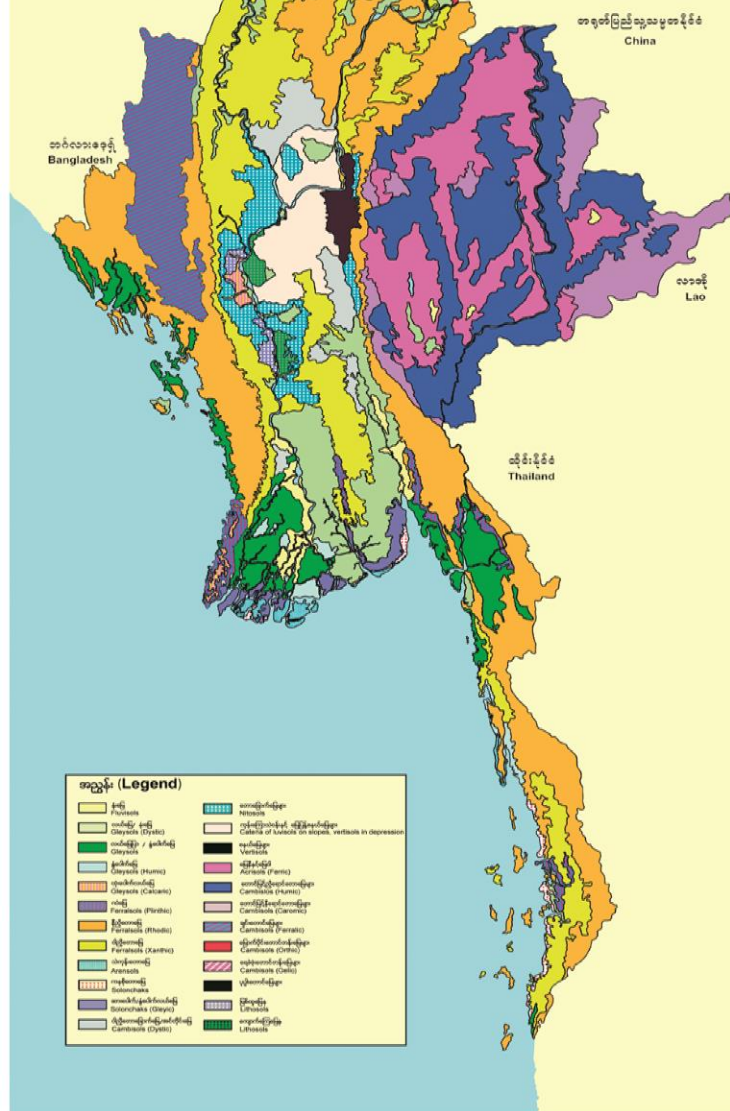




Aung Kyaw Lin
Deputy Staff Officer
Detkhina District | Naypyitaw

March/ 17/ 2022

Introduction

Land Evaluation

- ❖ Myanmar area – 676,578 Sq km²
- ❖ Process of estimating the potential of land for other alternative kind of use
- ❖ Part of the process of Land Use Planning
- ❖ It helps with decisions about land use need:-
 - At National Level
 - At Regional/State Level
 - At District Level
 - At Township Level
 - At Village Level
 - At Farm Plot Level

Basic Process is the same, but the level of detail and scale are different

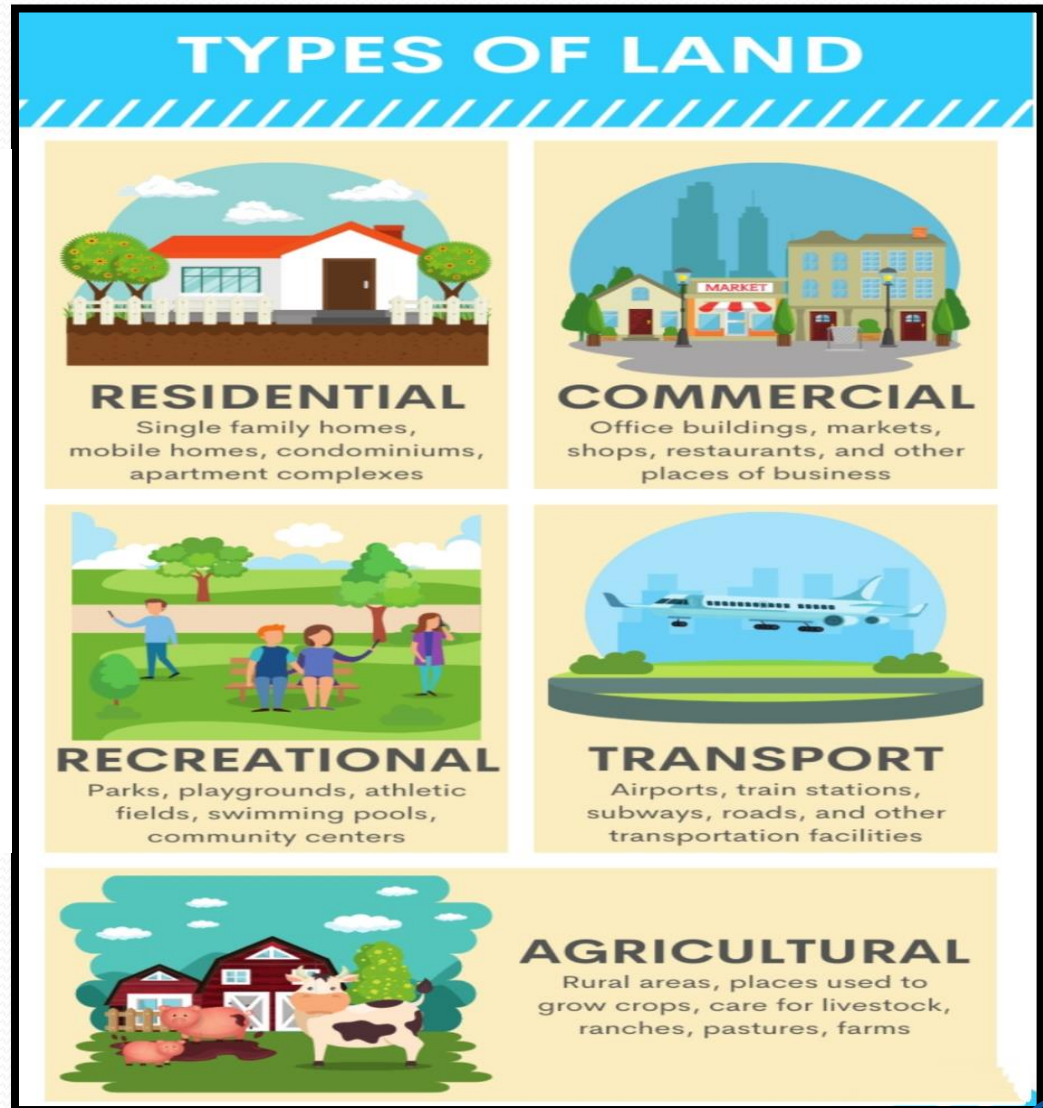
Successful Land Evaluation needs:-

- Multi-disciplinary process
- Standardized Framework

To ensure logical and possible analysis for a wide range of possible land uses

5 Types of Land Use

1. Residential
2. Commercial
3. Recreational
4. Transport
5. Agricultural

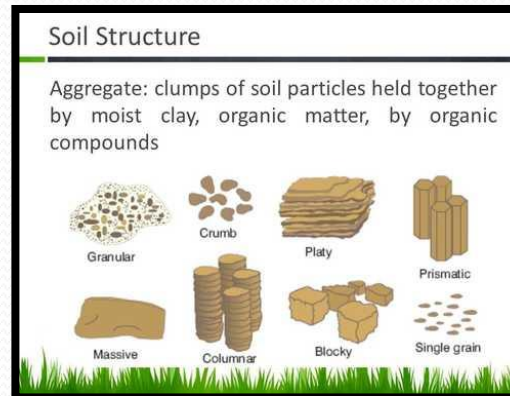
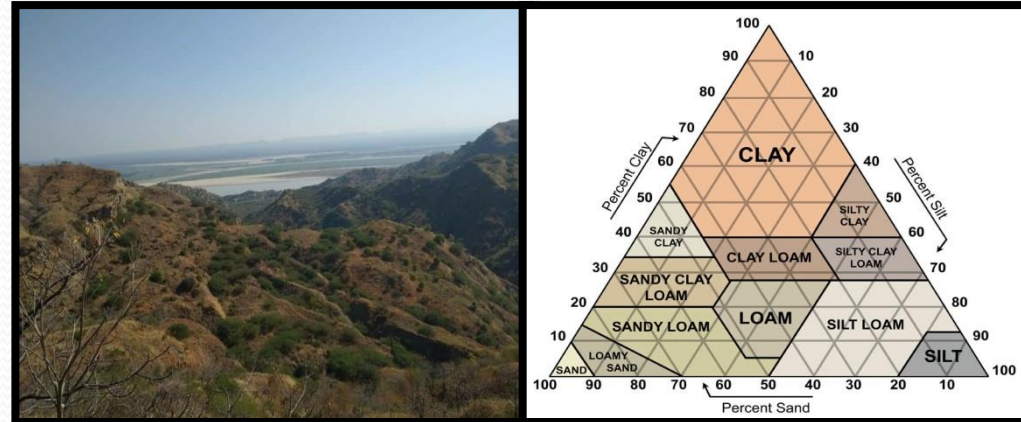


Major characteristic of crop land

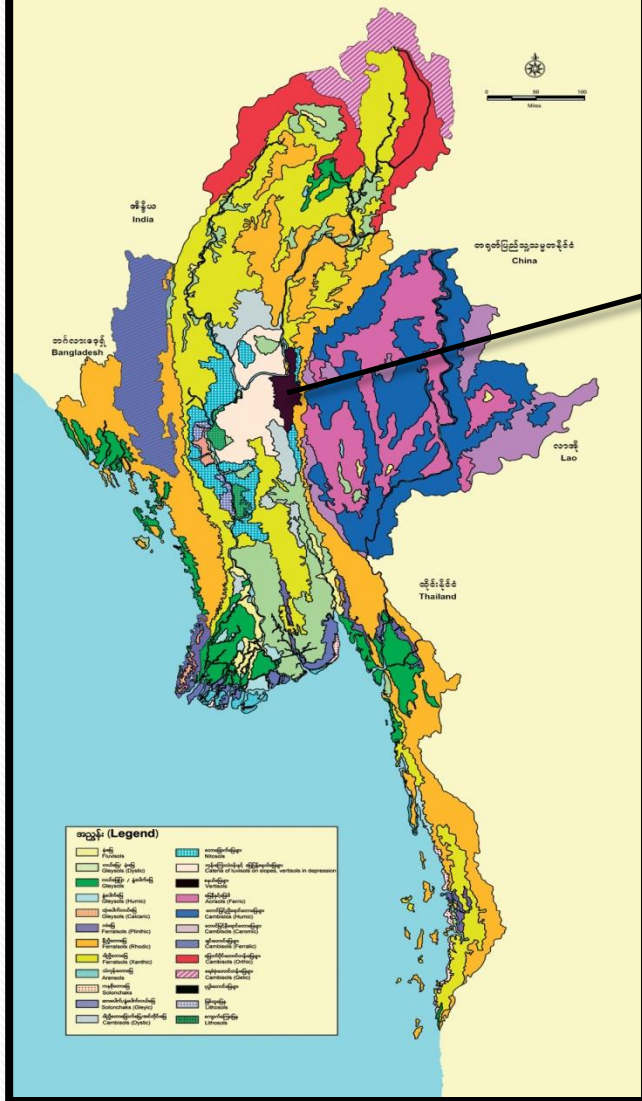
Soil	• large impact on crop productivity -soil texture, structure and nutrient availability
Climate	• average weather in a given area over a longer period time
Topography	• the study of the forms and features of land surface
Water supply	• provision of water by public utilities or individuals

Major characteristic of crop land(Cont.)

- ❖ Land form
- ❖ Depth
- ❖ Slope%
- ❖ Soil (texture, structure)
- ❖ **Climate**
- ❖ Topography
- ❖ Hazard or limitation

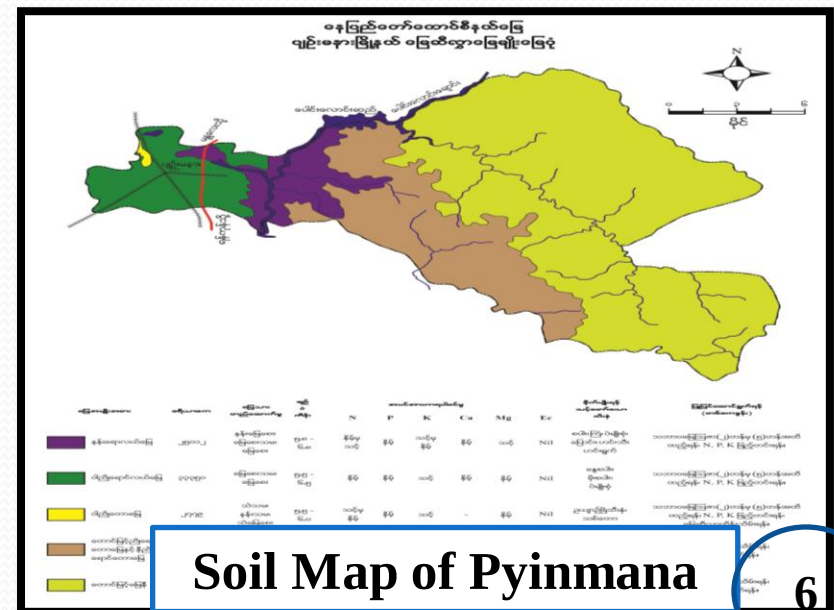
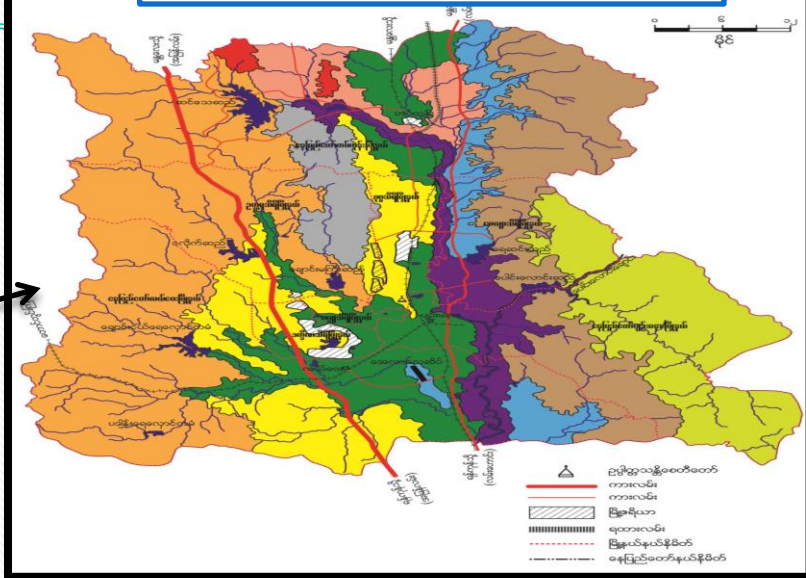


မြန်မာနိုင်ငံ မြေမျိုးကြီးများပြမြေပုံ
Soils Map of Myanmar



Soil Map of Myanmar

Soil Map of Naypyitaw



Soil Map of Pyinmana

Land suitability in Myanmar (Rozanov, 1965)

Nature of Land use	Total area		Used for farming	
	(Millions of ha)	% of total area	(Millions of ha)	% of suitable land
Suitable for rice	9.0	13.2	4.8	53.3
Suitable for other crops	12.3	18.1	1.6	13.0
Mountainous land	44.8	66.0	2.0	4.4
Not suitable for agriculture	1.8	2.7	-	-
Total Land resources	67.8	100.0	8.4	12.4

Land Evaluation. Part III: crop requirements. Agricultural Publications n° 7, G.A.D.C., Brussels, Belgium, 1993, 191 p.

<https://biblio.ugent.be/publication/233235>
https://www.researchgate.net/publication/324330469_Land_Evaluation_Part_3_Crop_Requirements

Objectives

- ❖ To estimate the suitable crop of the specific region (Naypyitaw, Pyinmana)
- ❖ To evaluate land and climatic data of the specific region (Naypyitaw, Pyinmana)
- ❖ To study the growing cycle of the suitable crop

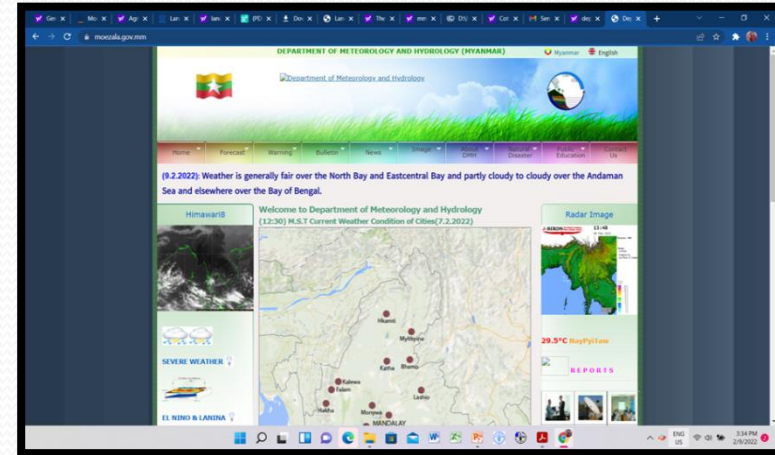
Problem Statement

- ❖ Need to decide future agricultural cropping pattern, planning and activities
- ❖ Determination how proper or appropriate it is for a particular use of the land (such as growing a crop variety) in a particular location
- ❖ Predicting the most important changes and to decide these are desirable or acceptable
- ❖ And Categorizing the proposed action as a wise or unwise use of land

Material and Methods

Data Collection

1. Temperature (Mean, Max., Min., Day and Night Temp.)
2. Rainfall
3. Climatic Characteristics



Source: Department of Meteorology and Hydrology

Data Analysis

- The collected data were calculated by Excel.

A screenshot of an Excel spreadsheet containing weather data for Myanmar. The spreadsheet has multiple columns for different weather parameters and rows for different locations. The data is organized into several sections, with the first section showing data for 'M25' and 'M27'. The columns include 'Time', 'Rainfall', 'Temperature', 'Max', 'Min', and 'Mean'. The data is presented in a clear, structured format, with each row representing a specific location and its corresponding weather data. The spreadsheet is titled 'M25' and 'M27' in the top left corner. The data is organized into several sections, with the first section showing data for 'M25' and 'M27'. The columns include 'Time', 'Rainfall', 'Temperature', 'Max', 'Min', and 'Mean'. The data is presented in a clear, structured format, with each row representing a specific location and its corresponding weather data. The spreadsheet is titled 'M25' and 'M27' in the top left corner.

Suitability Classes

S1 (0)	No limitations; very suitable; optimal yield
S1 (1)	Slight limitations; suitable; almost optimal yield
S2	Moderate limitations; moderately suitable; acceptable yield
S3	Severe limitations; marginally suitable; low yield
N1	Very severe limitations; not recommended, but potentially suitable.
N2	Very severe limitations; not recommended; potentially not suitable; not acceptable yield

Land Evaluation. Part III: crop requirements. Agricultural Publications n° 7, G.A.D.C., Brussels, Belgium, 1993, 191 p.

<https://biblio.ugent.be/publication/233235>
https://www.researchgate.net/publication/324330469_Land_Evaluation_Part_3_Crop_Requirements

Weather condition(mean) (1994-2019) Pyinmana

No.	Month	Minimum °C	Maximum °C	Mean Temp	Precipitation mm
1	January	14.5	31.65	23.07	42.3
2	February	16.59	34.12	25.36	13.2
3	March	21.15	38.03	29.59	5.16
4	April	23.72	37.60	30.66	53.77
5	May	24.37	35.95	30.16	321.37
6	June	24.9	32.79	23.44	228
7	July	23.83	31.55	27.69	281.17
8	August	24.41	32.8	28.6	307.52
9	September	24.71	34.06	29.38	261.6
10	October	23.05	33.33	28.19	150.39
11	November	20.77	34.32	27.54	163.06
12	December	16.67	32.34	24.5	28.21

Source: Department of Meteorology and Hydrology

Results and Discussion

Climate Requirement – Cotton (growing cycle 150-180 days)

Climatic Characteristics	Climate class, degree of Limitation and rating												
	S1		S2	S3	N1	N2	Pre Monsoon Season		Rainy Season		Late Rainy Season		
	0	1	2	3	4		Feb.15 to March		May.15 to June		July.15 to August		
	100	95	85	60	40	25	0	Results	Class	Result s	Class	Results	Class
Precipitation of growing cycle (mm)	1050-900 1050-1200	900-750 1200-1400	750-625 1400-1600				<500 -	1049.43	S1 L0	1478.8	S2	1163.74	S1 L0
Precipitation of vegetative stage (mm) (1 st - 2 nd month)	50-65 50-35	>65 <35	- -				- -	38.24	S1 L0	529.26	S1 L1	588.69	S1 L1
Precipitation of yield form stage (mm) (5 th month)	200-150 200-300	150-100 300-400	100-50 >400	<50 -	- -	- -		254.58	S1 L0	255.99	S1 L0	163.06	S1 L0
Precipitation of ripening stage (mm) (6 th month)	<25	25-50	50-75	75-100	-	>100	294.34	N2	156.72	N2	28.21	S1 L1	
Mean temp. of growing cycle (°C)	>26	26-24	24-22	22-20	-	<20	28.09	S1 L0	27.69	S1 L0	27.64	S1 L0	
Mean max. temp. of growing cycle (°C)	>32	32-28	28-26	26-24	-	<24	34.90	S1 L0	33.28	S1 L0	33.06	S1 L0	

Results and Discussion (Cont.)

Climate Requirement – Cotton (growing cycle 150-180 days)

Climatic Characteristics	Climate class, degree of Limitation and rating												
	S1		S2	S3	N1	N2	Pre Monsoon Season		Rainy Season		Late Rainy Season		
	0	1	2	3	4		Feb.15 to March		May.15 to June		July.15to August		
	100	95	85	60	40	25	0	Results	Class	Result	Class	Results	Class
Average max. temp. of warmest month (°C)	>34	34-30	<30	-	-	-		38.03	S1 L0	34.06	S1 L0	34.32	S1 L0
Mean temp. of vegetative stage (°C) (1 st + 2 nd month)	>30	30-25	25-20	<20	-	-		57.6	S1 L0	52.36	S1 L0	56.29	S1 L0
Mean DAY temp. of flowering stage (°C) (3-4 th month)	20-30	30-35	35-40	>40 <20	-	-		33.60	S1 L1	30.16	S1 L1	31.23	S1 L1
Mean Night temp. of flower -ing stage (°C) (3-4 th month)	12-18	18-22	22-27	>27 <12	-	-		27.23	S3	26.13	S2	26.32	S2
Mean temp. of ripening stage (°C) (6 th month)	>26	26-24	24-22	22-20	-	<20		28.14	S1 L0	27.54	S1 L0	24.5	S1 L1
Relative humid. of maturation stage (%)	<50	50-65	65-75	75-80	-	>80		84.8	N2	77.9	S3	71.6	S2

DAY temp

$$= [\text{Mean T} + \text{Mean max. T.}] / 2$$

NIGHT temp.

$$= [\text{Mean T} + \text{Mean min. T.}] / 2$$

Conclusion & Recommendation

Climate Requirement – Cotton (growing cycle 150-180 days)

Climatic Characteristics	Climate class, degree of Limitation and rating												
	S1		S2	S3	N1	N2	Pre Monsoon Season		Rainy Season		Late Rainy Season		
	0	1	2	3	4		Feb.15 to March		May.15 to June		July.15 to August		
	100	95	85	60	40	25	0	Results	Class	Result s	Class	Results	Class
Precipitation of growing cycle (mm)	1050-900 1050-1200	900-750 1200-1400	750-625 1400-1600				<500 -	1049.43	S1 L0	1478.8	S2	1163.74	S1 L0
Precipitation of vegetative stage (mm) (1 st - 2 nd month)	50-65 50-35	>65 <35	- -				- -	38.24	S1 L0	529.26	S1 L1	588.69	S1 L1
Precipitation of ripening stage (mm) (6 th month)	<25	25-50	50-75	75-100	-		>100	294.34	N2	156.72	N2	28.21	S1 L1
Mean Night temp. of flower - ing stage (°C)(3-4 th month)	12-18	18-22	22-27	>27 <12	-		-	27.23	S3	26.13	S2	26.32	S2
Relative humid. of maturation stage (%)	<50	50-65	65-75	75-80	-		>80	84.8	N2	77.9	S3	71.6	S2

Conclusion & Recommendation (Cont.)

Climate Requirement – Cotton (growing cycle 150-180 days)

- ❖ Precipitation of vegetative stage (mm) (1st - 2nd month) = 588.69 = S1 L1
- ❖ Mean Night temp. of flowering stage (°C) (3-4th month) = 26.32 = S2
- ❖ Relative Humidity of maturation stage (%) = 71.6 = S2

If the cotton will plant by farmers in Pyinmana Region,

Sowing Time - July (15-21)

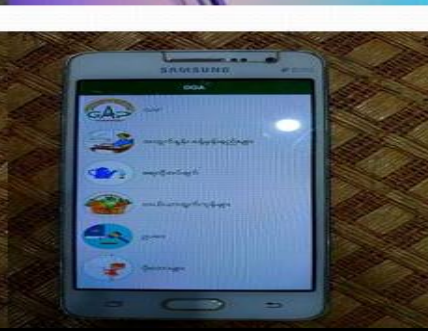
Harvesting Time - December

Growing cycle From July to December



Expected Outcome

- ❖ Coronavirus disease (Covid-19) – an infectious disease
- ❖ Mobile Applications from Department of Agriculture (ICT)
- ❖ <http://www.myanmarseedportal.gov.mm/>
- ❖ <https://www.landusedivision.gov.mm/>
- ❖ <https://doagap.org.mm>



Expected Outcome (Cont.)

Information and Communication Technology (ICT)

- ICT – used to – telephone networks with computer networks
- ICT – includes – any communication device, television, cell phones, computer, Satellite systems and so on
- Also used – video conferencing and distance learning

Ozdamli, Fezile; Ozdal, Hasan (May-2015)

This method – selected and used in future.

Due to this method, cotton grower can get high benefit from cotton production



Future Plan

✓ Soil

➤ **Climate**

✓ Topography

✓ Water supply

The screenshot displays a Google Maps interface for Pyinmana Township. The left sidebar lists several layers: 'Aung Kyaw Lin YAU', 'Pyinmana_Township_Boundary_KML', 'Pyinmana_Village_Track_Boundary_KML', 'Pyinmana_Township_Point_KMLNEW', 'Shan_Lake', and 'Pyinmana_Towns'. The main map area shows a satellite view of the township, outlined in yellow. Numerous blue house icons are scattered across the map, representing individual villages or settlements. Labels on the map include 'Naypyidaw', 'Kyaukpadaung', 'Yezin', 'Kwedugyi', 'Viti Hiway', 'Lay Eln Su', 'Ngar Te Su', 'San Thi Lwin', 'Myay Mye', 'Saungdaung Anauk', 'Thit Saint Pin', 'Inn Ther', 'Viti Pyoke', 'Sa Lu', 'Htein Pyaung', 'Myat Lin', 'Ma Yan Taung (Upper)', 'Koe', 'Aung Berk Thak', 'Ledugaung Shweyaung', 'Totan', 'Paunglaung', 'Saung Taung Gyi', 'Pa Det Chaung', 'Aungthar', 'Thone Gwa Taw', 'Thabyegyaung', 'Taung Myint Ywar Thit', 'Yae Pu', 'Ain Lal Chaung', 'Ain Lal Chaung Min Leik', 'Ain Lal Chaung Ywar Pain', 'Baw Ka Hta (Middle)', 'Baw Ka Hta (Upper)', 'Aungtha', 'Minye', 'Wayone', 'Myohla', 'NAYPYIDAW UNION TERRITORY', 'BAGO REGION', 'KAYIN STATE', and 'SHAN STATE'. The bottom of the screen shows a Windows taskbar with various application icons and a system clock indicating 1:01 PM on 2/6/2022.

<https://www.google.com/maps/d/edit?mid=1t6r-eO05WqfWKqbGTXF7mUkWvo6LNqyd&usp=sharing>

https://www.google.com/maps/d/edit?mid=1Y-bBjDehM1_jFQTty-X4uUEm0YRQPdFB&usp=sharing

Thank You for your kind attention

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