

Study of Suitability Between Existing Land Use and the Spatial Plans in Medan Perjuangan Sub District

1st Rohani

*Department of Geography Education
Universitas Negeri Medan
Indonesia
rohanispdmsi@gmail.com*

2nd Darwin P Lubis

*Department of Geography Education
Universitas Negeri Medan
Indonesia*

3rd Mahara S Tampubolon

*Department of Geography Education
Universitas Negeri Medan
Indonesia*

Abstract—This research was conducted in Medan Perjuangan. Medan Perjuangan is one of sub-district in Medan City which consists of 9 villages. In Medan Perjuangan sub-district, there is land use change which sometimes it is not suitable with the spatial plans. The objective of this research are 1) to study the existing land use of Medan Perjuangan subdistrict, 2) to analyse the suitability of land use to the spatial plan of Medan Perjuangan sub-district. The method which used in this research was a qualitative method and field survey. The data were obtained by observation, interview and map/image interpretation. The data were analysed descriptively and spatially. The result of this research were 1) the existing land use of Medan Perjuangan sub District consist of commercial services zone, green space, road/street, settlement and trade zone. The widest of existing land use was for settlement, 2) the suitability between the spatial plan and existing land use was 70.12%. Land use deviations from spatial plans can be seen in the open green space which has a limited area. The green space which planned in spatial plans was used to the residential area.

Keywords—existing land use, suitability, spatial plans, Medan Perjuangan

I. INTRODUCTION

Space is a place for environmental components in carrying out each process, namely interaction, interrelation, and interdependence. The existence of limited space and public understanding of the importance of spatial planning has led to the need for transparent, effective and participatory spatial planning in order to create a safe, comfortable, productive and sustainable space [1]. Each region must organize spatial planning by taking into account the potential of the region including urban areas.

In UU No. 26 of 2007 stated that urban areas are an area that has main activities is not in the agriculture sector, with the arrangement of functions of the area as urban settlements, centralization and distribution of government services, social services and economic activities [2]. Cities are very complex, and it experiences dynamic development over time. This condition is caused by the population which develops rapidly and complex activities in the cities.

A high level of population growth will affect the pattern of land use in an area. In addition, Chapin also stated that space needs which cause changes in land use are also influenced by the system of activities, systems of

development and environmental systems [3]. The needs of land should be balanced with the availability of available land. However, unfortunately many land use changes occur in urban areas. Many lands are converted for new uses due to increased population activities in the region ([4].

Changes in the function of land for residential areas occur along with the high level of population growth which will be a problem in spatial planning. The unsuitability between spatial plan and existing land use will prevent the region from carrying out its programs [1]. This also happened in Medan Perjuangan subdistrict.

In Medan Perjuangan, the increase in population causes an increase in the land need for settlements. The population in 2010 was 103,759 people and increased to 143,187 in 2015. This causes can trigger land use change in Medan Perjuangan subDistrict. To control land use change, the government makes a spatial plan, but sometimes the planning is not in line with the fact. Therefore, it is necessary to review the suitability between the spatial plan and land use in the Medan Perjuangan District. The purposes of this study are 1) to study the existing land use of the Medan Perjuangan district, 2) to analyse the suitability of land use to the spatial plan of Medan Perjuangan district.

II. METHOD

The method which used in this research was a qualitative method. Data were obtained by field and institutional survey. The data were collected by observation, interview and map/image interpretation. The suitability between land use and the spatial plans of Medan Perjuangan District was analysed by over-lay the two maps of land use map and Spatial Plans Map. The data were analysed descriptively and spatially.

III. RESULT AND DISCUSSION

The existing land use of Medan Perjuangan District

The existing land use of Medan Perjuangan District consists of commercial services zone, green space, road/street, settlement and trade zone. The existing land use of Medan Perjuangan District can be seen Table 1.

TABLE I. THE EXISTING LAND USE OF MEDAN PERJUANGAN DISTRICT

No	Land Use	Wide (Ha)	Wide (%)
1	Commercial Services zone	2.69	0.59
2	Green Space	9.46	2.08
3	Road/Street	2.27	0.50
4	Settlement	361.96	79.57
5	Trade Zone	78.54	17.26
		454.92	100.00

Source: Map Analysis, 2018

The settlement was the widest land use in Medan Perjuangan District with an area of 361.96 Ha (79.57%). Meanwhile, the lowest land use was street/road by around 2.27 Ha (0.50%). The condition of land use in Medan Perjuangan District was showed in Figure 1.



Fig. 1 the map of land use of Medan Perjuangan District

The spatial plans of the Medan Perjuangan District consist of commercial services zone, green space, road/street, settlement and trade zone. The spatial plans of the Medan Perjuangan District can be seen in Figure 2.

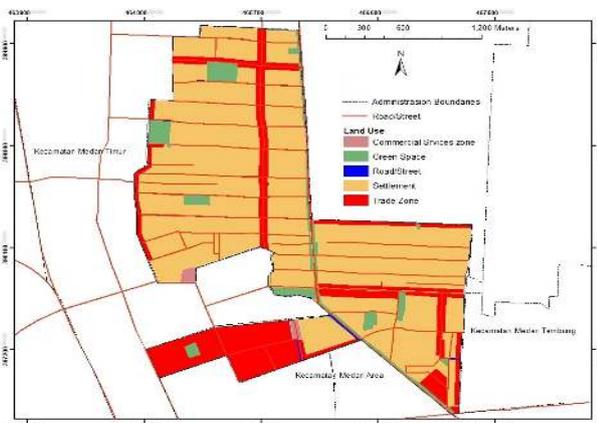


Fig. 2 The spatial plans of the Medan Perjuangan District

From the map, the spatial plans can break down into some land use as Table 2.

TABLE II. THE PATTERN OF LAND USE IN SPATIAL PLANNING IN MEDAN PERJUANGAN SUBDISTRICT

No	Land Use	Wide (Ha)	Wide (%)
1	Commercial Services zone	2.69	0.59
2	Green Space	26.25	5.77
3	Road/Street	2.27	0.50
4	Settlement	333.05	73.21
5	Trade Zone	90.66	19.93
		454.92	100.00

From table 2, it can be seen that road/street was the lowest land use in Medan Perjuangan and settlement was the widest land use by 0.50% and 73.21% respectively. Based on Spatial Plans and existing land use, there were differences between spatial plans and existing land use especially in green space, settlement and trade zone.

The result of overlay between the existing land use and the spatial plans of Medan Perjuangan subDistrict shows the Suitability Between Spatial Plan and Existing Land Use. The Suitability Between Spatial Plan and Existing Land use can be seen in Table 3.

TABLE III. THE SUITABILITY BETWEEN SPATIAL PLAN AND EXISTING LAND USE

No	Type of Land Use	Spatial Plans (Ha)	Existing Land Use (Ha)	Suitability (Ha)	Suitability (%)
1	Commercial Services zone	2.69	2.69	2.69	100.00
2	Green Space	26.25	9.46	16.79	63.96
3	Road/Street	2.27	2.27	2.27	100.00
4	Settlement	333.05	361.96	0.00	0.00
5	Trade Zone	90.66	78.54	78.54	86.63
	Total	454.92	454.92	100.29	70.12

From this table, it can be seen that the suitability between the spatial plan and existing land use in Medan Perjuangan District was 70.12 %. The highest suitability happened in commercial services zone and road/street, while the lowest suitability was a settlement. The high unsuitability for settlement between spatial plans and existing land use due to the wide of settlement in existing land use was wider than in spatial plans by around 28.91 Ha. The expansion of settlements has caused a reduction in green space of 16.79 Ha and a trade zone of 12.12 Ha.

IV. CONCLUSION

1. The existing land use of Medan Perjuangan district was settlement, green space, commercial service zone and trade zone.
2. The Suitability between the Spatial Plans of the Medan Perjuangan District and The existing land use was 70%.

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