



EVALUATION OF THE BEACH NOURISHMENT PROJECT AT PALLIYAWATTA-USWETAKEYIYAWA SRI LANKA

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Beach Nourishment is a soft engineering solution increasingly used to combat erosion. Sri Lanka's first major Beach Nourishment project was carried out over a 1.8 km stretch in the Uswetakeiyawa Palliyawatta area by the Coast Conservation Department (CCD). The Project was conducted in January 2012 and 300,000 cubic meters of offshore sand was pumped ashore using a dredging vessel. Dredged sand was used to nourish the stretch of eroded beach with a total project cost of USD 300 million. This research was carried out to assess the performance and to forecast future performance of the above Nourishment project. Topographic data and grain size data at the site were gathered and analyzed over a period of six months (spanning a monsoonal cycle). Satellite imagery obtained for a much larger time period were also analyzed and complemented the field data. The findings of the research indicate that due to incorrectly oriented sand retention structures and the incorrect grain size of nourished sand, the nourished area is currently undergoing rapid erosion. It was forecasted that due to erosion, the beach will return to its pre - nourished stage after a period of 12 months. This will result in the exposure of a beach rock at the mean sea level and will cause the beach to lose its recreational and aesthetic value. In order to prevent this and to retain the nourished sand, the correct orientation of the retention structures and the appropriate grain size for nourishment are proposed.

Keywords: beach nourishment, erosion prevention, performance forecasting, coastal protection, sand retention structures