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Navigating the Path towards Sustainable Development Goal 11: An Evaluation of Jakarta's Local Plans



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Abstract

Cities worldwide have been experiencing rapid urbanization, which has brought challenges related to low-quality urban services. Jakarta, the capital city of Indonesia and one of the fastest-growing megacities in the world, has also been affected by this issue, highlighting the importance of sustainable development in addressing the urbanization challenges faced by cities. Jakarta has recently released a Regional Development Plan for 2023-2026 in regards to the transitioning periods of governor. This research examines the extent to which the principles of Sustainable Development Goal 11 on Sustainable Cities and Communities are represented in the Jakarta Regional Development Plan. The study evaluates the plan's targets and their corresponding scores based on their alignment with the SDG-11 principles and indicators. A literature review has been conducted to establish assessment criteria, focusing on urban sustainability indicators. The review identified that principles, indicators (including their description and pilot tools), and funding options are crucial aspects of urban sustainability indicators. Subsequently, a qualitative content analysis was employed to evaluate the document using a scoring system ranging from 0 to 3, following the assessment criteria. The findings suggest that while the plan addresses all the principles, there is a particular emphasis on the importance of prioritizing optimal land function beyond the immediate vicinity, with a focus on accessibility. Integrating specific indicators and accessibility standards to enhance the city's sustainability efforts should be considered. The study recommends future research to delve deeper into specific targets and their strategies, aiming to gain a more comprehensive understanding of Jakarta's trajectory towards SDG-11.

Keywords: SDG-11, Sustainable Cities and Communities, Evaluation Criteria, Jakarta

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Background

The Centre for Liveable Cities and Urban Land Institute (2013) stated that cities are becoming denser, where the increase in density is often portrayed as the main root of congested cityscapes, pollution, poverty, and low-quality urban services. According to the United Nations (2018), 68% of the world population are expected to live in urban areas by 2050, highlighting the fact that sustainable urbanization will become the key to successful development and urban growth. The 2030 Agenda for Sustainable Development, adopted by the United Nations, addresses this matter, specifically the 11th goal on Sustainable Cities and Communities: *Making cities and human settlements inclusive, safe, resilient, and sustainable* (United Nations, n.d.).

In 2015, the 2030 Agenda for Sustainable Development was established to create a better future by promoting peace and prosperity for people and the planet (United Nations, n.d.). The agenda acts as a shared blueprint, consisting of 17 Sustainable Development Goals (SDGs) that acknowledge the connection between eliminating poverty and other forms of deprivation to strategies on enhancing health and education, decreasing inequality, boosting economic growth, and addressing climate change. SDG-11 delves further into the urban perspective, aiming to revitalize cities and human settlements in a way that offers equal opportunities to all, with access to basic services, housing, energy, transportation, and green public spaces, while minimizing resource use and reducing environmental impact (UNESCO, 2018).

Many cities have implemented these goals within their development agenda. However, the COVID-19 pandemic has halted the progress. The UN Under-Secretary-General Liu Zhenmin for SDG Global Report 2021 stated: "The pandemic has halted, or reversed, years, or even decades of development progress... with the global extreme poverty rose for the first time in over 20 years" (United Nations, 2021, p.3). A study by Gulseven *et al.* (2020) shows how lockdowns resulted in a rise of unemployment, leading to citizens' inability to pay for housing, restricted transportation services sparking protests among migrant workers, and scarcity of food mostly affecting the poor and vulnerable communities. Moreover, a report published by UN Habitat (2022) states that the

pandemic also delayed many urban projects, reflecting the need to make up for lost time to achieve the goals by 2030. The report also stresses that the challenges of urbanization will heavily affect low-income and lower-middle-income countries, which are experiencing rapid urbanization (UN Habitat, 2022). Jakarta, the capital of Indonesia, can be taken as an example.

Research Problem

Jakarta is one of the biggest and most densely populated megacities in the world, with almost 11 million inhabitants and a density of 16,125 people per square kilometer (km²) in a total area of only 664 km² (Rizaty, 2023). It is also the center of Indonesia's economic activity that is projected to grow between 4.5-5.3% in 2023 (Jakarta Investment Center, n.d). However, this rapid growth has led to economic and social disparities, inequality, and environmental problems, such as unemployment, slums, annual flooding, and pollution (Drestalita & Saputra, 2019). Addressing these issues through effective interventions is crucial for ensuring sustainable development and improving the quality of life for Jakarta's residents.

Intervention can be approached through spatial planning, as it plays a central role in moving society towards sustainable development (Haughton *et al.*, 2010). The concept of sustainability itself has been mentioned in numerous spatial planning documents from different government levels in Indonesia, including national, regional, and local plans. Drestalita & Saputra (2019) conducted a study on Jakarta's local plans, specifically the Detailed Spatial Plan (RDTR), and found that it does not provide a comprehensive understanding of sustainability. The document primarily focuses on economic growth and environmental protection while neglecting social justice. The authors emphasize the need for further research to assess the integration of sustainable principles in Jakarta's planning documents, as there is a lack of understanding if cities like Jakarta are in reality following sustainable principles, and if they are equipped to overcome the challenges associated with sustainability.

The Regional Development Planning Agency (Bappeda) of Jakarta has recently released a Regional Development Plan for 2023-2026 (RPD) in accordance with Ministry of Home Affairs order No. 17 Year 2022, aimed at maintaining alignment and continuity of development between transition periods of governors. This paper aims to identify the extent to which the Jakarta Regional Development Plan 2023-2026 covers sustainable principles to achieve an inclusive, safe, resilient, and sustainable city.

The objective of this research will be achieved through the creation of assessment criteria as a means to reach a verdict on whether Jakarta has sufficiently incorporated the principles of SDG-11 within its development plan. To achieve this, the following research question is formulated:

To what extent are the underlying principles of Sustainable Development Goal 11 on Sustainable Cities and Communities represented in Jakarta Regional Development Plan 2023-2026?

This paper will attempt to answer this question by addressing four sub-questions:

- 1. What are the underlying principles, indicators, and policies needed for cities to achieve SDG-11?*
- 2. How can we assess the integration of principles and indicators of SDG-11 in a policy document?*
- 3. Has Jakarta sufficiently incorporated the principles and indicators of SDG-11 into its development plan?*
- 4. What policy recommendations and suggestions can be made for Jakarta to better address the principles and indicators of SDG-11 to create sustainable cities and communities?*

Theoretical Framework

The theoretical framework provides a conceptual foundation for research by outlining relevant theories and concepts that inform the research questions and guide the analysis and interpretation of findings. The following section will discuss SDG-11, principles & indicators, and presents a conceptual model to illustrate the theoretical framework.

SDG-11: Sustainable Cities & Communities

SDG-11 is a prominent agenda for cities to follow, but evaluating progress towards its goals poses several challenges. Klopp and Petretta (2017) emphasize that the indicators within SDG-11 are vague in terms of their compatibility when implemented across different cities. One of the identified challenges is the problem of localization, which involves applying context-specific goals by diverse actors across different spatial environments. These challenges have been acknowledged by Thomas *et al.* (2021), who highlight that the indicators within SDG-11 often lead to difficulties in tracking a city's progress and comparing it at a global scale, given that each city has its own spatial focus shaped by its societal and economic environment. Therefore, there is a need to further explore the principles and indicators of SDG-11, specifically with a focus on a particular city as a context since there is a limited understanding of what makes a city sustainable.

Principles & Indicators

To understand the principles and indicators of SDG-11, it is important to first comprehend what these concepts mean. According to the definition by the Business and Biodiversity Offsets Programme (2012, p.1), 'Principles' refer to "*Fundamental statements about a desired outcome,*" and 'Indicators' are "*Measurable states which allow the assessment of whether or not a particular criterion has been met.*"

Shen *et al.* (2011) stated that indicators play a crucial role in measuring performance and evaluating different aspects of sustainability in the process of urban sustainability assessment. The selection of indicators should be done with a clear understanding of

where they will be applied. Additionally, according to Zhang *et al.* (2003), urban sustainability indicators should provide explanatory tools to translate sustainable development concepts into practical terms, pilot tools to assist in making policy choices, and performance assessment tools to decide the effectiveness of efforts. These criteria will be considered when assessing the RPD.

Conceptual Model

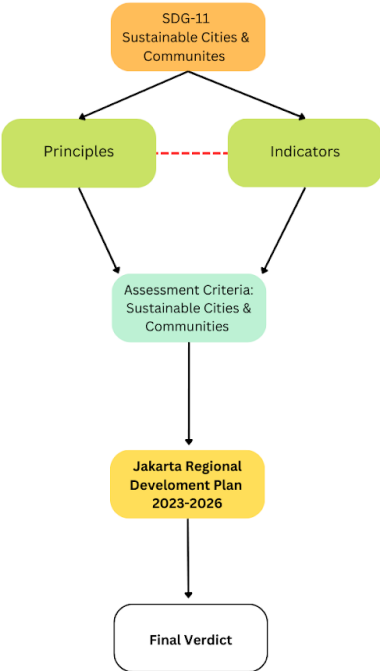


Figure I. Project Framework

Figure I visualizes the theoretical framework of this research, which serves as a roadmap to reach the final verdict. As shown in the figure, the conceptual model is based on SDG-11, which provides the main foundation of the research. The principles and indicators of SDG-11 will be used as the basis to establish an assessment criteria for determining the sustainability of cities and communities. These criteria will then be applied to assess Jakarta RPD 2023-2026, resulting in the final verdict.

Methodology & Data Collection Instrument

To answer the aforementioned research- and sub-questions, this study will use two research methodologies: literature review and qualitative content analysis. The data collection will be organized based on the sub-questions, each with its data collection instruments, to provide a comprehensive understanding of the research topic.

Literature Review

In this study, the theoretical framework is developed through a comprehensive review of the existing literature to further understand the underlying principles and indicators of SDG-11. Additionally, the United Nations' (UN) list of principles and indicators that comprise SDG-11, and reports on practical implementation of SDG-11 policies will serve as a guiding framework for analyzing the collected data. Related literature will also be utilized to supplement discussion in the results and analysis section. Together, it provides the theoretical underpinnings for this research and addresses the first sub-question: *What are the underlying principles, indicators, and policies needed for cities to achieve SDG-11?*

SDG-11 Targets

The UN has established a set of defined-targets for SDG-11, each explained by principle and indicators, as shown in Table I. These targets will be used as the basis of the assessment criteria to determine the sustainability of cities and communities. The targets were chosen based on the spatial focus of cities, excluding the regional and national targets of SDG-11.

Target	Principle	Indicators
Target 11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing
Target 11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	11.2.1 Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities

Target 11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	11.3.1 Ratio of land consumption rate to population growth rate 11.3.2 Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically
Target 11.4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.4.1 Total per capita expenditure on the preservation, protection and conservation of all cultural and natural heritage, by source of funding (public, private), type of heritage (cultural, natural) and level of government (national, regional, and local/municipal)
Target 11.5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	11.5.1 Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population 11.5.2 Direct economic loss attributed to disasters in relation to global domestic product (GDP) 11.5.3 (a) Damage to critical infrastructure and (b) number of disruptions to basic services, attributed to disasters
Target 11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	11.6.1 Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal waste generated, by cities 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
Target 11.7	By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities 11.7.2 Proportion of persons victim of physical or sexual harassment, by sex, age, disability status and place of occurrence, in the previous 12 months

Table I. SDG-11 Targets by United Nation

In accordance with the targets listed by UN, the keywords that will be used for the assessment criteria are:

- For target 1, “adequate housing”, “safe housing”, “affordable housing”, “basic service” and “upgrade slums”.
- For target 2, “safe transport system”, “affordable transport system”, “accessible transport system” “inclusive transport system” and “sustainable transport system”.
- For target 3, “inclusive urbanization”, “sustainable urbanization”, “capacity for participatory”, “integrated human settlement planning”, and “integrated human settlement management”.
- For target 4, “protecting cultural heritage” and “protecting natural heritage”.
- For target 5, “disaster resilience”.
- For target 6, “waste management” and “air quality”.

- For target 7, “safe green and public spaces”, “accessible green and public spaces”, “inclusive green and public spaces”.

The mentioned keywords will be searched in the RPD to determine whether the document covers all principles of SDG-11. As the use of indicators is known to vary across cities and should be context-specific (Klopp & Petretta, 2017; Thomas *et al.*, 2021), the characteristics of urban sustainability indicators provided by Zhang *et al.* (2003) will be the focus, as emphasized in the theoretical framework.

SDG-11 Policies

Marsal *et al.* (2017) proposed a framework for implementing policies related to SDG-11, which builds upon UN-Habitat's principle of urban sustainability and input from various governmental and organizational entities. The framework includes 8 essential aims under "*Bridging the Green and Brown Agendas*" and 7 additional aims for "*Linking Spatial Planning to Urban Infrastructure*." Table II provides the list of aspects that should be addressed in these policies.

Bridging the Green and Brown Agendas	Linking Spatial Planning to Urban Infrastructure
<ol style="list-style-type: none"> 1. Development of renewable energy; 2. Striving for carbon-neutral cities; 3. Distributed power and water systems; 4. Increasing green infrastructure; 5. Improving eco-efficiency; 6. Increasing sense of place; 7. Sustainable transport; 8. Developing cities without slums. 	<ol style="list-style-type: none"> 1. Smart growth and transit-oriented development; 2. Integrating land use and transportation; 3. Strategic spatial planning and infrastructure planning; 4. Integrated urban management and development plans; 5. Strategic structure planning; 6. Linking spatial planning to infrastructure planning; 7. Linking mega-projects and major infrastructural developments to spatial planning.

Table II. Essential Aims for Practical Implementation of Sustainability Policies (Marshal et al, 2017)

Furthermore, the Office of the UN's High Commissioner for Human Rights (OHCHR) (2020) emphasized the crucial role of enforcing SDG-11 in policies within cities to promote inclusive and sustainable urbanism. This involves integrating accessibility standards into legislation and regulatory frameworks, which enables policymakers to

facilitate the systematic implementation of accessibility measures. Such incorporation applies to all targets of SDG-11, ensuring equal access for individuals to diverse aspects of the built environment, including housing, transportation, and public spaces. By doing so, cities can establish a strong foundation for the creation of sustainable, inclusive, and accessible urban environments that cater to the needs of all residents.

Mora *et al.* (2017) highlights the importance of monitoring the effectiveness of inclusive infrastructure and environments, as it addresses a key challenge in inclusive urbanism: the lack of knowledge regarding accessibility deficiencies in cities. Without continuous analysis and monitoring, it becomes challenging to verify the effectiveness of implemented actions or identify potential degradation. Therefore, the implementation of robust monitoring mechanisms is crucial to ensure the success of inclusive urbanism efforts.

The findings presented in this literature review regarding SDG-11 policies aids the understanding on how cities can achieve the listed targets. These insights will be further explored and discussed in the results and analysis section, providing a comprehensive understanding of the research topic.

Qualitative Content Analysis

Qualitative content analysis (QCA) will be conducted to create the comprehensive assessment. This will help answer the second and third sub-questions: *How can we assess the integration of principles and indicators of SDG-11 in a policy document? / Has Jakarta sufficiently incorporated the principles and indicators of SDG-11 into its development plan?*

Cardno (2018) stated that QCA is a research technique that involves analyzing the content of documents with the aim of drawing inferences about the underlying meanings and themes. It is a useful method in analyzing organizational policy documents as it identifies not only what is explicitly stated but also what is implied by the language used.

This paper will adopt the Drestalita & Saputra (2019) method of a scoring system with a scale of 0-2 to analyze the policy document, basing the themes from the assessment

criteria created from the literature review. Thus, the following scoring system will be used as the technicalities of the assessment criteria, with an additional score of 3:

- Score 0 = principle and indicator is not mentioned in the document
- Score 1 = principle is mentioned, without further explanation on indicator
- Score 2 = principle and indicator is mentioned with a clear explanation, including description & pilot tools
- Score 3 = principle and indicator is mentioned with a clear explanation, including funding options

Context of Regional Development Plan

The document that will be analyzed is [Jakarta Regional Development Plan \(RPD\) 2023-2026](#), which covers five administrative cities (Central Jakarta, South Jakarta, East Jakarta, West Jakarta and North Jakarta) and one administrative regency (Thousand Islands). The document consists of spatial plans that are integrated and structured into four dimensions: the built environment, economic, human, and governance dimension. The document is considered as a legal tool mandated by law to align planning developments of Jakarta, taking into account the missions and agendas from three other existing planning documents: National Medium-Term Development Plan (RPJMN) 2020-2024, Jakarta Regional Medium Term Development Plan (RPJMD) and Jakarta Regional Long-Term Development Plan (RPJPD) 2005-2025.

RPD plays a crucial role in resource allocation as it helps determine the budgetary priorities and investment decisions of the region. Moreover, it serves as a guideline for the preparation of the Annual Regional Development Plan (RKPD), an annual plan that further operationalizes the goals and strategies outlined in the RPD, which includes specific programs, targets, and budgets for each year. While the RPD and its subsequent RKPD provide guidance and recommendations, their implementation by cities and regions may vary. The RPD is not binding in the sense that cities are legally obligated to follow it exactly. However, the RPD serves as a reference and basis for local governments in formulating their own development plans, aligning their priorities, and ensuring coherence with the overall regional development objectives.

Since the document is written in *Bahasa Indonesia*, the themes identified from the literature review will be translated to correspond with the language used in the document. Additionally, for the purpose of this research, the QCA will focus solely on the pertinent chapters of the document:

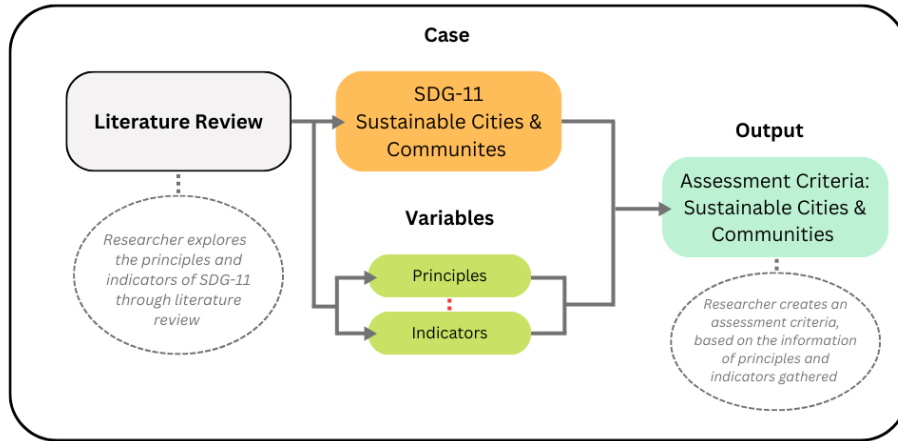
- Chapter 5 - *goals and objectives*
- Chapter 6 - *strategy, policy directions and priority programs*

The document will be analyzed manually by reading each chapter and recording all relevant categories based on the assessment criteria. The scoring technique will then be used to analyze the results and draw the conclusions. Additionally, the results of this assessment will also provide guidance in answering the last sub-question: *What policy recommendations and suggestions can be made for Jakarta to better address the principles and indicators of SDG-11 to create sustainable cities and communities?* This will conclude the final verdict on the level of sustainability integration in Jakarta RPD 2023-2026.

Data Analysis Scheme

The following section presents the data analysis scheme for this study. The scheme, illustrated in Figure II, includes the methodological approach, data collection instruments and analysis used to answer the research question. Since this research used a two-step approach, the case and variables differ between the approaches. In the first step, the SDG-11 targets are used as the case with the variables of principles and indicators from the literature review. In the second step, the case is the assessment criteria created from the first step, and the variables are the principles and indicators from the RPD.

First Step of Data Collection & Analysis



Second Step of Data Collection & Analysis

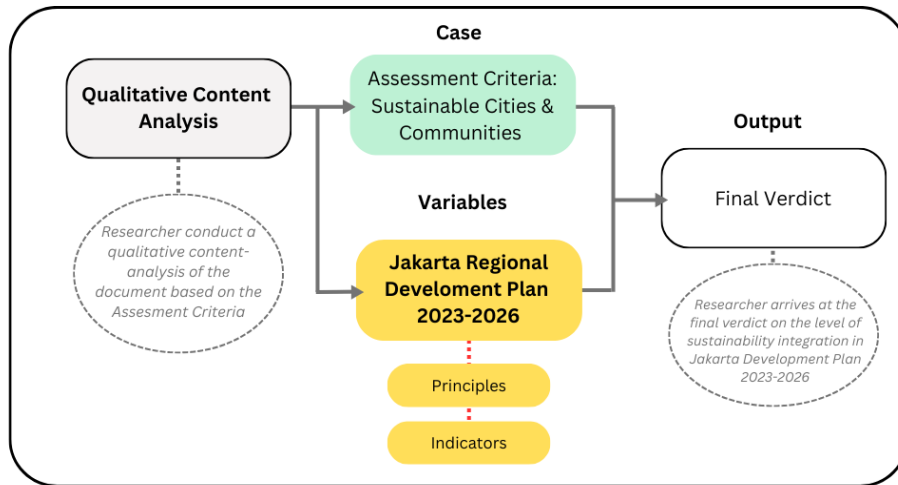


Figure II. Data Analysis Scheme

Results & Analysis

The following section will elaborate on the results of the assessment based on the targets of SDG-11. The assessment examines the principles, indicators, and explanations of the indicators (which consist of description, pilot tools, and funding options), as well as the corresponding score. Table III shows the overall result.

Target	Keywords	Principle	Indicator: Description + Pilot Tool	Funding Options	Score
11.1	Sustainable Housing	✓	✓	✓	3
11.2	Sustainable Transport System	✓	✓	✓	3
11.3	Inclusive Urbanism & Capacity for Participatory	✓	✗	✗	1
11.4	Protecting Cultural & Natural Heritage	✓	✗	✗	1
11.5	Disaster Management	✓	✓	✗	2
11.6	Reducing Environmental Impact: Air Quality & Waste Management	✓	✓	✗	2
11.7	Urban Green Spaces	✓	✓	✓	3

Table III. Assessment Criteria & Score Results

Target 11.1 - Sustainable Housing

The document acknowledges sustainable housing which is represented in the first objective of the built environment dimension: *Development of Quality Basic Infrastructure and Urban Services*. The target receives a score of 3 as both the principle & indicator are mentioned, with clear explanation including funding options.

Jakarta will approach this principle through four strategies: 1) Provision and improvement of access to drinking water services, 2) Provision and improvement of access to waste water services, 3) Improvement and maintenance of public housing and its infrastructure, and 4) Increasing the quality and quantity of residential areas that are livable, neatly arranged and sustainable. This strategy is aligned with the components of adequate housing which consists of 1) Access to improved water, 2)

Access to improved sanitation, 3) Sufficient living area and 4) Durability of dwellings (United Nations, 2007).

The indicator used for this assessment is the Urban Basic Service Indicator, which comprises three sub-indicators: 1) Households with Access to Decent and Affordable Housing by Province, 2) Percentage of Households by Province, Type of Region and Source of Adequate Drinking Water, and 3) Percentage of Households by Province and Having Access to Proper Sanitation. While this indicator differs from the UN in terms of measuring the number of adequate housing instead of inadequate housing, it still serves the same objective and can be used to assess the mentioned principle.

“In 2021, only 40% of households in Jakarta have access to decent housing. This low figure is due to one criterion related to building resilience, namely asbestos roof components which are considered not to meet health standards, which reach 54.78%.”
(Translated from Jakarta Regional Development Plan, 2022, p.367)

To increase adequate housing, the government has planned to prioritize the development of affordable flats by implementing ownership programs. These programs are not only targeted at citizens with low incomes, but also extend to workers and individuals with limited purchasing power. In conjunction with this initiative, efforts will be made to enhance the quality of residential areas. The funding for these initiatives primarily comes from Regional Revenue and Expenditure Budget (APBD) and State Revenue and Expenditure Budget (APBN), as well as the private sector.

Furthermore, the government has placed importance on the management of urban slums through collaborative efforts with stakeholders to implement interventions on privately-owned land. Figure III shows Kampung Aquarium, a successful pilot project that exemplifies the role of policy entrepreneurs in driving policy innovation and implementation. These policy entrepreneurs utilized their personal credibility, political communication capability, and urban policy knowledge to formulate and push forward the idea of rebuilding the evicted informal settlement (Fauzi & Kosandi, 2022).



Figure III. Kampung Aquarium (The Provincial Government of DKI Jakarta, 2022, p.370)

Target 11.2 - Sustainable Transport Systems

Sustainable transport systems are represented in the document as shown in the second objective of the built environment dimension: *Improvement of Activity and Mobility through Transit Oriented Urban Development*. The target receives a score of 3 as both the principle & indicator are mentioned, with clear explanation including funding options.

“The root causes of traffic congestion in Jakarta is the inefficient movement pattern, car-oriented urban development, and housing development that does not consider accessibility. As a result, residents spend a significant amount of time commuting to reach activity centers for their daily activities.” (Translated from Jakarta Regional Development Plan, 2022, p.371)

The government aims to reduce congestion by promoting a paradigm shift in Jakarta's spatial planning towards the concept of transit-oriented development (TOD). This approach emphasizes mixed-use zones with high density and incorporates other elements that integrate spatial planning and transportation. A study by Suryani *et al.* (2020) reveals that Jakarta has not effectively addressed TOD. The current projects primarily focus on single land development, which lacks integration with the surrounding areas and hampers accessibility for the wider community. This shows that there is the need to consider integration on a larger scale of the built environment in order to achieve a successful transit-oriented city.

The Public Transportation Mode Share serves as an indicator to measure the progress of these developments. However, as of 2021, it has only reached 14.76%, which falls far short of Jakarta's long-term target. It is important to note that this indicator measures the proportion of the population using public transport, whereas the UN's indicator focuses on the proportion of the population with access to public transport. Jakarta should consider incorporating this indicator as an additional assessment tool, as it highlights the necessity of transport integration on a broader scale, as criticized by Suryani *et al.* (2020).

Despite the challenges, Jakarta has witnessed several successful projects that promote TOD principles. One notable example is the integration of public transport modes between the MRT station ASEAN and the TransJakarta bus stop, serving as a pilot tool for this development, depicted in Figure IV. Furthermore, Jakarta has prioritized pedestrians by adopting a right-sizing approach, which includes revitalizing sidewalks and pedestrian bridges as seen in Figure V. The city also aspires to enhance safety and sustainability by implementing LED smart systems for public street lighting, thereby reducing energy consumption and carbon emissions. The government encourages innovative and collaborative funding sources through creative financing and non-APBD funding for pedestrian infrastructure, and subsidies for the development of public transportation (MRT, LRT and TransJakarta).



Figure IV. Integration of Public Transport Modes - MRT ASEAN & TransJakarta (The Provincial Government of DKI Jakarta, 2022, p.375)



Figure V. Pedestrian Bridges (The Provincial Government of DKI Jakarta, 2022, p.379)

Target 11.3 - Inclusive Urbanism & Capacity for Participatory

Inclusive urbanism is a crucial aspect to consider when designing for the built environment. This includes focusing on inclusive design, which is defined as designing products, services or environment that can be used by all, regardless of their gender, age or ability (Belausteguigoita, 2019). The RPD incorporates the concepts of inclusivity and participatory capacity, as stated in the document:

“The concept of the Jakarta Regional Development Plan 2023-2026 is "JAKARTA: A CITY FOR ALL," which aims to create a balanced city and promote inclusivity, where all residents can enjoy equal rights and benefits to live in the city. The goal is to improve their well-being and quality of life while actively participating in sustainable development.” (Translated from Jakarta Regional Development Plan, 2022, p.320)

These principles are interconnected and integrated into various targets, such as Target 11.5 on Disaster Management. In this target, the government aims to implement regulations that prioritize a persuasive approach and empower the potential of the community to actively contribute to maintaining peace, public order, and public protection. Another example is found in the plan towards Target 11.7 concerning Urban Green Spaces, where the government aims to incentivize the implementation of education, training, and empowerment programs on forestry to enhance the competence of the community and human resources involved in developing urban green spaces.

However, the principle of inclusivity and participatory capacity lacks further elaboration in the document, as there is no specific indicator provided. Therefore, this target receives a score of 1 based on the analysis of the document.

Target 11.4 - Protecting Cultural & Natural Heritage

Jakarta is rich in cultural heritage, with Central Jakarta alone having 95 listed cultural heritages (Permanasari, 2023). However, the document's built environment dimension does not specifically address plans for protecting Jakarta's cultural and natural heritage. This aspect is instead discussed in the fourth objective of the economic dimension: *Strengthening Urban Competitiveness through Innovation and Collaboration*. While the section acknowledges the importance of sustainable utilization of cultural heritage to attract investors, development partners, and business communities, it lacks concrete plans and strategies of protecting the heritage itself. Therefore, this target receives a score of 1.

Target 11.5 - Disaster Management

Jakarta is a city with high population density and vulnerability to climate-related disasters such as flooding, land subsidence, earthquakes and fires (Nasution *et al.*, 2022). Therefore, effective disaster management is of utmost importance. The document acknowledges this concern in the fourth objective of the built environment dimension: *Improved City Stability and Resilience*. However, the target received a score of 2, indicating that funding options for achieving the objective were not clearly specified.

To mitigate the risk of flooding, Jakarta aims to restore critical watersheds and protect coastal areas by increasing the capacity of drainage systems. One key aspect of this effort is the optimization of Waduk Pluit (reservoir) as seen in Figure VI, which plays a vital role in flood protection for the city. However, the reservoir's function was hindered by the emergence of informal settlements along its banks, reducing its water holding capacity. To address this, the government implemented regulations to prohibit construction along any reservoir and relocate the informal settlements to apartment buildings (Silalahi *et al.*, 2021).



Figure VI. Optimization of Waduk Pluit (The Provincial Government of DKI Jakarta, 2022, p.394)

Additionally, the government is committed to reducing groundwater extraction by establishing groundwater protection zones and regulating its usage through measures such as taxation and permits, to tackle land subsidence. When addressing risks posed from earthquakes and fires, the focus is placed on improving durability of buildings, as many settlements in Jakarta lack security and safety considerations in their designs and materials. Moreover, the government emphasizes the importance of disaster awareness, response and rescue as safety measures for everyone.

“Urban resilience can be defined as the readiness of individuals, communities, private sectors, and systems within a city to prepare, adapt, withstand, and become stronger in the face of various types of pressures and shocks experienced.” (Translated from Jakarta Regional Development Plan, 2020, p.397)

Jakarta will use the Disaster Risk Index to show the potential negative impacts that may arise as a result of a disaster. It will illustrate the estimated number of casualties, property losses, and environmental damage. This is aligned with the UN's indicator on disaster management.

Target 11.6 - Reducing Environmental Impact: Air Quality & Waste Management

The document highlights plans to reduce environmental impact, particularly in air quality and waste management, as part of the third objective in the built environment dimension: *Urban Ecosystem Restoration and Low Carbon Development*. Jakarta, being the largest global city in Southeast Asia, is dedicated to realizing this principle as quoted below. However, as the funding options are not clearly stated, the target received a score of 2.

“Jakarta's commitment towards this is reflected in Governor Regulation ... which aims to reduce greenhouse gas emissions by 30% by 2030 and achieve zero emissions by 2050 in the energy, waste, and AFOLU (agriculture, forestry, and other land use) sectors.”
(Translated from Jakarta Regional Development Plan, 2020, p.381)

Two indicators are utilized to assess progress towards this goal. The first indicator is the Environmental Quality Index (EQI), which aggregates the Water Quality Index, Air Quality Index, Land Cover Quality Index, and Coastal Quality Index. This composite index serves as a performance metric for environmental quality improvement initiatives in specific regions throughout Indonesia (Dewi & Fitria, 2022). The second indicator is the Percentage of Greenhouse Gas (GHG) Reduction, calculated after implementing mitigation measures across various sectors. Both indicators are monitored periodically to guide the implementation of interventions and actions.

The government aims to implement several mitigation and adaptation strategies: 1) Mitigation in the energy sector, such as electrification of public transportation vehicles and incentives for solar panels; 2) Mitigation in the waste sector, such as optimizing wastewater treatment and waste treatment facilities; 3) Mitigation in other sectors, such

as publishing results of GHG emissions and establishing partnerships with private sectors to control transboundary air pollution; and 4) Adaptation measures such as developing climate-resilient infrastructure.



*Figure VII. Electrification of Public Transportation - TransJakarta
(The Provincial Government of DKI Jakarta, 2022, p.383)*



*Figure VIII. Solar Panels in Thousand Island
(The Provincial Government of DKI Jakarta, 2022, p.390)*

When addressing climate change in urban areas, the urban heat island effect (UHI) emerges as a significant challenge, particularly in cities like Jakarta. The government acknowledges this as an opportunity to promote renewable energy, specifically by harnessing solar power. The installation of solar panels on rooftops throughout the city is being considered as a measure to adapt to the UHI effect. Additionally, the document highlights the potential benefits of solar power for the Thousand Islands area, particularly for resorts that are not yet connected to the electricity grid, depicted in Figure VIII.

Target 11.7 - Urban Green Spaces

Development and provision of urban green spaces also becomes an effort in reaching the third objective of the built environment dimension: *Urban Ecosystem Restoration and Low Carbon Development*. This target received a score of 3.

“The provision of urban green spaces serves to improve air quality, maintain the sustainability of natural ecosystems, create thermal comfort, enhance land carrying capacity, contribute to disaster mitigation areas, and improve the quality and identity of an area.” (Translated from Jakarta Regional Development Plan, 2022, p.383)

Jakarta will approach this target by optimizing the functions of the spaces through increasing quantity and improving the quality of urban green spaces. This includes developments of inclusive green buildings, green covers and city parks. It will be funded by APBD in collaboration with different governmental bodies.



*Figure IX. Taman Maju Bersama - Tebet Eco Park
(The Provincial Government of DKI Jakarta, 2022, p.384)*

One notable achievement towards this target is the Taman Maju Bersama (TMB) program, which established 100 new parks over a span of 5 years (2018-2021). Aristyowati & Ellisa (2021) conducted a study on the effectiveness of two TMB parks during the COVID-19 pandemic. The study found that the program designed parks that provided activities connecting people with nature. However, from a public health perspective, there were still some areas that needed improvement. Criticisms included the need to consider the development of parks on a neighborhood scale, ensuring accessibility to the parks (e.g., within a 15-minute walk from home), as this contributes to the mental well-being and recovery of Jakarta's residents. Moreover, the study showed that safety is still a present concern among the citizens.

The document focuses on the proportion of urban green public spaces as the indicator for measuring progress towards this target, but it does not mention the UN's indicator for measuring safety, which should be considered as an important aspect of urban park development.

Policy Recommendations

The essential aims for a sustainable policy listed by Marshal *et al.* (2017) was addressed in the RPD. This includes elements of slum development, sustainable transport, renewable energy development, water systems, and green infrastructure, as well as aspects related to smart growth, land use integration, spatial planning, urban management, and infrastructure planning. However, the evaluation suggests that it is important to address the challenge of accessibility to transportation modes and open spaces to ensure inclusivity and optimal land function beyond the immediate vicinity. This can be done by incorporating accessibility standards as emphasized by OHCHR (2020), such as making accessibility a requirement in all new construction and transportation contracts, or enhancing awareness and understanding regarding universal design for the built environment. Furthermore, monitoring these efforts is crucial to assess the effectiveness of interventions, as highlighted by Mora *et al.* (2017). This monitoring aspect becomes especially relevant in the context of Target 11.7 on Urban Green Spaces, as studies showed that TMB programs still receive criticism on the lack of public health aspect. Additionally, particular attention should be given to the protection and revitalization of cultural heritage infrastructure, taking into account Jakarta's limited space and future growth.

Conclusion

The Jakarta Regional Development Plan 2023-2026 has been assessed to determine the extent to which it represents the underlying principles of Sustainable Development Goal 11 on Sustainable Cities and Communities. Among the 7 targets evaluated, 3 received a score of 3, 2 received a score of 2, and 2 received a score of 1, indicating varying levels of representation. While the plan manages to address all the principles of SDG-11, it does adapt some different indicators, all while focusing on the similar objective of measurements. This indicates that Jakarta is making progress towards sustainability, although there is still room for improvement to address sustainability more comprehensively.

A comparison of research results reveals that the RPD includes several inclusivity measures. Inclusivity became the main concept of the regional plan as emphasized in the document's vision: *Jakarta, A city for all*, and integrated into various targets such as disaster management and urban green spaces. This finding contrasts with a previous study by Drestalita & Saputra (2018), which highlighted the inadequate consideration of social aspects, including inclusivity, in the previous Jakarta Regional Spatial Plan (RDTR). However, it was also seen that the subject of inclusivity was not specifically targeted throughout RPD, suggesting limited improvement on inclusivity measures from RDTR. Thus, incorporating accessibility standards into legislation and regulatory framework should be considered to ensure inclusivity beyond the immediate vicinity.

Furthermore, while the RPD incorporates only some indicators provided by the UN, there is potential to adapt other indicators to gain a clearer understanding of Jakarta's specific situation and help in intervention planning. Given Jakarta's dynamic and rapidly developing environment, the city faces distinct challenges that require alternative indicators to capture its progress and address its specific needs. For instance, the Urban Basic Service Indicator is utilized to measure the percentage of adequate housing, which prioritizes efforts to improve the availability of decent housing, considering the current low number of households that have such access. This example illustrates how Jakarta tailors its sustainability priorities based on its own spatial focus,

shaped by its societal and economic environment, which is aligned with the theory emphasized by Klopp & Pettara (2017) and Thomas *et al.* (2021).

Upon reflection, a strength of this assessment is the provision of a general overview of the representation of SDG-11 in the Jakarta RPD 2023-2026. This study serves as a guide to better address SDG-11 in future development plans, as it identifies which target needed to be focused on more. However, a weakness lies in the limited scope for each target, which could benefit from more in-depth analysis. Additionally, since the QCA was conducted manually, there is a possibility of errors or missed information that was not discussed in this study. For future studies, it is recommended to focus on specific targets to allow for more in-depth analysis of strategies and concepts. For instance, studying Jakarta's implementation of Transit-Oriented Development (TOD) or its progress towards zero carbon emissions with a particular focus on solar power. This would provide valuable insights into Jakarta's trajectory in navigating the path towards SDG-11.

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