

RESEARCH PAPER

Morphology of Garut City: Spatial Planning and Transportation System

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This paper examines the morphological growth of Garut City in historical perspective. To achieve this goal, this study used a historical method that includes four stages, namely heuristics, criticism, interpretation, and historiography. Garut city has been known as a tourist destination since the Dutch colonialism and became the main residential area of Europeans living on the island due to the existence of plantations in the South Garut region. These conditions make Garut City an urban area that has special features compared to other urban areas in Garut Regency. This study aims at addressing the following question: 1) How does the population influence the physical changes (morphology) of Garut City? 2) How was the railroad construction in Garut City during the Dutch colonial period? And 3) How is the influence of cosmology on the spatial layout of Garut City? The purpose of this study is to analyze the effect of population growth on the physical changes (morphology) of Garut city. The study seeks to explain the road traffic of Garut City and the factors that influenced spatial planning. The results showed that Kota Intan was the early name for Garut City, the center of government, economy, education, social, and culture of Garut Regency. The results also revealed that despite its rapid and dynamic morphological growth, Garut City still shows some traditional and colonial characteristics. Although its ancient road network is made in a way that does not interfere with the activity or movement of goods and services, its high population growth and development inequality prevent it from running properly.

Keywords: Garut City; City Morphology; Spatial Planning; Transportation and Railroads

Introduction

Morphologically, a city can be formed naturally and through planning. In the former case, the city grows without planning, but later on, grows bigger due to its fertile area and dynamic population (Nasrullah, 2013). While in the latter, a city is built through planning at the behest of the ruler (native or colonial) for certain interests (Pauty in Antariksa, 2008). Cities in East *Priangan* belong to the type of city that was built on the orders of colonial authorities. Changes in Garut City's urban planning must be analyzed to fully understand its morphology. Garut City as the capital of Garut Regency formerly knowns as Limbangan Regency (Staatsblad van Nederlandsch-Indie, 1913: 356; Besluit van den Gouverneur-Generaal van Neder-landsch-Indie van 7 May 1913 No. 60). These changes include socio-cultural and environmental aspects. This is in line with the study of Elissef (1976: 90) who argues that in the past, urban planning was not achieved instantly, but through a step by step process so that sequences can be identified in the formation of the city (in Antariksa, 2008). These changes in urban spatial structure are influenced by three factors, namely the basis of favorable ecology, advanced technology (Sjoberg, 1965).

In the early 20th century, cities in Indonesia had four historical characteristics. First, traditional cities were characterized by the spatial division of land-based on the social status with the center in the palace or pavilion. Second, there was a sector of foreign traders (especially Chinese traders) that colored the life of the city with its rich buildings, economic activities, and its own socio-cultural life. Third, the colonial sector with fortresses and barracks, offices buildings, residences, and houses of worship. Fourth, the indigenous middle-class sector that is found in villages (Kuntowijoyo, 2003: 63).

Understanding the development of city morphology can help understand the mindset of its community because, as mentioned earlier, urban planning is a manifestation of the expression of the socio-cultural system of the people living in the city. However, many of today's cities in Indonesia have been planned regardless of their historical background. The impact was the emergence of urban planning which seemed to have no historical ties with the city behind the term "modern city". There are often cases of modern city spatial planning in cities that have a long historical root at the expense of past urban planning so that the ties of society with their past are interrupted (Akihary, 1988). The study of a city's morphology and spatial planning not only helps better understand a city's historical development and DNA but also and more importantly how future steps can be taken toward better plannings of the city. This study argues that city planning regulations of Garut city were not fully implemented after Indonesia gained independence from the Dutch in 1945 due to a functional shift from traditional to modern urban planning. As argued at the outset of this paper, the purpose of this study is to analyze the effect of population growth on the physical changes (morphology) of Garut City. The study seeks to explain the road traffic of Garut City and the factors that influenced its spatial planning.

Research Methods

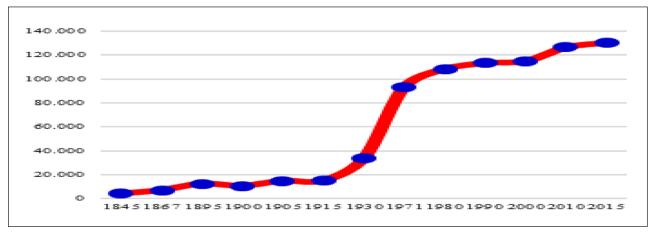
The research method used in this study is the historical method, a collection of techniques and guidelines used to research and write histories of the past, as the authors investigate and explain the growth and urbanization of Garut City around the 19th and 20th centuries. The historical method is used to depict the pass of Garut City. Secondary and primary sources are drawn on to construct an accurate and reliable picture of past events and environments. The imaginative reconstruction of the process is called historiography "(Gottschalk, 1968: 48). At the operational level, the historical method is carried out in four stages (Garraghan, 1957; Renier, 1997; Sjamsuddin, 2007). The first is heuristics, namely the process of finding, discovering, and gathering historical sources that are relevant to the subject matter being studied. Heuristics are carried out in various libraries, including in the National Library of the Republic of Indonesia (Jakarta), Army Central Library (Bandung), West Java Provincial Library (Bandung), Central Library of Padjadjaran University (Bandung), Universiteitsbibliotheek Lei-den, Koninklijk Bibliotheek (Den Haag), and Bibliotheek Museum Volkenkunde (Leiden). Besides, heuristics are carried out by searching for sources at the National Archives of the Republic of Indonesia (Jakarta), Nationaal Archief (The Hague), and the Tropenmuseum Royal Instituut (Amsterdam).

Field research was conducted to collect historical traces in the cities that were studied in this study. When historical resources have been gathered, the process of the historical method continues with both external criticism (to determine the authenticity of the source) and internal criticism (to determine the credibility of the source).

Results and Discussion Demography

One important aspect of city morphology is population problems. Cities or urban areas will develop depending on population growth. Especially with its position as a political, economic, social, and cultural center that attracts the surrounding population to migrate. With its position as the center of political, economic, social, and cultural activities, Garut City is the main attraction for migrants. In 1845, the population of Garut City was estimated to 4,068 Inhabitants and increased to 6,984 in 1867 as shown in Picture 1. This means, there was an increase in the number of about 71.68% in the period of 22 years or increased by about 3.26% per year. In 1867 residents of Garut City (by Blekker called the District of Negri) in 1867 only numbered 6,984 inhabitants consisting of 14 souls from the European group, 6 souls of the Chinese group, 36 souls of the Other Foreign East, and the rest were Indigenous groups. With an area of about 0.25 geogrphische-mijlen (g.m.) or around 13.72 km², the population density of Garut City is around 509,222 people/g.m. (Blekker, 1869: 486-487; 494; 500-503).

The population of Garut City in 1915 was 15,000 people (Encyclopedie van Nederlandsc-Indie, 1917: 740). Fifteen years later, namely in 1930, the population of Garut City numbered 33,612 people, consisting of 31,373 Bumiputra people, 454 Europeans, 1,683 Chinese people, 102 other Eastern Foreigners (Arabic, Indian and Japanese) (Volkstelling 1930, 1933: 114–115). According to the rules of the Dutch East Indies Government, citizens from foreign Eastern nations, especially Chinese, must live in parts of the city by occupying designated areas and may only leave the area if they get permission from the Dutch East Indies Government. The Chinese immigrants consisted of the Hokkien, Teo Chiu, Hakka (Khek), and Cantonese. The only livelihood of ethnic Chinese groups in Garut City is



Picture 1: Garut's Population increase from 1845–2015.

Source: P. Blekker. 1869. Nieuwe Bijdragen tot de Kennis der Bevolkingstatistiek van Java published in Bijdragen tot de Taal-, Land-en Volkenkunde van Nederlandsch-Indië, 16de Deel, 4deAfl., [3e Volgreeks, 4e Deel]; Volkstelling 1930 Inheemsche Bevolking Van West-Java/Department of Van Landbouw. 1933; Encyclopedie van Nederlandsc-Indie, 1917: 740; Regeeringsalmanak voor Nedderlandsche-Indie. 1900, 1905 and 1910; Garut Regency in Figures 2000, 2010 and 2015.

trading. At the beginning of his arrival in Garut City, the livelihoods of ethnic Chinese groups were indeed varied, such as the Hokkien people trading, Teo-Chiu, and Hakka (Khek) as coolies or laborers, and Cantonese as artisans. Most of the group's livelihoods in Garut City in the 1920s were trading (Sofianto, 2001: 19).

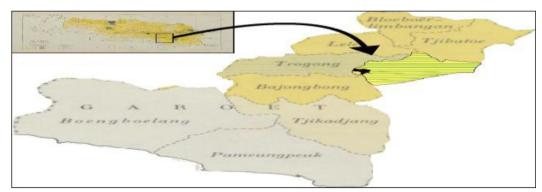
The arrival of Arab and Pakistani immigrants to Garut City was carried out at different times. Arabs arrived in Garut City around 1885 (Van Den Berg, 1989: 68). Whereas Pakistanis (at that time were called Indians) in the 20th century (around the 1920s) (Dyck, 1992: 62). The number of Arabs coming to Garut City was not as high as in other cities on Java Island. They were only 24 people, consisting of 8 men, 3 women, and 13 children. Only 6 people were born in Arabia, while others were born in the archipelago (Van Den Berg, 1989: 68). Pakistanis (Indians) first came to Garut around the 1920s from the Pandori Bibi/Shekupura region of the Punjab region. They were Abdullah bin Faiz Bakhz with his three sons, Nazir Ahmad, Abdul Majid, Bazir Ahmad. They opened a Bombay Shop in Garut City (Anggapradja, t.t.; Lubis, et al. 2000). In 1930, the Dutch East Indies Government conducted a population census throughout the Dutch East Indies. The results of the census show that population density in Garut District is in the range of 500-750 people/km², as seen in **Picture 2**. The population census of 1930 showed that the population of Garut District was 33,612. Thus, within a period of 15 years (1915–1930), the population of Garut District increased by about 124.08% or an average of 8.27% per year. With that much population density, Garut District together with Tarogong District has densities above the average compared to other districts.

Population data of Garut City in 1931–1970, have not been found so that the demographic development cannot be reconstructed. In 1971, the population of Garut City amounted to 93,340 people or if averaged, in the period 1930–1971, the population of the City of Garut amounted to around 4.33% per year. The increase in the population of the City of Garut, in the period 1971–2015, was only 0.9%. That is, the Government of Garut Regency can hold back the rate of population growth in Garut City so that an uncontrolled population explosion can be avoided. However, to the residents of Garut City Subdistrict, it was far higher than the other sub-districts.

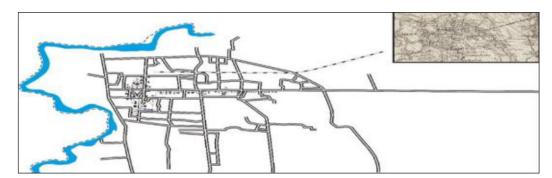
Spatial Planning and Cosmology

In the early twentieth century, the urban spatial structure of Ciamis shows a city pattern that is straight to the center of the square which borrows the term R. G. Gill (1995: 200) referred to as horizontale ladderstructuur (horizontal ladder structure). City patterns such as show that the city center is in the square and government buildings and settlements in stages are placed stretching eastward to form a horizontal urban area.

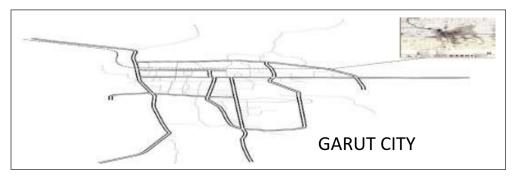
However, in its development, the spatial pattern of Garut City is vertikale ladderstructuur (vertical ladder structure) because the administrative area of Garut City extends vertically (north-south). Changes in the city spatial pattern do not have an impact on changes in important buildings in urban spatial planning whose placement is based on the cosmological concept. Changes in the layout of Garut City in the colonial period and the independence period can be seen in **Pictures 2, 3,** and **Map 1**.



Map 1: Garut's Population Density in 1930. Source: Volkstelling 1930 Inheemsche Bevolking Van West-Java/Department of Van Landbouw. 1933.

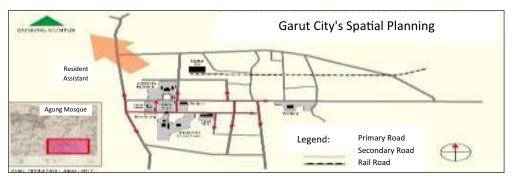


Picture 2: Spatial Planning Pattern of Garut City in 1909. Source: Java. Preanger-Regentshappen. Garoet, 1909. Coloniaal Collectie (KIT). Inv. Nr. KIT542201 (04854–220). Leiden: Universiteitsbibliotheek Leiden.



Picture 3: Spatial Planning Pattern of Garut City in 1978.

Source: Regency/Dati II Garut. 1978. Spatial Planning of Garut City. Garut: Regency/Dati II Garut and Directorate General of Human Settlements in the Department of Public Work.



Picture 4: 1978.

Source: *Java. Preanger-Regentshappen. Garoet, 1909.* Coloniaal Collectie (KIT). Inv. Nr. KIT542201 (04854–220). Leiden: Universiteitsbibliotheek Leiden.

Judging from the aspect of cosmology, the spatial layout of Garut City still shows the influence of traditional city spatial planning. In the concept of a traditional city, the central spatial structure of the government must be formed as a miniature of the macro-cosmos (Dati II Garut, 1978). In this universe, the magical center is located on Mount Mahameru, where Lord Indera lived as the king of the living gods, as can be seen in **Picture 4**. The human world is a microcosm that reflects life in the macrocosm. Therefore, there must be Mahameru Mountain as a magical center for the city (Geldern, 1972: 4–5).

In traditional city spatial planning, 'alun-alun' is the central point of the local government and its buildings. In the Encyclopedie van Nederlandsch Indie (Paulus, 1917: 31) it is written that almost every house of the regency has a large lawn and is surrounded by banyan trees. This field is called 'alun-alun'. In West Java, there is also a small square in front of the village head's house, but not every square has a banyan tree. In pre-colonial times, the square was an inseparable part of the palace or residence of the regional authorities. The square is a sacred area where the king and his subordinates meet or if in the area between the regent and his subordinates. Various ritual events, carried out in the square so that the square can not be equated with the term "city park". The square is a traditional city center surrounded by sacred buildings symbolizing the microcosm power center and the mosques as a symbol of the macrocosm power center usually facing north or a mountain considered sacred (Handinoto, 1992).

In the colonial period, the Dutch East Indies Government allowed the existence of the square because it was considered to be usable for its political interests. However, the function of the square was little by little shifted because it began to be used as a profane activity. The square is often used as a center for the activities of the urban community, including sports, performing arts, and so on. For its political interests, the Dutch East Indies government built houses and/or resident assistants around the square as well. This was done because the colonial government understood very well that the square with sacred buildings around it was the center of traditional power (Handinoto, 1992).

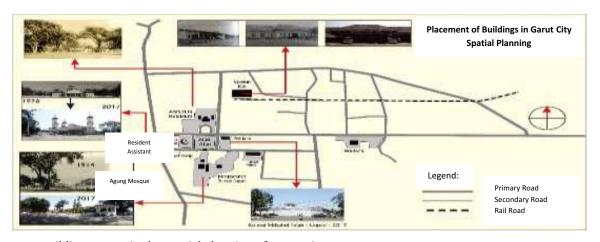
When the Unitary State of the Republic of Indonesia or Negara Kesatuan Republic Indonesia (NKRI) was established, the function of the square was completely changed because it was no longer a sacred place (meeting place of regents with subordinates or people) but functioned as a city park as shown in **Picture 5**. This happened in the Ciamis square which is currently known as the Rafflesia Park because in the middle of the square there is the Rafflesia Flower monument (Carrion Flower). In Garut, the square served as a center for community activities. Alun-alun in both cities has been turned into a public space. It no longer serves as a sacred place (Handinoto, 1992). When Islam entered as a new religion replacing Hinduism/Buddhism, the city spatial concept was not removed.

Although the spatial layout of the government was kept, a mosque was built on the west side of the square. Thus, in the spatial layout of the central government, the



Picture 5: Garut Square in 1890 & 2017 respectively.

Source: Plein, vermoedelijk de aloen-aloen te Garoet. 1890. Colonial Collection – KIT. Code Image 106902. Leiden: Bibliotheek Universiteit Leiden – KITLV Collection; Documentation of the Research Team, 2017.



Picture 6: Building Layout in the Spatial Planning of Garut City.

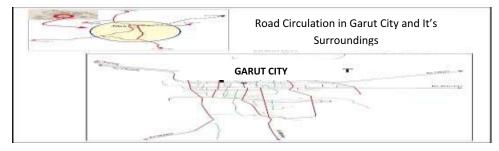
Source: Java. Preanger-Regentshappen. Garoet, 1909. Coloniaal Collectie (KIT). Inv. Nr. KIT542201 (04854-220). Leiden: Universiteitsbibliotheek Leiden; Plein, vermoedelijk de aloen-aloen te Garoet. 1890. Colonial Collection – KIT. Code Image 106902. Leiden: Bibliotheek Universiteit Leiden – KITLV Collection; De regentswoning te Garoet. 1900. Colonial Collection – KIT. Code Image 116454 and Woning van de assistant-te te Garoet. 1904. Colonial Collection – KIT. Code Image 10625. Leiden: Bibliotheek Universiteit Leiden – KITLV Collection; Documentation of the Research Team, 2017.

pendopo (the residence of the regent) remains in the south of the square overlooking Mount Mahameru which is located in the north. Another element is the market built in the south of the pavilion or east of the square, as can be seen in **Picture 6**. The elements of the colonial city color the urban spatial structure in Indonesia. The city layout applied in Java was standardized by the Dutch East Indies Government, which maintained a traditional urban spatial planning by placing residence buildings in the north of the square (Handinoto, 1992: 41). Besides, the

colonial city nuance at Garut Square grew stronger due to the construction of the Karel Frederick Holle (owner of a tea plantation in South Garut) Monument (see **Picture 7**).

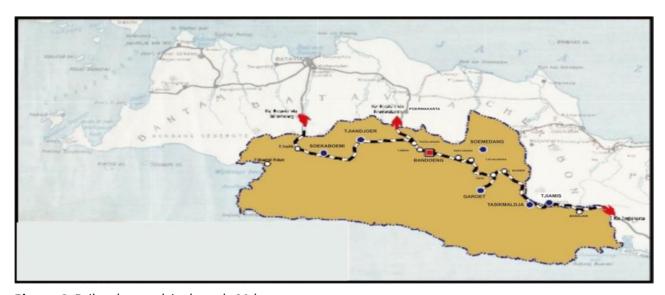
Road Circulation

In the 19th century, Garut City's transportation infrastructure was generally in the form of compacted land roads. As can be seen in **Picture 8**, the parts of the city are connected to the city center by roads that form right angles and that are built relatively parallel to form a radially sym-



Picture 7: Road Circulation in Garut City and Surrounding Areas in 1922.

Source: Java. Preanger-Regentshappen. Garoet, 1909. Coloniaal Collectie (KIT). Inv. Nr. KIT542201 (04854-220). Leiden: Universiteitsbibliotheek Leiden; Regency/Dati II Garut. 1978. Spatial Planning of Garut City. Garut: Regency/Dati II Garut and Directorate General of Human Settlements in the Department of Public Works Republic of Indonesia.



Picture 8: Railroad network in the early 20th century.

metrical road pattern extending vertically. Its condition improved as the asphalt was found to harden the road. The road network in the city of Garut is generally good so that it facilitates the movement of people and goods Several main roads are built quite wide, including Pengkolan Road and Regency Road (see Picture 9). Entering the twentieth century, the infrastructure of Garut City was growing because it was one of the tourist destinations. Besides, the number of plantation areas in South Garut makes Garut City a place to store plantation products (De Pengkollan te Garoet, 1905; Hoofdweg te Garoet, 1930). This requires adequate infrastructure and transportation facilities.

In addition to being connected by road (for horses and motorized vehicles), Garut City is also connected by railroads. In Indonesia, the idea of building a railroad has emerged at least since the 1840s. However, this idea could only be realized in 1871, along with the increasingly urgent need for transportation to cover plantation products after the enactment of the Agrarian Law of 1870. In West Java, the earliest constructed railroad was the Batavia-Buitenzorg line inaugurated in 1873. From Buitenzorg, the railroad was extended to Bandung in 1884. In the second decade of the 20th century, the railroad extended from Bandung East Priangan, as can be seen in Picture 10.

This Bandung-Banjar railroad network, through the North Garut Regency area, includes Cibatu, Cipeundeuy,

and Malangbong. This railroad does not cross the area of Garut City because it is not supported by geographical factors. To support the mobility of people and goods, especially plantation products that are widely found in the Regency, the Dutch East Indies Government built the Garut City railroad line to Cikajang. The management of railroads in the Dutch East Indies is carried out by the government that forms the Staatsspoor-wegen company or commonly called S.S. or by the private sector, among others, the Nederlandsch Indische Spoorweg Maatschappij (NISM). As in Europe after the industrial revolution, stationing as a new type of building became very important in urban spatial planning. With the progress of the railroad in Indonesia in the early 20th century, which almost reached all cities in Java, the placement of train stations in both large cities and regencies became an important thought. In the late 19th and 20th centuries, railroad transportation became one of the most important means, both freight and human transportation (Hadinoto, 1999: 48).

With the construction of railroad transportation lines, the existence of a train station is a new building on Java. The problem that arises has nothing to do with the architecture or building material but the location of buildings within the urban spatial structures. The rail system in Indonesia is not as advanced as in Europe, especially in the

Netherlands where most of the railroads and train stations are underground (subway) for safety and comfort reasons. In Indonesia, all the railroads are built on land so special locations are required to avoid disturbing other land traffics. The Garut – Cibatu rail traffic was built parallel to the primary road so that it did not disturb the mobility of people and goods using land transportation. After Indonesia gained independence, rail traffic declined dramatically due to the rapid progress of other land transportation systems. The train has always been a foreign transportation system to many Indonesian, even those in urban areas. In Garut city, the condition is even worst because the two lines built during the Dutch occupation i.e., the Garut – Cibatu and Garut - Cikajang rail lines have been closed by the Railroad Service Company or Perusahaan Jawatan Kereta Api (PJKA). The closure was caused by people's disinterest in using train transportation services. Besides, efforts to maintain the train as a means of mass transportation were not carried out optimally so that there was also a decline in the quality of services. That is, the community of train service users felt uncomfortable and insecure when using trains. However, at the end of the twentieth century, as land transportation became more crowded, the need for mass transportation such as trains has resurged.

Conclusion

It is important to note that the urban spatial structure of Garut City, especially from the early years of its formation to the middle of the 20th century, is still influenced by its traditional and historical backgrounds unlike many cities in modern Indonesia. Administrative buildings in Garut City are built based on the relationship between the macrocosm and the microcosm. Administrative buildings still face Mount Guntur, which is located southwest of Garut City. In this concept, the mountain that produces hot water is considered to be the mahamer for downtown Garut. From an urban spatial planning viewpoint, the old Garut City Square remains the center of the city even though its function has shifted from sacred public space to profane public space. Evidence of this is when Ciamis Square was turned into a city park by the government of Garut Regency. The most interesting and unprecedented point made by this study is that the Dutch colonial government had well planned the development of Garut City, but the uncontrolled post-independence population growth has had a rather negative impact on the morphology of the city. Many colonial city planning regulations were not fully implemented after Indonesia gained independence from the Dutch in 1945 due to a functional shift from traditional to modern urban planning.

Competing Interests

The authors have no competing interests to declare.

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