

Regulation and Implementation of Green Open Space in Indonesia: Between Policy and Reality (Case Study at JIS Stadium)

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ABSTRACT

Green Open Space (GOS) has a vital function in maintaining ecosystem balance, improving air quality, and providing healthy and comfortable public spaces for the community. The role of green spaces is becoming increasingly important in the midst of increasing urbanization and rapid infrastructure development. In Indonesia, the government has established various regulations to ensure the availability of green spaces, including through Law No. 26/2007 on Spatial Planning which requires a minimum of 30% of the total city area to be allocated for green spaces. However, implementation in various regions, including in strategic areas such as the Jakarta International Stadium (JIS), still faces serious challenges. This study uses a juridical normative method to analyze the policy and implementation of the GOS regulation and assess the extent to which the JIS area complies with the regulation. The findings show that despite the existence of a strong legal foundation, the implementation of the GOS policy is still constrained by land conversion for commercial purposes, weak inter-agency coordination, low law enforcement, and minimal public participation in the planning and monitoring process. This study also identifies that the JIS area has not fully fulfilled the proportion of green space according to the stipulated standard. Therefore, concrete steps such as policy revision, strengthening of supervision mechanisms, and collaboration between the government, private sector, and civil society are needed in managing green spaces.

Keywords: *Green Open Space; Regulation; Implementation; Policy; Environmental Law; Jakarta International Stadium; Urbanization*

INTRODUCTION

Green Open Space (GOS) is an essential element in urban spatial planning, serving multiple strategic functions in ecological, social, and aesthetic dimensions (Yanti, 2022). Ecologically, GOS plays a vital role in maintaining ecosystem balance, absorbing air pollutants, enhancing water infiltration capacity, and mitigating the effects of global warming. The vegetation within green spaces helps lower ambient temperatures and increase air humidity, thereby contributing to the creation of a more comfortable microclimate for urban residents (Latuamury, 2025). Moreover, GOS functions as a habitat for various flora and fauna, contributing to the conservation of biodiversity amid rapid urban expansion (Midi et al., 2024).

From a social perspective, the presence of Green Open Space (GOS) plays a significant role in enhancing the quality of life within communities. GOS provides public spaces that allow residents to interact, exercise, and participate in a variety of social and cultural activities (Pasaribu et al., 2022). Access to open green spaces has also been proven to positively impact both physical and mental health by offering areas for relaxation, reducing stress, and promoting psychological well-being. When integrated with public amenities such as pedestrian paths, playgrounds, and recreational facilities, GOS can strengthen social connectivity and reinforce community bonds in urban neighborhoods (Putri, 2025).

In addition to its ecological and social benefits, Green Open Space (GOS) also possesses aesthetic value that can enhance urban landscapes and increase the attractiveness of a region. Cities with well-planned GOS tend to appear greener, more pleasant, and more livable for their residents (Ali et al., 2022). From an economic perspective, the presence of well-maintained green spaces can raise surrounding property values and attract tourists seeking destinations with healthier and more natural environments (Putra et al., 2024). Therefore, investment in the development of GOS not only yields environmental and social benefits, but also contributes to local economic growth and tourism development (Dananjaya & Pratiwi, 2025).

In terms of regulation, Law Number 26 of 2007 concerning Spatial Planning mandates that every city must have at least 30% green open space (GOS) of its total area, consisting of 20% public GOS and 10% private GOS. However, the implementation of this policy still faces various challenges. Uncontrolled land-use conversion, weak oversight of rule enforcement, and a lack of coordination among the government, the private sector, and the community are the main obstacles in achieving the GOS target (Fitriah, 2020). Many urban areas fail to meet this standard due to increasing development pressures, which often sacrifice green spaces for commercial and infrastructure purposes (Irfan & Yulianti, 2024).

Recent data shows that the availability of Green Open Space (GOS) in major cities across Indonesia still varies greatly and has not yet fully met the minimum target of 30 percent of the total city area. In DKI Jakarta, for example, GOS has only reached about 9.4 percent or around 62.181 km² of the total area far below the ideal requirement. Meanwhile, the city of Surabaya has recorded 7,356.24 hectares of GOS or 21.99 percent of the city's area still below the national target, although it meets the minimum requirement for public GOS as stipulated in Minister of Public Works Regulation No. 05/PRT/M/2008. In contrast, the city of Pekanbaru shows a more promising achievement with 31,311 hectares of GOS, accounting for about 49.06 percent of the total city area, based on research data from March–August 2018 (Muhid, 2021). This disparity highlights the importance of strengthening policies and implementation in GOS development, especially amid the growing threat of climate change, where GOS plays a critical role in lowering urban temperatures, reducing pollution, and maintaining ecological balance in urban areas.

DKI Jakarta as a megacity with a population of 10,562,088 and a growth rate of 0.92% in 2020, DKI Jakarta faces immense pressure on land availability, particularly to meet housing and food needs. This pressure has led to massive land-use conversions, often at the expense of Green Open Space. The demand for land is not only driven by residential needs but also by growing economic, social, political, and cultural demands.

According to Law No. 26 of 2007 on Spatial Planning, every city is required to provide a minimum of 30% Green Open Space (GOS) of its total area. Ironically, the Province of DKI Jakarta, with an area of 661.5 km², only has around 9.8% GOS. This situation is exacerbated by 2014 data from BPS showing that 83% of Jakarta's area has been utilized, and from the original 1,500 lakes or "situs" once found in the Greater Jakarta area (Jabodetabek), only 178 remain. The transformation of areas with swamp-based toponyms such as Rawa Buaya, Rawa Belong, Rawamangun, and Rawa Sari into densely populated residential and city activity centers has led to a lack of water catchment areas. As a result, rainwater cannot infiltrate the ground and becomes surface runoff, which poses a flood risk when it exceeds the drainage system's capacity (Pawestri & Ridhani, 2022). This real-world case underscores the urgency of preserving and managing GOS in Jakarta as a strategic step to mitigate ecological impacts and build urban environmental resilience amid rapid urbanization.

The novelty of this research lies in its specific focus on linking the regulation and implementation of Green Open Space (GOS) with the development of Jakarta International Stadium (JIS) as a current and representative case study in Jakarta. Rather than merely examining GOS regulations in general, this study highlights the gap between policy and field practice by using a concrete example of the impact of megastructure development on GOS sustainability.

This research not only analyzes the normative juridical framework of Green Open Space (GOS) policies (such as Law No. 26 of 2007 and Minister of Public Works Regulation No. 05/PRT/M/2008), but also empirically evaluates how these policies are implemented in the Jakarta International Stadium (JIS) development project, which is said to have been built on an area that originally had the potential

to serve as GOS and a water catchment zone. The main focus of this study is to compare the condition of GOS in the area before and after the stadium's construction, including land-use changes, vegetation coverage, and the environmental impacts such as flooding, microclimate temperature, and public access to green space.

With this approach, the study offers new value in the form of:

1. A critical analysis of a prestigious development project in the context of GOS sustainability an area that has not been extensively studied in a comprehensive manner;
2. The use of spatial data or satellite imagery documentation (if available) to compare GOS conditions before and after the construction of JIS;
3. A combination of normative approaches and empirical case studies that highlight the gap between ideal regulations and implementation, which is often compromised by economic or political interests.

Thus, this research can offer sharper and more contextual evidence-based recommendations to support the formulation of spatial planning and GOS management policies that are not only normative, but also realistic and sustainable.

METHODS

This study employs a normative juridical method, which is a research method based on the analysis of applicable laws and regulations as well as other relevant legal documents (Benuf et al., 2020). The approaches used include the statute approach and the conceptual approach to analyze how Green Open Space (GOS) policies are regulated and how they are implemented in practice.

Field data collection was conducted through direct observation around the Jakarta International Stadium (JIS) area to obtain a real depiction of the GOS conditions before and after the stadium's construction. This observation included identifying land-use changes, remaining vegetation, the presence of public parks, and the condition of supporting infrastructure for GOS such as pedestrian paths and water catchment areas. Additionally, visual documentation in the form of field photos and satellite imagery maps was used to analyze spatial and ecological changes in greater detail.

The data used in this research includes national regulations such as Law Number 26 of 2007 on Spatial Planning, Law Number 32 of 2009 on Environmental Protection and Management, and various regional regulations governing GOS management. Case studies from several regions in Indonesia were also examined to identify the extent of policy implementation and the obstacles encountered in the field.

The analysis was carried out by examining the gap between existing legal norms and the reality of implementation in various regions. This study also explores the factors influencing the effectiveness of GOS policy implementation, including the role of government, public participation, and legal aspects that either support or hinder the application of these policies. Field findings were compared with planning documents and applicable regulations, such as regional spatial plan (RSP), environmental impact assessment document (EIAD), and GOS management policies. This approach allows the researcher to assess the alignment between GOS policy implementation in the field and the stipulated regulations, and to identify discrepancies that arise due to large-scale infrastructure development such as JIS.

Although this study combines a normative juridical approach with field observations around Jakarta International Stadium (JIS), several limitations must be acknowledged. One of the main limitations is the reliance on legal and planning documents, which are normative and idealistic in nature, and thus may not always reflect the actual conditions on the ground. Documents such as laws, RSP, or EIAD often do not provide detailed quantitative data on the actual area or ecological quality of GOS after development. Furthermore, the limited timeframe for field observation and restricted access to certain areas may result in data that does not fully represent the entire affected area, especially in the absence of accurate spatial data or interviews with local stakeholders. Therefore, although this method is capable of revealing the gap between policy and reality, the study still faces limitations in providing

in-depth quantitative analysis without longitudinal or comprehensive official data from relevant institutions.

In this study, the regional regulatory documents examined include:

1. Provincial Regulation of DKI Jakarta No. 1 of 2012 on the Regional Spatial Plan (RSP) 2030, which includes provisions on spatial zoning, GOS area targets, and directives for controlling land use in the DKI Jakarta region.
2. Governor Regulation of DKI Jakarta No. 196 of 2010 on the Detailed Spatial Plan and Zoning Regulations (DSP and ZR), which provides technical details on land use at the city and sub-district levels, including arrangements for strategic locations for GOS development.
3. Regional Regulation of DKI Jakarta No. 7 of 1991 on the Master Plan of Regional Spatial Planning of DKI Jakarta, used as a historical document to trace spatial management policy directions before the issuance of the RSP 2030.
4. Governor Regulation of DKI Jakarta No. 31 of 2022 on the Provision and Utilization of Green Open Space, which is one of the most recent regulations governing strategies for achieving GOS targets in DKI Jakarta, including aspects of management, maintenance, and public participation.

These five documents serve as the normative analytical basis for assessing the consistency between the applicable regulations and their actual implementation particularly in the context of the construction of the Jakarta International Stadium (JIS) and its impact on the existence of GOS in the surrounding area.

RESULT AND DISCUSSION

Previous Research

Green Open Space (GOS) plays a crucial role in climate change mitigation and in enhancing urban quality of life. The presence of public green spaces such as parks, conservation areas, and vegetation corridors has proven effective in: (1) controlling surface water runoff to prevent flooding, and (2) filtering air pollutants as part of the city's ecological infrastructure. Although regulations such as Law No. 26/2007 on Spatial Planning and Government Regulation No. 15/2010 mandate a minimum allocation of 30% GOS in urban areas, their implementation is often hindered by land conversion for infrastructure development, including around the Jakarta International Stadium (JIS), which is located in a densely populated area. Recent studies show that the GOS deficit in North Jakarta reaches 23%, indicating the urgent need for policy evaluation and stricter law enforcement.

Table 1. The GOS Deficit In North Jakarta

No	Name & Year	Title	Method	Findings
1.	Midi, et al., (2024)	Analysis of Green Open Space Quality at Kendari Botanical Garden	Interviews, observation, and literature review	The results indicate that the accessibility aspect received a good rating, while the aspects of activities and facilities ranged from fairly good to good.
2.	Fatturusi & Jati, (2023)	Availability of Green Open Space and Its Impact on Urban Heat Island in Pontianak City	Quantitative method using remote sensing and Geographic Information Systems (GIS)	The transformation of agricultural land into urban areas in Pontianak (2000–2020) triggered a chain reaction: reduction of GOS → increase in Land Surface Temperature (LST) → amplification of the Urban Heat Island (UHI). These findings highlight the urgency of integrating GOS policies with sustainable urban planning.

3.	Mahdiyah, et al., (2023)	Effectiveness of Green Open Space (GOS) as Water Catchment Areas and Carbon Storage in Pontianak City	Thiessen Polygon for mapping rainfall distribution. Overlay and scoring to assess the potential of natural infiltration, GOS infiltration, and actual infiltration. Carbon storage calculation based on total GOS area. Nearest Neighbor Analysis to identify the spatial distribution pattern of GOS.	Pontianak's GOS spans 5,714.82 hectares (48.29% of the city area) with a clustered distribution. A total of 277.37 hectares (2.34%) function optimally as water catchment areas and store 5,034.88 Gg/year of carbon. Climate mitigation requires a zero runoff system and horticultural preservation to reduce greenhouse gas emissions.
4.	Alimina, et al., (2024)	Green Open Space Planting to Support Environmentally -Oriented Fisheries Port Development at Kendari Oceanic Fisheries Port	Community Service	Enhancing environmental quality through GOS requires multi-stakeholder collaboration involving the fisheries port, academics, users, and the community. This cooperation is essential for achieving sustainable development. Regular monitoring of air quality around the port is also needed to assess the environmental impact of port activities.
5.	Rachmayanti & Mangkoedihardjo, (2021)	Evaluation and Planning of Green Open Space (GOS) Based on Carbon Dioxide (CO ₂) Emission Absorption in the Southeast Zone of Surabaya City (Literature and Case Study)	Literature Study	In 2019, GOS in Southeast Surabaya absorbed only 27.48% of the total CO ₂ emissions (1.35 million tons/year), indicating the need for expansion to cover the remaining 72.52% deficit.

Compared to previous studies, this research, which focuses on the Jakarta International Stadium (JIS), offers contextual uniqueness and a different analytical approach. Below is an in-depth comparison:

1. Uniqueness of the JIS Case Compared to Pontianak

The study by Fatturusi & Jati (2023) in Pontianak used a quantitative approach based on remote sensing and GIS to explore the relationship between land-use change and the rise of the Urban Heat Island (UHI). They found that the conversion of agricultural land into urban areas led to increased surface temperatures and diminished the city's ability to manage heat and water.

However, the JIS case differs in several key aspects:

- a) The land-use change occurred in the context of a large-scale national project (an international stadium), not ordinary residential expansion.
- b) JIS was built on an area that previously had a strategic ecological function, including serving as a water catchment area in North Jakarta, a flood-prone region with high population density.
- c) This study not only investigates ecological impacts but also highlights the gap between policy (RSP, RDTR, Spatial Planning Law) and the reality of constructing a prestigious project, which often seems immune to spatial planning regulations.

2. Comparison with the Surabaya Study (Rachmayanti & Mangkoedihardjo, 2021)

The Surabaya study focused more on the role of GOS in absorbing carbon (CO₂) and used literature data to evaluate its efficiency in offsetting urban emissions. They found that GOS in Southeast Surabaya could absorb only 27.48% of emissions, indicating a significant ecological deficit.

In contrast, the JIS study does not begin with carbon issues but rather focuses on regulatory compliance, spatial planning sustainability, and the spatial-functional sustainability of GOS. Moreover, this research takes into account the political and economic dynamics influencing land use factors not heavily emphasized in the Surabaya study.

3. Contrast with Studies by Midi et al. (2024) & Mahdiyah et al. (2023)

These two studies emphasize the direct functions of GOS—accessibility, facilities, activities, water infiltration potential, and carbon storage. They focus on the ecological and social functions of existing GOS, evaluated in the context of its actual use by the public.

In contrast, this study begins with the issue of the 'loss' or 'reduction' of ecological function due to development. Thus, the JIS study serves as an academic alarm on potential violations of sustainable development principles and the weakness of GOS policy enforcement in a megacity context.

Several previous studies related to Green Open Space (GOS) have focused on quality, ecological function, and effectiveness in various regions of Indonesia. Research conducted by La Ode Midi et al. (2024) titled Analysis of Green Open Space Quality at Kendari Botanical Garden used interviews, observation, and literature review methods. The results showed that the accessibility aspect of GOS received a good rating, while the aspects of activities and facilities were rated from fairly good to good.

Next, the study on the Availability of Green Open Space and Its Impact on the Urban Heat Island in Pontianak City found that the conversion of agricultural land into urban areas over the past two decades led to a reduction in GOS, increased land surface temperature (LST), and worsened the Urban Heat Island (UHI) phenomenon. This study emphasized the importance of integrating GOS policy into sustainable urban planning, although it did not explicitly state the research method used.

Another study by Muhammad Naufal Fatturusi et al., titled Effectiveness of Green Open Space as Water Catchment Areas and Carbon Storage in Pontianak City, employed various spatial mapping and analysis methods such as Thiessen Polygon, overlay, scoring, carbon storage calculation, and spatial distribution pattern analysis. The results indicated that while GOS in Pontianak functions effectively in water absorption and carbon storage, the effective area is still small, highlighting the need for additional mitigation efforts through a zero runoff system and horticultural conservation.

In the context of social implementation, the study Green Open Space Planting to Support Environmentally-Oriented Fisheries Port Development at Kendari Oceanic Fisheries Port used a community service approach. This research underscored the importance of multi-stakeholder collaboration involving academics, port authorities, users, and the community to enhance the environmental quality around the port through GOS expansion and routine air quality monitoring.

Meanwhile, the study Evaluation and Planning of GOS Based on CO₂ Emission Absorption in Southeast Surabaya, which used a literature and case study approach, showed that in 2019, the GOS in the area was only able to absorb 27.48% of total CO₂ emissions. This reveals an urgent need to expand GOS areas to address the 72.52% carbon absorption deficit.

In comparison, the article Regulation and Implementation of Green Open Space in Indonesia: Between Policy and Reality highlights a significant gap between national policies that mandate 30% GOS in urban areas and the actual achievement in the field. Through policy analysis, this study identifies key implementation obstacles in Indonesia, such as land limitations, sectoral conflicts of interest, weak regulatory enforcement, and low public awareness of the importance of green spaces.

Overall, previous studies suggest that while GOS is recognized as essential for ecological, social, and environmental purposes, its implementation continues to face numerous challenges at both local and national levels. This underscores the urgency for further research to find integrative solutions for the development and management of GOS in Indonesia.

This study offers a unique contribution by specifically focusing on green spatial planning around the Jakarta International Stadium (JIS). Unlike previous studies that discuss GOS in general or city-wide contexts, this research narrows its scope to the stadium area a large-scale public space that demands integrated GOS planning. JIS itself was built on approximately 22 hectares of land, with green open

space planned to cover around 30% of the total area, as outlined in the spatial planning document for Ancol and surrounding areas (RSP DKI Jakarta 2030). In this research, supporting data such as the actual green area in the stadium zone, types of planted vegetation, and the presence of water catchment areas are analyzed to assess how optimally the green space functions to support environmental quality.

From an environmental impact perspective, the presence of GOS around JIS is crucial for reducing surface temperatures, improving air quality, and managing rainwater runoff. Preliminary calculations based on satellite imagery and planning maps show that green areas around the stadium contribute to carbon absorption and have the potential to reduce local temperatures by 1–2°C compared to the surrounding concrete-dense areas. However, field challenges include limited shady vegetation and the dominance of hard surfaces, which may reduce the ecological effectiveness of the GOS.

From a regulatory standpoint, the development and management of GOS in this area refers to several regulations, including Law No. 26 of 2007 on Spatial Planning, which mandates that each city must provide at least 30% GOS, Regional Regulation of DKI Jakarta No. 1 of 2012 on the 2030 Regional Spatial Plan (RSP), and various Governor Regulations related to GOS management in public facilities. In the context of developing sports zones such as JIS, this policy is reinforced through technical instructions from the DKI Jakarta Parks and Urban Forest Agency regarding the use of local vegetation to support climate resilience.

Thus, this study not only presents the existing green spatial conditions around the stadium but also evaluates their compliance with regulatory provisions and the effectiveness of green spaces in providing ecological and social benefits to Jakarta's urban environment.

Green Open Space Regulation in Indonesia

Regulations regarding GOS in Indonesia are governed by various laws and regulations that address the planning, management, and supervision of GOS (Lestari et al., 2024). Several key regulations that serve as the legal foundation for the provision and management of GOS include:

- a) Law Number 26 of 2007 on Spatial Planning, which stipulates that at least 30% of a city's area must consist of GOS comprising 20% public GOS and 10% private GOS in order to ensure ecosystem balance and urban environmental quality.
- b) Minister of Public Works Regulation Number 05/PRT/M/2008, which regulates the technical planning of GOS, including planning standards, management, and maintenance of green spaces in urban areas.
- c) Law Number 32 of 2009 on Environmental Protection and Management, which underscores the importance of GOS in maintaining ecosystem balance and reducing the impacts of climate change.

Regional Regulations and Local Policies, which play a role in adapting GOS implementation to the specific conditions of each area, although enforcement and application remain inconsistent. Although these regulations have been established, their implementation in various regions still faces obstacles, such as weak oversight, limited budgets, and conflicts of interest in urban land use. The legal framework for GOS in Indonesia is relatively robust, particularly through Law Number 26 of 2007 on Spatial Planning, which mandates that at least 30% of a city's area be allocated for GOS divided into 20% public and 10% private green space. This provision is reinforced by Minister of Public Works Regulation No. 05/PRT/M/2008 on Guidelines for the Provision and Utilization of GOS in Urban Areas, as well as regional regulations such as Regional Regulation of the Province of DKI Jakarta No. 1 of 2012 on the Regional Spatial Plan (RSP) 2030.

However, when examined critically, there are several fundamental weaknesses in the existing regulations that often render their implementation ineffective:

a. Absence of Firm Sanctions

GOS regulations tend to be normative in nature and lack concrete legal enforcement mechanisms. For instance, while Law No. 26/2007 mandates the provision of GOS, it does not specify clear administrative or criminal sanctions for local governments or private entities that fail to provide or maintain GOS. As a result, many major cities such as Jakarta have only achieved around 9.8% GOS far below the 30% target without facing any significant legal consequences.

b. Planning Flexibility Vulnerable to Economic Interests

At the local level, spatial planning often sees overlaps between ecological needs and economic development interests. This creates a situation where GOS policies are weakened in practice through revisions of Detailed Spatial Plans (RDTR), zoning adjustments, or legal loopholes such as the "strategic area development" narrative.

c. Case of Implementation Failure: Land Conversion around Jakarta International Stadium (JIS)

The case of JIS development in Tanjung Priok serves as a clear illustration of failed GOS regulation enforcement. The area around JIS was previously an ecologically strategic zone, serving as a water catchment area and semi-swamp region, helping to reduce flood risks in North Jakarta. However, in practice, the area was converted into a prestigious infrastructure project without any publicly disclosed long-term ecological impact assessments.

In fact, under the Jakarta RSP 2030, the area falls within a limited protection zone. The JIS project appears to be "shielded" by the narrative of strategic area development and urban economic expansion, while GOS provisions are disregarded. This underscores how weak the enforcement power of spatial regulations can be especially when a project is tied to political interests or government image. Although Indonesia has a relatively comprehensive legal framework for GOS, the lack of strict sanctions, easily manipulated zoning flexibility, and weak supervision and public transparency often result in regulatory failure, as seen in the land conversion case around JIS. Therefore, policy revisions are needed to strengthen sanction mechanisms, public transparency, and cross-sectoral oversight to ensure that GOS is genuinely protected as an ecological and social asset for urban communities.

Implementation and Field Challenges

Although policies have set standards for Green Open Space (GOS), the reality on the ground reveals a range of complex and multidimensional obstacles (Khairiah et al., 2022). Some of the main challenges in implementing GOS in Indonesia include:

a) GOS Management Issues in Urban Areas:

These encompass various interrelated aspects. The conversion of land into commercial, residential, and other infrastructure zones continues to erode the presence of GOS, driven by high urbanization pressure, despite regulatory minimums. On the other hand, weak law enforcement makes regulations difficult to implement effectively due to a lack of supervision and ineffective sanctions. Public participation is also low due to a lack of awareness and education on the importance of GOS, resulting in many green spaces being neglected or repurposed without ecological consideration. Furthermore, limited budgets and a shortage of competent human resources make it difficult for local governments to manage and maintain GOS, as funding is often prioritized for other sectors. These problems are compounded by overlapping regulations and policies between central and regional governments, which are poorly coordinated, leading to confusion in implementation and hindering optimal GOS preservation efforts.

b) Weak Law Enforcement:

Lack of supervision by local governments results in regulations being difficult to implement effectively.

c) Low Public Participation:

Public awareness of the importance of GOS remains low, which frequently hampers conservation efforts (Wijayanti et al., 2024).

Urban Green Open Space (GOS) management issues encompass various interrelated aspects. The conversion of land into commercial, residential, and other infrastructure zones continues to erode existing GOS, driven by intense urbanization pressures, despite regulations mandating minimum requirements. To address this, there is a need to strengthen spatial planning control through stricter zoning systems, the use of GIS-based monitoring technologies, and the provision of incentives for developers who preserve or increase GOS. On the other hand, weak law enforcement makes it difficult to implement regulations effectively due to insufficient supervision and ineffective sanctions. Solutions include strengthening the capacity of supervisory officers, enforcing strict and consistent penalties, and opening public reporting channels for GOS-related violations.

Public participation remains low due to a lack of awareness and education about the importance of GOS, resulting in many green areas being neglected or repurposed without ecological consideration. To enhance public engagement, massive awareness campaigns should be launched, GOS topics should be integrated into educational curricula, and local communities should be involved in green space adoption and maintenance programs. Additionally, limited budgets and a shortage of competent human resources hinder local governments from effectively managing and maintaining GOS, as existing funds are often prioritized for other sectors. Potential solutions include the allocation of dedicated environmental funding, partnerships with the private sector and NGOs, and technical training for relevant personnel.

These problems are further complicated by overlapping regulations and policies between central and regional governments that are not well-coordinated, creating confusion in implementation and hindering optimal GOS conservation efforts. Resolving this requires policy harmonization through cross-sectoral coordination forums and synchronization of regulations between central and local governments to ensure a unified and aligned policy direction.

Analysis and Discussion

The gap between regulation and implementation of Green Open Space (GOS) in Indonesia shows that although the policies have been normatively formulated, their application still faces numerous challenges (Sholeh et al., 2024). Regulations such as Law Number 26 of 2007 on Spatial Planning clearly mandate a minimum percentage of GOS in urban areas, yet in practice, many regions have failed to meet these requirements. This problem is caused by several factors, including weak coordination among stakeholders, limited resources, and a lack of awareness regarding GOS as an essential component of sustainable urban planning.

One of the primary barriers to GOS implementation is weak law enforcement (Arismayuda et al., 2022). Despite the existence of regulations, sanctions against violators are often inconsistently applied. For example, some property developers neglect the obligation to provide GOS in their projects due to poor supervision by authorities. As a result, many cities suffer from a reduction in green space that should be preserved. To address this issue, the government needs to strengthen regulations by enforcing stricter penalties on violators, including significant administrative fines or revoking business licenses for repeated offenses.

In addition to legal enforcement, incentives are needed to encourage compliance with GOS policies (Sepuhtra et al., 2024). Incentives can be offered to developers or communities who contribute to GOS management, such as tax reductions for companies that allocate part of their land for green spaces or award programs for communities actively engaged in greening their neighborhoods. These incentives are expected to foster compliance not only based on legal obligation but also through broader economic and social benefits.

Community and private sector involvement in GOS management is also a crucial aspect that needs to be improved. Currently, many people are unaware of how important GOS is for maintaining ecological balance and enhancing quality of life (Wardana et al., 2024). Therefore, education and outreach about the benefits of GOS must be intensified through environmental campaigns, green school programs, or community-based greening activities. Active public participation can also be promoted by establishing community-based urban parks or tree adoption programs involving local residents.

The private sector plays a strategic role in supporting the provision and management of GOS. Companies can contribute through Corporate Social Responsibility (CSR) programs, such as building public parks, conducting urban reforestation, or supporting innovative and sustainable green space management (Iqrar, 2025). Collaboration between the government, communities, and the private sector is vital to ensure that GOS is not just a policy on paper but is effectively implemented and managed in the field. With concrete steps to strengthen regulations, increase public involvement, and encourage private sector participation, it is hoped that the implementation of GOS policy will be more effective. The success of this policy will not only enhance urban environmental quality but also improve the social and economic well-being of the community as a whole.

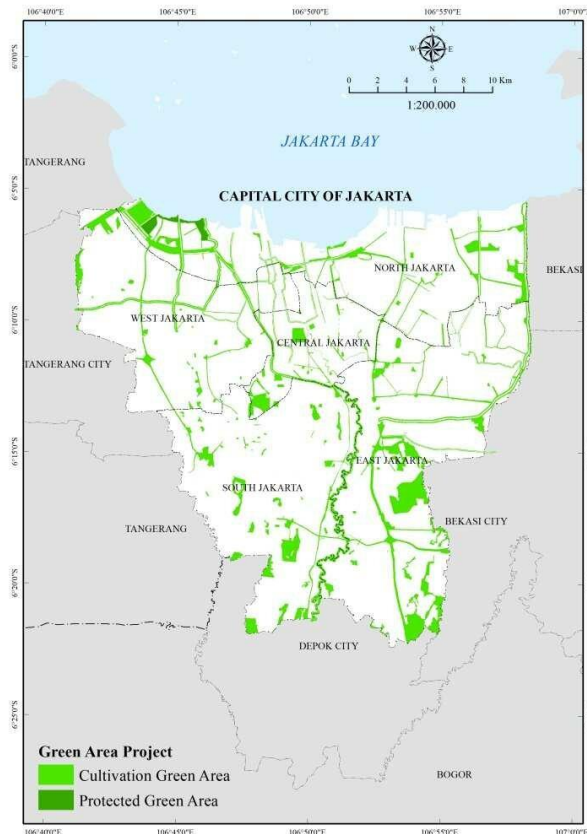


Figure 1. Green Plan in Jakarta Source: Regional Regulation No. 1 of 2014 (Detailed Spatial Plan and Zoning Regulations – RDTR and PZ) Source: Setiowati et al. (2019)

Law Number 26 of 2007 on Spatial Planning stipulates that every city must allocate at least 30% of its total area for Green Open Space (GOS). However, as of 2023, DKI Jakarta had only reached approximately 5.21% GOS of its total area, or around 33.34 million square meters (Jakarta Regional Legislative Council, 2024). This highlights a significant gap between the regulatory target and on-the-ground realization.

Singapore is known as one of the countries with the highest proportion of green open space in the world, achieving about 47% of its total area (Setiowati et al., 2018; CUGE, 2011). The nickname “Singapore as a Garden City” is attributed to this success. This effort began in the 1960s under Prime Minister Lee Kuan Yew through long-term planning that integrated green and water elements in the Green-Blue Plan (CUGE, 2011; Rowe & Hee, 2009). This approach illustrates the importance of vision and consistency in developing GOS as an integral part of sustainable urban planning. Conversely, in Indonesia, the disparity between GOS planning and implementation remains evident. A striking example can be seen around the Jakarta International Stadium (JIS). Although the stadium was promoted with an environmentally friendly concept, its surrounding area still lacks sufficient GOS that could serve both ecological balancing and public space functions. Based on green area distribution maps, the green space around JIS is insufficient to meet the ecological and social needs of the community, revealing a disconnect between green development narratives and the actual conditions on the ground.

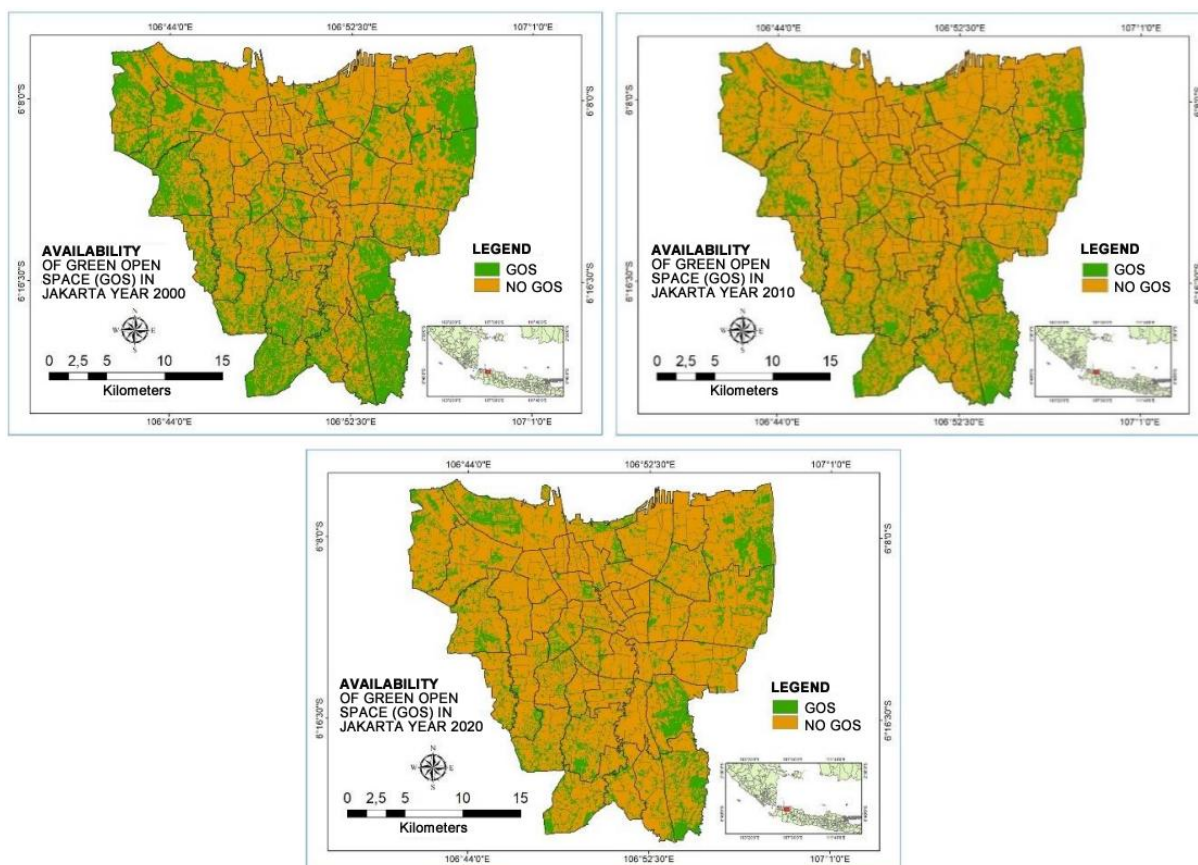


Figure 2. Map of Green Open Space Availability in DKI Jakarta for the Years 2000, 2010, and 2020
Source: (Nurfadhil & Zain, 2024)

Addressing the GOS deficit in Jakarta requires collaboration between the government, private sector, and the community. One successful initiative is the "Taman Maju Bersama" (TMB) program, which involves active citizen participation in the planning, development, and management of city parks (Wulandari, 2022). This program not only provides green space but also strengthens social bonds and improves the quality of life for local residents.

Another example of multi-stakeholder collaboration is the involvement of community groups such as "Ayo ke Taman", which advocates for the importance of public open spaces and the preservation of local trees in Jakarta (Putri, 2021). In addition, local governments can collaborate with the private sector through Corporate Social Responsibility (CSR) programs to support the development and maintenance of GOS.

Strategic Recommendations

- a) Optimization of Idle Land: Identify and utilize underused government-owned land as new Green Open Spaces (GOS).
- b) Regulatory Strengthening: Revise and enhance regional regulations to more effectively govern and protect GOS, including providing incentives for developers who allocate green space.
- c) Increased Community Participation: Engage residents in the planning and management of GOS through education programs and community empowerment initiatives.
- d) Private Sector Partnerships: Encourage companies to contribute to GOS development through sustainable Corporate Social Responsibility (CSR) programs.
- e) Technology Utilization: Use information technology and Geographic Information Systems (GIS) to monitor and plan GOS development effectively.

With the implementation of these strategies, Jakarta is expected to accelerate the achievement of the 30% GOS target, thereby creating a healthier, more livable, and sustainable urban environment for all its residents.

CONCLUSION

The JIS Stadium cannot yet be considered fully compliant with GOS regulations. Construction on former green space without transparent compensation and without verification of the actual area and function of GOS on-site makes the implementation of GOS regulations at JIS legally and spatially problematic. Community-based programs and public education have the potential to serve as strategic solutions, but they still require strong regulatory support and cross-sectoral synergy. Without collaboration between the government, private sector, and the public, GOS policy risks remaining merely a discourse without realization.

Specific Recommendations:

1. Firm and Measurable Law Enforcement

The government needs to implement a system of progressive sanctions for developers or parties violating GOS provisions and offer fiscal incentives to regions that successfully preserve or expand green spaces sustainably.

2. Inter-Governmental Coordination

The Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN) and the Jakarta Provincial Government should form a special task force to synchronize spatial planning policies, particularly in the supervision and evaluation of urban land use.

3. Utilization of Vacant Land for Strategic GOS

The Jakarta Provincial Government should immediately remap vacant lots, especially around strategic areas like the Jakarta International Stadium (JIS), to be revitalized as functional and integrated public GOS.

4. Enhancing Environmental Literacy in Schools and Social Media

Launch the “Green Jakarta” campaign through social media and school curricula to raise public awareness especially among the younger generation about the importance of GOS in addressing climate crises and pollution.

5. CSR Partnerships for GOS Development

Encourage private sector participation through Corporate Social Responsibility (CSR) schemes focused on developing city parks, vertical gardens, and community gardens in densely populated areas.

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