

Ministry of Agriculture and Irrigation
Department of Agriculture
Agricultural Extension and Education Division

***MANAGEMENT OF CROPPING
PATTERN***

Daw Khin Mar Yee
Assistant Director
Agricultural Extension and Education Division

Location

Latitude: 9°32' - 28°31'

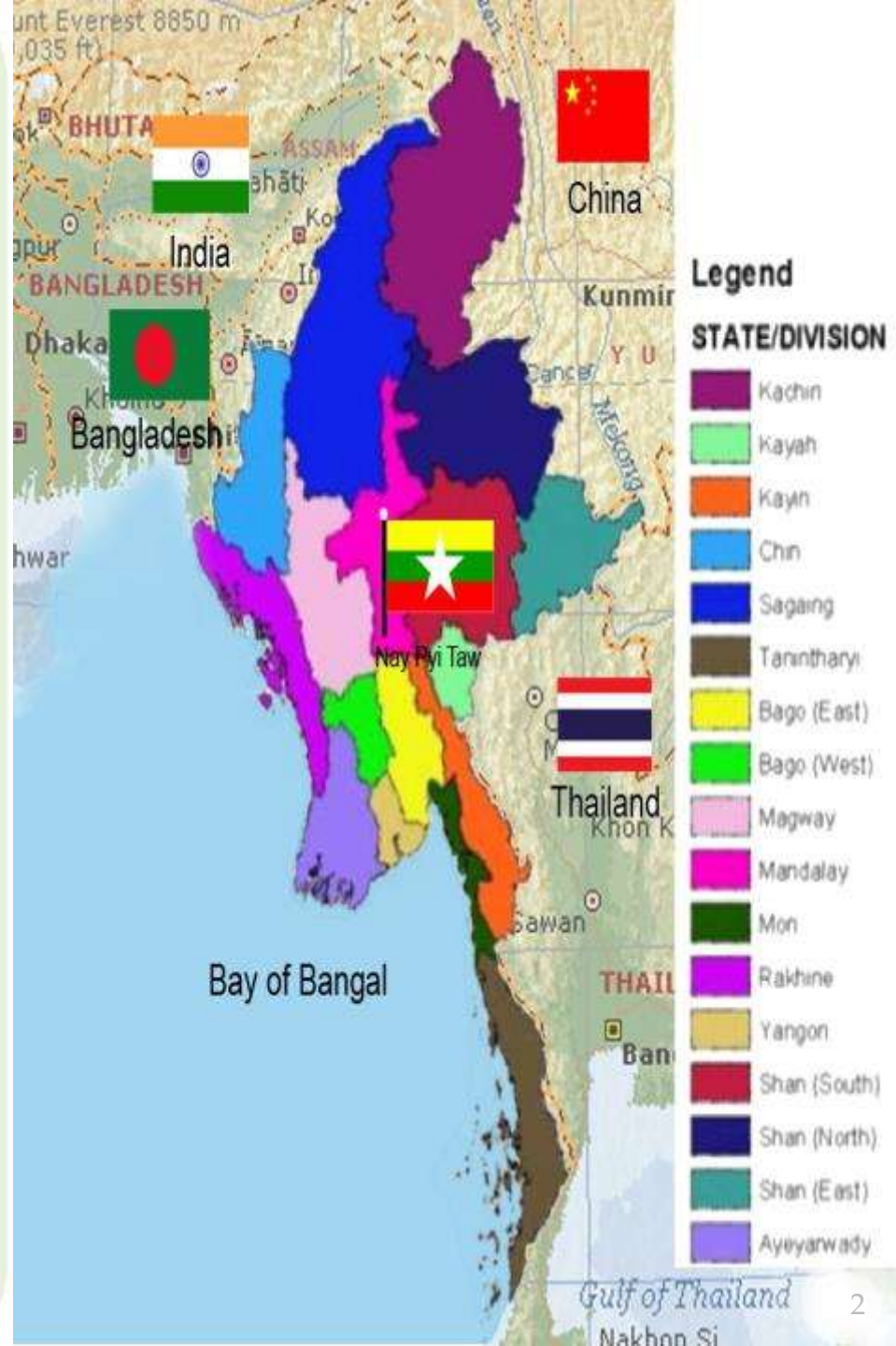
Longitude: 92°10' - 101°11'

Land frontier:

with Thailand	2099 km
with Laos	235 km
with China	2227 km
with Bangladesh	272 km
with India	1453 km

Sea frontier:

Rakhine coastline	713 km
Delta coastline	438 km
Tanintharyi coastline	1078 km

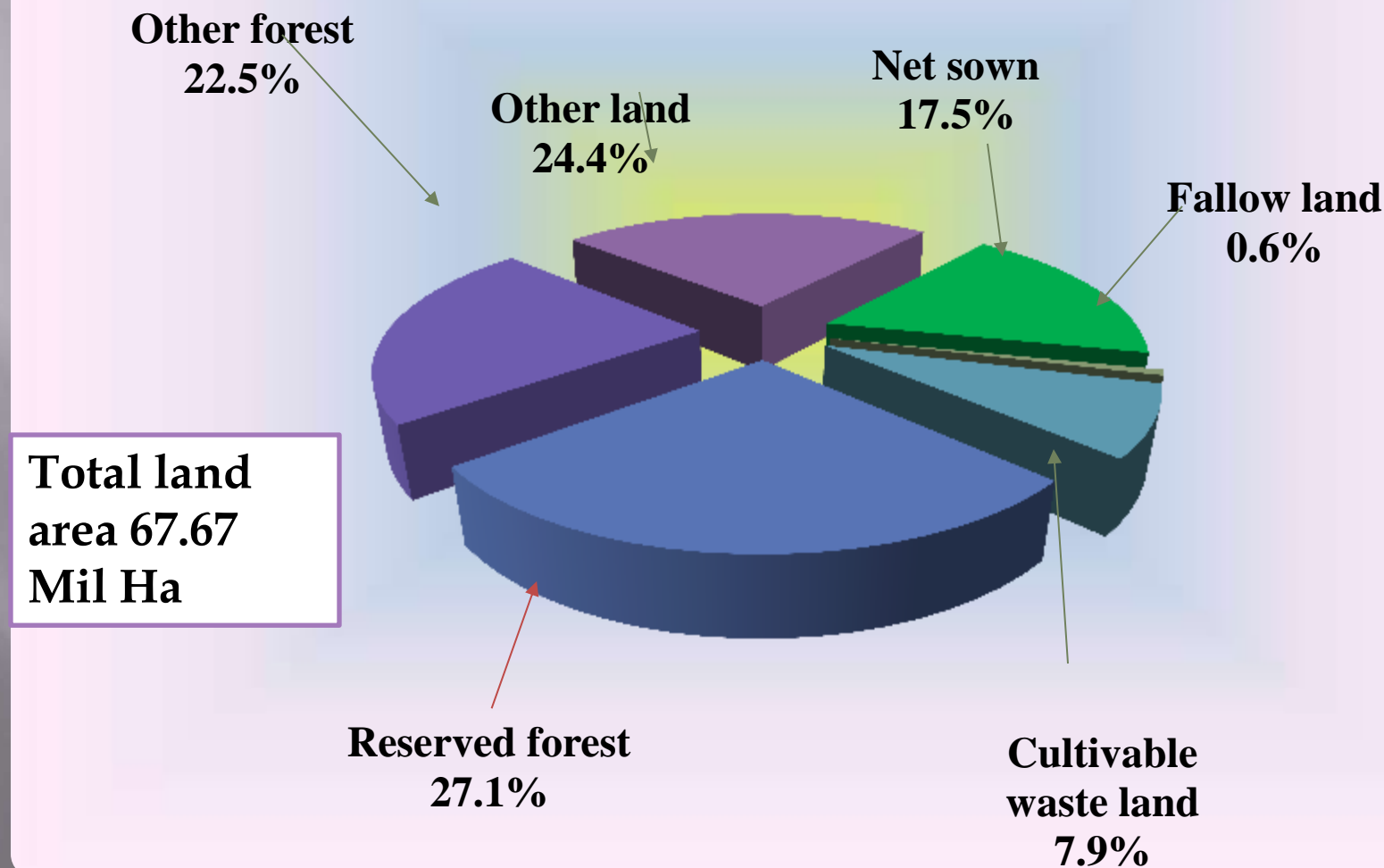


Land Utilization in Myanmar

Item	Area (mil. ha)	%
Net sown area	11.87	17.50
Fallow land	0.46	0.60
Cultivable waste land	5.29	7.90
Reserved forest	18.60	27.10
Other forests area	14.84	22.50
Other land	16.61	24.40
Total	67.67	100.00

Source : DAP (2014-15)

Land Utilization in 2014-2015



Climatic data

▣ Typical seasons

- * Rainy : mid-May to mid-October
- * Winter : mid-October to mid-February
- * Summer : mid-February to mid-May

▣ **Annual rainfall : 2540-5080 mm in coastal & hilly regions.**
: 760-1015 mm in central Myanmar

▣ **Temperature : different ranges**
: 30° - 40° C from coastal regions to central.
: 4° - 20° C in mountainous and plateau.

Area Contribution of Crop Groups

No.	Crops	Sown Area (000 ha)	Production (000 mt)	Sown area %
1.	Cereal Crops	8414	34355	38
2.	Oil Seed Crops	3479	3379	16
3.	Pulses	4534	5409	19
4.	Industrial crops	1228	10094	5
5.	Culinary crops	333	2043	1
6.	Other crops	3380		21
	Total	21368		100

Source : DAP (2014-15)

Major Crops Production



- ▣ Paddy
- ▣ Maize
- ▣ Groundnut
- ▣ Sesame
- ▣ Sunflower
- ▣ Black gram
- ▣ Green gram
- ▣ Pigeon pea
- ▣ Cotton
- ▣ Sugarcane



Current Crops Management

- ▣ Irrigated lowland
- ▣ Rainfed lowland
- ▣ Irrigated upland
- ▣ Rainfed upland
- ▣ NyaungOo Township in dry zone area

**Table-1. Seasonality of the Crop (Rice based Cropping Calendar)
(Irrigated lowland)**

No.	Cropping Patterns	Sowing Time											
		Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	Ma y
1	MR – P + S - SR	Monsoon Rice					Pulses + Sunflower				Summer Rice		
2	MR – P- SR	Monsoon Rice					Pulses				Summer Rice		
3	MR – P + S - Ss	Monsoon Rice					Pulses + sunflower				Summer sesame		
4	MR – P - Ss	Monsoon Rice					Pulses				Summer sesame		
5	MR – P - V	Monsoon Rice					Pulses				Vegetable		

**Table-2. Seasonality of the Crop (Rice based Cropping Calendar)
(Rainfed lowland)**

No.	Cropping Patterns	Sowing Time											
		Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May
1	MR – C + Sun		Monsoon Rice					Chick pea + Sunflower					
2	MR – P		Monsoon Rice					Pulses					
3	MR – Oil crops		Monsoon Rice					Oil crops					
4	MR – M		Monsoon Rice					Maize					
5	MR- V		Monsoon Rice					Vegetable					
6	MR- P + S		Monsoon Rice					Pulses + Sunflower					

**Table-3. Seasonality of the Cropping calendar
(Rainfed lowland)**

No.	Cropping Patterns	Sowing Time											
		Mar	Apri	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	Oil crops - MR	Oil crops					Monsoon Rice						
2	P – Oil crops		Pulses					Oil crops					
3	P - MR		Pulses					Monsoon Rice					
4	M - MR		Maize					Monsoon Rice					
5	V - MR		Vegetable					Monsoon Rice					

**Table- 4. Seasonality of the Crop (Rice based Cropping Calendar)
(Irrigated upland)**

No.	Cropping Patterns	Sowing Time											
		Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	Ma y
1	MR – P + S - SR	Monsoon Rice				Pulses + Sunflower				Summer Rice			
2	MR – P- SS	Monsoon Rice				Pulses				Summer sesame			
3	MR – G-nut- S		Monsoon Rice				Ground nut				sesame		
4	MR – G- nut - Gg		Monsoon Rice				Ground nut				Green gram		
5	MS – C + Sun - Ss	Monsoon sesame				Chickpea + Sunflower				Summer sesame			

**Table-5. Seasonality of the Crop (Cropping Calendar)
(Rainfed upland)**

No	Cropping Patterns	Sowing time											
		May	Jun	Jul y	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apri
1	MR – BB + S		Monsoon sesame				Butter bean + Sunflower						
2	MR – GG + S		Monsoon sesame				Green gram+ Sunflower						
3	Oil crops - V		Oil crops				Vegetable						
4	P – G-nut		Pulses				Ground nut						

Table-6. Seasonality of the Crop (Inter-Cropping Calendar)
(Rainfed Upland)

No	Cropping Patterns	Sowing Time											
		May	Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apri
1	P- S	Pigeon + Sesame											
2	P – G-nut	Pigeon + Ground nut											
3	P – Sesame + Sorghum	Pigeon + Sesame - Sorghum											
4	P - Penaut	Pigeon + Paenaut											
5	P – S + Gg	Pigeon + Sesame – Green Gram											
6	P – S + Penaut	Pigeon + Sesame - Paenaut											

Crops Management for Nyaung Oo Trowship

(Dry Zone Area)

Rainfall Distribution in NyaungOo (2015)

No.	Month	Number of days	Rainfall (mm)
1	January	3	-
2	February	-	-
3	March	-	-
4	April	1	3.00
5	May	2	20.00
6	June	3	49.00
7	July	9	113.00
8	August	9	181.40
9	September	9	110.70
10	October	6	127.80
11	November	7	12.90
12	December	2	nil
	Total	51	630

**Table-1. Seasonality of the Crop (Cropping Calendar) in NyaungOo
(Rainfed Upland)**

No	Cropping Patterns (10) Years ago	Sowing Time												
		Ap ri	May	Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar	
1	G- Nut- Sesame			G-nut (Erect/ Runner)				Late sesame/ horse gram						
2	Sesame - G-nut			Sesame				G-nut (Erect/ Runner)						
3	GG- G-nut			Green Gram				G-nut (Erect/ Runner)						
4	GG- Sorghum			Green Gram				Sorghum						
5	Cotton + G- nut – horse gram			Cotton + G- nut – horse gram										

Used variety – Kywe chan Shwe dinnga (late variety) for Pigeon pea
 Magway- 11, SP 121 for ground nut (eract)
 Kyaungkone, local runner for ground nut (runner)
 Local variety (hnanni, yethaekyaw) for sesame
 local late variety (pea naut) for Green Gram
 Local long duration variety for cotton (short staple)

Sole Cropping of Groundnut in NyaungOo



Table-2. Pigeon Pea based Cropping Pattern (Rain fed upland)

No	Cropping Patterns (at present)	Sowing Time											
		Ap ri	May	Jun	July	Aug ust	Sept	Oct	Nov	Dec	Jan	Feb	Mar
1	Pigeon pea +G- Nut -			Pigeon Pea + G-nut									
2	Pigeon pea + G- Nut - sesame/ horse gram			Pigeon Pea + G-nut –Sesame/ horse gram									
3	Pigeon pea + Sesame – Green gram			Pigeon Pea + Sesame – green gram									
4	Pigeon pea + Green Gram - Sesmae			Pigeon Pea + Green gram - sesame									

Used variety – Kywe chan Shwe dinnga (late variety) for Pigeon pea
 Sinpadatha- 11 for ground nut (eract)
 Kyaungkone for ground nut (runner)
 Sinyadanar-3 /Sinyadana 5 for sesame
 Yezin-8 for Green Gram

Inter-cropping Pattern (Pigeon pea + Groundnut)



Land Utilization in NyaungOo

Item	Area (ac)	%
Net sown area	170239	60.7
Low land	256	0.09
Up land	155249	55.32
Alluvium	6591	2.35
Gardening	205	0.07
Fallow land	7938	2.83
Uncultivable land	68945	24.54
Reserved forest	4588	1.63
Other forests area	36850	13.13
Total	280622	100

Sown Area of Crop Groups in NyaungOo (2015-2016)

No.	Crops	Sown Area (Acre)	Sown area (%)
1.	Cereal Crops	18142	8.80
2.	Oil Seed Crops	104662	50.77
3.	Pulses	56170	27.25
4.	Industrial crops	4084	1.98
5.	Culinary crops	4230	2.05
6.	Other crops	1498	0.73
7	Flooder	17350	8.42
	Total	206136	100

Lesson learnt

- ▣ Inter-cropping Pattern is much more better than Sole Cropping Pattern to reduce crop losses due to yearly drought.

Suggestions

- ▣ Supplementary irrigation during drought period,
- ▣ Instead of only Pigeon Pea based inter-cropping pattern, perennial crops (Mango) based inter-cropping pattern with oil seed crops (Groundnut, Sesame) and Pulses (Green Gram, Cowpea)

THANK YOU