

DEVELOPMENT OF LAND SUITABILITY MAP TO EXPAND RUBBER IN NORTHERN DRY ZONE OF SRI LANKA: A CASE STUDY FROM VAVUNIYA DISTRICT

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The land extent of traditional rubber growing areas in the Wet Zone of Sri Lanka is limited due to various development activities. Therefore, expansion of rubber into non-traditional areas is vital to increase the extent under rubber cultivation and to meet the production target of the country. This study was aimed at developing a land suitability model and using it for mapping of potential areas where rubber can be cultivated in the Dry Zone of Sri Lanka considering a case study from Vavuniya District.

Weighted overlay analysis in Geographic Information System (GIS) environment was carried out to develop a land suitability model where weights for the main variables namely; annual cumulative rainfall, maximum and minimum temperatures, elevation, slope of the land and soil type were determined using Analytical Hierarchical Process (AHP). Once the land suitability map was derived, potential land areas where rubber can be cultivated in the district were identified.

Results of the AHP revealed that rainfall, minimum temperature, maximum temperature, slope, elevation and soil type were allocated weights of 39%, 7%, 15%, 6%, 5% and 28%, respectively in the land suitability model. Furthermore, results revealed that out of total potential land for expansion of rubber cultivation in the Vavuniya District, 19,751 ha of land were “Moderately suitable” while 3,297 ha of lands were categorized under “Unsuitable” and “Most unsuitable”. As the Vavuniya District has no optimum soil condition for rubber cultivation, proper ways of amending soils should be carried out. The outputs generated from this study provide firsthand information for policy makers related to expansion of rubber in the Northern Dry Zone of Sri Lanka.