

Mainstreaming Flood and Drought Management in the Lower Mekong River Basin

The Lower Mekong River Basin (shared by Cambodia, Laos, Thailand and Viet Nam) is one of the most advanced river basins in the world in terms of trans-boundary Climate Change Adaptation (CCA) and Integrated Water Resources Management (IWRM), and the Mekong River Commission and its Climate Change Adaptation Strategy and Action Plan (MASAP) embody those efforts.

MASAP was developed via a consultative and multi-dialogue process engaging all relevant stakeholders of the Mekong River Commission (MRC) as part of a CCA Initiative. This initiative conducted a series of basin-wide assessments of climate change impacts on water and water-related resources under a variety of climate change and development scenarios. These assessments resulted in modelling and mapping tools showing a large increase in the total surface area, and thus exposed population, affected by flooding due to dramatic increases in river flow. Although different models produce different results, increased flooding remains the norm across them, interacting with development patterns such as urban growth and land-use change, in addition to sea-level rise. At the same time, these assessments also helped pinpoint priority areas in which to reduce drought vulnerability.



Figure 1: The Lower Mekong River Basin – Source: Mekong River Commission



Figure 2: Paddy fields, Ban Pan, Thailand. Source: MRC, 2019. Available [here](#).

To share just one example of how these water and climate vulnerability assessments are informing real, on-the-ground action, a project dealing with flood and drought-risk reduction activities in the Mekong sub-catchment shared between Cambodia (downstream) and Thailand (upstream) was carried out from 2018 to 2019 using assessment findings. This same project foresaw the development of a joint strategy with an implementation plan focused on short and longer-term structural and non-structural mitigation measures (harmonized alarm levels, improved early warning capabilities, quantification of groundwater potential, improved structures for high flood water levels, and much more). Finally, the project supported countries in implementing the Sendai Framework for Disaster Risk Reduction on the ground and applying for additional climate-finance support. Many more transboundary projects have been implemented as part of the Mekong IWRM Project, reflecting the well-recognized need for cross-border cooperation to scale efforts and results in order to address the magnitude of the climate and water impacts facing the region.¹

Indeed, if this combination of climate threats is not addressed at the right scale, the region's large and growing population will be more and more exposed to extreme events, be they storms and flooding or long-onset droughts. In simple terms, these climate impacts will be felt most via the population's stomachs and wallets. Agricultural employment, in particular, will be affected, as predicted crop yields are negative for both rice (the main crop currently representing 80 per cent of total agricultural production) and maize, the two main sources of calories for most of the basin's inhabitants. Tied to food supplies is, of course, livelihood security with 65 million people working in the agricultural sector alone, a sector that is highly dependent on diversions of river flow for irrigation.² Thus, how the basin manages water flows "spills over" into food and livelihood security, but that is not the entire picture. Navigation to move goods from areas of production to ports or markets, fisheries, and hydropower production (predicted to grow by 6-7% per year with tens of billions of dollars in investments for new hydroelectric facilities planned³) all depend on reliable river levels and flow as well.

1 <https://www.mrcmekong.org/our-work/mekong-integrated-water-resources-management-project/>

2 <https://www.mrcmekong.org/our-work/topics/agriculture-and-irrigation/>

3 <https://www.mrcmekong.org/our-work/topics/hydropower/>

To ensure MASAP does indeed help MRC member states attain the necessary scale to prevent the worst of predicted climate impacts, its principles and guidance on CCA are fully integrated into a Basin Development Strategy, the main document for IWRM in the Lower Mekong River Basin. This Basin Development Strategy:

- Incorporates a range of climate change scenarios in the Basin Vision and goals, with, for example, decisions taken on infrastructure with life spans of 50 years or more having to take projected climate impacts into account for their design and operations;
- Supports enhanced data and information sharing between all riparian countries, improved forecasting and early warning systems, the development and communication of clear operating protocols, and deeper institutionalization of regional cooperation platforms;
- Promotes enhanced data and information management systems in line with the recently agreed-upon Mekong Basin Indicator Framework, including the climate change factors and the establishment of the MRC climate change monitoring and reporting system;
- Facilitates the development of joint projects and national projects of basin-wide significance that support regional climate change adaptation and capacity-building.

Currently MASAP's measures are being mainstreamed into relevant national strategies, policies and plans including, e.g.: (i) Integration of drought

management activities in Nationally Determined Contributions (NDCs); (ii) MRC regional drought adaptation guidelines; (iii) Accreditation processes for GCF and Adaptation Fund to support future IWRM and CCA projects; (iv) National-level water quality monitoring programmes with standardized indicators; (v) Technical guidelines for MASAP mainstreaming at the national level and an information-sharing initiative.

The consultative and multi-dialogue process leading to the development of MASAP has unveiled some of the main challenges to address when working at the transboundary level. For instance, (i) Partners must deal with the different levels of climate change impacts and adaptation priorities of each member country; (ii) Data monitoring and sharing is to be further developed according to a given country's needs; (iii) Member countries must seek funding together for transboundary adaptation projects once they are convinced of the added value of cooperating at the regional level.

On the other hand, some of the key lessons learned from this basin-wide approach include: (i) Strong leadership to address climate impacts at a regional level is needed; (ii) Holding transparent and inclusive consultation processes with both internal and external stakeholders adds value to the process; (iii) The multiplicity of initiatives and actors in the field of climate change adaptation must be aligned; and (iv) Institutions must build a stronger water-climate nexus, showing how IWRM buttresses CCA initiatives.

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