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Green Open Space System Efforts to Increase The Area Of Green Open Space in Urban Areas: A Case Study of Tangerang District, Tangerang City Banten

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Abstrak

Selama pandemi, ruang terbuka hijau sangat penting sebagai tempat untuk bersosialisasi dan menjalankan fungsi ekologis, sehingga seharusnya mencakup 30% dari suatu wilayah di kota. Penting untuk mengintegrasikan ruang-ruang ini dengan elemen-elemen lain dalam kehidupan perkotaan agar benar-benar layak huni dan hidup. Perencanaan ruang terbuka hijau sering kali menjadi yang terakhir dalam rencana kota, dan hasilnya sering kali adalah sistem yang sangat terfragmentasi untuk mengakomodasi lahan yang telah dialokasikan, diakuisisi dengan biaya tinggi, atau dibangun. Saat ini, hanya 15 persen dari Kabupaten Tangerang yang memiliki ruang terbuka hijau, dan penggunaan lahan sering kali terisolasi. Penelitian ini bertujuan untuk memetakan ruang terbuka hijau di Kabupaten Tangerang. Dengan pendekatan GRS: Menggunakan penggunaan lahan sebagai sudut pandang, studi ini akan mengidentifikasi berbagai potensi lahan yang kurang dimanfaatkan—seperti lahan peternakan yang tidak terpakai dan area lain dengan potensi pengembangan—yang dapat memberikan peningkatan ruang terbuka hijau antara 15 hingga 30% atau lebih. Hasil penelitian ini akan menjadi data sumber untuk mengembangkan konsep perencanaan ruang terbuka hijau di Kabupaten Tangerang, Kota Tangerang, Banten.

Kata kunci: *Ruang Terbuka Hijau, Perencanaan Perkotaan, Tangerang, Penggunaan Lahan, Pembangunan Berkelanjutan*

Abstract

During the pandemic, green open spaces are important for venues to socialize and perform ecological functions so that it should account for 30% of an area in a city. It is important to bring these spaces together with the other elements of urban life so that they are truly liveable, and alive. Green open space planning commonly comes last in urban plans and the result is often a highly fragmented system to fit around land which has already been allocated, acquired at high cost or built up. Currently, only 15 percent of Tangerang District has green open space and the use lots often isolated. This research is intended to map green open spaces in Tangerang District. The GRS Approach: Using land use as a lens, the study will pinpoint a range of low hanging fruit—underutilized husbandry lands and other areas with development potential—which could account for 15 to 30% or more increase in green space. The results will be the source data for developing green open space planning concepts in Tangerang District, Tangerang City, Banten.

Keywords: *Green Open Spaces, Urban Planning, Tangerang, Land Use,Sustainable Development*

INTRODUCTION

In accordance with Republic of Indonesia Law No. 26 of 2007 concerning Spatial Planning, in article 29 point 2 it is stated that the proportion of green open space (RTH) in urban areas is at least 30% of the total area of the city. The area includes 20% in the form of public green open space and 10% private green open space. Not all cities in Indonesia have an area of 30% green open space of the total area. One of them is the City of Tangerang Banten, although it is

nicknamed the city of a thousand parks, its green open space is still within the range of 15% of the total area.

Green open space is one of the elements of the urban landscape whose implementation can vary, whether in the form of city parks, environmental parks, urban forests, river banks, railroad banks, green roads and others. The role of open space is quite diverse, starting from urban decoration elements to ecological space and city identity, so that green open space can become branding for a city, apart from being the lungs of the city. Currently research or studies on green open spaces are very varied, not only from the perspective of landscape architecture, even social sciences are starting to pursue studies of green open spaces as social spaces and behavioral settings.

The existence of green open space in Tangerang District as a whole is still 15% and land use has not yet formed a green open space system, so that one green open space with another green open space still stands alone. This research is intended to map the existence of green open spaces in the Tangerang district, so that an overview or profile of green open spaces is obtained. Furthermore, through the green open space system method with a land use approach, green open spaces will be identified that have the potential to be developed, so that it is expected to increase the area of green open space by more than 15%. These findings can later be used as a basis for drafting a green open space planning concept for the Tangerang District, Tangerang City, Banten.

Based on the survey results, several issues have been identified regarding the development of green open spaces in Tangerang District. First, can the green open space system method be applied based on land use as an effort to increase the area of green open space? Second, what types of green open spaces can be utilized for establishing a green open space system in Tangerang District? This research aims to inventory the types of urban green open space based on land use in Tangerang District and map the types of green open spaces in Tangerang sub-district to identify profiles of green open spaces that have the potential to be developed as a system. Additionally, this study aims to develop a concept for expanding green open space using the green open space system method as an effort to increase the area of green open space in Tangerang District.

METHOD

The research was conducted over one semester during the odd semester of the 2022/2023 academic year in Tangerang City, Banten. The study focused on the Tangerang sub-district and employed a qualitative research design utilizing a case study approach, which allowed for the in-depth exploration of specific problems within well-defined boundaries. The population consisted of all public green open spaces in the sub-district, with the research sample focusing on those with potential for development, including road green open spaces, riverbank green open spaces, and railroad green open spaces. Data collection methods included a survey method for inventorying and identifying green open spaces through field observations, enabling the mapping of these areas based on land use and existing potentials and constraints. Additionally, an archive method was used to obtain secondary data regarding green open spaces based on land use. Data analysis involved descriptive and overlay analyses to interpret the collected data and identify potential green spaces for development, thereby aiming to increase the overall area of green open spaces in the Tangerang sub-district. The study measured several variables, including the classification of green open space based on land use, types of green open spaces, patterns, area, and location. The achievement indicators for this research included providing an overview of existing green open spaces, identifying potential types for development, and formulating a planning concept using the green open space system method to expand green areas in the Tangerang district.

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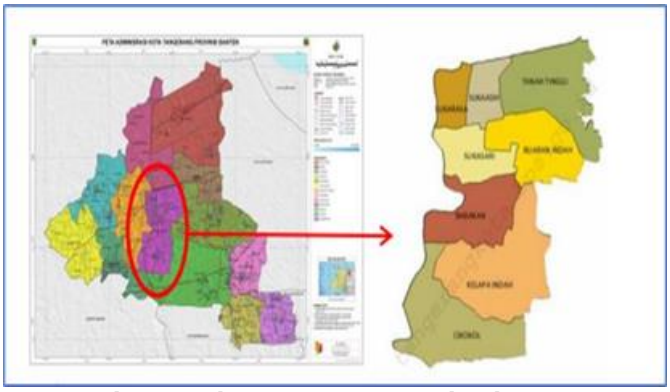


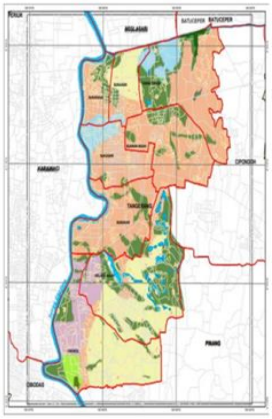
Fig. 1 Research Location Tangerang District, Tangerang City
Source: Researcher, 2023

Table 1. Research variable

Variabel	Sub Variabel	Indicator
Public Green Open Space	Classification of green open space based on land use: Green open space according to land use: City green areas, agricultural green areas, urban forest green areas, sports activity green areas, border green areas Types of green open space: city parks, environmental parks, road green lines, river green lines, railroad green lines.	• Pattern: • linear, • network • Area • Location
	Types of green open space: city parks, environmental parks, road green lines, river green lines, railroad green lines.	

RESULT AND DISCUSSION

The findings indicate that the implementation of green open space systems (RTH) significantly contributes to enhancing the ecological and recreational value of urban areas. As highlighted by Dramstad (1996), green open space systems can be effectively developed into green belts or parks, tailored to the existing landscape structure. This interconnectedness of various green areas, as supported by Budiyanti et al. (2020), facilitates not only an increase in the total area of green spaces but also enhances their roles and functions within the urban environment. The study identifies several conceptual frameworks for developing these systems, including the Greenbelt Concept, which promotes the integration of parks and natural areas, fostering connectivity through green corridors. Additionally, the linear pattern system effectively combines previously fragmented green spaces, illustrating a successful approach pioneered by George Kessler in Kansas City. This method merges natural and artificial elements, resulting in a more aesthetically pleasing and functional urban landscape. The application of the Natural Pattern Concept, as exemplified in Minneapolis, demonstrates the potential of utilizing existing tree canopies to visually link green spaces, preserving their unique characteristics while enhancing connectivity. Specifically, in the Tangerang sub-district, the establishment of green corridors, such as the revitalized green line along the Cisadane River, exemplifies the tangible benefits of these concepts. This initiative not only serves recreational purposes but also functions as an essential ecological barrier, ensuring the sustainability of the river's ecosystem. Overall, the results underscore the critical role of well-designed green open space systems in fostering sustainable urban development and enhancing community well-being.



In Figure 2a, the green open space system is depicted before its development, showcasing its initial condition.

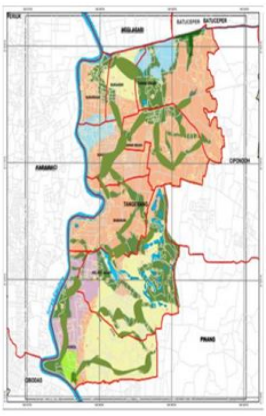


Figure 2b illustrates the enhanced after the implementation of the green open space method. The development demonstrates the transformation and improvements made to the area, highlighting the effectiveness of the applied methodology in enriching the green open

CONCLUSION

The mapping results show that not all green open spaces can become a sub-system of green open spaces. An approach is needed to find out what types of green open space can be converted into sub-systems of the green open space system. In this study land use is one of the approaches and in the Tangerang sub-district it was found that the appropriate green open space system is in the form of corridors and networks. This is because the green open space is dominated by corridors and networks in the form of mixed gardens, river border lines, road green lines, railroad border lines with several patterns, namely:

1. The network pattern, by applying the concept created by Olmsted Greenbelt (green belt), which aims to connect green open spaces in the form of city parks, environmental parks and other green belts, in the Cikokol Village; Tanah Tinggi Village; Sukasari Village.
2. Linear Pattern, by applying the concept from Kessler in the form of a combination of the natural structure of the city with the artificial structure of the city. In this linear system concept, a green open space that was originally standing alone (partially) can become a green open space system with the addition of another green open space, in the Sukarasi Village (Sukasari)
3. Natural Pattern, by applying the concept from Cleveland, namely adding trees with crowns with a diameter of more than 5 meters, thus forming a green corridor that will be implemented in Cikokol, Kelapa Indah, Sukasari, Tanah Tinggi Villages.

Of the three patterns, the linear pattern is the most efficient because it can use minimal land, but can connect between green open spaces, so that green open space is not only seen as space, but as a sub-system of the landscape that plays a role in forming the green open space system. The application of the green open space system in the Tangerang sub-district shows that it can increase the green open space area by 5.70%, bringing the total area of green open space in the Tangerang sub-district to 20.70%, which was previously only 15% of the total area

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