

Potential Development Region in Palangka Raya

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Abstract—Palangka Raya is located in Central Kalimantan. Palangka Raya also has been declared as a substitute for the capital of the Republic of Indonesia in the era of President Sukarno. In this paper will discuss how potential area city of Palangka Raya from the standpoint of geography. The methods used in this research are spatial method using Geographic Information System. The results of this research is the Land use evolution in the city of Palangka Raya included in C class, it means that the area dominated by peat land forest. The potential area in the city of Palangka Raya is for settlement, agricultural and conservation, given the vast peat land dominated areas of the city.

Keywords—Geographic information system, land use evolution, potential region

I. INTRODUCTION

Palangka Raya City is the capital of Central Kalimantan Province a center of town in the interior of Central Kalimantan. Palangka Raya City is one of the main path from west to east, crossed by the Trans-Kalimantan south axis. Urban development in the city of Palangka Raya certainly will trigger the development of settlements, commerce, industry, and tourism. This urban development should be laid out so that the desire to make the city of Palangka Raya as the capital of the Republic of Indonesia can be realized. The city, is also part of the Watershed KAKAB (Kahayan, Kapuas, and Barito).

The city of Palangka Raya official as its capital in 1957, at that time there was only one village namely Kampung Pahandut located in Kahayan River. Kahayan and Sebangau River is a major transportation at that time. This time not only river transport but also road construction Trans Kalimantan and causeway Kalimantan has reached 75%. Its area is 267.85 ha, a vast area for a provincial town, dominated with rural areas.

Assessment of potential region is necessary for the arrangement of space in order to create a sustainable land use so that sustainable development without damaging the ecosystem can be maintained.

II. METHOD

The potential of the region in this study is the potential for settlements, protected areas and agriculture, obtained by analysis of MCE (Multi Criteria Evaluation) working with the

principle of quantitative assessment, which is based on the assessment and ranking of relative weight by several criteria. MCE working with clustered, standardize, and weight of all indicators in a tree criteria. The software used in data processing and analysis is ArcGIS 10.1, all the data in the form of spatial data.

III. FINDING AND DISCUSSION

Institutional aspect is very important for the development of a city. Surely legality should be determined before the start of a process of development. Legislation that will ensure the sustainability of development need to be established and adhered together by policy makers and the public. In this case the socialization of the regulation is also needed so that people know about the plans that have been defined. Besides, it should also be noted sociopolitical developed in the community.

As a Rain Forest City, the construction of the city of Palangka Raya course must be in line with the sustainable development of ecological norms noticed with the carrying capacity of the region as well as economic and cultural conditions that exist in society Palangka Raya.

The city of Palangka Raya still a rural area with a population density of less than 50 inhabitants/km². This means 80% of the population density of the city of Palangka Raya included in the classification of low population density. While it is the most densely populated in the District Pahandut (Village Pahandut and Langkai) and Jekan Raya (Menteng urban village and Palangka Raya) with a population density of 1,000 inhabitants/km².

Land use widest is a swamp (1,911 km²), in almost all parts of the city of Palangka Raya, bush (417 km²) is located in the northern part of the city, open land (185 km²), settlement (160 km²) and mixed farms (92 km²), gathered into one area in the southeastern part of the city which is in District Pahandut and Jekan Raya. When viewed from the density of the population in both districts is a region of the concentration of population. Given the pattern of land use where open land immediately adjacent to the settlement can be concluded that the trend growth of the settlements will move to the use of open ground. This is due also that the area southwest of the city is protected area. Will be an issue in days to come if the direction of development settlement leading to the protected area. This can be prevented by the socialization of legislation on the plan next town. The community is involved actively in

keeping the territory in order to remain sustainable. Currently along the Rungan river, still dominated by the use of marshland. It must be kept in order to flood plain areas along the river should be left as a protected area, so that people will be spared from floods.

In the coming years a growing number of the population means that land awoke certainly continue to grow. The broader the land up getting a bit of land non-awakened. For that we need urban planning to prevent mismanagement in the city's compliance.

A. Potential Area for Settlement

Potential areas of settlement building assumption will not exceed a height of the four-storey building. So the ability of the foundation is not a parameter determining this potential region. The deciding factor is the potential for residential areas is a disaster area, because the assumption is the settlement should be free from the scourge of flood or fire, and the ground water, because the ground water is an important factor for the settlement as well as the slopes. Flat area is the best place for residential areas compared to the hilly area because it was feared that area will be prone to landslides. In the city of Palangka Raya only in the northern part of the corrugated. Parameter determining potential areas of settlement can be seen in Table 1.

TABLE 1. DETERMINATION OF POTENTIAL AREAS OF SETTLEMENT

Parameter	Criteria		
	Very Potential	Potential	Not Potensial
Land Use	Settlement, open space	Agricultural dry land, scrub	Forest, swamp
Slope	< 15 %	< 15, 15-40 %	> 40 %
Ground Water	Shallow	Shallow	Shallow-intermediate
Disaster Prone	No Hazard	No Hazard	Hazard

Its territory is spread in District Pahandut and Jekan Raya also in the north, east and west of the Rungan river. This development should also be made regarding the rules of the basic building coefficient so that in every neighborhood are not all built to be developed and undeveloped land, but still there is a page for greening. See Figure 1.

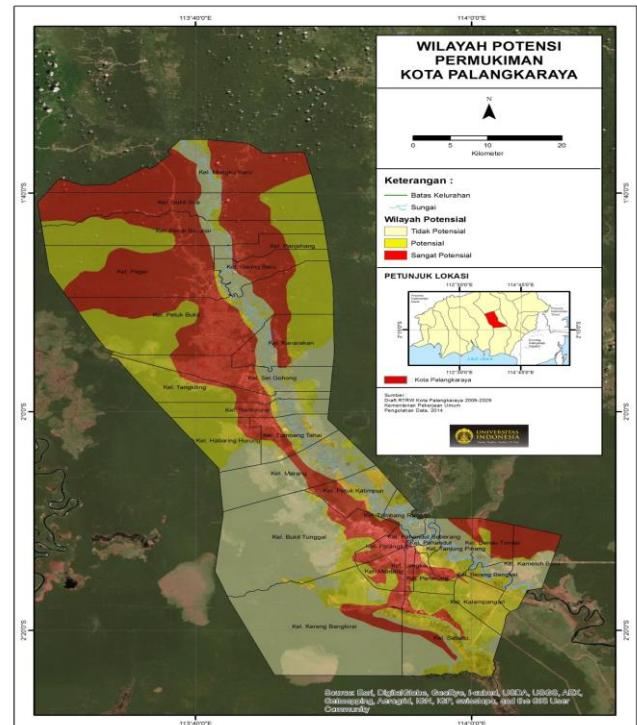


Fig. 1. Potential area for settlement

B. Potential Area for Agriculture

The potential areas for agriculture in the city of Palangka Raya is very small, only 94 km² or 3.3% of total city area, the rest is a region that is not potential for agriculture. The potential region not means it cannot be planted at all but it is not the optimum result and also need to get special treatment in terms of planting commodities. Determination of potential areas for agriculture, the greatest weight is on soil type, because the type of soil is an important element for the sustainability of the plant, although today there are plants that are grown not in soil media. See Table 2.

TABLE 2. DETERMINATION OF POTENTIAL AREA OF AGRICULTURAL

Parameter	Criteria		
	Very Potential	Potential	Not Potensial
Land Use	Dry land, scrub, open land	Dry land, scrub, open land	Forest, swamp
Slope	< 15 %	< 15, 15-40 %	> 40 %
Ground Water	Shallow	shallow	shallow-moderate
Soil	Alluvial, Gley Humus	Latosol	Organosol, Podsol
Location	Cultivation	cultivation	conservasi
Erosion	Low	low	Moderate, high

Distribution of potential areas for agriculture are in the west of the Rungan river, District Sebangau, Habang Hurung, Tumbang Tahai, Banturung, Sei Gohong, Gaung Baru, Petuk Barunai and Mungku Baru in Figure 2.

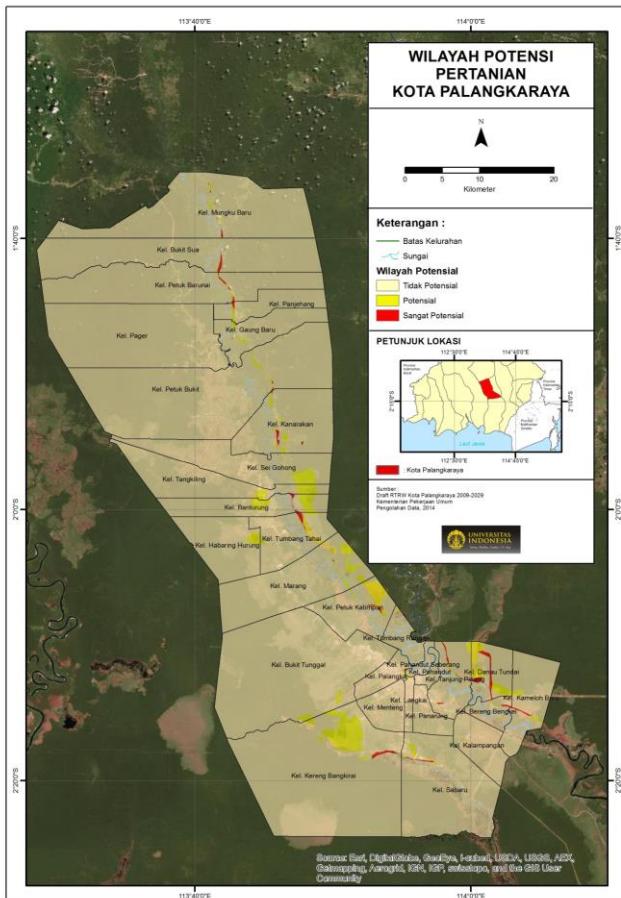


Fig. 2. Potential area for agriculture

C. Potential Area for Conservation

The potential area for conservation is an area that is designated as a protected area that is the area of riparian Rungan and Kahayan and Sebangau river, peat swamp area in the Kereng Bangkirai Village, Kalampangan Village, Bereng Bengkel Village, Sebaru Village, Lake Snooze Village, Kameloh Baru Village, Village of Tanjung Pinang, Petuk Katimpun Village, Village of Marang, Lake Tahai Village, Habaring Hurung Village, Tangkiling Village, Sei Gohong Village, Kanarakan Village, Petuk Bukit Village, Pager Jaya Village, Gaung Baru Village, Panjehang Village, and Petuk Barunai Village and water catchment area in the north of the city in district Rakumpit. See Figure 3.

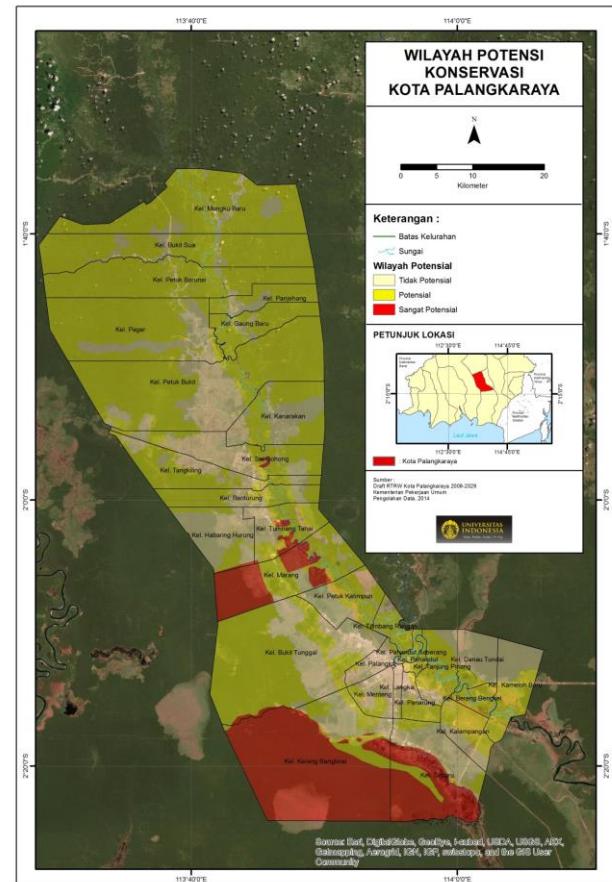


Fig. 3. Potential area for conservation

From the vast potential calculation for the conservation of an area of 2,098 sq km, or 73.8% of the total area of the city of Palangka Raya. This does not mean that the area can't be used for other purposes, but must pay attention and retain management of peat areas on an ongoing basis based information and an adequate understanding of the quality and characteristics, setting the ground water level that allows peat remain in wet conditions, area utilization peat must pay attention to the nature and characteristics of the peat so it does not exceed the threshold of damage to peat lands. Utilization of peat areas should be carried out without burning peat.

Regions that as far as possible not be used for any other use that is border river because it has important benefits for maintaining the preservation of rivers and lakes. The protection of river banks and lakes do to preserve the rivers and lakes of farming activities that may interrupt, destroy river conditions while securing the flow of the river.

D. City Structure

The structure of the city of Palangka Raya space includes two systems of the central area's system of government and system infrastructure region, where each system has the characteristics of each development.

System Region Government Center is divided into four regions, namely the old city area in District Pahandut and

Jekan Raya, Conservation Area in District Sebangau, Recreation Area in the district of Bukit Batu and Protected Areas in the flood plain along Kahayan and Rungan River and to the north in the District Rakumpit where the area designated as protected areas and supporting local ecology. The region is connected to the national road leading out of the city of Palangka Raya.

System infrastructure includes a region of land transportation system, river and air, raw water management systems, waste water management systems, drainage systems and flood control, solid waste management system and fire control system. Figure 4.

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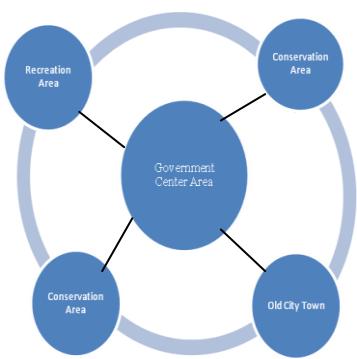


Fig. 4. City Structure

IV. CONCLUSIONS AND SUGGESTIONS

The potential area for settlement lengthwise from north to south, agricultural in south east n conservation in the northwest of area Palangka Raya. This could be detected with system information geography.

ACKNOWLEDGMENT

Thank you to Mr. Antony who has invited me to participate in the study of Macro-optimization of the city of Palangkaraya, in cooperation with Bappeda Palangka Raya City with Vocasi UI.

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