

Lower Mekong Basin: Monitoring and reporting system on climate change and adaptation



1. Context

► Programmatic context

The Climate Change and Adaptation Initiative (CCAI) is a regional initiative of the Mekong River Commission (MRC), an intergovernmental body established in 1995 between the governments of Cambodia, Lao PDR, Thailand and Vietnam¹. CCAI was established in 2009 and the Member Countries agreed on a Program Implementation Plan (PIP) in 2012. The CCAI aims at guiding and harmonizing climate change adaptation planning and implementation through improved strategies and plans at various levels in priority locations throughout the Lower Mekong Basin (LMB) as well as developing a basin-wide climate change strategy. One of the activities of the CCAI is the development and implementation of a basin-wide system for monitoring and reporting on the status of climate change and adaptation in the Lower Mekong region².

► Purpose of the M&E system

The stated purpose of the monitoring and reporting system is to monitor climatic change and its impacts,

¹ The mission of the MRC is: 'To promote and coordinate sustainable management and development of water and related resources for the countries' mutual benefit and the people's wellbeing by implementing strategic programmes and activities and providing scientific information and policy advice.'

² CCAI focuses on: (i) climate change impact and vulnerability assessment, adaptation planning and implementation in priority locations within the LMB; (ii) building knowledge and capacity at different levels (institutional, technical and managerial capacity); (iii) regional adaptation strategy supporting national frameworks; (iv) regional partnership and collaboration for sustainability of adaptation actions.

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About the Mekong River Commission (MRC)

The MRC is an inter-governmental agency that works directly with the governments of Cambodia, Lao PDR, Thailand and Vietnam on their common specific interests – joint management of shared water resources and sustainable development of the Mekong River.

As a regional facilitating and advisory body governed by water and environment ministers of the four countries, the MRC aims to ensure that the Mekong water is developed in the most efficient manner that mutually benefits all Member Countries and minimises harmful effects on people and the environment in the Lower Mekong Basin.

Serving its member states with technical know-how and basin-wide perspectives, the MRC plays a key role in regional decision-making and the execution of policies in a way that promotes sustainable development and poverty alleviation.

Source: www.mrcmekong.org



vulnerability to climate change, as well as climate adaptation actions and performance at regional, national and sub-basin levels in the LMB. Specifically, the stated objectives of the system include to:

- improve understanding on climate change,
- detect trend and magnitude of change,
- monitor actual impacts of climate change, and
- monitor progress and performance on adaptation planning and implementation.



The potential target users of the system include decision-makers and planners on climate change issues at regional, national, and local levels; technical staff and researchers and other organisations that implement climate change adaptation activities in the LMB.

► Scale: level of application and aggregation

The system operates at the river-basin level.

M&E Guidebook for national adaptation M&E systems

An M&E guidebook by GIZ & IISD (2015) in collaboration with the Adaptation Committee and the Least Developed Countries Expert Group outlines key considerations for the development of country-specific adaptation M&E systems. This factsheet is structured along its four building blocks:

- **Context:** what is the policy context and purpose of undertaking M&E?
- **Content:** what information is required to address the purpose?
- **Operationalization:** how will the information be gathered and what are the institutional arrangements?
- **Communication:** how is the generated information used and disseminated?

2. Content

► Establishment process

The establishment of the basin-wide monitoring system includes the following key steps:

Figure 1 Key steps of the establishment process of the system

1. Development of a concept and workplan (January – August 2012)

This step focuses on the conceptual development of the system based on rounds of consultations in the Member Countries.

2. Selection of a set of indicators (2013 – 2016, with long breaks)

An initial set of indicators to monitor changes in climate parameters, climate change impacts and adaptation has been developed with the support of GIZ by international consultants. Because of issues around the attributability and sensitivity of the different proposed indicators to climate change this initial set was later reviewed and a final set could be agreed on.

3. Development of indicator cards (2016)

This step comprehensively defined each indicator, its relevance, description, metrics, data, reference period, computation method, limitations and reference period.

4. Data collection and computation of indicators' baselines (2016)

Data from different sources and at different scales were collected in order to determine the indicators' baselines wherever possible.

5. Reporting (2017, on-going)

A report describing the set of indicators, their cards and the available baselines has been drafted and consulted with the four Member Countries. The report also highlights a number of recommendations for the operationalization of the system. It will be published by the end of 2017. Concomitantly, an additional report – the Status Report which presents the status of climate, impacts, vulnerability and adaptation performance (see section 4 below) – is being developed; it captures the results of the monitoring system.

► Focus and approach

The proposed approach for the basin-wide monitoring and reporting of climate change adaptation in the LMB is indicator-based. Baselines are mainly established by calculating indicators of climate, climate change impacts and adaptation performance over the baseline period (1981 – 2010 for most of the indicators). Data collection will be on-going using different time intervals to monitor the changes in indicator values over time.

► Indicators

The system focuses on three types of indicators: climate, climate change impact and adaptation indicators. The final set of indicators has 21 climate indicators, 36 impact indicators and 9 adaptation indicators (see table 1). Each indicator is comprehensively defined in its indicator card and calculations of the indicators' baselines have been conducted whenever possible (for 21 climate indicators, 12 impact indicators and 3 adaptation indicators), depending on data availability. The MRC Member Countries have agreed on the results. Three additional indicators were suggested in the process and will be integrated into the system during its operationalization phase.

Table 1 Adaptation indicators

Adaptation indicators
Policy and institutional response
58. Level of mainstreaming climate change adaptation into policies and strategies
59. Regional budget for climate change adaptation
60. Percentage of national budget for climate change adaptation
61. Percentage of employment in climate-related sectors
Adaptation response
62. Total conservation area
63. Total irrigation area
64. Total water storage in reservoirs
65. Coverage of disaster warning systems
66. Total mangrove area

3. Operationalization

► Data collection and analysis

The indicators are calculated from observed data, based on existing observation systems and sources at national, regional and global levels.

MRC established several basin-wide monitoring systems: meteorological parameters, river flow, groundwater, water quality, sediment, and socio-economic data are monitored but fall short of providing enough information to monitor climate change and adaptation. To fill this gap, the monitoring and reporting system of climate change adaptation will be part of the existing MRC data portal, aiming at storing existing and new data relevant for climate adaptation.

At national level some of the Member Countries (for example Cambodia³) are also initiating the development of national monitoring systems of climate change adaptation and mitigation and have been informed about the MRC system in order to look for future synergies.

► Institutional arrangements

At regional level, the development of the Climate Change and Adaptation (CCA) monitoring and reporting system is coordinated by the Planning Division in close collaboration with other MRC Divisions and the Member Countries. The operationalization of the CCA monitoring system is under the responsibility of MRC Technical Division, which is a cross-sectional division of the MRC that collects, exchanges and manages data, ensures basin monitoring and is responsible for the MRC modelling and forecasting services.

At national level, activities related to the establishment and to the operation of the system are coordinated by the National Mekong Committees. The implementation of the system in the long run will be the responsibility of the MRC countries in line with the MRC decentralisation process.

► Resources needed

The resources needed for the development and establishment of the system included expertise at regional

3 <http://pubs.iied.org/101181IED/?k=Tracking+Adaptation+and+Measuring+Development+%28TAMD%29>



and national levels as well as consultation processes with the four Member Countries. These activities represented an overall budget of approximately 120 000 USD.

4. Reporting and outlook

► Outputs and reporting

The Status Report of climate change and adaptation in the Mekong River Basin using among others the information from the basin-wide monitoring system will be finalized in 2017 and updated on a regular five-year basis.

Besides, monitoring data will be analysed and used in various governance and technical reports of the MRC on both regular and by-request basis. These data will also be publicly shared and available on the MRC data portal.

► Lessons to date

The process of developing the basin-wide monitoring and reporting system has been a long process and its operationalization will bring its share of additional challenges. MRC Member Countries recognise that the development of the system is a priority activity to support adaptation at both national and regional levels. The system is urgently needed to provide sufficient data and information for analysis and reporting on the status of climate change, its impacts and adaptation performance of the region. The results in turn will guide effective adaptation strategies and actions.

The selection of a final set of indicators – attributable and sensitive to climate change – has been time consuming and required intensive participation and validation of all Member Countries. The data collection has also been very difficult because of scattered data at the national levels as well as limited expertise.

For further information

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This factsheet is part of a [series of factsheets about national adaptation M&E systems](#). The series was initially published as part of the 2014 study ['Monitoring and Evaluating Adaptation at Aggregated Levels: A comparative analysis of ten systems'](#) by GIZ & IISD. All country factsheets are available on www.AdaptationCommunity.net under 'Monitoring & Evaluation'.

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