

**Study Title:** A bathymetric survey of Batticaloa Lagoon

**Study Area:** Batticaloa Lagoon, Batticaloa District & Ampara District, Eastern Province of Sri Lanka

**Study Objective:** To generate a baseline database describing the depth profile of Batticaloa Lagoon, which will enable researchers, developers and planners track future changes in the hydrodynamics of the lagoon.

**Scope of Work:** Prior to commencing the bathymetric survey of the Batticaloa Lagoon, the Consultant will undertake to establish, based remotely sensed data, the historical and current perimeter of the Batticaloa Lagoon and establish the principle causes of any resulting expansion or contraction of the lagoon's area. Further the Consultant will, using secondary data establish the primary, secondary and tertiary sources of freshwater input into the Batticaloa Lagoon and estimate the magnitude and seasonality of freshwater input into the lagoon. The Consultant will also establish the primary, secondary and tertiary sources of saltwater input into the Batticaloa Lagoon and estimate the magnitude and seasonality of saltwater inputs into the lagoon. Having established the basis of the hydrological process in Batticaloa Lagoon, the Consultant will undertake a bathymetric survey of Batticaloa Lagoon. The results of the bathymetric survey, together with analyses of the flow of freshwater and saltwater into and out of the lagoon will be combined to generate a synopsis of the current hydrology of the lagoon. Based on this analysis the Consultant will highlight the key hydrological processes and issues to be addressed in the lagoon and provide recommendations to sustain or improve the management of the Batticaloa Lagoon.

The Batticaloa Lagoon, covering over 10,000 ha, is the third largest basin estuary in Sri Lanka and the largest in the Eastern Province. The lagoon provides a multitude of environmental 'goods' (e.g. fish, prawns, mangrove timber) and environmental 'services' (e.g. drainage, sewage disposal, scenic beauty) and is the defining feature of Batticaloa Town. Basin estuaries are extremely dynamic habitats, the point of convergence of freshwater, marine and terrestrial ecosystems and as such are influenced and in turn influence activities in each of these domains. Changes in freshwater inputs, land use practices or sea level rises for instances will give rise to changes in each of the other domains. This basis for these changes, the nature of the changes themselves and the impact of human interventions in affecting freshwater or saltwater flow into or out of the lagoon and land use changes within the catchments of the lagoon are currently poorly understood at the local. No baseline data exists against which to monitor future changes in the hydrology of Batticaloa Lagoon.

The proposed Technical Study will consolidate available secondary data and complete the first bathymetric survey of Batticaloa Lagoon, to enable researchers, developers and planners to better monitor and plan for future changes in the hydrodynamics of the lagoon

**Terms of Reference:** In consultation with the NECCDEP, the Consultant will undertake to:

1. Establish the past and current perimeter of the Batticaloa Lagoon using remotely sensed data and identify the principle locations and causes of recent changes in the extent of Batticaloa Lagoon. .
2. Review secondary data sources describing the freshwater and saltwater flows into and out of the lagoon and describe the magnitude and seasonality of the same.
3. Undertake a bathymetric survey of Batticaloa Lagoon.
4. Generate a synopsis of the current hydrology of the lagoon and through which highlight the key hydrological processes and issues to be addressed in the lagoon and provide recommendations to sustain or improve the management of the Batticaloa Lagoon.

**Suggested Staff**

	<b>Nature of Consultant</b>	<b>Experience</b>	<b>Duration</b>
01	<b>Team Leader</b> Hydrologist	<ul style="list-style-type: none"> <li>• Planning, implementation and management of hydrological research projects</li> <li>• A thorough understanding of hydrology and coastal ecosystems</li> <li>• A demonstrated ability to design and manage hydrological surveys</li> </ul>	3 months
02	<b>Research Assistant</b> Hydrologist	<ul style="list-style-type: none"> <li>• Implementation of hydrological research projects</li> <li>• An understanding hydrology and coastal ecosystems</li> </ul>	5 months
02	<b>Bathymetric Survey Coordinator</b> Hydrologist	<ul style="list-style-type: none"> <li>• An understanding hydrology and coastal ecosystems</li> <li>• A demonstrated ability to undertake hydrological surveys</li> </ul>	2 months
02	<b>Field Survey Assistant</b> Hydrologist	<ul style="list-style-type: none"> <li>• An understanding hydrology and coastal ecosystems</li> <li>• demonstrated ability to undertake hydrological surveys</li> </ul>	2 months

**Timeframe:** The estimated timeframe for the proposed *bathymetric survey of Batticaloa Lagoon* is five (05 months), from the date of signing the contract.

**Reporting:** The Consultant will submit the following reports at the specified time periods

1. An Interim Report submitted within one (01) month from the commencement of the contract
2. A Draft Final Report to be submitted one (01) month before the completion date of the Contract
3. A Final Report to be submitted on the date of completion of the Contract