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The Puttalam/Mundel estuarine system. A Presentation

INTRODUCTION

The Puttalam Lagoon, the Mundel Lake and associated coastal areas on the north-western coast of Sri Lanka (latitude 7°45' – 8° 25' N, longitude 79° 42' – 50' E) fall under the jurisdiction of the North Western Provincial Council. Though widely referred to as a lagoon, the Puttalam Lagoon technically is an estuary, while the so-called Mundel Lake is a true lagoon.

The area is under the purview of four Divisional Secretariats: Kalpitiya, Mundel, Puttalam and Wanathawilluwa (Fig. 1). These have 101 Grama Niladari (GN) Divisions covering 261 villages and a population of over 100,000 persons. The main population center in the study area is Puttalam town, with smaller agglomerations in Kalpitiya, Mundel and Wanathawilluwa.

The coastal area associated with the Puttalam/Mundel estuarine system encompasses the land area of the four Divisional Secretariats, the islands and the sea up to 14 km off the coast, including the Bar Reef and associated reef systems. Fisheries, aquaculture and agriculture are the primary sectors of employment. Freshwater is in short supply and becomes a constraint particularly for agriculture and aquaculture development during the dry seasons. In some areas, this problem is overcome by extracting ground water using tube wells.

The population is made up of three major categories of people: residents, seasonal migrants primarily involved in fishing and refugees displaced from their homes, due to civil disturbances in the northern and north-eastern provinces.

Historically, the income sources for the population have been fishing, trading with fish products and agriculture. Aquaculture (shrimp farming) and agricultural produce new to the area (chillies, onions and gherkins) have had positive impacts on the economy and showed unprecedented growth rates in recent years.

PHYSICAL ENVIRONMENT

The study area covers a total of 1,480 km², of which 467 km² make up the Puttalam/Mundel estuarine system. The offshore area accounts for an additional 695 km² and encompasses the Bar Reef and the associated reef systems (Fig. 2).

The Puttalam/Mundel estuarine system is open to the sea at the northern end of the Puttalam Lagoon. The only input of freshwater from riverine sources to the estuarine system, is by the two rivers Mi Oya and Kala Oya, which both discharge into the Puttalam Lagoon. A section of the brackish water Dutch Canal connected to the Deduru Oya estuary in the Chilaw District opens into the Mundel Lake at its southern end. Another portion of the Dutch Canal connects the Mundel Lake with