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## Estimation of the risk of malaria in different Medical Officer of Health areas and Grama Niladhari divisions in the district of Hambantota

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The district of Hambantota occupies the South-Eastern extremity of Sri Lanka, with its major part lying within the dry zone. Its environmental conditions are favourable for malaria transmission and therefore the population is at risk for malaria. There are 19 rivers and streams within the district. The water level of these rivers is subject to fluctuations according to rainy and dry seasons. Agriculture in the district is characterised by 'chena' or slash and burn cultivation, and paddy cultivation on irrigated land. Stratification is the first step towards planning activities for both malaria control and elimination. It involves classification of areas by more easily recognizable characters of different eco-epidemiological types. Specific risk may be associated with each epidemiological type. More detailed analysis or 'micro-stratification' may allow identification of smaller areas, Grama Niladhari (GN) divisions.

GN divisions in each of the 12 Medical Officer of Health (MOH) areas in the district of Hambantota were listed and their populations were noted. Thereafter, epidemiological risk factors or 15 criteria were identified. The severity of each risk factor was graded. Each grade was given a rate. In this way, each GN area was rated for different risk factors. By addition of all the rates for a particular GN area, the final rating for each GN division was determined. Considering the final ratings, several risk ranges were determined. These were 'extremely high risk' (stratum 1 of 100 - 80 rating), 'high risk' (stratum 2 of 79 - 60 rating), 'moderate risk' (stratum 3 of 59-40 rating), 'low risk' (stratum 4 of 39-30 rating), 'very low risk' (stratum 5 of 29 - 20 rating) and 'no risk' (stratum 6 of < 20 rating). Considering the percentage of the population at different risk ranges, the risk of each MOH area of the Hambantota District was finalized.

There were no extremely high risk areas or no risk areas for malaria in Hambantota District. MOH areas of the Eastern part of Hambantota were more vulnerable to malaria while MOH areas of the Western part were at lower risk. The Tissamaharama MOH area was the highest risk area for malaria while Katuwana was the least risk area. In conclusion, micro stratification is shown to be of use when programmes are run with limited resources, to identify the most needy places that should be prioritized for necessary resources in malaria elimination programmes.

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