



The 2<sup>nd</sup> Meeting of National Soil and Nutrient Management Expert Group for ASEAN  
Guidelines on Soil and Nutrient Management

### Soil Types and General Soil Information in Myanmar

Dr. Thin Nwe Htwe  
Deputy Staff Officer  
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Yangon, Myanmar

### Objectives of Land Use Division

- ❖ Soil classification
- ❖ Cropping recommendation based upon soil types of different agro-ecological zones
- ❖ Recommendation on fertilizer management for each type of crops and soil
- ❖ Recommendation on irrigation frequencies for different crops based upon physical characteristics of the soil and meteorological conditions
- ❖ Undertaking soil conservation and reclamation measures

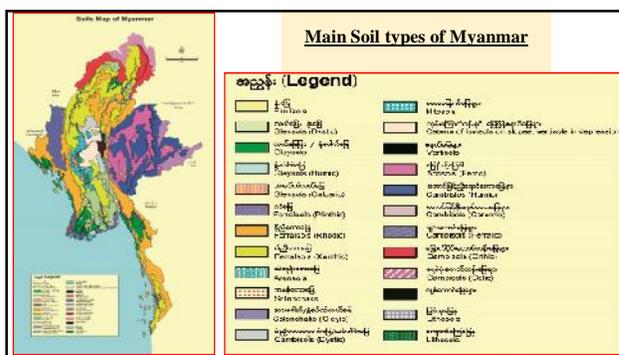
### On going Tasks of Land Use Division

- ❖ Survey and Mapping
- ❖ Demonstration of Soil conservation practices
- ❖ Demonstration of Amelioration on problem soil
- ❖ Soil fertility improvement
- ❖ Research on Soil and Fertilizer correlation
- ❖ Fertilizer Registration and Enforcement of Law and Regulation
- ❖ Soil, water and fertilizer analysis
- ❖ Training and Education

### Soil Classification

- ❖ Agricultural Planning Commission made a classification mainly based on data of aerial photo interpretations in 1955-1957.
- ❖ Land Use Bureau made a general scientific classification with the help of Soviet Soil Expert in 1957 based on the Russian system.
- ❖ As it needs to revise, redefine for adoption, a new classification system was imperatively needed.
- ❖ The old classification system was modified in 1970 by Land Use Division of Myanmar Agriculture Service to correlate it with the FAO/UNESCO Classification.

No.	FAO Classification	USDA Classification	Area (000 ha)	(%)
1	Fluvisol	Fluvents	736	1.1
2	Gleysol	Inceptisols & Fluvents	3051	4.5
3	Gley Gley soil	Inceptisols	555	0.8
4	Calcaric Gley soil	Inceptisols	55	0.1
5	Swampy Gleysol	Inceptisols	2241	3.3
6	Vertisol	Vertisols	482	0.7
7	Catena of Luvisol	Alfisols, Vertisols	1781	2.6
8	Acrisol	Ultisols	4130	6.1
9	Cambisol	Inceptisols	1085	1.6
10	Radic Ferralsol	Oxisols	9971	14.7
11	Xanthic Ferralsol	Oxisols	8363	12.4
12	Arenosol	Entisols	244	0.4
13	Othic Cambisol	Inceptisols	2461	3.6
14	Gelic Cambisol	Inceptisols	2596	3.8
15	Histic Cambisol	Inceptisols	6287	9.3
16	Chromic Cambisol	Inceptisols	1370	2
17	Pitathic Ferralsol	Oxisols	588	0.9
18	Lithosol	Lithic Sub Group	241	0.4
19	Andosol	Inceptisols	46	0.1
20	Humic Gleysol	Inceptisols	203	0.3
21	Solomchak	Inceptisols / Aridisol	42	0.1
22	Cambisol	Inceptisols	530	0.8
23	Lithosol(Purly primitive crusted store)	Lithic Sub Group	290	0.4
24	Othic Cambisol	Inceptisols	2188	3.2
25	Not suitable for crop		18123	26.8
	<b>Total</b>		<b>67659</b>	<b>100</b>

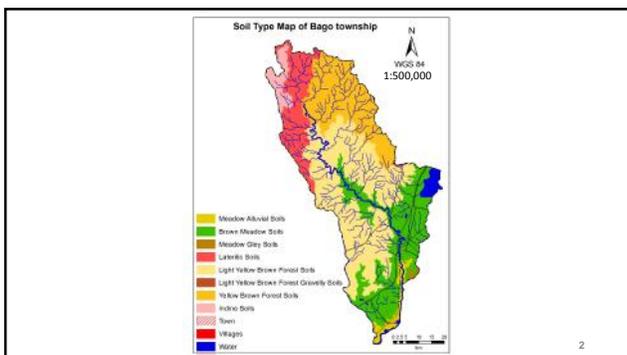
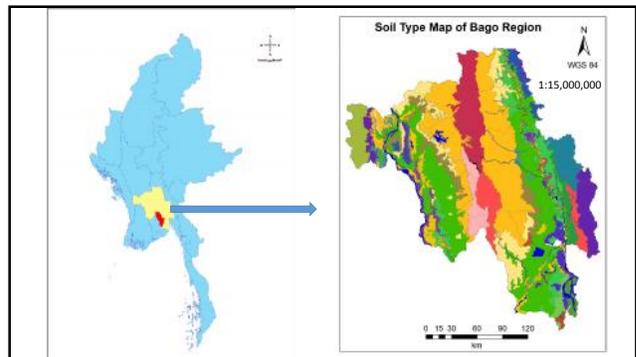


Soil Type (FAO/UNESCO)	Location	Indicative soil constraints	Suitable Crops
Fluvisol	Deltas, Former Lake, Coastal Areas	Low organic matter	Rice, Jute, Sugarcane, Pulses, Corn, Sesame, Groundnut, Chilli, Vegetables
Cambisol (gelic)	Northern Myanmar, Putao District		
Luvisol	Dry Zone Areas	Low fertility and some areas are poor drainage	Rice, Sesame, Sunflower, Groundnut, Cotton, Sugarcane, Pulses, Vegetables
Cambisol (o)	Myitkyina Areas	Degraded land and land slide problems in some areas	Forest
Vertisol	Sagaing, Mandalay, Magway Division	Poor drainage, low fertility	Rice, Sesame, Sunflower, Groundnut, Cotton, Sugarcane, Pulses, Vegetables
Arenosol	Coastal line of Myanmar		Forest
Gleysol	Deltas and Coastal Areas	Poor drainage	Rice, Jute, Sugarcane, Vegetables, Pulses
Ferralsol (plinthic)	Lower Slopes of the Hills of Bago, Yakhine Yoma	Low fertility	Rubber, Coconut and Oil palm, Orchards
Nitisol (h)	Mountainous plains in Dry Zone, Lower Parts of the Slopes in Shan Plateau		Forest, Orchards, Groundnut, Sesame, Upland crops
Fluvisols (thionic)	Sea water inundated areas (>6months)	Degraded land in some areas	Mangrove forest

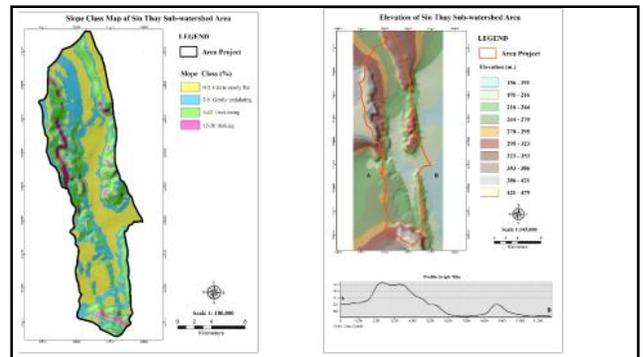
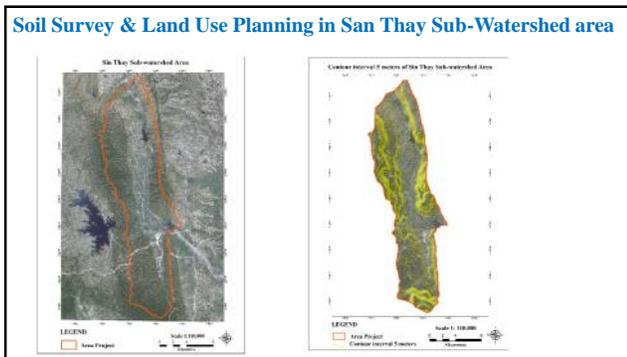
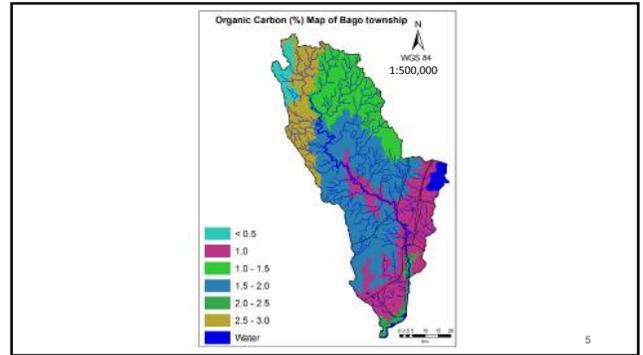
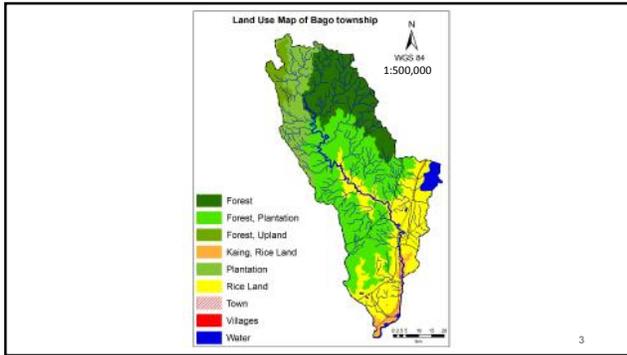
Soil Type (FAO/UNESCO)	Location	Indicative soil constraints	Suitable Crops
Gleysol	Dry Zone Areas	Low fertility	Rice, Sesame, Groundnut, Corn, Pulses, Tobacco, Vegetables, Sugarcane
Gleysol	Dry Zone Areas	Low fertility	Chilli, Pulses, Sorghum, Rice, Cotton
Cambisol (chonic)	Shan Plateau (4000-6000ft)	Degraded land in some areas	Forest
Cambisol (o)	Myitkyina Areas	Degraded land in some areas	Forest
Andosol	Popa Region		Forest
Lithosol	Dry Zone Areas		Pasture
Ferralsol (rhodic)	Rakhine and Tanintharyi (1000-4000ft)	Degraded land in some areas	Forest, Orchards, Rubber, Mango, Pineapple, Tea, Coffee and Other plantation
Acrisol	Shan Plateau (>3000ft)	Low pH level, Fe toxicity and Degraded land in some areas	Upland rice, Soybean, Corn, Groundnut and Niger, Tea, Coffee, Orchards
Gleysol ( e )	Dry Zone Areas	Saline problems in some areas	Rice, jute
Gleysol (h)	Coastal line of Myanmar	Poor drainage, low fertility	Mangrove Forest, Rice, Jute
Cambisol ( orthic )	Eastern Side of Rakhine Yoma	Degraded land in some areas	Forest, Orchards, Uplands crops, Rubber, Mango, Pineapple and Other plantation
Ferralsol (xanthic)	Bago, Tanintharyi, Rakhine	Degraded land in some areas	Forest, Orchards, Rubber, Mango, Pineapple and Other plantation crops

### Soil Survey

To prepare district level soil type map



No.	Zonal (Older) System	FAO/UNESCO Soil Classification	USDA Soil Taxonomy
1.	Meadow Alluvial Soils (နားရေလှည့်မြေ)	Eutric Gleysol	Aquepts / Aquepts
2.	Brown Meadow Soils (လှည့်မြေ)	Eutric Gleysol / Humic Gleysol	Aquepts / Aquepts / Histic Aquepts
3.	Meadow Gley Soils (လှည့်မြေ)	Eutric Gleysol / Humic Gleysol	Aquepts / Aquepts / Histic Aquepts
4.	Lateritic Soils (ဂရိတ်)	Dystric Nitisol	Udults / Ustults
5.	Light Yellow Brown Forest Soils (သစ်တောမြေ)	Xanthic Ferralsol	Oxisol
6.	Light Yellow Brown Forest Gravelly Soils (ကျောက်စိမ့်ပါသစ်တောမြေ)	Xanthic Ferralsol	Oxisol
7.	Yellow Brown Forest Soils (သစ်တောမြေ)	Xanthic Ferralsol	Oxisol
8.	Indine Soils (အင်းတိုက်မြေ)	Orthic Cambisol	Tropepts 9





**Challenges for evidence-based land use planning**

- ❖ Shortage of capability to survey land resources
  - To prepare digital land resource mapping in districts and township levels
- ❖ Limited numbers of expert soil surveyors

**Future plans**

- To develop appropriate digital land resource mapping in Pyawbwe Township
- To analyse land suitability in the Pyawbwe Township for agricultural or conservation uses
- To Develop participatory land use planning processes

