Current Status of Coastal Debris Accumulation along Beach Ecosystems in Southern Province of Sri Lanka

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Coastal debris accumulation in coastal and marine ecosystems is considered one of the serious, the emerging environmental problem in several countries including Sri Lanka. This study aims to identify the current status of debris accumulation in the coastal zone of Southern province in Sri Lanka. The 180 stakeholders were interviewed to collect data using a pre-tested questionnaire survey through 15 open-ended and rank order closed-ended questions (maximum 1-10 of scale) as a convenience sampling method. Based on the estimated median rank data, the majority of waste types were plastic (991.5), followed by glass (819.5) and papers (768.5) in the Southern coastal zone. Soft drink/water bottles (1264) were recorded as the major disposal items followed by food wrappings (1225) and Styrofoam food containers (1146) considering rank scores. Burning or collecting wastes (32.09%), handing over the garbage to the municipal council (25.5%), usage of public garbage bins (25.11%) are common waste disposal methods along the southern coast. The highest percentage of waste separation practices were recorded from Hikkaduwa (81.81%), Galle fort (60%), and Polhena (61.11%) regions. Hambantota and Tangalle beaches have regular waste collection services (100%) to a satisfactory level. Rekawa and Godawaya regional coasts had not recorded any frequent waste collection mechanism. Tourism and recreational activities (86.36-52.94%) and fisheries and harbor operations (93.33-60%) are major waste accumulation sources in study sites. Coastal debris is also accumulated by residential and household activities and unsustainable constructions to a lesser extent. Thus, unsustainable anthropogenic activities are major sources of coastal debris accumulation. The majority of fishermen and coastal residents did not adequately aware of the ecological and commercial impacts of coastal debris. This study suggests implementing integrated coastal management programs focusing on plastic debris accumulating sources. In conclusion, this study provides a basic platform on the issue of coastal debris deposition on the southern coast of Sri Lanka.

Keywords: Plastic pollution, Coastal debris accumulation, Coastal environment, Pollution sources, Anthropogenic activities