SOILS OF THE COCONUT GROWING LANDS

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Introduction

The "Coconut Triangle" is covered by ten 1" to a mile topographic sheets of (1) Kalpitiya, (2) Puttalam, (3) Battulu - Oya, (4) Chilaw, (5) Negombo, (6) Dandagamuwa, (7) Wariyapola, (8) Gampaha, (9) Kurunegala (10) Nalanda (Fig. 2). The extent of the area is approximately 3500 sq. miles.

Soils of the coconut triangle have been previously studied under the Kelani - Aruvi area survey and under the national soil survey programme by the Land Use Division. These surveys have been done at a very broad level for the purpose of providing an inventory of the soil resources. Under the National Soil Survey Programme, the Great Soil Groups (each Great Soil Group consisting of many soil series) had been mapped. Such studies provided very useful information on soils and they were fully made use of in the classification of soils in the coconut triangle at soil series level.

Some of the Great Soil Groups identified and mapped in respects of the different Agro - ecological regions in the survey area are given in Table 1.

There is a wide variation in the soil characteristics within a Great Soil Group and which reflect on the performance of coconut. Therefore, the Great Soil Group was broken down into the next lower category which is called the soil series.

Example

1.	Sandy Regosols	1) Negombo series 2) Welikatiya series 3) Kalpitiya series
2.	Red Yellow Latosols	1) Gambura series 2) Wilpattu series 3) Mavillu series 4) Borupan series

Present Soil Survey

During the present survey, the soil series were identified and mapped within a soil series, the variation in the soil characteristics and qualities is minimal. Also, the variation in the performance of coconut too is minimal within a soil series. Therefore, the soil series mapping was adequate to provide the necessary information on soils to evaluate the land suitability classes for coconut.

Some of the importamt soils identified and mapped in the survey area are given in Table 2.

Root distribution in water logged sandy soil.

Interpretation of the Soils

The interpretation of the soils is an important aspect of soil survey. The interpretation is based on the purpose for which the survey is done. In this case the survey was done for the land suitability evaluation for coconut.

The performance of coconut depends on:

1) Moisture Availability which is determined by:

   a) Climate
   b) Hydrology
   c) Internal drainage

2) Soil earation which is determined by:

   a) Texture
   b) Drainage
   c) Structure
   d) Consistence

3) Rooting depth of soil

4) Fertility status of the soil

5) Soil toxicity

Therefore the important soil characteristics on which the potential of the soil is determined are;

1) Soil depth 2) Soil drainage status
3) Soil Texture (4) Fertility status
5) Soil toxicity

On the above soil characteristics, the good soils for coconut, the moderately good soils for coconut, and poor soils for coconut could be determined.

Table 1. The great soil in each agro - ecological region in the survey area

Agro - ecological Region	Great Soil Groups
DL 3	1. Sandy Regosols 2. Latosols
DL 1	1. Reddish Brown Earths
IL 3	1. Sandy Regosols 2. Non Calcic Brown Soils 3. Alluvial Soils
IM 3	1. Reddish Brown Latosolics
IL 1	1. Sandy Regosols 2. Latosols and Regosols on Old Red and Yellow sands 3. Red Yellow Podzolic Soils 4. Alluvial Soils
WL 3	1. Red Yellow Podzolic soils with soft or hard laterite 2. Alluvial soils

Table 2. Some of the important soils identified and mapped

Agro Ecological Region	Great Soil Group	Soil Series	Physiographic Unit	Brief description of the soils
DL3	Sandy Regosols	Weliketiya Series	Coastal plain (beach)	Deep imperfectly drained sandy soils.
	Latosols	Wilpattu Series	Undulating plain of the red earth formation (upper slope)	Somewhat excessively drained very deep loamy sand soils.
		Borupan Series	-- do -- (lower slope)	Imperfectly drained, very deep yellowish brown loamy sand soils.
		Gambura Series	Undulating plain of the red earth formations (upper slopes)	Somewhat excessively drained, very deep sandy loam soils.
		Mavillu Series	-- do -- (lower slope)	Imperfectly drained, very deep, sandy loamy soils.
DL1	Reddish brown earths	Ranorawa Series	Undulating mantled plain (upper slope)	Well drained, moderately deep to deep, gravelly loamy soils.

Agro Ecological Region	Great Soil Group	Soil Series	Physiographic Unit	Brief description of the soils
IL3	Alluvial Soils	Ambakele Series	Higher terrace (alluvial plain)	Moderately well drained to imperfectly drained, deep, coarse loamy soils
		Rajakadaluwa Series	Lower terrace (alluvial plain)	Imperfectly drained, deep loamy soils
	Red yellow podzolic	Andigama Series	Mantled plain	Well drained to moderately well drained, mod.erately deep, loamy to clayey soils with considerable Fe stone gravels.
		Wilattawa Series	- do -	Imperfectly drained, coarse loamy to loamy soils
	Red yellow podzolic Soils	Maho Series	- do -	Well drained, mod.erately deep to deep gravelly loamy soils.
		Wariyapola Series	- do -	Imperfectly drained, deep, gravelly loamy soils.
IL1	Sandy regosols	Negombo Series	Coastal plain (beach)	Excessively drained, deep, sandy soils
	Latosols and regosols on old red and yellow sands	Rathupasa Series	Coastal plain (old deposits)	Well drained, very deep sandy to coarse loamy soils.
		Madampe Series	- do -	Moderately well to imperfectly drained very deep, sandy to coarse loamy soils.

Agro Ecological Region	Great Soil Group	Soil Series	Physiographic Unit	Brief description of the soils
IL1	Red yellow podzolic	Kurunegala Series	Mantled plain	Imperfectly drained, deep, loamy soils
		Kuliyapitiya Series	- do -	Moderately well drained to well drained, moderately deep to deep loamy soils.
IM3	Reddish brown latosolic soils	Melsiripura Series	- do -	drained very deep, well drained loamy soils
WL3	Red Yellow Podzolic with soft or hard laterite	Boralu Series	- do -	Well drained to moderately well drained, moderately deep, loamy to clayey soils with considerable Fe stone gravels.
		Pallama Series	- do -	Moderately well to imperfectly drained deep coarse loamy soils.