

## **Catalyzing action towards sustainability of deltaic systems with an integrated modelling framework for risk assessment (DELTAS)**

**Call:** Coastal Vulnerability

**NSF code:** G8MUREFU3FP-2201-037

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**BF/G8HORC sponsors:** FAPESP, ANR, DFG, MoES, JSPS, NERC & ESRC, NSF

**Amount:** €2.065K

**Time period:** 36 months

Deltas are economic and environmental hotspots, food baskets for many nations, and home to a large portion of the world population. They sustain rich, biodiverse ecosystems and related services. Most deltas are also international and regional transportation hubs that support intense economic activity. Yet, deltas are deteriorating at an alarming rate due to climate impacts (e.g., sea level rise and flooding), human-induced catchment changes (e.g., water and sediment flow reduction), and local exploitation (e.g., sand, groundwater, and hydrocarbon extraction). The international science community recognizes the need to develop a solid knowledge base for protecting these vulnerable coastal systems, and this BF initiative leads the way by coordinating

and enhancing innovative international work towards the development of a science-based framework for delta sustainability.

The project will develop a versatile modeling framework that may be applied from local to national levels to evaluate the unique functioning, critical stressors, and vulnerability of the world's deltas. The framework will ingest social, economic, physical and ecosystem data into an open-access repository and will allow planners to model and deliver optimized, viable solutions for their region. In areas for which detailed data are sparse, an infrastructure for critical data gathering will be developed and modeling and prediction tools will be customized. The framework will initially be applied to three case-studies for which local and regional partnerships are already in place, including the Ganges-Brahmaputra-Meghna (GBM), Mekong, and Amazon deltas.

The team represents the BF-G8 countries: Brazil, Canada, China, France, Germany, Norway, India, Japan, UK, and USA, and includes partners in the Netherlands, Vietnam, and Bangladesh. It is composed of government and university researchers, and NGO's, working closely with policymakers.

The training of graduate students and post-docs able to work across disciplinary boundaries and countries will also be a unique legacy of the project.