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Sustainability of coastal windows: Case study on the Colombo coastal region, Sri Lanka

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The coastal zone is the interface between the land and the sea, which has complex systems affected both by terrestrial and marine processes. Human presence influences the systems, adding more pressure and threatening the sustainability. Hence sustainability requires managing activities at individual, community and national levels, ensuring that the economy and society can continue to exist without destroying the natural environment. The coastal belt around Colombo is full of properties and features, which have long been exploited and which contribute towards the wealth and the quality of life of the people. The past and ongoing developments in the Colombo business district and the developments in the Colombo coastal window have led to conflicts. This massive development has a significant impact on the natural resources of the coastal zone. Taking a closer look at recent ongoing development projects and how those projects will affect social, economic and environmental sustainability is important. This research is aimed at determining the main forces influencing development of coastal areas, and assessing the present use and manage future exploitation of the coastal zone following the sustainability concepts.

The study area lies 10 km on both sides to north and south of the Colombo port. Presuming that some of the natural systems of the western coast line are exclusively interlinked, the system was investigated in finite coastal segments that are derived in accordance with the coastal characteristics. A monitoring system with scientific evidences for maintaining the functional integrity of the natural coastal system was developed for investigations, and analytical software platforms computer models were used to model the system.

As examined, changes to the coastline of Colombo and outskirts are being made with the new expansion of commercial harbour, port city, and Dikowita fisheries harbour. Being the shorefront in the Colombo city, this coastal region is economically highly sensitive. This study provided the principal scientific evidence on shoreline stability, health and sensitivity of eco systems, process for informed coastal administration, and maintaining the functional integrity of the natural coast. Excessive policies on sustainability could cause much more different results to the western coastal region than expected, and therefore discussion towards a balance in environment and economy through integration of policies that connect to the natural system are highly important.

Key words: Colombo coastal window, Port City, functional integrity, shoreline stability, coastal process.

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