



MEKONG RIVER COMMISSION

For Sustainable Development



# 2018-2022

## MEKONG BASIN-WIDE FISHERIES MANAGEMENT AND DEVELOPMENT STRATEGY

NOVEMBER 2017



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# Mekong Basin-Wide Fisheries Management and Development Strategy 2018-2022

# Preface

On behalf of the Mekong River Commission (MRC) Council, it is my great pleasure to present the Basin-wide Fisheries Management and Development Strategy (BFMS) 2018-2022. The strategy has been developed on the basis of the Integrated Water Resources Management-based Basin Development Strategy for the Lower Mekong Basin 2016-2020 in close collaboration with the four MRC Member Countries (Cambodia, Lao PDR, Thailand and Viet Nam).

The five-year strategy focuses on inland capture fisheries, based on the national management and development policies, strategies and plans of Member Countries. These were compiled and reviewed as the strategy was being formulated. The regional aspects of these policies, strategies and plans were then compared with policies, strategic priorities and actions as defined by the MRC's Basin Development Strategy.

The BFMS strategic goal is: "responsible and sustainable use of living aquatic resources", with the objective of facilitating and implementing sustainable fisheries management and development across the basin through consensus, dialogue and harmonisation of national [sectorial] sector-based plans. The BFMS encompasses ten key strategic priorities and related actions. These are clustered under: (i) monitoring of key indicators of fish diversity, abundance and ecology, socio-economics and livelihoods, food security and gender; (ii) management-related priorities; and (iii) priorities related to development. Management-related priorities include conservation of key habitats and co-management as well as transboundary management and fisheries enhancement. Priorities related to development include fish-friendly irrigation, aquaculture development, water development and adaptation of fisheries to climate change.

**THE BFMS STRATEGIC GOAL IS:**

**“RESPONSIBLE AND SUSTAINABLE USE OF LIVING AQUATIC RESOURCES”**

WITH THE OBJECTIVE OF FACILITATING AND IMPLEMENTING SUSTAINABLE FISHERIES MANAGEMENT AND DEVELOPMENT ACROSS THE BASIN THROUGH CONSENSUS, DIALOGUE AND HARMONISATION OF NATIONAL [SECTORIAL] SECTOR-BASED PLANS.

The BFMS 2018-2022 also encourages dialogue, understanding, and learning to foster sustainable management and development of fisheries and aquatic resources in the Lower Mekong Basin. To achieve the strategic goal, the generous assistance from the Development Partners is very important for supporting the efforts of the Mekong River Commission and its Member Countries. Therefore, we call on our development partners to continue working with us and providing financial support to implement the strategy. The implementation of this strategy is envisaged to follow a Project-Based Action Plan, which will be elaborated on by all Mekong actors and stakeholders in a participatory manner to guide and coordinate the integrated management and development of the sector.

I would like to express my special gratitude to all Member Countries' governments, the National Mekong Committees and line/implementing agencies for providing valuable contributions and technical guidance, through national and regional consultations, which help make it possible for the successful completion of the BFMS 2018-2022



*Gen. Surasak Karnjanarat*

**H.E. General Surasak Karnjanarat**  
**Minister of Natural Resources and Environment**  
**Chairperson of the MRC Council for 2017**

# Executive Summary

The Lower Mekong Basin (LMB) has a population of more than 60 million, with projections suggesting this figure could rise to 100 million ten years from now. The basin ecosystem comprises many subsystems, with the Mekong, its tributaries and low-lying habitats like floodplains, wetlands, swamps and the Mekong Delta in Viet Nam playing a prominent role. In spite of progressive urbanisation and emerging secondary and tertiary sectors in the economies of the four riparian countries, the majority of the population depends on this ecosystem for their livelihood – both as a source of income and employment, and for food.

All Mekong River Commission (MRC) Member Countries have formulated strategies for fisheries management and development as part of their national development policy frameworks. To some extent, these national strategies, policies and plans cover regional fisheries management issues that need to be aligned with a basin-wide fisheries management and development strategy. The MRC Member Countries have acknowledged this and have prioritised the development of a comprehensive 'Basin-Wide Fisheries Management and Development Strategy' (BFMS 2018-2022) in the implementation plan of the MRC Fisheries Programme 2011-2015.

The formulation of the BFMS 2018-2022 relied on two key strategy elements: (i) communication and mutual understanding between actors and (ii) LMB-wide cooperation for fisheries management and development.

The BFMS 2018-2022 was developed by the former MRC Fisheries Programme's Technical Advisory Body for Fisheries Management in the Lower Mekong Basin, which was established in 2000. The MRC Fisheries Programme facilitated the development process of the BFMS 2018-2022 from late 2012 until the programme was discontinued in December 2015. Under the new MRC structure, the Environmental Management Division of the MRC Secretariat, in cooperation with its Expert Group/Subgroup on Fisheries, is responsible for the BFMS 2018-2022.

The BFMS 2018-2022 is, by definition, a regional strategy with a focus on inland capture fisheries. It is based on the national management and development policies, strategies and plans of the MRC Member Countries, which were compiled and reviewed ahead of the formulation of the BFMS 2018-2022. To achieve a regional perspective, issues of regional relevance contained in these policies, strategies and plans were compared with MRC policies, strategic priorities and actions as defined in the updated Basin Development Strategy (BDS).

The BFMS 2018-2022 should be seen as a living, constantly evolving document that encourages structured dialogue and consensus. It should be seen as not just a platform for understanding and learning, but also a springboard for consensus.

The scope of the BFMS 2018-2022 is to provide an overarching, regional cooperation framework for basin-wide fisheries management and development. It is thus both a policy and a strategy document, as well as a cooperation framework. Indeed, the policy approach of the BFMS 2018-2022 considers the sustainable use and conservation of fish resources as its top priority, while the key issues represent different ways of approaching it, i.e. stakeholder participation, gender equity and property rights in fisheries management and development.

The BFMS 2018-2022 vision statement is: *"Member Countries collaborate to manage the fisheries of the Mekong Basin in an environmentally non-degrading, technically appropriate, economically viable, and socially acceptable manner."*

For its mission, it proposed to "Provide Member Countries, the MRC Environmental Management Division and its Expert Subgroup on Fisheries (one of the Subgroups of the Expert Group on Environmental Management) with a holistic strategic framework for fisheries management of the LMB".

The proposed strategic goal of the BFMS 2018-2022 is the "Responsible and sustainable use of living aquatic resources". This includes all pertinent conservation measures and encompasses the entire LMB as an ecosystem. The goal overrides objectives of economic growth and efficiency if these imply unsustainable resource use for short-term economic or political gain and jeopardise maintenance of livelihoods and food security in the basin.

The BFMS 2018-2022 has the following objective: "Basin-wide sustainable fisheries management and development by Member Countries is facilitated and implemented through consensus, dialogue and harmonisation of national sectorial plans". Outcomes to achieve the objective are (i) Member Countries and regional stakeholders agree on and support key management and development issues identified in the BFMS 2018-2022; (ii) key fisheries management and development priorities issues are included in the MRC IWRM-based Basin Development Strategy's Strategic Priorities and Strategic Actions; (iii) the BFMS 2018-2022 is implemented by fisheries and other relevant national line/implementing agencies with facilitation by MRC Environmental Management Division and its Expert Subgroup on Fisheries by promoting transparent dialogue; and (iv) a monitoring and evaluation system for implementation is in place and allows periodic adjustment of the BFMS 2018-2022.





Regarding principles, the BFMS 2018-2022 refers to the General Principles of 1995 Mekong Agreement, takes Integrated Water Resource Management principles into consideration, and further proposes the precautionary approach of the *Code of Conduct for Responsible Fisheries* of the Food and Agriculture Organization of the United Nations, which Fisheries line agencies (i.e. Departments of Fisheries) of each MRC Member Country have adopted. In addition, it emphasises stakeholder participation as the principle of primary importance for its formulation, implementation and Monitoring & Evaluation.

The BFMS 2018-2022 proposes ten key strategic priorities and actions. These are clustered under **(i) monitoring of key indicators** of (a) fish diversity, abundance and ecology, (b) socio-economics, livelihoods, (c) food security and nutrition, and (d) gender, to observe and document changes and impacts in capture fisheries sector and other sectors; **(ii) management-related priorities**, where the BFMS 2018-2022 promotes proactive regional engagement (conservation of key habitats, fisheries enhancement, fisheries co-management and transboundary fisheries management); and **(iii) priorities related to development (fisheries and fish-friendly irrigation and agriculture)**, aquaculture, water development and adaptation of fisheries to climate change, where a responsive and advisory role of the BFMS 2018-2022 is envisaged.

**In collaboration with the former MRC Basin Development Programme and Climate Change Adaption Initiative, recommendations are made regarding the alignment of the BFMS 2018-2022 Strategic Priorities and Actions with the strategic priorities and actions outlined in the relevant BDS Core River Basin Management Functions and the Mekong Adaptation Strategy and Action Plan.**



# The BFMS 2018-2022 Proposes 10 Key Strategic Priorities and Actions.



## (i) Monitoring of Key Indicators

- ▶ (a) fish diversity, abundance and ecology, (b) socio-economics, livelihoods, (c) food security and nutrition, and (d) gender, to observe and document changes and impacts in capture fisheries sector and other sectors.



## (ii) Management Related Priorities

- ▶ The BFMS 2018-2022 promotes proactive regional engagement (conservation of key habitats, fisheries enhancement, fisheries co-management and transboundary fisheries management) impacts in capture fisheries sector and other sectors.



## (iii) Priorities Related to Development

- ▶ (fisheries and fish-friendly irrigation and agriculture) aquaculture, water development and adaptation of fisheries to climate change, where a responsive and advisory role of the BFMS 2018-2022 is envisaged.

# Abbreviations

<b>BDP</b>	Basin Development Programme
<b>BDS</b>	Basin Development Strategy
<b>BFMS</b>	Basin-Wide Fisheries Management and Development Strategy
<b>CCRF</b>	Code of Conduct for Responsible Fisheries
<b>DPs</b>	Development Partners
<b>EAF</b>	Ecosystem Approach to Fisheries
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>FIA</b>	Fisheries Administration in Cambodia
<b>FP</b>	Fisheries Programme of MRC
<b>GMS</b>	Greater Mekong Subregion
<b>IWRM</b>	Integrated Water Resources Management
<b>LARReC</b>	Living Aquatic Resources Research Center, Lao PDR
<b>LMB</b>	Lower Mekong Basin
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MRC</b>	Mekong River Commission
<b>NACA</b>	Network of Aquaculture Centres in Asia-Pacific
<b>NGF</b>	Network for the promotion of Gender in Fisheries in the LMB
<b>NIP</b>	National Indicative Plan
<b>RAP</b>	Regional Action Plan
<b>SEAFDEC</b>	Southeast Asian Fisheries Development Center
<b>SPF</b>	Strategic Planning Framework
<b>TAB</b>	Technical Advisory Body for Fisheries Management in the LMB
<b>WWF</b>	World Wildlife Fund

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# 1. Rationale and Background

## 1.1 Why do we need a Basin-Wide Fisheries Management and Development Strategy?

The Lower Mekong Basin (LMB) has a population of more than 60 million, with projections suggesting this figure could rise to 100 million ten years from now. The LMB ecosystem comprises many subsystems, with the Mekong, its tributaries and low-lying habitats like floodplains, wetlands, swamps and the Mekong Delta in Viet Nam playing a prominent role. In spite of progressive urbanisation and emerging secondary and tertiary sectors in the economies of the four riparian countries, the majority of the population depend on the Mekong River ecosystem for their livelihood: both as a source of income and employment, and for food. In Cambodia, for example, the recent draft agricultural survey estimates that 85% of the population relies on resources from the Mekong River system.<sup>1</sup>

Fish and rice are the most important staple foods and, thus, the pillars of food security and nutrition. Estimates of fish production in the Lower Mekong Basin range from around 1 million metric tons to around 2.6 million metric tons, with 2.1 million metric tons considered the most probable. On a global level, different sources estimate that Mekong fisheries produce between 7% and 22% of the world's freshwater-captured fish, with 18% considered the most accurate estimate.<sup>2</sup>

Capture fisheries production in the Lower Mekong Basin is higher than that of any comparable geographical area in the world and also exceeds many countries' production from the marine fisheries sector. A point in case is Cambodia, where fishing intensity and freshwater fish catch per inhabitant are by far the highest in the world.

The fisheries in the basin also form an important source of income and employment for local populations. In Cambodia and the Mekong Delta of Viet Nam alone, almost 7 million people derive their livelihoods from capture and culture fisheries. In Cambodia, some 30% of the population is estimated to be employed/self-employed in the sector.<sup>3</sup> However, professional (full-time) fishing is the exception rather than the rule. Small-and medium-scale producers rely heavily on a diversified farming system centred around water use for their livelihoods.

Capture fisheries and, increasingly, small-scale fish farming and 'hybrid systems', such as fisheries enhancement and restocking of water bodies, are of pivotal importance to rural livelihoods, food security and nutrition.

<sup>1</sup> RGC n.d.

<sup>2</sup> Baran 2010.

<sup>3</sup> FAO and World Fish Center 2008.



Scientists believe that almost all rural dwellers in the basin with access to water will fish – as the Cambodian saying goes:



*Where there is water, there is fish."*

Fishing provides affordable and accessible animal protein. For many remote communities with limited market access and low incomes, it is the principle source of animal protein. Rice farming is still the most common choice of land use in the basin. In these areas, fish and other aquatic animals form welcome dietary supplements and are an essential source of income, often exceeding monetary returns from rice cultivation.

In many production systems, the interdependence and interaction between fishing and farming is such that it is not clear whether people are farmers who also fish or fishers who also farm. However, for the people concerned these analytical differences are probably irrelevant, as both fishing and farming are integral to their way of life and culture, and crucial to their economic survival.

Therefore, the first answer to the question of why we need a Basin-Wide Fisheries Management and Development Strategy (BFMS 2018-2022) is:

- **Capture fisheries form an essential part of the economic, social and cultural way of life of the majority of rural people and their communities in the Lower Mekong Basin. The contribution of capture fisheries to livelihoods, food security and nutrition, in particular of the rural poor, is irreplaceable.**

The Mekong ecosystem and the fisheries it supports are currently under increasing pressure from water-related development interventions. These developments threaten both the food security and livelihoods of the majority of the population in the basin, in particular the most vulnerable members of society. Fisheries resources and associated habitats and ecosystem services are interlinked, with upstream developments impacting downstream fisheries and vice-versa. Therefore, the second proposed answer is:

- **Sustainable livelihoods and use of fisheries and aquatic resources, their effective management and conservation need to be approached holistically, addressing the larger Lower Mekong Basin ecosystem.**



The Food and Agriculture Organization of the United Nations (FAO) provides guidance for the development of such a holistic strategy:

“ *The [Ecosystem Approach to Fisheries (EAF)] takes its focus in fisheries management, but broadens the perspective beyond seeing a fishery as simply ‘fish in the sea, people in boats’, beyond consideration only of commercially-important species and beyond management efforts directed solely at the harvesting process. As defined in the EAF Guidelines, an EAF strives to balance diverse societal objectives, by taking account of the knowledge and uncertainties of biotic, abiotic and human components of ecosystems and their interactions and applying an integrated approach to fisheries. The purpose of an EAF is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by the aquatic ecosystems.*”<sup>4</sup>

To implement the EAF or similar holistic management approaches in a larger ecosystem comprising different countries, or regions of these countries, requires cooperation, in particular transboundary resource management. This provides the third answer to the question why we need a BFMS 2018-2022, best expressed by the FAO’s *Code of Conduct for Responsible Fisheries (CCRF)*, which states in Article 6.12 of its General Principles:

“ *States should, within their respective competences and in accordance with international law, cooperate at subregional, regional and global levels through fisheries management organizations, other international agreements or other arrangements to promote conservation and management, ensure responsible fishing and ensure effective conservation and protection of living aquatic resources throughout their range of distribution, taking into account the need for compatible measures in areas within and beyond national jurisdiction.*”<sup>5</sup>

<sup>4</sup> FAO 2009

<sup>5</sup> FAO 2008

THE MRC MEMBER COUNTRIES HAVE  
ACKNOWLEDGED THIS BY PRIORITISING  
THE DEVELOPMENT OF A COMPREHENSIVE BASIN-WIDE FRAMEWORK  
FOR FISHERIES MANAGEMENT AND DEVELOPMENT  
IN THE IMPLEMENTATION PLAN OF  
THE MRC FISHERIES PROGRAMME 2011-2015.

The foreword to the 2011 edition of the CCRF underlines that "although the Code is non-binding, by endorsing it, governments commit themselves to operating according to its values and standards. The Code has proved forward-looking and helped shape policy with concepts such as precautionary, participatory and ecosystem-based – concepts that today are integral to the responsible management of fisheries and aquaculture."<sup>6</sup>

All Mekong River Commission (MRC) Member Countries have formulated strategies for fisheries management and development as part of their national development policy frameworks. To some extent these national policies, strategies and plans include regional fisheries management issues that would require alignment with a holistic basin-wide fisheries management and development strategy. The MRC Member Countries have acknowledged this by prioritising the development of a comprehensive basin-wide framework for fisheries management and development in the Implementation Plan of the *MRC Fisheries Programme 2011-2015*.

The requirement to "draft a regional cooperation framework for fisheries management and development in close collaboration and interaction with the Basin Development Plan" builds on the MRC Strategic Plan 2011-2015 approved in early 2011, which includes the activity to "prepare an LMB-wide cooperation framework for Fisheries Management and Development".<sup>7</sup>

**The central strategy elements which can be drawn from these planning documents are the requirements for (i) communication and mutual understanding between actors, and (ii) LMB-wide cooperation for fisheries management and development. These elements define how to advance, i.e. by "communication and mutual understanding" and, to what end, i.e. towards a "LMB-wide cooperation for fisheries management and development."**

The BFMS 2018-2022 should be seen as a living, constantly evolving document that encourages structured dialogue and consensus. It should be considered not just as a platform for understanding and learning, but also a springboard for consensus.

<sup>6</sup> Ibid

<sup>7</sup> MRC 2010b.

## 1.2 Regional Fisheries Management at Mekong River Commission

The 1995 Mekong Agreement, which provides the MRC's legal mandate, identifies the need for a Basin Development Plan (BDP) to facilitate joint planning to achieve its vision of stimulating the "economically prosperous, socially just and environmentally sound development of the Mekong River Basin".

The Plan encourages cooperation in all fields of sustainable development, including use, management and conservation of water and related resources to optimise their multiple uses, generate mutual benefits and minimise harmful effects of development interventions. Although inexplicitly, it adopts the Integrated Water Resource Management (IWRM) approach,<sup>8</sup> according to which "waters should be used to provide economic well-being to the people, without compromising social equity and environmental stability. Waters should be managed in a basin-wide context, with stakeholder participation, and under the prevalence of good governance".<sup>9</sup>

With regard to regional fisheries management, the updated 2013 BDP Regional Action Plan states: "A regional cooperation framework for fisheries management and development will be drafted in close collaboration and interaction with the BDP."

### **Activities and outputs leading to this outcome focus on two aspects:**

1. The importance, in addition to improved information, of good relationships between actors on all levels for sustainable fisheries management and development.
2. The need for an overarching, regional cooperation framework for basin-wide fisheries management and development which may critically contribute to the BDP process.

<sup>8</sup> The concept stems from the early 20th century and regained recognition through the 1992 Dublin and Rio de Janeiro conferences. The main policy elements are the acknowledgement that resources are finite; the importance of stakeholder participation; the recognition of the role of women in management and development; and the need to treat resources as an economic good.

<sup>9</sup> Mehtonen, K. et al. 2008.



The Basin Development Strategy 2011-2015 (BDS) was approved by the MRC Member Countries in 2011. The Strategy sets out 15 Strategic Priorities to be addressed through 64 Strategic Actions, which form the overarching strategic framework that is to be implemented through a Basin Action Plan. This Plan is made up of a Regional Action Plan (RAP) and four National Indicative Plans (NIPs).

The recent *Regional fisheries perspectives on updating the Basin Development Strategy* cites "fundamental objectives and principles underlying the strategy such as (1) protection of the environment and ecological balance; (2) reasonable and equitable utilisation; (3) maintenance of flows on the main stream; (4) prevention and cessation of harmful effects" as of high relevance for the fisheries sector.<sup>10</sup>

The MRC Fisheries Programme led the development process of the BFMS 2018-2022 from late 2012 until the programme was discontinued in December 2015. Under the new MRC structure, the Environmental Management Division of the MRC Secretariat is responsible for the BFMS 2018-2022.



<sup>10</sup> MRC-FP 2014a.

# 2. The Basin-Wide Fisheries Management and Development Strategy 2018-2022

## 2.1 Development process

The 1995 'Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin' commits the signatory countries through the MRC 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. Furthermore, Member Countries are committed to cooperating in all fields of sustainable development, use, management and conservation of water and related resources in the Mekong River Basin, including fisheries. In compliance with Article 25 of the 1995 Agreement, and to further the protection and sustainable management of Mekong fisheries, a Technical Advisory Body for Fisheries Management in the Lower Mekong Basin (TAB) was established with the help of the MRC in 2000.

Comprised of senior fisheries line agency officers of the four Member Countries, the TAB was considered a uniquely suitable platform to consult, develop and implement the regional fisheries management and development strategy and plan. This is reflected in its institutional objective, formulated as follows: "Fisheries stakeholders foster coordinated management and development and sustainable utilisation of the economic and nutritional potential of aquatic resources in the Mekong River Basin, and facilitate the uptake of regional issues in national and local action plans and activities by concerned government agencies and user groups."<sup>11</sup>

The BFMS 2018-2022 was developed in close collaboration and consultation with the TAB. Under the MRC Strategic Plan 2016-2020, the MRC Secretariat is currently discussing the establishment of MRC Expert Groups, which will be aligned with the Core River Basin Management Functions as described in the road map for organisational reform that was approved by the MRC Council in 2014.<sup>12</sup> An Expert Group on Environmental Management will be established under the MRC Environmental Management Division. It will comprise several Subgroups, including an Expert Subgroup on Fisheries. The competencies of the current Technical Advisory Body for Fisheries Management will be transferred to this Subgroup.

It will focus on promoting and coordinating the management and development of aquatic resources in the Mekong River Basin and facilitating the uptake of regional issues in national and local action plans and activities by relevant government agencies and stakeholder groups.

<sup>11</sup> Tab 2013

<sup>12</sup> MRC Secretariat 2017.



The Basin-Wide Fisheries Management and Development Strategy 2018-2022 is, by definition, a regional strategy with a focus on inland capture fisheries. However, it is based on the Member Countries' national strategies. In preparation for the assignment, and to take stock of these national strategies, Member Countries were invited to compile and review national fisheries development and management strategies, policies and plans. The resulting assessments provided the starting point for the identification of strategy areas that would be relevant to the BFMS 2018-2022 (see Annex 2 for summaries).

In addition to the policy, strategy and plans contained in the assessments, the BFMS 2018-2022 incorporated the following priority areas defined by the former MRC Fisheries Programme's TAB: (i) impact and mitigation of hydropower and irrigation dams; (ii) transboundary movement of aquatic organisms; (iii) transboundary fisheries management including co-management at multiple levels; (iv) common technical interests among Member Countries such as stock enhancement and aquaculture of indigenous species; and (v) cross-cutting issues such as gender, climate change and capacity building.

The national assessments show variations in terms of comprehensiveness and depth of analysis. In order to reach a more holistic understanding, additional documents were consulted, including legal and regulatory frameworks, sector and national planning documents and subject-matter-specific plans. Together, these assessments and documents allowed for a list of different policy principles and strategy elements to be drawn up. In order to achieve a regional perspective, strategy elements and policy principles were identified for each country and compared with MRC policies and strategic priorities and actions as defined in the updated BDS 2016-2020.

**MEMBER COUNTRIES ARE COMMITTED TO COOPERATING IN ALL  
FIELDS OF SUSTAINABLE DEVELOPMENT, USE, MANAGEMENT  
AND CONSERVATION OF WATER AND RELATED RESOURCES  
IN THE MEKONG RIVER BASIN, INCLUDING FISHERIES.**





## 2.2. Scope and Focus

### Scope

The scope of the BFMS 2018-2022 is to provide an “overarching, regional cooperation framework for basin-wide fisheries management and development”.<sup>13</sup> The BFMS 2018-2022 is thus a policy and a strategy, as well as a cooperation framework.

### Focus

From a policy point of view, the BFMS 2018-2022 focuses on sustainable use and conservation of fisheries resources, stakeholder participation, gender equity in fisheries management and development, and property rights in fisheries.

## 2.3 Vision, Mission, Goal, Objectives and Outcomes

**The Vision, Mission, Goal, Objectives and Outcomes of the BFMS 2018-2022 were formulated as follows:**

### Vision

Member Countries collaborate to manage the fisheries of the Mekong Basin in an environmentally non-degrading, economically viable, socially acceptable and technically appropriate manner.

### Mission

To provide Member Countries, the Environmental Management Division's Expert Subgroup on Fisheries and the MRC Environmental Management Division with a holistic strategic framework for fisheries management of the Lower Mekong Basin.

<sup>13</sup> As cited in the Implementation Plan 2011-2015 of the Fisheries Programme.

## Strategic goal

To stimulate responsible and sustainable use of fisheries and living aquatic resources in the Lower Mekong Basin.

The goal overrides objectives of economic growth and efficiency if these imply unsustainable resource use for short-term economic or political gain and jeopardise maintenance of livelihoods and food security in the basin.

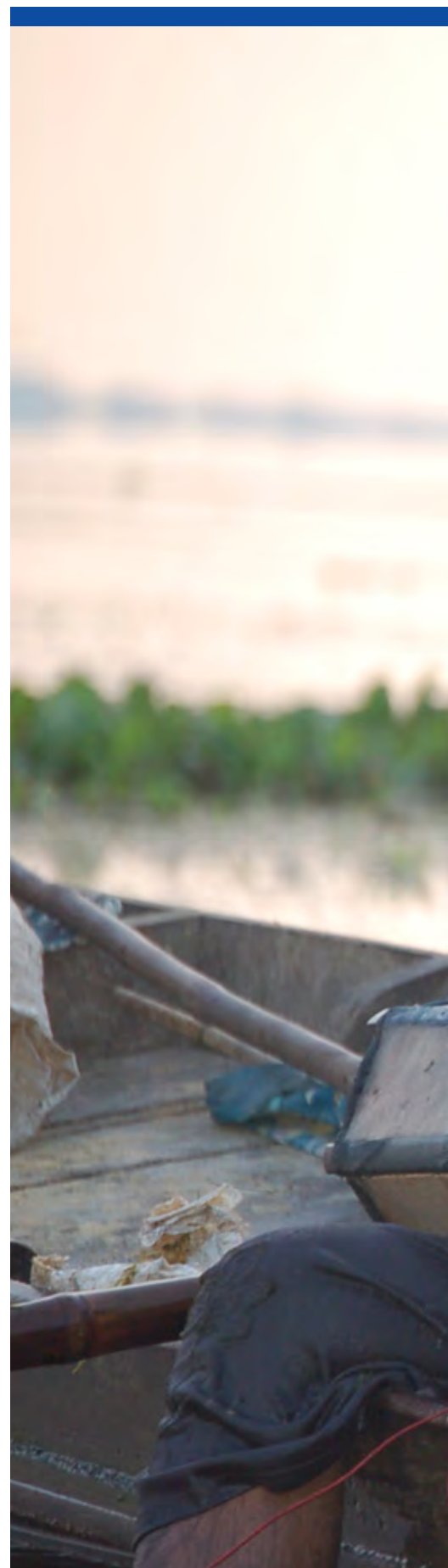
## Objective

Basin-wide sustainable fisheries management and development by Member Countries is facilitated and implemented through consensus, dialogue and harmonisation of national sectoral plans.

## Outcomes

Outcomes to achieve the objective are:

- Member Countries and regional stakeholders agree on key management and development issues identified in the BFMS 2018-2022
- Key fisheries management and development priority issues are included in the strategic priorities and actions of the MRC IWRM-based Basin Development Strategy.
- The BFMS 2018-2022 is implemented by fisheries and other relevant national line/implementing agencies,<sup>14</sup> with facilitation by the Expert Subgroup on Fisheries and the Environmental Management Division which promote transparent dialogue.
- An M&E system for implementation is in place and allows periodic adjustment of the BFMS 2018-2022.

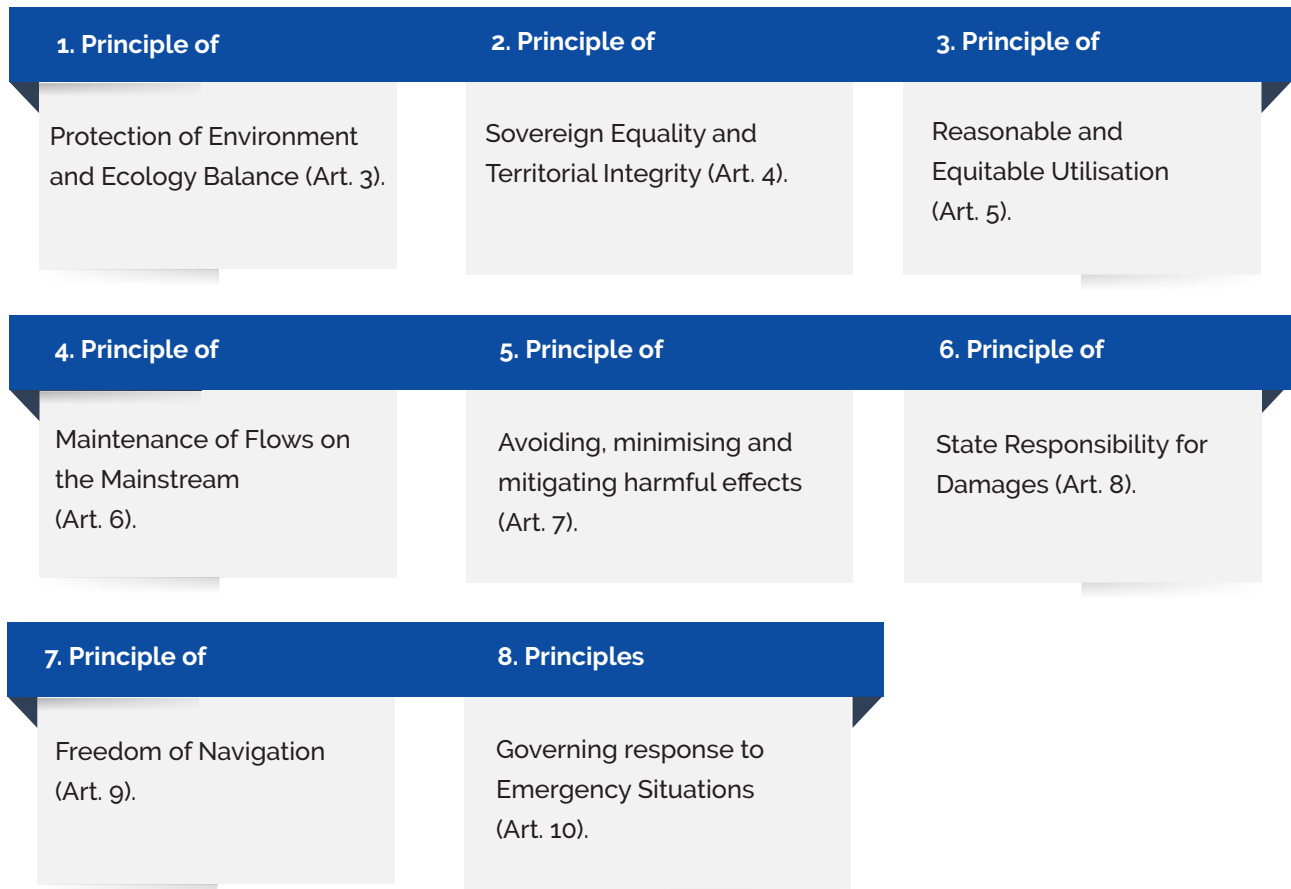


<sup>14</sup> Cambodia: Fisheries Administration; Lao PDR: Department of Livestock and Fisheries and LARReC; Thailand: Department of Fisheries; Viet Nam: Department of Fisheries, Research Institute for Aquaculture 1, 2.

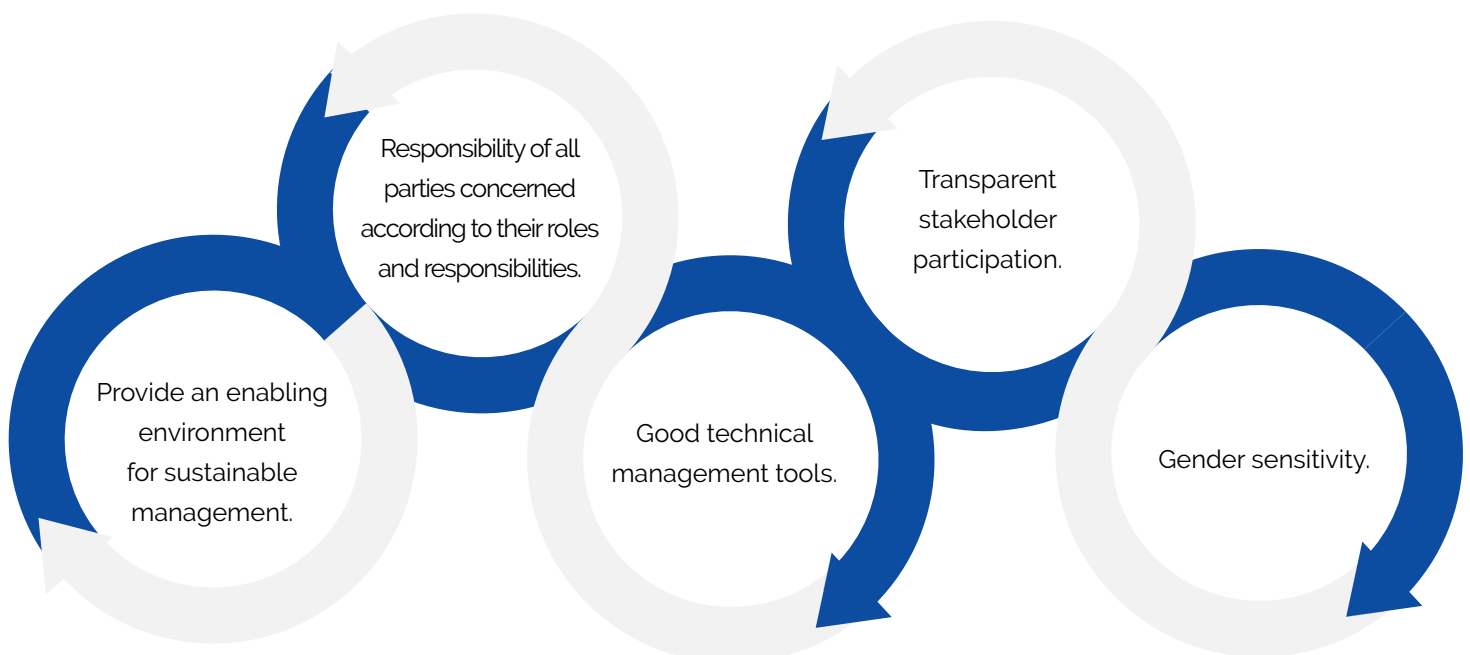


## 2.4 Principles

The BFMS 2018-2022 recognises the General Principles of the 1995 Mekong Agreement:



The BFMS 2018-2022 observes the following IWRM principles:





**The BFMS 2018-2022 also observes the MRC following procedures:**

Procedures for Water Quality (PWQ).

Procedures for Water Use Monitoring (PWUM).

Procedures for Maintenance of Flows on the Mainstream (PMFM).

Procedures for Data and Information Exchange and Sharing (PDIES).

Under this framework, the BFMS 2018-2022 adopts the precautionary approach of the CCRF, which, in its *Technical Guidelines for Inland Fisheries*, describes a "set of agreed cost-effective measures and actions, including future courses of action, which ensures prudent foresight, reduces or avoids risk to the resources, the environment, and the people, to the extent possible taking explicitly into account existing uncertainties and the potential consequences of being wrong".<sup>15</sup>

## 2.5 Key Strategic Priorities and Related Priority Actions

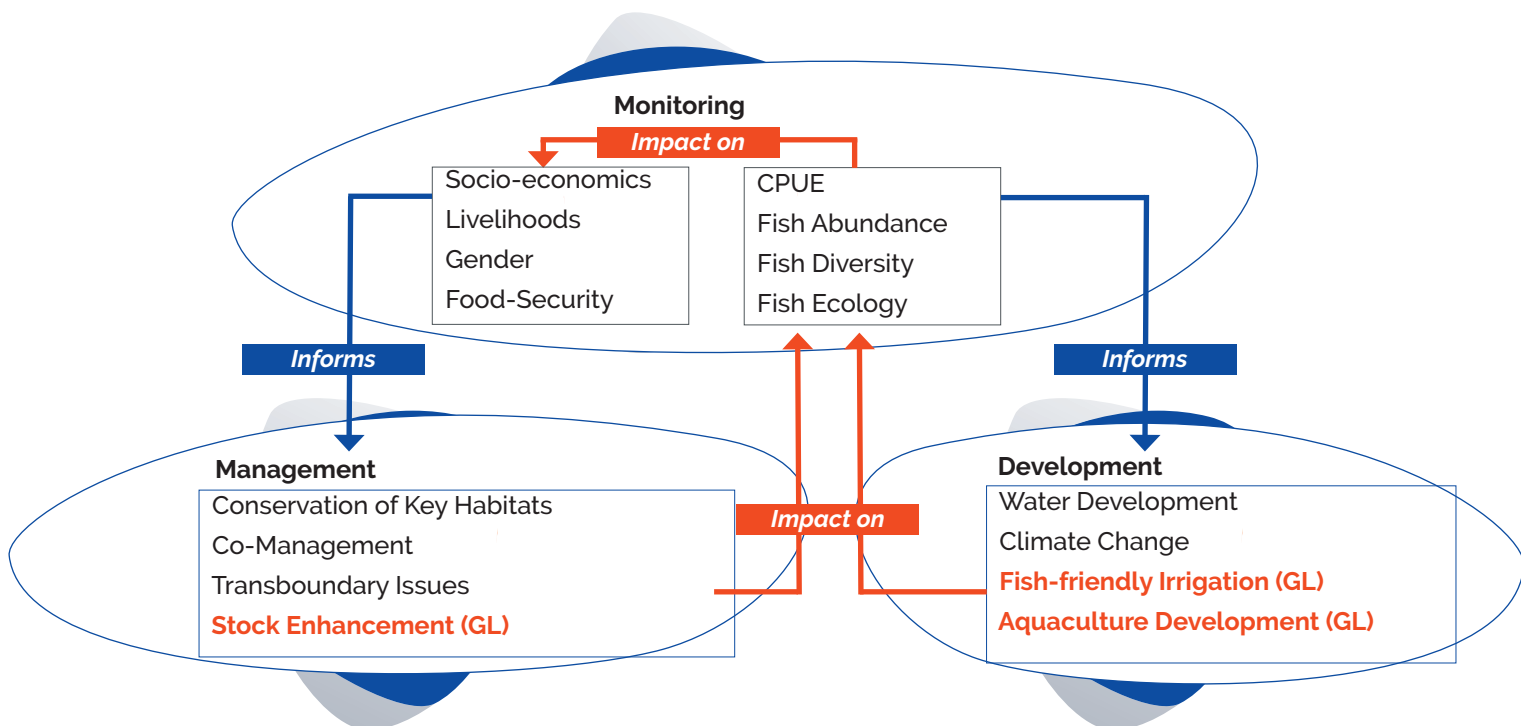
**The BFMS 2018-2022 proposes key strategic priorities and related priority actions clustered under:**

- (i) Monitoring of key indicators to document changes in capture fisheries and other sectors. Indicators include:
  - (a) Fish diversity, abundance and ecology.
  - (b) Socio-economics, livelihoods.
  - (c) Food security and nutrition.
  - (d) Gender.
- (ii) Management-related priorities, promoting proactive regional engagement and cooperation.
- (iii) Priorities related to water development, where a responsive and advisory role of the BFMS 2018-2022 is envisaged.

The key strategic priorities reflect key issues, including sustainable use and conservation of fish resources; stakeholder participation; gender equity in fisheries management and development; and property rights in fisheries. Equally, they address priority areas defined by the Environmental Management Division's Expert Subgroup on Fisheries.

<sup>15</sup> FAO 2011.

These include impact and mitigation of hydropower and irrigation dams; transboundary movement of aquatic organisms; transboundary fisheries management, including co-management and harmonisation of fishing ground areas, fishing rules and regulations, and institutional arrangement at multiple levels; common technical interests among Member Countries, such as stock enhancement and aquaculture of indigenous species, and; cross-cutting issues such as gender, capacity building and climate change. Figure 1 shows the three clusters of strategic priorities and priority actions.



**Figure 1: Three priority clusters of strategic priorities and related actions**

### 2.5.1 Fisheries Monitoring, Analysis, Modelling & Assessment

To better understand impacts from water-development activities on fisheries, it is essential to monitor not only the hydrological changes and changes in stock diversity and abundance, but also how these changes impact livelihoods and food security. The former MRC-Fisheries Programme has been supporting monitoring programmes at four major capture fisheries in the LMB since the early 1990s.

**The MRC Environmental Management Division continues to monitor activities at the following fisheries:**

- Lee Trap Monitoring Programme at the Khone Falls, southern Lao PDR (1994 – present)
- Stationary Trawl (*Dai*) Fishery Monitoring Programme, Tonle Sap, Cambodia (1994 – present)
- Fish Abundance and Diversity Monitoring Programme, up to 38 sites across the basin (2003 – present)
- Fish Larvae Density Monitoring Programme, Cambodia and Viet Nam (1999 – present)

The MRC decentralisation plan foresees that Member Countries will from 2020 carry out fisheries-monitoring activities themselves. Data generated from these monitoring activities will be submitted from national databases to the MRC Secretariat for compilation and synchronisation into the regional fisheries monitoring databases.

The Secretariat will assume a central role as a platform for regional fisheries data generation, sharing and reporting.

**Proposed priority actions with respect to monitoring are:**

- Transfer fisheries monitoring to national agencies according to MRC Decentralisation Road Map (2016-2020).<sup>16</sup>
- Update and synchronise regional fisheries databases with national monitoring data that include fish biological/ecological (including water-quality) information and data on livelihoods, food security, value chains and gender.
- Elaborate regional analysis, modelling, fisheries sector report, technical papers, State of the Basin report.
- Develop and manage Mekong fisheries data & information-generation and sharing platform and feed back regional data and analysis in a timely manner.

## 2.5.2 Conservation of Key Habitats

It is widely understood and accepted that the conservation of key habitats and species biodiversity are vital for the LMB fisheries and their contribution to local livelihoods and food security. This is also recognised in the CCRF, which states in Section 6.8: "All critical fisheries habitats in marine and freshwater ecosystems, such as wetlands, mangroves, reefs, lagoons, nursery and spawning areas, should be protected and rehabilitated as far as possible and where necessary. Particular effort should be made to protect such habitats from destruction, degradation, pollution and other significant impacts resulting from human activities that threaten the health and viability of the fishery resources."<sup>17</sup>

Floodplains and associated flooded forests, wetlands and the deep pools of the Mekong River system are commonly recognised central key habitats of the LMB ecosystem. Regarding the latter, the TAB already signalled its concerns in 2005:

“Any alteration of the river’s natural hydrologic regime, such as hydroelectric projects or flood mitigation schemes, threatens the preservation of deep pools. Changes in the flow of the river and its suspension load may cause the deep pools to fill with silt or increased sediment slumping resulting from increased erosion of the riverbank. To date these problems are largely limited to the Mekong’s tributaries and do not affect the main stream; but were any of the pools in the Mekong to silt up, particularly in the stretch between Kratie and Stung Treng, the damage inflicted on fish populations throughout the basin would be serious.”<sup>18</sup>

At least as important for the continuing productivity of the river system and the basin ecosystem at large are the floodplains and the associated flooded forest habitats and wetlands. Here the flood pulse in the floodplains of the Tonle Sap and the Mekong Delta are vital to the system’s biological/ecological sustainability. *The Report on the Review of National Fisheries Plans, Strategies and Policies in Cambodia* cites the 2007 Cambodian Law on Fisheries which calls for “continuity of fishery management, fisheries protection and conservation, and management of mangrove forest and flooded forest”.<sup>19</sup>

<sup>16</sup> The MCs had not approved the road map at the time of writing.

<sup>17</sup> FAO 2011.

<sup>18</sup> TAB 2015.

<sup>19</sup> Nom, S.2014.

For example, the review mentions “mapping, demarcation and protection of flooded forest” as an activity of transboundary/regional importance. Similarly, and in addition to the protection of deep pools in the Upper Mekong, restoration and management of flooded forest in the Tonle Sap Great Lake and conserving freshwater biodiversity and critical wetland resources along the Mekong River are flagged for their regional pertinence.<sup>20</sup>

**The statement of the 2005 TAB publication regarding deep pools can be extended to all the ecosystem's key habitats:**

“*Fisheries throughout the four countries in the Lower Mekong Basin depend on fish that use these habitats as a sanctuary during the dry season. Although many of these fish neither spawn nor feed extensively in deep pools, most have evolved complex life cycles and migration systems that involve these special environments. The three geographically distinct major migration systems recognised in the Mekong probably developed because of the existence of these sanctuaries. For these reasons, the deep pools are an inseparable part of the larger Mekong ecosystem. Plans for their protection and management must consider this interrelationship. Furthermore, these plans must serve both the management of local stocks and of migratory stocks (i.e. transboundary stocks).”<sup>21</sup>*

**Proposed priority actions with respect to conservation of key habitats are:**

- Update identification, mapping and demarcation of key habitats of the LMB ecosystem and rank key conservation areas, including spawning ground, according to their consistency with medium- and long-term sustainability of the basin ecosystem.
- Assess and catalogue the efficiency of existing protection and conservation measures of key species, including high economic value migratory and endangered fish species, in relation to present and future threats and develop and implement guidelines for their long-term conservation.
- Agree on economic and social cost of habitat degradation or loss according to Mekong Agreement 1995 Principle 5, 'Principle of State Responsibility for Damages' (Art. 8).
- Apply management and conservation of key habitats through co-management arrangements or community-based management, drawing from regional experiences.
- Include management and conservation of key habitats in transboundary fisheries-management arrangements.<sup>22</sup>

<sup>20</sup> Ibid.

<sup>21</sup> TAB 2005

<sup>22</sup> For example, the MCR Fisheries Programme is facilitating implementation of transboundary fisheries management, including protection of key habitats in the bordering provinces of Bokeo, Lao PDR, and Chiang Rai, Thailand. The main objective of the project is to encourage fisheries stakeholders in the bordering provinces of Bokeo in Lao PDR and Chiang Rai in Thailand to jointly manage fisheries resources in a sustainable way based on transboundary cooperation and commonly agreed principles, tools and targets.



### 2.5.3 Fisheries Enhancement (restocking or habitat enhancement)

**The FAO's *Technical Guidelines for Responsible Fisheries* outlines a series of ways to sustainably increase the productivity of inland waters. They include:**

- Engineering of the environment to improve levels of reproduction, shelter, food resources and vital habitat.
- Constituting an artificial fauna of selected species to increase the degree of control and the yield from the system.
- Introduction of new species to exploit under-utilised parts of the food chain or habitats not colonised by the resident fauna.
- Stocking natural waters to improve recruitment, bias fish assemblage structure to favoured species or maintain productive species that would not breed naturally in the system.
- Fertilisation to raise the general level of productivity and overall availability of food for fish, thereby increasing growth and survival of the individual fish and increasing their number and biomass.
- Elimination of unwanted species that either compete with or predate upon target species.
- Modification of water bodies by cutting off bays and arms or bunding off areas to serve for extensive and intensive fish ponds to increase control and nutrient flows.
- Introduction of cage culture and parallel intensification of effort of the capture fishery.
- Aquaculture through management of the whole system as a fish pond.
- Genetic modification of cultured species to increase growth, production, disease resistance and thermal tolerance of the stocked or cultured material.<sup>23</sup>

<sup>23</sup> FAO 1997.

The *Guidelines* further underline that enhancement methods aimed at changing the productivity of the water and the nature of the fish stock may conflict with the conservation-oriented objectives. Also, such methods may pose ecological risks if nutrient-rich effluents are discharged or stocked fish escapes.

The MRC's Environmental Management Division actively supports fisheries-enhancement efforts in Member Countries, including those which have transboundary implications. A major enhancement support effort is being implemented together with the FAO's Technical Cooperation Project. It is based on the following rationale:

“**“** *Fish-stock enhancement, particularly seed releasing, has been considered and carried out by the MRC Member Countries as the major measure to enhance the inland fisheries resources for decades. However, due to knowledge gaps and weak human capacity, the enhancement practices conducted by the national institutions are far from science based and without proper pre-assessment, good planning and execution, and post evaluation. As a result, despite significant resource inputs, the actual outputs of enhancement activities and potential impacts on natural population are basically unknown. Recognising the issue, MRC conducted a consultation workshop in 2010 that briefly reviewed the fish-stock enhancement activities in the Member Countries and recommended actions needed to promote good practices of fish-stock enhancement in the Member Countries.*”<sup>24</sup>

The project's objective is “to significantly strengthen the human and institutional capacity of MRC Member Countries in conducting good practices of fish-stock enhancement for sustainable management and utilisation of inland fish resources contributing to national food security and nutrition and livelihood of fishers”.<sup>25</sup>

**The following proposed priority actions were adopted from the project for the BFMS 2018-2022:**

- Conduct in-depth country investigation into status and key issues/constraints for effective and responsible fish-stock and habitat-enhancement activities in all four Member Countries.
- Encourage hatchery production of indigenous and endangered species to counter loss of genetic diversity of stocks as a result of human intervention into LMB ecosystems.
- Provide training for key managerial and technical personnel in Member Countries on good practices of inland fish-stock and habitat-enhancement, such as prohibition of releasing exotic species and implementation of quarantine protocols that prevent transfer of pathogens from cultured animals to the wild.
- Translate existing international norms and standards and successful experiences related to inland fish-stock and habitat-enhancement to a regional technical guideline for MRC Member Countries.
- Fisheries habitat enhancement/restoration.

<sup>24</sup> FAO 2015b.

<sup>25</sup> Ibid.



## 2.5.4 Fisheries and fish-friendly Irrigation and Agriculture

Population growth, together with intensification of agriculture, loss of forest cover, hydropower generation and increasing impacts of climate change pose great challenges to the sustainable use of ecosystems in general and aquatic ecosystems in particular. This is mirrored in the third priority area of action formulated during the MRC summit in Ho Chi Minh City in 2014: "Avoiding, reducing and mitigating risks to river ecology, food security, livelihoods and water quality posed by intensive agriculture, aquaculture, and irrigation, as well as hydropower, navigation and other development activities in the Basin, recognising that the impacts of climate change could compound these risks."<sup>26</sup>

The Lower Mekong Basin's current population of around 60 million is projected to rise to around 100 million ten years from now, requiring a substantial increase in food production, specifically rice and fish (and other aquatic animals), the two pillars of food security. While urbanisation and income and employment opportunities outside the agriculture, fisheries and forest domain are expected to increase, a substantial section of the population will remain dependent on these sectors. For instance, according to Cambodia's latest draft agricultural census, 85% of the total population continue to depend on agriculture and fisheries.<sup>27</sup> Most of them are projected to remain in rural areas, many in remote communities in the basin, with limited access to markets and services. For them fish will continue to be the primary source of animal protein, as well as a critical source of minerals and micronutrients.

The Basin Development Strategy foresees a significant increase in irrigated rice production over the coming years, also to improve food security. However, there is a trade-off to be considered, between intensification of rice production by increasing irrigation and the conservation of the biodiversity that exists in traditional, low-intensity rice-field habitats. This trade-off has been studied since the introduction of high-yielding rice varieties during the Green Revolution of the 1960s and 1970s. It is widely recognised that intensive rice production requires considerable inputs of fertilisers and pesticides, and the need for fertiliser may further increase as dams block the flow of sediment.

<sup>26</sup> TAB 2015.

<sup>27</sup> RGC n.d.



While the use of fertiliser and pesticides increases harvest yields, it will reduce income from fish and other aquatic organisms that would otherwise be generated if rice was rain fed or irrigated in a 'fish-friendly' manner. Studies show that in low-intensity rice fields the monetary income from fish and other aquatic animals considerably exceeds returns from the sale of rice.<sup>28</sup>

In recognition of this trade-off, the MRC Planning Division is cooperating with the Environmental Management Division, which is presently preparing *Guidelines for fish-friendly irrigation*. The guidelines will emphasise that expanding irrigated agriculture in a fish-friendly manner will not only require limiting use of fertilisers and pesticides but, above all, maintaining connectivity of water bodies.

**Proposed priority actions are:**

- Integrate 'fish-friendly irrigation' into national agriculture development strategies, as well as into the Regional Strategy for Irrigated Agriculture Development of the updated Basin Development Strategy.<sup>29</sup>
- Support linkages with other national and regional organisations to ensure that efforts to diversify agricultural production include 'fish-friendly irrigation'.
- Elaborate regional technical guidelines on fish-friendly irrigation for MRC Member Countries based on the experiences and lessons learned in the region and beyond.

<sup>28</sup> Gregory et al.1996.

<sup>29</sup> MRC 2014a.



## 2.5.5 Aquaculture Development

Aquaculture production has been steadily increasing worldwide and in the Lower Mekong Basin over recent decades. In Thailand and Viet Nam, aquaculture production surpassed capture fisheries around the turn of the century. In Cambodia and Lao PDR, there has also been an increase, but production remains more modest.

Production increases have not been without problems, although more in brackish and marine production than in freshwater aquaculture. In Viet Nam, for example, the industry fuels demand for so-called 'trash fish', driving off-shore vessels that use destructive methods to catch juvenile and undersized fish in inshore waters, with dire consequences for stock diversity and abundance. Both Thailand and Viet Nam have faced problems with diseases, environmental degradation and pollution from intensive systems. However, there are combined efforts in place to address problems and promote good aquaculture practices on national and regional levels, in line with CCRF Article 9.2.1: "States should protect transboundary aquatic ecosystems by supporting responsible aquaculture practices within their national jurisdiction and by cooperation in the promotion of sustainable aquaculture practices."<sup>30</sup>

However, contributions to livelihoods and food security differ from those provided by capture fisheries and extensive practices such as fisheries enhancement and culture-based fisheries. As production systems intensify, demands for capital, inputs and know-how increase, as do investment and operational costs.

Total production costs often rise to levels where products become inaccessible to low-income households. To safeguard the livelihood of local communities, capture fisheries should be maintained alongside aquaculture development:

“ Aquaculture yield can substitute for capture fisheries over large scales, but may do little for the people most impacted by losses to capture fisheries. Constraints include lack of land, water, capital, tenure, security and education, and technical know-how, as well as conditions in the area of impact (e.g. terrain and infrastructure), which may all severely limit the possibility for people to make a successful transition to aquaculture, and may also constrain other direct substitutes, such as livestock, poultry or crops. A priority for governments should therefore be to conserve and manage existing capture fisheries. At the same time, providing opportunities for complementary and alternative livelihoods outside fisheries (and where necessary outside the agriculture sector) is an important longer-term approach to reduce the socio-economic effect of negative impacts on capture fisheries.”<sup>31</sup>

With respect to technical and regulatory aspects, there is an assumed common technical interest in aquaculture of indigenous species and of understanding the issue of transboundary management of aquaculture.

<sup>30</sup> FAO 2011.

<sup>31</sup> MRC 2010a.

**The following priority actions are proposed for aquaculture:**

- Promote knowledge sharing on fish-culture techniques, including of Mekong Indigenous Species, among Member Countries in support of stock-enhancement strategies.
- Promote green aquaculture at basin level.
- Encourage Member Countries to give preferential support to aquaculture systems which provide maximum rural income and employment and which produce fish and other aquatic organisms accessible to low-income groups, as rice fields, culture-based or enhanced fisheries.
- Address transboundary issues of aquaculture (see below).
- Focus on regulatory functions and frameworks to ensure good aquaculture practices for higher-intensity, primarily market-oriented aquaculture.
- Develop Regional Technical Guidelines for Aquaculture Development taking the above issues into account.



## 2.5.6 Gender and Fisheries

The Environmental Management Division's Expert Subgroup on Fisheries has recognised the importance of women in fisheries in the Lower Mekong Basin. It has recommended that the role women play in the fisheries sector should be valued and that they should be empowered at all decision-making levels from household to government.<sup>32</sup> In addition to promoting women's role in Fisheries Administrations, participation of women and women's groups in decision-making processes at the community level is encouraged, as well as ensuring women have better access to information on the fisheries sector so that they can participate from a position of knowledge.

As this is a cross-cutting issue, no particular priority areas of action are proposed. All Member Countries have efforts in place to mainstream gender and the MRC supports respective efforts throughout its programmes. It is proposed, however, to include impacts of water development on gender in the monitoring effort proposed in Figure 1 above.

Gender equity in fisheries is one of the key social issues addressed by the MRC Fisheries Programme. The Network for the promotion of Gender in Fisheries Development (NGF) was established in 2000 by fisheries line/implementing agencies of the MRC Member Countries as a platform to promote gender mainstreaming in fisheries management and development in the LMB. The MRC Fisheries Programme has supported the Network in organising regular annual meetings and numerous training courses on Gender Awareness and Mainstreaming. The NGF annual meeting is a regional platform for members to review progress on the implementation of the Network's activities and discuss new work plans, as well as share/exchange knowledge and experience regarding gender mainstreaming/promotion in fisheries among members and participants. In addition, the most recent NGF annual meeting discussed approaches and strategies for strengthening the Network's functions in gender mainstreaming in fisheries in the basin.

### **With respect to gender equality, the BFMS 2018-2022 proposes three strategic priorities for discussion:**

- Promote gender equity and equality, including elimination of abusive child labour in the Mekong fisheries region consistent with universal human rights.
- Document and disseminate basin-wide 'lessons learned' from national implementation of gender strategies.
- Promote capacity building regarding gender in fisheries, e.g. by institutionalising the NGF as a regional partner for sustainable fisheries management and development.

<sup>32</sup> TAB 2006.

## 2.5.7 Fisheries Co-Management

It has been widely recognised that co-management of fisheries resources is preferable to traditional forms of top-down management frequently applied by governments and sector agencies. Co-management implies that fishers and their organisations receive a mandate to manage resources, with governments providing the legal and regulatory frameworks for resource use.

*"Article 6.1 of the CCRF outlines the principle of rights-based fisheries management: "States and users of living aquatic resources should conserve aquatic ecosystems. The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of living aquatic resources."<sup>33</sup>*

Co-management has been the subject of MRC-led training for some time. The approach has been applied to different degrees in Member Countries, with Cambodia and Viet Nam having instituted legal provisions to this effect. Cambodia is probably the most advanced in implementing co-management comprehensively for inland and coastal fisheries management. In Viet Nam, some successful cases of co-management are reported.<sup>34</sup> Thailand and Lao PDR also have co-management schemes though they are more limited in scope: in Thailand, no legal provisions have been promulgated to date, while in Lao PDR legal provisions for co-management have only recently been introduced.

Development partners, such as the FAO and the European Union, and regional fisheries management organisations, such as the Southeast Asian Fisheries Development Center (SEAFDEC), proactively support co-management in and beyond the LMB. While co-management is currently mainly approached on national levels, there is considerable scope for basin-wide cooperation.

### **The following priority actions are proposed:**

- Document lessons learnt from implementing fisheries co-management in the LMB.
- Develop regional guidelines for fisheries co-management in the basin considering the interface between traditional knowledge and co-management.
- Disseminate/exchange experiences and lessons learned (including positive and negative experiences) among Member Countries.
- Support exchange visits and cooperation on fisheries community and state levels between Member Countries.
- Assist Member Countries in developing/improving legal frameworks for fisheries co-management.

<sup>33</sup> FAO 2011.

<sup>34</sup> See, for example, Takahashi and Van Duijn 2012



## 2.5.8 Transboundary Issues and Shared Fish Stocks

Within the larger basin ecosystem, many aquatic ecosystems are shared by two or more countries. The impact of human activities such as overfishing, habitat degradation and pollution in one country have been known to affect the resources in neighbouring countries.

*"Article 7.1.3 of the CCRF states: "For transboundary fish stocks, straddling fish stocks, highly migratory fish stocks and high-seas fish stocks, where these are exploited by two or more States, the States concerned, including the relevant coastal States in the case of straddling and highly migratory stocks, should cooperate to ensure effective conservation and management of the resources. This should be achieved, where appropriate, through the establishment of a bilateral, sub-regional or regional fisheries organisation or arrangement."<sup>35</sup>*

The FAO's *Technical Guidelines for Responsible Fisheries, No. 6, Inland Fisheries*, section on 'Multinational rivers, reservoirs and lakes' states: "Many lakes, reservoir and river basins lie within the jurisdiction of more than one country, or within countries [with] more than one administrative unit. In such waters, agreements should be reached for common research programmes, standardised systems of reporting, exchange of information and, where possible, common approaches to management."<sup>36</sup>

More recently, the *Voluntary Guidelines for Sustainable Small-Scale Fisheries* recommended: "Where transboundary and other similar issues exist, e.g. shared waters and fishery resources, States should work together to ensure that the tenure rights of small-scale fishing communities that are granted are protected."<sup>37</sup>

MRC's Fisheries Programme had been addressing transboundary issues since 2004. MRC's Core River Basin Management Functions 3 (Planning support) and 6 (Regional cooperation) directly relate to transboundary and cross-border management. The Fisheries Programme's *2011-2015 Implementation Plan* included the activity, "Explore and promote transboundary fisheries management mechanisms through cross-border stakeholder engagement."

In 2008, on the occasion of the '2<sup>nd</sup> TAB Learning Event in Transboundary Management' organised by the MRC Fisheries Programme, fisheries stakeholders from Lao PDR and Thailand came together and visited several fishery communities along the Mekong River in Chiang Khong and Houeisay districts to discuss and identify regional opportunities for improved transboundary fisheries management. They also explored needs and challenges, concepts and principles, as well as the application of appropriate management tools for fisheries management under transboundary/cross-border cooperation. The proposal document on transboundary fisheries management in the bordering provinces of Bokeo, Lao PDR, and Chiang Rai, Thailand, were developed and endorsed for implementation.

<sup>35</sup> FAO 2011. For transboundary resource management in marine waters, see also the 1982 United Nations Straddling Fish Stocks Agreement.

<sup>36</sup> FAO 1997

<sup>37</sup> FAO 2015a.

In response to the challenges of transboundary fisheries management, the MRC Fisheries Programme supports and facilitates the implementation of two transboundary fisheries management projects in the MRC Member Countries: "Transboundary Fisheries Management in Bordering Provinces of Prey Veng, Cambodia, and Dong Thap, Viet Nam" and "Transboundary Fisheries Management in Bordering Provinces of Bokeo in Lao PDR and Chiang Rai in Thailand."

Together with development partners such as SEAFDEC and World Wildlife Fund (WWF), the Fisheries Programme supported a series of meetings on transboundary fisheries management on the Mekong and Sekong Rivers in Cambodia and Lao PDR.

**The following priority actions are proposed:**

- Document, disseminate and exchange the lessons learned from transboundary fisheries management implementation at regional level.
- Build capacity on the transboundary approach and related topics such as co-management of shared stocks in the Member Countries.
- Identify and strengthen existing cross-border mechanisms for transboundary fisheries management.
- Harmonise transboundary fisheries-management measures, including cooperation and research.
- Promote regional cooperation on research and development in the domain of transboundary issues.



## 2.5.9 Water Development and Fisheries

Water development impacts fisheries in many ways, e.g. with regards to critical habitats such as wetlands and floodplains, irrigation and water retention, and management devices for flood control or hydropower generation. With respect to the latter, the 1995 Mekong Agreement requires Member Countries to design hydropower projects to “avoid, minimise and mitigate” impacts. According to the World Commission on Dams, dams constitute a threat to fish because of i) modification of flows and subsequent impact on water and habitat quality/quantity, and ii) a barrier effect making fish migrations difficult or impossible for adult or juvenile fish.<sup>38</sup>

While hydropower dams have a wide range of impacts on primary production systems including farming, agro-industries and forestry, it is widely assumed that capture fisheries are most severely impacted. In the case of the LMB, impacts from hydropower dams will reduce the yields from one of the world's largest inland fisheries. In 2012, the MRC's Fisheries Programme estimated that total fish production amounted to 4.4 million metric tons, with an estimated 2.3 million metric tons from capture fisheries and 2.1 million metric tons from aquaculture products. These yields support an average basin-wide consumption of fish and other aquatic animals of about 63 kg/capita/year in the LMB,<sup>39</sup> as compared to a world average of around 20 kg/capita/year.<sup>40</sup> Productivity is driven by two factors: (i) the hydrological regime of the Mekong River, in particular the flood pulse in the floodplains of the Tonle Sap and the Mekong Delta, and (ii) the interconnectivity of distant yet vital fish habitats.<sup>41</sup>

Estimates of the impact of hydropower dams on capture fisheries in the LMB vary, from 25% relative to the baseline<sup>42</sup> to 13-42% in a best-case/worst-case scenario for the LMB<sup>43</sup>. For Cambodia, the same study estimates a production loss of between 40% and 57% by 2030.

Lower production will result in decreased capacity to contribute to food security and provide for livelihoods. In terms of food security, one study estimates that the loss in capture fisheries would imply between 6.4 million and 21.1 million people (12-38% percent of the LMB population in 2000) losing their main protein source.<sup>44</sup>

Factoring the lessons learned from food security assessments worldwide, i.e. that food not only needs to be available but also accessible, it is evident that remote rural communities will suffer most from the loss of capture fisheries: they have neither easy access to markets nor sufficient purchasing power to replace fish caught for their own consumption with commercial products. In Cambodia, for example, significantly reduced catches of *trey riel*, a white fish used to make *pra hoc* (fish paste) will directly impact communities as it is the principle source of affordable animal protein with a long shelf life.

Similarly, losses in income and employment will primarily impact the rural poor. Estimates of people economically active in fisheries (full-time, part time and occasional) in the LMB, are inconsistent.

<sup>38</sup> WCD 2000.

<sup>39</sup> MRC 2015.

<sup>40</sup> FAO 2016.

<sup>41</sup> MRC 2011, pp. 19-20.

<sup>42</sup> MRC ISH11 2013.

<sup>43</sup> MRC 2010a.

<sup>44</sup> Ibid.

One study cites 1.6 million, 3.13 million and 2.8 million people for Cambodia, Thailand and Viet Nam, respectively.<sup>45</sup> Others estimate that, in Cambodia alone, 4 million people derive their income from fisheries.<sup>46</sup> Regardless of these differences in estimates, it is highly likely that the loss of livelihoods, income and employment opportunities will come at a high socio-economic and socio-political cost, though the impact may vary per country.

There has been both regional and international controversy over dam construction in the basin, and positions remain polarised. The FAO's *Technical Guidelines for Responsible Fisheries*, No. 6, Inland Fisheries recognises the central constraint to the conservation of the aquatic environment and its contribution to livelihoods and food security:

“Responsibility for the protection of aquatic ecosystems usually lies outside the fishery. States should, therefore, plan for the conservation of aquatic environments in the context of their multi-purpose use. Activities such as dam construction for water supply and power, channelisation for navigation and flood control, land drainage and wetland reclamation for agricultural and urban use, waste disposal from urban, mining, industrial and agricultural uses, abstractions for agricultural, industrial and urban supply all have a profound impact on the aquatic ecosystem.[...] Many of these activities are fundamental to the functioning of modern society and are economically of such importance that their limitation in the interests of conservation becomes hypothetical. All that can be done in many cases is to keep the number of such interventions to a minimum and to limit their impacts. Users of the aquatic system inflicting damage should contribute to the mitigation of the effects of their activities.”<sup>47</sup>

**The Guidelines recommend the following elements for conservation:**

- The maintenance and restoration of longitudinal and lateral connectivity in rivers in the interests of conserving fish-migration patterns through removal of transversal (dams) or lateral (levees) obstructions or the provision of fish-pass mechanisms.
- Restoration or maintenance of main channel diversity in rivers including meanders, point bars, bottom structure, vegetation etc.
- Maintenance or restoration of floodplains and riverine wetlands. This does not have to be continuous along the river but provision should be made for reserves at intervals along the river where normal flood regimes are maintained.
- Removal and control of all point-sources of pollution including industrial, urban and mining wastes. Control of diffuse pollution, particularly of nutrients, into lakes and rivers.
- Control of processes at basin level, particularly deforestation, mining operations in rivers and changes in agricultural practice, that can lead to massive siltation which can shorten the lives of lakes and reservoirs and destabilise river channels and floodplains.<sup>48</sup>

<sup>45</sup> Baran 2010.

<sup>46</sup> Kurien 2006.

<sup>47</sup> FAO 1997.

<sup>48</sup> Ibid.



GIVEN THE CONSIDERABLE EFFORTS BY THE MRC AND OTHERS TO FACILITATE INFORMED DEBATE ON AVOIDANCE, MINIMISATION AND MITIGATION OF IMPACTS OF WATER DEVELOPMENTS, **THE BFMS 2018-2022 WILL HAVE TO REMAIN A 'LIVING DOCUMENT', ABLE TO ABSORB NEW INSIGHTS INTO THE IMPLICATIONS OF DEVELOPMENTS.**

**In addition to the strategic or priority actions identified in the updated Basin Development Strategy 2016-2020, the following measures are proposed:**

- Encourage Development Partners to assist in assessing the transboundary and cumulative impact of different water development scenarios on fish, habitats, livelihoods, income and employment and communities depending on fishing and other users of fisheries resources.
- Monitor impacts of water developments on regional food security and nutrition.
- Assess benefit flows accruing from water development and relate benefits to economic and socio-ecological cost incurred, by country and user groups.
- Disseminate respective data and information to facilitate further debate on national and regional levels.
- Develop guidelines for fish passage designs for Mekong migratory fish species.



## 2.5.10 Fisheries and Climate Change

Climate change, together with water-development interventions, pose great challenges to sustainable use of ecosystems in general and aquatic ecosystems in particular. The LMB is expected to be significantly affected by changes in rainfall and temperature, which could result in greater variability of the River flow, with an increasing risk of flooding during the wet season, in particular in low-lying areas downstream of Kratie and in the Mekong Delta. In the Mekong Delta, the most important factor related to flooding is expected to be sea-level rise. Overall, global warming is expected to impact geographic ranges of fish species, which will probably change species composition and biological ecosystem productivity.

All Member Countries are addressing climate change. Cambodia has developed a *Strategy to Respond to Impacts of Climate Change 2014-2018*, while Thailand has identified four priority areas for climate-change impact research in its *Inland Fisheries Policy and Research Framework (2012-2016)*:

- Production variation, fisheries resources diversity and fish distribution related to flood and drought phenomena.
- Impact of climate change on breeding and nursing of freshwater fauna.
- Impact of climate change on culturing of freshwater fauna.
- Mitigation of impact of climate change on inland fisheries resources.<sup>49</sup>

MRC is engaging in a major new initiative to assess in more detail the range of potential impacts that climate change may have on the basin and to formulate a regional adaptation strategy. The Asian Development Bank-supported 'Core Environment Program and Biodiversity Conservation Corridors Initiative in the Greater Mekong Sub-Region, Phase 2' includes the component: "Building capacity to mainstream climate change adaptation in rural communities in [Greater Mekong Sub-Region (GMS)] biodiversity conservation landscapes."<sup>50</sup> For the development of a robust community-level adaptation strategy, the following recommendation is made:

“ [P]lanners also need to understand how different communities, livelihood strategies, and ecosystems which support the communities may be vulnerable to current and future climate change. However, communities are likely to be exposed not only to climate-related hazards but also socio-economic variables which could change the communities' vulnerability context. Therefore, it is crucial that socio-economic dynamics affecting the communities will be addressed as an integral part of a climate-vulnerability assessment. Currently, capacity gaps in these analyses exist in the GMS. Practical assessment and planning tools, which incorporate scenario analyses and simultaneously capture unfolding climate and socio-economic risks, need to be developed and institutionalised. Such tools should be integrated in the planning process for land and water use, agricultural production, and community development in the GMS.”<sup>51</sup>

<sup>49</sup> Ingthamjitr 2014.

<sup>50</sup> ADB RETA 7987 n.d.

<sup>51</sup> Ibid.



**The following Strategic Priority Actions are recommended:**

- Incorporate climate-change adaptation into holistic strategies.
- Develop guidelines for the identification of climate-change-related vulnerability of fisheries-specific habitats and species.
- Develop, in liaison with national and regional specialised agencies, guidelines for identification of climate-change-related vulnerability of communities depending on fisheries for their livelihoods.
- Update Member Countries on the development of MRC Mekong Adaptation Strategy and Action Plan and tools developed to assess the impact of climate change on fisheries and aquaculture.
- Facilitate incorporation of fisheries-relevant climate-change forecasting and mitigation, resilience and adaptation strategies into national and regional early-warning systems, emergency response plans and disaster-management according to MRC's Core Function 4 (Forecasting, warning and emergency response) and 1 (Monitoring, data analysis).

## 2.6 Alignment of Strategic Priorities and Actions with Basin Development Strategy Core River Basin Management Functions

The 21<sup>st</sup> TAB meeting recommended aligning the Strategic Priorities and Actions of the BFMS 2018-2022 with Section 4.2 of Basin Development Strategy 2016-2020 as follows:<sup>52</sup>

### 4.2.1



#### **Reduce remaining knowledge gaps to minimise risks:**

- Study of risk-mitigation options for mainstream dams regarding fish, hydrology, hydraulics, sediments and water quality.
- Study of capture-fish productivity and migration and potential impacts of MRC sector-development projects.
- Study socio-economic impacts from reduced capture fisheries and implementation of fisheries mitigation measures.

### 4.2.2



#### **Optimise basin-wide sustainable development and cost and benefit sharing:**

- Promote, implement and update a regional strategy for fisheries management and development (Basin-Wide Fisheries Management and Development Strategy 2018-2022).
- Prepare and promote regional strategy for aquaculture development.
- Encourage Development Partners to assist in assessing the transboundary and cumulative impact of different water development scenarios on fish, habitats, livelihoods, income and employment, and communities dependent on fishing and other users of fisheries resources.
- Monitor impacts of water developments on regional food security and nutrition.
- Promote gender equity and equality, including elimination of child labour in Mekong fisheries region consistent with universal human rights.
- Incorporate climate-change adaptation into holistic strategies.

<sup>52</sup> MRC-FP 2014b. The regrouping of BFMS 2018-2022 Strategic Priorities and Actions is ongoing as this document is being redrafted – parallel to further revisions of the BDS and the MRC SP 2016-2020.

### 4.2.3

#### **Strengthen the protection of mutually agreed environmental assets:**

- Update identification, mapping and demarcation of key habitats of the LMB ecosystem and rank key conservation areas according to their consistency with medium- and long-term sustainability of the basin ecosystem.
- Conduct in-depth country investigation into status and key issues/constraints for effective and responsible fish-stock and habitat-enhancement activities in all four Member Countries.
- Assess and catalogue the efficiency of existing protection and conservation measures of key species in relation to present and future threats.
- Develop and implement guidelines for long-term conservation.
- Agree on economic and social cost of habitat degradation or loss according to the Mekong Agreement 1995 Principle 5, 'Principle of State Responsibility for Damages' (Art. 8).
- Apply management and conservation of key habitats through co-management arrangements or community-based management, drawing from regional experiences.
- Include management and conservation of key habitats in transboundary fisheries management arrangements.



### 4.2.4

#### **Strengthen basin-wide procedures and national implementation capacity: strengthen Member Countries' capacity to implement 'Plan to Transfer Fisheries Monitoring Activities to Member Countries (2016-2020)':**

- Strengthen capacity to update and synchronise fisheries database with national monitoring data that include fish biological/ecological (including water-quality) information and data on livelihoods, food security, value chains and gender.
- Strengthen capacity to elaborate fisheries data analysis, modelling, fisheries sector report, technical papers, State of the Basin reports.
- Build the Member Countries' capacity in transboundary approach and related topics such as co-management of shared fish stocks.



- Provide training for key managerial and technical personnel in Member Countries regarding good practices of inland fish stock and habitat enhancement, such as prohibition to release exotic species and implementation of quarantine protocols that prevent transfer of pathogens from cultured animals to the wild.
- Strengthen capacity in gender and senior managers in fisheries, e.g. by institutionalising the Environmental Management Division's Expert Subgroup on Fisheries and NGF as a regional partner for sustainable fisheries management and development.

#### 4.2.5

##### **Improve national water resources development and management:**

- Develop guidelines for transboundary fisheries management and co-management.
- Develop guidelines for improvements to capture fisheries in agricultural irrigation schemes.
- Promote and implement guidelines for the transboundary movement of aquatic organisms.
- Promote and implement guidelines (good practices & protocols) for fish-stock enhancement.
- Develop guidelines for good aquaculture practices.
- Develop guidelines for identification of climate-change-related vulnerability of fisheries-specific habitats and species.
- Develop guidelines for identification of climate-change-related vulnerability of communities depending on fisheries for their livelihoods.



#### 4.2.6



##### **Enhance information management, communications and tools:**

- Update and synchronise regional fisheries database with national monitoring datasets.
- Develop and manage Mekong fisheries data and information-generation and -sharing platform and feed back regional data and analysis in a timely manner.

#### 4.2.7



##### **Increase cooperation with partners and stakeholders:**

- Promote transboundary fisheries management and co-management.
- Promote development and establishment of transboundary fisheries management mechanisms.
- Document, disseminate and exchange the lessons learned from transboundary fisheries management implementation at regional level.
- Promote cooperation between Mekong Member Countries and other regional (e.g. SEAFDEC) and international (e.g. FAO) organisations on research and development addressing transboundary fisheries management issues.

## 2.7 Implementation and Monitoring & Evaluation

The Terms of Reference of the Environmental Management Division's Expert Subgroup on Fisheries were adopted from the Terms of Reference of the former MRC Fisheries Programme's TAB: "To provide essential technical inputs and guidance to the formulation and implementation of a basin-wide fisheries management and development strategy, as promoted by the MRC."<sup>53</sup>

The Expert Subgroup on Fisheries is, therefore, the owner of both the development and the implementation of the BFMS 2018-2022. Throughout the implementation of the BFMS 2018-2022, the Expert Subgroup on Fisheries will provide oversight and guidance as to how agreed basin-wide Strategic Priorities and Actions are addressed and integrated into national planning and implementation. Implementation will be participatory, engaging with national agencies, regional organisations (e.g. SEAFDEC, FAO, NACA) academic organisations, private sector, civil society and other non-state actors.

Monitoring and evaluation (M&E) of the BFMS 2018-2022's implementation will be carried out by the Expert Subgroup on Fisheries and coordinated with the MRC Environmental Management Division. The Expert Subgroup on Fisheries will develop specific, objectively verifiable indicators following the log frame proposed in the BFMS 2018-2022 once it is approved by the MRC Council.

To implement the BFMS 2018-2022, a five-year Project-Based Action Plan will be developed in order to take up regional and transboundary issues and challenges, as well as to seek funds from Development Partners and other funding sources. The Project-Based Action Plan will be composed of several projects and activities proposals, including rationale, tentative log frame, proposed budget and implementation arrangements. M&E by the Expert Subgroup on Fisheries will cover both regional and transboundary activities set out in the BFMS 2018-2022 and National Indicative Plans. M&E results will be integrated into the MRC's M&E system, in accordance with the agreed MRC indicator framework. It will record and evaluate efficiency, effectiveness, impacts and sustainability, including in the overall context of the MRC Basin Development Strategy.

<sup>53</sup> TAB 2013.







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# Annex 1: Document History

No.	Task	Status
<b>Inception Phase</b>		
1	Concept note, full proposal and outline V1 draft BFMS 2018-2022	Discussed and agreed at the 19 <sup>th</sup> TAB meeting in November 2012 (HCMC) and 20 <sup>th</sup> TAB meeting in March 2013 (Nongkhai)
2	V2 draft BFMS 2018-2022	Discussed and agreed at 21 <sup>st</sup> TAB Meeting in September 2014 (VTE)
3	Additional feedback on V2 BFMS 2018-2022 from the Member Countries	Completed in November 2014
4	Formulation of V3 BFMS 2018-2022	Prepared in December 2014
<b>Consultation Phase</b>		
5	Four national consultation workshops on V3 BFMS 2018-2022 in each MC	Completed in March 2015
6	Formulation of V4 BFMS 2018-2022	May 2015
7	Regional stakeholder consultation workshop on V4 BFMS 2018-2022 for final version for TAB agreement	11 October 2016
<b>Synthesis Phase</b>		
8	Preparation of V5 BFMS 2018-2022	12 October 2016
9	22 <sup>nd</sup> TAB Meeting to agree on V5 BFMS 2018-2022	13 October 2016
10	Preparation of the final draft BFMS 2018-2022	January 2017
11	Submission of the final draft to four Member Countries for making final comments and feedback. Prepare final BFMS 2018-2022	May 2017
<b>Endorsement and Approval Phase</b>		
12	Endorsement of final version of BFMS 2018-2022 by MRC JC	August 2017
13	Approval of final version BFMS 2018-2022 by MRC Council	November 2017
<b>Implementation Phase</b>		
14	Development of the Project-Based Action Plan	June 2017 – June 2018
15	Implementation of the Project-Based Action Plan	January 2018 – 2022

# Annex 2:

## National Fisheries Sector Reviews

### Cambodia

The *Report on the Review of National Fisheries Plans, Strategies and Policies in Cambodia* cites relevant documents and policies and outlines strategies for fisheries management and development.<sup>54</sup>

The sector policy framework for the management and development of the fisheries sector outlined in the *Strategic Planning Framework 2010-2019* (SPF) aims to conserve fisheries resources and ecosystems, maintain sustainable livelihoods and contribute to national economic development. It is based on the *Cambodia Rectangular Strategy*, which is the government's economic policy agenda,<sup>55</sup> and the 2005 National Fisheries Sector Policy.<sup>56</sup>

**The Framework was developed to support the achievement of Cambodian Millennium Development Goals in compliance with Chapter 4 of the Law on Fisheries, which states that the Fisheries Administration shall develop a national fisheries management plan based on the national fisheries policy. The law stipulates that the management plan should reflect the following principles:**

1. Fishery and aquaculture should contribute to national prosperity.
2. Fishery and aquaculture should improve livelihoods
3. Fishery domains and their resources should be maintained in healthy and resilient condition, and sustainably managed.
4. Fish should remain a plentiful, healthy and valuable source of food.
5. Profitable, sustainable and responsible fishing.
6. Close cooperation with neighbouring countries to manage, develop and conserve the fisheries domain.
7. The sector's policy, regulatory and support environment should be sufficient, appropriate and enabling.

**In 2014, the Fisheries Administration (FiA) developed an annual fisheries action plan in compliance with the Framework's goals, indicators and targets. It listed nine subprogrammes:**

1. Community-fisheries development.
2. Management of fisheries domain.
3. Rural aquaculture development.
4. Human-resources development and fisheries-resource protection.
5. Research in support of sustainable fisheries.
6. Improvement of post-harvest fisheries for better quality and safety.
7. Fisheries protection and conservation of fisheries resources.
8. Fisheries policy, planning, M&E.
9. Sustainable marine-fisheries resource development.

<sup>54</sup> Nom 2014.

<sup>55</sup> RGC 2004.

<sup>56</sup> RGC 2005.

Parallel to the Framework, the FiA developed the Cambodian Code of Conduct for Responsible Fisheries and policies to address cross-sector issues, such as climate change and gender.<sup>57</sup> More recently, the *Strategy to Respond to Impacts of Climate Change 2014-2018* and the *National Strategic Plan for Aquaculture Development in Cambodia* were elaborated.

The report comprehensively outlines policy areas and strategy elements contained in these documents. Table 1 shows a comparative ranking of policy areas and strategy elements. The comparison uses broader categories in order to accommodate the formulations and definitions used in the documents. It therefore contains an element of interpretation.

**Table 1. Broad Categories of Policy Areas and Strategy Elements of the Cambodia Fishery Sector**

Categories	Relevance/pertinence Estimated at High (3), Medium (2), Low (1) Not Listed (0)			
	NFP 2005	Fish. Law 2007	SPF 2010-19	Action Plan
Contribution to economic (GDP) growth, including by value chain and post-harvest improvements	3	2	3	3
Contribution to sustainable livelihoods	3	3	3	3
Contribution to food security	1	2	2	0
Responsible fisheries	2	3	3	3
Fisheries enhancement, including rice-field fisheries	1	2	2	2
Responsible aquaculture	2	3	2	2
Environmental and ecosystem/habitat protection and restoration	2	3	3	3
Co-management, including public-sector institutional strengthening and capacity building	3	3	3	3
Research, including monitoring and generation of data and information	1	1	1	2
Basin-wide cooperation in fisheries management and development	0	1	2	0
Regional/international cooperation	0	1	2	0

<sup>57</sup> FiA 2007





## Lao PDR

The *Review of National Fisheries Plans, Strategies and Policies for Lao PDR* provides a summary of the state of fisheries management and development in Lao PDR.<sup>58</sup> Its findings are based on the *National Strategy for Fisheries from the present to 2020, Action Plan from 2006 to 2010*<sup>59</sup> and on the legal and regulatory framework governing the sector, in particular the 2009 Fisheries Law.<sup>60</sup> In addition, the FAO's *Fisheries and Aquaculture in the Lao PDR – a Legislative Review* was consulted for the findings presented below.<sup>61</sup>

The review recognises the important contribution of fisheries and aquaculture to national food security and livelihoods, especially in rural areas. It also acknowledges that developments in other sectors – such as irrigated agriculture, hydroelectricity, domestic water supply and wastewater disposal – threaten this contribution. Regarding sector management and development, it recommends the following:

“The development of aquatic resources should be recognised by the Government in its development planning, as it is a key component in improving food security for many rural people, as well as providing them with additional income and employment opportunities. Two interlinked strategic frameworks of resource assessment and the management of capture fisheries should be developed, in concert with the promotion of the sustainability of aquaculture.”<sup>62</sup>

<sup>58</sup> Phounsavath 2014. The author emphasised in personal communication with the FP that this version should be considered a rough first draft.

<sup>59</sup> DLF 2006.

<sup>60</sup> Lao PDR 2009.

<sup>61</sup> Cacaud and Latdavong 2009.

<sup>62</sup> Ibid.

The National Strategy for Fisheries discusses issues pertinent to the sector, but does not explicitly outline strategies, plans and road maps. No explicit reference to regional cooperation is made. As it refers to the planning period 2006-2010, it may well have been superseded by more recent planning efforts, although no documents were provided for the purpose of this review.

**The FAO's legislative review analysed the fisheries and aquaculture legal framework in place before the 2009 Fisheries Law, including relevant legislation that impacts fisheries and aquaculture.**

**Major findings of the analysis included:**

- “Fisheries regulations are scattered throughout several laws and regulations, particularly in the Forestry Law, Agriculture Law and MAF rules and instructions, and are, to a large extent, redundant, dealing mainly with protected and managed species, prohibited fishing gears and methods and closed seasons
- Aquaculture activities are virtually unregulated.
- There is a need to clarify the extent of the powers conferred by the Local Administration Law 2003 upon local authorities with respect to fisheries and aquaculture at each level of government (province, district and village).
- Signs of overfishing have been reported in certain areas, indicating that there may be a need to introduce legal mechanisms to restrict or limit access to such areas.
- Existing regulations are poorly enforced, if at all.”<sup>63</sup>

**The FAO's review resulted in the following:**

- “It was proposed to introduce co-management mechanisms drawing on co-management initiatives by the Living Aquatic Resources Research Center (LARReC), the Mekong River Commission (MRC) and WWF for the management of fisheries at the local level.
- It (was) recognised that a significant amount of fish is produced in rice-field fisheries and that rules of access to such fisheries need to be clarified.
- To facilitate the orderly development of commercial aquaculture and control the conduct of such activities, it was suggested to introduce a licensing system.
- There (was) a need to reassess the procedure and objective of fishing concessions, as, so far, fishing concessions that have been granted are marketing concessions.
- Provide for enforcement mechanisms (e.g. designation of enforcement officers, specification of enforcement officers' powers).
- There (was) no offences and penalties scheme for fisheries and aquaculture”<sup>64</sup>



<sup>63</sup> Ibid.

<sup>64</sup> Ibid.

**The 2009 Fisheries Law provides the basic principles of fisheries in Article 6:**

**1. Principle of**

"Engagement in aquaculture, conservation, protection, development and expansion of the species of fish and other aquatic fauna in a sustainable manner shall be work in which all people participate;

**2. Principle of**

Engagement in aquaculture, conservation, protection, development and expansion of the species of fish and other aquatic fauna shall be the important tasks in the management of fisheries of fish and other aquatic fauna;

**3. Principle of**

Exploitation of aquatic fauna shall be in accordance with laws and regulations, effective and sustainable without creating negative impact on environment, society or nature;

**4. Principle of**

Establishment and protection of conservation zones for aquatic species and of their habitats, and food sources are to create the best conditions for their growth and proliferation and are aimed at maintaining the ecosystem balance;

**5. Principle of**

Conservation, protection, development, exploitation of aquatic fauna, the management and inspection of fisheries shall be in conformity with international treaties to which the Lao PDR is a party."<sup>65</sup>

**Article 23 covers the protection of habitats and ecosystems:**

"The protection of habitats and ecosystems means the conservation and protection of the habitats of fish and other aquatic fauna, and of the ecosystems of the bodies of water including the conservation of natural fish breeding areas, the food sources and other protected areas to ensure the sustainability and abundance of biodiversity. At the same time, protection measures against any man-made or natural destruction or attack shall be issued."<sup>66</sup>

<sup>65</sup> Lao PDR 2009.  
<sup>66</sup> Ibid.

The law provides for participatory resource management in several articles, including roles of community-based fisheries management committees. Several participatory management schemes are being implemented, some with external support, e.g. management of stretches of the Kading River supported by WWF. *The Guidelines on Fisheries Co-management* (in Lao) was developed by the Department of Livestock and Fisheries with support from WWF-Laos in 2009.

As all consulted documents were either in draft, outdated or not intended as policy/strategy documents, the following valuation of policy areas and strategy elements (Table 2) is largely based on the consultant's interpretation.

**Table 2: Broad Categories of Policy Areas and Strategy Elements of the Lao PDR Fishery Sector**

Broad Categories of Policy Areas and Strategy Elements	Relevance/pertinence Estimated at High (3), Medium (2), Low (1) and Not Listed (0)	
	2006-2010 National Strategy	2009 Fisheries Law
Contribution to economic (GDP) growth, including by value chain and post-harvest improvements	3	2
Contribution to sustainable livelihoods	2	2
Contribution to food security	2	2
Responsible fisheries	3	3
Fisheries enhancement, including rice-field fisheries	2	2
Responsible aquaculture	3	2
Environmental and ecosystem/habitat protection and restoration	2	3
Co-management, including public-sector institutional strengthening and capacity building	1	2
Research, including monitoring and generation of data and information	2	2
Basin-wide cooperation in fisheries management and development	1	1
Regional/international cooperation	1	1

# Thailand

The *Report on the Review of National Fisheries Strategies and Policies and Plans in Thailand* is based on the previous *Fisheries Development Strategy (2009-2012)* and the current *Fisheries Development Strategy (2013-2016)*, which are aligned with the *11th National Economic and Social Development Plan (2012-2017)* and the *11th Agriculture Development Strategy (2012-2017)*.<sup>67</sup>

The current *Fisheries Development Strategy (2013-2016)* includes statements of vision and mission. The vision is formulated as follows: "Development, determination and administration of changes, to be leader of fisheries food security of the country consistent with sustainable development."

## **The Department of Fisheries has formulated the following mission:**

- Support and encourage fish-production increase effectively at all levels.
- Support and develop quality of fish and fisheries products in all production chains in compliance with national and international standards.
- Regulate and control aquatic resources management for sustainable use and maintain diversity by community participation.
- Support and encourage fisheries research in all disciplines, including technology-transfer development to further develop creative innovation and increase value added.
- Personal capacity building and organisational management system improvement.

## **The following objectives are outlined:**

- Ensure aquaculture production is efficient and quality of products is acceptable, support the country's food security and enhance competitiveness.
- Ensure farmers have secure income to maintain suitable living conditions and increase competitive potential.
- Improve quality of aquatic animal and fisheries products to increase consumer confidence in export markets.
- Balance aquatic animal production and exploitation.
- Research-based sustainable development.
- Personal capacity building.

## **Five fisheries strategy issues are highlighted:**

1. Enhancement of fish production.
2. Improvement of fish and fisheries-products quality.
3. Sustainable fisheries resources administration and management and maintenance of fish diversity.
4. Fisheries technology research and development.
5. Institutional and personal capacity building.



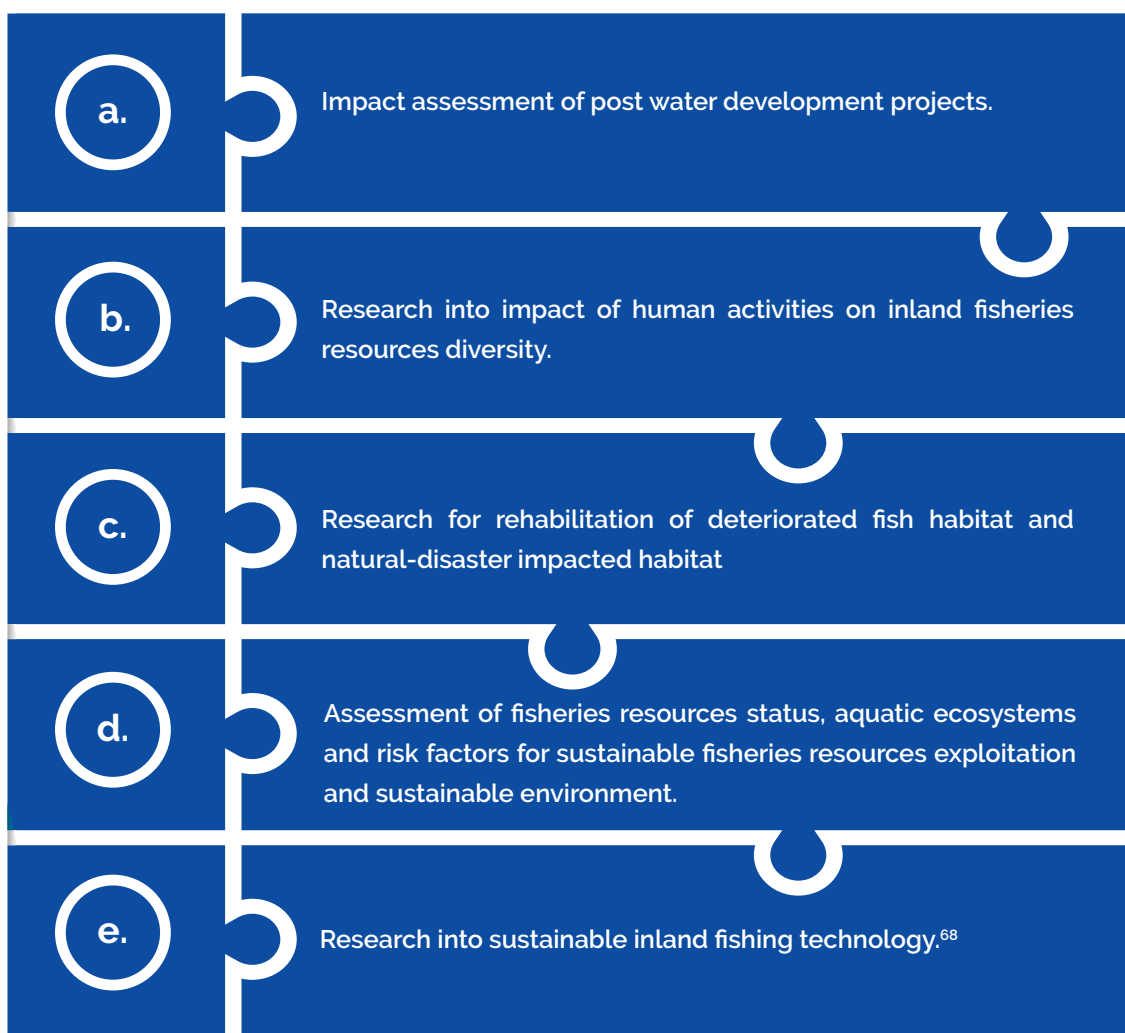
<sup>67</sup> Ingthamjitr 2014.

The document identifies Strategy Issues 1, 3 and 4 as most relevant to regional fisheries management.

Strategy Issue 1 focuses on fish-production enhancement by improving the potential of fish production, extension and technology transfer. Strategy Issue 3 focuses on balancing fisheries resources for sustainable exploitation; maintaining biodiversity through legal measures and participation of community and local administration organisations; and control of unpolluted areas for organic and chemical-free aquaculture. Strategy Issue 4 focuses on using research outputs to increase production and value of fish and fisheries products.

In accordance with the identified strategy issues, the Thai Department of Fisheries formulated the *Inland Fisheries Policy and Research Framework*, based on a review and analysis of issues pertinent to inland fisheries in the Mekong Basin. Priorities for Thai Mekong Basin fisheries management included fisheries administration and management; aquaculture management and development; climate change and fisheries resources diversity; technology transfer and knowledge building; and capacity building.

The framework identifies Research Strategy 3, which addresses fisheries resources administration and management, as highly relevant for Mekong Basin-wide fisheries management. It includes the following points:



<sup>68</sup> Ibid

The screening of the review resulted in the following policy areas and strategy elements (Table 3), which are ranked with the limitations mentioned above: comprehensiveness of the national assessment and interpretation.

**Table 3: Broad Categories of Policy Areas and Strategy Elements of the Thailand Fishery Sector**

Broad Categories of Policy Areas and Strategy Elements	Relevance/pertinence Estimated at High (3), Medium (2), Low (1) and Not Listed (0)	
	Fisheries Development Strategy (2013-2016)	Inland Fisheries Policy and Research Framework
Contribution to economic (GDP) growth, including by value chain and post-harvest improvements	3	3
Contribution to sustainable livelihoods	2	2
Contribution to food security	3	2
Responsible fisheries	3	3
Fisheries enhancement, including rice-field fisheries	3	3
Responsible aquaculture	3	2
Environmental and ecosystem/habitat protection and restoration	2	3
Co-management, including public-sector institutional strengthening and capacity building	2	2
Research, including monitoring and generation of data and information	3	3
Basin-wide cooperation in fisheries management and development	2	2
Regional/international cooperation	1	1

## Viet Nam

The *Review of policies, strategies, development plans in fisheries in Mekong Delta* Viet Nam cites the 'Viet Nam Fisheries Development Strategy through 2020, Decision No.1690/QD-TTg of Prime Minister dated 16/9/2010', which states that the fisheries sector should be industrialised, modernised and developed to become a key sustainable manufacturing sector.<sup>69</sup> The aim is to gradually improve the level of education and quality of life of fishermen, while protecting the environment and defending the nation's sea areas and islands. The strategy pursues ambitious targets for 2020, including 8-10% annual growth in production value with total production reaching 6.5-7 million tons (of which 65-70% from aquaculture) and the tripling of the per capita income of the 5 million fisheries workers.

The recent national-level decisions related to the agriculture and fisheries sector include the 'Approval of the Restructuring of Agriculture and Rural Development Sector, Decision 899/QD-TTg of the Prime Minister dated 10/6/2013' and, specifically for fisheries, the 'Approval of the Restructuring Fisheries Sub- Sector, Decision 2760/QD-BNN-TCTS dated 22/11/2013'. Subsequently, the 'Approval of Plan of Action for Restructuring Fisheries Sub-Sector, Decision 1167 QD-BNN-TCTS dated 28/5/2014' was issued by the Minister of Agriculture.<sup>70</sup> These decisions do not appear to have affected *Viet Nam's Fisheries Development Strategy by 2020* nor the decisions cited above related to the BFMS 2018-2022.<sup>71</sup>

For the Mekong Delta, the strategy places strong emphasis on aquaculture, including good aquaculture practices and other standards, value added, processing and exports, while ensuring that local fisheries are maintained in harmony with environmental protection, regeneration and development of aquatic resources.

The 'Approval of the master plan development fisheries through 2020 with a vision toward 2030, Decision 1445/QD-TTg of Prime Minister dated 16/08/2013' reiterates the strong growth orientation, as does the 'Scheme to restructure the seafood industry towards improving the added value and sustainable development, Decision No.2760/QD-BNN-TCTS dated 22/11/2013'.

**The overall goal of the 'Master plan for socio-economic development in the Mekong River Delta region through 2020' is stated as follows:**

“*Developing the Mekong River Delta region to become a key production area of agricultural and fisheries products with strong sustainable economic growth. The region also aims to have a thriving maritime economy, to develop culture and society and to keep up with the national average. The region also aims to be the connection to integrate trade and economic cooperation with other countries in the region, to ensure political stability and safety.*”

<sup>69</sup> Le Xuan Nhat et al. 2014.

<sup>70</sup> Pers. Comm. with Nguyen Viet Manh, TAB or Subgroup on Fisheries Delegate, Viet Nam.

<sup>71</sup> Pers. Communication Son Nguyen Hai, MRC Programme Officer Viet Nam with Peter Dengen, MRC-FP.



Again, ambitious growth targets, in which equity and sustainability are mentioned, but without setting specific, measurable targets.

The Masterplan is followed by specific planning documents/decisions, such as 'Planning the development of production and consumption of catfish in the Mekong River Delta in 2010, oriented to 2020, Decision No.102/2008/QĐ-BNN dated 17/10/2008'; 'Development planning mollusc commodity focus to 2020, Decision 1628/QĐ-BNN-TCTS dated 20/07/2011'; 'Irrigation Planning Mekong Delta period 2012 - 2020 and orientation to 2050 in terms of climate change and sea level rise, Decision No.1397/QĐ-TTg of the Prime Minister dated 25/09/2012'; 'Irrigation planning in southern Ca Mau Peninsula, Decision No. 1336/QĐ-BNN-KH dated 08/05/2009'; and 'Development planning on national seafood processing by 2020, Decision No.2310/QĐ-BNN-CB dated 04/10/2011'.

Only the decisions on irrigation make reference to regional issues: "to improve people's lives in political stability, security, defence, social order and safety in the region". "(Pro)active measures to manage impacts of climate change, such as sea level rise, saltwater intrusion, declining upstream flows; measures to also minimise pollution, work on water conservation and to prevent erosion and sedimentation" are also planned.

Two further decisions, 'System planning reserve inland waters by 2020, Decision No. 1479/QĐ-TTg dated 02/05/1994' and 'Program to protect and develop aquatic resources by 2020, Decision No.188/QĐ-TTg dated 13/02 /2012' address the need to protect and conserve the environment and regional cooperation. For instance, the first decision describes the need to "create a system of protected areas to protect, restore, regenerate fisheries resources, especially aquatic species which are rare, have economic value and high science value. The system will aid in protecting aquatic ecosystems in inland waters, and encourage community participation in the management, exploitation and rational use of resources. This is to ensure ecological balance, preserving biodiversity of inland waters".

Regarding international cooperation, the second decision highlights the need to "strengthen international cooperation in order to conduct surveys, carry out research on aquatic resources (marine and inland), manage migratory species and manage marine-protected areas. Also the need to build international relations to help protect transnational inland protected areas, as well as prevent illegal fishing activities from outsiders within the Mekong Delta".



The screening of the review resulted in the following policy areas and strategy elements (Table 4), which are ranked with the limitations mentioned above: comprehensiveness of the national assessment and interpretation.

**Table 4: Broad categories of policy areas and strategy elements of the Viet Nam Fishery Sector**

Broad Categories of Policy Areas and Strategy Elements	Relevance/pertinence Estimated at High (3), Medium (2), Low (1) and Not Listed (0)	
	Viet Nam fisheries Development Strategy by 2020	Master plan for the Mekong River Delta region by 2020
Contribution to economic (GDP) growth, including by value chain and post-harvest improvements	3	3
Contribution to sustainable livelihoods	2	2
Contribution to food security	3	2
Responsible fisheries	2	2
Fisheries enhancement, including rice-field fisheries	2	1
Responsible aquaculture	3	3
Environmental and ecosystem/habitat protection and restoration	2	2
Co-management, including public-sector institutional strengthening and capacity building	2	2
Research, including monitoring and generation of data and information	3	3
Basin-wide cooperation in fisheries management and development	2	2
Regional/international cooperation	2	3





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