

## Land-use changes over past two decades in Rekawa lagoon region in Sri Lanka

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The mangrove cover in Sri Lanka is rapidly decreasing due to continuous anthropogenic interferences. Among the highly threatened mangrove ecosystems, Rekawa lagoon (06<sup>0</sup>03'N–80<sup>0</sup>50'E), situated in the intermediate climatic zone of Sri Lanka, with high species diversity was selected for the present study. The main objectives of the research were to investigate the land-use changes in Rekawa lagoon region during the past two decades and to determine the possible consequences of human impacts on the mangrove ecosystem. The data on land-use changes were determined by field observations coupled with questionnaire survey. The study on the spatial changes over the past two decades were based on the GIS-based map produced by Dahdouh-Guebas et al. (2005) depicting the situation in 1994 together with 2015 Google Earth imagery with the current mangrove cover in Rekawa lagoon.

The total area of the land use that has been changed was 0.9933 km<sup>2</sup> (19% of the total land cover) and the total mangrove area that has been disturbed was 0.002 km<sup>2</sup> during the past two decades. Moreover, human interference i.e. land claimed for hotel constructions, acquiring to use as a private property, waste disposal and clear-felling of mangrove species for housing, fencing etc. and the invasion by exotic species were identified as the major factors that led changes at the study site. Besides, cryptic ecological degradation as a result of intrusion by invasive plants including *Acacia auriculiformis*, *Chromolaena odorata* and *Lantana camara* which are co-occurring with true mangrove species and mangrove associates at the buffer zone threaten the natural vegetation at Rekawa lagoon. Higher anthropogenic impacts on Rekawa lagoon region over the past two decades have reduced the mangrove cover in the area, thus we strongly recommend active intervention in a scientific way to minimize threats on this fragile ecosystem.

**Keywords:** Human interference, Invasive species, Land-use, Mangroves, Rekawa lagoon

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