T.R.I. ADVISORY CIRCULAR No.LU 1

Issued in: October 2002 Serial No. 3/02

GUIDELINES ON LAND SUITABILITY CLASSIFICATION FOR TEA

The selection of land according to its suitability has become increasingly important in making the best use of available land for tea cultivation. It is not appropriate for a single set of norms to be established for all tea-growing areas, since this will not take into account regional differences caused by variations in elevation and climate, which are likely to exert a strong influence on land suitability.

The term "land" includes many attributes such as climate, topography, soil and its genesis, vegetation, the presence of soil microorganisms and the effects of human activity. Land can be classified according to its agricultural suitability. Performance of lands, under different management systems, can be predicted. The potential and limitations of land intended for tea-growing can be determined by its physical, chemical and biological features.

Land classification can simplify management and decision-making on new planting, replanting, infilling, diversification and conservation of tea lands. It also helps to assess the long-term production trends and investment needs for enhanced productivity.

There are many factors that determine land suitability for tea. The most important factors are climate, slope, soil depth, surface rockiness and gravel content. Certain of these factors could be limiting factors. A simplified land suitability classification for tea can be based on limitations imposed by these factors and their interactions (Tables 1a and 1b).

Table 1a. Criteria for classifying lands according to their suitability for tea - single limitations

Climate (agro-ecological region)	Limiting Factor				Degree of limitation
	Slope (%)	Soil depth (cm)	Surface rockiness (%)	Gravel (Vol.% in top 50cm)	
					Regions above 900 m elevation
WU_{2-3} IU_{2-3}	0 – 25	> 90	0 – 10	0 – 10	None
IU_1	25 – 70	70 – 90	10 – 20	10 – 50	Moderate
All other up - country regions	> 70	< 70	> 20	> 50	Severe
					Regions between 300 – 900 m elevation
WM_3	0 – 25	> 90	0 – 10	0 – 10	None
WM_2 & IM_2	25 – 55	70 – 90	10 – 20	10 – 50	Moderate
All other mid - country regions	> 55	< 70	> 20	> 50	Severe
					Regions below 300 m elevation
WL_1					
WL_2	0 – 25	> 90	0 – 10	0 – 10	None
All other low - country regions	25 – 70	70 – 90	10 – 20	10 – 50	Moderate
	> 70	< 70	> 20	> 50	Severe

Table 1b. Criteria for classifying lands according to their suitability for tea - dual moderate limitations

Moderate limitations	Climate	Slope	Soil depth	Surface rockiness	Gravel
Climate	Class 2	Class 3	Class 4	Class 3	Class 3
Slope	,, 3	,, 2	,, 4	,, 3	,, 3
Soil depth	,, 4	,, 4	,, 2	,, 3	,, 4
Surface rockiness	,, 3	,, 3	,, 3	,, 2	,, 3
Gravel	,, 3	,, 3	,, 4	,, 3	,, 2

The degree of limitation increases progressively from Class 1 to Class 4 (Table 2). Class 1, Class 2 and Class 3 are considered suitable for tea growing while Class 4 is considered unsuitable.

Table 2. Land suitability classification based on limitations

Suitability Class	Degree of Limitation	Suitability
Class 1	No significant limitation	Highly suitable
Class 2	Moderate single limitation	Suitable
Class 3	Moderate, dual limitations	Moderately suitable
Class 4	One or more severe limitations, strongly interacting dual limitations or multiple moderate limitations	Unsuitable

(This classification is a modification of that in the paper by K A de Alwis, L H Fernando, S E Jayasooriya, S Kulasegaram, M B A Perera, S Sandanam, S Sivasubramaniam and D T Wettasinghe, 1980: "A simplified land suitability classification for tea" in Tea Quarterly 49 (2) 5-12, Tea Research Institute, Talawakelle).

Methodology for Assessing the Limiting Factors

1. The slope of the land is measured using a clinometer.
2. The surface rockiness of the land is estimated by measuring the extent covered by rocks and boulders in the total land area.
3. The soil depth is measured by digging at random a minimum of 12 pits per ha to a depth of 1 m (Figure 1).

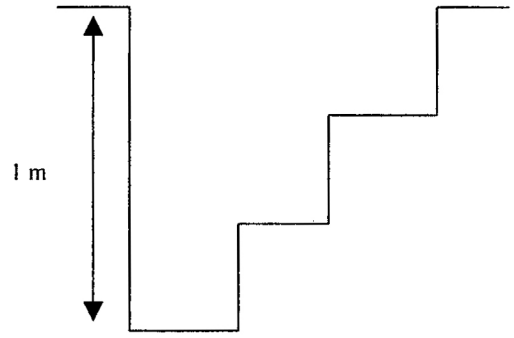

Figure 1. Vertical cross section of a soil pit

4. The gravel content is measured by passing soil through a 2 mm mesh, or visually.

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