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Study on the Change of Function and Utilization of Green Open Space in Pondok Bambu Kuning Housing – Bogor Regency

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A R T I C L E I N F O

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A B S T R A C T

Green Open Space is an area extending from a path and/or a group whose use is more open, a place for plants to grow, both those that grow naturally and those that are intentionally planted. Green Open Space has strategic value within the scope of a city or a smaller environment, for example: a housing environment, considering the various functions it has, including: ecological function, health function, social function, aesthetic function, and even economic function. The study was conducted to determine and examine the changes that occur in the function and utilization of Green Open Space in Pondok Bambu Kuning Housing - Bogor Regency. The research method chosen is a descriptive-analytical research method using a qualitative approach. Meanwhile, the results of the study are expected to help stakeholders, especially officials in the Bogor Regency Government, to make more comprehensive, targeted, and sustainable policies.

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INTRODUCTION

A residential area always has elements in the form of land and house buildings, public facilities, social facilities, and infrastructure in the form of road infrastructure, environmental sanitation, telecommunications, and public street lighting. This article examines part of the public facilities of a residential area, namely: Green Open Space. Green Open Space as one of the elements that forms urban space and the environment, according to Shirvani (1985) for Hamidah & Santoso (2022), is not only limited to forming the image and aesthetics of the city, but its role is much more as part of the space to maintain the sustainability of the natural environment, the availability of land for urban and environmental water absorption, and additional oxygen availability produced by vegetation growing on it. According to Yunus (2008) for Hamidah & Santoso (2022), a comprehensive policy on the factors of the availability of Green Open Space in built-up areas needs to be implemented.

Green Open Space as part of the city elements, can form a good environtment between: paths, districts, nodes, and landmarks (Lynch, 1960). And in forming the image of the city, Green Open Space plays a very important role in providing an important contribution to the visual perception of the city (Lynch, 1971). It is stated in the Regulation of the Minister of Public Works Number 05/PRT/M/2008 concerning: Guidelines for the Provision and Utilization of Green Open Space in Urban Areas, that Green Open Space has a strategic function as an ecological function that emphasizes efforts to preserve the environment in urban areas as part of development.

Sustainable as part of the world's mandate towards SGDs 2030, point 11. Sustainable Cities and Communities. In Law number 26/2007 concerning: Spatial Planning, and derivatives of the Job Creation Law in the form of Government Regulation number 21/2021, article 21, paragraph 3, point d, it is stated that: the need for a plan for the provision and utilization of Green Open Space consisting of: Public Green Open Space and its distribution, Private Green Open Space, Non-green Green Open Space, road infrastructure, and pedestrian networks, public transportation, informal sector activities, and disaster evacuation spaces. While article 22 mandates that the plan for the provision and utilization of Public Green Open Space is 20% and Private Green Open Space is 10%, where if it is more than 20% + 10% = 30%, then it must be maintained. A simple housing area whose ownership can be paid in installments through Home Ownership Credit - Bank Tabungan Negara, known as Pondok Bambu Kuning Housing, located in Bojonggede Village, Bojonggede District, Bogor Regency; located on the edge and bordering the Bojonggede - Bogor Highway and 1.2 kilometers north of the Bojonggede Electric Train Station. Construction began in late 1983 in stages, as many as 893 simple housing units were built on an area of 14.7523 hectares, with various types of houses 21, 27, 36, 45, 56, 70 and the area of the plot varies according to the type of building. The housing developer deliberately chose a location near the Bojonggede Electric Train Station with the intention of attracting State Civil Apparatus who have offices along the Jakarta-Bogor Electric Train tracks as buyers of the houses built, including State Civil Apparatus from the following agencies: State Intelligence Agency (formerly the State Intelligence

Coordinating Agency), Ministry of Manpower, Ministry of Home Affairs, Ministry of Trade, Ministry of Foreign Affairs; also lecturers from the University of Indonesia and Pancasila University.

Changes in the function and benefits of Green Open Space in Pondok Bambu Kuning Housing - Bogor Regency began to be experienced physically when in the early 1990s it was annexed by residents and outsiders without any prohibition from residents or local residents' administrators; by making the Green Open Space a parking lot for residents' cars, and the green belt as part of the Green Open Space became a row of illegal houses without permits.

LITERATURE REVIEW

Some Literature and Research that Has Been Conducted

Green Open Space with its vegetation acts as the lungs of the city which functions to pay attention to the environment. City space and the environment are as a function of shared space and recreation space as indicated by the use of Green Open Space as a place to refresh the physical and mental health of city residents and smaller environments (Hamidah & Santoso, 2022). Green Open Space as part of Public Open Space in urban areas is a facility that must be provided by the city government, and must be provided by housing developers for residents in the housing complex built by them (Branch, 1995 for Hamidah and Santoso, 2022).

Previous studies on Green Open Space have not conducted research on changes in the function and utilization of Green Open Space in a housing area or environment, and its long-term impact on the housing area or environment, and how to return it to its original function and utilization.

Research on Green Open Space that is known and has been carried out so far is:

1. Evaluation of the function of Green Open Space in Keren Mo'odu Park in Gorontalo City, whether it is in accordance with the standards of Green Open Space function as regulated in Law number 26/2007 concerning: Spatial Planning (Rauf, 2002).
2. Research on the distribution and availability of Green Open Space in Tondano City, by mapping the existing Green Open Space using Arc GIS 10.3, 2 (Karouw, et.al,, 2019).
3. Study of the behavior of using Green Open Space in Nostalgia Park, Kupang City, by analyzing its suitability to the needs of Green Open Space (Suban Mukin, 2021).
4. Developing a concept for developing Green Open Space as an ecological function to absorb rainwater in Rungkut District, Surabaya City, by taking a rationalistic approach through overlay analysis techniques in identifying the characteristics of the form/morphology of Green Open Space, (Angelia, 2017).
5. Conducting an analysis of the arrangement of the Bakti Field Public Open Space in Toraja Regency based on public perception by identifying key parameters of quality public space (Rantelabi, 2022).

State of the Art and Research Novelty

Previous studies on Green Open Space are still limited to research on: evaluation of Green Open Space function standards, distribution of Green Open Space availability in a city, analysis of suitability with the needs of Green Open Space in a city, and identification of the characteristics of the form/morphology of Green Open Space in a city. The research conducted in Pondok Bambu Kuning Housing - Bogor Regency is to examine the changes in the function and benefits of Green Open Space annexed by residents and non-residents, into rows of illegal houses without proof of land ownership and without building permits on the green belt, and making Active Green Open Space and Passive Green Open Space into car parking spaces owned by residents of Pondok Bambu Kuning Housing - Bogor Regency. The research is continued with the impacts that occur on the environment, and what solutions are taken by stakeholders to restore Green Open Space to its original function and benefits.

METHODOLOGY

The research on changes in the function and benefits of Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency uses a descriptive-analytical research method with a qualitative approach to changes in the function and benefits of Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency. Data collection using qualitative methods with interview techniques, observation, and document analysis to collect factual information. Data analysis is carried out by organizing data, interpreting findings, and identifying patterns or themes that emerge from the data. Observation techniques are used to determine the current physical condition of Green Open Space. Interview techniques are used to obtain information and residents' perceptions of changes in the function and benefits of Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency. Document analysis is carried out to determine the extent of changes in the function and benefits of Green Open Space from the original plan.

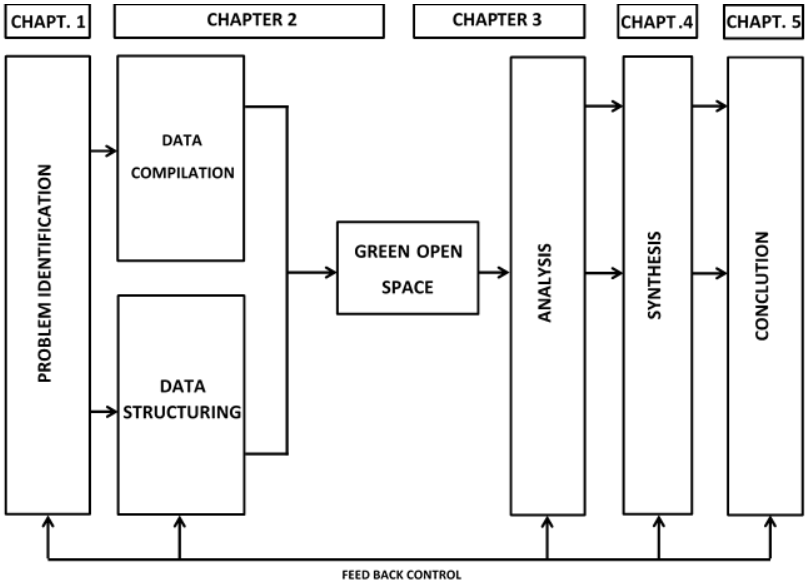

Figure 1. Systematic Diagram
Source: Jones, 1970

RESEARCH RESULTS AND DISCUSSION

Research on public facilities, especially Green Open Space in Pondok Bambu Kuning Housing - Bogor Regency, indicates a change in function and benefits, which were originally designated as green parks and green belts, have undergone significant changes to other functions and benefits that do not support the existence of Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency. This change in function and utilization occurs along with the economic mobility experienced by residents of Pondok Bambu Kuning Housing-Bogor Regency, and with the increase and increase in their needs as conveyed by Maslow (1970) in his theory: Theory of Needs, where human needs are influenced by their desire to achieve their highest needs as cultured beings. This condition requires the need for a study to restore the Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency to its original function and benefits, which of course must involve stakeholders, including: housing residents, Neighborhood Association and Citizens Association officials, local government, and developers.

The economic mobility experienced by residents of Pondok Bambu Kuning Housing Complex–Bogor Regency, which has changed their behavior and daily lives, has ultimately caused social and environmental problems, including:

1. Addition and change in the function and benefits of active, passive, and green belt Green Open Spaces.
2. Loss of environmental lungs that have an impact on the health and comfort of residents.
3. Increased carbon emissions because Green Open Spaces become parking lots for 4-wheeled vehicles.
4. Loss of green vegetation on the greenbelt because it has changed function to become illegal housing.
5. Loss of recreation and playground functions and benefits.

Figure 2. Pondok Bambu Kuning-Bogor Regency Location
Source: Google Map 2025

Based on Government Regulation number 21/2021 concerning the Implementation of Law number 26/2007, it is stated that there is a need for a plan for the provision and utilization of Green Open Space consisting of Public Green Open Space and its distribution, Private Green Open Space, Non-green Green Open Space, road infrastructure, pedestrian networks, public transportation, informal sector activities, and disaster evacuation spaces. Government Regulation number 21/2021 also mandates that the plan for the provision and utilization of Public Green Open Space is 20%, and Private Green Open Space is 10%, where if it is more than the amount of the two Green Open Spaces, it must be maintained. As stated in the Regulation of the Minister of Public Works number 05/PRT/M/2008 concerning: Guidelines for the Provision and Utilization of Green Open Space in Urban Areas, that Green Open Space has a strategic function as an ecological function that emphasizes efforts to preserve the urban environment. More clearly, Green Open Space in urban areas has several purposes, functions and benefits.

According to the Regulation of the Minister of Home Affairs number 1/2007 concerning: Arrangement of Green Open Space in Urban Areas, the objectives of arranging Green Open Space in Urban Areas are: maintaining harmony and balance of the urban environmental ecosystem; realizing balance between the natural environment and the artificial environment in urban areas; and improving the quality of a healthy urban environment; beautiful, clean, and comfortable.

Meanwhile, its functions are: securing the existence of urban protected areas; controlling pollution and damage to land, water, and air; a place to protect germplasm and biodiversity; controlling water management and urban aesthetic facilities. The benefits are: a means to reflect regional identity; research, education and extension facilities; active and passive recreation facilities and social interaction; increasing the economic value of urban land; fostering a sense of pride and increasing regional prestige; a means of social activity for children, adolescents, adults, and the elderly; evacuation space facilities for emergencies; improving the microclimate; and increasing oxygen reserves in urban areas.

Referring to the objectives, functions, and benefits of Green Open Space in Urban Areas, the housing environment as part of the urban area, the objectives, functions, and benefits of Green Open Space in the housing environment can be described as follows (Sinaga, 2018):

1. Social:
   Providing open space for recreation, playgrounds, social activities, disaster evacuation, and improving the quality of life of residents of the housing area.
2. Culture:
   Providing a place for arts & cultural performances.
3. Economic:
   Increasing property values, economic activities of residents, and attracting investment.
4. Aesthetic:
   Increasing the beauty of harmony, tranquility, and sustainability.

5. Health:
   As a means and place for sports activities

Number and Type of Houses

The type of house, area and dimensions of the plot are determined based on the idea that there is still space available in the plot of land for the development of space and space for 4-wheeled vehicles.

Table 1. Amount and Housing Type

Type	Building Area	Land Area	Variant	Amount
K-21/60	21 m^2	60 m^2	Duplex	273 Units
K-27/72	27 m^2	72 m^2	Duplex	27 Units
K-36/90	36 m^2	90 m^2	Duplex	242 Units
K-45/104	45 m^2	104 m^2	Duplex	270 Units
K-56/154	56 m^2	154 m^2	Duplex	61 Units
K-70/176	70 m^2	176 m^2	Single	20 Units
JUMLAH				**893 Units**

Source: PT. Indonesian Engineering Services Putra

Green Open Space

Green Open Space in Pondok Bambu Kuning Housing-Bogor Regency is designed to spread across the site, consisting of 3 (three) types:

a. Active Green Open Space: in addition to functioning as the lungs of the environment, it can be used by residents for activities; sports, playgrounds, bazaars; which are equipped with hardscape (seats, outdoor sports equipment) and softscape (shade vegetation, bushes, and ground cover).
b. Passive Green Open Space: a garden with softscape (shade vegetation, and ground cover).
c. Green belt: as a site boundary, is a Green Open Space placed on the edges of the site that have a different height from the site, outside the location.

It has been stated in advance that changes in the function and benefits of Green Open Space in Pondok Bambu Kuning Housing – Bogor Regency have taken place since the early 1990s with the following changes in function and benefits:

a. Active Green Open Space has changed its function and benefits to become a parking lot for residents' cars, a sports field, an office for the Neighborhood Association and Citizens Association, and a place for economic activities.
b. Passive Green Open Space change's function and benefits to become electricity substations, public facility buildings and social facilities for residents.
c. Green belt change's function and benefits to become rows of illegal houses without permits (both land and buildings), public facility buildings and social facilities for residents.

The annexation of Green Open Space in Pondok Bambu Kuning Housing - Bogor Regency which has been going on for decades has made residents

increasingly accustomed to conditions without Green Open Space in their environment. This kind of condition is certainly a wrong mindset, considering that Green Open Space provides many functions and benefits: economic, social, interaction facilities, recreation, and environmental awareness; according to Hamidah and Santoso (2022).

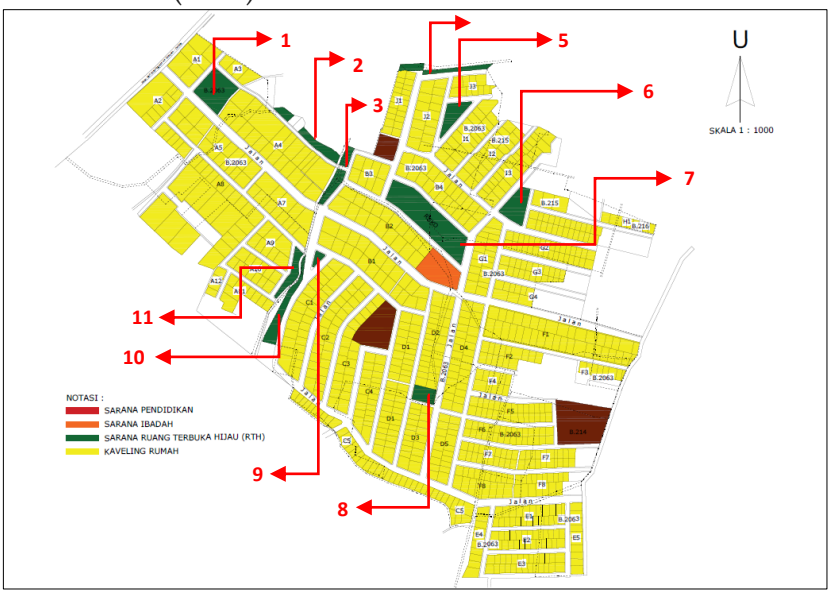

Figure 3. Location Point of Green Open Space (Current Function and Utilization)

Source: Private

Photos of Green Open Spaces, Their Functions and Benefits Today

Figure 4. Avtive Garden

Green Open Space of 1,190 M2 which is still functioning even though there are stalls built on the edge and a jogging track added around the site. Several shade vegetation such as Ketapang (Terminalia cattapa) totaling 3 (three) trees are located on the edge of the site.

Figure 5. Green Belt

Green Open Space of 412 M2 in the form of a green belt that has been annexed by the former head of the Pondok Bambu Kuning Housing project - Bogor Regency in collaboration with a beong (land broker) by forging a signature and claiming to be the director of the developer company before the PPAT in Bogor, but the Deed of Sale and Purchase was never issued, thus the buyers cannot have proof of ownership in the form of a Building Use Rights (HGB) land certificate. On the greenbelt land, illegal houses were built without a Building Construction Permit (IMB).

Figure 6. Green Belt

The 342 M2 Green Open Space in the form of a green belt has been annexed by residents and a Guard Post and Majlis Ta'lim (formerly the RW XIV Office in Pondok Bambu Kuning) have been built without permission from the developer company or the Bogor Regency Government.

Figure 7. Green Belt

The 622 M2 green open space is in the form of a green belt that has been annexed by non-residents (former employees of the developer's sister company with the permission of the company owner as a substitute for salaries and severance pay that the developer's sister company is unable to pay). On the greenbelt site, illegal houses were built and sold to the community without a Building Permit (IMB) and without proof of land ownership in the form of a Building Use Rights (HGB) land certificate.

Figure 8. Active Garden

Green Open Space of 522.5 M2 in the form of an Active Park annexed by residents to become a Children's Playground and a parking lot for residents' cars. There is no initiative from residents or RT/RW officials to plant the site with hard vegetation for shade and to produce oxygen. It looks dry and barren, especially with the paving made by residents haphazardly and without planning.

Figure 9. Active Garden

Green Open Space covering 1,040 m² in the form of an Active Park has been annexed by residents and converted into a pavilion structure and a parking area for residents' cars. Same as the explanation in Photo 5, it appears dry and barren, especially due to haphazard paving done without any planning.

Figure 11. Active Garden

Green Open Space covering 2,847 m² in the form of an Active Park still functions fully as Green Open Space and is well maintained. It serves as a children's playground and is planted with shade vegetation that produces oxygen. The only structure present is a PLN electricity post in the southeast corner, which was built with permission from the developer company.

Figure 12. Active Garden

Green Open Space covering 738 m² in the form of an Active Park has been annexed by residents, where a concrete floor has been built and turned into a volleyball court. The park no longer serves its oxygen-producing function, and there is no longer a play area for children or a gathering place for women.

Figure 13. Passive Garden

Green Open Space covering 102 m² in the form of a Passive Park has had an overhead PLN electricity post built on it, with permission from the developer company. This overhead PLN post was built solely to meet the electricity supply needs of the first 205 housing units.

Figure 14. Green Belt

Green Open Space covering 1,065 m² in the form of a green belt has been sold and transferred by the original landowner and turned into a row of permanent houses, all built without Building Permits (IMB) and without any proof of land ownership such as a Building Use Right (HGB) land certificate.

Figure 15. Passive Garden

Green Open Space covering 1,205 m², filled with various shade plants, shrubs, and ground cover vegetation, still functions fully as a Passive Park. This is possible thanks to residents who pay close attention and diligently monitor and care for the Green Open Space with high discipline.

Source: Personal

CONCLUSION AND RECOMMENDATION

The Pondok Bambu Kuning Housing Complex, Bogor Regency has experienced a decline in the quality of the physical environment since the change in the function and utilization of Green Open Space. This is marked by the reduction in the size of Green Open Space, which initially covered 11,290.5 m² and has now decreased to only 5,242 m², as most of it has been repurposed for other uses, both by residents and non-residents. This condition has had negative impacts on the social, economic, comfort, and health aspects of the residents of the Pondok Bambu Kuning Housing Complex, Bogor Regency.

The function of Green Open Space should be restored to its original state through cooperation among stakeholders, each according to their roles, as follows:

a. Bogor Regency Government:
    1. Take persuasive action toward both residents and non-residents, considering that land and building ownership rights are involved.
    2. If necessary, enforce law enforcement measures if persuasive efforts fail, by applying existing laws and regulations.
b. Village Government and Neighborhood Association (RT/RW):
    1. Educate residents to respect and develop a sense of belonging to their environment by refraining from actions that can degrade environmental quality.
    2. Help maintain and protect the environment by preventing the annexation of public and social facilities within the housing complex.
c. Residents: Comply with existing laws and regulations and actively participate in maintaining and caring for their environment.
d. Developers: Although no longer directly involved on-site, the developer can still contribute suggestions and provide project data that may be needed by the residents.

FURTHER RESEARCH

1. Prioritize socio-economic aspects for the benefit of housing residents.
2. Use environmental quality degradation as a benchmark for studies on other residential environments.
3. Develop models to improve housing quality toward sustainable development in support of SDG 2030, particularly Goal 11: Sustainable Cities and Communities.

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