



# MANAGEMENT OF RIVER AND RESERVOIR FISHERIES IN THE MEKONG BASIN

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## **Data Collection and Sharing Mechanisms for Co- management**

### **Report on Systems Requirements for Regional Management Organizations (“Level 3”):**

#### **The Case of MRC**



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Vientiane, February 2004

### **Management of River and Reservoir Fisheries in the Mekong Basin (MRRF)**

The aim of this Component of the MRC Fisheries Programme is to contribute to sustainable management and use of aquatic resources by strengthening reservoir fisheries co-management in the Mekong Basin. This will be achieved by developing improved river and reservoir management strategies, joint preparation of river and reservoir fisheries management plans by users and government agencies concerned and their implementation, and the strengthening of management capacity of all participating stakeholders. Major activities comprise the review of national fisheries management strategies, assessment of present and future river and reservoir fisheries potential, special studies on technical and institutional improvements in river and reservoir fisheries, participatory aquatic resource planning and management implementation, the training of resource users and Government staff in river and reservoir co-management and user community organization.

The Component maintains offices in all four riparian countries. Presently, its head office is at the Living Aquatic Resources Research Center (LARReC), Vientiane, Lao PDR. E-mail: [fip@laopdr.com](mailto:fip@laopdr.com).

### ***Title Illustration:***

Staff of the Management of River and Reservoir Fisheries Component (MRRF) on a visit to Huey Siet Reservoir to discuss issues relating to the implementation of the reservoir management plan with local users. MRRF is a joint undertaking of the national fisheries line agencies in Lao PDR (i.e. the Department of Livestock and Fisheries [DLF] and the Living Aquatic Resources Research Center [LARReC]).

**Level 3 – System Requirement Report:  
Information Needs of Regional Management  
Institutions**

**The case of the Mekong River Commission (MRC)**

Compiled by Wolf D. Hartmann on the basis of documents  
provided and published by the MRC.

## ACRONYMS

<b>ADB</b>	Asian Development Bank
<b>ADPC</b>	Asian Disaster Preparedness Center
<b>AIT</b>	Asian Institute of Technology
<b>ASEAN</b>	Association of South East Asian Nations
<b>AusAID</b>	Australian Agency for International Development
<b>BDP</b>	Basin Development Plan (MRC)
<b>CEO</b>	Chief Executive Office (MRC)
<b>CSO</b>	Civil Society Organisation
<b>DANIDA</b>	Danish International Development Assistance
<b>DFID</b>	Department for International Development
<b>DLF</b>	Department of Livestock and Fisheries, Lao PDR
<b>DoF</b>	Department of Fisheries
<b>EA</b>	Environmental Assessment
<b>ECAFE</b>	United Nation's Commission for Asia and the Far East
<b>EP</b>	Environment Programme (MRC)
<b>ESCAP</b>	Economic and Social Commission for Asia and the Pacific
<b>FMM</b>	Flood Management and Mitigation Programme (MRC)
<b>GDP</b>	Gross Domestic Product
<b>GMS</b>	Greater Mekong Sub-Region
<b>IFRC</b>	International Federation of the Red Cross
<b>ICLARM</b>	The World Fish Centre
<b>ICEM</b>	International Centre for Environmental Management
<b>ISDIT</b>	Information System Design and Implementation Team (MRC)
<b>IUCN</b>	International Union for the Conservation of nature
<b>JC</b>	Joint Committee (MRC)
<b>LA</b>	Line agency
<b>LARReC</b>	Living Aquatic Resource Research Center, Lao PDR
<b>LWU</b>	Lao Women's Union
<b>MRAG</b>	Marine Resources Assessment Group
<b>MRC</b>	Mekong River Commission
<b>MRC-IS</b>	MRC Information System
<b>MRCS</b>	Mekong Commission Secretariat
<b>MRRF</b>	Management of River and Reservoir Fisheries in the Mekong Basin

## ACRONYMS

<b>MT</b>	Metric ton
<b>NACA</b>	Network of Aquaculture Centres in Asia-Pacific
<b>NGO</b>	Non Governmental Organisation
<b>NMC</b>	National Mekong Committee
<b>NMCS</b>	National Mekong Committee Secretariat
<b>PAD</b>	Protected Area and Development
<b>SEAFDEC</b>	South East Asian Fisheries Development Center
<b>SIDA</b>	Swedish International Development Agency
<b>STREAM</b>	Support to Regional Aquatic Resources Management
<b>TAB</b>	Technical Advisory Body for Fisheries Management (MRC)
<b>TDG</b>	Technical Drafting Group (WUP/MRC)
<b>USGS</b>	US Geological Survey
<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Programme
<b>WMO</b>	World Meteorological Organisation
<b>WUP</b>	Water Utilization Programme
<b>WWF</b>	World-Wide Fund for nature

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# 1. Background

## 1.1 Purpose

The purpose of the project “Data collection and sharing mechanisms for (co-) management”, and, more specifically, the activity of writing up this report was prescribed in a number of documents, as follows:

For capture and enhancement fisheries important to the livelihoods of the poor, the project aims to provide managers and advisors at all levels, but particularly local fisher communities and institutions, with appropriate cost-effective systems and mechanisms for the collection and sharing of data and information necessary to improve the sustainable co-management of their resources.

In preparation for the Guidelines Development Workshop, prepare Systems Requirements Reports describing, for local, national and regional levels, the (i) management institutions (ii) fisheries, (iii) data and information requirements for managers to meet their respective roles, responsibilities and mandates, (i) details of existing and planned data and information sharing and facilitation programmes, in Lao PDR, Viet Nam and MRC’s area of operations (the Lower Mekong Basin) [*Annex 2 of the Letter of Agreement between MRAG and MRC*].

This information will be reviewed, discussed and synthesized during the Guidelines Development Workshop as the basis for developing a manual, in the form of an FAO Technical Paper, for designing and implementing data collection and sharing systems to support the co-management of aquatic resources;

## 1.2 Report Focus

For a range of geographic areas in the countries of the LMB, environmental regimes, and fisheries types, the content of these reports should provide, at different management levels, a broad picture of the

- range of data and information requirements that exists;
- typically available manpower, resources and institutional capacity;
- structure and operations of co-managed fisheries;
- existing and potentially appropriate data collection tools, sources and methods;
- existing data storage and processing methods (if any);
- requirements and opportunities for data and information sharing; and
- lessons and experiences of previous or existing attempts to develop data collection and sharing mechanisms.

**Figure 1:  
THE LOWER MEKONG BASIN AND THE MRC COUNTRIES**



Prepared by  
Technical Support Division  
Mekong River Commission Secretariat.



## 2. Description of Regional Management Body

### 2.1 Background

#### 2.1.1 The Mekong Basin

At approximately 4,400 km in length, the Mekong is one of the world's longest. The total population in its basin at present is believed to exceed 70 million. The Lower Mekong Basin, covered by the 1995 Agreement, is home to some 60 million people. The large majority of them earn their living from agriculture and fishing – occupations that account for 50 percent of the lower basin's GDP. Population pressure is placing increasing stress on already low living standards and food security, and exacerbating poverty. Significant investments are therefore needed in agriculture, rural development, education and basic health to increase employment, combat poverty and raise living standards. Table 1 lists some selected technical and socio-economic statistics for the Lower Mekong Basin.

Mekong River Basin ecosystems have evolved over millions of years in harmony with the natural rise and fall of the river and its tributaries. The river and its ecosystems are now comparatively healthy, but are showing signs of increasing stress. The challenge is to find ways to manage the much-needed development so benefits are shared equitably while minimizing environmental harm.

**Table 1: Selected Statistics for the Lower Mekong Basin**

Indicator / Country	Cambodia	Lao PDR	Thailand	Viet Nam	Total
(1) Catchment Area (km <sup>2</sup> )	155,000	202,000	184,000	65,000	606,000
(2) Average Flow (m <sup>3</sup> /s)	2,860	5,270	2,560	1,660	12,350
(3) Irrigated Area (ha x mill.)	0.161	0.075	1.414	1.512	3.162
(4) Population (million)	9.30	4.70	23.2	19.8	57
(5) Per Capita GDP (US\$)	252	259	876	287	-

#### 2.1.2 The Mekong Cooperation

Mekong cooperation dates back to 1957, when the Committee for Coordination of the Lower Mekong Basin (the Mekong Committee) was established. Over the period 1978 to 1995 it was known as the Interim Mekong Committee. The story of Mekong cooperation begins in the middle of the 20th century with the formal signing of the Geneva Accords, when the newly independent nations of Cambodia, Laos and Viet Nam took their places on the world stage. Studies of the Mekong by the United Nations' Economic Commission for Asia and the Far East (ECAFE) and the US Bureau for Reclamation sparked interest in the Lower Mekong countries and at the newly established ECAFE, for a grand scheme to develop what was thought of as one of the world's great 'untamed rivers'. No international river body had ever attempted to take on such encompassing responsibilities for financing, construction, management and maintenance of projects on an international river. The 'Mekong Project' was the largest single development project the fledgling United Nations organisation had ever undertaken.

When the Mekong Committee began its work, there were no models to follow. In its early days, the Committee was guided and supported by ECAFE and the United Nations Development Agency. Lack of stability in the region resulted in the interruption of Mekong Committee sessions in the late 1970s. In response to Cambodia's absence, in 1977 Lao PDR, Thailand and Viet Nam adopted a new statute forming the basis of the Interim Mekong Committee. When Cambodia finally requested readmission in 1991, lengthy discussions began which led to the eventual transformation of the Mekong Committee through the 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin.

The '95 Agreement was a coming-of-age for the Mekong Committee, now the Mekong River Commission. No longer under the umbrella of ECAFE/ESCAP and the UNDP, its Articles give full management responsibility of the Commission to a Council of Ministers of member countries. The Articles of the '95 Agreement have retained much of the original 'Mekong Spirit', but have shifted the focus from development of large-scale projects to sustainable development and management of natural resources.

From 1955 through to the mid-1960s, the Mekong Committee conducted hundreds of surveys and studies. Teams of experts traveled up and down the mainstream and its tributaries in boats, in jeeps, on foot, and on the backs of elephants to map, measure, sample and catalogue a rich diversity of resources. These studies were the basis of an ever-expanding 'knowledge base' now maintained by the Mekong River Commission. Since the 1995 Agreement, the member countries have signed sub-agreements on Data and Information Sharing and Exchange, a Flood Management and Mitigation Strategy, and a formal agreement with China on the exchange of hydrological and other data.

The aim of many early Mekong Committee surveys was to gather data for irrigation flood control and hydropower projects. Over the last 50 years, much has been learned about dams and their impacts. The Commission has responded with a hydropower development strategy based on principles that recognise the rights and needs of multiple users, the value of public participation in planning, and protection of the environment. Similarly, the knowledge gained from early efforts to 'control' floods led to greater understanding of flood management and mitigation.

The Mekong Committee was born in an era of enormous optimism in science, technology and international development assistance. It was thought that whatever the problem, technology could and would provide the solution. Few of the proposed projects were ever realised, but the early surveys and data collection were the beginning of the Committee's work as a natural resource planning advisor to its member governments. A new paradigm has been steadily emerging. People are coming to see nature and the environment as a complex web of interacting systems that we must learn to manage cooperatively, not exploit. U Thant, Secretary-General of the United Nations in the 1960s, once described the vision of the Mekong Project as a "struggle to build a modern civilisation on the foundations of our ancient cultural heritage and to blend western technology with our own traditional values."

Since 1995, the Mekong River Commission has made slow but sure progress towards implementation of the agreement. A common thread through all of its work is the facilitation of agreements between the four member countries on water use, water quantity and water quality.

The Basin Development Plan of 2002 is a basin-wide planning process rather than a specific list of projects. Planning today means 'participatory planning' and plans are informed by a much expanded range of stakeholders than was once the norm. The

organisation itself has undertaken a radical restructuring to lay the basis for a modern river basin management body.

In a 1966 editorial the Executive Secretary of ECAFE, U Nyun, observed that, "History is full of examples of countries, large and small, that have lost national independence because they have failed to grasp the need of international cooperation." The 1995 Agreement that transformed the Mekong Committee into the Mekong River Commission is an expression of just such international cooperation.

Developing water resources is one of the most complex and sensitive activities humans can attempt. Many different needs must be served and those needs are often competing or conflicting. Water is seen by some as 'the' foreign policy issue of the 21st century. The nations of Southeast Asia who conceived and nurtured a Mekong Committee may prove to be a model for the world.

## **2.2 MRC's Structure, Roles and Responsibilities**

### **2.2.1 Structure**

The MRC has given itself the following visions and mission:

**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.

**The 1995 Agreement** established the Mekong River Commission with a unique status: it forms the basis of the only legally constituted regional organisation mandated from the highest political level to deal with Mekong River management in a holistic manner. The MRC is the only wholly riparian voice speaking for the interests of riparians in Mekong River Basin matters.

- To cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin;
- To promote, support, cooperate and coordinate in the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of Mekong River Basin waters, with emphasis and preference on joint and/or basin-wide development projects and basin programs through the formulation of a basin development plan;
- To protect the environment, natural resources, aquatic life and conditions, and ecological balance of the Mekong River Basin from pollution or other harmful effects resulting from any development plans and uses of water and related resources in the Basin;
- To cooperate on the basis of sovereign equality and territorial integrity in the utilization and protection of the water resources of the Mekong River Basin;
- To utilize the waters of the Mekong River system in a reasonable and equitable manner in their respective territories;

- To cooperate in the maintenance of the flows on the mainstream from diversions, storage releases, or other actions of a permanent nature;
- To make every effort to avoid, minimize and mitigate harmful effects that might occur to the environment, especially the water quantity and quality, the aquatic (eco-system) conditions, and ecological balance of the river system, from the development and use of the Mekong River Basin water resources or discharge of wastes and return flows.

Articles 7-10 further stipulate the

- Cessation of uses that cause damages and harmful effects;
- Responsibility for harmful effects and resolution of issues, differences and disputes;
- Guarantee of freedom of navigation;
- Notification of problems constituting an emergency in order to take appropriate action.

Three permanent bodies administer the MRC: the **Council**, the **Joint Committee** and the **Secretariat**. Figure 2 (next page) provides an organisational chart of the organization.

The **Council** comprises one member from each participating riparian State at the Ministerial and Cabinet level. It is charged with making policies and decisions; to entertain, address and resolve issues, differences and disputes referred to it.

Accountable to the Council is the **Joint Committee (JC)**, comprising one member from each participating riparian State at no less than Head of Department level. The JC is responsible

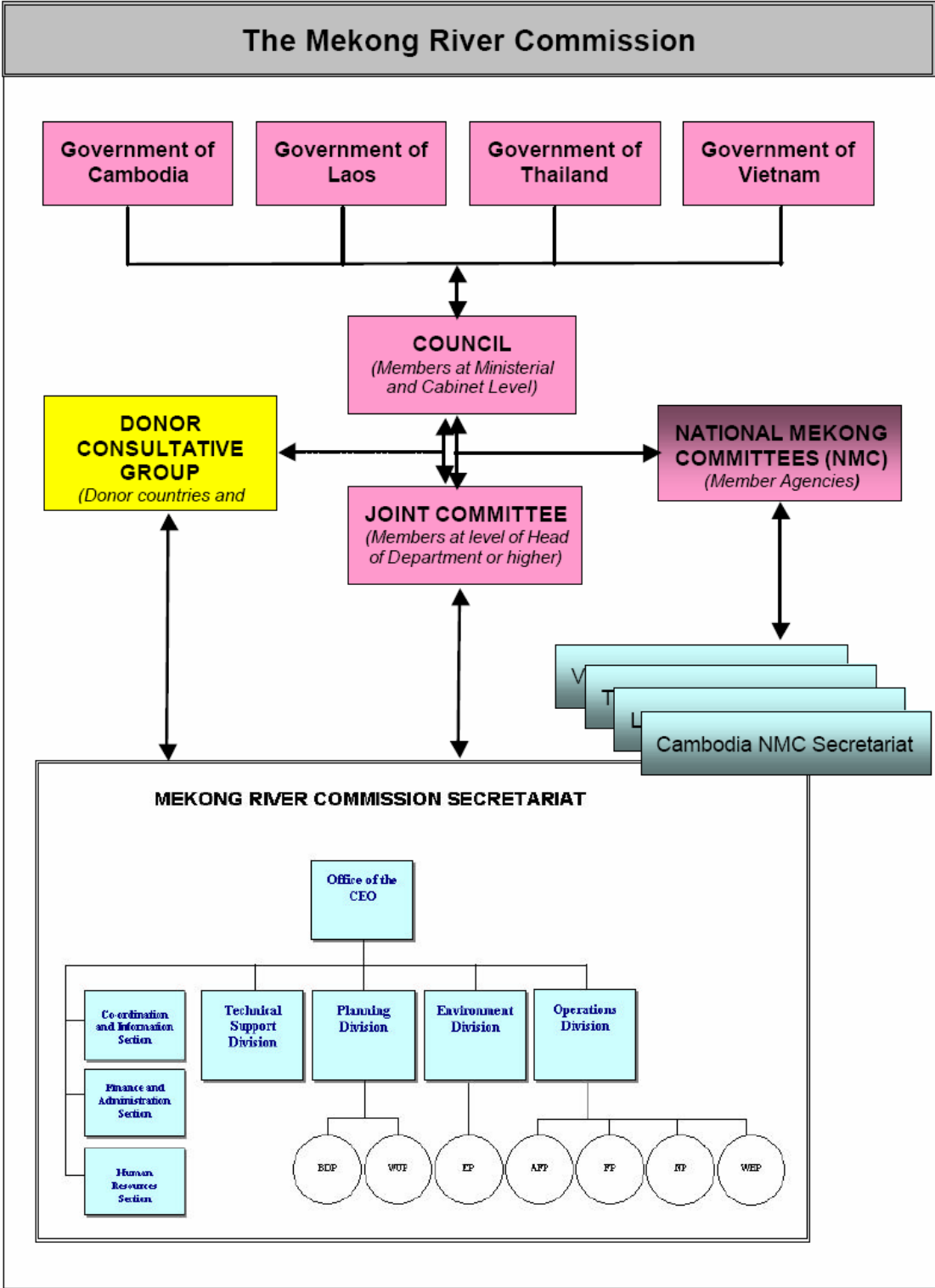
- to implement Council policies and decisions;
- to formulate a basin development plan and submit to the Council for approval, as well as joint development projects/programs to be implemented in connection with it;
- to confer with donors, directly or through their consultative group, to obtain the financial and technical support necessary for project/program implementation;
- to regularly obtain, update and exchange information and data necessary to implement the Agreement; to conduct appropriate studies and assessments for the protection of the environment and maintenance of the ecological balance of the Mekong River Basin;
- to assign tasks and supervise the activities of the Secretariat as is required to implement this Agreement and the policies, decisions, projects and programs adopted thereunder, including the maintenance of databases and information necessary for the Council and Joint Committee to perform their functions, and approval of the annual work program prepared by the Secretariat.

Serving the JC is the **Secretariat (MRCS)**, headed by a Chief Executive Officer (CEO). Its role is

- to carry out the decisions of the Council and JC;
- to provide technical and administrative services as requested by the Council and JC;
- to maintain databases and information as required; etc.

The Secretariats' roles in activity monitoring and evaluation were clarified as part of the capacity building programme, and appropriate strengthening measures have been undertaken (see below).

**Figure 2: An Organisational Chart of the MRC**



**NMCs and NMCSs**

While not specified under the 1995 Agreement, each member country continues to use their established National Mekong Committee (NMC) as the country focal point for

liaison and coordination with the MRC. Although the mandates and structures of the four respective NMCs vary somewhat, all have representation at a high political level, and members are appointed from most of the national Ministries involved with water and related resources in the Mekong River Basin. The NMCs are national public agencies that represent the relevant line agencies. With this, they also play a unique coordinating role in their respective countries between the MRC Joint Committee, MRC Secretariat and national interests. The NMCs are expected to promote adopted positions of the MRC Council and Joint Committee to national agencies, provide insights on national concerns for guiding MRC's involvement with respect to the above mentioned roles, and provide a forum for continued interaction with other stakeholders.

Each NMC is supported by a permanent Secretariat, which acts as a coordinator between MRCS and the national Ministries. The Ministries are the principal collectors of primary natural resources data and, in addition to their national development responsibilities, are implementers of basin-wide, or trans-boundary, programmes carried out under the MRC umbrella.

In Lao PDR for example, the Prime Minister has issued a decree (No. 32/PM 1999 Chapter 11: Duties and Scope of Authority, Article 2: Duties of Ministry of The State Planning Committee, 2.7), which specifies that the responsibility of the Lao National Mekong Mekong Committee (LNMC) is "To act as a coordination center for the study and formulation of water development plan and other water related resource along the Mekong and its tributaries within the boundary of Lao PDR."

As part of the Capacity Building Support Programme, all NMCs are now in the process of developing strategic plans to complement MRC's plan (see below). The MRC strategic plan sets down a shared Vision, Mission, Goals and Strategic Objectives for the whole MRC, including the NMCs. Thus, in developing their corresponding strategic plans, NMCs will use these key strategic elements from the 2001-2005 Strategic Plan as their starting point. They will also develop extra strategic objectives, as needed, to reflect extra roles and responsibilities under their respective national mandates. In so doing, NMCs will focus on how the MRC strategic objectives can best be achieved at the national level. Strengthening of NMC Secretariats' capacities to enable them better to perform their fundamental role of liaison and coordination between line Ministries and MRCS was a major result of the Capacity Building Support Programme (see below).

## 2.2.2 Roles and Responsibilities

Under the 1995 Agreement, MRC's role is to coordinate and promote "cooperation in all fields of sustainable development, utilisation, management and conservation of the water and related resources of the Basin."

Within this role, MRC's focus is on three priority areas:

- Developing rules for the cooperative use of water through the Water Utilization Programme;
- Basin Development Planning - facilitating cooperative sustainable development of water and related resources;
- Environmental management and monitoring of the basin's natural resources.

Regarding the latter, MRC is facing the following challenges:

- inadequate understanding of how the Basin functions as a system;
- incomplete policy and regulatory frameworks;

- weak enforcement capabilities, co-ordinating action and data exchange across international boundaries;
- inadequate data and information of the natural resources in the Basin;
- insufficient awareness among stakeholders, including economic planners and decision-makers regarding the monetary and social value of the Basin's complex ecosystems and inadequate participation by all stakeholders in the planning process;
- inequitable distribution of the benefits of development;
- only four of the six Mekong Basin countries are members of the MRC.

There are also a number of opportunities, however. Some of these are:

- the Mekong River Basin eco-systems are still largely in a healthy shape, and biodiversity in the Basin remains among the richest in the world;
- the legal and institutional set-up for regional co-operation is basically in place;
- the understanding of the eco-systems has increased significantly over the last decades;
- there is potential for increased agricultural production in the region, based on an increased yet sustainable use of the Mekong River waters;
- there may be significant potential for small-scale hydro-electric power schemes with limited negative environmental impact;
- there is increasing dialogue between MRC and the two non-MRC members, China and Myanmar.

MRC is moving away from being a general development agency, a role that other agencies can fill as well as MRC. This does not mean, however, that MRC will stop planning and executing development programmes. Maintaining an operational programme is important for several reasons. Firstly, there remains a large need for externally supported quality development programmes in the region, and there are areas where MRC has a unique competence that should be harnessed for this purpose. Secondly, operational programmes help generate the data and knowledge that is needed for MRC to be a respected knowledge centre. Thirdly, operational programmes are required so MRC can engage in dialogue, and help strengthen where needed, the many institutions - government and non-government - that are involved in implementation. All MRC operational programmes are planned with these functions in mind.

The operational programmes are now truly "strategic", as called for in the 1995 Agreement. They need to have basin-wide significance. They need to deal with issues of high priority. And they need to support the knowledge-generating role of MRC. MRC needs to clearly focus on its role as an International River Commission, and avoid competing with others in being a general funding source for development projects. Since 1999 MRC has made a major move from a project-by-project approach to a flexible but strategic programme approach.

In order to better fulfill its role outlined above, MRC developed a first Strategic Plan for the period 1999-2003 and, after a review in 2000, for the period 2001-2005.

### 2.2.3 Goals

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

- GOAL 1: to establish and implement “rules” for water utilisation and interbasin diversions;
- GOAL 2: 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;
- GOAL 3: to establish and promote MRC environmental and socio-economic management systems, recommendations, and policy guidelines;
- GOAL 4: to establish an effective organisation, capable to promote, in partnership with other institutions, basin-wide development and co-ordination.

These goals are considered realistic and achievable, given sufficient resources are available and MRC’s organisational structure, staffing levels, motivation, and skills, and management and financial systems are appropriate and constantly improved. With this, the number of Goals of the 1999-2001 Strategic Plan has been reduced from 5 to these 4. Goal four was integrated under goals 2 and 4 of the updated strategic plan. Apart from this change, the goals remain essentially the same as for the previous plan.

## 2.2.4 MRC’s Programmes

Of the organisational changes implemented by MRC over the past years, perhaps the most significant has been the move from a “project” to a “programme” focus. Prior to 2000, MRC operations centered on many, generally small, projects that commonly reflected member country national interests, or donor development preferences. Since then, however, MRC has used the strategic plan to guide development of a comprehensive series of programmes, the collective purpose of which is to achieve MRC’s goals and reach toward its Vision. The new approach aims to make future MRC activities part of comprehensive programmes supporting basin-wide strategies adopted, or to be adopted, by the riparian countries.

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 cross-cutting themes of environment, gender, poverty, employment and people-centered 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.

There are three types of programme: **core**, **sector** and **support programmes**. Together they reflect current and future riparian needs under the 1995 Agreement.

The *Water Utilisation Programme (WUP)*, *Basin Development Plan (BDP)* and *Environment Programme (EP)* are assigned as **Core Programmes** as they specifically address the key Articles of the 1995 Agreement. Core programmes are central to MRC’s purpose, and are intended to remain with the MRC in the long term. 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.

Five **Sector Programmes**, covering all water and related resource areas as required under the 1995 Agreement, are: *Fisheries Programme; Agriculture, Irrigation and Forestry Programme; Navigation Programme; Water Resources Programme; and the Tourism Programme*. 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. Sector programmes basically fall within the purview of, and support, the Basin Development Planning process. They address important sectoral issues from a basin-wide perspective, complementing and supporting national and bilateral development initiatives. The intention is that in the future, as national capacities are strengthened, basin level sectoral programmes will be assumed by riparian member country line agencies working in full co-operation and collaboration.

A crosscutting **Support Programme**, the *Capacity Building Programme*, aims to raise the capacity of MRC and relevant member country Ministries to implement the strategic plan. It also supports and helps coordinate parallel technical capacity building activities that form an integral part of all Core and Sector Programmes. 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 programme will be reduced and, as needs dictate, will be augmented by other institutional development activities.

#### **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 modeling 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.

The WUP will also support formulation and execution of the Basin Development Plan (BDP). As an umbrella programme, the WUP covers planning, data collection, development of a basin modeling and knowledge base, establishment of monitoring systems and river basin management. The overriding principle governing the WUP process is that it is owned by the member countries, with the Secretariat acting as a facilitator.

At its 6th meeting in October 1999, the MRC Council endorsed a schedule of subsidiary agreements to be made between the four member countries of Cambodia, Lao PDR, Thailand and Viet Nam. These are:

- Procedures for data and information exchange (available by the end of 2001);
- Preliminary procedures for notification, consultation and agreement (by the end of 2003);
- Procedures for monitoring existing water uses (by the end of 2003);
- Procedures for notification, consultation and agreement (by the end of 2003);
- Rules for the maintenance of flows (by the end of 2004);
- Rules for water quality (by the end of 2005).

The "rules" are drafted by a group called the Technical Drafting Group (TDG) made up of experts from the four countries, with support from legal and other technical specialists.

#### **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 focused 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.

The output is envisaged to be 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 formulation process will rely substantially on inputs from WUP, Environmental and Sector Programmes, most of which are in their early stages of implementation. All MRC programmes will be closely integrated, as difficulties in one programme will affect the others. The BDP aims to identify transboundary economic development activities that balance the Basin peoples' development needs with sustainable water quality, quantity and long term environmental integrity.

The Basin Development Plan (BDP) will institutionalise a planning process necessary for the responsible management and sustainable development of the Mekong River Basin's resources. The BDP will achieve a balance between socio-economic

development and environmental concerns and ultimately create a framework for development based on technical knowledge as well as public, stakeholder and political views. Through the development of scenarios, strategies and planning guidelines the BDP will foster co-operation between stakeholders throughout the Lower Mekong Basin.

The BDP will serve as a framework for strategy formulation, as well as for identification of projects to support the agreed strategies. It will mainly deal with international, cross-border issues, rather than national planning initiatives which do not affect other riparian countries.

The BDP will focus attention on irrigated agriculture; watershed management; fisheries; hydropower; navigation, transport, river works; tourism and recreation, where it is water-related; water supply for domestic and industrial use; flood control and flood management; cross-cutting themes within the BDP's work, such as environment, human resource development; socio-economics, including poverty reduction and gender equity; and public participation

The BDP will consider sub-areas of the Lower Mekong Basin on which to formulate and assess regional cross-sectoral development plans, and to analyse and predict their environmental and socio-economic impacts, including transboundary effects.

Around 10 sub-areas will be chosen which have features of common interest to the four governments of the Lower Mekong Basin. These may be watershed areas spanning national boundaries, areas with a high incidence of poverty, or others.

Development of the Plan will proceed through 5 stages:

- Analysis of development opportunities at the sub-area level
- Formulation of development scenarios
- Preparation of integrated development strategies
- Compilation of a long list of projects and programmes
- Preparation of a short list of priority projects and programmes according to criteria which will be developed and agreed upon

Overall approach to this work:

- To achieve basin-wide benefits whilst taking account of national interest
- To balance development opportunities with resource conservation
- Broad public participation
- Knowledge-sharing and capacity-building

The National Mekong Committees serve as focal points in each country for development of the Plan. They will collaborate closely in the planning process with the government organizations involved, and with other stakeholders.

The initial formulation of the BDP will proceed from 2001 to 2004. Financial support to the BDP formulation is being provided by Denmark, Sweden, Japan, Switzerland and Australia.

### ***Environmental Programme – EP (Goal 3)***

The EP is a new, strategic, long-term MRC environmental programme covering the period 2001-2005 has recently been approved for implementation. In contrast to the more technically oriented approaches of the past, the People of the Basin are now the central focus and starting point. The Environment Programme strengthens the

framework for transboundary environmental management by the four Lower Mekong countries.

It adopts a programmatic approach, focusing on Basin environmental issues and integrating social and economic concerns. Its overall aim is to achieve sustainable development in the Mekong River Basin. It will carry out studies and research, and build a quality environmental, social and economic data and knowledge base for the Basin. In addition to their intrinsic social and scientific value, outputs from the environmental programme will contribute directly to WUP formulation and to sustainable development activities under the BDP. It will provide the environmental and social bases to assist the WUP to make decisions on water sharing and the BDP to decide on development needs and priorities.

The Mekong River Basin is threatened by a host of pressures on the environment. The ramifications of environmental disturbances in the Basin are felt most acutely by the 60 million people who depend on the Basin for their livelihoods. Consequently, at all times, the MRC's Environment Programme focuses on the people of the Basin. The Environment Programme will generate data, information and knowledge for decision-making to balance economic development and environmental conservation that will benefit the Basin's inhabitants. In addition to establishing systems for monitoring the Basin's environmental health, improving policies and legislation, and encouraging co-operation among the riparian countries, the programme will increase the public's environmental awareness.

#### **Flood Management Programme - FMM**

The Flood Management and Mitigation Programme has been recently developed, focusing on three areas: providing technical products and services, addressing differences and facilitating solutions, and capacity building and technology transfer. Detailed implementation plans are being made, which include the establishment of a regional FMM Centre; studies, policy discussions on land use planning and infrastructure development in relation to flood impacts; flood proofing measures; flood forecasting, warning and dissemination services; mediation services; analysis of risk and impacts, and strengthening of capacity to manage flood emergencies.

#### **Capacity-Building Support Programme (Goal 4)**

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, modeling and data management, basin planning, development of water sharing guidelines, and building community awareness and strengthening at the strategic level.

The Capacity-Building Programme ended in 2002. The programme has provided support to the Secretariat and National Mekong Committees in each country for improved systems of administration, management and communications.

Sector Programme:

### **Agriculture, Irrigation and Forestry Programme (Goal 2)**

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.

The programme focuses on water-use efficiency, catchment management and capacity building. In 2002, watersheds in the Lower Mekong Basin will be inventoried and key areas of transboundary significance will be selected for activities.

### **Fisheries Programme (Goals 1-4)**

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 continuously increasing fisheries productivity and maintaining a healthy ecosystem.

The Fisheries Programme aims to manage the productive Mekong fisheries so as to sustain their high yield and economic output well into the future. The programme does research into capture fisheries, trains fisheries managers, promotes aquaculture of indigenous Mekong fish species and disseminates information to policy makers and planners in the four Lower Mekong countries.

### **Water Resources and Hydrology**

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.

A network of river monitoring stations along the Mekong transmits real-time information on water levels for flood forecasting and other uses. The MRC runs training of gauge readers and other water resources staff of the four Lower Mekong governments.

### **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.

The development objective for MRC navigation development is:

- To promote freedom of navigation in the Lower Mekong River system;
- To assist in co-ordination and co-operation in developing effective and safe waterborne transport in a sustainable and protective manner for the waterway environment; and
- To increase international trade opportunities for the mutual benefit of the Member Countries of the MRC.

Its objectives are concerned with legislation; trade, transport and safety (both *non-physical and physical* improvements); environment; and social issues.

### ***2.3 Institutional Capacity and Resources***

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.

Major efforts have been made in improving the institutional capacity of MRC. A major restructuring of the Secretariat has taken place, new staff has been recruited, management systems and operational procedures have been improved, and new staff training programmes have been developed. The NMC Secretariats are also being upgraded through recruitment of additional staff, improvement of management and operational systems, and technological upgrading.

Although this has led to an improvement in the capacity of MRC, significant further improvement is required before MRC will be able to live up to its vision of being a world-class river basin organisation. The 1999-2003 Strategic Plan Goal of institutional strengthening therefore remains a key Goal of the 2001-2005 Strategic Plan.

It is the staff of MRC who more than anything else determine whether the goals will be achieved or not. An increased emphasis will be placed on attracting and recruiting the best possible quality of staff, and on providing staff with a positive work environment that enables them to perform their best and receive recognition for their work.

The administrative and financial systems of MRC are also crucial to the success of the organisation. A further major effort is needed for MRC to be able to implement all its programmes effectively. This is a priority task of the present Strategic Plan.

The National Mekong Committees and their Secretariats play an essential role in the MRC system. They take the leading role in co-ordinating MRC programmes at the national level, and provide the link between the MRC Secretariat and the national Ministries and other line agencies. MRC emphasises the role of the NMCs and the NMC Secretariats, and will prioritise strengthening their capacity so that they can be effective co-ordinators of MRC programmes.

### ***Financing***

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%.

Total present funding for core programmes is:

- BDP: US 6,156,000;
- WUP: US 16,300,000;
- EP: US 23,458,000.

Funding for the MRC system comes principally from three sources:

- from member countries, for core funding;
- from donors, through funding of core, sector and support programmes; and
- from donors, through direct funding of international managerial and professional staff based in MRCS and NMC Secretariats.

MRC's Vision for itself as a world class international river basin organisation includes the aim to be "financially secure". As in 1998, MRC remains largely reliant on external funding for its continued existence. However, in the two years since the first strategic plan was prepared, several important actions have been taken on the path to financial security. Their aims are to reduce reliance on donor contributions to core funding, and to improve MRC's approach to diversifying, securing and managing long-term funding for strategic programmes and activities.

The implementation of the Strategic Plan 1999-2003 has become the catalyst for renewed donor confidence in MRC's performance. It provided a clear picture of how funds were to be used strategically and aligned toward a shared Vision. Long term programme funding commitment has consequently increased substantially, with the priority being on implementation of the three core programmes – Water Utilization Programme, Basin Development Plan and Environmental Programme.

The MRC members accept that as a minimum they should own and support the core of the organisation. This covers the basic structure as defined in the 1995 Agreement – the Ministerial Council, Joint Committee and Secretariat, establishing and monitoring water sharing agreement, basin development planning, and the fundamental data systems and models that underpin MRC's operations. In support of this aim, MRC Council has recently approved a new core funding strategy whereby the four member countries will annually increase their contributions to MRC so that within 12 to 15 years they will bear full organisation infrastructure costs.

## **2.4 Links and Relationships with Other Organisations and Institutions**

MRC applies and maintains a number of mechanisms in order to link up with other organizations, institutions and stakeholders in general

### **2.4.2.1 Partnerships and Links**

The MRC has always accorded high importance to international cooperation. In building partnerships with concerned organisations and initiatives, MRC will take advantage of its unique status as the only regional institution with a legal framework to promote and coordinate management and development of water and related resources in the Basin. With more than 40 years of accumulated hydrometeorologic and other natural resources data, extensive experience in co-ordinating multi-disciplinary development activities in the Mekong River Basin, and a solid legal framework, the Mekong River Commission is well placed to take the leading role in co-ordinating the development of water and related resources in the Basin.

MRC has formal agreements for cooperation with regional and international organisations, e.g. ADB, AIT, ICLARM. Partnerships have been formed already between MRC and organisations such as WMO, UNDP, IFRC, USGS, ESCAP, ADPC, IUCN, WWF, etc. Partnerships have also been formed with national organizations and institutions, such as the University of New South Wales, Australia; University of Sydney, Australia; the Murray-Darling Basin Commission, Australia.

An agreement with China on the provision of hydrological information on the Lancang/Mekong River during flood season was signed in April 2002. This agreement represents an important step towards a closer relationship with upstream partners.

Most of MRC's core and sector programmes maintain close links with concerned organizations and institutions in the implementation of its activities. A case in point is the EP's Review of Protected Area and Development in the countries of the lower Mekong River Region, where technical support in the review was being provided by ICEM - the International Centre for Environmental Management in partnership with IUCN - The World Conservation Union, Birdlife International, Worldwide Fund for Nature, United Nations Development Program and the Mekong River Commission. Organisations sponsoring the review were DANIDA, AusAid, Swiss Development Corporation and the MRC.

For the BDP institutional relationships and cooperation are equally important. The BDP will comply with the national policies for social and economic development of all riparian countries. It will support the national policies, and add value to the national development efforts. Therefore, the BDP will link with and support parallel regional development initiatives for economic collaboration including the Greater Mekong Sub-region collaboration; and ongoing work of ASEAN; ESCAP; Global Water Partnership, and others. Also, the BDP will liaise closely with the MRC sector programmes, and draw comprehensively on the knowledge they have generated about sector development opportunities, priorities, and impacts in fisheries; Agriculture; Irrigation and Forestry; Navigation; and Water Resources and Hydrology.

The Fisheries Programme also maintains close linkages with other regional fisheries organisations, such as the Network of Aquaculture Centers in Asia-Pacific (NACA), the South-east Asian Fisheries Development Centre (SEAFDEC), the World Fish Centre, the initiative 'Support to Regional Aquatic Resources Management' (STREAM) and FAO.



Linkages and cooperation with other organizations is a principle of the MRC. It is its Strategic Objective 4.6, which reads: “Strong partnerships established between MRC and other institutions dealing with water-related management or development in the basin.” As a general directive, 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.

#### **2.4.2.2 Panels**

Strategic Objective 4.4: A panel of international/regional experts on river basin / natural resources management meeting regularly to provide advice to the Joint Committee and senior management of MRCS and NMCs on MRC's progress and strategic direction.

#### **2.4.2.3 Public Participation**

The 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin established a new structure and a stronger decision-making mechanism for the MRC. The mandate set out in the Agreement extends the areas of cooperation among member countries and calls for their more active participation in policy and decision-making processes. The Agreement stresses the interdependent nature of sustainable development of the Mekong River Basin. As a result, the decisions taken by the MRC Council and Joint Committee achieve the highest level of participation, that is, each of the member countries is an equal partner in a negotiated decision-making process.

In carrying out the work of the MRC, the Secretariat and the National Mekong Committees (NMCs) have actively advocated participatory approaches. In 2001, the MRC Council and Joint Committee agreed to invite partner civil society organizations (CSOs) to participate as observers at their meetings. At the level of strategy formulation, effective consultative programs involving internal and external stakeholders have been undertaken in the context of the preparation of the MRC Strategic Plan 2001-2005, as well as the Flood Mitigation and Management Strategy and the Hydropower Strategy.

Core programs at the MRC engage in a range of participatory approaches in collaboration with the NMCs. The focus of stakeholder involvement in the Water Utilization Program (WUP) is the active participation of key internal stakeholders, that is, the MRC Secretariat, the NMCs and line agencies (LAs) in each of the member countries. The Environment Program (EP) and the Basin Development Plan (BDP) collaborate with internal stakeholders as well as a range of external stakeholders.

Project-level participatory approaches are exemplified by the design and implementation of the projects of the MRC Fisheries Program (Logarta, 2002). The focus of these projects is co-management and the active involvement of directly and indirectly affected people. Co-management is premised on reaching agreement on the shared power and responsibility for the management of fisheries resources. Important strategies also include stakeholder involvement in project formulation, including participatory appraisal of the needs and objectives at the community level.

In 1999, the Joint Committee of the Mekong River Commission (MRC) endorsed a policy to promote public participation in the programs, projects and activities of the MRC. In 2002, following further review and study of the issues of public participation at the MRC, a process was initiated to formulate a strategy to enhance the integration of stakeholder involvement in the work and activities of the MRC. This process has involved a regional consultation to identify the scope and objectives for the strategy,

as well as national and regional consultations to review the proposed Strategy and to discuss specific mechanisms for its implementation.

The MRC policy (1999) defines public participation as “a process through which the key stakeholders gain influence and take part in decision making in the planning, implementation, monitoring and evaluation of MRC programs and projects.” Stakeholders are defined as “any person, group or institution that has an interest in an (MRC) activity, project or program.”

The overall goal of the MRC Public Participation Strategy is to raise the awareness of the MRC and its role to promote regional cooperation for sustainable development, through greater participation of internal and external stakeholders. Strategic objectives and the major components of the Strategy are closely linked and reflect the assessment of key issues and requirements at the present time to promote stakeholder involvement at the MRC.

MRC Public Participation Strategic Objectives:

Expand the opportunities for participatory collaboration among MRC, the NMCs and riparian government line agencies;

Enhance greater participation of external stakeholders who share MRC strategic objectives for sustainable development in the Mekong River Basin;

Build institutional capacity within MRC and NMCs to plan, implement, monitor and evaluate stakeholder involvement in MRC activities.

MRC Public Participation Strategy Components:

- Enhancing consultation within the MRC network: Participants identified the need to strengthen existing mechanisms and to explore additional means to promote consultations and exchange of information among the key internal stakeholders of the MRC, that is, the MRC Secretariat, National Mekong Committees (NMCs) and line agencies (LAs) in the member countries;
- Engaging civil society: Participants recognized the importance of greater contact and dialogue with a range of external stakeholders and the need to define appropriate strategies to integrate the exchange of information and consultations with these groups into the work of the MRC;
- Institutionalising public participation in the MRC: In order to support the above initiatives, the participants stressed the need to improve the understanding and knowledge of, as well as experience with participatory methods and tools.

Access to information has been recognized as a “pillar” of public participation. As mentioned above, it was endorsed in Agenda 21 and agreed to by participants at the 1992 Rio Summit on Sustainable Development. It formed a central issue in the discussions of public participation at the 2002 World Summit on Sustainable Development.

As a centre of knowledge about the Mekong River Basin, the MRC is concerned with the production and distribution of information about the sustainable development of water and water-resources in the LMB, as well as the protection of these resources and the ecological balance of the Basin. The development and exchange of information about the technical work of MRC programs are central aspects of the MRC Strategic Plan.

Making information accessible to internal and external stakeholders as well as to the general public is, therefore, at the centre of MRC’s work. Dialogue within the MRC occurs at the senior levels of the organisation to ensure the maximum accessibility of

information within limits of the proprietary interests of the member countries. Efforts are continuous to identify the ways in which the MRC can be responsive to the interests of a wide range of “publics” to know and obtain information about the work of the organisation. And, importantly, the MRC is reinforcing its capacity to be pro-active providing information about different aspects of MRC activities and through different media. An example is the proposed Public Awareness Strategy (see box).

## ***2.5 Participatory Management in the Member Countries***

### **2.5.1 National Context for Participation**

Due to the socio-cultural, historical and political conditions in the riparian countries, there is not a long tradition in the Lower Mekong Basin (LMB) of consultative decision-making. Few mechanisms – legal or institutional – exist to support forms of public participation whereby individuals and organizations in society gain influence and take part in decisions about national and regional development. Increasingly, however, governments are acknowledging and supporting participatory approaches to development that affects the lives of their citizens. The situation in the four countries is rapidly evolving through a range of legal and institutional strategies to encourage greater participation in local and national development.

In Cambodia, the basis for a political and legal framework for public participation is found in, among others, the Press Law and the Law on Environmental Protection and Natural Resources Management (Chapter VII, Article 16 and Article 17). While there has been little stakeholder involvement in national socio-economic development planning, recent Government policies for decentralisation (2002) call for active participation in development planning and implementation at the provincial and local levels. A number of Government initiatives are clearly premised on key roles for local involvement in development, for example, the Village Development Committee. Throughout 1990's in Cambodia, national NGOs and other civil society organizations have emerged as major players in the rebuilding and development of the country.

The Government of Lao PDR promote participation particularly through mass organizations such as the Lao Women's Union (LWU), Lao Youth and the Lao Front for National Construction. The LWU has strong network at the district, provincial and national levels. Over the past decade, it has evolved into a participatory community development organisation addressing a range of issues related to rural development, poverty alleviation and well being of women and their families. Government policies in support of public participation are included in the Constitution and other laws and decrees. For example, Lao PDR is presently the only country in the LMB to legally require public participation during the preparation of an environmental impact assessment (EMR, 2002). However, to date, there is no legal provision for the registration of national NGOs and CSOs in Lao PDR.

Recent changes in the 1997 Constitution of Thailand explicitly acknowledge citizens' rights to participate in environmental assessments (EA) of development projects through access to information and public hearings, as well as collective rights to environmental and resource management. This builds on the National Environmental Quality Act (1978) that officially recognized public involvement in environmental matters. The Government has issued guidelines and procedures for public participation in EA, including participation at the project conception stage. Moreover, the National Water Vision Statement and the National Water Policy emphasise the participation of all stakeholders in the sustainable management of water resources largely via the formation of water management organisations at national and river

basin levels. Among the riparian countries in the LMB, Thailand has a longer tradition of national NGOs and CSOs, as well as the mass media that participate actively in a wide range of development issues.

Viet Nam, like Lao PDR, has relied primarily on the participation of mass organizations in debates about policies and plans for national development. In 2000, however, the Government signed a decree permitting the establishment of national NGOs. In addition, in the areas of water resources planning and management, the Government is promoting greater stakeholder involvement. The recent National Rural Water Supply and Sanitation Strategy, for example, promotes a demand-based approach with community participation in all project phases. The management of water resources through the creation of river basin organizations is also premised on the direct involvement of user groups and local authorities.

## 2.5.2 Fisheries Co-management

Over the last decade, MRC member governments and line agencies responsible for the management of natural resources have increasingly involved end users in resource management. Users represent a significant resource for enforcement and regulation and defining operational rules. Their understanding and acceptance of rules ensures a high degree of compliance. There are long-standing traditions of fisheries management being undertaken by communities in many areas of the Lower Mekong Basin. Rules on fishing, often associated with spiritual beliefs, are established to sustain local resource levels and to ensure the equitable distribution of benefits. The rules established for traditional, community based fisheries management, whether documented or not, are often *de facto* recognised by provincial and national authorities and their enforcement is supported.

The growing political interest in promoting user participation in resource management has recently led to legislation favoring co-management arrangements whereby local fisheries are jointly managed by public authorities at various administrative levels, local fishers and other stakeholders.

New legislative initiatives in Cambodia promote the establishment of community fisheries groups that will take part in the management, conservation, development and sustainable use of fisheries resources. The 1997 revision of the Constitution of the Kingdom of Thailand includes the provision that the "traditional community shall have the right to conserve and restore their custom, local intellect, art and good culture of their community and the nation and participate in the management, maintenance, preservation and exploitation of natural resources and the environment in a balanced fashion and persistently as approved by law."

In Lao PDR there is constitutional support for local management and customary law. A new decentralisation policy launched in 2000 represents a conscious effort to empower provincial and district authorities to actively manage local financial and natural resources to optimise the local development process. The province is the strategic unit, the district is the planning and budgeting unit and the village is the implementing unit. This decentralisation process gives formal recognition and status to a process that has been underway for a number of years.

Similar to Lao PDR, Viet Nam's current policies give communities an active role in fisheries management, an equitable share in resource property rights and shared responsibilities for conservation and management. However, these policies are vague, as they do not state how this sharing of management is to take place.

### **3. Data and Information Requirements**

#### **3.1 Forms and Sources of Data and Information**

A key challenge of MRC is to improve data collection and information exchange among the riparian countries and MRC, as well as with other users or donors. Data items include quantity and quality of both surface and groundwater, other natural resource information, and the range of hydrologic, economic and social models to analyse and utilise the data.

MRC also recognises that local community knowledge forms a critical source of natural resource information in the basin. MRC operations must access local anecdotal information as an adjunct to conventional data monitoring networks.

The data and information provided by the riparian governments and collected through MRC and other programmes, need to be available in a comprehensive MRC database. Given the large and diverse nature of the information, and the lack of uniform data formats in the four riparian countries, this is a daunting task. Recognising the importance as well as the challenge of this task, the Technical Support Unit of the MRC Secretariat has been upgraded to a Division, and staffing has been increased. The success of this Division in establishing a sound, comprehensive and easily accessible database on the Mekong Basin water and related resources will be critical.

To be able to establish and monitor agreements on the use of the Basin's water, MRC must have in place comprehensive modeling tools that can simulate the effect of different environmental events and development interventions in the Basin. Modeling is also required to determine the most beneficial development options. A major task of MRC during 2001-2005 strategic plan will therefore be to develop and refine suitable modeling packages for the Basin, modifying tools used elsewhere where possible. This task will be another major responsibility of the Technical Support Division of the MRC Secretariat, with external support and in partnership with other institutions, including a transfer of technology also to the NMCs.

#### **3.2 Provider of Quality Information**

In order to be able to perform its functions effectively, MRC needs to be well known and well respected, in the riparian countries as well as internationally. This requires that MRC delivers quality work products and services that truly and visibly benefit the riparian countries. This implies that MRC - the Secretariat and the NMCs - must produce and widely distribute high quality information material and have a strong public communications strategy.

#### **3.3 Working Principles**

Three of MRC's six working principles (the others being neutrality; quality; and dialogue) are related to information and information exchange:

*Openness:* to be open and honest in sharing knowledge and information with all stakeholders and to seek broad stakeholder participation in the planning and implementation of programmes.

*Learning:* to be a learning organisation, enabling staff continually to develop their professional, technical and administrative skills to high levels.

*Teamwork:* to have a multi-disciplinary team approach in all work, and to continually explore ways to enhance and improve cross discipline integration.

### **3.4. Information and Goals and Strategic Objectives**

MRC has four goals and a total of 22 strategic objectives, of which 11 are information-related. Interestingly, only three of these information-related strategic objectives refer to data collection as such, while 9 refer to institutional and organizational arrangements for data and information collection and sharing. Information-related strategic objectives are:

GOAL 1: To establish and implement “rules” for water utilisation and inter-basin diversions.

- Strategic Objective 1.1: Information needed for establishing and implementing water use “rules” identified, and effective and efficient information exchange and sharing among riparian countries and MRC established.
- Strategic Objective 1.2: The data, information, and knowledge base needed to establish and implement water use “rules” developed, maintained and shared among riparian countries (complementing the MRC environmental information and knowledge base – Goal 3, strategic objective 3.3).
- Strategic Objective 1.3: A modelling package of the water and related resources of the basin developed and maintained.

GOAL 2: 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

- Strategic Objective 2.2: A data, information, and knowledge base on water-related development trends, opportunities and challenges in the Mekong River Basin established, maintained, and shared among riparian countries.
- Strategic Objective 2.3: A prioritised list of natural-resources-related basin development projects formulated, appraised and agreed upon by the riparian countries.

GOAL 3: To establish and promote MRC environmental and socio-economic management systems, recommendations, and policy guidelines.

- Strategic Objective 3.1: Capacity of MRCS, NMC Secretariats / related line agencies in environmental monitoring and assessment improved.
- Strategic Objective 3.2: A comprehensive data and knowledge base on environmental and socio-economic issues developed and maintained (also supporting Goals 1 and 2, water use “rules” and the Basin Development Plan).
- Strategic Objective 3.3: Systems for environmental information exchange, sharing, and communication between the riparian countries and MRCS improved.

GOAL 4: To establish an effective organisation, capable to promote, in partnership with other institutions, basin-wide development and coordination.

- Strategic Objective 4.2: MRCS/NMCS project management, planning and execution systems strengthened, including a comprehensive system for participatory monitoring and evaluation of MRC programme efficiency and impact (applies to MRC programme efficiency and impact only; environmental monitoring is covered separately under Goal 3).
- Strategic Objective 4.3: The financial, administrative, personnel, logistics and information and communication technology systems of MRCS, NMC

Secretariats and operational programmes running efficiently, effectively, and with sufficient transparency.

- Strategic Objective 4.5: MRC providing ample quality information to the public on the basin's water and related resources, including a periodic "State of the Basin" report.

#### Information and Programmes

##### BDP

- Compilation of a long list of projects and programmes
- Preparation of a short list of priority projects and programmes according to criteria which will be developed and agreed upon
- Broad public participation
- Knowledge-sharing and capacity-building

##### WUP

- Procedures for data and information exchange by the end of 2001 (now completed)
- Procedures for monitoring existing water uses by the end of 2003

##### EP

- generate data, information and knowledge for decision-making
- to establishing systems for monitoring the Basin's environmental health
- to increase the public's environmental awareness

##### FMM

- flood forecasting, warning and dissemination services (Flood Preparedness Measures recognise that - no matter how effective the above types of management measures are – an overwhelming flood will always occur. They aim at '*getting people ready for floods before they come*'. In a number of cases, Flood Preparedness and Emergency Measures may be the only type of management that is feasible or economically justified. Flood preparedness measures embody flood forecasting, flood warning, and raising the general flood awareness of the potentially affected population groups).

##### CBP

- Improved communications

##### NP

- Establish a Regional Data Management Centre and River Information System (a RIS is to provide the knowledge base to support planning and policy formulation, and to provide daily services on a regional level for safe and efficient passage by inland and sea-going vessels on the Mekong River System);
- Develop a knowledge base on river training works issues, including river morphology and riverbank stability, and propose protection measures.
- Assess and monitor, together with other relevant and directly related partners, environmental impacts from increased navigation;
- Collect, examine and distribute environmental data relevant for navigation and the potential impact from increased IWT (including river training works);

## **3.4 Fisheries Data and Information**

### **3.4.1 The Situation**

Inland fish production is included in national statistics of the four MRC member countries. In 1991, official statistics registered an annual fish production of 356,000 MT, including 8-10 % coming from aquaculture. With a population then estimated at 50 million, this translated into an average per capita fish consumption of 7.2 kg per year. The most recent estimate of total fish production is close to two million MT with an average per capita consumption around 30 kg per year. The main reason for the difference between these figures is that new data collection methods have been used to include small-scale fisheries. A distinction between farmers and fishers is very difficult in the Mekong Basin. There are very few full-time fishers and very few farmers who do not fish in rice fields or in nearby wetlands and streams. A huge variety of traditional large and small-scale gear exists, which is well adapted to the different species, habitats and seasons. In Cambodia alone, the MRC Fisheries Programme has catalogued more than 170 different types of fishing gear.

Small-scale production figures, the biggest part of the total catch, are not reflected in the national statistics because this production is not registered by traditional data collection methods. It is obvious that the traditional marine fisheries method of quantifying fish production through collection and analysis of catch and effort data is not applicable to a seasonal small-scale fishery in floodplains and rice fields with hundreds of different gear types. It is also clear that exclusive registration of more visible large-scale fisheries will only target a fraction of the real production. This is a dilemma for countries with large inland fisheries. Under traditional data collection methods only large-scale fisheries in major reservoirs and rivers and outputs from large aquaculture programmes have been registered as these are the fisheries which contribute to government revenues through taxes and license fees. More accurate data are crucial for the purposes of shifting the focus to food security for the rural poor and getting the sector included in the national and regional economic planning.

The MRC member countries, in cooperation with the MRC Fisheries Programme, have produced estimates using a number of data collection methods. While large-scale fisheries may be registered directly, consumption surveys have proven more efficient in recording the total production in small and family-scale fisheries. This method includes recording of traditional salted, dried and fermented products. These surveys are accompanied by biological surveys, which reveal information on individual fish species, their habitats and migration routes—vital information for the development of fisheries management systems.

Though the new estimates have been generally accepted by national fisheries agencies, the much larger figures have yet to enter the official statistics. The old low figures continue to be disseminated for official purposes because the new estimates are not compatible with the existing methods of collecting information. Fisheries production data are usually collected monthly or quarterly and always province-wide. They are sent to the national statistical bureaus where they are processed and disseminated together with statistics from other sectors. There are no channels for submission of overall national annual production figures and no way of breaking down the new overall figures in a way that can substitute or even complement the existing data on a monthly and province-wide basis. There is little possibility of introducing consumption surveys as the routine official methods of collecting production data through provincial and district fisheries and agriculture officers.



National and regional institutions recognise the dilemma. A request to the MRC Fisheries Programme for assistance in establishing a better statistical system has been ongoing since the start of the Programme.

The main problem is that a new method has to cope with representative data sampling in a floodplain area and in small-scale and family-scale fisheries. The consumption surveys used for creation of the new data require considerable effort and expense. The approach may serve well as a survey carried out every five or ten years but it is not suitable for routine data collection.

A second issue is to define in greater detail the objectives, target groups and scope of an inland fisheries statistics system. A minimum 'need-to-know' approach may help ensure that the most important information is collected with a sufficient degree of accuracy and at the lowest possible cost. This alone would be a huge step forward in available fisheries information at a macro-level. Once established, such a system could be expanded to include more detail on species, value, product, operator and other parameters. A third issue concerns enabling national statistical agencies to operate such a system in a sustainable manner on a basin-wide scale in cooperation with other national fisheries and non-fisheries systems and with the international organisations involved. The underlying assumption is that a suitable data sampling system, tailor-made for the administrative area under consideration, can be developed over a reasonably short period and can be expanded to cover the entire Lower Mekong Basin.

There is no system in the Lower Mekong Basin for effective collection of statistical data on inland capture fisheries. Existing official statistics on inland fisheries grossly under-report catches. No authority collects data on small-scale family fishing because these fisheries have always been considered of minor importance to the national economy. Most large-scale capture fisheries data are inaccurate. Nowhere in the world are fishers who pay license fees based on catch likely to report correctly. Mekong fishers are no exception.

During the last decade, however, household fish consumption surveys have been conducted in 15 of the 87 provinces in the Lower Basin. These surveys show that annual fish consumption ranges from 20 kg per person in mountainous areas with limited access to fish resources to 70 kg per person in floodplain areas of Cambodia and Viet Nam where fish is abundant most of the year (Map 4). In Northeast Thailand, home to about one third of the population in the Basin, annual fish consumption is about 36 kg per person. Most fish is supplied from local inland areas. Surplus fish is transported for sale in local and more distant markets.

The national statistical authorities in Lao PDR and Cambodia have recently undertaken national household consumption and expenditure surveys. These surveys are largely consistent with the household consumption figures mentioned above.

Extrapolation of household survey findings provides a conservative estimate for total fish consumption in the LMB of 2 million MT annually. Without reliable fish import and export data, it is assumed that fish import and export volumes are similar and that fish consumption is equal to the amount of fish caught and produced in culture. Since aquaculture and reservoir fisheries catches produce 260,000 and 240,000 MT of fish per year respectively (1999/2000 figures), the production from the freshwater natural water body fishery is approximately 1.5 million MT per year.

This catch figure is nearly 100 percent higher than the 1992 MRC review (Fisheries in the Lower Mekong Basin) estimate and is 50 percent higher than the MRC 1997 estimate. One and a half million MT per year corresponds to an average catch of 150

kg per hectare per year from the total 10 million ha of wetlands in the Basin, a number that can be considered fairly realistic.

### 3.4.3 Fisheries Programme (FIP)

Continuation of the long-running MRC fisheries programme is presented in the newly formulated “Fisheries Management and Development Cooperation Programme – (2001-2005)”.

The **Development Objective** of the Fisheries Programme is: *Coordinated and sustainable development, utilisation, management and conservation of the fisheries of the Mekong Basin.*

The **Immediate Objective** of the Fisheries Programme is: *Relevant fisheries information generated, communicated and used by resource users, riparian governments and MRC in management planning and implementation.*

The FP generates information relevant for fisheries development, utilisation, management and conservation in the Mekong River Basin. Relevant information is that necessary for understanding the biology, ecology, economics and social aspects of fisheries, and for the planning and management of fisheries activities.

Accurate and reliable information is the basis of any effective action, and is therefore the cornerstone of the FP. Information by itself is not sufficient to ensure development. It has to be communicated to individuals and institutions that are able to use it for making informed decisions about the future.

The FP is, therefore, concerned with generation, communication and use of information, as expressed in the following **Outputs**:

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

#### **Programme focus**

The FP targets poverty alleviation and food security in the LMB countries, with an obvious disciplinary emphasis on sustainability of fisheries resources. Strategic focus of the programme is achieved through identification of thematic areas of work needed to realise the development and immediate objectives. The thematic areas are fisheries ecology and impact assessment, enhancing livelihoods, fisheries management, and communication.

Current plans for FP Phase 2 (2006-09) have the focal areas as fisheries ecology and valuation, fisheries management, and information requirements for MRC core programmes. While these aspects are also elements of the present programme, they will be more formally identified as the focus of our work in FP Phase 2. In order to move as smoothly as possible to Phase 2, but also in recognition of evolving priorities in the fisheries environment, we plan to gradually change the focus of our work over the period 2004-05. This will entail the progressive termination of activities which will not be part of FP Phase 2; their termination will be in accordance with the previous Programme Implementation Plan 2003-05. But, those activities that will continue in FP Phase 2 will be maintained, and further developed where appropriate.

Gender equity is a cross-cutting issue for the programme in order to ensure that there is a reasonable participation of both men and women in programme implementation and that there is a fair distribution of benefits from development activities. Human rights and good governance are particularly addressed in the component Management of River and Reservoir Fisheries (MRRF), and the publication of results from all components

contributes to these as well. More commentary on meeting developmental objectives can be found in the "MRC Fisheries Programme Annual Report, April 2003 – March 2004".

### ***Communication and linkages***

Essential data and communication linkages are being maintained with the MRC core programmes (the Basin Development Plan, the Water Utilisation Programme and the Environment Programme). This aspect of the programme will be developed further in FP Phase 2, probably through the development of a separate component specifically targeting information needs of the core programmes.

The work plan for the TAB for Fisheries Management will be developed and implemented starting in 2004, in close cooperation with the FP. Funding will come from both Danida and Sida. The aim is that the TAB will become much more intimately involved in introducing effective fisheries management in the region.

The primary focus points of interaction in programme planning and implementation are the line agencies responsible for fisheries in each member country, as well as the NMCS. Linkages are also maintained with other regional fisheries institutes, such as the Network of Aquaculture Centers in Asia-Pacific (naca), the South-east Asian Fisheries Development Centre (SEAFDEC), the World Fish Centre, and FAO.

The FP maintains a strong emphasis on capacity building within line agencies and MRC, particularly in management and implementation of natural resource programmes.

### ***3.4.3.1 FP Components***

#### **Institutional Support (IS)**

Management, planning and coordination of the Fisheries Programme is placed within the MRCS. Programme management takes responsibility for the provision of external support, cross-cutting issues and other tasks which cross several components. It forms the umbrella of the Programme under which related activities may be taken up and interaction with other organisations is coordinated. It is also responsible for ensuring that the information produced within the Programme is disseminated to stakeholders in an appropriate form, and ultimately for publishing the information arising from the Programme. Most importantly, the management facilitates the interaction of the Fisheries Programme with the core programmes of the MRC.

These functions are essential, as the geographically dispersed nature of the programme, operating across 4 countries and based in national fisheries agency offices in each, requires considerable coordination.

The **objective** of the component is that the management and development of the inland aquatic resources in the Mekong Basin is being implemented in a basinwide cooperation. The focus is on the sustainability of development activities and the communication of knowledge on the fisheries resources of the Mekong River system.

#### ***Key Activities***

- Coordination of the Programme's operations, financing and reporting to donors.
- Management of the central office and interaction with the core programmes of MRC.
- Management of field staff and operations.
- Coordination of communication with National Mekong Committees and line agencies.

- Establishment of new components, including needs identification, liaison with donors, and implementation in conjunction with line agencies.
- Organising the Annual Meeting, Technical Symposium, Steering Committee Meeting and Programme Coordination Meetings.
- Coordinating and organising the publication of results of the Programme, in a variety of media and formats.
- Regular production and distribution of the “Catch and Culture” newsletter.
- Provide financial and logistical support to the Women in Fisheries Network.
- Provide logistical support and expert advice to the Technical Advisory Body for Fisheries Management.

## Assessment of Mekong Capture Fisheries (AMCF)

The Lower Mekong Basin’s wild capture fishery is one of the largest and most diverse in the world, with an estimated annual catch of over 1.5 million tonnes, comprising over 150 main species. About 80% of the Basin’s 60 million people are involved in some form of fishing, with a wide range of gears and methods, and fish and other aquatic animals are crucial for livelihoods, food security and nutrition among LMB people.

The high productivity of the wild fishery is a result of several factors:

- The LMB has naturally high fish diversity, giving numerous species capable of exploiting the many different habitats and niches.
- Annual flooding inundates vast areas of floodplain, providing highly productive conditions for the development and growth of fish and their food organisms.
- Fish can migrate freely on most of the system’s larger rivers, to access their spawning and rearing grounds.

Management of the wild fishery depends upon managing the fishers, the fish themselves, and the environment. The main immediate threats to the wild fishery are threats to the environment posed by water management projects, such as dams (e.g. for hydroelectricity and/or irrigation) and flood control schemes, both of which modify hydrology and water quality and habitat, and block access of migrating fish or their drifting larvae. Modification of the river channel for navigation also damages habitat, including spawning grounds, and leads to increased traffic, which has further effects.

The immediate **objective** of the Component is that improved information on fisheries ecology and socioeconomics is provided and (a) taken into account in fisheries management practices, and (b) incorporated into planning of water management projects in order to sustain and optimise fisheries productivity and socio-economic benefits from potentially affected water bodies.

### **Key activities**

The Component compiles and disseminates information for planning purposes, either from existing or new studies. Field and desk studies are carried out by graduates in fisheries departments and other agencies that are involved in water management activities that impact the fishery. Counterparts undergo specialised training for studies, analysis and reporting. The main types of studies include:

- Migration and spawning of fish, in particular migration patterns and timing, spawning habitats, and the drift and development of larvae and juveniles.
- Yield of the fishery, either from site-specific studies based on catches over defined areas, or basin-wide from fish consumption studies.
- Value of the fishery, based on studies of fish processing, transport, marketing and sale.

- Threats to the fishery especially from water management projects, and assessment and mitigation of impacts, either at planning or project level.
- Results from the studies are reported and fed into the core MRC programmes (the BDP and WUP), and are translated and disseminated within each LMB country.

## Aquaculture of Indigenous Mekong Fish Species (AIMS)

The AIMS component is designed to address the threat to the aquatic environment and the ecological balance that is posed by unwise aquaculture practices, including introduction of exotic species and ill-advised management of indigenous species for aquaculture and fisheries enhancement. Currently, aquaculture in the Mekong basin is dominated by exotic species. Several of these exotics have the potential to spread and cause damage to the aquatic resource base. However, the threat is not only from exotic species, since accidental or intentional release of genetically inappropriate or domesticated strains of indigenous species may also be harmful to the environment. The component tackles these issues by 1) assisting with the research into alternative, indigenous species, with appropriate genetic make-up, for economically viable aquaculture; and 2) by increasing the capacity of line agencies to identify, implement and manage more environmentally friendly aquaculture systems and stocking programmes.

The Immediate **Objective** of the component is “Economically feasible aquaculture systems developed using indigenous Mekong fish species, which may complement or replace the use of exotic species for culture purposes in the Mekong basin.” This may be interpreted as follows (from the Inception Report): “Government researchers and extension officers are enabled to disseminate and support implementation of economically feasible aquaculture systems developed using indigenous Mekong fish species, which may complement or replace the use of exotic species for culture purposes in the Mekong Basin.”

### Key activities

- Networking between riparian fisheries line agencies and aquaculture stations.
- Development of economically feasible, extendable culture techniques, including broodstock management, breeding techniques, hatchery operations, nursery techniques and grow out.
- Dissemination of information on culture techniques.
- Strengthening of research capacity of government researchers through practice, workshops, short courses and formal training.

## Management of River and Reservoir Fisheries in the Mekong Basin (MRRF)

The Component originated as a management project for reservoir fisheries in the four riparian countries (1997-2002). It concentrated in its first phase (1997-2002) on fostering the capacity of government staff to better manage these fisheries, by providing relevant information and training staff in inland fisheries management. While all riparian governments have developed policies for decentralization of aquatic resources management, they actually have little experiences in implementing the policies. Consequently, the Component set out in its 2<sup>nd</sup> phase (2000-2004) to create examples or models of co-management of reservoir fisheries and disseminate its results. However, both “co-managers”, i.e. government staff and aquatic resource users, do not limit their activities to reservoir fisheries, but are often active in other types of waterbodies, such as rivers. It is also in these other types of waterbodies that more important management problems exist and conflicts occur, and it is here that co-management is increasingly

considered a promising approach to aquatic resources management. Against this background, the Component area will comprise river reaches as well as reservoir areas, as was already the case in the fisheries management activities under the Cambodian Capture Fisheries Component

The immediate **objective** of the Component is that fishing communities and concerned authorities jointly develop, implement and disseminate sustainable river and reservoir co-management models.

The co-management models will be applied to selected riverine and reservoir fisheries at different levels (local, supra-local, trans-boundary) and include the dissemination of experiences and results as models for basin-wide aquatic resource (co-) management.

**Key activities**

- Policy and strategy reviews; conduct of supplementary studies; and drafting of management policy and strategy recommendations on national and regional levels;
- Developing a co-management approach; determining minimum data requirements for co-management; facilitating liaison with other agencies and organizations; conducting specific studies on technical and institutional aspects of reservoir and riverine management.
- Facilitation of local-level joint meetings of aquatic resource users and members of line agencies concerned where management plans are formulated.
- Facilitation of the implementation of jointly agreed upon local-level management plans. Technical, organizational and financial support to the implementation of such activities.
- Joint elaboration of guidelines for aquatic resources co-management. Continuous discussion of experiences with these guidelines and adaptation of these. Design of a framework and approach for co-management and implementation (“adaptive management”).
- Documenting experiences in co-management in the form of case studies and similar and disseminate this experience to the specialized and general public in appropriate forms.
- Identification of training needs and elaboration of capacity-building plans for co-managers (resource users and government staff on all levels). Develop and conduct training events for local-level co-mangers on topics contained in jointly formulated management plans.

**3.4.3.2 FIP information Provision and Requirements**

The following table is a brief description of the major achievements of the FIP since 1995, and an outline of major needs within the fisheries sector in the LMB. The needs are those identified from the perspective of the FIP (not line agencies nor independent reviewers).

**Table 2: FIP information provision and requirements**

Achievements	Needs
<b>Valuing the Fishery</b>	
<ul style="list-style-type: none"> <li>• information on yield of the fishery and its value greatly improved;</li> </ul>	<ul style="list-style-type: none"> <li>• nutritional importance of fishery needs to be determined and documented;</li> </ul>
<ul style="list-style-type: none"> <li>• good information from selected areas on</li> </ul>	<ul style="list-style-type: none"> <li>• statistical basis for fishery yield and value</li> </ul>

Achievements	Needs
<ul style="list-style-type: none"> <li>involvement of people in the fishery; importance of the fishery from a livelihood perspective;</li> <li>the importance of small-scale aquaculture for rural livelihoods in areas remote from the river demonstrated;</li> </ul>	<ul style="list-style-type: none"> <li>estimates needs to be greatly improved;</li> <li>sustainable methods for collection of fishery data need to be established;</li> </ul>
<b>Understanding the Fishery</b>	
<ul style="list-style-type: none"> <li>the importance of fish migrations in the LMB now appreciated;</li> <li>some knowledge of flood-fishery relationships;</li> <li>some estimates of yields from wetlands;</li> <li>the successful use of farmers as extension agents in aquaculture demonstrated;</li> </ul>	<ul style="list-style-type: none"> <li>relative importance of different types of wetland habitats required;</li> <li>understanding of the ecological basis for fish production in the LMB needs to be quantified where possible;</li> <li>procedures for quantitative estimates of impacts of developments need to be developed;</li> </ul>
<b>Management and Regional Cooperation</b>	
<ul style="list-style-type: none"> <li>public participation in research and development standard procedures within FIP;</li> <li>community management of fisheries in reservoirs in all 4 countries, and in the river fishery in Cambodia, has been facilitated by FIP;</li> <li>regional cooperation in fisheries management established through formal meetings (TAB, Annual Meeting and Technical Symposium) and informal contacts;</li> <li>regional appreciation of the use of indigenous species for aquaculture enhanced;</li> </ul>	<ul style="list-style-type: none"> <li>community management of fisheries is seen as increasingly important in all countries ;</li> <li>development of husbandry techniques for indigenous species;</li> </ul>
<b>Communication</b>	
<ul style="list-style-type: none"> <li>"Catch and Culture" a regular (4 editions per year) publication on fisheries in the region since August 1995 (MRC's only regular newsletter);</li> <li>some technical reports, many in the process of being published (full data available for many only in the last year or two);</li> <li>several reports in riparian languages;</li> <li>film on fisheries of Cambodia;</li> </ul>	<ul style="list-style-type: none"> <li>process for message delivery to decision makers needs to be researched and actioned upon;</li> <li>technical information interpreted and published in an attractive and easily read format is required;</li> <li>Use of different media (e.g., films) needs to be pursued;</li> <li>More publications at technical level required to ensure longevity of results;</li> </ul>

### 3.4.3 Core Programme Requirements for Fisheries Information

The following information is based on discussion between FIP and staff within BDP, WUP and EP. Discussions with BDP and WUP personnel were based on considerations of what fisheries information the two core programs needed to fulfill their mandates. With the EP, discussion was on EP subprograms as currently defined, and a qualitative assessment of topics or activities that involve fisheries. It is stressed that only the major areas of mutual interest are listed below, but it should be noted that all sub-programmes within the EP are complementary with fisheries issues.

The various points in each section of the table below are not in priority order. To aid interpretation, the points in columns 2 and 3 have been aligned with similar points in column 1. Descriptive text in column 1 which applies to most of the headings in the same rows in columns 2 and 3 has not been repeated in columns 2 and 3.

**Table 3: Core Programme Information Requirements**

<b>What does the BDP want from Fisheries?</b>	<b>What does the WUP want from Fisheries?</b>	<b>Areas of potential interaction with EP</b>
<p><b>1. Valuation of the economic importance of aquatic resources</b></p> <ul style="list-style-type: none"> <li>• includes description of the economic importance from harvesting through to retail;</li> <li>• particularly what the resource means for the social economy of rural peoples directly depending, either partially or completely (part-time/full time), on the resource;</li> <li>• identify exactly who are the beneficiaries from utilisation of the resource</li> </ul>	<p><b>1. Valuation of the economic importance of aquatic resources</b></p> <ul style="list-style-type: none"> <li>• two important elements: firstly, the link that fisheries forms between the hydrological-physical conditions and socio-economics of people in the region;</li> <li>• and secondly, the valuation or comparative importance of different habitats for fisheries production</li> </ul>	<p><b>1. Valuation of the economic importance of aquatic resources (<i>Humans and Ecosystems Sub-P</i>)</b></p>
<p><b>2. Description of the nutritional importance of aquatic resources to consumers in the LMB</b></p> <ul style="list-style-type: none"> <li>• the nutritional role of aquatic products in a region where fish is a major dietary component;</li> <li>• should include issues about accessibility, risk and seasonality. If these are not addressed, it is easy to dismiss some important parts of fisheries (primarily part time subsistence fisheries) with arguments for agricultural intensification or other land uses;</li> <li>• points 1 and 2 effectively amount to a livelihoods assessment of the importance of aquatic resources in the LMB;</li> </ul>		<p><b>2. Human use of ecosystems – Livelihood importance of aquatic resources (<i>Humans and Ecosystems Sub-P</i>);</b></p>
<p><b>3. Information on the vulnerability of the fishery to changes in flow / floods</b></p> <ul style="list-style-type: none"> <li>• quantify (where possible) the role of the flood in fisheries production in the LMB</li> <li>• role of migrations in fisheries production in the LMB, and what can impact on migrations</li> <li>• migrations relate to mainstream, tributaries and flood plain habitats</li> <li>• covers also lateral movements in and out of various habitats</li> <li>• assessment should be capable of being applied locally and basin-wide</li> </ul>	<p><b>2. Relationship between floods and fisheries production</b></p> <ul style="list-style-type: none"> <li>• must be based on long-term data</li> </ul> <p><b>3. In-stream flow requirements for fishes</b></p>	<p><b>3. In-stream flow requirements – for fishes (<i>Ecosystem Understanding Sub-P</i>)</b></p>



What does the BDP want from Fisheries?	What does the WUP want from Fisheries?	Areas of potential interaction with EP
<ul style="list-style-type: none"> <li>should cover financial and ecological impacts</li> </ul>		
<p><b>4. Information on the vulnerability of the fishery to developments and changes other than flow</b></p> <ul style="list-style-type: none"> <li>most important element is information on habitats critical for fisheries production (on the assumption that habitat loss is the most immediate threat)</li> <li>consider the trade-off between sector.; e.g., flooded forests for agricultural land</li> <li>other threats include pesticides, industry, siltation.</li> </ul>		<p><b>4. Targeted studies on understanding of ecological systems driving fisheries production (<i>Ecosystem Understanding Sub-P</i>)</b></p>
<p><b>5. Trends (long-term data) in the fishery</b></p> <ul style="list-style-type: none"> <li>the need for long term data from the fishery to recognize trends and threats is needed for basin-wide planning</li> </ul>	<p><b>4. Indicators on the health of the fishery</b></p>	<p><b>5. Health of the river from a fishery perspective - long-term fishery data (<i>Monitoring and Assessment Sub-P</i>).</b></p>
<p><b>6. Impact of population growth on fish availability and consumption patterns</b></p> <ul style="list-style-type: none"> <li>Will the fishery continue to supply the growing population?</li> <li>If not, can aquaculture fill the gap between supply and demand?</li> <li>Will demand remain the same, or will people look to other products?</li> </ul>		
<p><b>7. Detailed studies for predictive purposes</b></p> <ul style="list-style-type: none"> <li>generate detailed information on socio-economics of fisheries in selected areas for predictive use elsewhere in the basin</li> <li>If areas already surveyed by fisheries programme do not match the BDP-selected areas, is there a need for further work in the BDP areas?</li> </ul>		<p><b>6. Targeted studies on understanding of ecological systems driving fisheries production (<i>Ecosystem Understanding Sub-P</i>)</b></p>
<p><b>8. Development of fisheries models for incorporation into other basin-wide modelling exercises</b></p> <ul style="list-style-type: none"> <li>note virtually all points above are essential for developing realistic fisheries - ecological models</li> </ul>	<p><b>5. Development of fisheries production models</b></p> <ul style="list-style-type: none"> <li>if possible, incorporate into other basin-wide planning exercises</li> <li>can be a stand alone product</li> <li>must validate major elements of the model(s)</li> </ul>	<p><b>7. Incorporate transboundary and basin-wide perspectives on the ecological factors driving fisheries production – fisheries modelling (<i>Decision Support Systems Sub-P</i>)</b></p>
	<p><b>6. UP requires on-going liaison with Fisheries, for provision of expert advice</b></p>	<p><b>7. Participatory management systems (<i>Humans and Ecosystems Sub-P</i>)</b></p>

What does the BDP want from Fisheries?	What does the WUP want from Fisheries?	Areas of potential interaction with EP
		<ul style="list-style-type: none"> <li>• participatory management systems is documented as an area of future EP work</li> <li>• FIP, through its Reservoir and Cambodian Fisheries Components, has extensive involvement in facilitating participatory / community management of fisheries. The FIP work is the only example to date of MRC involvement in participatory natural resource management. The importance of this work within MRC and a future fisheries program should be considered, even though it is not a direct <i>information need</i> of the BDP or WUP.</li> </ul>

## **4. Data and Information Sharing/Provision Systems**

### **4.2 Existing Information Sharing/Provision Systems**

#### **4.2.1 General**

As explained above, provision of data and information is one of the main roles of MRC. Consequently, most programmes, both core as well as sector, have made the establishment and maintenance of databases a major function.

In addition, MRC is maintaining a number of mechanisms to enable sharing of information, such as partnerships and links, panels, and implementation of its Public Participation Strategy, which has, as its main pillar, the provision of access to information for the public.

#### **4.2.2 WUP Rules**

##### **4.2.2.1 *Procedures for Data and Information Exchange and Sharing***

In 2001, the WUP developed and put into force "Procedures for data and Information Exchange and Sharing". The main characteristics of these Procedures are:

###### *Objectives*

- To operationalize the data and information exchange among the four MRC member countries;
- To make available, upon request, basic data and information for public access as determined by the NMCs concerned; and
- To promote understanding and cooperation among the MRC member countries in a constructive and mutually beneficial manner to ensure the sustainable development of the Mekong River Basin.

###### *Principles*

- Exchange, on a regular basis, data and information that are necessary to implement the Mekong Agreement;
- Efficient, equitable, reciprocal and cost effective data and information exchange and sharing, including the prioritization of information needs;
- Data and information contained in the MRC-Information System that is maintained by MRCS ("the MRC-IS"), to be relevant, timely and accurate, and exist in established usable formats for MRC and its member countries through an appropriate network and communication system;
- Any additional and unavailable data and information that is required from time to time to facilitate MRC activities, programs and projects will be agreed by the MRC Joint Committee, including procedures and cost sharing arrangements for collecting the minimum necessary data at the lowest feasible cost in a timely and equitable manner.

###### *Data and Information Exchange and Sharing*

Endeavoring to provide, on a case-by-case basis, historical data required for the implementation of the Mekong Agreement, each NMC and MRCS shall cooperate

with one another in supporting and promoting the implementation of the present Procedures; providing data and information to the MRCS, as appropriate and where applicable; subject to the following requirements:

- Major Groups/types of data and information required for implementation of the MRC program/activities and Mekong Agreement, are, inter alia: water resources; topography; natural resources; agriculture; navigation and transport; flood management and mitigation; infrastructure; urbanization/industrialization; environment/ecology; administrative boundaries; socio-economy; and tourism;
- Standards to be determined by MRCS and approved by the Joint Committee, including but not limit to the format, standardization, classification, and acceptable level of data quality;
- Delivery schedules; and
- Modalities for exchange and sharing.

Cost for collecting additional data and information other than those required for the implementation of the MRC projects, programs, and not available shall be borne by any requesting party. Channel of communication shall be made through MRCS.

#### *Custodianship of MRC-IS*

The MRC Secretariat shall be responsible, as custodian, for the following:

- Obtaining and updating of required data and information;
- Managing of this on behalf of the Mekong River Commission (MRC);
- Ensuring proper access to, and maintenance and quality of the data and information that meet the required standards;
- Providing a recognized contact point for the distribution, transfer and sharing of the data and information;
- Estimating and collecting cost incurred according to Section 4; and
- Preparing the MRC guidelines on custodianship and management to be adopted by the MRC Joint Committee.

The obligations and responsibilities of users, on the use of the data and information shall be elaborated in the MRC guidelines on custodianship and management of the MRC-IS.

#### ***4.2.2.2 Guidelines on Custodianship and Management of the Mekong River Commission Information System***

In 2002, the WUP developed and put into force the “Mekong River Commission Guidelines on Custodianship and Management of the Mekong River Commission Information System”. The main characteristics of these Guidelines are:

##### *Management of the MRC Information System*

The MRC-Information System (MRC-IS) is a structured communication and management system for data and information, aiming to support the activities (planning, development, decision making, and monitoring) of the Mekong Agreement. It includes:

- MRC-Integrated Database;
- Models, and other data processing tools;

- Institutional and technical mechanisms for data and information sharing and exchange;
- People involved in developing, maintaining, and using the MRC-IS.

The MRCS is the manager (and developer) of the MRC-IS, through the Information System Design and Implementation Team (ISDIT), comprising representatives of MRCS divisions/programmes and NMCs.

#### *Data and Information Custodianship*

MRCS shall be “Custodian of the MRC-IS” with duties as specified in the Procedures for Data and Information Exchange and Sharing. NMCs/LAs, as the ones that initially collect, process, and store the data and information to be exchanged and shared shall be “Primary Custodians”.

MRCS, as the Custodian of the MRC-IS, holds data and information in the MRC-IS on behalf of the MRC member countries. In consultation with the NMCs, and through the ISDIT, it is responsible for determining appropriate standards for approval by the Joint Committee.

Each custodian

- shall develop and implement data management plans in order to ensure the continuity of collection, processing and maintenance of necessary data and information;
- is the authoritative source for the fundamental dataset(s) in its care;
- is accountable for the integrity of the data in its care and for maintaining agreed access even if the custodian contracts another party to collect some or all of the required data;
- shall establish and exchange metadata of the dataset(s) in their respective care in accordance with the approved standards.

#### *Scope of Data and Information*

MRCS shall develop, issue and regularly update the detailed specification required for each of 12 major groups/types of data and information provided for in the Exchange and Sharing Procedures, as well as on the collection or processing of additional and/or unavailable data and information that is required from time to time to facilitate MRC activities, programs, and projects.

#### *Obligations and Responsibilities of Users*

MRC distinguishes between different classes of data and information users, each with varying obligations and responsibilities:

- *Internal Data and Information Users* (all bodies of the MRC, NMCs and Line Agencies) with full access to all MRC-IS data and information; shall respect the rights of the original data owner in relation to copyright, intellectual property and any specified confidentiality requirement, and acknowledge the source when appropriate on publication;
- *Other Data and Information Users*
  - commercial data and information users;
  - research /academic or civil society data and information users
  - public data and information users (access through various media).

### **4.2.2.3 Procedures for Water Use Monitoring**

In 2003, the WUP developed and put into force the “Procedures for water Use Monitoring”. The main characteristics of these Procedures are:

#### *Objectives*

To provide a comprehensive and adaptive framework and process to support effective implementation of the intra-basin water use monitoring and the monitoring of inter-basin diversions.

To promote better understanding and cooperation among the member States through transparency and confidence in the water use monitoring system.

#### *Principles*

Water use monitoring shall be governed by the principles of efficiency; coordination; transparency; cost effective; dynamism; adjustability; and mutual benefit.

#### *Scope*

The water uses to be monitored under the Procedures include intra-basin water uses and inter-basin water diversions.

#### *Monitoring System*

The Monitoring System consists of three components:

- Physical equipment and related structures, which are normally located in and managed/owned by the respective State;
- Various technological procedures; and
- Related personnel/institutions/organizations.

Details of these components shall be determined by a technical support team.

#### *Institutional Arrangements*

Operation and management of the Monitoring System shall involve the MRC JC (which may delegate all or some responsibilities to a technical support team), MRCS (technical and administrative support), NMCs (establishing, maintaining and strengthening the Monitoring System in their respective countries; supplying water use data for monitoring purposes; and engaging and assisting the line agencies in the country to implement the Procedures), each with its respective roles/functions/responsibilities.

## **4.3 Potential Systems for Sharing/Provision of Data and Information.**

Article 25 of the 1995 Agreement on the Joint Committee’s Rules of Procedures foresee that the Joint Committee may form ad hoc and/or permanent sub-committees or working groups as considered necessary. Under this rule, FIP has initiated the setting-up of the Technical Advisory Body on Fisheries Management (TAB), which is a possible mechanism for provision and sharing of data and information, and utilization of such data.

NP has recently established a permanent regional advisory board or working group on legal matters relating to navigation (similar to the TAB on Fisheries).

In a recent Review of Protected Areas and Development, EP has held regular meetings of the Protected Areas and Development (PAD) core groups that bring together important national agencies and experts to provide technical guidance.

They have led to the formation of national PAD networks of several hundred individuals who are being kept informed and invited to participate in the review.

## **5. Details of Involvement in Related Research, Studies, and Programmes**

The MRC is cooperating in innumerable research and study projects on data collection and sharing, such as:

- DfID/FMSP – Data collection and sharing mechanisms for co-management;
- DfID/FMSP – Uptake of Adaptive Learning in Enhancement Fisheries;
- etc.