



# Traditional Settlement Patterns on The Parapat Girsang Sipangan Bolon District

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**Abstract.** Settlement is one of the important elements including basic needs. Humans live their lives in the chosen area. Cultural and historical factors are factors that can form a settlement. Parapat is a village in the Girsang Sipangan Bolon sub-district, Simalungun Regency, North Sumatra. This village is one of the accesses to Lake Toba which is about 48 km from Pematangsiantar City. Parapat is one of the important stopover points of Jalan Raya Lintas Sumatera and has a lot of potentials, including the traditional ones in it. This research was conducted using qualitative methods through aerial map analysis to identify settlement patterns formed in Parapat. Through this research, it will be known the pattern formed in the Parapat sub-district in the context of geographical conditions as well as local social and cultural conditions.

**Keyword:** pattern, Parapat , settlement, traditional

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## 1 Introduction

Settlement is one of the basic needs that is included as an important element with two factors that can be the basis of the formation of an environment, namely physical factors which include geographical characteristics such as climatic and topographical characteristics of the area, as well as non-physical factors related to the social and socio-cultural aspects of the area. society [1]. The forming elements of the pattern consist of five aspects, such as nature, shell, network, and society, which include non-physical physical factors and become the basis for the formation of a [2].

Indonesia is the largest archipelagic country in the world with various topographical characters and cultural richness that has the unique character of each region. Girsang Sipangan Bolon is a sub-district in Simalungun Regency, North Sumatra, Indonesia. This iconic area and tourist

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destination are located on the shores of Lake Toba with Parapat being one of the accesses to Samosir Island.

Parapat is a village in the Girsang Sipangan Bolon sub-district, Simalungun Regency, North Sumatra. This village is one of the accesses to Lake Toba which is about 48 km from Pematangsiantar City. Parapat is one of the important stopover points of the Trans Sumatra Highway and has a lot of potentials. This area is located in the highlands, with a variety of topography and land contours, namely sloping, sloping, and steep.

Parapat is famous for the beauty of Lake Toba, so it has become a famous tourist attraction in North Sumatra. There are certain areas to enjoy the cool water of Lake Toba, such as in the area of Kasih Beach, Ujung Beach, Hanging Rock, and several other areas around it. From Parapat there is a ferry port that serves water transportation to the island of Samosir to be precise to the port of Ajibata. This fairly rapid development has led to changes in the characteristics of existing settlement patterns, especially traditional settlements in Parapat.

With various aspects and existing potentials, this study aims to identify settlement patterns that are formed in the context of local geographic and social, and cultural conditions.

## **2 Literature Review**

### Settlement

Settlements are used to live by individuals or groups for a temporary or permanent period, formed by humans or by nature with all its accessories, to carry out their lives. Meanwhile, housing is known as a group of houses with environmental facilities and infrastructure that have a function as a residential environment [3].

According to Law no. 12 of 2021 article 1 regarding amendments to Government Regulation Number 14 of 2016 concerning the Implementation of Housing and Settlement Areas, Settlements have many housing units with facilities and infrastructure that complement them, also have public utilities and support activities for various functions located in urban or rural areas. . While housing is part of the settlement which is a collection of houses, located in urban and rural areas, with facilities and infrastructure as well as public utilities to meet the requirements for livable houses [4].

The difference between settlement and housing can be found in their respective functions. The housing environment is only a collection of houses that have a function as a place to live for its residents and do not double as a place to earn a living. Meanwhile, in residential areas, the environment has two functions, namely as a place to live as well as a place to earn a living for its residents [5].

## Settlement Patterns

Settlement patterns are influenced by various things, such as land use, topographic conditions or altitude, accessibility, social and economic conditions of residents as well as socio-economic facilities, which in their development greatly affect the pattern and distribution of settlements in the area. The pattern of settlements in various regions is not the same because there are differences in the arrangement of buildings and roads as a result of different geographical conditions. There are several forms of settlement patterns, including road elongated patterns, river elongated patterns, radial patterns, scattered patterns, coastal elongated patterns, coastal elongated patterns, and trains [6].

The settlement pattern is divided into two, namely the concentrated settlement pattern and the scattered settlement pattern [7]. The settlement pattern tends to be concentrated in groups and consists of a hamlet and village each consisting of about 40 houses or even more than hundreds of houses, around which there are lands for livestock, agriculture, fisheries, forestry, and mining, which are places where residents make a living for their livelihood. live their daily life. Generally, social conditions and physical conditions can change the shape of a village. Meanwhile, the pattern of scattered settlements, having housing conditions that tend to be scattered and isolated only with remote farmer's houses called farmsteads, equipped with cattle cages, machine tool warehouses, and wheat grinding machines, is generally found in Australia, the United States, Canada, and Europe. West.

The house is part of a settlement that is grouped to form settlements with a certain pattern, which can be grouped based on the similarity of groups in society (for example, occurs in certain social groups, including the palace complex, employee housing complex), certain professional similarities (such as craftsman village, lecturer housing, bank housing), and similarities based on certain ethnic groups (such as Kampung Bali, Kampung Makasar) [8].

## Traditional Settlement

Traditional settlements are closely related to the socio-cultural values of their inhabitants and are an embodiment of the socio-cultural values of the community itself with the preparation process using the basis of traditional norms [9].

Traditional settlements can provide a regional identity that is formed from environmental patterns and arrangements as well as local socio-cultural-economic activities. The three elements in the spatial pattern of settlements are the building, the space around the building, and the arrangement with a certain composition. Traditional settlements can be interpreted as a residential environment in which there are still traditional and historical values rooted in a certain belief, which will be oriented to various elements of the settlement, both physical and non-physical. The structure of the residential space can be identified through the boundaries as the main component, then oriented through the levels in a built environment, both physically

and non-physically, thus emphasizing the identification of the actual object and not just orientation [10].

The form of the residential environment is a community product with the results of social agreements that are not individual products so that each community certainly has different characteristics of settlements with their uniqueness, such as in traditional buildings with a background of religious concepts on the orientation of shapes and materials. the unique building and the main attraction for tourists [11]. Thus, objects made by humans are a form of physical culture, including settlements and traditional buildings [12].

Traditional settlements with distribution patterns and types of distribution become an arrangement with different properties from the factors that determine the distribution of a settlement [13]. Traditional settlement patterns based on their shape are divided into several parts, namely circular settlement patterns, rectangular settlement patterns, cube-shaped settlement patterns, and elongated settlement patterns that follow an object such as rivers, roads, and coastlines.

The traditional settlement pattern based on the distribution pattern is also divided into two, namely the spreading pattern and the clustering pattern [14]. Meanwhile, the spatial pattern of settlements is divided as follows: a. Settlement patterns are collected in a village, then arranged to follow a circular path, while the arable land is behind it; b. Settlement pattern that extends along the traffic road (land/river) or gathers in a village, while the arable land is behind it; c. The pattern of settlements that gather in a village, while the cultivated land is outside the village; and d. The pattern of settlements that are scattered and far apart in the newly opened location. This is due to the unavailability of the main road, while the community must continuously cultivate the plot of land they own for a certain period.

The majority of the population of Parapat Village are Toba tribes with the majority of Parapat Village residents practicing Christianity. Huta is a term for a residence of the Toba Batak settlement which is located on the slopes of a mountain or hill and is not used for rice fields [15]. There are 13 elements in the huta, namely houses and barns, gardens, rice fields, yards, forts that surround the village, waterways, places to spy on the enemy, places for residents to gather, places for livestock, graves, gates, reserve land for expansion that can be used as rice fields, as well as reserve land for expansion that should not be used as rice fields [16]. Based on this, it is known that Batak settlements can function as a place to take refuge from enemies with the presence of surveillance and protective points that surround the residential area. The building mass arrangement also tends to be clustered with buildings lined up and facing each other.

### **3 Methodology**

The research was conducted using qualitative methods, through analysis of aerial maps. Concerning the identification of settlement patterns, the main factors that need to be considered and become objects of observation are circulation and environmental access, distribution of mass and typology of building masses, and distribution of building functions.

In addition to observations in the form of physical objects, literature on the history and culture of the local community, especially the culture of the Toba tribe, also influences the formation of settlement patterns in Parapat Village. Analysis of settlement patterns is carried out by comparing physical data (mass distribution, circulation, etc.) with non-physical data (history, culture, customs, etc.), so that correlation can be found between the two which form the basis for the formation of existing settlement patterns.

### **4 Result and Discussion**

This study took place in Parapat Village, Girsang Sipangan Bolon District, Simalungun Regency, North Sumatra. This village is one area with a direct view facing Lake Toba. According to the 2021 population census, this village has a population of 9,138 people with a density of 577.00 people/km<sup>2</sup>. The majority of the population of Parapat Village are Toba tribes with the majority of Parapat Village residents practicing Christianity.

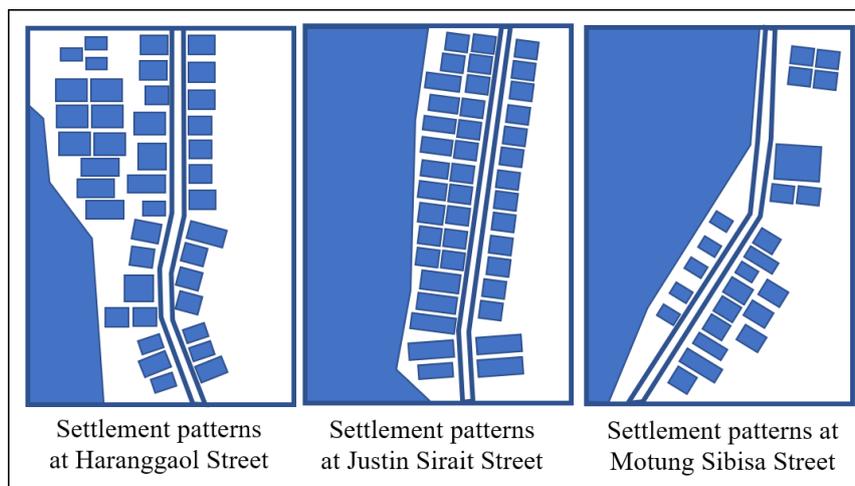
As one of the accesses to Lake Toba, access to Parapat Village is quite easy. The width of the road can be traversed by four-wheeled vehicles with a section wide enough for the vehicle lane in the opposite direction. This main road then branches into a secondary road as a link to residential areas.

Regarding the distribution of building mass, data collection is carried out through aerial map analysis. Based on observations, there is one pattern of building mass distribution, namely an elongated pattern, both around the access and circulation points and along the waterfront area, with buildings that tend to spread out to fill the existing space along the access and circulation points as well as the water's edge. In the following picture, you can see several corridors that can represent the pattern of settlements in Parapat, namely Harangaol Street, Justin Sirait Street, and Motung Sibisa Street (Figure 1).



**Figure 1** Settlement near circulation access and waterfront area

The growth of the settlement pattern in this area begins with the waterfront and roadside areas, which underlies the emergence of a tendency for the distribution pattern of the building mass to extend following the circulation path and the water's edge. These buildings are oriented to the road and water, followed by other buildings to fill the existing space, thus also forming a concentrated pattern of settlements that tend to be clustered (Figure 2).



**Figure 2** Settlement patterns near circulation access and waterfront area

Concerning the cultural life of the Batak Toba, namely Huta, which is the residential term of the Batak Toba, the tendency is that Batak settlements tend to have a mass structure of buildings in clusters with buildings lined up and facing each other. Although the current conditions in residential areas tend to be dominated by new settlements with commercial functions, the tendency of the Batak people to place the building mass remains the same as before.

## 5 Conclusion

The type of settlement pattern in Parapat Village is a linear pattern along with the circulation access that is oriented to the highway and riverbanks, with settlement patterns that tend to be

concentrated and the mass arrangement is clustered with buildings lined up and facing each other.

There is one pattern of building mass distribution in the Parapat sub-district, namely an elongated pattern, both around the access and circulation points and along the waterfront area, with buildings that tend to spread out to fill the existing space along the access and circulation points as well as the water's edge. Its growth starts from the waterfront and roadside areas so that there is a tendency for the distribution pattern of the building mass to extend following the circulation path and the water's edge. The buildings that are oriented to the road and water are followed by other buildings that fill the existing space, thus also forming a concentrated pattern of settlements that tend to be clustered.

Another trend that appears is that the building has a mass structure that is grouped with buildings that are lined up and facing each other, related to the cultural life of the Toba Batak, namely Huta in the preparation of the building.

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