

GEOGRAPHICAL ANALYSIS ON RICE CULTIVATION OF THANLYIN TOWNSHIP

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Abstract

Thanlyin township lies in the Southern part of Yangon Region. Thanin Township has a total land area of 143.98 square miles. It is made up of 17 wards and 28 village tracts. The rice is staple food of Myanmar. This paper is divided into three parts. The first part is the physical factors, second part is the human factors, third part include the conditions of Rice cultivation in Thanlyin Township. This paper analyzed on the geographical analysis on rice cultivation of Thanlyin Township.

Keywords: Rice Cultivation

1. INTRODUCTION

Myanmar economy depends mainly on Agriculture. Paddy is the mainly crop and the staple food of Myanmar. Rice is mainly cultivated in Thanlyin Township because of its low land area and there are many suitable plots for farming.

Thanlyin Township is located south part of the Yangon Region. Rice cultivation is a traditional livelihood of the region, the area of cultivated land cannot be extended as much as it should be because the town is surrounded by rivers and other towns. This paper is composed of three chapters. In chapter I deals with to physical bases of Thanlyin Township and social bases of Thanlyin Township is presented in chapter II. In chapter III, deals with the conditions of rice cultivation in Thanlyin Township.

1.1 Aim

The aim of this study is express the geographical analysis on rice cultivation within the study area.

1.2 Objectives

In this paper, the main objectives are-

- (1) To study the condition of rice cultivation in Thanlyin Township.
- (2) To encourage paddy cultivation in Thanlyin Township.

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1.3 Historical Background

Thanlyin (Syriam) is derived from the Mon word “Trawn” which mean Hasun Ban (aqmifyef;). Europeans pronounced Mon word. “Trawn” as “Syriam” when the English man. Ralpfitch came to Myanmar during the King Nanda Bayin (1581-1599), he called “Syriam”.

European adventures and seafarers (Portuguese, Dutch, English and French) came to Thanlyin as early at the end of thirteenth century. They came to trade and settled down at the port of Thanlyin. And they believed the harbor of Thanlyin protected to the ships from the storms and strong winds. The confluence of Bago, Hmawun and Dawpon Rivers was known as “Than Hlet Soon”. Mons who first built the present town “Thanlyin” where settled down.

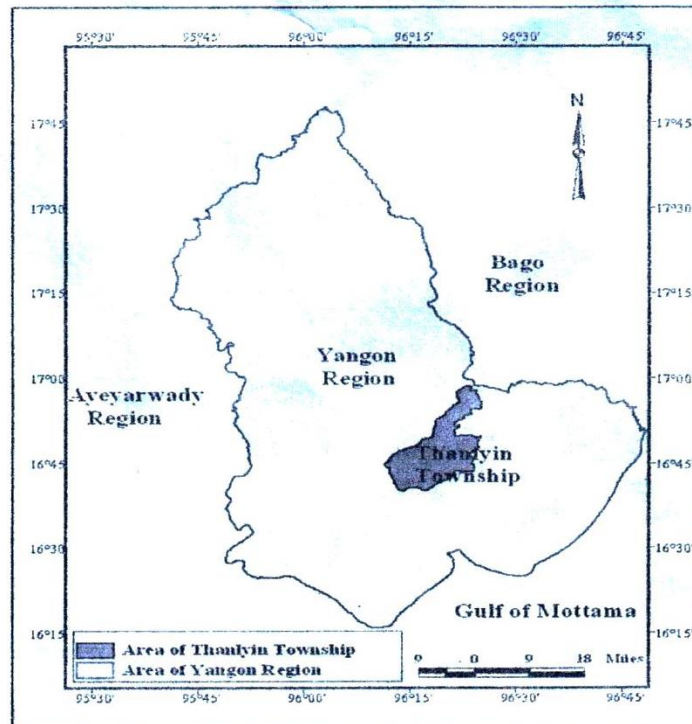
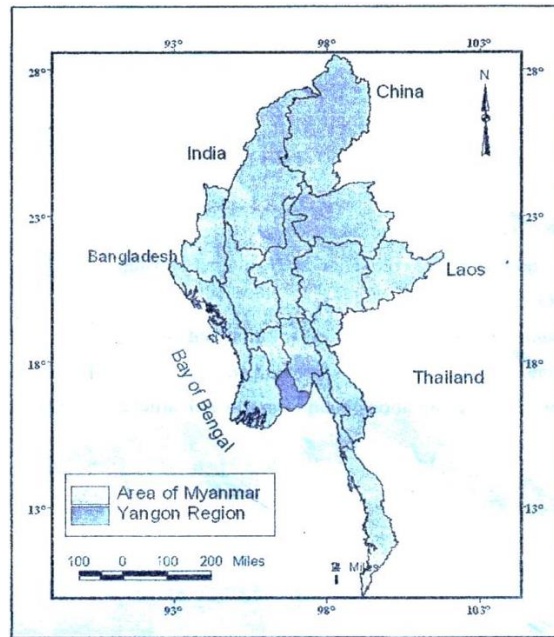
2. GEOGRAPHICAL BACKGROUND OF THANLYIN TOWNSHIP

2.1 Location, Size, Shape and Boundaries

Thanlyin Township is located on the south of Yangon Region. It lies between north latitudes 16° 40' and 16° 59' and between east longitudes 96° 13' and 96° 25'.

Thanlyin Township has a total area of 143.98 square miles (92147 acres). It comprises 17 wards and 28 village tracts. Thanlyin Township is surrounded on the east by Khayan and Thonegwa Township and on the south by Kyauktan Township, on the north by Bago River, and on the west by Yangon River. It total land boundary is 40.5 miles and with 31.5 miles of sea boundary.

Figure(2.1) Location of Study Area



Source: Based from MIMU (Shape File)

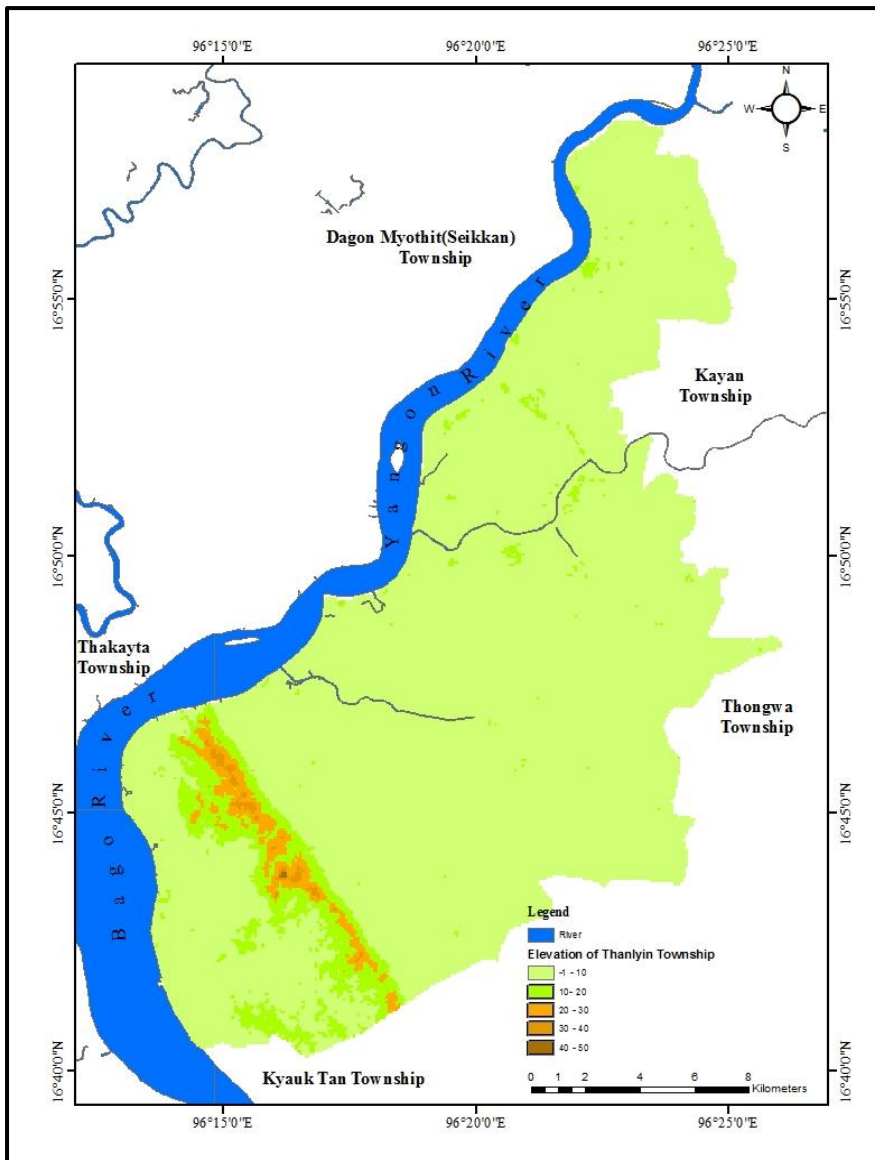
2.2 Relies and Drainage

The southern part and the south eastern parts are parts of lateritic ridge located 50 to 100 feet above sea level. The highest part of the township is southern portion.

The most part of Thanlyin Township area is an almost level plain below 50 feet.

The main rivers of the township are Yangon River, Bago River and Khayan Creek. The small creeks are Kadatphyar, Alunsoke, Bauh Chaung, Myoyoe Chaung. In Thanlyin Township, Khayan Creek flows into Bago River near Kalawe village tract.

Figure (2.2) Elevation of Thanlyin Township



Source: Based from DEM

2.3 Geology

Geologically, Thanlyin Township can be classified as Pliocene type and Rock layers are included in Irrawaddy Group. These layers are most of the sediments, and the rocks are made of grey or grayish blue in colour.

In Thanlyin Township, a small lateritic ridge elongated from the west and northwest to the east and southeast.

Many rivers rivulets and gutters including Bago River and Yangon River flowing through this area have high tide and low tide.

2.4 Climate

Climate is directly related to the availability of temperature and precipitation. Thanlyin Township is located in the Southern District of Yangon Region. This climate of Thanlyin Township is the tropical monsoon type.

March and May have maximum monthly average temperature of 27.2°C, 38.4°C and 37.1°C respectively. The minimum monthly temperature of March is 18.5°C

The Rainy Season stands the end of May to end of October. According to this data, the average total rainfall is 2294.5mm. August receives the highest total rainfall of 535.45 mm.

The cool season starts from November to end of February. According to this data, the maximum temperature ranges from 34.7°C to 37.2°C. The minimum temperature ranges from 13.8° C to 15.7°C.

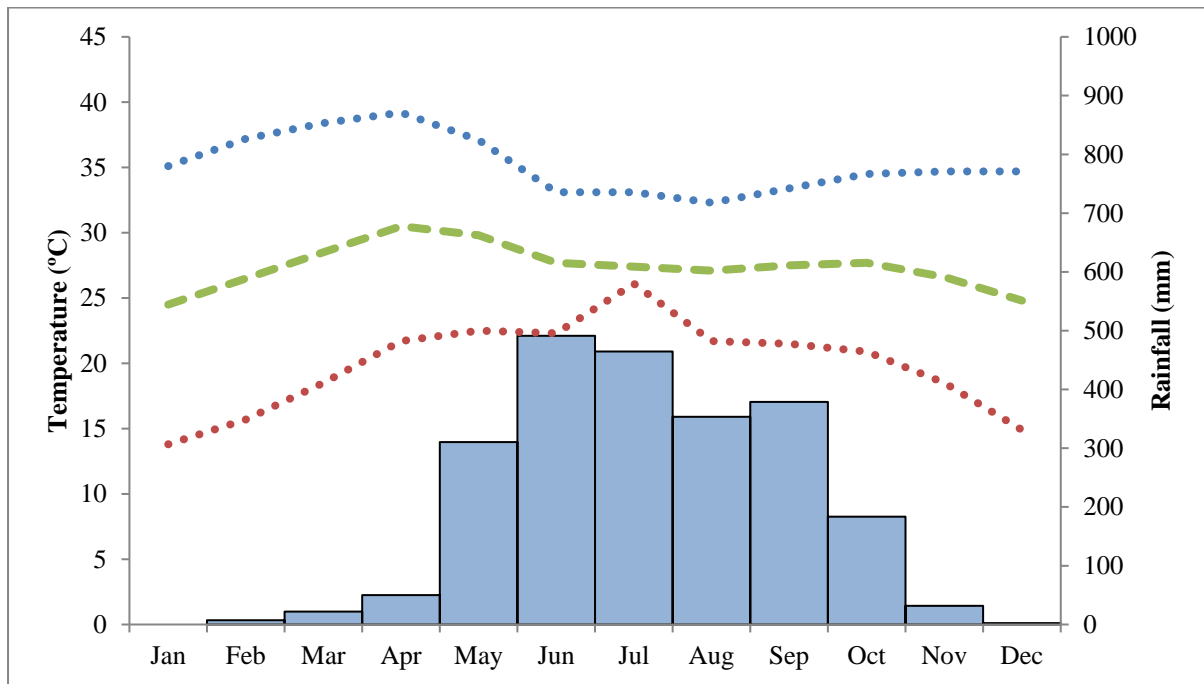
Climate play an important role in economic activities. Temperature, rainfall and humidity are influencing the climate condition of paddy cultivation in study area.

Table (2.1) Monthly Mean Temperature and Rainfall of Thanlyin Township (2009-2019)

Month	Maximum Temperature (°C)	Minimum Temperature (°C)	Mean Temperature (°C)	Rainfall (mm)
Jan	35.1	13.8	24.5	0
Feb	37.2	15.7	26.5	7.3
Mar	38.4	18.5	28.5	22
Apr	39.2	21.7	30.5	49.9
May	37.1	22.5	29.8	310.5
Jun	33.1	22.3	27.7	491.4
Jul	33.1	26.1	27.4	464.5
Aug	32.3	21.7	27.1	353.4
Sep	33.4	21.5	27.5	378.8
Oct	34.5	20.9	27.7	183.4
Nov	34.7	18.5	26.6	31.8
Dec	34.7	14.9	24.8	2.4

Source: Meteorology and Hydrology Department (Kaba-aye)

Figure (2.3) Monthly Mean Temperature and Rainfall of Thanlyin Township (2009-2019)



Source: Table (2.1)

2.5 Soils and Natural Vegetation

Soil is the most important factor for the development of agriculture in any region. Six types of soils are found in Thanlyin Township. There are-

- (1) Strongly eroded soil
- (2) Lateritic soil
- (3) Meadow laterite soil
- (4) Meadow soil
- (5) Meadow gley soil and
- (6) Meadow swampy soil and meadow swampy saline soil.

- (1) The strongly eroded soil can be found in the highest part of the hills. This type of soil is not useful for cultivation.
- (2) Lateritic soil - this type of soil is found in the ridge located in the southwest of the township, which stretches towards northwest and southeast of the township.
- (3) Meadow lateritic soil - Meadow lateritic soil is found in the smooth slope. This soil is useful for gardening.
- (4) Meadow soil - The total area of meadow soil is as wide as 16883.48 acres of the land area of the township. This type of soil is suitable for rice cultivation.

(5) Meadow Gley soil - Water needed for the cultivation of paddy is conserved in the soil. Meadow soil of the region is very fertile, paddy is the main cultivated crop of the region. It is found in the middle part and the whole eastern part of township, the area is 35327.04 acres.

(6) Meadow swampy soil and meadow swampy saline soil are found in the hollow with deep curves where rainwater collects for a long time. Meadow swampy soil can be used for rice cultivation despite its has yield. (Figure) In Thanlyin Township, deciduous and evergreen forests thrive well. The species of these forests are Kanyin, Pinyinma and Pyingadow. In this area average annual rainfall is between 80 inches and 120 inches.

3. HUMAN FACTORS

3.1 Total Population and Population Growth

The total population of Thanlyin Township is 268063 persons in 2014 and 269498 persons in 2016. Thanlyin Township is made up of 17 wards and 28 village tracts. The total population and Growth rate of Thanlyin Township is 273043 persons currently living in the township in 2019. The annual growth rate is one percent normal increased in yearly.

In 2014, the total population of Thanlyin Township is 268063 persons composing 130537 males and 137526 females. In 2016, the total population of this township include to 269498 persons, composing 131842 males and 137656 females. The total population of Thanlyin Township in 2019 was 273043 persons, of which males are 131571 and females are 141472. Table (3.1).

Table (3.1) Total population and Growth Rate of Thanlyin Township (2014-2019)

Sr. No.	Year	Population (person)			Increase of Population	Growth Rate (%)
		Male	Female	Total		
1	2014	130537	137526	268063	-	-
2	2016	131842	137656	269498	+1435	1
3	2019	131571	141472	273043	+3545	1

Source: General Administration Department, Thanlyin Township

3.2 Population Distribution and Density

The distribution of population varies from place to place depending on the relief, economic activities and transportation routes. The population of Thanlyin Township is distributed in 17 wards and 28 village tracts. Densely populated village are Myoma (south) and Daraga in urban area. The sparsely populated area is found in Yenana with 3442 persons and population density with 1712 persons per sq. mile. Rural population is unevenly

distributed. In 2019, the highest density of villages are Bogyoke, Phayargon, Kyaungkoneseikgyi and Letyatsan, because these villages have favourable and availability of water and agricultural opportunity. The sparsely populated area is found in Winkani village tract because it has poor cultivated land, and it has availability to flood.

3.3 Urban and Rural Population

In 2019, the number of population living in urban area was 83223 persons (30%) and 189820 persons (70%) in rural area. The wide area and large population is rural area are favourable for the growing cultivation.

Table (3.2) Population Density of Thanlyin Township

No.	Types	Area (sq. mile)	Total Population (persons)	Population Density (person/ per sq. ml)
1	Rural	137.62	189,820	1379
2	Urban	5.94	83,223	14011

Source: General Administration Department, Thanlyin Township

Table (3.3) Urban Population Density of Thanlyin Township

No.	Name of Wards/ Village Tract	Area (sq. mile)	Total Population (persons)	Population Density (person/ per sq. ml)
1	Amuhtan	2.00	10,740	5,370
2	Aungchanthar	0.40	9,454	23,635
3	Aungmingalar	0.14	2,294	16,386
4	Bagosu	0.30	4,572	15,240
5	Daraga	0.10	6,705	67,050
6	Htanpingone	0.10	4,000	40,000
7	Myohaung (East)	0.10	16,328	163,280
8	Myohaung (Middle)	0.10	3,654	36,540
9	Myohaung (West)	0.10	3,271	32,710
10	Myoma (North)	0.04	1,729	43,225
11	Myoma (South)	0.10	5,207	52,070
12	Myothit (East)	0.10	1,100	11,000
13	Myothit (Middle)	0.02	840	42,000
14	Myothit (West)	0.03	426	14,200
15	Yenan	2.00	3,442	1,721
16	Okkphosu	0.20	5,445	27,225
17	Thauktawtwin	0.11	4,016	36,509
		5.94	83,223	14,011

Source: General Administration Department, Thanlyin Township

Table (3.4) Rural Population Density of Thanlyin Township

Sr. No.	Village Tract	Area (sq.mile)	Total Population (persons)	Population Density (person/per sq. mile)
1	Winkani	7.38	328	44
2	Phagu (East)	5.78	4986	863
3	Phagu (West)	1.8	4191	2328
4	Dazat	6.8	4329	637
5	Yonethabyegan	5.9	5136	871
6	Mingalon	9.34	4883	523
7	Bauhthabyegan	8.4	4515	538
8	Kayinseik	9.73	4030	414
9	Thabyegon	1.91	3599	1884
10	Pagantaung	5.27	3512	666
11	Alwunsoke	5.3	6695	1263
12	Kyaunggone-seikgyi	5.63	3716	660
13	Latyetsan	6.65	22480	3380
14	Thatay-kwin	3.43	3994	1164
15	Sitpin-kwin	6.4	3905	610
16	Bayet	3.08	2945	956
17	Ngapyayma	4.3	2879	670
18	Na/pa	2.26	3546	1569
19	Thanutpin	1.78	978	549
20	Bogyoke	4.58	21562	4708
21	Nyaunghthonepin	3.4	7790	2291
22	Phayagon	8.83	46445	5260
23	Laharyet	4.31	4803	1114
24	Kadatphyar	4.65	4516	971
25	Nyaunglaypin	3.43	3603	1050
26	Kalawe	3.04	4791	1576
27	Saylonegyi	2.2	1783	810
28	Chaungsauk	3.04	3880	1276
	Total	138.62	189,820	1369

Source: General Administration Department, Thanlyin Township

3.4 Age and Gender Structure

Total population of Thanlyin Township is divided into two age groups as mature population which is composed of over 18 years persons and unmatured population which is composed of under 18 years persons.

In 2019, Thanlyin Township has 166870 matured population and 106173 unmatured population forming about 61 percent and 39 percent of total population.

According to 2019 data obtained total population of Thanlyin Township is 131571 male and 141471 female form about 48.19 percent and 51.81 percent of total population.

Table (3.5) Age Structure of Thanlyin Township

Sr. No.	Urbanization	Aged Under (18) year (person)			Aged Above (18) year (person)			Total Population (person)		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Rural	38,430	37,824	76,254	54,651	58,915	113,566	93,081	96,739	189,820
2	Urban	13,841	16,078	29,919	24,649	28,655	53,304	38,490	44,733	83,223
	Total	52,271	53,902		79,300	87,570		131,571	141,472	273,043

Source: General Administration Department, Thanlyin Township

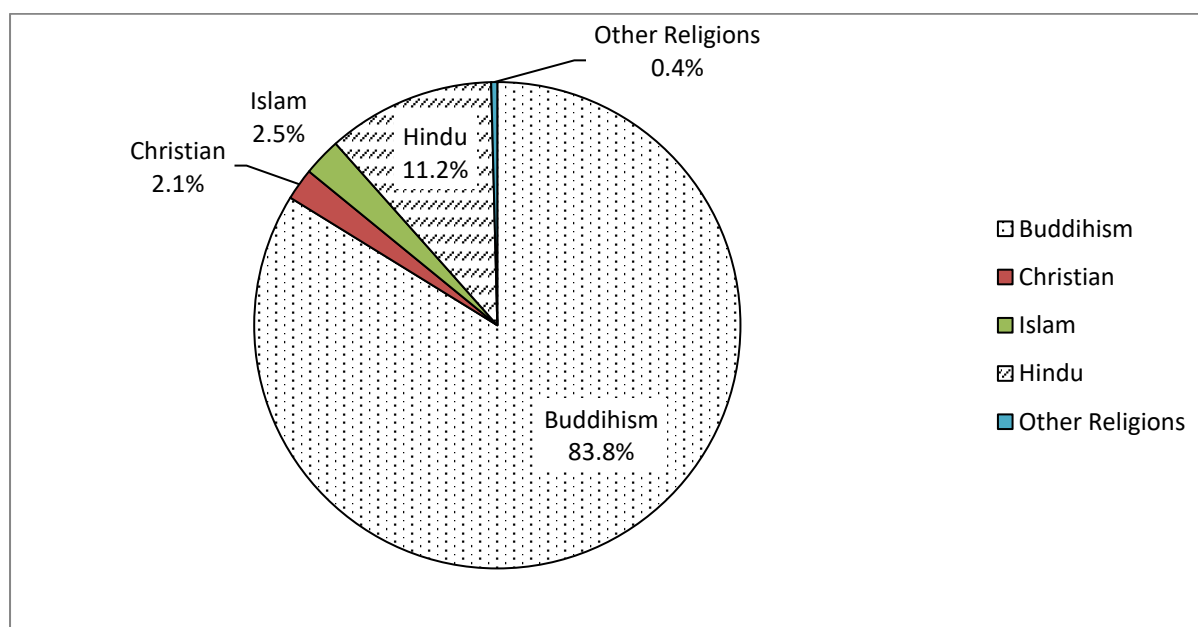
3.5 Ethnicity and Religion

The specific data concerning races and religions are not available. According to field survey and office data, most of people are Bamar and Indian. Majority of population are Buddhist and Hindus. Buddhism ranks first with 83.8 percent. Hindu ranks second with 11.2 percent in 2019.

Table (3.6) Religions of Thanlyin Township

Sr. No.	Urbanization	Buddhism	Christian	Islam	Hindu	Other Religions	Total population
1	Rural	149,920	5,456	5,341	28,059	1,044	189,820
2	Urban	78,863	302	1,552	2,448	58	83,223
	Total	228,783	5,758	6,893	30,507	1,102	273,043

Source: General Administration Department, Thanlyin Township

Figure (3.1) Religions of Thanlyin Township

Source: Table (2.6)

4. Conditions Of Rice Cultivation In Thanlyin Township

Physical bases which influence over paddy cultivation are mature of topography, climate, soil type. Paddy favors a hot, humid climate. Thanlyin Township's major crop is rice, it is found grow it. According to the 2018-2019, the total cultivated land in Thanlyin Township was 59760 acres, which accounted for 100 percent of the study area. The proportion of agricultural area is fully hundred percent in 2016-2017, the total agricultural area is 4600 acres. The people are staying at their own field, they do not transfer to another place.

4.1 Production of Monsoon Paddy

Production of Monsoon Paddy is 83% of the total production of paddy. There are mainly two types of monsoon paddy. They are dry dispersing and wet dispersing. Dry dispersing is usually carried out at the beginning of the rainy season. They are dispersed in the region surrounding with wide and deep water. Wet dispersing gets started in Myanmar month called Nayon. Preparing land, appropriate cultivating system, applying fertilizer, utilizing bio-fertilizer, using standardized seeds are basically considered and cultivated.

The commonly cultivated types of paddy are Sin Thukha, Sinn Thwel Latt, Pathein Yar Kyaw, Pale' Thwe, Manaw Thukha. Paddy likes hot and wet weather. They are more productive in the land without salt. They are also more productive in the sour soil. The monsoon paddy has to be watered until they sprout. Only if enough water is stored, the seeds are dispersed. After three nights, water in the field is drained out. After draining out for five nights, the natural fertilizer, and other bio-fertilizer are used. When duration of the plantation is 15 days old, the fertilizer needs to be dispersed. When they are 25 days or 30 days old, they need to be transplanted. They need to be carefully and systematically planted. When they are 3 months old, the shoots appear. After 4 months, in Thidingyut, the paddy are reaped and after four and a half month, the cultivating process is finished.

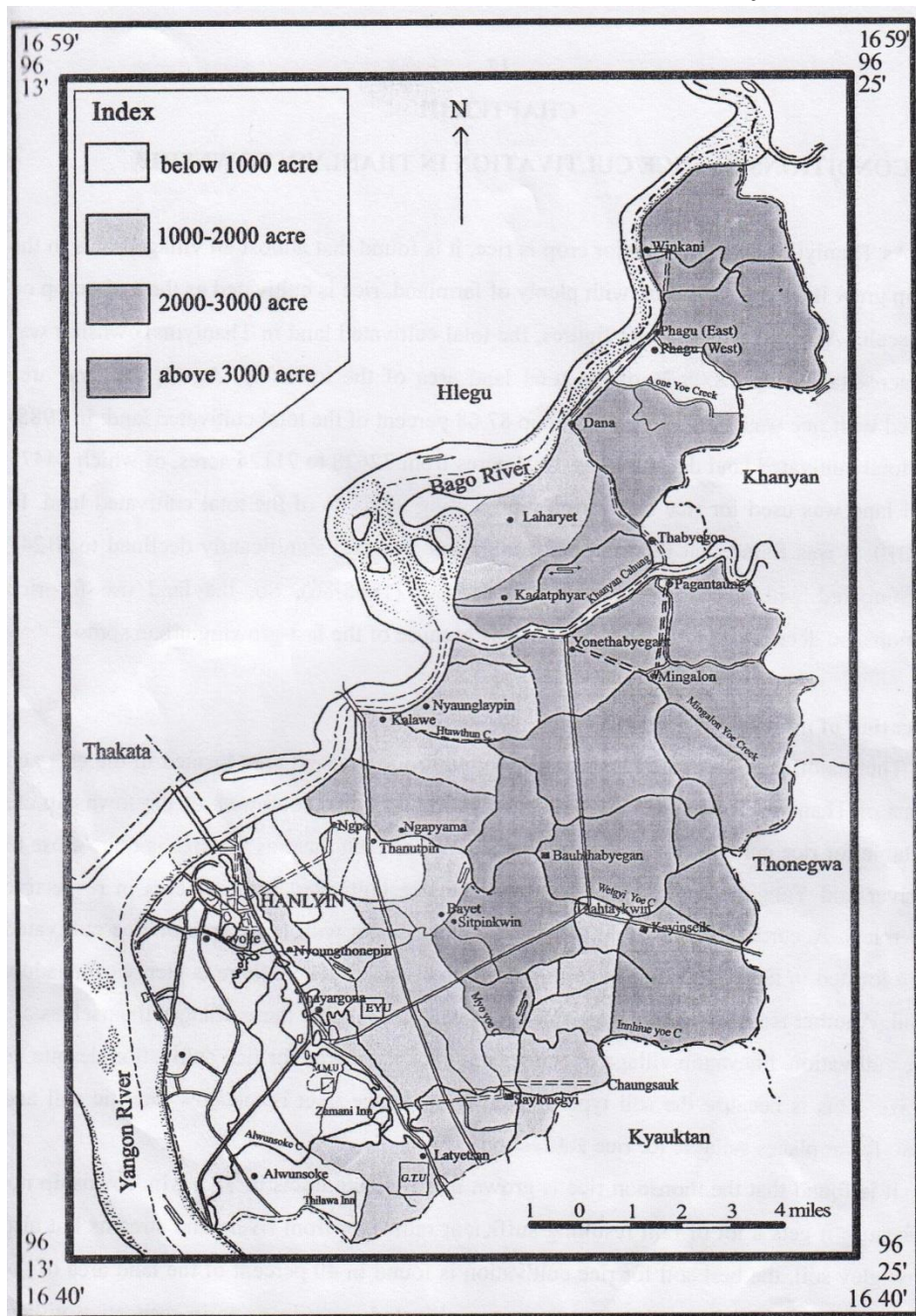
4.2 Location of Monsoon Rice Cultivation

The agriculture or rice favours best, himid climate. It requires temperatures above 16°C-27°C and it needs 100mm-200mm during the growing period. Paddy tertiaryes best on alluvial soil above clay subsoil. The majority of cultivated land can be found in the lowland area located in the east and northeast of Thanlyin Township. Tables show the rice cultivated area in acres in respective village tracts.

Figure (3.1) shows the monsoon rice cultivated areas in respective village tracts in four groups. The first comprises these each of which with an area under 100 acres, while the

second and third groups list the monsoon rice cultivated areas which ranges between 1000 and 2000 acres, and between 2000 and 3000 acres respectively. The fourth groups is made up of those with and area over 3000 acres. The village tracts in the third and fourth groups are mostly found in the eastern and middle part of the township as they have meadow gley soil, the best type for rice cultivated area with the fewest area are mostly found in the west of the township.

Figure (4.1) Distribution of Monsoon Rice Cultivation in Thanlyin Township (2019)



Source: Land Survey Department (Thanlyin)

4.3 Production of Summer Paddy

In Myanmar, a total of (18) million acres consisting (14)million acres of monsoon paddy and (4)million acres of summer paddy are aimed to cultivate since 1992-1993. The paddy cultivated from 1st October to the end of April is regarded as the summer paddy.

The summer paddy is cultivated by applying different ways of achieving water. The area of paddy depends on the access of water, diesel. The paddy likes to grow in the clay type of soil. They are differentiated into two types according to the life span of the paddy and the seasons of the cultivation.

Some types of paddy begin sprouting in Tazaungmone whenever they are cultivated. Some sprout only if they are due. The production of good paddy type is between (60-100) Tinn. In planting paddy, direct seeding and transplanting is common. Direct seeding should be implemented when there is not enough labour, the field is near the dam or the type is the summer paddy. There are two types of seeding, wet and dry type. If the paddy is transplanted, the cultivating field must be separated.

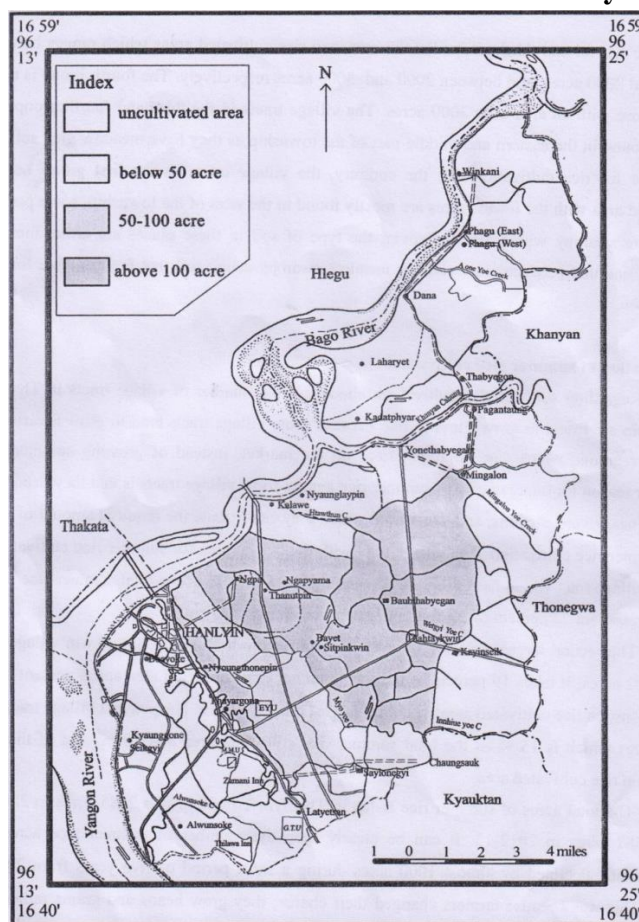
4.4 Location of Summer Rice Cultivation

Summer rice cultivation, about half the number of village tracts in Thanlyin Township are found to grow summer rice. Paddy favours hot and wet areas since it likes high relative humidity. In areas of low rainfall, rice may be cultivated with the help of irrigation. The village tract with largest area for summer rice cultivation is Bayet village tract which has 439 acres, accounting to 26 percent of the total summer rice fields.

The second largest area of summer rice cultivation is found in Sitpinkwin village tract with 308 acres. The third largest area is found in Ngapyayma village tract with 285 acres. In Thanlyin Township, the total acre of summer rice fields was 2038 acres in 2018-2019.

Figure (3.2) shows summer rice cultivated can be put under four group depending on the size of the area. In the first group are the largest size with an area over 100 acres. In the second largest size, with a range of 50-100 acres, the third below 50 acers and the fourth with no cultivated area.

The second largest summer rice cultivated area namely Bayet, Sitpinkwin and Ngapyayama village tracts are found to be situated in the middle of the township. For the paddy plants to for the paddy plants to grow well, the soil has to be fairly fertile. Soil with capacity to retain mature is the best soil for rice cultivation. Therefore, it is found that the success of rice cultivation mainly depends on soil, water source and weather conditions.

Figure (4.2) Distribution of Summer Rice Cultivation in Thanlyin Township (2019)

Source: Land Survey Department (Thanlyin)

4.5 Production of Rice

In 2018-2019, the total acreage of the monsoon rice fields was 59,800 acres with a yield of 4365400 baskets of rice. Total basket of rice produced from 2038 acres of summer rice cultivation, 132470 baskets.

On the studying of sown acreage of the crop cultivated in Thanlyin Township, paddy is found to be the largest sown crop. To study the production pattern of rice cultivation, analysis is made on rice cultivation over 5 years from 2014-2015 to 2018-2019.

Pagantaung village tract produces 70 baskets of rice per acre, the maximum yield per acre for the monsoon rice cultivation. Latyetsan village tract produces 69 baskets of rice per acre, the seasonal maximum yield per acre for the monsoon rice cultivation. Winkani village tract produces the minimum yield of 66 baskets per acre.

Harvested acreage raise and fall are depending on the conditions of weather and pests. Yield per acre of paddy varies depending upon the climatic conditions, types of paddy, the

use of fertilizers and the method of farming. During the five years from 2014-2015 to 2018-2019, the yield per acre was the highest with 175420 baskets in 2018-2019.

Table (4.1) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township (2014-2015)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	3,400	3,405	67	228,135
2	Phagu (East)	3,280	3,280	69	226,320
3	Phagu (West)	920	925	68	62,900
4	Dazat	3,602	3,602	69	248,538
5	Yonethabyegan	2,680	2,685	67	179,895
6	Mingalon	5,100	5,100	73	372,300
7	Bauhthabyegan	4,600	4,600	70	322,000
8	Kayinseik	5,700	5,700	72	410,400
9	Thabyegon	1,040	1,040	72	74,880
10	Pagantaung	2,526	2,520	72	181,440
11	Alwunsoke	1000	1000	70	70,000
12	Kyaunggone-seikgyi	598	598	71	42,458
13	Latyetsan	1,780	1,780	70	124,600
14	Thatay-kwin	1,927	1,927	71	136,817
15	Sitpin-kwin	3,500	3,500	74	259,000
16	Bayet	1,790	1,790	71	127,090
17	Ngapyayma	2,320	2,320	70	162,400
18	Na/pa	890	890	70	62,300
19	Thanutpin	970	970	71	68,870
20	Bogyoke	825	825	68	56,100
21	Nyaungthonepin	1,577	1,577	69	108,813
22	Phayagon	1,275	1,280	68	87,040
23	Laharyet	1,434	1,434	69	98,946
24	Kadatphyar	2,517	2,517	70	176,190
25	Nyaunglaypin	1,200	1,215	70	85,050
26	Kalawe	1,338	1,338	69	92,322
27	Saylonegyi	1,088	1,088	68	73,984
28	Chaungsauk	1,735	1,735	70	121,450
		60,612	60,641	69	4,184,229

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.2) Summer Rice Cultivated area in the village tracts of Thanlyin Township (2014-2015)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	-	-	-	-
2	Phagu (East)	-	-	-	-
3	Phagu (West)	-	-	-	-
4	Dazat	-	-	-	-
5	Yonethabyegan	29	29	20	580
6	Mingalon	-	-	-	-
7	Bauhthabyegan	162	164	50	8,200
8	Kayinseik	-	-	-	-
9	Thabyegon	-	-	-	-
10	Pagantaung	-	-	-	-
11	Alwunsoke	-	-	-	-
12	Kyaunggone-seikgyi	-	-	-	-
13	Latyetsan	-	-	-	-
14	Thatay-kwin	58	66	35	2,310
15	Sitpin-kwin	302	308	63	19,404
16	Bayet	439	439	69	30,291
17	Ngapyayma	281	285	60	17,100
18	Na/pa	96	96	35	3,360
19	Thanutpin	247	247	52	12,844
20	Bogyoke	-	-	-	-
21	Nyaungthonepin	121	121	37	4,477
22	Phayagon	150	152	40	6,080
23	Laharyet	-	-	-	-
24	Kadatphyar	-	-	-	-
25	Nyaunglaypin	74	80	30	2,400
26	Kalawe	26	30	20	600
27	Saylonegyi	15	21	18	378
28	Chaungsauk	-	-	-	-
		2,000	2,038	62	126,356

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.3) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township (2015-2016)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	3,400	3,405	66	224,730
2	Phagu (East)	3,280	3,280	67	219,760
3	Phagu (West)	920	925	65	60,125
4	Dazat	3,602	3,602	66	237,732
5	Yonethabyegan	2,680	2,685	65	174,525
6	Mingalon	5,100	5,100	70	357,000
7	Bauhthabyegan	4,600	4,600	65	299,000
8	Kayinseik	5,700	5,700	70	399,000
9	Thabyegon	1,040	1,040	68	70,720
10	Pagantaung	2,526	2,520	70	176,400
11	Alwunsoke	1000	1000	69	69,000
12	Kyaunggone-seikgyi	598	598	65	38,870
13	Latyetsan	1,780	1,780	68	121,040
14	Thatay-kwin	1,927	1,927	67	129,109
15	Sitpin-kwin	3,500	3,500	70	245,000
16	Bayet	1,790	1,790	69	123,510
17	Ngapyayma	2,320	2,320	67	155,440
18	Na/pa	890	890	68	60,520
19	Thanutpin	970	970	67	64,990
20	Bogyoke	825	825	62	51,150
21	Nyaungthonepin	1,577	1,577	66	104,082
22	Phayagon	1,275	1,280	65	83,200
23	Laharyet	1,434	1,434	65	93,210
24	Kadatphyar	2,517	2,517	66	166,122
25	Nyaunglaypin	1,200	1,215	65	78,975
26	Kalawe	1,338	1,338	66	88,308
27	Saylonegyi	1,088	1,088	64	69,632
28	Chaungsauk	1,735	1,735	65	112,775
		60,612	60,641	65	3,941,665

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.4) Summer Rice Cultivated area in the village tracts of Thanlyin Township (2015-2016)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	-	-	-	-
2	Phagu (East)	-	-	-	-
3	Phagu (West)	-	-	-	-
4	Dazat	-	-	-	-
5	Yonethabyegan	29	29	15	435
6	Mingalon	-	-	-	-
7	Bauhthabyegan	162	164	40	6,560
8	Kayinseik	-	-	-	-
9	Thabyegon	-	-	-	-
10	Pagantaung	-	-	-	-
11	Alwunsoke	-	-	-	-
12	Kyaunggone-seikgyi	-	-	-	-
13	Latyetsan	-	-	-	-
14	Thatay-kwin	58	66	28	1,848
15	Sitpin-kwin	302	308	60	18,480
16	Bayet	439	439	65	28,535
17	Ngapyayma	281	285	56	15,960
18	Na/pa	96	96	30	2,880
19	Thanutpin	247	247	48	11,856
20	Bogyoke	-	-	-	-
21	Nyaungthonepin	121	121	32	3,872
22	Phayagon	150	152	35	5,320
23	Laharyet	-	-	-	-
24	Kadatphyar	-	-	-	-
25	Nyaunglaypin	74	80	25	2,000
26	Kalawe	26	30	14	420
27	Saylonegyi	15	21	12	252
28	Chaungsauk	-	-	-	-
		2,000	2,038	56	114,128

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.5) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township (2016-2017)

Sr. No.	Village Tract	Sown Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	3,400	3,405	67	228,135
2	Phagu (East)	3,280	3,280	69	226,320
3	Phagu (West)	920	925	71	65,675
4	Dazat	3,602	3,602	72	259,344
5	Yonethabyegan	2,680	2,685	69	185,265
6	Mingalon	5,100	5,100	72	367,200
7	Bauhthabyegan	4,600	4,600	73	335,800
8	Kayinseik	5,700	5,700	73	416,100
9	Thabyegon	1,040	1,040	70	72,800
10	Pagantaung	2,526	2,520	72	181,440
11	Alwunsoke	1000	1000	70	70,000
12	Kyaunggone-seikgyi	598	598	67	40,066
13	Latyetsan	1,780	1,780	71	126,380
14	Thatay-kwin	1,927	1,927	72	138,744
15	Sitpin-kwin	3,500	3,500	72	252,000
16	Bayet	1,790	1,790	72	128,880
17	Ngapyayma	2,320	2,320	70	162,400
18	Na/pa	890	890	70	62,300
19	Thanutpin	970	970	70	67,900
20	Bogyoke	825	825	65	53,625
21	Nyaungthonepin	1,577	1,577	71	111,967
22	Phayagon	1,275	1,280	70	89,600
23	Laharyet	1,434	1,434	73	104,682
24	Kadatphyar	2,517	2,517	70	176,190
25	Nyaunglaypin	1,200	1,215	72	87,480
26	Kalawe	1,338	1,338	73	97,674
27	Saylonegyi	1,088	1,088	69	75,072
28	Chaungsauk	1,735	1,735	71	123,185
		60,612	60,641	79	4,790,639

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.6) Summer Rice Cultivated area in the village tracts of Thanlyin Township (2016-2017)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	-	-	-	-
2	Phagu (East)	-	-	-	-
3	Phagu (West)	-	-	-	-
4	Dazat	-	-	-	-
5	Yonethabyegan	29	29	17	493
6	Mingalon	-	-	-	-
7	Bauhthabyegan	162	164	44	7,216
8	Kayinseik	-	-	-	-
9	Thabyegon	-	-	-	-
10	Pagantaung	-	-	-	-
11	Alwunsoke	-	-	-	-
12	Kyaunggone-seikgyi	-	-	-	-
13	Latyetsan	-	-	-	-
14	Thatay-kwin	58	66	30	1,980
15	Sitpin-kwin	302	308	64	19,712
16	Bayet	439	439	70	30,730
17	Ngapyayma	281	285	60	17,100
18	Na/pa	96	96	32	3,072
19	Thanutpin	247	247	50	12,350
20	Bogyoke	-	-	-	-
21	Nyaungthonepin	121	121	35	4,235
22	Phayagon	150	152	38	5,776
23	Laharyet	-	-	-	-
24	Kadatphyar	-	-	-	-
25	Nyaunglaypin	74	80	30	2,400
26	Kalawe	26	30	15	450
27	Saylonegyi	15	21	13	273
28	Chaungsauk	-	-	-	-
		2,000	2,038	60	122,280

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.7) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township (2017-2018)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	3,400	3,400	66	224,400
2	Phagu (East)	3,280	3,280	67	219,760
3	Phagu (West)	920	927	70	64,890
4	Dazat	3,602	3,602	70	252,140
5	Yonethabyegan	2,680	2,682	67	179,694
6	Mingalon	5,100	5,100	70	357,000
7	Bauhthabyegan	4,600	4,600	70	322,000
8	Kayinseik	5,700	5,700	71	404,700
9	Thabyegon	1,040	1,040	68	70,720
10	Pagantaung	2,526	2,520	72	181,440
11	Alwunsoke	1000	1000	68	68,000
12	Kyaunggone-seikgyi	598	598	65	38,870
13	Latyetsan	1,780	1,780	70	124,600
14	Thatay-kwin	1,927	1,927	71	136,817
15	Sitpin-kwin	3,500	3,500	70	245,000
16	Bayet	1,790	1,790	71	127,090
17	Ngapyayma	2,320	2,320	69	160,080
18	Na/pa	890	885	69	61,065
19	Thanutpin	970	970	70	67,900
20	Bogyoke	825	825	60	49,500
21	Nyaungthonepin	1,577	1,577	70	110,390
22	Phayagon	1,275	1,280	69	88,320
23	Laharyet	1,434	1,434	72	103,248
24	Kadatphyar	2,517	2,517	68	171,156
25	Nyaunglaypin	1,200	1,210	70	84,700
26	Kalawe	1,338	1,338	71	94,998
27	Saylonegyi	1,088	1,088	67	72,896
28	Chaungsauk	1,735	1,735	69	119,715
		60,612	60,625	78	4,728,750

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.8) Summer Rice Cultivated area in the village tracts of Thanlyin Township (2017-2018)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	-	-	-	-
2	Phagu (East)	-	-	-	-
3	Phagu (West)	-	-	-	-
4	Dazat	-	-	-	-
5	Yonethabyegan	29	29	21	609
6	Mingalon	-	-	-	-
7	Bauhthabyegan	162	164	51	8,364
8	Kayinseik	-	-	-	-
9	Thabyegon	-	-	-	-
10	Pagantaung	-	-	-	-
11	Alwunsoke	-	-	-	-
12	Kyaunggone-seikgyi	-	-	-	-
13	Latyetsan	-	-	-	-
14	Thatay-kwin	58	66	38	2,508
15	Sitpin-kwin	302	308	72	22,176
16	Bayet	439	439	77	33,803
17	Ngapyayma	281	285	69	19,665
18	Na/pa	96	96	42	4,032
19	Thanutpin	247	247	60	14,820
20	Bogyoke	-	-	-	-
21	Nyaungthonepin	121	121	45	5,445
22	Phayagon	150	152	47	7,144
23	Laharyet	-	-	-	-
24	Kadatphyar	-	-	-	-
25	Nyaunglaypin	74	80	40	3,200
26	Kalawe	26	30	25	750
27	Saylonegyi	15	21	22	462
28	Chaungsauk	-	-	-	-
		2,000	2,038	70	142,660

Source: Administration of Farmland and Statistics Department in Thanlyin Township

Table (4.9) Monsoon Rice Cultivated area in the village tracts of Thanlyin Township (2018-2019)

Sr. No.	Village Tract	Sowned Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	3,245	3,245	66	214,170
2	Phagu (East)	3,123	3,123	67	209,241
3	Phagu (West)	908	911	69	62,859
4	Dazat	3,502	3,502	69	241,638
5	Yonethabyegan	2,611	2,615	68	177,820
6	Mingalon	5,060	5,060	69	349,140
7	Bauhthabyegan	4,595	4,595	68	312,460
8	Kayinseik	5,655	5,655	68	384,540
9	Thabyegon	1,017	1,017	67	68,139
10	Pagantaung	2,506	2,506	70	175,420
11	Alwunsoke	977	977	66	64,482
12	Kyaunggone-seikgyi	564	568	55	31,240
13	Latyetsan	1,756	1,760	69	121,440
14	Thatay-kwin	1,907	1,907	69	131,583
15	Sitpin-kwin	3,484	3,484	67	233,428
16	Bayet	1,783	1,783	67	119,461
17	Ngapyayma	2,300	2,300	67	154,100
18	Na/pa	871	876	65	56,940
19	Thanutpin	958	958	68	65,144
20	Bogyoke	805	805	53	42,665
21	Nyaungthonepin	1,577	1,577	66	104,082
22	Phayagon	1,255	1,265	62	78,430
23	Laharyet	1,434	1,434	65	93,210
24	Kadatphyar	2,517	2,517	67	168,639
25	Nyaunglaypin	1,191	1,201	60	72,060
26	Kalawe	1,338	1,338	63	84,294
27	Saylonegyi	1,088	1,088	58	63,104
28	Chaungsauk	1,733	1,733	66	114,378
		59,760	59,800	73	4,365,400

Source: Administration of Farmland and Statistics Department in Thanlyin Township

**Table (4.10) Summer Rice Cultivated area in the village tracts of Thanlyin Township
(2018-2019)**

Sr. No.	Village Tract	Sown Area (acres)	Matured Area (acres)	Yield per Acre (Baskets)	Production in Baskets
1	Winkani	-	-	-	-
2	Phagu (East)	-	-	-	-
3	Phagu (West)	-	-	-	-
4	Dazat	-	-	-	-
5	Yonethabyegan	29	29	19	551
6	Mingalon	-	-	-	-
7	Bauhthabyegan	162	164	49	8,036
8	Kayinseik	-	-	-	-
9	Thabyegon	-	-	-	-
10	Pagantaung	-	-	-	-
11	Alwunsoke	-	-	-	-
12	Kyaunggone-seikgyi	-	-	-	-
13	Latyetsan	-	-	-	-
14	Thatay-kwin	58	66	33	2,178
15	Sitpin-kwin	302	308	69	21,252
16	Bayet	439	439	74	32,486
17	Ngapyayma	281	285	63	17,955
18	Na/pa	96	96	39	3,744
19	Thanutpin	247	247	56	13,832
20	Bogyoke	-	-	-	-
21	Nyaungthonepin	121	121	40	4,840
22	Phayagon	150	152	42	6,384
23	Laharyet	-	-	-	-
24	Kadatphyar	-	-	-	-
25	Nyaunglaypin	74	80	35	2,800
26	Kalawe	26	30	19	570
27	Saylonegyi	15	21	17	357
28	Chaungsauk	-	-	-	-
		2,000	2,038	65	132,470

Source: Administration of Farmland and Statistics Department in Thanlyin Township

5. CONCLUSION

Thanlyin Town is located on the south of Yangon Region. It lies between north latitudes 16° 40' and 16° 59' and between east longitudes 96° 13' and 96° 25'. Thanlyin Township has an area of 143.98 square miles. Thanlyin Township is elongated shape.

The population worldwide is rapidly increasing day by day. According, it is important to provide the increasing number of people with sufficient food.

In 2014-2015, yield per acre and production of rice was high 73.49 baskets, acre and 4184436 baskets. In 2018-2019, yield per acre and production of rice was high 73 baskets and 3865410 baskets.

Thanlyin Township can cultivate and produce both monsoon and summer rice successfully due to its topography, soil type and suitable weather conditions.

Acknowledgement

First of all, I would like to express my sincere appreciation to Dr. Yi Yi Win, Rector, Co-operative University, Thanlyin, U Oo Tin Thein, Pro-Rector, and Daw Myint Myint Sein, Pro-Rector, Co-operative University, Thanlyin, with their permissions on this research work. My special thanks go to Daw Aye Aye Maw, Professor and Head of the Department, Department of Economic Geography. Moreover, I would like to give my special thanks to Township Farmland Administration and Statistical Department of Thanlyin Township.

References

- Ma Yin Yin Lè, Ma Thara Phu Kyaw (2016): *Spatial Distribution Patterns of Paddy Cultivation, Fourth Year B.A (Geography), University of East Yangon.*
- Ma Tharaphy Ko Ko, Mg Thein Aye, (2018): *Geographical Study on Agricultural Activities of PANTAW Village in Kyauktan Township, Fourth Year B.A (Geography), University of East Yangon.*
- (2019): *oefvsifNrdKU\ a'oqdkif&mtcsuftvufsrsm;? taxGaxG tkyfcsKyfa&;OD;pD;Xme? NrdKUe,fv,f,majrpDrHcefYcJGa&;ESihf pm&if;tif;OD;pD;Xme? oefvsifNrdKU?*