MANAGEMENT OF MODEL GREEN OPEN SPACE TOWARDS THE CONSTRUCTION OF THE GREEN CITY (CASE STUDY IN MEDAN-INDONESIAN)

Darwin P Lubis*, **Retno Widhiastuti **, Alvi Syahrin **,

* Student of Postgraduate University of North Sumatera, Indonesia (darwinparlaunganlubis@gmail.com)

** Lecture of Postgraduate University of North Sumatera, Indonesia

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Abstract-- Legislation Structuring space (UUPR) No. 26 in 2007 explicitly mandated 30% of the city area takes the form of green open space, 20% green open space publik and 10% of green open space privat. Broad area space woke up in Medan city will continue to grow in line with the development of the city. Land cover change of land cover in green open space. 2001 green open space has an area of,53 Ha 11.354, while 2010 turns into 9.250 4 Ha research results indicate that temperature classification in Medan consisting of three classes, namely between $26-28^0$C, $28,1-30^0$C, $30,1-32^0$C Temperature $28,1-30^0$C, dan $30,1-32^0$C are the northern city of Medan that Kecamatan Medan Belawan which is located on the coast. Almost the entire town in the city of Medan have a temperature range between $26-28^0$C.Almost the entire town in the city of Medan have a temperature range between $26-28^0$C. An attempt to reach the green open space of 30% required management that involves stakeholders in the management of efforts to green the city. Model AHP analysis results showed that the main actors in the management of green open space towards the construction of a green city in medan is the government in this case local government with a total weight of 0.39. The community is a great actor with second priority with weights 0.30 and College is the third priority with weights 0,19. Private parties and NGOS have a relatively small weight of the respective weighting of 0.8 and 0.4.

Keywords—Green Open Space (GOS), Geographic Information System (GIS), Stakeholder

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I.INTRODUCTION

For big cities in Indonesia, the town planning process is an environmentally important needs. Spatial planning is a vehicle for the realization of a comfortable town, beautiful, and healthy. One of the benchmark spatial capable of provide comfort,atmosphere,and health for the city dweller is the availability of the allocation of sufficient and sustainable GOS from time to time (Aji, 2000)

Legislation Structuring space (UUPR) No. 26 in 2007 explicitly mandated 30% of the city area takes the form of green open space, 20% green open space publik and 10% of green open space privat. spatial spatial dimension development of the town as a tool to coordinate the development of sustainable cities. UUPR Commission in accordance with article 3, it should be embodied a form of urban development that harmonize the natural environment and man-made environment. Efforts to raise awareness in society and realize the existence of the city life, among other things can be done in the form of embodiment of green city.

It is realized that the residents of Medan has a very basic need for healthy air environment, the availability of ground water, and space as a means of social interaction. Therefore, the required space for frequently called RTH embodies that also serves as a public space. Rapid changes in land use in the city of Medan has displaced the green open space to be woken up space with no maximum restraint so that marginalize the green city concept (green city) as an ecological system of the city intact. Broad area space woke up in Medan city will continue to grow in line with the development of the city. Analysis Results Pane (2011) shows a broad area of waking up in the city of Medan by 14.096,46 Ha, it is quite substantial when compared to 2005, i.e. a difference of about 347,16 Ha. If the calculated increase per year since 2005, the estimated area of 86,79 Ha increases Awakenings per year during this period. This happens due to the development of the city until the construction and development of the region was carried out in a big way. In addition to pressure from the need of land for settlements of the hinterland are also very high in that period, as well as supported by the development of the Mebidang (Medan – Binjai-Deli Serdang) (2011 Pane.)

The impact of marginalization is widely urban management can be categorized in two ways, namely the impact of the ecological and socio-economic impacts (Briassoulis 1999). The phenomenon of rapid land conversion with marginalization green open space, causing the ecologically difficult for residents of the city of Medan to be able to achieve or maintain the protected area as an area for the conservation of biological diversity, the development of hydrological, creation of micro-climate area and reducing pollutants city

II.PROBLEM STATEMENT

Green open space in Medan City increasingly pressed for its existence and turned into the building to fullfill the needs of residents of the city facilities. The spread of uneven population give influence on the dynamics and patterns of land use change which occurs in each subdistrict Medan city over the last 10 years (2001-2010)

III. RESEARCH OBJECTIVES

The purpose of this research is to analyze the dynamics and patterns of land use change which took place in each district during the last 10 years (2001-2010), and put together a management model of green open space for city green city development in Medan

IV. RESULTS AND DISCUSSION

Land cover date obtained in Medan City results classification of satellite images landsat TM landsat TM 2001 and 2010. As for commonly used combinations of bands on the classification of the image i.e. 543 (band combination commonly used in the field of Forestry) in which various seemingly natural good vegetation and planted as well as facilitating the introduction of land cover types can be seen clearly. The image has been corrected is classified by using the method of supervised classification. Appearance of the image in the presentation of the data is affected by the resolution. Landsat TM image has a resolution of 30 m x 30 m. therefore the object whose size is less than 30 m may not be recognized. This can be seen under the State land use from 2001 to 2010.

Tabel 1. A rea of Land Cover 2001- 2010 in Medan City as well as changes

| No	Kelas Tutupan Lahan	Extensive Year 2001	Extensive Year 2010	Changes (Ha)	Percent ase (%)
1	Cloud	797,51	797,51	-	-
2	Water bodies	915,27	1.367,84	-452,57	10,69
3	Industry	630,32	766,45	-136,13	3,21
4	Esplanade	3.829,13	3.815,53	13,60	0,32
5	Settlement	9.183,59	10.712,55	-1.528,96	36,10
6	Green open space	11.354,53	9.250,4	2.104,13	49,47
	Total	26.710,3	26.710,3	4.235,39	100

Source: Citra Landsat TM tahun 2001 dan tahun 2010

Changes in land cover found on most of the land cover of green open space. 2001 green open space has an area of 11354.53 hectares, while in 2010 changed to 9250.4 ha, mean changes in land use on the green space of 2104.13 hectares or 49.47%. So are the other land cover classes such as water bodies and settlements there is a change in land use of 10.69% and 36.10%. Residential areas also have considerable changes such as green open space. In 2001 the settlement has an area of 9183.59 hectares, while in 2010 to widespread 10712.55 ha, mean changes in land use increased to

2

1528.96 Ha. Mean change in residential areas at 36.10%. This means green open space in the city of Medan experienced a reduction in the term of ten years, both the mangroves, green areas and urban forest.

The results showed that the temperature in the city of Medan classification consists of three classes, namely between $26-28^0$C, $28,1-30^0$C, $30,1-32^0$C. Temperature $28,1-30^0$C, and $30,1-32^0$C are in the northern city of Medan is Medan Belawan subdistrict which lies on the coast. Furthermore almost all districts in the city of Medan has a temperature range between $26-28^0$C. For the temperature range between $26-28^0$C, almost all districts in the city of Medan has a temperature ranging between $26-28^0$C.

Figure 1. Green City Master Plan in Medan City
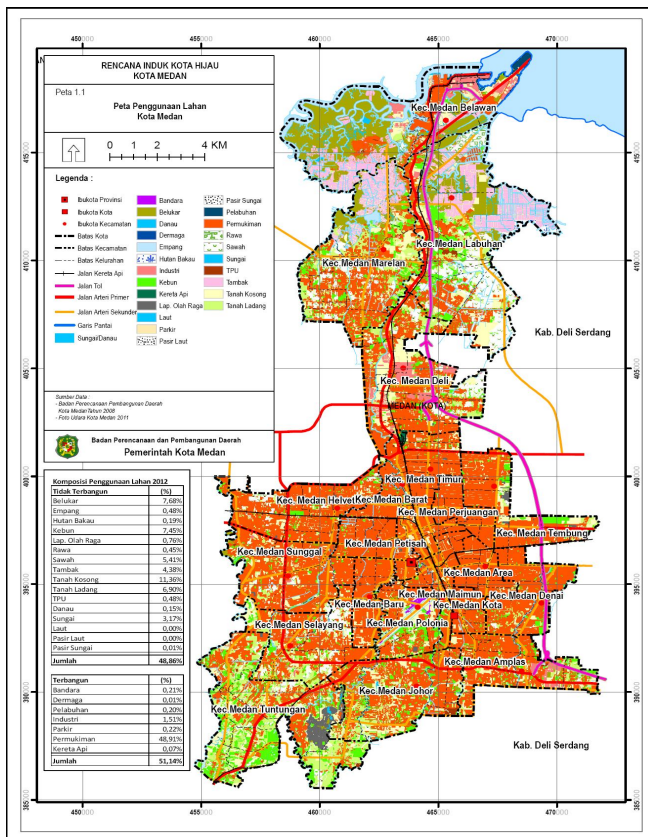
Tabel 2 Wide Spread Land Closure Temperature Class in Medan City

No	Kelas Tutupan Lahan	broad class at a temperature (Ha)			
		$(26 – 28)^0$C	$(28,1 – 30)^0$C	$(30,1 – 32)^0$C	Total
1	Water bodies	21,33	411,94	941,25	1.374,52
2	Industry	55,04	371,37	47,82	474,23
3	Esplanade	378,75	3.344,59	310,34	4033,68
4	Settlement	318,84	6.674,31	3.309,90	10.303,06
5	Green open space	3.456,99	5.721,77	606,14	9.784,90
	Total	4.713,48	16.776,88	5.219,94	26.710,3

Source :Citra Satelit Landsat TM tahun 2010

By using the technique of correlation of the correlation of values generated bivariat-0,262. This means the correlation between NDVI and temperature has the relationship upside down with low significance values. The relationship between vegetation index value correlation with temperature is quite strong. The smaller the value NDVI then the greater the temperature of the air. This means the less vegetation cover Medan city, the higher the temperature of the field. Changes in vegetation area was not the only factor that affects the temperature change. Other factors i.e. climate, rainfall, and the level of pollution.

Based on the land cover map of the town fields, green space areas are generally only found in 12 (twelve) districts of green open space conditions above 30% the District: Medan Helvetia, Medan Tuntungan, Medan Johor, Medan Polonia, Medan Sunggal, Medan Tembung, Medan Labuhan, Medan Marelan, Medan Labuhan, Medan Amplas, Medan Belawan dan Medan Deli, whereas 9 (nine) districts as Medan Kota, Medan Timur, Medan Barat, Medan Petisah, Medan Baru, Medan Maimun, Medan Perjuangan, Medan Area dan Medan Denai only green open space that its range does not reach 30%.

The quantity and quality of open green spaces largely determine its capacity to deliver ecological benefits, resulting in an increase in the quantity and quality is the key element of program management goal of open green space green city. Management with community empowerment and institutional strengthening is a policy that can be applied in the management of open green space. The analysis of the needs of stakeholders in the management of efforts to green city management are as follows: 1). Local government: based on the Green open space allocation based on area-based environmental budgeting 2).Community: management of the utilization of urban green open spaces through provision of open green space proportionally to social activity, activity of rekreatif and resapan of the water and the lungs of the city; 3.) private (Entrepreneurs): contribute to the financing of open green space in the city is right on target and sustainable; 4). non-governmental organizations: Controlling the utilization of open green space the city involving the participation of the community in a transparent and accountable; 5). College: the management of open green space of an effective and efficient land uses based on appropriate academic perspectives.

AHP model analysis indicates that the main actors in the management of green open space towards the construction of a green city in medan is the Government in this case local government with a total weight of 0.39. The community is a great actor with second priority with weights 0.30 and College is the third priority with weights 0,19. Private parties and

NGOS have a relatively small weighting each by 0.8 and 0.4.

IV. CONCLUSION

1. Changes in land cover found on most of the land cover of green open space. 2001 green open space has an area of 11354.53 hectares, while in 2010 changed to 9250.4 ha, mean changes in land use on the green space of 2104.13 hectares or 49.47%.

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3. AHP model analysis indicates that the main actors in the management of green open space towards the construction of a green city in medan is the Government in this case local government with a total weight of 0.39. The community is a great actor with second priority with weights 0.30 and College is the third priority with weights 0,19. Private parties and NGOS have a relatively small weighting each by 0.8 and 0.4.

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