

# Geographic Assessment on Basic Needs in Dagon Myothit (South) Township

Aye Aye Thein<sup>1</sup>

## Abstract

This research work focuses on the existing urban infrastructures of new satellite towns which are the indispensable as basic needs for the urban residents. To make a broad generalization, Dagon Myo Thit (South) is chosen as a case study area. Such infrastructure as education, health care services, transportation facilities, availability of electricity and water supply are identified, assessed and presented from the geographical point of view. The basic needs in analysis on the primary data obtained from the settlement areas of the township are assessed by "SPSS" software. Based on the resultant value, insufficient infrastructural facilities are identified and presented together with the increasing number of population.

**Key words: infrastructure, service**

## 1. Introduction

The basic needs constitute three main components: social infrastructure, physical infrastructure, and business establishment. To illustrate these basic needs, the main focus is oriented toward education, health care services, transportation, electricity and water supply. Dagon Myo Thit (South) has an area of 30.545 square miles, and is made up of 26 wards and 6 village tracts. There are 19834 people in the old settlement area (village tracts) and 252091 people in the new settlement area (wards), in 2006.

This research work is conducted to present the existing infrastructures for the basic needs of inhabitants of study area and to point out the infrastructural facilities still needed to established and arranged for the well being of the people living either in the new or the old settlement area .

## Methodology

Primary data are acquired through questionnaires and secondary data from the offices concerned. Field surveys and interviews are also conducted to have a general images of the study area and to confirm the questionnaires responses.

## 2. Physical Bases

### Location, Size and Shape

South Dagon Myo Thit Township is one of the Eastern Yangon Division. Latitudinally, between 16° 46' 51" N and 16° 49' 45" N and Longitudinally between 96° 11' E and 96° 13' E . It is bounded by Hlegu Township on the north, Dagon Seikkan Township on the east, Thakayta Township on the south ,Thinganyun Township on the west. The shape of study area is less compact.

---

<sup>1</sup> Dr., Tutor, Department of Geography, Yangon Institute of Economics

**Relief and Drainage**

The study area has no salient topographic feature, being part of the plain built by the streams. Land is flat and low with a general elevation of about 20 feet above sea-level. The Ngamoeyeik Creek drains along the western rim of the township.

**Geology**

The entire area is covered with young alluvium. It is about 300 feet thick. No fold and fault lines are found within the study area.

**Climate**

Latitudinally, it is within the tropics. The area experiences Tropical Monsoon Climate (Amwg). The mean annual temperature is 27.57°C (81.64°F). The average annual rainfall is 101.36 inches.

**3. Areal Extent and Social Conditions****Area Extension**

The present Dagon Myo Thit (South) consists of two types of settlement. The township, in fact, is a new satellite town built in 1989, divided into 36 wards, covering an area of 15.06 square miles. These old settlements including covers 15.51 square miles. Thus the total area of Dagon Myo Thit (South) is 30.57 square miles. At present, of the 36 wards only 26 wards are being inhabited and the remaining wards form as vacant land of unsettled area. There were 271942 people in 2006 including 132108 males and 139834 females.

**Population Growth**

In the year 1990-94 period, the average growth rate was extremely high with 95.43 percent per year owing to the relocation of government service families to the newly established town. The main growth rate was on account of the transfer of some families toward the inner ring of Yangon City. Nevertheless, the average annual growth rate rose again to 6.82 percent in the 1998-2002 period and to 8.98 percent in the 2002-06 period. This implies that the infrastructures needed for the town have been established and the creation of job opportunity by the establishment of industrial zone in and around the study area.

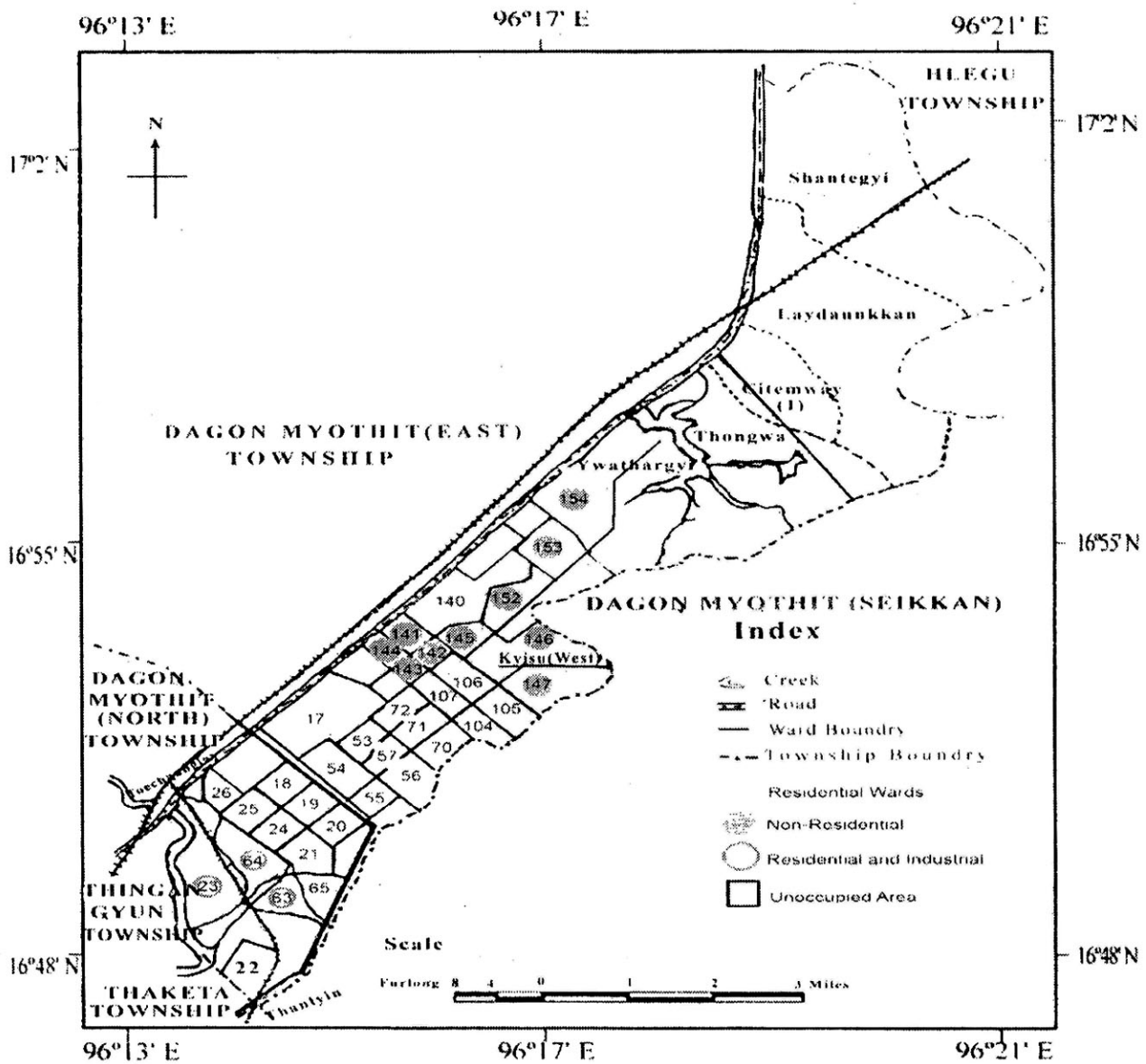


Figure (1) Wards and Village Tracts in Dagon Myothit (South) Township

**4. Existing Social and Physical Infrastructures and Assessment  
Education Facilities**

The township has three Basic Education High Schools (BEHS) and 2 affiliated high schools, nine Basic Education Middle Schools and one Basic Education branch Middle School, and 33 Basic Education Primary Schools. In 2007, there were 3663 high school level students, 11569 middle school students and 19477 primary level students attending the schools locating within the new settlement area. The existing basic learning centres and their distribution are easily accessible by the residents, and sufficient enough to satisfy the basic learning need

Besides, those who pass the matriculation examination can join Yangon Institute of Economic, located in Ywathargyi, Cultural University and University of Dagon.

### **Assessment On Questionnaires Responses of Education**

Responses are obtained from 241 households that have one or more students in the three basic education school level. According to the responses 76% of the students are attending the schools located within the administrative boundary of the township and the remains 24% attend the schools outside to township. As regard to such learning facilities as tables, benches and chairs, 56% accept as sufficient while 44% as insufficient.

For questions concerning with the availability of textbooks, 75% of the students have their textbooks in time while the remaining 25% does not. According to the response, 60% have in mind that the school library is open for them, but 38% have no access to their school library. Concerning with computer, 41% have used computers in their schools while 51% have not.

Based on these responses percentages the existing education facilities and the related factors are fairly sufficient for satisfying the basic education needs of the inhabitants, though some schools have no sufficient facilities for effective teaching and learning.

### **Health Care Services**

In public health care, there are two hospitals within the study area, one in ward No 25 with 25 beds and another in Veteran Model Village (Citemway).

The township has three doctors for public health care services. With a total population of 271942 in 2006, one doctor is responsible for the treatment of more than 90000 people.

The residents of the township have their children vaccinated regularly to prevent from diphtheria, polio, measles and tetanus with the help of township health services personal in cooperation with UNICEF and WHO.

### **Assessment On Questionnaires Responses of Health Conduction**

Medical facilities and health care services in Dagon Myo Thit (south) according to 292 respondents can be summed up as follows. The study area has Township Hospital, Rural Health Care Department and Private Clinics. However, only 10% take treatment at the township hospital, but 61% at Private Clinics, 7% at Yangon General Hospital and remaining 7% at others.

The majority, 96% out of 292 households have their children vaccinated regularly in response to the child health care services offered by the directive of the Ministry of Health. Occasional educative talk on health knowledge is carried out according to 90% of the respondents of the households. The remaining 10% have not noticed such talk. As regards to health knowledge, 69% know how to raise their children healthy, while 31% lack of the knowledge. More than half (59%) the respondents believe that there are sufficient medical facilities and drugs at public health care centre like hospitals and rural health departments, but 41 percent think these public medical centre have no full facilities such as diagnosis and drugs to be given free of charge. The Public Health care services centre usually keep medicines for the treatment of common diseases, but only 25% percent often have had these medicines free of charge while 75% have to buy them at the nearby drugstores.

## Transportation

There are three modes of transportation : road , railway and waterway for the transport of people and goods within and beyond the township.

### Road Transportation

The majority depends on road transport both for short and long trips . According to responses received from the questionnaires, 98 % of the passengers use bus in travelling and 2% take the train. Ayeyarwan Road is the main entrance into the town and it continues to Seikkan Township. Pyidaungsu and Kyansittha are also main roads of the township for intraurban trips, Pyidaungsu road (7700 feet ), Sipin Road (200 feet) ,Myeik Road and Hlawga Road are mostly use. The No (2 ) main road runs through the western margin of the township.

In teams of traffic volume, No (2) Main Road ranks first with 16 bus-lines serving along the road. There are 17 bus-lines serving on Pyidaungsu and Sipan roads, 8 bus-lines on Ayeyarwun road, 3 bus-lines on Kyansittha road and one bus-line on Hlawga road in 2008. The traffic volume is high on Pyidaungsu, Sipin and Ayeyarwun roads, moderate on Hlawga road and low on Kyansittha road .

### Rail Transport

Yangon-Ywathargyi rail service is with eight trains daily. The Yangon-Thilawa railway runs cross the township.

### Assessment On Questionnaires Responses of Transpotation

Transportation is one of the basic needs for the urban dwellers, particularly like the study area which is distant from the downtown and the more developed parts of Yangon City. For various trips the great majority (98%)of the inhabitants use the bus-lines, 1% the train and 2% trishaw. When going to workplace, 73% depend on buses while 27% have ferry arranged by the department concerned. As for government staff and company staff 84% use buses. Thus bus transport services is the most important for moving from home to any other places.

Only 14% get directly to their destinations, their work with one bus-line, while 77% have to change another route and 7 % have to use two bus-lines. Usually most buses are heavily crowded with passengers in the rush-hours and thus 15% of the travellers, have to waste the time at the bus-stop for more than half an hour and 85% of them spend less than 30 minutes .

In making trips with buses,79% feel inconvenient, while 21% regard it as convenient. For 59% of the respondents, the buses are crowded at every time of the day, whole 41 receive it not so congested for the whole day. According to the 92% of the respondents, it is very difficult to get on a bus after 6 O' clock in the evening, while 8%have no problem. This clearly shows that the gap between the demand (commuters) and supply (number of buses) have been widening.

Traffic Jam at road junction points is not an uncommon scene for 75% of the respondents, while 25% do not take it seriously. The respondents perceive that the road are rough, wave and narrow account for 81%, while 19% give no negative responses to the road conditions. These responses indicate the inferior conditions of roads linking between the study area and other parts of Yangon City.

### **Current Water Supply Sources**

Since the township occupies part of the alluvial plain built by the Bago River, the underground aquifer with potable water is deep and the water quality is inferior with high iron content. At the present time, the township has two main water supply systems: Central Water Supply System (YCDC pipe water) and Local Water Supply System (Ground water). Only southwestern part of township has YCDC pipe water supply system. However, the inhabitants of the township, therefore, have to depend on tank water and underground water.

There are 5 ponds within the new settlement area. The township has 33 tube-wells sunk by the YCDC and each well yields 1200 to 2000 gallons of water per hour in average.

### **Ponds**

There are many ponds in every ward within the study area. Ponds which are not natural occurrences and usable for drinking water and domestic water exist in some wards. Most of the ponds dry up in summer because the water demand is higher than available water with increasing population.

### **Central Water Supply System (Pipe Water of YCDC)**

At the present time, the Central Water Supply System is seen in Wards Nos 18, 19, 24, 25, 20 and 26. The first phase of installing household meter systems can be seen at Wards Nos 18, 19, 20 and 24 in 2007-2008. Dagon Myothit (South) Township has a total population about 300,000 of which only (8.2) percent could have connected pipe water from YCDC Central Water Supply System. Currently a pipeline with a diameter of 24 inches has been laid out along the Pyidaungsu road. It is an extension of Dagon Myo Thit (Seikkan) water supply project.

### **Groundwater Supply**

#### **Community Tube-wells and Tanks**

Nineteen percent of the water use depends on groundwater within the township. The number of community tube-wells and tanks increased up to 43. There are 3591 private tube-wells distributed in 22 wards in 2007-2008.

### **Local Water Supply System**

Another water supply project based on groundwater source was implemented at Ward No 107 under the supervision of YCDC in 2008. This project intends to distribute water for domestic use in Ward Nos 70, 71, 72, 104, 105, 106 and 107.

### **Assessment On Questionnaires Responses of Water Supply**

Of the 313 households included in the sampling, 283 give responses relating to the questions on water supply. Although the township has connection with the YCDC water supply system and 80% of the households under study have to depend on tube-wells and another 20% on pond water. As drinking water, 68% use tube-well water, 28% use tank water and 5% use treated purified water. The quality of water they drink is considered as good by 73% and as bad by 23%. Actually, no respondents know the physical and chemical properties of water they drink. They just make a guess by the existing ponds which have no protective arrangements from animals, waste materials and also have attitude of indiscipline uses.

The first one is Central Water Supply System (CWSS) which serves about 22.3% of the township with population. The second is Local Water Supply System (LWSS) that is based on

groundwater distributes about 9.4% of township population. Finally the private water supply system is delivering for about 68.38 % of the population. On the other hand, the people buy water from street water vendors. In 2007-2008, only about 10.8% of the township area received water from CWSS. About 2.0 % of the township areas are provided with LWSS. The remaining 87.2 % are served from the private water supply system and ponds. Most drinking water and water for domestic uses are also acquired from street water vendors.

Those who have no access to sources of water have to buy water in the dry season. In acquiring water in the dry season, 65% of the respondents usually undergo some difficulties, while 35% have no problem at all. With the increasing population, water shortage problem tends to become more acute in the future.

### **Electricity Power Supply**

In 2006, there are 38975 persons who have access to electricity, including 37208 local inhabitants, 163 government services personnel and 1604 living in industrial zones. To be able to distribute the electric power, 273 transformers have been installed, 104 in industrial zone (1), 58 in industrial zone (2) and 167 in industrial zone (3). Within the settlement area, 6 sub-stations have been established.

For lighting and other uses in the residential buildings meter boxes have been issued, excepting ward 22. Electricity is also available in Citemway Model villages and Laydaunkkan village.

### **Assessment On Questionnaires Responses of Power Supply**

There are 67% of the households under study that have access to electric power supply, whereas 33% have not. Among the households that receive electricity 62% have at every alternate day and 38% percent under the system. The received voltage is perceived as low by 32%, as high by 17 and as moderate by 51%. Generally, the availability of electricity within the study area is about the same to the townships located in the outer part of Yangon City. Based on these responses the percentage of households that have no access to electricity is still high. Ward No. 22, Thongwa and part of wards 107 and 72 have no electric power transmission line.

## **5. Results and Suggestions Needs and Feasible Solution**

Based on social and physical infrastructures, especially on education facilities, health care services, transportation facilities, water supply and electricity supply as well as on the residents needs, the new settlement area can be classed into three levels. To be able to make in-depth study within the study area, 26 wards are classed into different levels. The classification is firstly based on physical and social infrastructure. Based on the emergence of wards, they can be considered as three different groups.

According to the value of infrastructure index, Ward Nos 18, 19, 23, 24, 25, 26, 63 and 64 are included in the First Level. These wards comparatively have more infrastructural facilities and accessibility is relatively high. Ward Nos 17, 20, 21, 22, 53, 54, 55, 56, 57 and 65 are in the Second Level with moderate infrastructural facilities and accessibility and Ward Nos 70, 71, 72, 104, 105, 106, 107 and 140 are in the Third Level with less infrastructural facilities. The economic development in these wards is low and stagnant owing to being occupied by low-income families. Besides, infrastructural needs have not been fully satisfied in accord with the growing population.

Although every ward has each primary school, the nearest basic high school is fairly distant from these wards. Thus this part of the town needs a high school to reduce the difficulties being encountered by those who have passed the basic middle school level.

In the old settlement area, some school buildings are rather old and weak, since they have been built some decades ago. Thus some schools need to be renovated or rebuilt, whereas other need tables, chair, benches, books for school library and other teaching aids for effective teaching.

Response to the questionnaires indicate that health care infrastructure such as hospital and health care centres are conceived to be adequate. However, the majority think that the existing number of medical staff is not adequate for effective treatment. Besides, the necessary medicines are often out of stock. Thus more health care service personal should be appointed, and more medical instruments and drugs should be facilitated.

The majority use road transport for making routine or non-routine trips. The area classified as the third level in the new settlement area does not have enough bus-lines and the roads and streets are narrow and inferior in quality. Thus more lines should be arranged for the area and roads should be repaired and extended.

As regards to water supply, tube-wells are the main sources and the majority depend on the water withdrawn from these wells. Some use the tank water which is more or less contaminated. The tube-wells that belong to YCDC cannot be satisfied by of the residents owing to pump breakdown, collapse of water and electricity interruption. As a result, a considerably large proportion of some family's income drains off for acquiring water. Therefore, Ngamoeyeik Water Supply Project should be extended to the study area.

Electricity interruption is common, but it should be supplied regularly for a fixed span of time and meter-box should be issued to the wards which are in dare need.

### References

1. Arthur Getis, Jerome D. Fellmann, Jan C. Malinowski, (1996) *Introduction to Geography , Tenth Edition, .Boston Burr Ridge, H. Dubuque, Ia Madison, WI New York*
2. Aye Aye Thein , Daw and Members, (2007) Research Paper, *Basic Need Assessment of Local Community in the Suburban area of Yangon City After 1988 : Case Study in Dagon Myothit (South) Township*
- 3 .Aye Aye Thein , (2009), Dissertation, *A Geographic Assessment on Water Supply of Dagon Myothit (South) Township*