

Assessment of survival status of trees and ground cover along with the ocean pathway fast track project in galle, sri lanka.

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Abstract:

Environmental enhancement is one of the defining features in the 21st century of urbanization. It creates opportunities for improving the living standards of residents and environmental sustainability while achieving urban development. The objective of this study was to assess the survival status of trees and ground cover, along with the Ocean Pathway Fast Track Project in Galle, Sri Lanka. Survival rate of trees and ground cover along the pathway were measured together with their growth behaviors at monthly intervals from November 2020 to March 2021. The entire project was 1.5 km in length and implemented in two phases. In phase 01, the rate of survival of planted trees was 100% in *Cassia fistula* (Ehala), *Barringtonia asiatica* (Mudilla), and *Tabebuia rosea* (Roberosia). It was 73% in *Delonix regia* (Malmara), while in Blue Jacaranda it was found to be nil. In phase 02, the rate of survival of planted trees such as *Pandanus kaida* (Watakeyya), *Delonix regia* (Malmara), *Barringtonia asiatica* (Mudilla) and *Wathabanga* was recorded as 100%, 92%, 86% and 84% respectively. Ground cover (Turfing) along the pathway areas used Buffalo grass and *Ipomoea pes-caprae* (Madu bimthamburu) in extents of 635 m² and 250 m² respectively. Madu-bimthamburu was found to be favorable to the coastal region, but it showed very poor succession and growth. Buffalo grass showed a moderate growth level. Frequent thatches, brown patches, tricky weeds, bare spots and thin lawns were observed in the turfing area. This assessment revealed that selecting trees to plant near the coastal zones, should concern the existing windy condition and salinity level and sunlight. Their tolerance level to adverse conditions and adaptability was the key factor for the higher survival status of trees. The poor succession of Madu-bimthamburu was mainly due to lack of maintenance, compacted soil, urination of pets, and drought. These constraints directly and adversely affected the project sustainability. Removing lawn weeds, application of natural post-emergent herbicide (con. vinegar/acetic acid), re-seeding, clipping and thinning would increase the long-term sustainability of the project intervention.

Keywords: *Environmental enhancement, Environmental sustainability, Ground cover*