

## **GROWING COASTAL POPULATION AND FUTURE OF GROUND WATER RESOURCES: A CASE STUDY OF KALPITIYA PENINSULA, SRI LANKA**

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**Abstract:** *Water being the key element of life's existence, essentially retains social, economic and environmental value, and is crucial for sustainable development. It is evident that most of the future settlements will be located along the coastal belt of Sri Lanka, while the global warming induced sea level rise in the Indian Ocean could have a number of physical impacts on the country as an island. One of the major consequences is the depletion of coastal ground water resources due to salt water intrusion leading to potential shocking impacts on coastal population. In the contemporary context, ground water has become a diminishing resource in the dry zone coastal areas of the island due to vast utilization and over exploitation. Both natural and anthropogenic forceful directives have hastened ground water quality deprivation causing ground water stress and fatal diseases as well. On this background the study focuses on the main objective of reviewing the impact of the climate change induced threat of sea level rise on dry zone coastal ground water quality variations and the future of the coastal population taking Kalpitiya Peninsula of Sri Lanka as the case study location. The significance of ground water usage in the context of demographic and economic conditions of the case study area was reviewed using secondary data. The results of the analysis indicate that the dry zone coastal ground water table is facing de-facto deprivation under the threat of sea level rise. Accordingly, the sustainability of dry zone coastal settlements requires immediate attention since the growing population of the area does not possess the capacity to sustain themselves without the water they need for daily life.*

**Keywords:** Coastal Population, Sustainability, Water, Climate Change

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### **Introduction**

It is evident from history that human settlements are located where 'water', as the most necessary resource is essentially available. Even in the 21<sup>st</sup> century this is still an undeniable factor in most of the regions in Sri Lanka. Ground water being the widely utilized water resource of the population, it delivers the most significant drinking water supply in the country. The 22.4 per cent of urban population in Sri Lanka exploit groundwater as the drinking water source while the 71.8 per cent rural population depends on ground water not only for drinking purpose but also for agricultural and domestic requirements (WHO/UNICEF, 2004). Critical degradation of the water quality of ground water has been observed during the recent past and this has been suspected to be the result of the rate of groundwater extraction, noted as considerably exceeding its' recharge rate (Panabokke, 2007). When considering the dry zone coastal area of Kalpitiya Peninsula, the inhabitant population is primarily relying on the available ground water resources of the area, since usable surface water sources are largely limited.

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