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Urbanization Phenomena of Small Inland City: Case of Parakan, Central Java

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Abstract. Urban development in Indonesia has been notably figured out with the development of coastal area as the place to provide regional-international trade having the control of labour. Hence, coastal cities and the surrounding areas are rapidly growing to urbanized area. However, rapid development with limited carrying capacity and climate related issues of coastal area has become the challenges of their development. Meanwhile, the growth of inland city also started to gain some attentions. In Central Java, for instance, the emerging of inland city centre has become a new phenomenon in urbanization. Parakan, one of the inland cities in Central Java selected as the study area due to the growing of rural-urban characteristic. This new inland city centre is a part of Temanggung Region, Central Java strategically located in the national road of Semarang to Purwokerto. The intention of this paper is to elaborate the growth of inland city in Central Java, especially in Parakan. The GIS is utilized to analyse the spatial changes in Parakan meanwhile the economic aspects are analysed to find out the indication of shifting economic activities within the city. From the analysis, it is found that changes in population appear in urban area as one of indicators of urbanization in Parakan inland city. As a consequence, the economic activities and the GDP also experience changes due to the growing of urbanized area. The growing of Parakan has been proven that the urbanization phenomenon in Central Java occurs in the inland city inferring that the urbanization pattern in Indonesia, specifically in Central Java, is not only limited to the growth of the coastal cities.

1. Introduction

The urbanization has been understood as the common phenomenon of urban development. According to the United Nation, the world urban population is expected to increase from 3.6 billion in 2011 to 6.3 billion in 2050 [1] which means that the growing urban population will reach 72% by 2050. Urbanization can also be simply understood as a demographic phenomenon [2]. However, the demographic phenomenon led to broader issues regarding with physical and environmental changes causing land use transformation. Land prices and land availability are the common factor behind land use transformation. Unbalance functional changes from farm use to non-farm uses emerge as the result of rapid modification and urbanization. Thus, the urbanization also leads to the environmental degradation in the new urbanized area.

In Indonesia, especially in Central Java, urbanization was started with the development of coastal city and the area surrounding it. For instance, the major big city in Central Java is Semarang City



which is also the coastal city. Despite the rapid growth of Semarang as a coastal city, coastal area of Semarang faces its own vulnerability. In contrast with the development, coastal areas are mostly prone to the environmental hazard such as climate change, which would affect the urban development. Most climate-related disasters, such as floods, tidal flooding, and windstorms, affect coastal areas [3]. Hence, the emerging of inland city development should be encouraged to bridging the balanced urban development of coastal area and other urbanized area surround them [4].

Parakan as one of inland cities in Central Java is a unique sample of urban development. The development of this small city is influenced by the existence of national road to the tourism area and the plywood industry. This strategic position has implications for the role of the city as a service center for the region behind it, where the urban area of Parakan tends to be a distribution city for the other cities as the provider due to insufficient sources of primary raw material, for which the other regions acts as the provider.

Growth and development of a region can also cause changes in spatial use of the area. Hence, this paper aims to further elaborate the urbanization of inland city in Central Java, especially in Parakan through analyzing the growth of the built up area, the changes of activities, growth of population in urban area, and the changes of GDP. By understanding the urbanization characteristic of the area, it is beneficial for the future development of Parakan as the growing inland city.

2. Methods

2.1. Study Area

The study area of this research is Parakan urban area. The urban area of Parakan includes Parakan Sub-district as the center of economic and government of Temanggung Regency. This sub-district is located on the slopes of Mount Sindoro-Sumbing and the urban area of Parakan sub-district is crossed by the route from Wonosobo Regency to Yogyakarta City/Semarang City and crossed by the route from Yogyakarta City to the Pantura Line/Jakarta. Urban and non-urban region in Parakan are identified through the latest data from the Central Bureau of Statistic (BPS) [5].

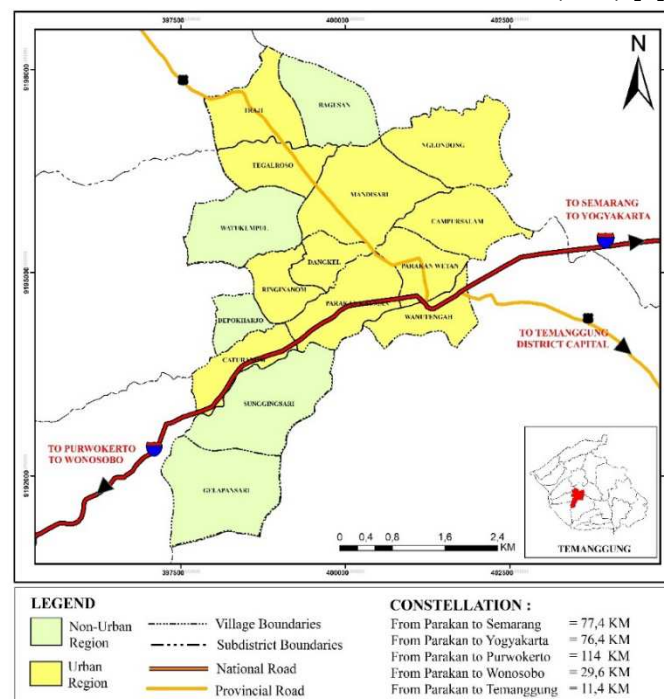


Figure 1. Study Area of Parakan

2.2. Data Collection

The data for this research was spatial data and socio-economic data of Parakan. The spatial data consist of the built up area maps from the year of 1990 to 2016 which were derived from the Google Maps. The maps are from the year of 1990, 2000, 2010 and 2016 of Parakan indicating the built up area. Besides, the data of rural-urban status from the Central Bureau of Statistic in the year of 1990, 2000, and 2010 are also utilized to analyze the growth of Parakan inland city. Meanwhile, economic data are derived from the Central Bureau of Statistic.

2.3. Methods

There are two methods to further elaborate the urbanization in Parakan, through the Geographical Information System (GIS) analysis and from the analysis of economic and activities aspect. The series of maps are processed in GIS to see the changing of built up area. Meanwhile, descriptive analysis was applied to analyze the changing economic activity and the growth of GDP in Parakan.

3. Results and Discussions

3.1. The growth of Parakan

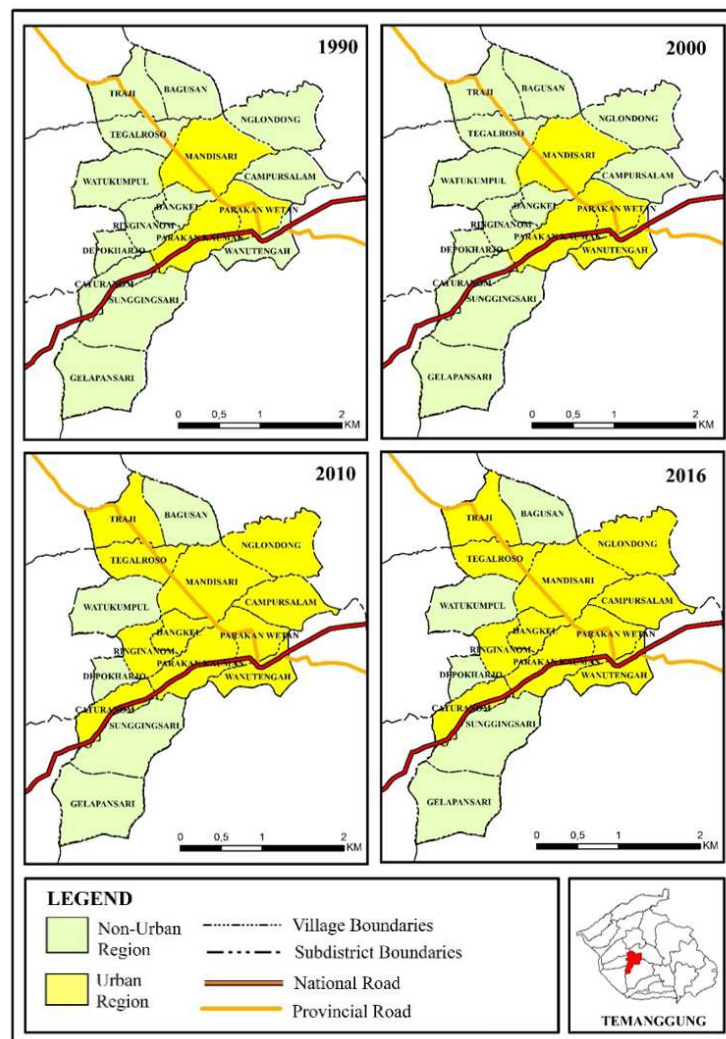


Figure 2. Urban and Non-Urban Region of Parakan from 1990-2016

The number of population in Parakan in 2017 was 52.346 with total of 42.089 people living in urban area meaning that more than 80% of people in Parakan are living in urbanized area. Figure 2 illustrates the number of growing urban village of Parakan. Based on the rural-urban data of BPS, the number of village with urban status are growing from only three villages in 1990 to eleven villages in 2016. The change of status from rural to urban mostly occurs in the village directly crossing to the national and provincial road. There are additional 8 villages which were adjanted to the national and provincial road that changed from rural to urban villages within 1990 to 2016.

Table 1. Built up Area in Parakan (ha)

Year	Built up Area (ha)
1990	230,74
2000	292,33
2010	347,51
2016	406,45

In line with the growing number of urban status of village in Parakan, the growing number of urbanized area in Parakan is also supported with the growth of the built up area (as referred to Table 1). By viewing the maps of built up area in Parakan from time to time, the growing of built up area as seen in Figure 3, is mostly along the national and provincial road. Those roads are the route of Wonosobo Regency to Yogyakarta City/Semarang City as well as crossed by the route from Yogyakarta City to the Pantura Line/Jakarta. Those roads attract many passerby hence the route connects the tourism activity in Wonosobo Regency, Borobudur Temple (Magelang, Central Java), Yogyakarta City and alsoto other cities like Purwokerto City to Semarang as the capital city of Central Java.

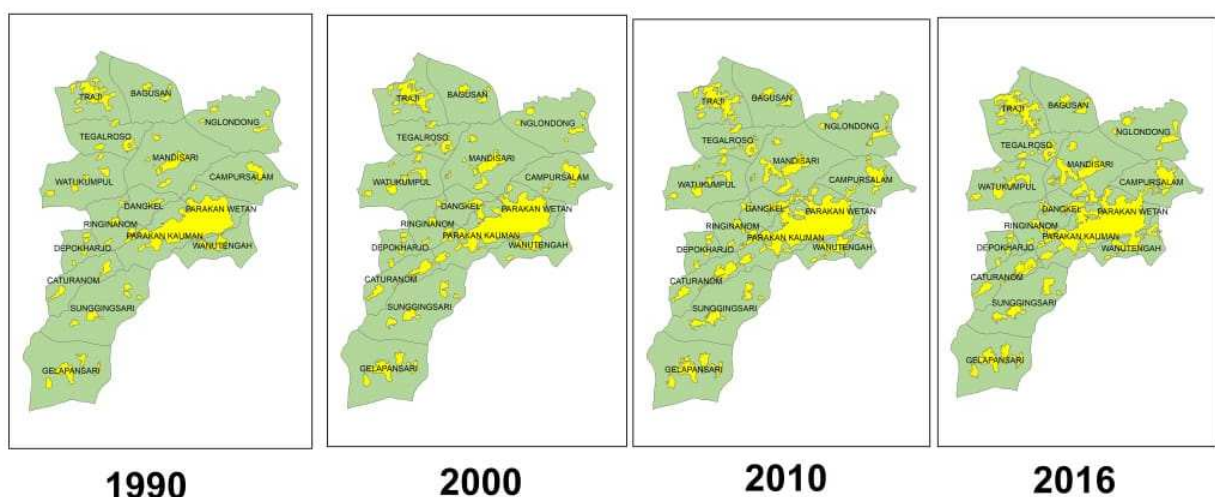


Figure 3. Built-up area Changes of Parakan Inland City

3.2. Activities and GDP Changes of Parakan

The existence of national and provincial road in Parakan is essential to the urbanization in Parakan. Figure 4 indicates the land use changes along the national road. It is apparent on Figure 4 that the lands use along the national road covers industrial cluster, central market and shop house. The growing of small industrial area is spreading along the road to Purwokerto and Wonosobo Regency. These are the changing land use from agricultural area to the industrial area although the numbers are not quite high. However, it is obvious that the changes are potentially getting wider along the road. Meanwhile, there is also growing of shop house along the national road, owned by private household

which find the opportunity in selling goods along the strategic place. The national road crossing Parakan is considered as strategic place for the growing of shop house due to the numbers of passersby of the tourist from and to the nearby tourism area which are in Dieng Plateu (Wonosobo Regency), Borobudur Temple (Magelang Regency), and tourism city like Yogyakarta. The shop houses in Parakan are mostly selling the traditional goods such as local souvenir and traditional snacks made by local people in Temanggung Regency especially from Parakan.

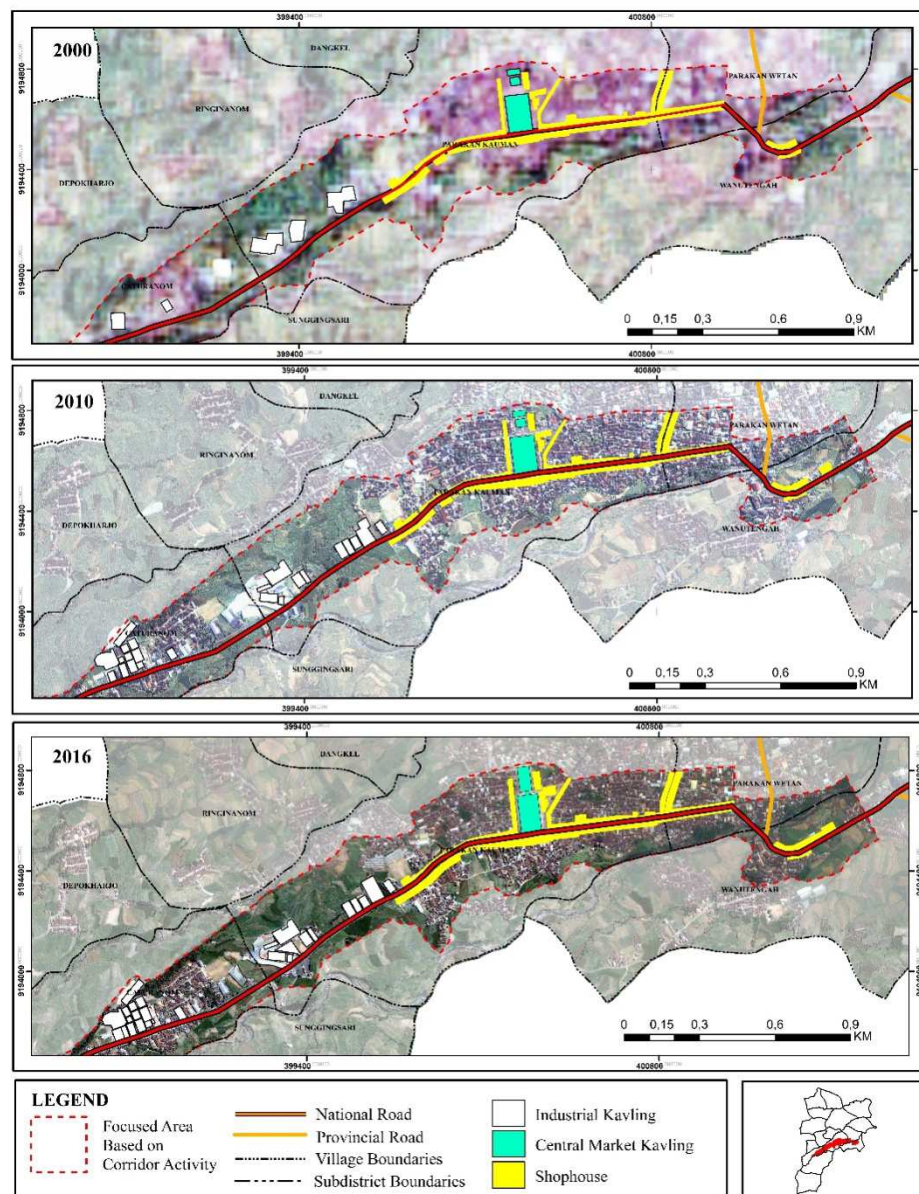


Figure 4. Spatial Changes alongside the National Road in Parakan

From the socio-economic aspect, there are also the shifting of economic sector within 2010-2014. Table 1 illustrates the percentage of economic sector from Gross Domestic Product (GDP) of Parakan. Table 2 depicts that the agricultural sector is slightly decreasing from 17,33% in 2010 to 12,98% in 2014. In contrary, the processed industry sector has been growing from 23,95% in 2010 to 25,55% in 2014. In line with the processed industry, the building/construction as well as trading, restaurant and hotels have been growing more than 1% from 2010 to 2014. The percentage indicates that the

agricultural sector in Parakan slightly decreases to the secondary and tertiary economic activities such as industry, trading, restaurant and hotels (Figure 5).

Table 2. The Percentage of GDP for each sectors in Parakan, 2010-2014

Economic Sector		2010	2011	2012	2013	2014
Primary	Agricultural	17,33	14,14	14,13	13,82	12,98
	Mining	0,55	0,51	0,46	0,46	0,44
		17,88	14,65	14,59	14,28	13,42
Secondary	Processed Industry	23,95	25,03	25,57	25,48	25,55
	Gas, Water and Electricity	1,09	1,12	1,12	1,12	1,11
	Building/construction	4,48	4,54	4,71	4,73	4,95
		29,52	30,69	31,4	31,33	31,61
Tertiary	Trading, Restaurant and Hotels	23,31	23,82	23,93	23,64	24,14
	Transport and Communication	10,09	10,35	9,87	10,02	10,09
	Finance, Rental and Service Company	6,3	6,82	6,74	7,11	7,31
	Services	12,91	13,67	13,48	13,62	13,43
		52,61	54,66	54,02	54,39	54,97

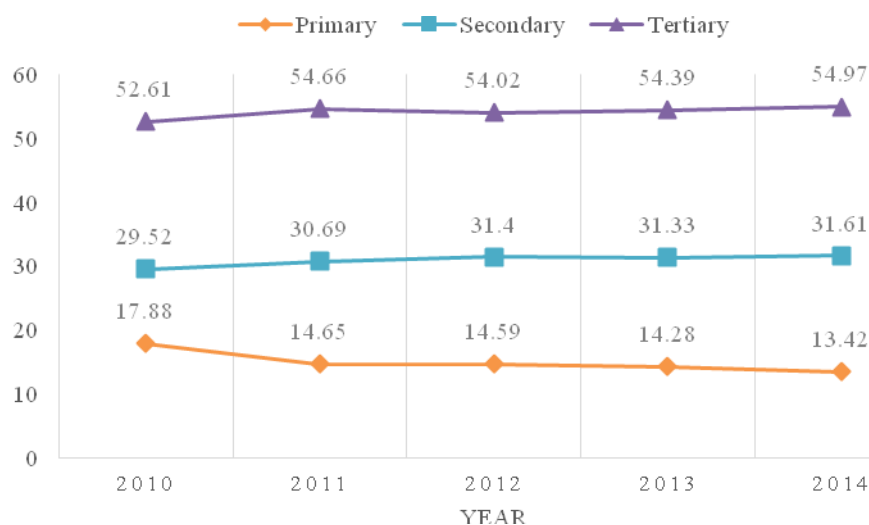


Figure 5. GDP Percentage for Each Economic Sector

4. Conclusion

This paper presents the findings that the urbanization occurs in the small inland city. Many scholars have been proved that the urbanization in Indonesia occurs in the coastal area [6][7]. However, the elaboration of the growth of the built up area, the changes of activities, growth of population in urban area, and the changes of GDP in Parakan indicate that the urbanization phenomenon occurs in the small inland city such as in Parakan, at Central Java.

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