	750	750	0
	Information and Communication	1,150	1,090	60
	Junior Riparian Professional Scheme	581	201	380
	Environmental Governance	1,000	0	1,000
	Programme Support	1,000	949	51
	Core Activities in New Organization	2,263	1,091	1,172
	River Basin Management	500	0	500
Sector Programme				
Fisheries Programme	5 Years	5,114	0	5,114
	Institutional Support	1,842	0	1,842
	Assessment of Mekong Capture Fisheries	1,297	0	1,297
	Management of River and Reservoir Fisheries	955	0	955
	Aquaculture of Indigenous Mekong Fish Species	870	0	870
	Population Genetics of trey Riel (Fish) in the MB	150	0	150
	Agriculture, Irrigation and Forestry Programme	5 Years	35,600	27,200
Water Use Efficiency		16,000	13,900	2,100
Catchment Management		14,200	7,900	6,300
Capacity Building for MRC		5,400	5,400	0
Flood Management Programme	6 Years	21,508	19,178	2,330
	Regional FMM Centre	13,064	10,734	2,330
	Structural Measures	1,582	1,582	0
	Transboundary Flood Issues	1,381	1,381	0
	Flood Emergency Management and Strengthening	1,314	1,314	0
	Flood Proofing Measures	2,129	2,129	0
	Land Use Management	2,038	2,038	0
Water Resources Management Programme	5 Years	5,540	1,370	4,170
	Hydrology	3,840	420	3,420
	Hydropower	1,700	950	750
Navigation Programme	5 Years (under development)	13,437	11,610	1,827
	Implementation of Art. 9 Freedom of Navigation	1,945	1,305	640
	Supporting Studies and Data Collection	1,708	1,643	65
	River Works and Fairway Improvement	6,841	6,210	631
	Institutional Strengthening/Capacity Building	2,806	2,315	491
	Promotion and Coordination	137	137	0
Tourism Programme	3 Years (to be developed)	3,000	3,000	0
TOTAL		137,357	82,797	54,560

*) Programme budgets less funds received and pledges of support

Table 2 : MRC Programme, Programme Costs and Funding Needs 2003

Programme	Programme Components	Total Budget (1,000 US\$)	Funding Needs*) (1,000 US\$)	Funded/Pledged (1,000 US\$)
Core Programme				
Basin Development Plan	3 Years	1,877	0	1,877
Water Utilization Programme	6 Years	3,100	0	3,100
	Basin Modelling and Knowledge Base	2,000	0	2,000
	Rules for Water Utilization	400	0	400
	Institutional Strengthening	700	0	700
Environment Programme	5 Years	3,320	1,297	2,023
	Environmental Monitoring and Assessment	1,304	235	1,069
	Environmental Decision Support	554	79	475
	Strategic Networking and Coordination	304	304	0
	Capacity and Awareness Building	854	375	479
	Support Studies and Research Facilitation	304	304	0
Support Programme				
Capacity Building	5 Years	1,640	561	1,079
	Integrated Training Programme (Management)	150	150	0
	Information and Communication	230	170	60
	Junior Riparian Professional Scheme	180	53	127
	Environmental Governance	300	0	300
	Programme Support	200	149	51
	Core Activities in New Organization	380	39	341
	River Basin Management	200	0	200
Sector Programme				
Fisheries Programme	5 Years	1,759	0	1,759
	Institutional Support	590	0	590
	Assessment of Mekong Capture Fisheries	533	0	533
	Management of River and Reservoir Fisheries	291	0	291
	Aquaculture of Indigenous Mekong Fish Species	270	0	270
	Population Genetics of trey Riel (Fish) in the MB	75	0	75
Agriculture, Irrigation and Forestry Programme	5 Years	3,550	2,380	1,170
	Water Use Efficiency	1,500	1,130	370
	Catchment Management	1,500	700	800
	Capacity Building for MRC	550	550	0
Flood Management Programme	6 Years	1,503	903	600
	Regional FMM Centre	1,503	903	600
	Structural Measures	0	0	0
	Transboundary Flood Issues	0	0	0
	Flood Emergency Management and Strengthening	0	0	0
	Flood Proofing Measures	0	0	0
	Land Use Management	0	0	0
Water Resources Management Programme	5 Years	1,110	690	420
	Hydrology	390	120	270
	Hydropower	720	570	150
Navigation Programme	5 Years (Under the Development)	2,246	1,011	1,235
	Implementation of Art. 9 Freedom of Navigation	580	0	580
	Supporting Studies and Data Collection	763	558	205
	River Works and Fairway Improvement	410	410	0
	Institutional Strengthening/Capacity Building	450	0	450
	Promotion and Coordination	43	43	0
Tourism Programme	3 Years (To be Developed)	200	200	0
TOTAL		20,305	7,042	13,263

*) Programme budgets less funds received and pledges of support

4. Progress of MRC Work Programme 2002

This Section makes a brief account of progress of the activities under the MRC Work Programme in the period October 2001 – November 2002.

4.1. Core Programmes

Basin Development Plan (BDP)

The BDP commenced in October 2002, prior to the 8th Council meeting. The BDP Programme expected to be finalized by October 2004. The programme is supported by Australia, Denmark, Japan, Sweden and Switzerland.

National consultations were held in all countries between November 2001 and February 2002 and in February 2002 a Regional Launch Workshop took place in Bangkok. Concurrently the BDP team at the MRC Secretariat (8 experts/advisers and 1 Junior Professional Officer) was mobilised and BDP units and working groups were established by each National Mekong Committee (NMC) Secretariat. At the 15th Joint Committee meeting held in March 2002 in Vientiane, it was agreed that each country would establish a BDP national Sub-committee chaired by the Joint Committee member.

Other preparatory activities have included delineation of the Lower Mekong Basin into 10 sub-areas, information on national policies and legal frameworks have been collected and reviewed. A series of national consultations and a Regional Inception workshop were held in April and May 2002, which contributed directly to the BDP Inception Report endorsed by the Joint Committee at its 16th meeting in July 2002.

National implementation plans to the end of 2002 have been prepared by the BDP units in consultation with concerned line agencies, and following endorsement by the national BDP Sub-committees these plans are currently being implemented. This encompasses national review of the overall planning process and data management systems, orientation of key stakeholders and initiation of sub-area studies in one “pilot” sub-area in each country. A long-term training programme on integrated river basin management in cooperation is about to start which has come to place in cooperation with the Murray Darling Basin Commission. Two persons have already started their Master degree studies supported by the BDP and the applications for 3 others are being finalised.

The BDP has been intimately involved in the formulation of a MRC Public Participation Strategy. A regional workshop and national consultation meetings have resulted in agreement on a strategy that is being refined according to the needs of each MRC programme, and into national action plans.

A donor review of the BDP is scheduled for late November/early December 2002.

Water Utilization Programme (WUP)

In April 2002, the four riparian member countries reached agreement in selection of the modelling package and structure of Decision Support Framework (DSF), which allowed the Halcrow consultants to start Phase II of their assignment on model development. The first

round of on-the-job training commenced in June 2002 with eight trainees from four member countries and four MRC Secretariat staff. The training aims at providing trainees with skills to become trainers for their countries after completing training by October 2003. The Halcrow consultants and the trainees have been cooperating closely in developing and setting up the three model components (Hydrological, Simulation and Hydrodynamic) including data collection and processing, model schematization preparation. The structure of the three model schematizations was presented for discussion at the regional modelling workshop No.5 on 25-26 September 2002. Steps have been initiated to overcome certain constraints with respect to data provision. Close cooperation between the Halcrow and BDP and other MRC programmes is maintained with a view to identify test scenarios for the DSF and for further training and technical support needs. The modelling activities are progressing on schedule.

The study on “Modelling of the Flow Regime and Water Quality of the Tonle Sap” has achieved the following main results: (i) baseline survey from Chau Doc along the Bassac River to Prekdam; (ii) collection and analysis of hydrological and water quality data; (iii) setting up hydrodynamic model for the Lake; and (iv) training of Cambodian staff on modelling and data collection. The JICA Study Team is carrying out discharge measurements for water use monitoring, at this stage for calculation of water balance of the Tonle Sap and to support formulation of rules for water quantity. A French Study Team on water quality started working in August 2002 and provides support to WUP.

The WG2’s activities have been focused on identification of key transboundary indicators. A series of national consultation meetings have been conducted to provide knowledge and technical guidelines on how to identify indicators. WG2 and Environment Programme have completed the concept paper on environmental flow and sent out to NMCs for comments. They have also formulated the “Proposal for a Three-Phased Approach for Managing Flows for Health of the Mekong River”, which has been submitted to the World Bank for final approval.

It is expected that draft Preliminary Procedures for Notification, Prior Consultation and Agreement (PPNPCA) will be submitted to the Ninth Council meeting.

Environment Programme

The revitalization of the 15 years old Water Quality Monitoring Network in the basin is continuing and the new network should be in place by the end of 2003. The Programme will continue to conduct analyses of relevant parameters throughout the basin on a monthly basis. A monitoring system for pesticides is under consideration. The water quality data has been reviewed and revised and is now accurate and of high quality. A basinwide diagnostic study of water quality was initiated in 2002, which will support the Water Utilisation Programme in the development of guidelines for water quality. To complement the monitoring of physical and chemical parameters of the basin water the Programme is developing an ecological health monitoring system based on biological assessment. The first phase of the monitoring system will be operational by the end of 2003. Existing information on aquatic ecosystems has been collated from the basis of aquatic ecosystem maps of the basin. MRC has proposed a common wetland classification system compatible to the system used by the Asian Wetland Inventory (AWI), which provisionally has been adopted by the four member countries. Current work on completing a basin wide inventory followed by assessment of the functions and values (economic and social) will continue in close collaboration with other agencies engaged in this field (e.g. IUCN, ICLARM, WI, WWF, etc.).

The development of technical guidelines and policy advice for a trans-boundary Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA)

System was completed in May 2002, and after further guidance from the Council and the Joint Committee on how to proceed, the Programme will assist in the development of a suitable system to be used in MRC member countries. Environmental risk assessments are undertaken in areas surrounding Vientiane/Nong Khai and Phnom Penh by regional teams. A comprehensive review of environmental conflicts in the region was completed in 2002 and will serve as a basis for work on how MRC should be engaged in conflict mediation and resolution.

Seven training modules and 20 case studies related to EIA have been prepared and translated into the riparian languages. A CD-ROM based self-learning kit on river awareness is being developed and will be ready for broader distribution in early 2003. The review of environmental awareness in the basin will serve as a basis for developing a strategy for such MRC engagement in the member countries.

4.2. Support Programme: Integrated Capacity Building Programme

Major accomplishments in 2002 were as follows: (i) The first batch of four Junior Riparian Professionals; one from each member country joined the MRC in June 2002. The four JRPs are attached to the four MRC programmes: BDP, EP, WUP and FMP. A second batch of JRPs is scheduled to join MRC in January 2003; (ii) At the tripartite Review Meeting of the UNDP capacity building programme in January 2002, good progress in programme activities was observed at all levels; (iii) The MRC Programming Manual was reviewed and finalized for use as a working document. A training of trainers programme on how to use the MPM was conducted for staff from both the Secretariat and NMCs. Implementation of operational plans developed during the training is on-going as well as sharing of MPM-based sample forms with CBP-teams of NMCs.; and (iv) A wide range of training programmes for staff at the secretariat and NMCs had been provided including training in programme management, logical framework approach, functional English training such as report and proposal writing and presentational skills, and training in self-empowerment.

Under the Murray Darling Basin Commission (MDBC) and Mekong River Commission (MRC) Strategic Liaison programme training in hydrological modelling has been carried out. Likewise a workshop on data and information exchange and final drafting of guidelines on custodianship and management of MRC's information system has been concluded. Preparations are made for training in basin planning and further development of MRC's public participation strategies.

The Communications function provided management support for production of the Annual Report 2001, a revamped quarterly newsletter, and general information materials about MRC and its work in English, Khmer, Lao, Thai and Vietnamese. Publishing of scientific research and technical work of the Commission has increased, and improved media liaison has resulted in higher profiling of the Commission and its work.

4.3. Sector Programmes

Fisheries Programme

A major focus of work over the previous 12 months has been communicating important outcomes of the Programme. This has resulted in a series of publications, production of an interactive CD on fish migrations and a database on fishes of the Mekong, and a film on the

fisheries of Cambodia. It is the first phase in the important task of communicating and promoting programme results to the core programmes of MRC and to national management agencies. Construction of a new Fisheries Institute in Cambodia will be completed in December 2002, ahead of schedule. Regional training in co-management has continued as part of a structured 3-year regional programme. Further studies have been conducted on the relationship between flood heights and fisheries production, and the fisheries productivity of different wetland habitat types. Developing work on aquaculture of indigenous Mekong fishes has proceeded that has resulted in establishment of information sharing networks among fisheries workers in the 4 member countries. Further formalized networking has taken place in conjunction with the Fisheries Annual meeting and the Annual Fisheries Technical symposium. In addition, Catch and Culture has been produced four times the past year, and is now seen as a major fisheries communication vehicle in the region. The Mekong Women in Fisheries network has continued to provide a platform for women working in the fisheries field to support their development endeavours in their respective countries. The planning of the Symposium on Large Rivers and Fisheries in 2003, which MRC is organising in cooperation with Department of Fisheries (DOF) in Cambodia and the Food and Agriculture Organization (FAO), has continued and is well advanced.

During the reporting period, a review of the Fisheries Programme was undertaken and the findings have contributed to develop a new Fisheries Programme that will be implemented from January 2003.

Agriculture, Irrigation, and Forestry Programme

In 2002, three basin-wide databases, irrigation, inundation and soil database have been developed. A final workshop on irrigation and inundation databases was held on 29 November – 1 December 2002, and for soil database a similar workshop was held on 29-30 April 2002. These databases will contribute to planning effective land and water use. Since February 2002 activities with respect to development of models to evaluate and demonstrate the multi-functionality of paddy fields has developed further. Production of data and information on irrigation water use have been promoted by facilitating collaborative research between the four riparian countries

Water Resources Management Programme

Hydrology: In 2001, The Australian funded Appropriate Hydrological Network Improvement Project (AHNIP) commenced to upgrade 18 major hydro-meteorological stations along the Lancang-Mekong mainstream. The aim is to improve the water level and discharge monitoring to assure accurate, reliable and real time data and data handling capacities of MRC and the riparian countries for flood forecasting, auditing of rules for water sharing, disaster management, etc. So far, 15 of these stations have been upgraded. Communication equipment, data receiving centres and facilities are being installed at the Secretariat and in the riparian countries. The first training of trainers programme has been completed and training at national levels is in good progress.

The project “Consolidation of Hydro-Meteorological Data and Multi-functional Roles of Tonle Sap Lake and its Vicinities”, funded by Japan, has collected water level data from 20 stations and discharge data in the Cambodian flood plain, which will complete data gaps in this region to enable model simulation and understand the function of the area in terms of flood mitigation and water supply essential for FMP, BDP and WUP. The sustainability of the

project is paramount and could only be ensured through a comprehensive training programme for staff at NMCs, line agencies, and the MRC Secretariat.

Hydropower: The MRC Hydropower Development Strategy (HDS) was launched at a workshop in October 2001. The strategic areas for the HDS that were defined and approved include (1) consideration of integrated water use, environmental and socio-economic factors; (2) efficient hydropower generation and distribution mechanisms; and (3) information system and capacity building for hydropower development. The development of the Strategy had been based on extensive discussions and information collected from sources inside as well as outside of MRC. Consultations and exchange of views had taken place throughout the process of strategy formulation. This process involved representatives of agencies and individuals in the four MRC member countries, including the National Mekong Committees and the relevant line agencies, as well as a wide range of civil society organisations and international agencies and organisations, such as the Asian Institute of Technology, the Asian Development Bank, the World Commission on Dams, Global Water Partnership, the World Wide Fund for Nature, Oxfam America and others. Based on these activities the HDS was published in October 2001 and the hydropower component of the Water Resources Management Programme was revised. A fundraising proposal was prepared in June 2002 and submitted to relevant donors and interested NGO's.

Flood Management Programme

Since the Council approved the MRC Flood Management and Mitigation Strategy in November 2001, the FMM Task Force has worked actively in the following areas: (i) Improvement of existing flood forecasting and early warning system, (ii) Organization of Annual Mekong Flood Forum, (iii) Improvement of regional flood maps, and (iv) capacity building for preparedness planning and response through using flood information and data generated within the lower Mekong basin.

During 2002 and with the MRC Flood Management and Mitigation Strategy in mind, a Flood Management Programme has been developed through a participatory process. Initial consultations were held from 31 July to 13 August 2002 with the National Mekong Committees and selected national line agencies and organizations to obtain general agreement on the FMP formulation process, and to obtain initial comments on the usefulness, scope and structure of the FMP as a whole, as well as of its individual components. Further, national workshops were held from 27 August to 6 September 2002. The programme was discussed with donors at an informal meeting on 17 September 2002 and a regional workshop was conducted on 20-21 October 2002.

The Flood Forecasting and Early Warning (FFEW) activities of the MRC have recently been improved. During dry season from December 2001 to Mid June 2002, seven-day river monitoring and low flow forecasts were conducted and updated weekly on MRC River Monitoring Web Page. An International Expert Meeting on Flood Forecasting and Early Warning System was held in February 2002. The meeting emphasized the need for an improved flood forecasting and early warning system in the Mekong region and recommended to upgrade the MRC forecasting system based on modern technology, combined with a more effective warning system. Additional real time hydrometeorological data on water level and rainfalls were received at 7 AM and 7 PM from two Chinese stations. Since June 2002 synoptic data and rainfall estimates, forecasts from Thai Meteorological Department have been received on a daily basis and since September 2002 data from 2 main tributaries in Cambodia were transmitted. The MRC is now capable of making five-day flood

forecasts for 21 key stations on the main Mekong stream, which is disseminated to the end users through email and Web site. The Flood Information Web Page is constantly being updated and improved. A proposed flood forecasting and warning dissemination system in the Lower Mekong Basin Project has been funded by the Government of Japan and will be launched in December. Assistance is currently sought from the Office of US Foreign Disaster Assistance under the Flood Management Programme to provide appropriate flood early warning information to flood-vulnerable communities in the Lower Mekong Basin.

Navigation Programme

The Mekong River Commission is currently redefining its role regarding waterborne transport on the Mekong river system in order to cope properly with international trade prospects, national policy developments and to be in accordance with the MRC Strategic Plan (2001-2005). Aiming for a stronger position as intergovernmental facilitator in this matter, MRC in August 2002 started to update the existing strategy formulated in 1994, which will take place in a participatory process including important stakeholders. The new Navigation Strategy is foreseen to be outlined by the end of 2002 and following this, an action plan and a detailed implementation programme will be formulated by April 2003.

In July 2001 the Hydrographic Atlas Project was completed and the next stage of this project, UHA Digitizing in Cambodia, Lao PDR and Thailand to transform hard copy maps into electronic navigation geographical information systems (GIS) charts commenced in September 2002.

Belgium is financing navigation-related projects through the National Mekong Committees. In Cambodia, the identification of the project called “Master Plan for Water Transport Sector in the Mekong Delta”, which is closely related to the formulation of the MRC navigation strategy started in June 2002. The project has three main components: (i) access by maritime (sea-going) vessels to Phnom Penh using the Mekong river, and improvement of inland water transportation between Cambodia and Viet Nam, (ii) The inland waterway system in Cambodia, and (iii) multi-modal transport links with the Lao PDR. In June 2002, a Institutional Strengthening and Capacity Building Programme for the Mekong River Transportation was initiated and it aims at enhancing the planning and management capacity of Cambodia’s navigation sector, of selected staff of the Cambodia National Mekong Committee and staff of the Ministry of Public Works and Transport. Belgium cooperated with the Lao National Mekong Committee on the issue of bank protection that took place early 2002, and the MRC-related programme between Belgium and the Viet Nam National Mekong Committee on navigation projects was considered.

Tourism

The tourism programme has yet to be developed

5. Planned Activities per Programme in 2003

5.1. Core Programme

Basin Development Plan

Based on the Project Implementation Plan (PIP) included as part of the Inception Report, national work plans for 2003 will be formulated during the latter months of 2002 and incorporated into an overall regional implementation plan. Key elements will be coordinated with other MRC programmes, in particular the core programmes, WUP and EP to ensure harmonisation between BDP requirements and the production, testing and calibration of assessment tools and models. The main activities to be undertaken under the BDP during 2003 will encompass: 1) completion of sub-area studies and updating basin-wide sector overviews; 2) scenario formulation for prioritised sub-areas and the whole lower Mekong basin through a process involving public participation; 3) formulation of sub-area and basin-wide strategies; 4) compilation of a long-list of possible projects with trans-boundary implications; and 5) reaching agreement on project/programme selection criteria and the identification of at least one “spearhead” project with trans-boundary dimensions in each country and at regional level. The training programme in cooperation with MDBC on integrated river basin management will be completed and reviewed. Other training needs will be addressed either as a component of the integrated MRC training programme or through specific courses to meet BDP requirements. The six persons selected for scholarships for Master degree study will either have completed or be part way through their studies. It is anticipated that a mid-term review of the BDP project will take place during the 2nd half of 2003.

Water Utilisation Programme

The training on operation and administration of the modelling Package will be conducted in July/August 2003. Component A Basin Modelling Package and Knowledge Base of WUP will be completed by October 2003, and the Finnish co-financing project will be completed by June 2003.

Workshops and National Consultations will be conducted to discuss the concept on “Flow Management”. A Technical Drafting Group 3 (TDG3) will be established, to identify Rules/Procedures on Water Use and Monitoring and to continue working on the Final Procedures for Notification, Prior Consultation and Agreement (PNPCA).

Environment Programme

Implementation was initiated in 2001, and the Programme is now implementing a number of activities in prioritised areas. About half of the required technical advisors have been recruited and advisors placed at the NMCs are assisting in implementation at the national level. During 2003 the Programme will continue the work initiated under the components, while slowly finalizing the revision of the Programme. The final work on strengthening the Water Quality Monitoring Network (WQMN) should be completed in 2003, ensuring generation of high quality data. Wetland classification and inventory will further develop into assessment of its functions and (economic) value. The development of an ecological health monitoring system will continue with testing of methodologies and training assessment teams. The CD-ROM based self-learning kit on river awareness will be evaluated and further work in environmental training may continue in this way. Work on the development of a

trans-boundary EA system will continue, and may incorporate findings from the work on environmental risk assessment. Work on provisional assessment of environmental flows for the basin will commence in 2003 together with further work on conceptual modelling to improve understanding of ecological processes in the basin.

5.2. Support Programme

Integrated Capacity Building Programme - Development of the MRC Integrated Training Strategy and Programme commenced in the second half of 2002. The aim is to bring the various training needs of MRC under one umbrella and to address these needs through one comprehensive and coherent training programme. The Training Needs Assessment is the main preparatory activity to arrive at the Integrated Training Strategy and Programme. The different MRC training strategy options will be presented and discussed at a regional workshop in the beginning of 2003. On the basis of the outcomes of the workshop an Integrated Training Programme will be developed. The ongoing recruitment process of four new Junior Riparian Professionals will be completed by January 2003, bringing the number of JRPs at the Secretariat to eight. Participation in the strategic liaison programme between the Murray Darling Basin Commission and MRC will involve short-term training and advice in the priority areas of integrated water resources management, public participation and basin development planning. Workshops will be held in the areas of public participation and community awareness, natural resources policy development and river basin planning water management, modelling and basin development planning.

In-house systems, in the development stage during 2002, will be improved and finalised for report publication, translation management, marketing and sales of MRC publications, management of images and transmission of information through email lists and the website. General promotion of the Commission through event management, media liaison and the packaging and distribution of information products will be given a high priority, to increase public awareness of the Commission's role in the member countries and internationally.

5.3. Sector Programme

Fisheries Programme

The new Fisheries Programme has been prepared in the later half of 2002 and will be implemented from January 2003 onwards. Emphasis will be on three areas; firstly, maintenance of core fisheries activities; secondly, synthesis and publication of completed work; and thirdly, seeking funding from new donors.

Core activities in the field of fisheries ecology will include continuing the assessment of daily fisheries catches in relation to water flow and flood patterns; training in the application of fisheries impact assessments, and associated monitoring and mitigation; completing studies on recruitment and dispersion of major species groups; consolidation of co-management training and development packages, including an extension of reservoir based activities to river fisheries; and development of husbandry techniques for indigenous Mekong fish species, but at fewer centres than previously planned.

Substantial effort will be directed to collating and publishing studies already completed within the Fisheries Programme. This is needed to provide a public and retrievable documentary record of results and achievements. Part of the process will involve consolidation of databases and their transfer into the MRC's Technical Support Division. Both publication and database cleaning will actively involve MRC core programme staff, to

ensure that all relevant data is processed and made available in formats that can be readily integrated by the WUP, BDP and EP.

A major focus in 2003 will be to implement and further the new Fisheries Programme. Concept papers for the various activities will be prepared, and thereafter, in cooperation with potential donors, the concept papers will be elaborated into component documents for funding and implementation.

Agriculture, Irrigation and Forestry Programme

Under the catchment management component, relevant management institutions will be identified and provided with support to strengthen regional cooperation, information exchange/sharing and to develop approaches for sustainable catchment management within trans-boundary areas. This will also include preparation for a forest rehabilitation component in the LMB. Under the Water Use Efficiency component, activities for development of models to evaluate and demonstrate the multi-functionality of paddy fields will be continued. An irrigation water use database for modelling will be established to provide data for the core programmes of MRC. Information related to the environmental impacts of wetland rice production will be collected for basin planning purposes.

Water Resources Management Programme

The major task under the Hydrology component in 2003 will be to guarantee the continuous supply of improved quality, quantity and timely hydro-meteorological information to all core programmes for model improvement, forecasting and monitoring verification of scenarios and rules auditing by further strengthening and consolidating the established network and capacity involved. Under the AHNIP project the quality of the improvement so far will be monitored and measures taken to ensure sustainability. The two stations in China will be improved and upgraded for satellite data transmission. The project “Consolidation of Hydro-Meteorological Data and Multi-functional Roles of Tonle Sap Lake and its Vicinities” will focus on the refinement of data, model calibration and water balance studies and on-the-job training in data collection and analysis using modern equipment. Identified data gaps will be filled to improve data availability. For the medium and long-term plan, the AHNIP activity will be expanded to cover the MRC’s core hydro-meteorological network taking into account the recommendations of the Strategic Master Scheme, the upcoming mid-term review, and the MRC’s core programmes.

Under the hydropower component cooperation structures with hydropower segments in the riparian countries will be established and advice on the planning, development and operation of hydropower plants in the LMB will be provided in close consultation with the riparian governments and the BDP. Costs and benefits of existing hydropower plants and dams, will be analysed to support identification of options for best hydropower development in LMB. Studies will be carried out of the potential for improved efficiency, reduced power demand and savings in investments in the power sector in the riparian countries through demand and savings Management (DSM) and other viable options. It is envisaged that a study will be conducted on practices and obstacles for private and public participation in hydropower development in the riparian countries; proposing efficient and fair principles for private and public participation. Acceptable Hydropower projects in the LMB will be identified for the BDP.

Flood Management Programme

Activities will focus on flood preparedness, development of guidelines and institutional strengthening. Construction of a regional Flood Management and Mitigation Information Centre will be commenced in early 2003. This will support MRC in promoting flood management and mitigation in the member countries and regional management of flood plain development. Emphasis will be placed on flood forecasting and early warning. By 2003, precise warnings with accurate flood plain maps will be disseminated to meet the local need for reliable and accurate information in a timely manner. The flood emergency management capacity building of MRC riparian staff will be carried out under the programme in early 2003. Based on the master plan for the improvement of the hydro-meteorological network in the river basin, further planning, development and management of the network will take place. Improvement of the Hydro-Meteorological network, including the setting up of an on-line monitoring system to provide real-time and automatically recorded data at key stations for the WUP will continue. Development of a new flood forecasting model will be initiated and the second annual Flood Forum will be organized in May 2003. In cooperation with the Water Utilization Programme, an intensive measurement campaign is being organized in the Cambodian Mekong Delta to study the role of the Tonle sap Great Lake and its associate systems.

Navigation Programme

Digitizing of the Hydrographic Atlas in Cambodia, Lao PDR and Thailand will be completed in April 2003. The Formulation of the Strategy and Programme for Navigation development and Coordination in the Lower Mekong Basin will be completed in May 2003. Subject to the availability of funding, MRC will therefore commence implementation of the Navigation Programme by mid-2003. In 2003, the following bilateral projects between Belgium and the National Mekong Committees will start implementation: The actual design of the Master Plan for the Waterborne Transport Sector in the Mekong Delta will start in April 2003 (CNMC), Institutional Strengthening and Capacity Building for Navigation in Cambodia (CNMC), Bank Protections in Pakadan and in Khammouane (LNMC).

Tourism Programme

Subject to availability of funding, this Programme will be under development during 2003 where the main activity would be a study of the tourist sector and development of a coherent programme proposal.

PROGRAMME PROFILES

For each programme, the profiles provide information on the context of the programme and the situation addressed by it, on objectives, strategy and main outputs and activities envisaged under the programme. The programmes are presented as core, support and sector programmes.

The programme profiles are deliberately very brief and are intended to provide an overview of what the particular programme or component is aiming to achieve. Comprehensive programme descriptions/proposals are available upon request from the MRC Secretariat.

CORE PROGRAMME

6. BASIN DEVELOPMENT PLAN

6.1. Programme Context and Problem Addressed

The 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin defines the Basin Development Plan (BDP) as a "*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 implement the plan at the basin level*".

Its aim is to promote, support, cooperate and coordinate the development of the full potential of sustainable benefits to all riparian countries and prevention of wasteful use of the basin's waters, consistent with the needs to protect, preserve, enhance and manage the environmental and aquatic conditions and maintenance of the ecological balance exceptional to the MRB. The Agreement aims also to assist in developing the Mekong River Basin in accordance with the new vision of the Mekong cooperation in order to accelerate interdependent sub-regional growth, create a new environment which is conducive to investments and establish a firm foundation for sustainable development. To this end, views from the public will need to be incorporated adequately and a well planned, formulated and mutually acceptable basin development framework that would balance socio-economic and environmental considerations will have to be established. The development efforts will have to continue on a sustainable basis to provide a strategy for the MRC to initiate priority programs and projects in cooperation with appropriate national and international organizations, including regional initiatives.

6.2. Objective

The development objective of this Programme is "sustainable development of the water and related resources of the Basin for the mutual benefits of the riparian countries and people living in the Mekong River Basin". In the medium-term, the programme will develop a framework for regional cooperation among the riparian countries to develop the MRB through implementation of a well-defined and established BDP.

6.3. Programme Strategy

BDP Programme is seen as three parallel processes comprising (i) the BDP planning process carried out in five stages, (ii) a knowledge and capacity building process and (iii) a dialogue with the public, stakeholders and political levels. While the internal knowledge base will be strengthened and firmly established for operation of the staged technical planning process, a participatory planning approach will help achieve the Programme objectives and ensure sustainability of the development efforts and the planning processes in the longer term. MRC Secretariat, NMCs and line-agencies in the riparian countries will continue to be the key actors of BDP, with a limited involvement of external consultants/advisors. The BDP and the planning process is dynamic and with a participatory approach. It will initially have a three-year duration.

6.4. Component Description

Immediate Objectives: 1. *Basin Planning Process established and is ongoing;* and 2. *A BDP drafted and agreed to by the riparian countries.*

Main Outputs and Activities: The BDP planning process is seen as dynamic. The Plan itself is to be comprehensive, integrated and multi-purpose of nature. The main expected outputs are:

- A planning process based on national legal and policy frameworks;
- A set of planning guidelines, policies and criteria;
- A training component consisting of short training courses and in-house training seminars;
- Assessment/analysis of sub-areas (situation analysis) based on the vision and mission statement of BDP;
- Development scenarios for each sub-area including an analysis of factors that may affect the availability of water and influence the demand for it;
- Development strategies for each sub-area, management and development strategy for the water related sectors, and development and management strategy for the lower Mekong River Basin;
- A list of basin-wide priority projects and programs with a limited implementation plan.

Activities to be carried out will be to: (i) strengthen the required technical knowledge base including human resources, databases and planning tools, (ii) establish the participation plan and related mechanism to secure adequate public inputs for the BDP, and (iii) complete the five stage planning process. Sub-areas, a basic unit for analysis and planning, will be defined for further analyses and formulation of a basin-wide development/management strategies and plans. On-the-job training, workshops and seminars will be organised.

6.5. Budget

Component	Total Cost	External Funding Sought
Basin Development Plan Process	6,156,000	0
Total Programme Cost	6,156,000	0

7. WATER UTILISATION PROGRAMME

7.1. Programme Context and Problems Addressed

The 65 million inhabitants of the Mekong River Basin depend to a great extent on the natural resources of the Basin for their livelihood. The Basin has, in the last decade, experienced lower economic growth than surrounding regions of Southeast Asia. As a result, exploitation of the forest areas, wetlands and flooded forests is increasing. The prospect of increased water diversions and constructions of the needed infrastructure for irrigated agriculture and water supply represent competing water uses that threaten the basin's natural habitat and aquatic ecosystem. Shifting cultivation and widespread logging in the sensitive upland areas are degrading the watersheds, increasing erosions, and modifying the flow regime. Finding a way to support continued development of the Mekong River Basin in a sustainable way and minimising water-use conflicts is critical. Therefore, there is a need to assist the MRC member countries in promoting socio-economic development and improving sustainable water management while protecting the ecological balance of the basin.

The Water Utilisation Programme's major issues concern equitable and reasonable sharing of the water resources and sustainable development of the natural resources in the Basin. The most critical factors are related to changes in the hydrological regime and dry-season flow in the Lower Basin. Lao PDR and Cambodia rely on river transport and the reduction in dry-season flows can adversely affect navigation. Cambodia has the long-term potential for expanding its irrigated agriculture. Over decades, Thailand and Vietnam have developed extensive irrigation systems that currently face dry-season water constraints. Saltwater intrusion into the Mekong Delta during the dry season adversely affects irrigation and domestic water supplies. Hydropower remains to be an important development activity, especially in the upper part of the Basin. The options for diverting water from the Mekong, and for inter-basin diversion of the water from the Mekong tributaries have also been considered.

The WUP will assist the MRC member states to implement key elements of the 1995 Mekong Agreement (Articles 5, 6 and 26) and contribute to addressing these issues. Equally important the WUP will provide the analytical tools and knowledge base required to support negotiation of the "rules" for water utilization and their implementation. It will provide the technical and institutional capacities required for longer-term cooperation to manage the basin's water and ecological resources in sustainable manner.

7.2. Objectives

The Programme's development objectives are:

- Promote a mechanism to improve coordinated and sustainable water management in the Mekong River Basin (MRB) and among the riparian countries;
- Promote equitable and reasonable water utilisation by the countries of the MRB; and
- Enhance the protection of environment, aquatic life and the ecological balance of the MRB.

7.3. Programme Strategy

The objectives will be achieved through preparation of “rules” for water quantity and quality data and information exchange; notification, prior consultation and agreement, in accordance with the principles set forth in the Mekong Agreement; and the development and adoption of related mechanisms and procedures for implementation of the “rules”.

The WUP aims to support the MRC in developing an integrated and comprehensive basin modelling package, as well as an integrated knowledge base on water and related resources to establish a series of "rules" for joint water management. The WUP will help establish a decision support framework and a permanent and functional program to support the management of water resources in the Mekong Basin in a manner consistent with the Mekong Agreement. It is intended to help the MRC-member countries achieve “equitable and reasonable” water uses, while maintaining the ecological integrity of the Basin. It will also support the formulation and execution of the MRC’s Basin Development Plan (BDP). The Programme started in early 2000 and will last for 6 years. It consists of three primary components:

- A. Basin Modelling and Knowledge Base
- B. "Rules" for Water Utilisation
- C. Institutional Strengthening.

The strategy pursued in the Programme is to facilitate and support a flexible, yet structured process in formulating the "rules" for water utilisation. Moreover, in a manner consistent with the principle of adaptive management and in light of the prevailing uncertainties in some key data, the “rules” will be adopted on an interim basis, subject to review and revision according to the conditions promulgated by the MRC.

Water resource management requires the consideration of all elements of the hydrological cycle, including surface and groundwater, quantity and quality, and temporal and spatial variations. Water quality considerations are an integral part of formulating procedures related to: i) information and data exchange, ii) notification and prior consultation, and iii) water use monitoring.

Understanding the flow regime of the Mekong River Basin in the most complete sense, including temporal (seasonal and annual) and spatial (mainstream, tributaries, sub-tributaries, wetland, floodplains) variations is the foundation for establishing mainstream flow and water quality rules, formulating the BDP, and the review of proposed water uses. The publication of a MRC report on the “Hydrology and Environmental Assessment of the Lower Mekong River Basin” to be developed jointly by the WUP Working Groups I and II, will serve as a foundation for the above purposes.

Critical data gaps and improved information management needs will be identified under Component A (Information and Knowledge Base Development). This information will provide the foundation for developing procedures for information exchange and water use monitoring. The exchange of information engendered by these procedures would help in the development of the Basin Modelling Package, the Trans-boundary Response Analysis, and support the formulation of the BDP.

The calibrated basin-modelling package will be used to simulate a wide range of water use and diversion scenarios to test the viability of the alternative mechanisms being considered in the consultations on the water use monitoring procedures, to test procedures and guidelines developed during consultations on the procedural rules, and to formulate and evaluate alternatives and options for the technical rules.

7.4. Component Descriptions

Component A. Basin Modelling Package and Knowledge Base

Sub-Component A.1: Information and Knowledge Base Development

Immediate Objective: Information needs identified and knowledge base developed

Main Outputs and Activities: The information and knowledge base will be developed through identifying the actual modelling needs, data requirements, and selection criteria; review all existing data, agreeing upon data base and information system design, assessing national legal and institutional frameworks. Based on the results of the afore mentioned activities, the WUP will focus on the development, testing, and implementation of the Knowledge and Information Management System, assessing water quality data and problem and identifying and filling critical data gaps.

Sub-component A.2: Development of the Basin Modelling Package

Immediate Objective: A modelling package of the waters of the basin developed

Main Outputs and Activities: Basin Modelling Package will be developed by examining the general basin modelling requirements, developing water quality modelling and strategy, and integrating the upper and lower basin models into an integrated modelling package. In the process, the efforts will be exerted in calibrating and verifying the WUP Modelling Package, and the Water Use Monitoring Procedures, as well as supporting the Rules Formulation and Consultations.

Sub-component A.3: Environmental, Economic and Social Trans-boundary Analysis and Modelling

Immediate Objective:

Main Outputs and Activities: The Environmental, Economic and Social Trans-boundary Analysis will be carried out through conducting diagnostic assessment of trans-boundary problems, prioritising the problems and issues and identifying the related data needs, and taking action in closing the critical data gaps. The development of trans-boundary model component will be the key focus of this sub-component.

Component B: Development of the "Rules" for Water Utilisation

Immediate Objective: Rules for water utilisation, in line with the Agreement, developed and ready for adoption by the riparian countries

Main Outputs and Activities: There are five sets of "water utilisation rules" anticipated to be formulated under this component, first "procedural rules" which includes: 1. Procedural rules for information exchange and monitoring, 2. Procedural rules for prior notification and consultation of proposed water use, and 3. Procedural rules for monitoring water use and diversions in the Mekong Basin. Secondly, "technical rules" which includes: 4. Maintenance of flows on the mainstream, and 5. Water quality-related rules.

Component C: Institutional Strengthening of the MRC and National Mekong Committees to Implement the WUP

Sub-component C.1: Programme Management Support

Immediate Objective: Improve institutional capacity of MRC and NMCs to implement the Programme

Main Outputs and Activities: Senior WUP Advisers as well as national consultants will be recruited to assist in all aspects of WUP implementation and coordination, and expert review

panel consisting of internationally renowned water management, will be convened once a year over the course of the Programme to provide advice to WUP and the Joint Committee on particularly difficult issues related water utilisation (or other relevant issues).

The equipment package to support a networked computer/communications system that will link the national WUP units with the MRC Secretariat will be provided.

Sub-component C.2: Technical Training, Capacity Building and Team Building

Immediate Objective: Improve capacity of staff involved in the Programme to implement activities

Main Outputs and Activities: Under this sub-component, activities will be undertaken both to improve the capacities of the WUP participants and to build momentum during the first year of the Programme and proceed throughout the Programme. Besides, international visits to study inter-state and/or international river basin management and administration are also envisaged. A training fund will be administered by the WUP Management Team (WMT) to support training needs throughout the Programme for training in-country or combine in-country and overseas training or at regional institutions (universities, colleges, and government offices) and on-job training.

Since, technical collaboration between the two upper riparian countries – China and Myanmar – is very crucial for the WUP, the WUP budget is allocated to support collaboration with the upper riparian states at a technical level in the WUP, including workshops, study visits, and other information sharing activities.

The WUP also focuses on the improved public participation that may include information gathering, information dissemination, consultation, and participation of key stakeholders. The Programme will also support the participation of the MRC, specifically its WUP management teams in the MRCS and the NMCs, in the GEF global program (GEF International Waters, IW).

7.5. Budget

The WUP Start-Up Project Budget of US\$ 16.3 million has been funded (of which US\$ 11 million from the GEF, and the balance from the co-financiers, Finland, France and Japan, and the MRC and its member-states are financing the remaining costs).

Component	Total Cost	External Funding Sought
A. Basin Modelling and Knowledge Base	9,100,000	-
B. Rules for Water Utilisation	1,200,000	-
C. Institutional Strengthening	4,700,000	-
Contingencies (8%)	1,200,000	-
Total Programme Cost	16,300,000	-

8. ENVIRONMENT PROGRAMME

8.1. Programme Context and Problems Addressed

Mekong River Basin Diagnostic Study (1995-2005), a joint effort between MRC Secretariat and UNDP, and other studies have identified many environmental and socio-economic problems in the region. These problems emerge due to increased environmental degradation, reduction of bio-diversity, decreased complexity and extent of aquatic habitats resulting in a decline in the growth and reproduction of the living natural resources. The problem is acute for aquatic habitats, which are vital to the livelihoods of the Basins people. Damage to the naturally sustainable productive capacity of aquatic ecosystems caused by destructive local practices is compounded by disturbances in other parts of the Basin such as deforestation and drainage of large flood-plain wetlands. Environmental degradation “far away” commonly induces lasting changes in water quality, hydraulic cycle and productivity of downstream areas, hence the importance of adopting a holistic approach to managing the Basin’s water and related natural resources. The Environment Programme, in concert with all other MRC programmes, focuses on the issues that need to be addressed by the Mekong River Commission over the next decades in order to ensure a balance between economic development and environmental concerns.

8.2. Objectives

Development Objective: *An environmentally sound, economically prosperous and socially just Mekong River Basin.*

Immediate Objective: *The riparian Governments have the capacity to secure a balance between economic development and protection of the environment to ensure a healthy Mekong River Basin capable of supporting the natural resource diversity and productivity which are central to the livelihoods of the people.*

Objective 1: *Improved capacity for monitoring and assessing the environmental state of the Mekong River Basin.*

Objective 2: *Increased knowledge base of environmental issues of the Mekong River Basin.*

Objective 3: *Improved systems for environmental information exchange and communication.*

Objective 4: *Improved environmental policies and legislation related to management of water and related resources, taking gender, ethnic and socio-economic aspects into consideration.*

Objective 5: *Improved awareness of and capacity to address environmental issues.*

Objective 6: *Improved coordination of development in the Mekong River Basin.*

8.3. Programme Strategy

The MRC Environment Programme is comprehensive, flexible, and builds on improved mechanisms for co-ordination provided by the new organisational structure of MRC Secretariat. In contrast to previous and more technically oriented environmental projects, the central focus of the Programme is people. The Programme continues to monitor water quality and is developing an ecosystem health monitoring system, both crucial for food production as well as other products generating export revenue in the Lower Mekong Basin. Furthermore, through development of environmental planning and management tools the programme is supporting the BDP process.

The long-term strategy of the Environment Programme is the progressive incorporation of information gathering, assessment and exchange activities between the national line agencies, the NMCs and the MRC Secretariat as an integral part of national processes and strategies retaining only the most central aspects as core functions of the Programme.

The Programme is implemented through components, each with its own logical framework matrix. The components can be funded by different donors and provide a flexible arrangement for donor support with different funding horizons. Each is designed independently in terms of focus, scope and timing. Realignment or changes to components can be negotiated without compromising the coherence of the overall Programme. The programme is being revised during 2003 to align itself with the development of the BDP process as well as incorporating emerging environmental issues. Implementation is based on a rolling planning process, where objectives and outputs remain fixed, while actions undertaken to achieve the outputs and objectives are flexible. Reporting has the same format and structure for all Components. A computer based management and reporting system is used to ensure detailed and efficient management and reporting.

8.4. Component Descriptions

The Programme consists of five components, some which are sub-divided (Components A and D) to address more specific issues as reflected in their Immediate Objective¹. All contribute directly to one or more of the Programme Objectives, ensuring that all Objectives are addressed even if some components are not fully funded.

Component A - Environmental Monitoring and Assessment

This component focuses on gathering data, analysing and understanding status and trends, and providing relevant and timely information on socio-economic and environmental changes associated with aquatic ecosystem use.

Component A1: Water Quality and Transported Loads

Immediate Objective: *Timely information on trends and changes in dynamics of water and sediment quality of the Mekong River Basin.*

Main Outputs and Activities: The outputs under this component include improvements to the existing Water Quality Monitoring Network, developing analytical and interpretative capacity, and establishing proactive information exchange and dissemination procedures.

Component A2: People and Aquatic Ecosystems

Immediate Objective: *Timely information on trends and changes in the dynamics of aquatic habitats to prevent or minimise harmful effects on people who depend on aquatic habitat productivity.*

Main Outputs and Activities: The outputs under this component are aimed at identifying areas of high socio-economic dependence on aquatic ecosystems, characterisation of these ecosystems in terms of integrated management and natural resources used, and assessment of the major threats to these ecosystems.

Component A3: Integrated Environmental Analysis and Ecosystem Modelling

¹ Note that the terminology in the Environment Programme documentation differs where the term Purpose is used for this level of objectives in the logical framework matrix.

Immediate Objective: *Improved capacity of MRC Secretariat and NMCs to undertake integrated environmental analyses and ecosystem modelling of the environmental health of the Mekong River Basin.*

Main Outputs and Activities: Under this component the outputs will provide national agencies and MRC Secretariat with the capacity to assess the current health of the Basin and changes associated with development trends. Outputs address identification of special interest areas reflecting environmental, socio-economic and water-related health issues relevant to sustainable management; identification of areas of potential cross-boundary environmental conflict; and modelling changes in aquatic habitat size and complexity as a function of flooding intensity, duration and frequency.

Component B: Environment Decision Support

Immediate Objective: *Improved environmental policy for the development of the Mekong River Basin water and related resources.*

Main Outputs and Activities: Outputs will develop a Strategic Environmental Assessment (SEA) framework to ensure that integrated environmental and socio-economic considerations are part in early stages of policy, planning and programme cycles; promote acceptance of a comprehensive Regional Environmental Impact Assessment (EIA) process to be used in association with national EIAs for development initiatives; identify gaps and policy conflicts; indigenous use and management of aquatic habitats (100 Villages study); economic valuation of aquatic ecosystems; and assessment of mitigating strategies on aquatic ecosystem management relating to hydropower, navigation, agriculture, forestry, urbanisation and waterborne disease risk with a focus on cross-boundary conflict resolution.

Component C: Strategic Networking and Co-ordination

Immediate Objective: *Better coordination of development initiatives affecting the management of the Mekong River Basin water and related resources.*

Main Outputs and Activities: The outputs under this component will promote and facilitate better co-ordination of bilaterally and multilaterally funded development initiatives in the Basin by providing up-to-date information on past, current and planned initiatives and a forum for dialogue among funding agencies and implementers.

Component D: Capacity and Awareness Building.

This component is designed to promote and facilitate development of staff capacity to address basin-wide environmental issues and is complementary to the capacity building undertaken by national and bilateral initiatives currently under way or planned in the near future and will help ensure that basin-wide and cross-boundary issues are incorporated in national environmental awareness raising campaigns to promote maximum participation in the management of the Basin's water and related resources.

Component D1: Capacity Building

Immediate Objective: *Government staff of the riparian countries has better capacity to manage potentially harmful environmental impacts.*

Main Outputs and Activities: Programme outputs include improved mechanisms for riparian professionals to exchange information and experiences related to environmental management and training and provision of advice on minimising cross-boundary impacts of development. It also continues to build on the work initiated under the Environmental Training Programme (ETP).

Component D2: Awareness Raising

Immediate Objective: *Increased regional ecosystem awareness among the people who live and work in the Mekong River Basin.*

Main Outputs and Activities: Programme outputs include information and training resources for MRC Secretariat and NMC staff to increase their knowledge and capacity to address awareness-raising issues; increased dissemination of information on basinwide environmental issues to targeted audiences including the donor community. The profile of the MRC will be raised substantially through the launch of an educational, training and research support vessel christened “Mekong Spirit”.

Component E: Support Studies and Research Facilitation

Immediate Objective: *Research initiatives on environmental aspects of MRB's water and related resources are addressing relevant and prioritised issues.*

Main Outputs and Activities: Outputs include a system of documenting information (The Mekong Collection) facilitating research and supporting development initiatives; regularly updating an inventory of research projects; establishing processes to identify and list areas of needed environmental research and nominate research proposals for which funding should be sought.

8.5. Budget

Component	Total Cost	External Funding Sought
A. Environmental Monitoring and Assessment	11,331,000	8,160,000
B. Environmental Decision Support	3,016,000	1,407,000
C. Strategic Networking and Coordination	1,222,000	1,002,000
D. Capacity and Awareness Building	5,112,000	3,068,000
E. Support Studies and Research Facilitation	2,777,000	2,721,000
Total Programme Cost	23,458,000	16,358,000

SUPPORT PROGRAMME

9. INTEGRATED CAPACITY BUILDING PROGRAMME

9.1. Programme Context and Problems Addressed

With the signing of the Mekong agreement in 1995 the role of MRC was significantly broadened compared to that of its predecessor organisations. Rather than limiting its involvement to exploring and investigating the basin, MRC was charged with ensuring the sustainable development, utilization, conservation and management of the Mekong River Basin water and related resources. This calls for a holistic, multi-disciplinary approach to river basin management. In focussing the organisation on this, there is a need to ensure availability of expertise at regional and national levels as well as the capability of MRC to carry out activities in advocacy and communication with stakeholders.

9.2. Objective

To improve the capacity of the MRC to implement its Mission, play the leading role in coordinating the development and use of the basin's water resources and to meet stakeholder expectations through availability of sufficient expertise in integrated river basin management and the required level of communication and stakeholder participation in MRC activities.

9.3. Programme Strategy

The level of competence of staff in river basin management at the MRC Secretariat and the riparian governments is to be raised through a systematic, modular training programme. The future pool of expertise available within the region is to be broadened through on-the-job training of young professionals to work at the MRC Secretariat. The ability of MRC to carry out communication, public participation and partnership activities is to be ensured through expert services. Implementation and effectiveness of MRC core programmes is to be enhanced through targeted support. Through a twinning arrangement between MRC and the Murray-Darling Basin Commission in Australia it is intended to enhance MRC capacity in integrated water resources management, modelling and data management, basin planning, development of water sharing guidelines, and building community awareness and strengthening at the strategic level.

9.4. Component Descriptions

Component 1: Integrated Training Programme (Management)

Immediate Objective: (i) To raise the level of competence among MRC staff and staff in the riparian Governments in integrated river basin management. (ii) To consolidate MRC's training activities and allow for both specific and cross programme training in issues of identified priority for integrated river basin management in the Mekong Region.

Main Outputs and Activities:

MRC staff and staff in the riparian Governments are to be trained through a module based training programme responding to the needs of the core and sector programmes for expertise in integrated river basin management at regional and national levels. The component itself will provide the Management required for the training programme that will be funded through resources drawn from core and sector programmes.

Component 2: Information and Communication.

Immediate Objective: 'Improved information and communication to support implementation of the Strategic Plan'.

Main Outputs and Activities: The capacity of the MRC in information development and dissemination, public participation and partnership activities will be strengthened through the knowledge transfer of a Communications, Partnerships and Public Participation Adviser and Information Specialist. Activities will also involve support to the Local Area Network and Internet based Communication.

Component 3: Junior Riparian Professional Programme

Immediate Objective: "Improved skills in international integrated river basin management among young Riparian Professionals.

Main Outputs and Activities: In pursuing the long-term "riparianization" goal, the MRC has commenced a Junior Riparian Professional programme. The programme aims to provide human resource development opportunity and hands-on experience in international integrated river basin management to young professional from Mekong Riparian Countries thus promoting the development and replication of core basin management competencies and regional network for effective Mekong cooperation.

Component 4: Environmental Governance

Immediate Objective: Increased effectiveness and timeliness of MRC core programmes and Flood Management and Mitigation activities

Main Outputs and Activities: Based on a strategic partnership with UNDP for environmental governance and a holistic approach to management of the Lower Mekong Basin, this component would provide support to the MRC core programmes and the Flood Management programme to optimize implementation and ensure effectiveness of those programmes by targeting support to where it is most needed for this purpose.

Component 5: Programme Development and Support.

Immediate Objective: "Capacity and resources of MRC to respond to priority needs and changing conditions in a speedy, flexible and adequate manner".

Main Outputs and Activities: This component is meant to address priority needs related to programme/project identification/preparation, assessment/evaluation or other *ad hoc* activities in support of programmes, for which a need emerges during the course of a programme period and for which other funding is not timely available.

Component 6: Core Activities in New Organisation.

Immediate Objective: In mid 2000 MRC implemented a new organisational structure, creating a clearer separation between MRC core and operational activities. Core activities include overall management of MRC, planning, environmental monitoring and assessment, and data collection and information analysis. MRC intends to build up a stronger, integrated natural resources database, improve its environmental monitoring and assessment capability, and develop new planning, monitoring and evaluation tools. These are basic functions that MRC needs to carry out independent of the size of MRC operational programmes. MRC member countries are gradually increasing their contributions and will eventually be able to fully fund MRC core activities. In an interim period external support is needed for strengthening MRC capacity to carry out its core activities.

Component 7: River Basin Management.

This component is carried out through a twinning arrangement between MRC and the Murray-Darling Basin Commission in Australia. It is intended to strengthen the river basin management capacity of the MRC and includes capacity building in integrated water resources management, modelling and data management, basin planning, development of water sharing guidelines, building community awareness and strengthening at the strategic level.

9.5. Budget

Component	Total Cost	External Funding Sought
1. Integrated Training Programme (Management)	750,000	750,000
2. Information and Communications Systems	1,150,000	1,090,000
3. Junior Riparian Professional Programme	581,000	201,000
4. Environmental Governance	1,000,000	0.00
5. Programme Development and Support	1,000,000	949,000
6. Core Activities	2,263,000	1,091,000
7. River Basin Management	500,000	0.00
Total Programme Cost	7,244,000	4,081,000

SECTOR PROGRAMME

10. FISHERIES PROGRAMME

10.1. Programme Context and Situation Addressed

The fisheries Programme has been active since 1993, when the project Technical Assistance – Fisheries Development, was initiated under the precursor of the Mekong River Commission. With the signing of the MRC agreement in 1995, a range of activities were initiated within the Fisheries Programme, covering all four MRC-member countries, and capture fisheries in rivers and reservoirs, as well as aquaculture. These have yielded valuable information, highlighting the importance of the fisheries of the Mekong River system as a source of food and employment for millions of people in the Basin.

The following facts illustrate the importance of the fisheries.

- It is estimated that approximately 1.5 million tonnes of fish and other aquatic animals are captured annually in the LMB (this is about 2% of the total world capture fishery).
- Another 500,000 tonnes are produced annually from reservoir fisheries and aquaculture.
- The value at first point of sale is about US\$1,400 million.
- Up to 40 million people, or two-thirds of the population of the LMB, are actively involved, at least part-time or seasonally, in the fisheries.
- Fisheries products supply essential micro-nutrients and the bulk of the animal protein for the population in the LMB.
- Average consumption of fish and fisheries products in the LMB is 36 kg/person/year.

Maintenance of the flood pulse and migration routes is fundamentally important for the health of the fisheries. The annual flood inundates vast areas of wetlands, creating hugely productive habitats for spawning, feeding and hence production of fish. As flood waters recede, many species migrate out of the flood plains and into the rivers, often traveling long distances across national boundaries to dry season refuge areas. These trans-boundary fish migrations are a classic feature of the Mekong, enhancing the overall productivity of the system, but also making it vulnerable to exploitation. Indeed, peoples of the Mekong basin have developed elaborate fishing systems targeting the masses of migrating fish.

There are three principal threats to the fishery, namely loss of fisheries habitat (e.g., conversion of wetlands into agricultural land), water management schemes that alter the annual flood pattern, and barriers across rivers blocking fish migration routes. Increased fishing effort is also a threat, and will become more so as populations in the region increase.

While the Fisheries Programme has achieved many results, much remains to be done. Information is needed on the potential impacts of external developments on the fisheries and the livelihoods of people dependent on the natural resources. Such information is essential for MRC core programmes, particularly the BDP and WUP. Moreover, the information is a pre-requisite to enable decision makers in the region to appraise the benefits of various development scenarios. The Fisheries Programme aims to address these needs through biological and socio-economic studies, particularly in relation to trans-boundary issues.

Two other issues of primary concern are the development of improved statistics on the fisheries, and further development of co-management systems for fisheries in communities within the LMB.

10.2. Objectives

The development objective of the Fisheries Programme 2002-2005 is *"Coordinated and sustainable development, utilisation, management and conservation of the fisheries of the Mekong Basin"*.

The Programme has one immediate objective, namely *"Relevant fisheries information generated, communicated and used by stakeholders, riparian governments and MRC in development planning and management"*.

The FIP is about information relevant for fisheries development, utilisation, management and conservation in the Mekong River Basin. Relevant information is that identified as being necessary for the evolution of an understanding of the biology, ecology, economics and social aspects of fisheries, and for the planning and management of fisheries activities.

Information by itself is not sufficient to ensure development. It has to be communicated to individuals and institutions who are able to use it for making informed decisions about the future. The FIP will therefore be concerned with generation, communication and use of information, as expressed in the following Outputs:

1. *Relevant information on fisheries biology, ecology and socio-economics generated.*
2. *Relevant fisheries information communicated to management agencies and resource users.*
3. *Use of relevant information facilitated.*

10.3. Programme Strategy

The programme will operate within one shared system of support functions and infrastructure. Activities and staff will be maintained in each of the riparian countries in order to maintain the excellent network with line agencies and institutes. This presence will include a national programme director and the support required for programme activities in the country.

The programme will focus on some selected thematic areas. The thematic areas are interlinked to the extent that elements of each will contribute to the inputs required for implementation of programme activities. The activities, however, will usually be primarily related to one of the thematic areas. They are as follows

1. *Fisheries Ecology and Impact Assessment*

The Mekong River represents one of the richest freshwater biodiversity complexes in the world and one of the most important for sustaining livelihoods. Knowledge needed for conservation and management of indigenous fish species and the genetic integrity of stocks has only recently begun to accumulate. Much information is needed on life histories, key environmental variables (day length, temperature, flow regime) distribution of species and stocks, the major patterns of fish migration and habitat use during their life cycle, and the energetic basis of productivity and fish yields per habitat type.

2. *Livelihood Enhancement*

This thematic area covers all aspects of direct wealth creation related to inland fisheries, with emphasis on improving the socio-economic situation of the small-scale low-income groups dependent on fisheries for their livelihoods. These aspects include catch and aquaculture techniques, and post-harvest activities such as marketing, processing and prevention of wastage between catch and consumption. In addition, livelihood enhancement includes aspects of human nutrition and health practices.

3. Fisheries Management

Fisheries management takes place at various levels. All MRC member countries now recognise the importance of promoting participatory management practices on community level. This can be co-management techniques developed by the FIP during the past seven years, or variations of those techniques adapted to fit particular circumstances in each country and particular situation. There is a need to extend the experiences gained in specific habitats into more general use in fisheries management in the Basin.

4. Communication

The overall goal of Fisheries Programme communication activities will be to inform, in easily understood language and a variety of formats, all stakeholders of the importance of fisheries to the livelihoods of people of the Mekong River basin, with a view to ensuring political and community support for the maintenance of healthy rivers and fisheries in the Mekong. Communication processes within the Programme will be integrated with the MRC Communication Strategy, so ensuring the information flows to a broad audience within the LMB. Communication processes and milestones will be formally built into all components of the Programme. There will also be a specialized function to coordinate the communications coming from the Programme, and to ensure their integration with the MRC Communication Strategy.

10.4. Component and Core Activities

Initially there will be four components under the new Fisheries Programme. These evolve out of the present programme. Changes are that the Assessment of Mekong Fisheries component and the Cambodian Capture Fisheries component will be amalgamated into the *Assessment of Mekong Capture Fisheries* component. And the Management of Reservoir Fisheries in the Mekong Basin will change name and expand its role to *Management of River and Reservoir Fisheries*.

A range of other potential components have been identified based on consultation between the FIP, the core programmes of MRC and fisheries line agencies in the 4 countries. These are briefly described in the new Fisheries Programme documentation, and will form the basis of initial discussions with donors. It is expected that the component proposal list will be continually updated in response to the emerging needs for fisheries management and development in the Mekong Basin.

10.5. Budget

Component	Total Cost	External Funding Sought
Institutional Support	1,842,000	0
Assessment of Mekong Capture Fisheries	1,297,000	0
Management of River and Reservoir Fisheries	955,000	0
Aquaculture of Indigenous Mekong Fish Species	870,000	0
Population Genetics of trey Riel (Fish) in the MB	150,000	0
Total Programme Cost	5,114,000	0.00

11. AGRICULTURE, IRRIGATION AND FORESTRY PROGRAMME (SUSTAINABLE LAND AND WATER USE PROGRAMME)

11.1. Programme Context and Situation Addressed

Balanced and efficient land and water use is essential to long-term food security and forestry production in the Basin. Agriculture is the most important industry that relies on the water resources of the Mekong River Basin (MRB) and forestry is a key to the regularity and quality of water runoff for agriculture. Agriculture provides employment for some 85% of the basin's population and its efficiency is a key to poverty alleviation. The MRB is one of the world's most significant food sources, particularly for the growing urban population of the Greater Mekong Subregion. It provides the staple diet for perhaps 300 million people (ADB) and can, with care, produce much more as demand increases. Activities related to Agriculture and Forestry are the most significant direct human environmental influences on the basin and much of this impact occurs across national borders, requiring a regional approach to change. Other uses of the water resources of the basin, such as energy generation, also impact directly on people engaged in agriculture (and fisheries). Lasting solutions to many of these environmental impacts are to be found in inter-sectoral action at the local level between these industries and rural communities, often across national boundaries.

11.2. Objective

The development objective of the Agriculture, Irrigation and Forestry Programme (AIFP) is to *“facilitate cooperative sustainable development and utilization of water and land in agricultural and forestry to the benefit of the basin community, and to contribute to poverty alleviation and food security.”*

11.3. Programme Strategy

The Programme strategy consists of a collaborative learning approach to change in resource use to meet the evolving needs of basin communities, as these become progressively apparent. While objectives and intended outputs are fixed, actions undertaken to achieve these will remain flexible. The Programme strategy focuses on three factors; water use (and drainage) efficiency, catchment management planning, and capacity building of the MRC Secretariat, NMCs and line agencies within relevant sectors. The Programme provides MRC with a micro level community-based mechanism for the basin development process, particularly in cross border situations where impacts from land and water use in one-zone impacts upon others. The strategy particularly addresses cross border zones in isolated areas with significant ethnic minorities and where lack a means for integrated cross border planning is a serious constraint to poverty alleviation with consequent environmental impacts from unbalanced land use such as deforestation and erosion; threatening long term food security. The strategy also facilitates macro level policy development and capacity building in the forestry sector, building on the detailed forest cover and watershed classification work already undertaken under MRC by making it a basis for catchment planning and resource use monitoring for all land and water use for agriculture, forestry (and fisheries). The programme contributes to all of the MRC Strategic Plan Goals.

11.4. Component Descriptions

Component 1: Water Use Efficiency

Immediate Objective: To develop a collaborative applied research network between the riparian states to improve water use efficiency in the technical and social (management) spheres and in particular to evolve links between water user groups and the water utilization rules being developed under the WUP programme to facilitate their implementation. This will involve water use efficiency in the main irrigation areas, in the use of ground water and in upland agriculture and a study of the multi- functionality of paddy rice production in different ecological zones.

Main Outputs and Activities: The main output of this component will be improved water use efficiency in agriculture over time and an ability to monitor and influence water use through water user groups according to the rules being developed under the WUP program. Program activities will focus on both the technical and managerial and social aspects of water and related input delivery systems. The outputs will include technical materials and field demonstrations for extension purposes, policy advice and data and other input to the Basin Development Planning (BDP) process and the Water Utilization Programme (WUP) and succeeding activities, calibrated according to ecological zone to suit MRC database formats.

The specific activities proposed include:

- Applied research and technology transfer for the modernisation of existing public irrigation systems in lowland areas and ground water and other water use in upland areas, including the monitoring and management of water through water user groups and the facilitation of links with the rules being developed under the WUP program. Factors such as soil salinity and acidity, optimal input use, alternative cropping patterns and a model to show the multi functionality of water use in paddy irrigation in a range of ecological zones will be addressed.
- The further development of a land and water inventory of the 4 countries, in common units and ecological zones to facilitate land use zoning and other resource use planning in agriculture and forestry (and fisheries). Specific assistance will follow to develop draft land use zone maps for Cambodia and Lao PDR

Component 2: Catchment Management

Immediate Objectives: To institutionalize the catchment management planning in the riparian countries and the MRC Secretariat make use of regional co-operation, information exchange / sharing and improved approaches for sustainable Water Shed Management (WSM) in the Lower Mekong River Basin. This will lead to an enhanced capability of the riparian countries to manage their watersheds sustainably and increasingly in view of regional needs.

Main Outputs and Activities: The main output will be a capacity to plan and implement natural resources on a catchment basis in cross border and other fragile areas where adverse impacts from resource use are being experienced that have some basin wide implication. Program activities will focus on developing community-based means of addressing environmental issues as the environment programme or other means detects these and will particularly address poverty alleviation, gender and ethnic minority issues and food security where these are factors in resource use imbalances. The activities will include resource use monitoring and management involving cross-border cooperation including preventing and reducing illegal logging and forest related crimes with cross-border implications. Such monitoring will utilize forest use concepts from the MRC watershed classification and forest

cover mapping projects and will integrate these into planning and implementing sustainable land and water use in agriculture (and fisheries). The activities will include a means to direct small grants towards community-based projects planned in the course of catchment management planning. The activities will also include forest rehabilitation in critical catchments on the basis of participatory land-use planning.

A special small community grant scheme will be established to enable small-scale development activities at local sub-basin level planned in the course of catchment planning to be funded. This will provide an incentive for cooperation at local level and 'real life experience' for collaborative learning about catchment management issues. The provision of such infrastructure rehabilitation or new construction would depend on the submission of a feasible operational plan and monitoring system that utilises the principles of catchment management planning and transparent accountability. The activity would either provide grants directly or facilitate community approaches to other relevant bilateral or multi lateral small grant schemes. It would also facilitate applications for funding of larger projects that might be considered through normal funding channels.

Utilizing the established catchment planning capability in the above regions as a base specific studies would be undertaken in these subject areas related mostly to sustainable natural resources management:

- Support local actors in accessing funds for NRM implementation
- Facilitate in networking on NRM relevant topics at local, province and national level
- Analyse relevant international conventions and agreements on NR in review of their relevance to the program
- Provide feedback into BDP, WUP and EP of identified key issues for regional co-operation in the WSM

Component 3: Capacity Building for MRC

Immediate Objective: To improve the capacity of MRC Secretariat, NMCs and related line agency staff to plan sustainable development of agriculture and forestry on a collaborative basis. In particular to promote a more 'holistic' inter-sectoral approach between agriculture, forestry and other MRCS programmes and to assist similar activities at NMC level. This will enhance the basin development planning process as an ongoing activity.

Main Outputs and Activities: The main output of this activity will be an enhanced capacity to plan and monitor land and water use in agriculture and forestry in the basin in a collaborative way between the four Riparian States. Activities under this component will focus on building a professional cadre with the particular expertise and approach of a River Basin Commission. Improving the quality and ownership of data generated under the program and building a better institutional understanding of the complex socio-economic and ecological linkages in land and water use by people.

The specific activities proposed include:

- The provision of 'customized' education and research fellowships to relevant staff prepared to commit to continuing to work on MRC related activities. This will involve collaboration with relevant agricultural and forestry related research and education institutions within the region and elsewhere and linking research to specific activities being conducted under the program.
- The provision of funds to enable Riparian staff of MRC Secretariat, NMCs and relevant line agencies to attend conferences related to river basin management.

- The provision of funds for study tours for the above staff and for community representatives involved in program.
- The provision of funds to recruit a consultative panel of regional and international opinion makers in land and water use in agriculture and forestry.

11.5. Budget

Component	Total Cost	External Funding Sought
Water Use Efficiency	16,000,000	13,900,000
Catchment Management	14,200,000	7,900,000
Capacity Building for MRC	5,400,000	5,400,000
Total Programme Cost	35,600,000	27,200,000

12. WATER RESOURCES MANAGEMENT PROGRAMME

12.1. Programme Context and Problem Addressed

Balanced development and management of water resources to provide the growing population with energy as well as economic development is central to achieving the basin vision of "An economically prosperous, socially just and environmentally sound Mekong River Basin".

The Water Resources Management Programme (WRMP) addresses water-related issues of trans-boundary and/or basinwide nature. These include the coordination of a basinwide network for collection and analysis of hydro-meteorological information, and hydropower development.

An integrated information system will provide essential information for water resources development and monitoring of the hydrological status of the Mekong River basin.

12.2. Objectives

The development objectives of the Programme are:

1. Sustainable development of the Mekong River Basin's water resources to provide energy for social and economic development for the benefit of the basin's inhabitants.
2. Development of methodologies to investigate, monitor and mitigate potential effects of water resources development projects with trans-boundary impacts.
3. Development of an efficient information system for planning and monitoring of water resources development based on basin-wide hydro-meteorological monitoring data.

12.3. Programme Strategy

The growing population in the basin together with economic development will require protection from the destructive effects of floods and will also require more energy for development. At the basinwide level MRC will facilitate proper planning and development of hydropower as well as monitoring of impacts and mitigation measures. Participation of stakeholders and coordination with national authorities and international organizations in the formulation of development initiatives will be in focus and activities will be linked to the BDP process.

12.4. Component Descriptions

Component A: Hydrology

Immediate Objective: To have in place a reliable and sustainable hydro-meteorological information system for planning, development, management and environmental protection and flood and drought disaster management, and to operationalize the "rules" for equitable use of the River water to be established under the Water Utilization Programme.

Main Outputs and Activities: The expected outputs are a hydro-meteorological network and database capable of providing high quality and timely information for MRC needs, and an effective forecasting and dissemination network for flood and drought disaster prevention. Activities include improvement of the network for data collection, capacity building of personnel involved in network development, operation, management, information processing and sharing.

Component B: Hydropower

Immediate Objectives: (i) identification of best options in the Lower Mekong Basin for sustainable development in the hydropower sector, based on the MRC Hydropower Development Strategy and the process and criteria for identifying and shortlisting development projects under the BDP (ii) Enhanced capacity of the riparian countries in hydropower planning and development, based on the MRC Hydropower Development Strategy.

Main Outputs and Activities:

Establishment of cooperation structures with hydropower segments in the riparian countries and provision of advice on the planning, development, operation and decommissioning of hydropower plants and dams based on the MRC Hydropower Development Strategy.

Review of previous hydropower studies, reports and plans at national and regional levels and conduction of supplementary studies to identify options for best hydropower development in the LMB in close consultation with the riparian governments and the BDP process. Costs and benefits of existing hydropower plants and dams analyzed to support identification of options for best hydropower development in the LMB. Possible alternatives to hydropower development studied and riparian governments advised on alternatives to support identification of options for best hydropower development in the LMB. Study carried out of the potential for improved efficiency, reduced power demand and savings in investments in the power sector in the riparian countries through Demand Side Management (DSM) and other options. Study conducted on practices and obstacles for private and public participation in hydropower development in the riparian countries; efficient and fair principles for private and public participation developed and proposed.

Long and short lists of hydropower projects in the Lower Mekong Basin identified for the BDP programme.

12.5. Budget

Component	Total Cost	External Funding Sought
A. Hydrology	3,840,000	420,000
B. Hydropower	1,700,000	950,000
Total Programme Cost	5,540,000	1,370,000

13. FLOOD MANAGEMENT PROGRAMME

13.1. Programme Context and Situation Addressed

In 2000, more than 800 people lost their lives due to excessive flood, and the economic damage caused by the flood was assessed at more than US\$ 400 million. In 2001, more than 300 people lost their lives, and the economic damage from the flood was assessed at more than US\$ 100 million. In 2002, large floods have again caused loss of life and property in all the four riparian countries. Flash floods have devastated large areas in Thailand and Viet Nam. In each of these years, between one and eight million people were affected by floods, either by a need of evacuation, or by loss of crops and livestock, or by being prevented from going to work or to school.

Efficient flood management is an important precondition for poverty alleviation in the Lower Mekong Basin. Taking into account that 40% of the predominantly rural population in Cambodia, Lao PDR and Viet Nam live below the poverty line, serious floods have negative impact on the fragile social and economic systems. They pose a major threat to people's lives and property. People in flood prone areas are used to live with floods but population pressure and increasing severity of floods due to natural and man-made factors have significantly increased the damage risk.

Improved flood management and mitigation remain indispensable and will in the future be more in demand than ever. The complex flood problems of the Lower Mekong Basin not only require an integrated floodplain management (holistic) approach but also significant attention to trans-boundary and regional issues. The large floods of the Mekong are regional in character, and MRC is in a unique position to contribute effectively to improved flood management at the regional level. New opportunities are available for improved management and mitigation. MRC is already pursuing such opportunities, with its recently implemented real-time water level monitoring, and the MRC flood forecasts published daily on the Internet are widely applied.

13.2. Objectives

The development objectives of the Programme is: "people's suffering and economic losses due to floods are prevented, minimized, or mitigated, while preserving the environmental benefits of floods"

The immediate objectives for FMP include:

- A regional FMM Centre main-training the (national and regional) availability of important flood-related tools, data, and knowledge; producing accurate regional forecasts with a suitable lead time and a timely and effective dissemination; and providing accurate, well documented and consistent tools for basin-wide flood risk assessment and trans-boundary impact analysis (Component #1).
- A reduced vulnerability of society to floods, and a reduced risk of flood disasters caused by failure or inappropriateness of structural intervention (Component # 2).
- Enhanced mediation and coordination capacity of the MRC in issues of non-compliance in flood management (Component #3).

- Competence in flood preparedness and flood mitigation strengthened, consolidated and readily available with communities, emergency managers and civil authorities, as required at each management level (Component # 4).
- A reduced vulnerability to flooding and reduced flood damages at family, community and sub-regional levels, achieved by reducing the disruption of normal activities during and after a flood, and by providing people with the security and motivation necessary to make and sustain improvements in their economic and social welfare in an environment that floods frequently (Component #5).
- Institutional, human resources and technical support being available to sustainable land management, and improved land use planning integrated into floodplain management and mitigation in the LMB (Component #6).

13.3. Programme Strategy

A permanent “Regional Flood Management Centre (RFMC)” will serve as data repository, provide flood risk maps, satellite remote sensing and GIS based information on flood extent, flood behavior analysis, evaluation of efficiency/effectiveness of flood preparedness, lessons learned, scenarios’ simulation of flooding by incorporating up-to-date data and information on land-use, structural development, etc. The Centre will also organize annual regional flood forums. On a day-to-day basis, during the flood season, the Centre will provide real time flood forecast along the mainstream Mekong River. During the dry season, the Centre will provide river monitoring data and low flow forecasts, which will be useful in navigation and other water management activities.

A Land Management Component will firstly, increase awareness of the cause-and-effect relationship between intensified land-use and flooding, and, secondly, result in development of the land-use planning in the member states towards incorporation of floodplain management issues in the planning process. This also requires capacity building and the formulation of policies and guidelines for land-use in flood prone areas. Land-use planning will also be improved through introduction of new technologies in data collection and analyses and increased human and financial resources. Application of suitable models should predict the impact of land-use changes on flooding and allow for production of improved flood hazard maps. Best practices regarding “living with the floods” will be documented and demonstrated.

The individual and combined effects of these infrastructure works and the impact on floods in the Lower Mekong Basin call for study and international coordination. This component will enable MRC to develop and update the information and data on structural means of flood mitigation and management adopted and planned in the Mekong Basin as well as on infrastructure that have direct relation to modification of floods and associated risks.

Adopting a state-of-the art modelling technology will strengthen the flood forecasting. Emphasis will be given to develop and disseminate meaningful flood warnings to all types of users with special emphasis to flood affected people of the Lower Mekong Basin. The forecasting and warning services will be provided at a regional scale by MRC for the mainstream Mekong River and its main tributaries including the estuaries. Forecasts of large scale flooding of flood plains will also be made available.

13.4. Component Descriptions

Component 1: Establishment of a Regional FMM Centre

Immediate Objectives: *The immediate objective is a regional FMM Centre maintaining the (national and regional) availability of important flood-related tools, data, and knowledge; producing accurate regional forecasts with a suitable lead time and a timely and effective dissemination; and providing accurate, well documented and consistent tools for basin-wide flood risk assessment and trans-boundary impact analysis.*

Expected Outputs and Activities: expected outputs are: (i) An operational Regional FMM Centre established under MRC, interacting with national collaborating centres/focal points, (ii) Basic data, (iii) Improved monitoring, (iv) Improved operational forecasting, (v) Improved warning and dissemination services, (vi) Medium and long term forecasts, (vii) Risk assessment tools, (viii) Flood risk analysis and flood risk mapping, (ix) Related competence, and (x) Annual Flood Forums.

Main activities include: Detailed planning, Draft and complete the process of approval of act of establishment, including the agreement on location of the Centre, Finalize internal organization and recruit staff, Building design, tender, approval, Building construction and furnishing, Install equipment and logistics, Data compilation Review and gap-filling, Review Flood database, Satellite-based weather information, Strengthening regional network, Strengthening national networks, Reducing uncertainties, Increasing the lead time, Increasing the accuracy, Improvement of modelling system, Links to national forecasting, Flash flood forecasting, Local models in pilot areas, Common standards, Expand warnings, Links to national flood warnings, Improve understanding of warnings, Improve dissemination, Internet dissemination, Review Development of forecasts, Review of experience, Requirements and specifications, Tools development and implementation, Workshops, Hindcast studies, Parameter study of critical events, Statistical analysis, Flood risk mapping, Flood risk impact assessment, Professional liaison, Capacity building, Organize and report annual flood forums, Build and maintain a professional network of FMM practitioners and scientists in the LMB, and Facilitate FMM-related knowledge-sharing.

Component 2: Structural Measures

Immediate Objectives: *The immediate objective is a reduced vulnerability of society to floods, and a reduced risk of flood disasters caused by failure or inappropriateness of structural intervention. It implies (i) Identified impacts of reservoirs and other hydraulic structures in the Mekong basin, including those in China, with regard to implications for flooding in the LMB. (ii) An enhanced mechanism of coordination on hydraulic structures development and operation with all the riparian countries in the Mekong Basin, and (iii) Established guidance/guidelines on all aspects of structural measures of flood mitigation in the LMB.*

Main Outputs and Activities: Expected outputs are (i) Overview of infra-structural implications and management, (ii) Risk assessment of structural measures, (iii) Recommendations on structural flood mitigation, (iv) Recommendations on operating rules of storage and control structures, (v) Social and economic assessment framework, (vi) EIA framework, and (vii) Related competence.

Main activities include: Compile inventory of existing and planned flood-related infrastructure: Reservoirs, regulators, embankments, waterways, barriers, etc; Develop and implement procedure for maintenance of the inventory; Compile and review the national practices for planning, impact assessment and monitoring of structural intervention; Study hydraulic effects of reservoirs, embankments and other hydraulic structures with regard to modification of flood peaks and volumes, cumulative effects, and erosion and sedimentation effects; Conduct vulnerability analysis; Conduct dam-break analysis for dams and flood protection embankment showing areas under risks; Compute potential damages under normal floods and worst possible scenarios; Analyse and recommend on types of structures for flood mitigation in different areas, develop guidelines for structural flood mitigation, as a support for coordinated 'good practices' by the member countries; Develop approach and methodology for obtaining design flood frequencies for different types structures at different locations; Recommend on the use of construction materials and construction methods; Prepare risk and environmental impact assessment guidelines; etc.; Prepare guidelines for operating rules of storage and control structures; Promote the use of guidelines; Screening of national experience Case studies; Preparation of framework; Review of 2-way information flow; Screening of national and regional experience; Case studies; Preparation of framework; Scoping of training programmes; Preparation of training programmes; Training in management of structural intervention; Training in impact assessment; and Training impact monitoring

Component 3: Mediation of Trans-boundary Flood Issues

Immediate Objectives: *The immediate objective is enhanced mediation and coordination capacity of the MRC in issues of non-compliance in flood management. This will be achieved (i) by the establishment of a Mediation and Coordination Section; and (ii) by development of formalized procedures, norms and rules for mediation and decision-making regarding non-compliance in and cumulative flood management issues which are submitted to the Joint Committee from member states.*

Main Outputs & Activities: Expected outputs are: (i) A Mediation and Coordination Section (MCS); (ii) Facilitation and mediation tools; (iii) Related competence; (iv) Flood management pilot project(s); (v) Recommendations on emergency management; and (vi) Related recommendations on water and land use legislation.

Main activities include: Mandate and framework; Regional partnerships; Establishment of MCS; Land management and land-use planning; Impacts of structural measures; Flood emergency management; Organization of institutional and legislative forums; Literature studies; Capacity-building; Evaluation; Case studies in flood management; Related suggestions on institutional implications; Development of recommendations; Policy and legislative reviews; and Initial draft recommendations on legislation.

Component 4: Flood Emergency Management Strengthening

Immediate Objectives: *The immediate objective is competence in flood preparedness and flood mitigation strengthened, consolidated and readily available with communities, emergency managers and civil authorities, as required at each management level.*

Main Outputs & Activities: Expected outputs are: (i) Increased flood awareness, (ii) Regional knowledge sharing, (iii) Flood emergency manuals, (iv) Recommendations on trans-boundary emergency assistance; and (v) Related competence.

Main activities include: Planning Awareness creation and public education, targeting (i) government authorities; (ii) civil society organizations; and (iii) the population at large, covering flood mitigation and emergency management. The information campaign should be gender specific and directed at communities, schools, and local civil society groups

Workshops; Information material; Check lists; Study tours; Screening and review of existing manuals; Preparation of revised manuals; Scoping; Support to drafting of agreements, guidelines, or 'good practices'; Training needs assessment; Courses, expectedly covering (1) community flood mapping exercises to identify flood prone areas; (2) effective communication with pre-targeted communities; (3) identification of safe havens and/or escape routes; (4) formulation and implementation of sequential action plans, including operational inter-agency information flows and liaison; (5) interpretation of flood warning messages; (6) use of modern technologies; (7) exchange of best practice approaches; and (8) emergency (flood-related) procedures for sanitation, environment, health and child care, and Training impact assessment.

Component 5: Flood Proofing Measures

Immediate Objectives: *The immediate objective is a reduced vulnerability to flooding and reduced flood damages at family, community and sub-regional levels, achieved by reducing the disruption of normal activities during and after a flood, and by providing people with the security and motivation necessary to make and sustain improvements in their economic and social welfare in an environment that floods frequently.*

Main Outputs & Activities: Expected outputs are: (i) A broad vulnerability analysis; (ii) Recommendations on flood proofing of buildings and infrastructure; (iii) Public participation programmes; (iv) Financing mechanisms; (v) Pilot projects; and (vi) Related competence.

Main activities include: Improvement of knowledge of local floods; Vulnerability analysis of buildings; Vulnerability analysis of infrastructure; Estimation of benefits of flood proofing measures; Documentation; Area specific analysis; Classification of target users and areas; Promotion of indigenous techniques; Development of guidelines for flood proofing in buildings; Preparation of design manuals for flood proofing elements; Development of guidelines for flood proofing of infrastructure; Development of public participation programmes; Dissemination of flood proofing techniques; Financing of flood proofing at household level; Financing of flood proofing at community level; Financing of nation-wide flood proofing; Design of pilot projects; Implementation of pilot projects; Evaluation; Educational programmes; Training; and Awareness-building

Component 6: Land Use Management

Immediate Objective: *The immediate objective is institutional, human resources and technical support being available to sustainable land management, and improved land use planning integrated into floodplain management and mitigation in the LMB.*

Main Outputs and Activities: The expected outputs are (i) Harmonized land use management; (ii) Land use concepts and land management systems; (iii) Case studies; and (iv) Related competence

The main activities include: Regional networking; Terms, definitions and classification systems; Databases and risk assessment methodologies; Integration of land use management and flood management; Wetlands and flood management flood-related land use impacts Geographical Information Systems (GIS) for land use planning and risk assessment; Legislation and land allocation policies; Implementation of case studies; Implementation of case studies; Evaluation of case studies; Guidelines in national languages; Training in GIS-based land use planning and risk assessment; Training in urban planning and flood mitigation; and Training in policy issues

13.5. Budget

Component	Total Cost	External Funding Sought
1: Establishment of a Regional FMM Centre	13,064,000	10,734,000
2: Structural Measures	1,582,000	1,582,000
3: Mediation of Trans-boundary Flood Issues	1,381,000	1,381,000
4: Flood Emergency Management Strengthening	1,314,000	1,314,000
5: Flood Proofing Measures	2,129,000	2,129,000
6: Land Use Management	2,038,000	2,038,000
Total Programme Cost	21,508,000	19,178,000

14. NAVIGATION PROGRAMME

14.1. Programme Context and Situation Addressed

A common interest to increase international trade is the underlying reason why the MRC signatories opted for a separate article in the 1995 Agreement on Freedom of Navigation (Article 9). Shipping is one way to achieve this. On a commercial level it is the 'servant of trade', and at the national level it is a 'public utility'. It contributes to economic diversification, provides employment opportunities, and can supply a positive balance of payment. The governments and the private sector have realised the advantages of waterborne transport as it is cheap, because of its large cargo capacity, relieves road congestion and maintenance, aids tourism and is an ideal natural facility.

Revenues from international trade are important as they can be used to purchase capital equipment and goods from other countries, which are required for economic development. Other benefits from international trade include larger markets which result in economy of scale in production and higher returns; commercial interaction and communication provides learning effects and improvement of human resources. It provides an important stimulus to socio-economic growth in the individual countries and the whole region.

The economic status among the riparian countries varies considerably, where some countries export more than others. In the long run, the "law of comparative advantage" will benefit all countries, but in the short run, Cambodia and Lao PDR are facing difficulties to comply with infrastructural demands. The MRC should therefore assist in institutional strengthening and in the improvement of waterway infrastructure, always considering the technical feasibility and financial viability, and ensuring there is no risk for permanent negative impact to the environment.

Apart from international trade another important issue is access to waterborne transport for remote areas offering communication to remote farms for transportation of agricultural goods to consumption centres. The access provided by waterborne transport will then have an optimum return on interventions in other sectors. Most direct poverty-targeted interventions (schools, health clinics, nutrition programs, and social services) depend on transport as a complementary input for their effective delivery. The natural navigation potential is there and whilst preserving the ecological balance, the countries' tradition of using boats has to be promoted and facilitated.

The impacts of devastating floods of the year 2000 on the people in the flood-prone areas have also demonstrated the urgent need for improvement of boat transportation

It is easy to agree on the noble and common goal of 'Freedom of Navigation' in principle but the implementation and follow-up is more complicated as it is directly linked to an operational and financial responsibility of each country. It is now time to define the term in detail. MRC is the appropriate intergovernmental organisation to do so and has committed itself to assist its member states in these issues.

14.2. Objective

The development objective of the Navigation Programme is "To promote freedom of navigation on the Mekong river system, assist in coordination and cooperation in developing

effective and safe waterborne transport in a sustainable and protective manner for the waterway environment to increase the international trade opportunities for the countries' mutual benefit."

14.3. Programme Strategy

The Navigation Programme is still developing. Through close coordination with the member states, and through expert consultation meetings an updated *'Strategy and Programme for Navigation Development and Coordination in the Lower Mekong Basin'* will be developed in detail and finalised in 2003. A new Navigation Programme will be submitted for incorporation into the MRC Work Programme 2004.

The basic and main principle of the Navigation Programme will be the implementation of Article 9 "Freedom of Navigation". In the purely technical sense 'Navigation' means no more than the movement of vessels. 'International Navigation' has been established in international law, treaties and agreements and has quite a different meaning forming a cornerstone of all major river commissions. In the Programme strategy, the 'movement of ships' is only one tool to increase the international trade opportunities. The riparian countries have themselves initiated a process of formulating common shipping regulations and MRC should, as an intergovernmental facilitator, assist in coordinating and implementing Article 9 (Component 1).

Guidelines and regulations do not alone suffice to develop cross-border and international waterborne transport. Supporting studies, surveys and data collection (Component 2) will investigate multi-modal transport links, identify the most suitable locations for interventions, and prepare feasibility and EIA studies where major infrastructure works are to be carried out.

After identifying the physical barriers to cross-border and international navigation, infrastructure works with basinwide impact will be necessary, this is dealt with in River Works and Fairway Improvement (Component 3). In Cambodia and Lao PDR waterway facilities lag behind those of Thailand and Viet Nam, particularly in providing access for the remote rural communities to the economic centres.

Assistance should be provided for national works, which in time will have basinwide impact.

Institutional strengthening and capacity building (Component 4) is focused on navigation training for waterway users. Through Promotion and Coordination (Component 5) the aim is a greater awareness of the potential and impacts of waterway transport. To coordinate our activities, regular discussions are to be held with all national stakeholders and international organizations and investment banks. Cross-cutting aspects such as EIA's and social considerations are omnipresent as essential conditions.

14.4. Component Descriptions

Component 1: Implementation of Article 9 "Freedom of Navigation"

Immediate Objective 1.1: *To develop a framework for cross-border navigation and common maritime legislation to establish safe and effective freedom of navigation on the Mekong river system by reducing the physical and non-physical barriers and by promoting international trade.*

Main Outputs and Activities:

- Identified restraints for international navigation on the Bassac/Mekong stretches in the delta, and a priority ranked improvement programme for optimising use of these reaches as navigation routes. The navigation potential on the Upper Mekong River will be identified

during the 'Regional Port Development Study for Mekong Navigation from Ban Sai to Pakse'.

- Common and legal standards on aspects related to cross-border navigation such as transport of dangerous goods - oil pollution prevention – safety and rescue – ship's inspection – multimodal transport, etc.
- Master Plan for the Waterborne Transport Sector in the Mekong Delta. A framework for a Comprehensive Mekong Navigation Code, defining the respective operational and administrative responsibilities of the countries will form part of the Master Plan.

Immediate Objective 1.2: *Article 9 of the 1995 Agreement, 'Freedom of Navigation on the Mekong River' is implemented in all its aspects for Inland and Maritime Waterborne Transport.*

Main Outputs and Activities: MRC Secretariat, NMC's and counterpart agencies as centres for coordination, facilitation and professional guidance on aspects related to cross-border navigation.

Component 2: Supporting Studies, Surveys and Data Collection

Immediate Objective: *To improve the knowledge base on navigational issues such as regional transport initiatives and possibilities, and to monitor the navigation channel condition to support planning and policy formulation, management and operational decision making.*

Main Outputs and Activities:

- Physical improvement of navigation always starts with surveying and mapping to produce navigation charts for use by the pilots and helmsmen to indicate the 'natural' navigation channels. The waterway planners to identify the 'hot spots' where the river needs to be deepened or where other training works are essential can use these maps. The planned outputs include 'UHA Digitizing in Cambodia, Lao PDR and Thailand' and 'Detailed Mapping of the Rapids in Cambodia and Lao PDR'.
- As the morphology of the Mekong River is constantly changing, the impact of such change due to transportation and deposition of sediments, and erosion, can have significant consequences for agriculture, navigation, land holdings and bank top infrastructure; meanders can be cut off, islands form and disappear or join the river banks. There are also concerns about the impacts that human interventions in and along the river may have on the river morphology and in return on other parts of the river. Since the river flow and morphology are dynamic phenomena, the river management and protection/regulating works cannot be carried out successfully without a good scientific understanding of the fundamental problems to define the adjusted corrective measures. Any construction on any part of the river will have impact on the other upstream and downstream. Although it can be acknowledged that it is not viable to create a stable river morphology, an urgent study of hydraulic engineering is deemed necessary before permanent river works are installed. Building on the experience gathered during the Chaktomuk Project in Cambodia it has been proposed to carry out similar exercises for the Nongkhai/Vientiane Reach (Lao PDR–Thailand), and at Tan Chau (Viet Nam).
- Supporting studies include: 1) Cost-Benefit analysis and economic investigation of waterborne transport issues; 2) Multi-modal transport links, identification of the locations for navigation development interventions, fleet and hull design – shipbuilding standards; 3) Impact assessment of river works on the river morphology and environment; 4) Shipping market analysis, etc.; 5) Feasibility reports and statistical data collection for the infrastructure works in Component 3. Prioritised master plan for river port facilities and

feasibility results including environmental screening of port improvements or construction in line with plans indicated in the Subregional Transport Sector Study for the Greater Mekong Subregion.

Component 3: River Works and Fairway Improvement

Immediate Objectives:

- a) *To assist in establishing safe and continuous (night and day, year round) access to the maritime ports on the Mekong river system in Cambodia and Viet Nam for sea-going vessels of a certain dimension to be accepted by both countries;*
- b) *To assist in establishing safe navigation on the stretches outside the area specified under the Agreement on Commercial Navigation between the Quadrangle countries, for river barges and vessels of a size to be proposed following the results of the supporting studies and to be accepted by the Joint Committee.*

Main Outputs and Activities:

- Additional work needed on certain ‘hot spots’. Emphasis will be on infrastructure works allowing access to remote areas in view of poverty alleviation, and as required to achieve smooth and safe passage of vessels in view of cross-border navigation.
- Phase 2 of the Chaktomuk, Environment, Hydraulics, Morphology, will focus on the feasibility and the detailed design of the best alternative for the works to stabilize the junction, determined by Phase 1 of the project; Installation and Upgrading of Aids to navigation along the Mekong River System.
- Fine-tuning of necessary works will be defined by the updated 'Strategy and Programme for Navigation Development and Coordination in the Lower Mekong'.

Component 4: Institutional Strengthening and Capacity Building

Immediate Objectives:

- *Establish a basis for standardizing navigation training to reduce shipping accidents and improve waterborne transport quality.*
- *Additional training of NP staff at the MRC Secretariat, Institutional strengthening of the MRC Secretariat (navigation programme team) and NMC's to serve as coordinating and supervising centres and the main line agencies as the implementing centres in the fields related to Component 1.*

Main Outputs and Activities:

- Strengthening of Mekong Navigation Training, to improve training of skilled waterway users (men and women) as inadequate training is a major constraint to efficiency and productivity of waterborne trade. Navigation training is the single most important element in the structure of achieving safety, carriage and handling of dangerous and noxious goods. Improved regional and national capacity for coordinating and implementing the navigation programme and other navigation issues. Phase 1 involves the establishment of Navigation Training Standards and Common Core Syllabi. Phase 2 will concentrate on the upgrading of the Navigation School in Nha Be as the regional Mekong navigation centre.
- Improved regional and national capacity for coordinating and implementing the navigation programme through a “Capacity Building and Institutional Strengthening Programme for Navigation and Flood Management”.

Component 5: Promotion and Coordination

Immediate Objectives:

- a) Greater awareness of the potential and impacts of maritime and inland waterway transport for commercial and social considerations in judging its performance in comparison with other modes of transport.
- b) Improved coordination and cooperation with all stakeholders involved for implementation of and possible adjustments to the Navigation Programme.
- c) Maintain strategic relationship with MRC key programmes such as Water Utilization Programme, Basin Development Planning and the Environment Programme, and with other MRC Programmes.

Main Outputs and Activities:

- Improved awareness of the navigation potential among the government planners and the private sector. Changing the misconception that road transport is the most advantageous mode as river transport has large cargo carrying capacity, relieves road congestion and is an ideal natural facility. Ships pollute little when the appropriate rules and guidelines are being followed.
- Improved coordination among all stakeholders involved. On a national level with the NMCs, national agencies, NGOs, private sector and other stakeholders. On a regional level with the international organizations (ESCAP, UNDP, etc.), ASEAN, investment banks ADB (GMS) and IBRD, NGO's, private sector, and other stakeholders.
- Compulsory coordination and cooperation between the WUP, BDP, EP and sectoral programmes.

CROSS-CUTTING ASPECTS – ENVIRONMENT AND SOCIO-ECONOMIC CONCERNS- Raise and keep the momentum on environmental awareness throughout the planning, development and coordination activities related to the Navigation Programme in close cooperation with the Environment Programme. Although river engineering works at certain hot spots is inevitable, direct hydrological and morphological impacts, and detrimental environmental effects may be avoided by undertaking careful environmentally assessment programmes. MRC should make sure that EIA studies are carried out before any major enterprises on the river are undertaken. Transport of dangerous goods and prevention of oil pollution will be dealt with directly in Component 1. Special attention will be given to the social dimension to improve the living conditions for the remote and poorer communities who are presently unable to gain access to even the most basic social services.

14.5. Budget

Component	Total Cost	External Funding Sought
1. Implementation of Article 9 "Freedom Of Navigation"	1,945,000	1,305,000
2. Supporting Studies and Data Collection	1,708,000	1,643,000
3. River Works and Fairway Improvement	6,841,000	6,210,000
4. Institutional Strengthening/Capacity Building	2,806,000	2,315,000
5. Promotion and Coordination	137,000	137,000
Total Programme Cost	13,437,000	11,610,000

15. TOURISM PROGRAMME

15.1. Context of Programme and Situation Addressed

The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin provides a new and broad framework for regional cooperation among the riparian and member countries of the MRC to work and cooperate in all fields of sustainable development, including “**recreation and tourism**”. The tourism industry is already making a significant contribution to the economies of the member countries. Being blessed with abundant historical and cultural heritage and unspoiled natural beauty, the Mekong River Basin has also a great potential to attract visitors from various parts of the world, generating even more income from foreign exchange. Being a highly labour-intensive industry, tourism also plays a significant role in generating employment opportunities to localities where it is promoted. However, it is a major concern whether in addition to the economic rationale, tourism might have adverse environmental effects. There is therefore a need to ensure that tourism can be promoted within the framework of the MRC for a sustainable development of the Mekong River Basin.

Related projects and activities are those being carried out under the ADB's initiatives *tourism sector* of the Greater Mekong Subregion and those being carried out by the Transport, Communications and Tourism Division of ESCAP, especially the Mekong/Lancang River Tourism Planning Study.

15.2. Objective

The overall objective of the programme is to promote tourism within the Mekong River Basin in a balanced manner, which also ensures necessary protection of the environment against adverse effects of tourism.

15.3. Main Outputs and Activities

Outputs and activities have not yet been identified. Development of the programme would be subject to availability of funds and would be based on an analysis of needs and opportunities. This will include: (a) a review of documents concerned; (b) consultations with the national and international agencies concerned with tourism industry in the riparian countries; and (c) studies to determine the scope of work and identify priority activities.

15.4. Budget

Component	Total Cost	External Funding Sought
Total Programme Cost	3,000,000	3,000,000