

**Press Release**

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**Drastic reduction in sediment flows in the Mekong River much faster and larger than previously expected, [new study](#) shows**

*A [new study](#) shows that sediment transport and deposition in the Mekong River have been drastically altered due in part to infrastructure development, riverbed mining, land use change, and climate change.*

The Mekong region is experiencing rapid economic growth. Infrastructure development in the past decades has led to several socio-economic benefits and poverty reduction. Although the social and environmental effects of such development have been heavily scrutinised, the long-term downstream impacts of changes in sediment flows are still poorly understood.

The study titled “[Case study on sediment in the Mekong River Basin: Current state and future trends](#)” indicates that mainstream and tributary infrastructure development, riverbed mining, land use change and climate change are the main factors leading to a drastic reduction in sediment loads in the mainstream Mekong River. *The degree of sediment load reduction is considered faster and larger than had been estimated in previous studies.*

“The potential environmental and socio-economic impacts of altered sediment flows in the Mekong River could have significant implications for the Mekong Basin’s aquatic ecosystems, agriculture, fisheries, and wildlife, and affect the livelihoods and economies of millions of people in the Mekong Basin and beyond. Enhanced collaboration among key actors at the national and regional levels for sustainable sediment management is strongly recommended,” said Dr. Thanapon Piman, SEI researcher and the lead author of the report.

**Why sediment flow is crucial for the Mekong**

The Mekong River carries with it huge loads of sediment and nutrients across its entire length, from the Upper Mekong (Lancang) River down to the Mekong Delta in Vietnam. These sediments are critical for the formation and stabilization of deltas and the ecosystems that they support. Sediments and attached organic matter are essential for fish, plant, and soil nutrition across the wider Mekong Basin. The silt enriches and replenishes the entire basin, and performs critical ecosystem services for agriculture, fisheries, water-based plants and animals, and water quality, and in turn supports the economies of the basin countries.

**Changes in sediment flows: Key findings from the study**

- Based on previous studies and observed data, sediment carriage and deposition has been drastically reduced mainly due to large reservoir trapping and riverbed mining.
- Land use change and extreme events linked to climate change will exacerbate the current situation and increase uncertainty over sediment transport from the catchments. If all the dams proposed for the Lower Mekong Basin are developed, including the planned or ongoing 11 mainstream dams, it could prevent up to 94% of the river’s sediment load from being transported further downstream.

- This reduction of sediment delivery to downstream areas will have implications for the stability of the Mekong Delta and will lead to loss of nutrients that are vital for the basin's fisheries. The reduction will result in loss of soil fertility in the floodplains along the entire basin, especially the Tonle Sap in Cambodia and the Mekong Delta in Vietnam. These developments have an impact on poor rural populations throughout the entire basin whose livelihoods depend on the river for irrigation, soil fertilization, fisheries or water-related natural products.
- Lack of regionally binding guidelines and standards prevents countries from committing to best practices, effective monitoring and integrated sediment load management at every stage of the hydropower life-cycle, as well as riverbed mining.

### **The study recommendations**

- Continue to improve and enhance sediment monitoring systems at the national and regional levels, covering major tributaries of the Mekong River and at strategic locations such as Tonle Sap, as well as key environmental hotspots, especially in the floodplains and delta areas.
- Establish sediment baseline conditions to assess the relative changes to, and actual impacts on, sediments due to development, land use change and climate change, and define targets for sediment management and mitigation measures, particularly for large hydropower and riverbed mining projects on the Mekong mainstream and its tributaries.
- Develop regional standards and safeguards on transboundary sediment issues and institutional arrangements for their enforcement, and ensure that they are integrated into national policies, strategies and implementation plans.
- Implement best practices on sediment management and mitigation measures so that sediment issues at the national and regional levels are integrated at every stage of the hydropower lifecycle, from planning to development and operation.
- Enhance collaboration among Lancang-Mekong Countries for sustainable sediment management, data sharing and joint researches through existing mechanisms such as Mekong River Commission and Lancang-Mekong Cooperation, with support from international agencies and research communities.

The study was undertaken based on a literature review and published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Stockholm Environment Institute (SEI). The study aims to contribute to the global comparative study on sediment issues in major river basins, under the International Sediment Initiative (ISI) of UNESCO's International Hydrological Programme (IHP). UNESCO's IHP aims to develop a decision support framework for sediment management and provide guidance on legislative and institutional solutions in the context of global changes.

#### ***Expert available to comment:***

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