

GIS application in mapping of tourism attractions in samosir district north sumatera province

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GIS application in mapping of tourism attractions in samosir district north sumatera province

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Abstract. GIS supports the development of various sectors including tourism. The purpose of this research is to describe the spread of tourism objects in Samosir District. This is very important as part of tourism development in the form of promotion Samosir attractions as well as a consideration in formulating tourism development program in accordance with its characteristics. Survey method is used to obtain field data. Furthermore, spatial data and attribute data were analyzed using Arc GIS 10.5 to produce the output of map of distribution of tourism object in 9 districts in Samosir District. The results showed that there are 75 tourist objects spread over 9 subdistricts in Samosir.

1. Introduction

Samosir is a volcanic island located in the middle of Lake Toba and became one of the leading tourist destinations in the world. Administratively, Samosir Island is part of Samosir District Samosir District has an area of 1,419.5 km² consisting of 9 sub-districts in which 6 sub-districts are on Samosir Island and 3 sub-districts are on the mainland of Sumatra Island. Sub-districts located on Samosir Island include Pangururan Sub-districts, Simanindo Sub-districts, Ronggur Nihuta Sub-districts, Palipi Sub-districts, and Nainggolan Sub-districts, Onanrunggu Sub-districts. While the sub-districts located in the mainland of the island of Sumatra include Siotio, Sianjur Mula-Mula, and Harian Sub-districts. Each Sub-district has a unique beauty as well as its own attractions for tourists, especially its nature, historical tourism and cultural tourism.

Publication of research results in tourist attractions in Samosir District can also be used as a medium for tourism promotion. Tourism promotion is still oriented to the domestic market in the form of advertising, sales support and public relations [1]. Promotions in the form of sales support and public relations are good. The potential and strategy of managing natural tourist attraction used ST-SO-WT-WO strategy [2]. The development of GIS technology (Geographic Information Systems) especially for the collection, processing and analysis of geographic data has helped in facilitating the process of planning the development of tourism sector. The Research succeeded making digital mapping model in the form of android based mobile GIS by using google maps [3]. This model allows travelers to obtain information on natural attractions in North Sumatra. However, from previous studies no one has used GIS applications to map the destination in 9 districts in Samosir District. Therefore, the purpose of this study is to map the distribution of natural attractions, history and culture as well as the object of spiritual/religious tourism in Samosir District. From the result of this study, tourists can be more familiar



with the distribution of attractions throughout the District of Samosir. This of course can be used as a tourism promotion medium.

Geographic Information System can used to create digital maps related to tourism in Zlatibor and Zlatar as a technology that facilitates the development of tourism in Serbia [4]. GIS can combine spatial and non spatial data and then displayed in digital maps. GIS application is also equipped with data base program, management, data search, analysis and evaluation in the field of tourism. Mapping of locations and tourism facilities such as hotels, accommodations, food and relaxation spots, cinemas, banks, churches and other facilities. Some research also utilize the SIG software, produce a map of the distribution of natural attractions in the District of Kendal to facilitate tourists in obtain information of the destination [5].

2. Method

This study is a descriptive research using survey method. The research location covers 9 subdistrict namely Sitiotio, Simanindo, Pangururan, Sianjur Mula-mula, Harian, Nainggolan, Onanrunggu, Palipi, and Ronggur Nihuta. In each district, tourism inventory is then classified into several categories, namely (1) natural tourism (geophysical-landscape attraction, natural attraction); (2) historical tourism; (3) culture tourism; (4) religious tourism. Determination of coordinates on tourism objects that represent each administration (subdistrict) is done by using GPS (Global Positioning System). Furthermore, the scanning process on map of Samosir. Spatial data and attribute data are inputted and analyzed using Arc GIS 10.5 software to obtain the output of Tourism Distribution Map of Samosir Regency. The research flow diagram can be seen in the following scheme:

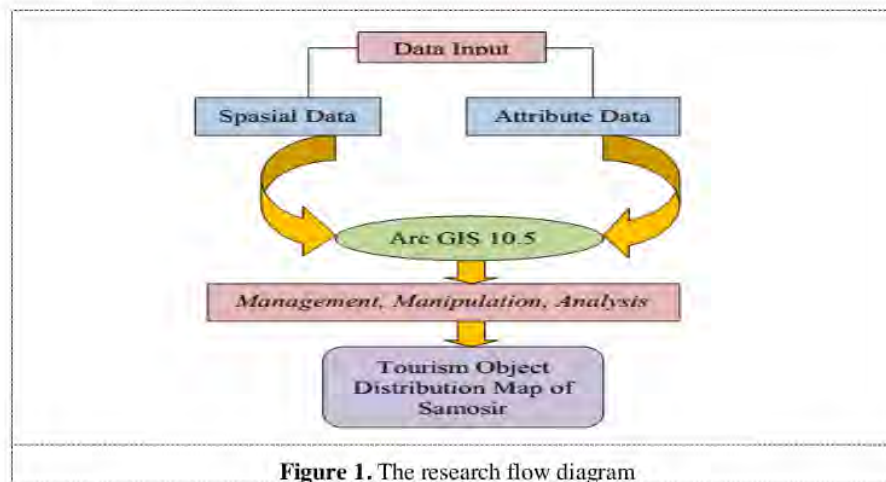


Figure 1. The research flow diagram

3. Result and Discussion

Samosir regency is located between 2 ° 21' - 20 ° 49' North Latitude and 98 ° 24' - 99 ° 01' East Longitude with an altitude between 904 - 2,157 meters above sea level. Its area is ± 2,069,05 km²; divided into two regions, namely the land ± 1.444,25 km² (69.80%) covering the entire island of Samosir surrounded by Lake Toba and partly on the side of Sumatra Island. The rest is the lake area of ± 624.80 km² (30.20%). Samosir regency as one of the important parts in the area of Lake Toba is one of the leading tourist destinations in Indonesia. Foreign and domestic tourist arrivals continued to increase each year as shown in Table 1 below :

Table 1. Tourist Arrivals In The Samosir District

Year	Tourist Type		Total
	Foreign	Domestic	
2011	22.732	109.897	132.629
2012	25.297	119.530	144.827
2013	25.662	124.117	149.779
2014	30.450	140.637	171.087
2015	34.248	141.215	175.463

From the table 1, we know that arrivals of domestic tourist is higher than foreign tourist in all of the years. So, it is necessary to promote all of the attractions in order to attract the international tourist. There are 75 tourist objects spread in 9 subdistricts in Samosir District. Of these, as many as 39 objects (52%) are natural attractions, 14 historical attractions (18.67%), 9 cultural attractions (12%), 12 historical and cultural attractions (16%), and 1 spiritual attraction (0.013%). Attractions in Samosir District can be observed in figure 2 below :

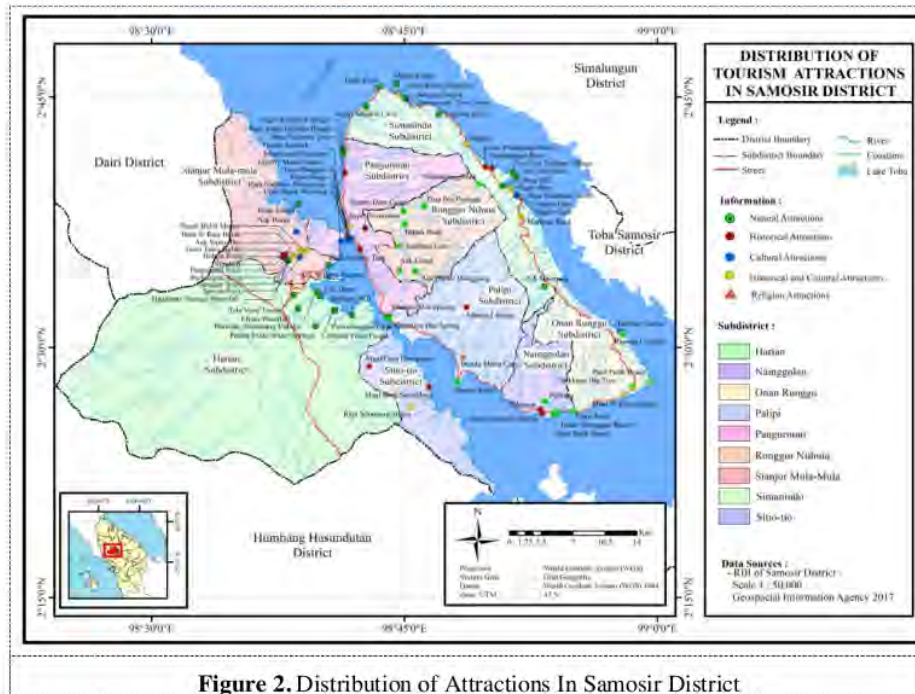


Figure 2. Distribution of Attractions In Samosir District

There are 39 natural tourist attractions, 14 historical attractions, 9 cultural attractions, 12 historical and cultural attractions and 1 religion attraction. Distribution of most attractions are in Subdistrict of Simanindo (19 attractions), and in Sianjur Mula-mula (15 attractions). While, the rest is in 7 other subdistricts; Pangururan (10 attractions), Harian (7 attractions), Ronggur Nihuta (7 attractions), Onanrunggu (5 attractions), Nainggolan (5 attractions), Palipi (4 attractions), and Sitiotio (3 attractions). Most destinations are in Simanindo Subdistrict and at least in Sitiotio Subdistrict. Tourism supporting facilities such as hotels and other accommodation are located in subdistricts of Simanindo (58 star hotels and jasmine classes), 18 jasmine-class hotels in Pangururan Sub-district, 4 jasmine-class hotels in Nainggolan Sub-district and 2 jasmine-class hotels in Palipi Subdistrict. While in other subdistricts do not have accommodation facilities. The development of the tourism facilities only occurred in

subdistrict that close to the district capital such as Pangururan Subdistrict and Sianjur Mula-mula Subdistrict. Whereas tourism facilities are needed in the development of tourist destinations [4]. Tourist attraction would be of little value if its locations were inaccessible by transportation. Physical isolation and inadequate transport facilities are, clearly, handicaps to tourism. Furthermore, Community involvement in tourism activities is also very important. The role of society can't be ignored, especially in interacting with tourist. Residents will be support tourism development when they obtained the advantages of tourism activities [6].

4. Conclusion

Samosir district has 75 tourist objects spread in 9 subdistricts. The large number of attraction does not affect significantly to the community welfare. It is necessary to involve all stakeholders, namely local government, private sectors and public (local community) in managing tourism. The responsibility is mainly in the field of tourism promotion, tourist attraction, running sapta charm, as well as improving the completeness and quality of supporting facilities to support the tourism sector in 9 subdistricts in Samosir District.

Acknowledgement

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References

- [1] Rifiyan A M and Manullang Y, 2015 Pelaksanaan Promosi Kepariwisata Samosir oleh Dinas Pariwisata, Seni dan Budaya Kabupaten Samosir *J. Online Mhs. Fak. Ilmu Sos. dan Ilmu Polit. Univ. Riau* **2**, 2.
- [2] Delita F Yetti E and Sidauruk T, 2017 ANALISIS SWOT UNTUK STRATEGI PENGEMBANGAN OBYEK WISATA Pemandian Mual Mata Kecamatan Pematang Bandar Kabupaten Simalungun *J. Geogr.* **9**, 1 p. 41–52.
- [3] Kurniawan H and Tanjung MR, 2017 Sistem Informasi Geografis Objek Wisata Alam di Provinsi Sumatera Utara Berbasis Mobile Android *Sisfotenika* **7**, 1.
- [4] Jovanović V, 2016 The application of GIS and its components in tourism *Yugosl. J. Oper. Res.* **18**, 2.
- [5] Hanggoro W Subiyanto S and Suprayogi A, 2017 Peta Sebaran Wisata Kabupaten Kendal Berbasis Sistem Informasi Geografis (Studi Kasus Kabupaten Kendal) *J. Geod. Undip* **6**, 4 p. 35–40.
- [6] Zadel Z Ivancic I and Cevapovic I, 2014 RESIDENTS' ATTITUDES TOWARDS TOURISM POTENTIAL OF SMALL RURAL CITY OF POZEGA in *Faculty of Tourism and Hospitality Management in Opatija. Biennial International Congress. Tourism & Hospitality Industry* p. 174.

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