

A Geographical Study on Agricultural Land Utilization of Mohnyin Township

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Abstract

The present paper emphasized the agricultural land utilization of Mohnyin Township from geographical point of view. In examining the agricultural land utilization, it is found that land utilization in agriculture of the township is changing both in terms of spatially and temporally.

Keywords-land utilization

1. Introduction

This paper examines the agricultural land utilization from the case study of Mohnyin Township. The social and economic fabric of study area and their environment has been shaped over time by the agricultural land utilization. While in the past agriculture was viewed as a purely sectorial activity producing primary products, today it is recognized as fulfilling a multiplicity of economic, social and environmental functions producing.

1.1. Aim and objectives

The main aim of this research is to find out the agricultural land utilization of Mohnyin Township.

The main objectives of this research paper are:

- To trace the temporal changes of agricultural landuse patterns
- To examine the spatial distribution of agricultural landuse patterns.

1.2. Research Problems

Is there any significant relationship between the crop cultivation and various socio-economic activities of Mohnyin Township?

If so, how can the measures concerning with the development of crop cultivation in Mohnyin Township be recognized?

1.3. Materials And Methods

Collection of primary data by means of field survey, personal interviews, structured questionnaires and secondary data from various sources; respective offices, published books, maps, websites, etc.

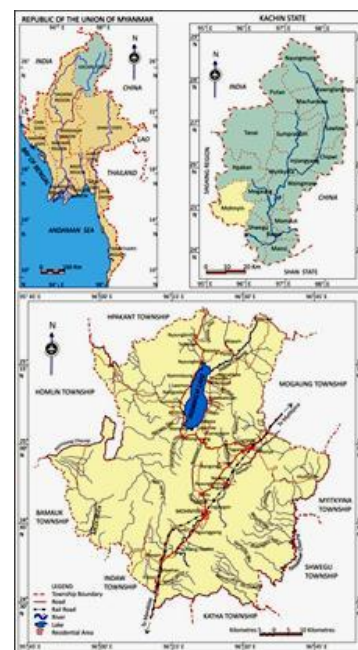
The application of computer mapping with G.I.S to identify changing pattern in cultivated land. Analysis of the collected data by the application of the appropriate statistical methods.

1.4. Study Area

Mohnyin Township is located Southern portion of Kachin State and between 24° 25' and 25° 27' north latitudes and 95° 45' and 96° 50' east longitudes with a total area of about 6661.40 sq. km. The township is composed of four physiographic regions- the Namyin Valley, the Indawgyi Lake area, the Gangaw Ranges and the Hmankin Ranges and drained by the Namyin Chaung.

Mohnyin Township is bounded on the north by Hpakant, on the east by Mogaung, Myitkyina, and Shwegu, on the south by Katha and Indaw and on the west by Banmauk and Homalin Townships. Location and compositions of Mohnyin Township are shown in Map (1), and Table (1).

The major drainage system of Mohnyin Township is composed of the Namyin *Chaung*, the Kaukkwe *Chaung*, Indaw *Chaung* and their tributaries. As Mohnyin Township is located in the mountainous region in the subtropical latitudes, it receives subtropical monsoon climate (Cwa) with abundant rainfall. In general, the soil of Mohnyin Township can be studied by Meadow Soils, Yellow Brown Forest Soils, Red Brown Forest Soils, Mountainous Yellow Earths, and Swampy Soils.



Map 1. Location Map of Mohnyin Township

Sources: Department of Agricultural Land Management and Statistics, Mohnyin.

2. Aricultural Land Utilization of Mohnyin Township

In general, the present land use of Mohnyin Township can be divided into four groups: Forest Lands, Agricultural Lands, Arable Virgin Lands and Uncultivated Lands. According to high annual rainfalls, there are large forested areas.

According to 2018-2019 data, the forest lands form about 66.5 % of the township area. Agricultural lands were found mainly in the Namyin valley and in Indawgyi Lake area. In 2018-2019, there were the agricultural land area forms about 7.66 % of Mohnyin Township area. These agricultural lands were divided into five types: "Le", "Ya", "Kaing/Kyun", "Garden" and "Taungya" Lands. In 2018-2019, there were "Le" Lands, 6,363 acres of "Ya" Lands, 6415 acres of "Taungya" Lands, 4,899 acres of "Garden" Lands and 1,129 acres of "Kaing/Kyun" Lands, the arable virgin land area was about 67.15 % in this township, Table (2).

2.1. "Le" Land

"Le" lands were cultivated mainly under paddy or wet agriculture. In Mohnyin Township "Le" lands were found in the Namyin valley and in Indawgyi area. According to 2018-2019 data, the area of "Le" land was found 107,614 acres and it forms about 85.12 % of the agricultural land area of Mohnyin Township.

The largest "Le" land area was found in Indawgyi area with 39,266 acres followed by 29,419 acres in Mohnyin area, 23,358 acres in Hopin area and 15,616 acres in Nammar area. As a result, the highest paddy productions were found in Indawgyi and Mohnyin area and they were settled by the largest numbers of residents. In fact, these areas have surplus food production over the local food consumption and paddy can be exported to other parts of Kachin State. Therefore, there was a good prosperity for the development of other economic activities in Mohnyin Township due to the consumption of exception a large area of the "Le" lands in the agricultural land area of Mohnyin Township.

2.2. "Ya" Lands

According to 2018-19 data, there were 6,263 acres of "Ya" lands in Mohnyin Township forming about 5.03 % of total agricultural land area. However, the "Ya" land area was less than 500 acres with the exception of Kyagyikwin village tract with 639 acres and Myazayar ward with 565 acres. Although the area of "Ya" land is small double cropping can be practiced in "Ya" lands due to high soil fertility and moisture content throughout the whole year. It was found that the "Ya" land area had increased from 3,674 acres in 1992-93 to 6,512 acres in 2018-2018-19.

Table 1. Area of Wards and Village Tracts of Mohnyin Township

No	Wards and Village Tracts	Area in sq. km
1	Nakhar Ward	2.52
2	Oakkyin Ward	2.29
3	Myoma Ward	1.43
4	Ashaisu Ward	2.66
5	Aungthapyay Ward	292.07
6	Myoma Ward (North)	3.98
7	Myoma Ward (South)	3.24
8	Myathida Ward	1.52
9	Myazayar Ward	40.73
10	Namyin Village Tract	135.19
11	Belu Village Tract	249.82
12	Pinhe Village Tract	150.50
13	Ingyingone Village Tract	7.85
14	Ywathitgone Village Tract	162.42
15	Nyaunggone Village Tract	132.92
16	Helon Village Tract	21.78
17	Nampoke Village Tract	225.27
18	Nyaungaing Village Tract	171.81
19	Ten-mile Village Tract	221.71
20	Kadu Village Tract	753.76
21	Mawhan Village Tract	734.95
22	Pinlon Village Tract	224.24
23	Nanmar Village Tract	35.91
24	Lehme Village Tract	62.18
25	Ingone Village Tract	61.57
26	Hepu Village Tract	91.09
27	Nyaungbintha Village Tract	19.51
28	Namsawlaw Village Tract	241.69
29	Taungin Village Tract	154.10
30	Nammon Village Tract	182.19
31	Mamonkaing Village Tract	132.72
32	Lonton Village Tract	216.46
33	Maigpoke Village Tract	335.74
34	Lwemon Village Tract	180.31
35	Nyaungbin Village Tract	312.61
36	Mapyin Village Tract	126.55
37	Panlar Village Tract	77.15
38	Chaungwa Village Tract	290.78
39	Lonsant Village Tract	158.65
40	Zawdigone Village Tract	47.04
41	Kyagyikwin Village Tract	256.69
42	Takwin Village Tract	20.68
43	Ywathitgyi Village Tract	59.86
44	Seven-mile Village Tract	35.14
45	Inle Village Tract	18.84
46	Myothitkalay Village Tract	20.53

Source: Land Recorded Department, Mohnyin

2.3. "Kaing/ Kyun" Lands

There were 1,129 acres of "Kaing/Kyun" land in Mohnyin Township. These lands were formed only after the recession period of flood water in the rainy season and therefore, crop cultivation cannot be done throughout the whole year. At present, there were 1,049 acres of "Kaing/Kyun" land in Indawgyi area and 80 acres in Hopin area. As the area of "Kaing/Kyun" was only about 0.89 % of total agricultural lands, crop production from "Kaing/Kyun" land was not greatly important for Mohnyin Township but they were of great importance for the individual farmers.

Table 2. General Land use of Mohnyin Township (2018-19)

No.	Type of Landuse	Area in Acres
1	Forest Lands,	1,097,408
	1 Reversed Forest lands	498,541
	2 Other Forest lands	598,867
2	Agricultural Lands	126,420
	1 <i>Le Lands</i>	107,614
	2 <i>Ya Lands</i>	6,363
	3 <i>Kaing/Kyun Lands</i>	1,129
	4 <i>Garden Lands</i>	4,899
	5 <i>Taungya Lands</i>	6,415
3	Arable Virgin Lands	317,336
4	Uncultivated Land	109,084
Total		1,650,248

Sources: Land Records Departments, Mohnyin.

2.4. "Garden" Lands

"Garden" lands were cultivated under perennial crops such as tea, coffee, rubber, fruit trees and vegetables. As the growing of "Garden" crops was encouraged and provided by the State Policies, the area of "Garden" lands has greatly increased from 230 acres in 1992-93 to 6,235 acres in 2009-10 and it had slightly decreased to 4,899 acres in 2018-2018-19. The area of "Garden" land was about 3.88 % of the agricultural lands area of Mohnyin Township.

Table 3. Agricultural Landuse of Mohnyin Township (2018-19)

Years	Current Sown Area			
	Le	Ya	Kaing/ Kyun	Garden
1992-1993	75,713	3,734	0	2,587
1993-1994	73,670	3,309	0	230
1994-1995	74,796	3,577	0	230
1995-1996	75,697	4,676	0	2,643
1996-1997	76,894	4,676	0	2,643
1997-1998	79,839	5,561	0	2,747
1998-1999	88,944	4,709	0	2,533
1999-2000	87,391	5,645	0	2,833
2000-2001	90,317	8,396	0	2,833
2001-2002	90,270	7,760	0	2,987

2002-2003	90,469	9,459	1,129	4,172
2003-2004	180,938	9,770	1,129	4,172
2004-2005	87,965	8,445	1,129	3,305
2005-2006	91,190	6,952	1,129	3,311
2006-2007	96,972	9,774	1,129	6,235
2007-2008	96,972	7,028	1,129	4,312
2008-2009	100,415	7,329	1,129	4,707
2009-2010	3,095	3,095	3,095	3,095
2018-2019	107,614	6,363	1,129	4,899
Avg	87,850.5	6,473.56	673.73	3,215.95

Sources: Land Records Departments, Mohnyin.

2.5. "Taungya" Lands

"Taungya" lands were found in the upland areas in Mohnyin Township. Traditional crops cultivated in "Taungya" lands were paddy, potato, groundnut, peboke, corn and vegetables but with the introduction of upland agriculture, perennial crops were also grown in "Taungya" lands for the sustainable crop production in hilly areas. Therefore, the area of "Taungya" land had increased from 113 acres in 1992-93 to 6,415 acres in 2018-19.

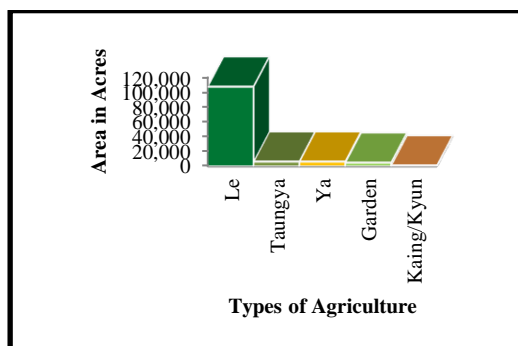


Figure 2. Agricultural Landuse of Mohnyin Township (2018-19)

Sources: Based on Table (2).

3. Conclusion

3.1. Finding and Result

In 2018-2019, Mohnyin Township has a total of 317,336 acres of virgin land area which is about 19.23% of the township area and about 2.5 times of the current net sown area. Therefore, the township has high capability to promote its agricultural production for the future generation.

In Mohnyin Township, "Le" lands occupied the largest proportion of the land ownership patterns and population growth average size of the land is only about 4.35 acres for an individual farmers. Therefore, commercial agriculture with mechanization has been delayed due to traditional and social constraints.

The easiest way to increase the production is the extension of crop area consequently from (1995-96 to 2018-19) the net sown area of the township has increased about 1.64 times while total sown acres increased about 1.82 times. Therefore, not only

horizontal extension but also vertical extensions of crop production have been performed in Mohnyin Township due to socio-economic benefits from crop cultivation.

With increased incomes they can use more expenditure upon their housing, electronic and communication equipment, vehicles and other personal goods and household goods for comfort ability of their lives while they can also send their children to school for higher classes. Therefore, the people of Mohnyin Township also have favourable socio-economic indicator for their regional development.

In Mohnyin Township, Hopin Town has been developed into an urban area from a past rural area due to the socio-economic development based upon agricultural production. Therefore, it is an inevitable way to build up the socio-economic development of Mohnyin Township through modernization and promotion of agricultural production. If the necessary assistances can be provided to the local people and local authorities, the living standards and socio-economic development can gain its momentum in Mohnyin Township.

These patterns can be found in all village tracts according to the same climatic conditions, water availability and economic conditions. The influence of agriculture upon the existing socio-economic conditions can be determined by using Jasbir Singh (1986).

According to the analysis, the influence of agriculture upon socio-economic conditions are high in Chaungwa, Inlay, Zawtigone, Nyaungaing, Lonsant, Sevenmile, Nyaungbin, Ywathitgone, Kyarkyikwin, Naungbintha, Taungin, Tagwin, Namsawlaw, Nanyin, Lwemon and Mapyain Village Tracts, and moderate economic conditions are found in Myothitkalay, Ywathitgyi, Lehmee, Hepu, Lonton, Ten-mile, Panlar, IngyIngone, Nyaungone, Maipoke, Belu, Mohnyin Proper, Helon, Nampoke and Ingone, while the remaining areas with Hopin Town, Nammar, Pinhe, Nammon, Pinlon, Mamonkaingng, Mawhan and Kadu Village Tracts have lower influence of agriculture upon their socio-economic conditions.

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ကျမ်းကိုးစာရင်း (မြန်မာ)

၀။ မိုးညှင်းမြို့နယ်၊ အချက်အလက်များ၊ (၂၀၁၈/၁၉) မိုးညှင်းမြို့နယ် အထွေထွေအုပ်ချုပ်ရေးမှူး၊ မိုးညှင်းမြို့။

၂။ ကျေးရွာအုပ်စုအလိုက်အရေးကြီးသီးနှံများစိုက်ပျိုးထုတ်လုပ်မှု အစီရင်ခံစာ (၂၀၁၉) မြန်မာစိုက်ပျိုးရေးလုပ်ငန်း၊ လယ်ယာစိုက်ပျိုးရေးနှင့်ဆည်မြောင်းဝန်ကြီးဌာန၊ မိုးညှင်းမြို့။

၃။ မိုးညှင်းမြို့နယ်မြေအသုံးချမှု (၂၀၁၈/၁၉) မြို့နယ်မြေစာရင်းဦးစီးဌာန၊ မိုးညှင်းမြို့။