



Report on a Terrain Classification
of the
TRUSAN - LONG TENGOA AREA

5 th. Division

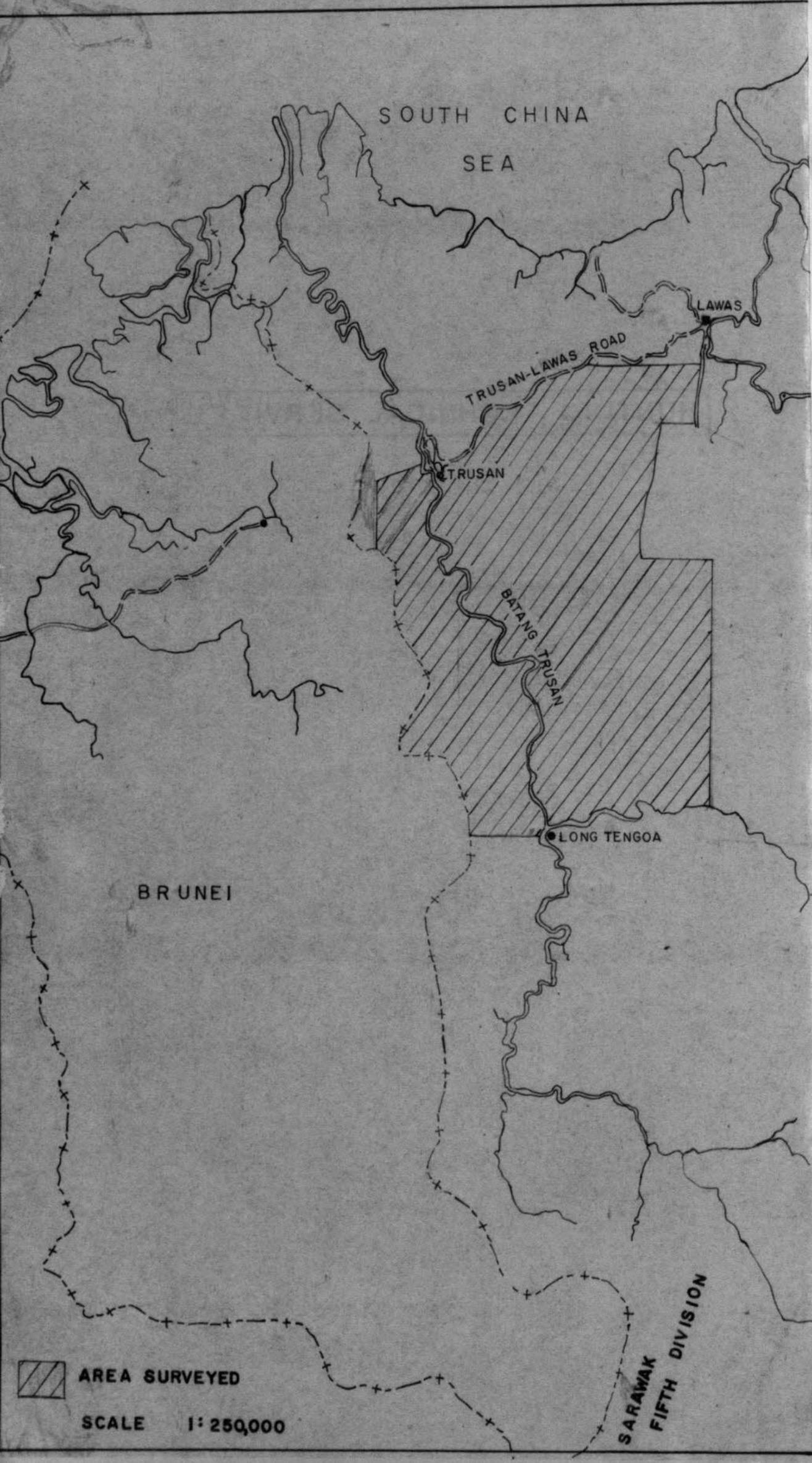
by
J. R. D. Wall
Soil Surveyor

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LOCATION MAP



SOUTH CHINA
SEA

LAWAS

TRUSAN-LAWAS ROAD

TRUSAN

BATANG TRUSAN

LONG TENGOA

BRUNEI

SARAWAK
FIFTH DIVISION



AREA SURVEYED

SCALE 1:250,000

REPORT ON A TERRAIN CLASSIFICATION OF THE
TRUSAN - LONG TENGOA AREA,
FIFTH DIVISION.

by

J.R.D. WALL

JANUARY, 1966.

1. INTRODUCTION

A request was made by the Fifth Division Development Committee for a terrain map of the Trusan - Long Tengoa area (Location Map) in order that a projected feeder road to Long Tengoa should pass through the best agricultural land, as indicated by topography. Two alternative starting points had been suggested, namely from Trusan following the Trusan valley upstream, and from the end of the Gaya road crossing into the Trusan valley via the Briwan valley. The boundaries of the area mapped cover that mapped at reconnaissance level in the Siang Siang area (Wall and Lim, 1962) and adjoin areas surveyed at reconnaissance level in the north (Wall, 1964, a and b; Dames and Sutton, 1959; R. b. Sahari 1965) the Brunei-Sarawak international border in the west, an arbitrary line extending west from Long Tengoa and the Tengoa River in the south, and in the east an arbitrary line following predominantly high land. The total area amounts to approximately 36 square miles.

The terrain class map accompanying this report has been compiled solely from air photograph interpretation, and classifies the topography according to various combinations of slope and the height of hills above adjacent valley land (amplitude of relief). The key to the units is shown diagrammatically on the map, and their agricultural usage is interpreted as follows:-

- Terrain Class 1. Flat or almost flat land, topographically suitable for agriculture.
- Terrain Class 2. Land with gentle slopes of less than 10° and rising to less than 150 feet above local base level. This type of topography is gently rolling, generally occurs at foothills or on terraces and is topographically suitable for agriculture.
- Terrain Class 3. Land with gentle to moderately gentle slopes of up to 20° and rising to more than 150 feet above local base level. This type of topography is moderately to strongly rolling and is topographically suitable for agriculture.
- Terrain Class 4. Land with gentle to steep slopes and rising to less than 50 feet above local base level. This type of topography ranges from being gently rolling to strongly dissected, and is topographically suitable for agriculture.
- Terrain Class 5. Land with moderately gentle slopes of between 10° and 20° , and between 50 and 150 feet above local base level. This type of topography is moderately rolling, and is topographically suitable for agriculture.

Terrain Class 6. Land with moderately steep to steep slopes of 20° to 35° and rising to less than 150 feet above local base level. This type of topography is moderately dissected, and is topographically suitable for agriculture.

Terrain Class 7. Land with moderately steep to steep slopes of 20° to 35° and rising to more than 150 feet above local base level. This type of topography is deeply dissected and is considered topographically marginal for agriculture.

Terrain Class 8. Land with slopes exceeding 35° , considered to be topographically unsuitable for agriculture.

The Terrain Map accompanying this report is at scale 1:100,000 and is subject to the same qualifications as a reconnaissance map at the same scale, namely that although parts of this area are cultivated and the ground with all the minor slope facets can be seen on the air photographs clearly, other parts cannot be seen clearly due to poor photography, or a thick cover of vegetation. The base map scale is 1:50,000 and at this scale the mapping units, although dominated by one terrain class, probably contain many small slope facets of other classes, particularly in areas under tall forest. The reduction of the base map to the issued scale of 1:100,000 is done primarily to increase the mapping accuracy, but the same process causes further simplification of the boundaries and grouping units.

2. TERRAIN OF THE AREA

Land topographically unsuitable for agriculture, namely Terrain Class 8, is mapped in four areas: in the north, among hills drained by the Siang Siang and tributary streams, and in the southwest, south and southeast among high hills drained by tributaries of the Trusan River mainly. These areas, however, contain many small slope facets of Terrain Class 7 in particular. The steepest slopes consist largely of cuesta scarp slopes and the upper, cliffed slopes of ridges. Despite the steepness of the slopes in this unit, landslides do not appear to be common.

Terrain Class 7 is topographically marginal for agriculture. This type of land is widespread surrounding the areas of Terrain Class 8, and the unit probably contains many small slope facets of this class in addition to those of Terrain Class 3. The topography consists predominantly of high, steep ridges and the steepest flanks of a few high, more gently sloping hills in the Sabangang valley, for instance.

The remaining units are topographically suitable for agriculture. These mainly consist of almost flat land of Class 1 in the Trusan valley, gently undulating land of Class 2 as terraces in the Trusan valley and large blocks of Terrain Class 3, together forming a rough Y-shape among the higher, steep hills. Land of Terrain Class 3 is uncommon in Sarawak except in Fourth and Fifth Divisions. It appears to be closely related to the distribution of rock formations dominated by a type of shale, as in the Temburong Formation that outcrops in this area.

The slopes of this unit are moderately steep to gentle but may contain small incised gullies in places.

The terrain can be interpreted in terms of soil by comparison with adjacent surveyed areas, and by knowing the underlying rock formations, (Wilson, 1964). Reference is made to soil groups and families described in more detail in 'A Classification of Sarawak Soils' (1966).

The steep, high land of Classes 7 and 8 are probably a mixture of shallow Skeletal soils and Red-Yellow Podsollic soils: the latter are probably members of the Nyalau or Bekenu families in the southwest, south and southeast, and of the Merit and Bekenu families in the north.

The flat land is believed to comprise a mixture of sandy and gravelly Recent Alluvial soils in the area near Long Tengoa, and poorly drained Gley soils downstream in association with better drained sandy and clayey levee soils of the Red-Yellow Podsollic group. Most of these soils are used for agriculture elsewhere, the main hazard to cultivation being flooding. It is possible that some peat soils occur in the neighbourhood of Trusan.

Terrain Class 2 land in the Trusan valley is terrace land that almost certainly consists of bouldery, sandy soils of the Skeletal Gaya Family, or of the Red-Yellow Podsollic Sabangang Family. The former is unsuitable for agriculture while the latter can be used. Class 2 land in the Gaya valley is probably a mixture of Recent Alluvial and Gley soils.

The remaining hill land of Terrain Classes 3, 4, 5 and 6 probably are dominated by Red-Yellow Podsollic soils, principally of the Merit Family. These are generally suitable for agriculture where slopes permit. There will be small admixtures of unsuitable Skeletal soils, however, and the long narrow area in the southeast is thought to contain in addition poorly drained Gley soils.

3.

FEEDER ROAD ROUTES

Two routes to Long Tengoa have been suggested, one from Trusan, and the other continuing from the end of the Gaya road. Both have merits.

That from Trusan can be routed to take advantage of what is thought to be medium to good agricultural land almost all the way and would be about 18 miles long. It would link up with Kuala Briwan village, but would require a largish bridge across the Briwan Stream. Most of the land the road would pass through is already used for shifting cultivation of hill rice, however, and the road would duplicate the existing river route. It is not known whether the Trusan River can be used by powered boats at all times or whether rapids near Long Tengoa are impassable at some periods.

The route from the end of the Gaya road can similarly be planned to take advantage of usable agricultural land, some of which has not been cultivated before in the upper Briwan area. No major bridges are required, and it does not duplicate existing routes. The suggested route does not link up with Kuala Briwan village and is about 11 miles long.

CONCLUSIONS

It is felt that from the points of view of agricultural development and cost, the route from the end of the Gaya road is preferable, its only disadvantage being that it does not link up with Kuala Briwan village. The land that this road would pass through is hilly, but not too steep for agriculture. The soils, judging by field examinations of adjacent areas, are thought to be suitable for agriculture largely.

Waller, J.A.S. (1941)

Report on a reconnaissance soil survey of the Lantau area, Pahang Division, Department of Agriculture, Soil Survey, Report No. 11.

Waller, J.A.S. (1941)

Report on a reconnaissance soil survey of the Kuala area, Pahang Division, Department of Agriculture, Soil Survey, Report No. 12.

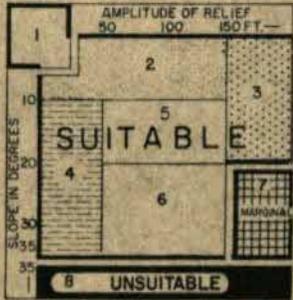
Wilson, B.A.W. (1941)

The geology and mineral resources of the Lantau and Pekan valley area, Pahang, Malaya. Geological Survey Memoir No. 17.

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- Wall, J.R.D. (1964 a) Report on a reconnaissance soil survey of **the Sabangang area**, 5th Division, Department of Agriculture, Soil Survey, Report No.71.
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KEY OF TERRAIN UNITS



N.B. Slopes and heights in units are those that are dominant

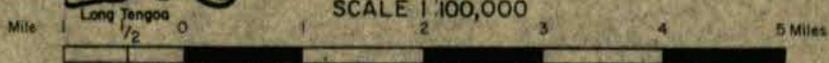
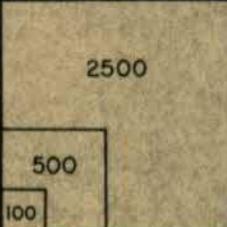
The reference grid located on the map border has an arbitrary origin and is divided in units of one mile

TRUSAN - LONG TENGOA AREA TERRAIN MAP



Suggested route between Lawas Damit and Long Tengoo.

ACREAGE SCALE



SCALE 1:100,000

