Title	Defensive Power Analysis by Spatial Concept: A Case Study of Meiktila
Author	Dr. Aung Ko Ko
Issue Date	2013

Defensive Power Analysis by Spatial Concept: A Case Study of Meiktila

Aung Ko Ko[1]

Abstract

As a geographic perspective, there are no two similar places in all over the world. This fact highlight the spatial identity of a place and it can be used as a power depending on the intelligence of the local people. World's history shows that the places located nearby border area have been subsequently suffered unwanted invades while those located at the centre have been fostered for their defensive or offensive power. In doing so, the role of spatial concept has been recognized days after days. In this study, potential defensive power of a central place is analyzed by means of a new method named as Concept of Potential Coverage (CPC). Meiktila, a district city of Mandalay Region is selected as the case study area and the potential defensive power of that city is analyzed by CPC Method. This paper highlights on the potentiality of locational advantage on defensive power for Myanmar with the consideration of infantry field by using missile.

Key Words: Defensive Power, Idea of Potential Coverage, Spatial Concept, Spatial Identity

Introduction

The location of places and objects is the starting point of all geographic study as well as of all personal movements and spatial actions in everyday life. Location can be referred to two senses, absolute location and relative location[2]. Absolute location is the identification of place by some precise and accepted coordinate system. Relative location is the position of point or a place in relation to that of other points or places or activities. Relative location expresses spatial interconnection and interdependence and may carry social, economic and political implications.

This research work intends to analyze the advantages of both site and situation of Meiktila for the defensive power of Myanmar. In order to determine the locational advantages, some location theories and quantitative methods are used for this work. In this paper, the absolute location of Meiktila will be analyzed by constructing the buffer zones (concentric circles centering on the place or point of capitals of Regions and States of Myanmar).

Quantitative methods have been particularly useful in applications of location theory, a branch of geography that studies the factors that influence the location of geographic elements, such as towns or factories. Location theory was introduced by the German agriculturist Heinrich von Thünen in the early 1800s. The German geographer Walter Christaller made great contributions to location theory during the 1930s, by analyzing the location of urban centres[3]. But those theories mentioned above are not directly fitting for the aim of this research and so that, a few modifications on Christaller's method are considered to find out the locational advantages of Meiktila for defense of the country.

Aim and Objectives

The aim of the paper is to define the most potential coverage area from the defensive point of view with the special reference of Meiktila according to its present location in Myanmar.

As the supportive elements for the aim mentioned above, the objectives are also laid down as follows:-

- To examine the physical characters which influence on the location of Meiktila
- To construct various potential coverage areas with the centre at different capitals.

Method and Data

For any particular place or region, the compact shape and its location at the centre is the perfect one. A central place is a settlement which provides one or more services for the population living around it. The location of the selected study area is seemed almost in the centre of the country according to the maps of Myanmar. But, it is just an observation that made by traditionally. Therefore, the locational superiority of Meiktila should be proved systematically by using appropriate method from the geographical point of view. To fulfill this blank, the researcher had put efforts to highlight the good points for defensive power in terms of its absolute location with coverage area of the country by using areal coverage method with buffer zones. The necessary data, i.e., coverage area of the country is computed by constructing the buffer zones with different centre points (Capitals of States and Regions).

The Study Area

According to its astronomical location, Meiktila is located between 20° 50' and 20° 55' North latitudes, and between 95° 49' and 95° 55' East longitudes. It is one of 31 townships in Mandalay Region.

By referring the UTM Maps of Meiktila, the relief feature of Meiktila is found between the altitudes of 180 and 240 m. above mean sea level. Eastern part of the town area is flat land, but the western portion is higher than that of the former. It can be said that it is occupied by rolling topography with gentle slope towards the east. The presence of Meiktila lakes favours the town as a natural drainage with the water sources of Mondaing, Chaunggauk and Ondon streams. Hence, the study area is well supported by the physical characters.

Theoretical Concept by Areal Coverage Method with Buffer Zones

First of all, the coverage area is theoretically considered by the shapes of the country as triangle, square, pentagon and polygon. Pointing at the centre, the concentric circles are drawn, and then the coverage area of a site is compared. As shown in Figure (1), the coverage areas and the distances among proposed sites are differed from each other. Figure (1.A) shows the least coverage area and shortest distance to any direction. Although the site "a" is at the centre of the circle, it cannot be assumed as the best centrality position. To overcome such drawback of centrality level, Figure B, C, and D are also transformed step by step from A up to D to be better coverage. Finally, the ideal shape of a site by referring its centrality, "d" is the suitable one to show the centrality with maximum coverage area of a country.

Based on this concept, the required data (the coverage area in sq. km.) are worked out by using ArcGIS 10 software. Comparison analysis will be made on these coverage areas of each capital (Regions or States).

In figure (1), the centre points refer to as location of sites, the blue colour indicates the coverable area of the country for each site. The green colour refers the territory belonging by other states or water body.
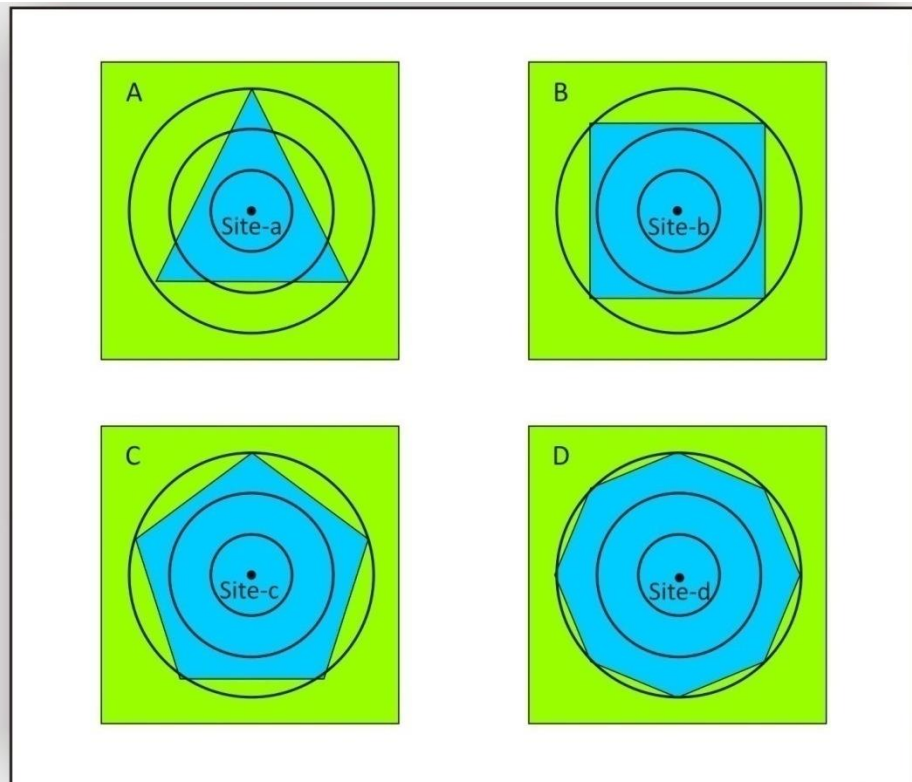
Source: Based on Modified Christaller's Model.

Figure 1 : A Theoretical Model Showing the Changes of Coverage Area according to Various Sites
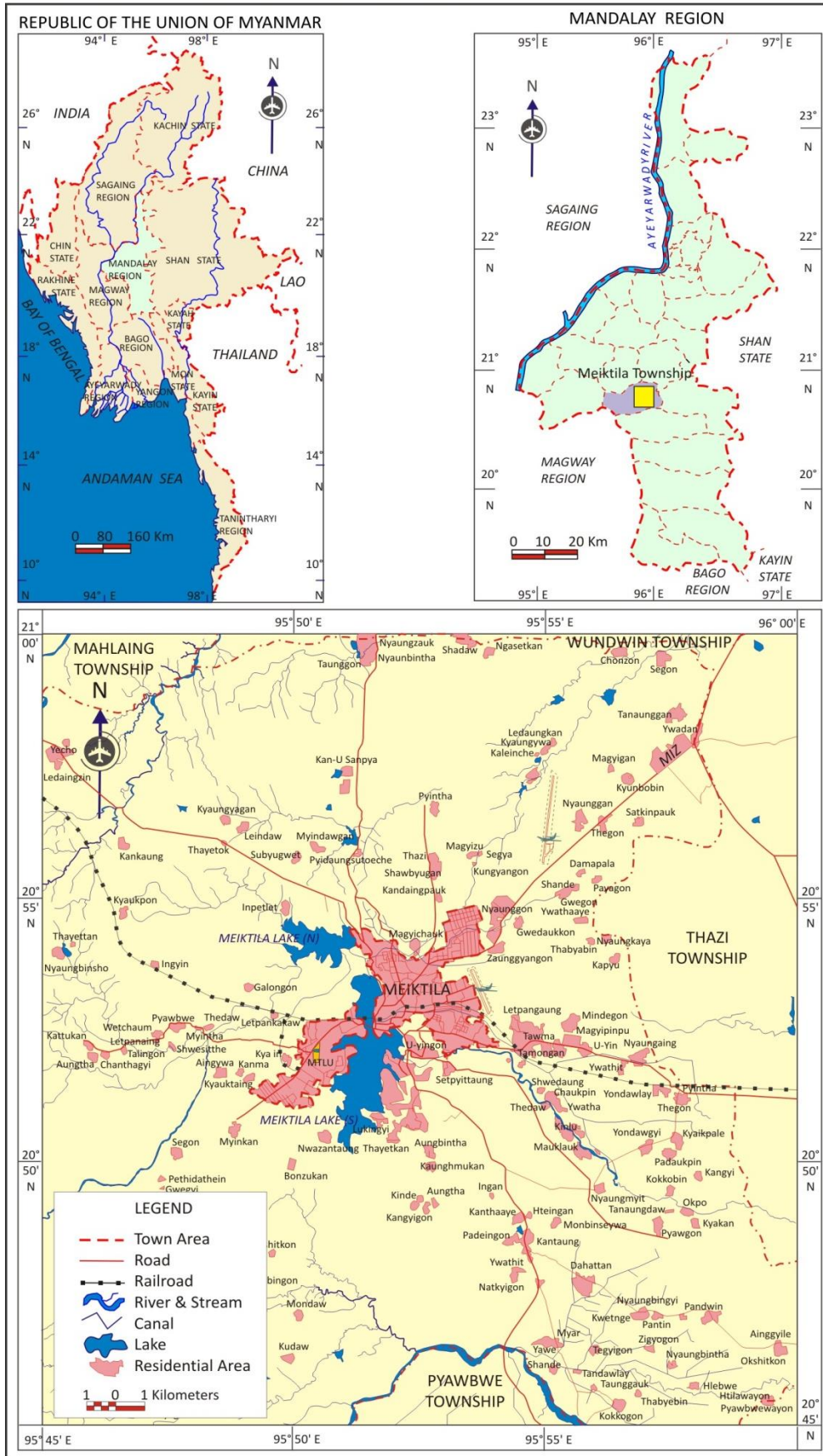
Source: Topographic Map No. 2095_13.

Map 1 : Site and Situation of the Study Area

Analysis on the Defensive Power of Meiktila

To analyze the defensive power of the study area, the basic concept is applied and comparative study will be made for the study area and capitals (including Nay Pyi Taw) of the Regions and States in Myanmar. To determine the defensive power, centrality and coverage area of the individual capital and the study area were firstly measured. To acquire the results of such centrality and coverage area of the sites, the buffer zones which can cover the entire country are drawn from the different centre points (the study area as well as other capitals and Nay Pyi Taw).

For each circle or buffer zone, the radius is considered as equi-distance, i.e., radius of one circle is equal to 100 kilometers far apart on ground. According to these buffer zones, the concentric circles are drawn. Then, the country's area for each buffer zone (each circle) is calculated. By doing so, the coverage areas of the country for every site according to the circles are acquired. After that, the coverage areas for all the circles (buffer zones) are ranked in descending order. The frequencies of the ranks for respective coverage areas can be observed in Table (1).

According to the Map (2), within the 100 km buffer zone or circle, there are 6 places including Nay Pyi Taw which can cover the same percentage share to the total area of the country. For the first circle, the sites of Meiktila, Mandalay, Sagaing, Nay Pyi Taw, Magway and Taunggyi ranked as the first place with the 31,416 sq. km. for each of the total area of the country. This value of areal coverage is followed by Bago, Loikaw, Yangon and Myitkyina with 31,286 sq. km., 30,380 sq. km., 25,180 sq. km., and 26,288 sq. km., respectively. The least coverage to the country's area for the every first interior circle is found for the sites of Dawei and Sittway with their respective area of 13,392 sq. km. and 13,728 sq. km.

The second buffer zone (i.e., 200 km coverage area) showed that the sites of Meiktila, Mandalay and Sagaing rank at the first place with the coverage area of 125,664 square kilometers to the country's total. Then, the coverage area of Nay Pyi Taw, Taunggyi and Magway are followed by. The least coverage area of the country within 200 km radius was found in the places of Mawlamyine, Sittway and Dawei.

For the buffer zone of 300 km radius, Meiktila is covered with 279,100.54 sq. km. after Madalay (286,086.33 sq km) and Sagaing (285,548.45 sq km). While, the least coverage area of the country can be found for the sites of Yangon, Pathein, Dawei, Sittway, Mawlamyaing, Hpa-an and Bago.
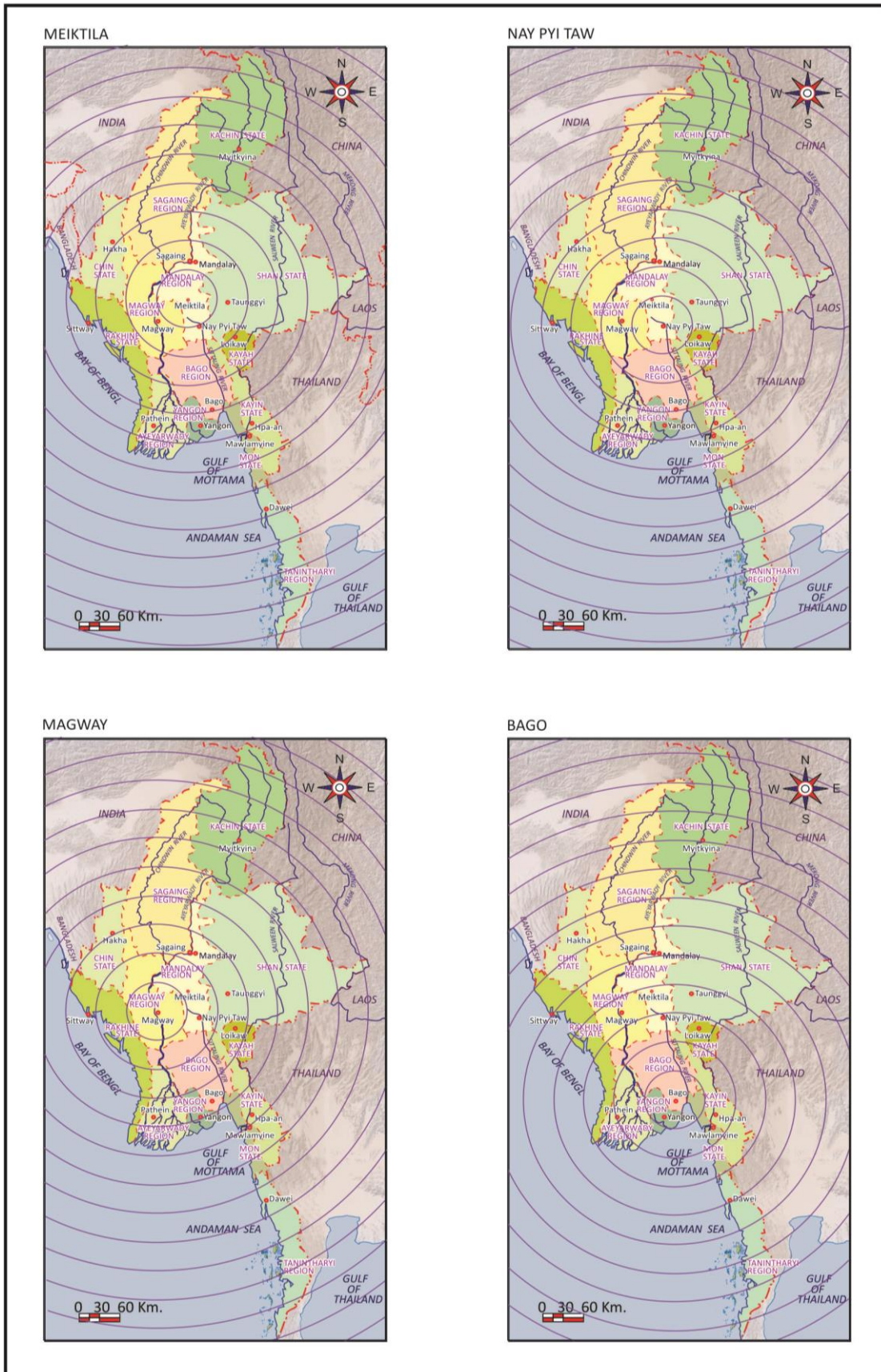
Map 2 :   Comparison of the Coverage Areas Between the Study Area and
          Capitals of States and Regions of Myanmar

Map 2 : (Concld.) Comparison of the Coverage Areas Between the Study Area
and Capitals of States and Regions of Myanmar
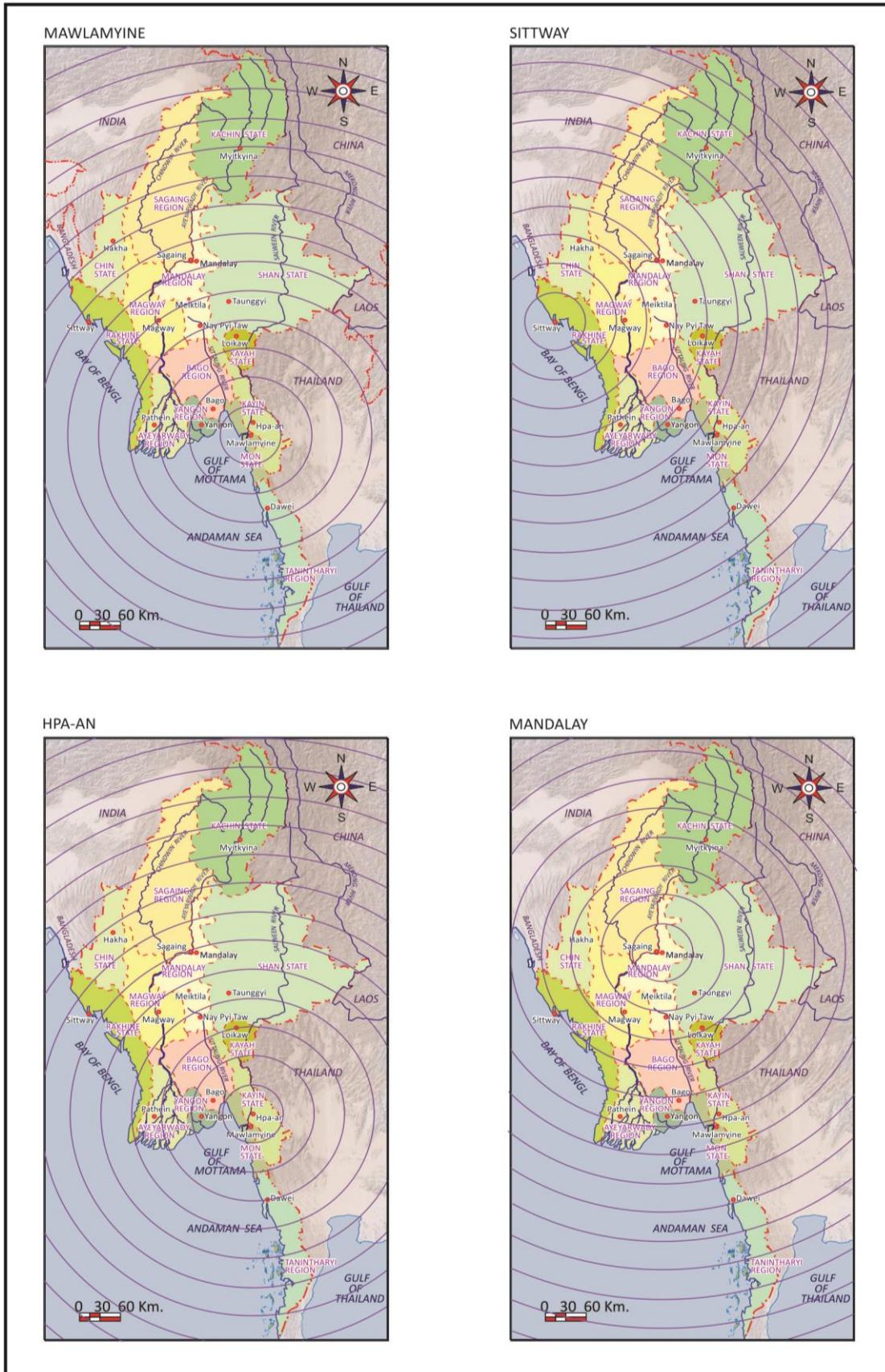
Map 2 : (Concld.) Comparison of the Coverage Areas Between the Study Area
          and Capitals of States and Regions of Myanmar

Map 2 : (Concld.) Comparison of the Coverage Areas Between the Study Area
and Capitals of States and Regions of Myanmar

Table 1 : The coverage Area of the Study Area and the Selected Cities of Myanmar

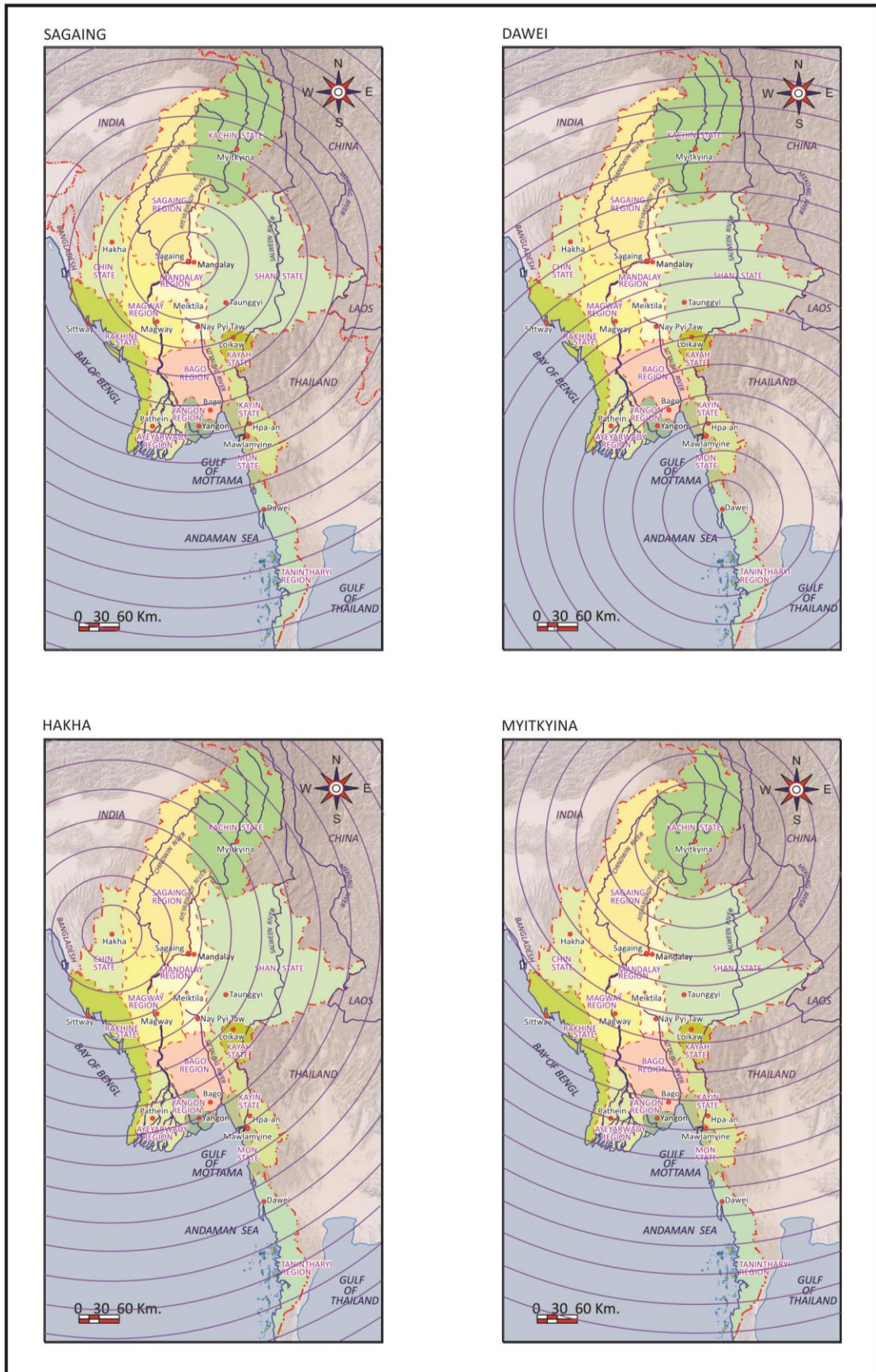| No	Towns	100	No	Towns	200	No	Towns	300
1	Meiktila	31,416.00		Meiktila	125,664.00	1	Mandalay	286,086.33
	Mandalay	31,416.00	1	Mandalay	125,664.00	2	Sagaing	285,548.45
	Naypyidaw	31,416.00		Sagaing	125,664.00	3	Meiktila	279,100.54
	Magwe	31,416.00	4	Naypyidaw	125,505.14	4	Taunggyi	255,697.50
	Taunggyi	31,416.00	5	Taunggyi	123,984.21	5	Naypyidaw	251,614.91
	Sagaing	31,416.00	6	Magwe	122,094.53	6	Loikaw	228,150.95
7	Bago	31,285.78	7	Loikaw	106,946.40	7	Myitkyina	198,255.26
8	Loikaw	30,380.21	8	Bago	106,167.09	8	Bago	175,745.43
9	Hakha	25,287.15	9	Myitkyina	103,370.71	9	Hakha	165,801.04
10	Yangon	25,179.84	10	Yangon	87,545.53	10	Yangon	147,419.69
11	Pathein	22,494.21	11	Hakha	84,236.11	11	Magwe	122,094.53
12	Hpa-an	22,214.31	12	Hpa-an	60,555.75	12	Sitwe	117,082.08
13	Mawlamyaing	20,674.89	13	Pathein	58,001.98	13	Hpa-an	116,957.56
14	Sitwe	13,728.27	14	Mawlamyaing	56,678.24	14	Mawlamyaing	110,262.75
15	Dawei	13,392.47	15	Sitwe	56,068.42	15	Pathein	106,662.91
16	Myitkyina	9,287.90	16	Dawei	29,724.97	16	Dawei	53,610.93

No	Towns	400	No	Towns	500	No	Towns	600
1	Mandalay	432,391.36	1	Meiktila	514,872.91	1	Mandalay	583,509.39
2	Sagaing	430,504.06	2	Mandalay	514,455.38	2	Sagaing	582,788.24
3	Meiktila	420,617.55	3	Sagaing	512,920.53	3	Taunggyi	576,359.69
4	Taunggyi	402,168.88	4	Taunggyi	512,693.00	4	Meiktila	571,160.89
5	Naypyidaw	386,896.28	5	Naypyidaw	495,858.57	5	Magwe	545,554.17
6	Loikaw	371,156.44	6	Loikaw	483,450.79	6	Naypyidaw	544,094.76
7	Magwe	366,309.94	7	Magwe	476,819.35	7	Loikaw	543,662.34
8	Myitkyina	276,093.08	8	Hakha	381,400.57	8	Hakha	495,614.32
9	Hakha	264,619.51	9	Myitkyina	357,341.74	9	Myitkyina	446,952.11
10	Bago	246,200.80	10	Bago	333,530.04	10	Bago	435,981.28
11	Sitwe	205,553.87	11	Sitwe	321,251.09	11	Sitwe	424,656.69
12	Yangon	202,481.17	12	Yangon	276,748.42	12	Yangon	370,768.99
13	Hpa-an	188,963.13	13	Hpa-an	267,220.09	13	Hpa-an	361,151.03
14	Mawlamyaing	175,392.73	14	Pathein	252,748.64	14	Mawlamyaing	338,678.56
15	Pathein	106,662.91	15	Mawlamyaing	248,449.46	15	Pathein	337,671.86
16	Dawei	86,276.68	16	Dawei	130,285.93	16	Dawei	171,311.33

No	Towns	700	No	Towns	800	No	Towns	900
1	Mandalay	626,743.29	1	Taunggyi	644,704.89	1	Naypyidaw	658,019.57
2	Sagaing	625,898.25	2	Meiktila	638,771.20	2	Taunggyi	655,875.76
3	Taunggyi	618,064.98	3	Mandalay	637,578.47	3	Meiktila	652,582.08
4	Meiktila	613,427.17	4	Sagaing	637,509.61	4	Magwe	650,846.96
5	Loikaw	589,524.30	5	Loikaw	633,210.30	5	Mandalay	642,989.48
6	Magwe	586,013.05	6	Naypyidaw	627,563.75	6	Sagaing	642,868.88
7	Naypyidaw	584,366.44	7	Magwe	624,598.45	7	Hakha	632,010.17
8	Hakha	578,783.28	8	Hakha	619,236.87	8	Sitwe	621,306.90
9	Sitwe	518,181.55	9	Sitwe	585,023.54	9	Bago	606,241.53
10	Bago	516,703.35	10	Bago	570,533.95	10	Myitkyina	588,083.58
11	Myitkyina	508,737.21	11	Myitkyina	549,974.43	11	Yangon	578,667.08
12	Yangon	469,344.75	12	Yangon	539,560.84	12	Pathein	572,012.64
13	Hpa-an	448,695.77	13	Hpa-an	522,752.86	13	Hpa-an	570,284.50
14	Pathein	427,746.92	14	Pathein	519,418.81	14	Mawlamyaing	557,589.98
15	Mawlamyaing	426,630.47	15	Mawlamyaing	504,304.19	15	Dawei	379,848.01
16	Dawei	225,056.83	16	Dawei	298,609.25	16	Loikaw	371,899.48

Note: Based on GIS Analysis.

Table 1 : (concld.) The coverage Area of the Study Area and the Selected Cities of Myanmar

No	Towns	1000	No	Towns	1100	No	Towns	1200
1	Naypyidaw	674,369.51	1	Naypyidaw	678,872.51	1	Naypyidaw	679,192.54
2	Taunggyi	666,124.47	2	Magwe	675,594.65	2	Loikaw	679,192.54
3	Magwe	665,030.54	3	Taunggyi	675,529.07	3	Magwe	679,150.52
4	Meiktila	661,054.75	4	Meiktila	672,208.74	4	Taunggyi	679,038.51
5	Mandalay	659,997.51	5	Bago	668,439.31	5	Bago	678,937.52
6	Sagaing	651,705.28	6	Sitwe	663,291.94	6	Meiktila	678,212.94
7	Sitwe	649,482.29	7	Mandalay	659,997.51	7	Sitwe	675,347.86
8	Bago	641,827.72	8	Sagaing	659,814.98	8	Hpa-an	671,409.41
9	Hakha	639,425.26	9	Yangon	646,990.84	9	Mandalay	671,195.16
10	Myitkyina	622,654.04	10	Hakha	646,351.32	10	Sagaing	671,028.85
11	Yangon	611,547.72	11	Hpa-an	644,125.74	11	Yangon	670,972.42
12	Hpa-an	606,684.16	12	Myitkyina	636,963.98	12	Mawlamyaing	665,441.54
13	Pathein	602,989.78	13	Pathein	636,689.45	13	Pathein	663,972.20
14	Mawlamyaing	594,523.15	14	Mawlamyaing	632,286.32	14	Hakha	654,689.79
15	Dawei	457,598.49	15	Dawei	523,768.83	15	Myitkyina	642,336.50
16	Loikaw	381,014.49	16	Loikaw	384,296.46	16	Dawei	569,737.90

No	Towns	1300	No	Towns	1400	No	Towns	1500
1	Meiktila	679,192.80	1	Meiktila		1	Meiktila	
	Taunggyi	679,192.80		Naypyidaw		2	Naypyidaw	
	Loikaw	679,192.80		Magwe		3	Magwe	
	Naypyidaw	679,192.80		Bago		4	Bago	
	Magwe	679,192.80		Taunggyi		5	Taunggyi	
	Bago	679,192.80		Loikaw		6	Loikaw	
7	Yangon	679,189.65	7	Yangon	679,192.80	7	Yangon	
8	Hpa-an	679,184.28	8	Pathein	679,192.80	8	Pathein	
9	Sitwe	679,171.12	9	Mawlamyaing	679,192.80	9	Mawlamyaing	
10	Mawlamyaing	678,060.92	10	Sitwe	679,192.80	10	Sitwe	
11	Pathein	677,782.43	11	Hpa-an	679,192.79	11	Hpa-an	
12	Mandalay	677,739.16	12	Sagaing	679,178.10	12	Mandalay	679,192.80
13	Sagaing	677,711.14	13	Mandalay	679,177.00	13	Sagaing	679,192.80
14	Hakha	664,577.75	14	Hakha	675,351.52	15	Hakha	679,151.42
15	Myitkyina	651,495.68	15	Myitkyina	659,111.32	14	Dawei	671,941.65
16	Dawei	606,590.62	16	Dawei	644,443.91	16	Myitkyina	670,574.79

No	Towns	1600	No	Towns	1700	No	Towns	1800
1	Meiktila		1	Meiktila		1	Meiktila	
2	Naypyidaw		2	Naypyidaw		2	Naypyidaw	
3	Magwe		3	Magwe		3	Magwe	
4	Bago		4	Bago		4	Bago	
5	Taunggyi		5	Taunggyi		5	Taunggyi	
6	Loikaw		6	Loikaw		6	Loikaw	
7	Yangon		7	Yangon		7	Yangon	
8	Pathein		8	Pathein		8	Pathein	
9	Mawlamyaing		9	Mawlamyaing		9	Mawlamyaing	
10	Sitwe		10	Sitwe		10	Sitwe	
11	Hpa-an		11	Hpa-an		11	Hpa-an	
12	Mandalay		12	Mandalay		12	Mandalay	
13	Sagaing		13	Sagaing		13	Sagaing	
14	Dawei	679,192.80	14	Dawei		14	Dawei	
15	Hakha	679,192.80	15	Hakha		15	Hakha	
16	Myitkyina	677,115.56	16	Myitkyina	679,156.55	16	Myitkyina	679,192.80

Note: Based on GIS Analysis.

As the radius has become great, the coverage area of other capitals also becomes larger, but they cannot be compared to that of Meiktila or Mandalay. Even for Nay Pyi Taw, the coverage area is 251,614.91 square kilometres or 37 % of the country's total within the circle with 300 km. radius. This fact makes clear for one situation which means that periphery areas may have lesser coverage area and also lesser defensive potentiality compared to that of inner ones.

The complete coverage for the entire country can be observed from the 100 km. radius concentric circle to that of 1,300 km. radius distance. Within this circle, the sites which can fully cover the whole area of the country include Meiktila, Nay Pyi Taw, Taunggyi, Magway, Bago and Loikaw.

For the site of Meiktila, the coverage area of Myanmar has been started free from the 400 km buffer zone. Although the coverage area of the country has become greater along with the greater range of radius, the coverage area to the relative site has been smaller. Therefore, the coverage area of each capital and Meiktila are ranked and shown in table (2).

It is explained that, for example there is the largest coverage for Nay Pyi Taw for 6 times or frequencies after drawing 13th buffer zone or concentric circles; it means that the largest coverage area ranked at first place. The second largest area is observed at second rank, the next largest coverage area at third place, and so on. According to that table, for the sites of Nay Pyi Taw, Meiktila, Magway, Loikaw, Taunggyi and Bago, only 13 concentric circles are sufficient to cover the almost entire country, whereas for Yangon, Pathein, Sittway, Mandalay, Mawlamyine and Hpa-an, it is necessary for 14 circles; 15 circles for Sagaing; 16 circles each for Dewei and Hakha, and 18 circles for Myitkyina.

To cover the area of entire country, up to 18 concentric circles are needed for the furthest point of study site (i.e., Myitkyina). Therefore, for each site, the weighted coverage can be calculated from the 1st rank to 18th one.

Therefore, the coverage area of the country for each point can be multiplied by 18, 17, 16, 15, …….1, according to their ranks of coverage. Then, table (3) shows the weighted coverage of the selected capitals and Meiktila.

Table 2 : The Frequency of Coverage Area for the Study Area and Other Capitals

Rank	Site	Circle																		Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	Naypyidaw	6	0	0	1	3	2	1	0	0	0	0	0	0	0	0	0	0	0	13
2	Meiktila	4	1	3	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	13
3	Magwe	2	1	2	1	1	2	3	0	0	0	1	0	0	0	0	0	0	0	13
4	Loikaw	1	1	0	0	2	3	2	1	0	0	0	0	0	0	0	3	0	0	13
5	Taunggyi	2	3	3	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	13
6	Bago	1	0	0	0	2	0	1	3	1	5	0	0	0	0	0	0	0	0	13
7	Yangon	0	0	0	0	0	0	2	0	1	3	3	5	0	0	0	0	0	0	14
8	Pathein	0	0	0	0	0	0	0	1	0	0	1	2	4	3	3	0	0	0	14
9	Sitwe	0	0	0	0	0	1	2	1	3	1	3	1	0	1	1	0	0	0	14
10	Mawlamyaing	0	0	0	0	0	0	0	0	0	1	1	0	1	1	6	4	0	0	14
11	Mandalay	6	1	1	0	2	0	1	0	1	0	0	2	1	0	0	0	0	0	15
12	Sagaing	2	4	1	1	0	2	0	1	0	1	0	1	2	0	0	0	0	0	15
13	Hakha	0	0	0	0	0	0	0	1	4	4	1	1	0	0	4	1	0	0	16
14	Hpa-an	0	0	0	0	0	0	0	0	2	0	0	2	4	8	0	0	0	0	16
15	Dawei	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	10	0	16
16	Myitkyina	0	0	0	0	0	0	0	1	1	3	2	2	1	0	0	3	3	1	18

Note: Calculated by the Researcher.

Table 3 : Weighted Coverage Area for the Study Area and Other Capitals

Rank	Site	Circle																		Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	Mandalay	108	17	16	0	28	0	12	0	10	0	0	14	6	0	0	0	0	0	211
2	Meiktila	72	17	48	60	0	13	0	0	0	0	0	0	0	0	0	0	0	0	210
3	Taunggyi	36	51	48	60	14	0	0	0	0	0	0	0	0	0	0	0	0	0	209
4	Naypyidaw	108	0	0	15	42	26	12	0	0	0	0	0	0	0	0	0	0	0	203
5	Sagaing	36	68	16	15	0	26	0	11	0	9	0	7	12	0	0	0	0	0	200
6	Magwe	36	17	32	15	14	26	36	0	0	0	8	0	0	0	0	0	0	0	184
7	Loikaw	18	17	0	0	28	39	24	11	0	0	0	0	0	0	0	9	0	0	146
8	Bago	18	0	0	0	28	0	12	33	10	45	0	0	0	0	0	0	0	0	146
9	Hakha	0	0	0	0	0	0	12	44	40	9	8	0	0	20	4	0	0	0	137
10	Sitwe	0	0	0	0	0	13	24	11	30	9	24	7	0	5	4	0	0	0	127
11	Yangon	0	0	0	0	0	0	24	0	10	27	24	35	0	0	0	0	0	0	120
12	Myitkyina	0	0	0	0	0	0	12	11	30	18	16	7	0	0	12	9	2	1	118
13	Hpa-an	0	0	0	0	0	0	0	22	0	0	16	28	48	0	0	0	0	0	114
14	Pathein	0	0	0	0	0	0	0	11	0	0	8	14	24	15	12	0	0	0	84
15	Mawlamyaing	0	0	0	0	0	0	0	0	10	9	0	7	6	30	16	0	0	0	78
16	Dawei	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	30	0	0	55

Note: Calculated by the Researcher.

Result and Findings

According to the weighted coverage analysis, Mandalay is at the first place of weighted coverage area of the country. It is followed by Meiktila. It can be assumed that by comparing with other capitals (even with Nay Pyi Taw), the coverage area of Meiktila is larger than that of the other 14 sites.

By considering the above mentioned points, it can be said with validity that the location of Meiktila is at geographical centre not only by its absolute location but also by the coverage area or relative location.

Missile Sample

As a supportive one for the above findings, the potential defensive power of missile is taken into considered as the sample one.[4] In this consideration, linear characteristics of missiles are simply considered and their military sights with defensive or offensive power are neglected here.

---

[4] Here, it should be noted that no place on the world is secure from the hi-tech weapons in this age of nuclear power and space technology.

Table 4 : The Defensive Power of the Study Area

Range of Buffer Zone (sq. km.)	Coverage Area	Defensive Power (Coverage %)
100	31,416.00	4.63
200	125,664.00	18.50
300	279,100.54	41.09
400	420,617.55	61.93
500	514,872.91	75.81
600	571,160.89	84.09
700	613,427.17	90.32
800	638,771.20	94.05
900	652,582.08	96.08
1000	661,054.75	97.33
1100	672,208.74	98.97
1200	678,212.94	99.86
1300	679,192.80	100.00

Note: based on GIS Analysis.

For studying the defensive power, Meiktila covers about 420,617.55 square kilometres at the 400 kilometres buffer zone. It means that to defend the 62 % of the country's area by using some short-range ballistic missile (SRBM) such as 9K720 Iskander missile made by Russia (400 km range) and Hadès missile made by France (480 km). The defensive power of the study area and types and range of missile are shown in following table (4) and (5). Next, over ¾ of the country's area can be defense by using 500 km. range ballistic missile. This sample makes clear the strategic location of Meiktila from standpoints of coverage area approach and simple missile power defensive approach.
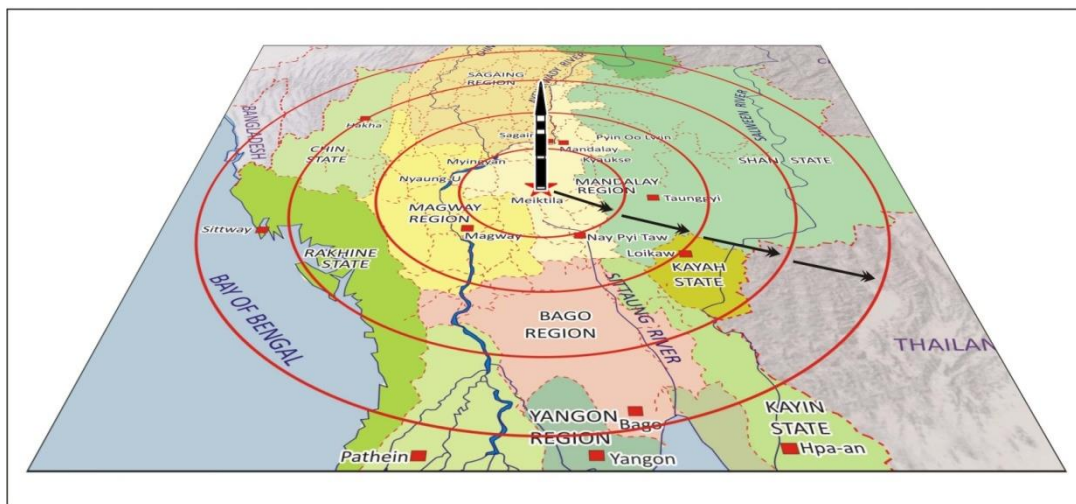

Figure 2 : Defensive Power of the Study Area

According to figure, at the 400-kilometres buffer zone, the study area can cover over 60 % of the country's area and can give defense to nine capitals of States and Regions of Myanmar: Nay Pyi Taw, Mandalay, Sagaing, Magway, Bago, Taunggyi, Loikaw, Sittway and Hakha.

Table 5 : The Range of Missile

No	Types of Missile	Range in Km.
1	Short-range ballistic missile (SRBM)	1000 or less
	Hyunmoo II	300-500
	SS-1 Scud	300-700
	Prithvi I II	350-750
	9K720 Iskander	400
	Hades	480
	Jericho I	500
	DF-15	600
	Shahab-2	700
	Shaurya	600-700
	Agni I	700-800
2	Theatre ballistic missile (TBM)	300-3500
3	Medium-range ballistic missile (MRBM)	1000-3500
4	Cruise missiles	2500
5	Intermediate-range ballistic missile (IRBM)	3500-5500
6	Long-range ballistic missile (LRBM)	3500-5500
7	Intercontinental ballistic missile (ICBM)	> 5500
8	ICBM Missile	>5500
9	MX Missile	6800

Source: Wikipedia.com

(A) MX missile on test-fired done on June 17, 1983
Range – over 6800 km (4100 miles)

(B) An Anti-missile missile: Patriot Missile

Source: Microsoft Encarta 2009

Figure 3 Missile and Anti-missile Missile on Test-fired

Conclusion

Apart from this method, there are other measures to support the locational advantages of a particular area for defensive purpose of that country. By examining the areal coverage method, the results of coverage area for Meiktila up to 900 km concentric circle, about 96.1 % of the country's area can be accounted for defense, the circle with 400 km. radius of Meiktila can protect the 62 % of the country's area. It can be concluded that the location of Meiktila is almost at the centre of the country. In turn, it can affect to be the most potential point for defending the entire country.

Whatever it may be, no place on the planet is totally defensive especially in this technologically advanced age. Because, there are such, man, things that terrain characters, accessibility of a place, improvement of the science and technology, socio-econo-political affairs of a country, the attitude of the government, etc. should be critically considered for defending their respective territories.

Acknowledgements

References

1. Fellmann, Getis, Getis (2007), **Human Geography, Landscapes of Human Activities**, 9 Edt., McGraw-Hill Companies, Inc., New York.
2. GAO (2003): **Specialty Hospitals: Geographic Location, Services Provided, and Financial Performance**, Report to Congressional Requesters, U.S. General Accounting Office, 441 G Street NW, Room 7149 Washington, D.C., USA.
3. John Cresswell & Catherine Underwood (2004): **Location, Location, Location: Implications of Geographic Situation on Australian Student Performance in PISA 2000,** Australian Council for Educational Research Ltd., Australia.
4. Matthew Sparke (2006): **Political geography: Political Geographies of Globalization (2) - governance Department of Geography**, University of Washington, USA**.**
5. Oliver Meier (2007): **Europeans Split Over U.S. Missile Defense Plans,** Arms Control Association, USA**.**
6. Park, B. (2003): **Strategic Location, Political Dislocation: Turkey, The United States, and Northern Iraq**, Middle East Review of International Affairs, Vol. 7, No. 2 (June, 2003)
7. Steven A. Hildreth & Carl Ek (2009): **Long-Range Ballistic Missile Defense in Europe**, USA.
8. Thomas Christin and Simon Hug (2006)**: Federalism, the geographic location of groups, and conflict**, Paper prepared for presentation at the Annual Meeting of the American Political Science Association, Philadelphia, USA.
9. http://**wiki.answers.com/**Q/ #ixzz1RVhwWStz.
10. Microsoft, **Encarta, 2009**.