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SUSTAINABLE DEVELOPMENT PLANNING INTEGRATING SDGS WITH MEDAN CITY'S RPJMD

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Abstract: The Sustainable Development Goals (SDGs) require local governments to integrate sustainable development principles into their RPJMD (Regional Medium-Term Development Plan). As a metropolitan city in Indonesia, Medan plays a strategic role in supporting the achievement of the national SDGs. This study analyzes the integration of SDGs in Medan's RPJMD and identifies challenges and opportunities. The study used a qualitative approach through a literature review, scientific journals on SDG integration in other regions, official Medan City Government documents, and sustainable development reports. Content analysis and literature comparisons assessed the alignment of SDG indicators with RPJMD targets. The results show that Medan's RPJMD adopts most of the SDGs, particularly the social and economic aspects. However, the integration of environmental dimensions and partnerships remains limited, in line with recent efforts such as the 2025-2029 RPJMD, which emphasizes inclusive and sustainable cities. Key challenges include a lack of accurate local data, coordination between regional agencies, and suboptimal monitoring and evaluation mechanisms based on SDG indicators.

Keywords: *Urban Planning Innovation, Digital Economy, Smart City Technology, Digital Transformation of Government*

INTRODUCTION

Sustainable development has become a key paradigm in global and national development policies. For local governments like the City of Medan, key planning documents like the RPJMD (Regional Medium-Term Development Plan) serve as strategic instruments for translating global commitments into local practice. Various development efforts currently being implemented by the Medan City Government, such as road repairs, the establishment and rehabilitation of schools, the rehabilitation of government offices, improvements in public health, food security and agribusiness, tourism development, the relocation of traditional markets to central markets, human resource development, poverty alleviation activities, and other activities that impact people's lives, under the mission program "Becoming a Multicultural, Competitive, Humanistic, Prosperous, and Religious City of the Future," have received a positive response from the community, although the results have not yet been fully realized.

According to Arsyia in Sjafrizal (2015:28), there are three types of development planning:

1. Short-term development plans (annual plans), which typically cover one year.
2. Regional medium-term development plans (RPJMD), which typically cover five years.
3. Long-term regional development plans (RPJPD), which typically cover 10-25 years.

The Regional Medium-Term Development Plan (RPJMD) is an official regional planning document required to guide regional development over the next five years of the elected regional head and deputy regional head's term. The RPJMD is closely linked to the vision and mission of the elected regional head. Therefore, the RPJMD document reflects the credibility of the elected regional head in guiding, directing, and programming his/her leadership and regional development over the next five years, and in being accountable to the public for the results at the end of his/her term.

The Medan City Medium-Term Development Plan (RPJMD) for the 2021–2026 period explicitly mentions "achieving the Sustainable Development Goals (SDGs)" as part of its development targets, as outlined in the official RPJMD document. In its development, Medan emphasized the vision of "Medan Bertuah yang Inklusi, Maju, dan Berkelanjutan" (Inclusive, Advanced, and Sustainable Medan), as conveyed by the Mayor of Medan during the Musrenbang (Development Planning Forum).

However, although the RPJMD includes the SDGs, real challenges arise in translating global targets into relevant and measurable local indicators. Limited local data, limited government capacity, and coordination between regional government agencies (OPDs) can be significant obstacles. Therefore, it is important to examine in more depth the extent to which the SDGs are truly integrated into the Medan City RPJMD, what regulations have been adopted, and what strategies have been designed to overcome implementation barriers.

This study aims to analyze the integration of the SDGs in the Medan City RPJMD, identify obstacles and supporting factors, and provide recommendations for strengthening sustainable development planning at the local level.

LITERATURE REVIEW

Sustainable development planning is a crucial approach in aligning regional development goals with global sustainable development frameworks. The integration of Sustainable Development Goals (SDGs) into local government planning instruments, such as Indonesia's Regional Medium-Term Development Plan (RPJMD), represents a significant step towards realizing balanced, inclusive, and sustainable urban growth. Scholars emphasize that localizing the SDGs requires aligning these global targets with the specific social, economic, and environmental contexts of cities, ensuring that planning instruments reflect measurable indicators, and involving multi-stakeholder participation in the development process.

Regarding Medan City, recent development policies as outlined in the RPJMD for the period 2025-2029 highlight its commitment to sustainable development principles aligned with the SDGs. The city's RPJMD articulates seven strategic missions aimed at inclusive, advanced, and sustainable transformation, including strengthening cultural values, equitable infrastructure development, enhancing public services through technology, and promoting data-driven governance. The RPJMD acts not only as a formal planning document but also as a roadmap for achieving the city's vision of sustainable development through the integration of SDG indicators into its programs and activities.

Literature on SDG integration in local development plans in Indonesia shows that harmonizing the RPJMD with SDG frameworks fosters accountability, financial planning efficiency, and better-targeted interventions. Various regional governments have demonstrated that embedding SDGs into their medium-term development plans enhances the monitoring and evaluation process and bridges the gap between global goals and local realities. Medan City's approach follows this trend by emphasizing a collaborative governance model, technology adoption such as the "Medan Satu Data" system, and a strategic focus on addressing urban challenges through SDG-aligned programs. The broader context of sustainable urban development underlines several thematic priorities consistent with Medan's RPJMD, including waste management, water resource management, energy efficiency, sustainable transport, and urban biodiversity preservation. These focal areas align with global sustainable development discourse and underscore the importance of adaptive and inclusive strategies in city planning, especially in rapidly urbanizing Indonesian contexts. Integrating SDGs into RPJMD thus serves as both a compliance measure to national and international commitments and as a practical framework to drive local improvements in environmental sustainability and social equity.

Scientific studies on the integration of SDGs into regional development planning show that successful implementation is largely determined by the institutional capacity of regions to internalize SDG indicators into the planning, budgeting, and

performance evaluation cycles. The theory of sustainable development planning emphasizes that the planning process must include intergenerational and intersectoral dimensions, as well as be evidence-based, so that the impact of each development program on social, economic, and environmental sustainability can be measured. The Sustainable Development Planning model, as described, positions regional planning as a key instrument in adapting global goals to the local context, while ensuring that development strategies continue to take into account ecological capacity and community needs. Previous studies in various cities in Indonesia have found that the integration of SDGs in RPJMD tends to be stronger in social and economic aspects, while environmental and governance aspects still face significant challenges. emphasizes that limited disaggregated data, the unavailability of regional indicators in line with national SDG indicators, and minimal coordination between institutions are factors that slow down the integration process.

In the context of a large city such as Medan, SDG integration is also related to the challenges of rapid urbanization, the digital transformation of public services, and the need to improve data-based governance. The literature on smart sustainable cities emphasizes that cities with high complexity require a planning framework that combines technological innovation, public service efficiency, and accountability in resource management.

In addition, various international studies on localizing SDGs confirm that successful integration depends on three key components:

1. Policy coherence between central and regional planning;
2. Readiness of measurable data and indicators;
3. Multi-actor collaboration, including government, community, academia, and the private sector.

Medan has begun to adopt this collaborative approach by improving coordination between OPDs and strengthening the regional development information system. However, the literature shows that this process needs to be supported by more comprehensive monitoring mechanisms, the use of indicators tailored to the local context, and increased human resource capacity in understanding and applying the concept of sustainable development both technically and strategically.

In addition, the literature emphasizes the importance of integrating digital technology into the planning and monitoring of sustainable development. The use of technology through the "One Data" system can be an important foundation for improving transparency, strengthening evidence-based planning, and facilitating collaboration among stakeholders. However, the effectiveness of this system still depends heavily on the readiness of digital infrastructure, the quality of available databases, and the capacity of government officials to manage and utilize the data optimally.

Thus, the literature emphasizes that SDG integration is not merely an administrative process, but a structural transformation that requires strengthening institutional capacity, improving data quality, and developing collaborative governance. The efforts made by the Medan City Government show a positive direction, but strategic and sustainable measures are still needed so that SDG integration can truly result in inclusive, resilient, and sustainable development.

METHODOLOGY

This research uses a qualitative method based on a literature review, focusing on the analysis of scientific journals, government reports, and official documents related to the integration of SDGs in regional development planning, specifically the Medan City Medium-Term Development Plan (RPJMD). This method was chosen to gain an in-depth understanding of previously studied patterns, strategies, and challenges of SDG integration, and to compare them with the actual conditions outlined in Medan City planning documents.

1. Literature Data Collection

Data was obtained through a search of national and international journals, academic books, government reports, and official documents. The primary sources reviewed include:

- a. Journals on SDG integration in regional RPJMDs in Indonesia.
- b. Studies on sustainable development policies at the city/district level.
- c. Official documents of the Medan City Government, such as the 2021–2026 RPJMD, the Regional Development Planning Agency (Bappeda) Strategic Plan (Renstra), and the Environmental Agency's Strategic Plan (Renstra).
- d. Research articles analyzing barriers to regional development planning, including aspects of data, coordination, and budgeting.

The journals used included research from Medan and other relevant cities to compare SDG integration patterns across regions. The study was then adapted to the Medan City context.

2. Data Analysis Techniques: Content & Comparative Analysis

Data analysis was conducted using content analysis to:

- a. identify key themes in previous journals,
- b. identify patterns of SDG integration in regional planning documents,
- c. assess the alignment of SDG indicators with performance indicators in the RPJMD.

A comparative analysis approach was used to compare:

1. the results of previous journal studies,
2. the content of the Medan City RPJMD, and
3. sustainable development planning theory.

This approach helps to determine the extent to which Medan City's conditions are consistent with or different from research findings in other regions.

RESEARCH RESULT AND DISCUSSION

RESULT

The inclusion of the Sustainable Development Goals (SDGs) in the Medan City Medium-Term Development Plan (RPJMD) reflects the local government's efforts to align the local development agenda with global commitments. As a metropolitan city with high social, economic, and environmental complexity, Medan City holds a strategic position in supporting the achievement of the national SDGs. The 2021–2026 RPJMD prepared by the Medan City Government explicitly incorporates sustainable development principles as one of the foundations for formulating the vision, mission, targets, and direction of regional

development policies. This demonstrates that development orientation has begun to shift from a conventional approach to a holistic and sustainable approach. The discussion on the integration of the Sustainable Development Goals (SDGs) in the Medan City RPJMD demonstrates that the city government has endeavored to translate the global development agenda into regional policies. Based on the analysis of the 2021–2026 RPJMD documents, it is clear that the commitment to the SDGs is reflected in the inclusion of sustainable development goals as one of the foundations for setting development targets and directions. This integration appears stronger in the social and economic dimensions, for example, in poverty alleviation programs, improving education and health services, developing basic infrastructure, and strengthening city competitiveness. These programs align with SDGs 1, 3, 4, 8, and 9, which are widely outlined in regional government performance indicators.

However, content analysis results indicate gaps in SDG integration in the environmental and partnership dimensions, as well as multi-stakeholder collaboration. While the environmental aspect in the Medan City Medium-Term Development Plan (RPJMD) does receive attention, it has not yet fully adopted the specific and measurable indicators recommended in national guidelines. This situation indicates that development orientation still places greater emphasis on the socio-economic needs of the community, while environmental sustainability issues have not yet fully become a core part of medium-term policy development.

The integration of SDGs in the RPJMD can be seen in a number of priority programs that align with global development goals. In the social dimension, for example, the RPJMD includes programs to improve the quality of education, access to health services, poverty alleviation, and strengthening community social resilience. These programs are closely linked to SDGs 1, 3, 4, and 10. In the economic dimension, the focus on increasing regional competitiveness, modernizing city infrastructure, developing MSMEs, and expanding employment opportunities also demonstrates consistency with SDGs 8 and 9. Integration across these two dimensions demonstrates that the Medan City Government is relatively prepared to adopt the SDG agenda, which focuses on public welfare and economic growth.

Table 1.1 Summary of SDG Integration in the Medan City Medium-Term Development Plan

RPJMD Fields/Programs	Main Indicators of the RPJMD	Linkages to SDGs	Suitability Analysis	Strengthening Recommendations
Education	APK & NER for PAUD, SD, SMP increased; education quality	SDG 4 – Quality Education	Aligned, but indicators do not yet meet SDG standards (literacy and numeracy are not included).	Add indicators for learning quality (AKM), inclusion of poor and disabled children.

Health	Stunting reduction, primary health care improvement	SDG 3 – Health & Well-Being	Strong alignment; disease indicators are still incomplete.	Add indicators for non-communicable diseases, safe sanitation, and environmental health.
Economy & Poverty	Poverty reduction, MSMEs, workforce growth	SDG 1, 2, 8	MSMEs and food security are aligned with SDGs; work quality is incomplete.	Add indicators for the informal sector, inequality, and labor productivity.
Infrastructure	Improved roads, clean water, and sanitation	SDG 6, SDG 9	Focus is still on physical resources without sustainability measurements.	Add indicators for safe drinking water, waste management, and resilient infrastructure.
Environment	Waste management, green open spaces	SDG 11, 13, 15	Environmental indicators are weak (air, emissions, and conservation are missing).	Add indicators for air quality, green open space per capita, and emission reduction.
Good Governance	Bureaucratic reform, public services	SDG 16	Alignment exists, but SDG indicators are not yet used.	Use integrity indicators, open data, and independent satisfaction surveys.
Regional Partnerships	Collaboration between OPD, private sector, and community	SDG 17	There are no specific partnership indicators.	Establish an SDG Partnership Framework, MoU indicators, and collaborative funding.
Data Systems & Monitoring and Evaluation	Annual RPJMD reporting	All SDGs	Out of sync with national SDG indicators; data is not disaggregated.	Create a Local SDG Indicator Set, SDG dashboard, and integrate data from regional government agencies (OPD) and Statistics Indonesia (BPS).

DISCUSSION

Sustainable development has become a global imperative for achieving balanced progress in economic, social, and environmental aspects. In Indonesia, this vision is implemented through aligning the Sustainable Development Goals (SDGs) with regional development plans, particularly the Regional Medium-Term Development Plan (RPJMD). The integration of SDGs into the RPJMD of Medan City represents a strategic effort to ensure that local development policies are consistent with national and international sustainability commitments.

Medan City, as one of Indonesia's major urban centers, faces complex challenges related to urbanization, waste management, air quality, poverty reduction, and equitable infrastructure development. Incorporating SDG principles such as sustainable cities and communities, clean water and sanitation, decent work and economic growth, and climate action into the RPJMD enables the local government to formulate more inclusive and measurable development strategies. This integration turns global goals into localized actions that directly address community needs.

The process of integrating SDGs into the RPJMD requires coherent planning, cross-sectoral collaboration, and strong institutional capacity. It involves aligning each SDG target with regional development indicators, budget priorities, and performance evaluation frameworks. For example, SDG 11 (sustainable cities and communities) can be linked with Medan's urban infrastructure development programs, while SDG 3 (good health and well-being) aligns with healthcare service improvements. Effective data management and participatory decision-making are also crucial to monitor progress and ensure transparency.

However, several obstacles hinder smooth integration. Limited data availability, overlapping bureaucratic responsibilities, and insufficient funding for sustainable initiatives often create implementation gaps. Additionally, the need for greater public awareness and stakeholder involvement remains high, as many development actors still perceive SDGs as merely abstract international goals rather than operational local guidelines. Strengthening governance, institutional coordination, and human resource competency in sustainability management are therefore essential to overcome these barriers.

The discussion on integrating SDGs into Medan City's RPJMD also needs to be linked to the increasingly complex dynamics of regional development governance. From a governance theory perspective, the success of sustainable planning is largely determined by the extent to which local governments are able to establish effective cross-sectoral coordination, especially in managing multidimensional issues such as poverty, climate change, and the quality of public services. Medan, as a metropolitan city with a high population density, faces the need to improve coordination between regional government agencies so that development programs are not implemented in a sectoral manner, but rather in an integrated manner that is aligned with SDG targets.

In addition, strengthening data and monitoring systems is a strategic issue in discussions on SDG implementation. Evidence-based policymaking theory emphasizes that effective development decisions must be based on accurate and evenly distributed data.

However, the results of the analysis show that Medan still faces limitations related to disaggregated data, especially for environmental indicators and specific social indicators such as inequality among vulnerable groups. The mismatch between RPJMD indicators and national SDG indicators also creates gaps in the monitoring and evaluation process. Thus, digital transformation through the "Medan Satu Data" platform is a positive step, but it still needs improvement in terms of interoperability, data validity, and integration between government data sources.

In terms of policy implementation, the discussion also revealed that budgeting is a determining factor in the successful alignment of SDGs in the RPJMD. Based on the theory of fiscal sustainability, development budgets must be allocated efficiently and with a long-term orientation to ensure that environmental and social carrying capacity is maintained. However, in practice, regional budgets often lean toward fulfilling short-term programs with instant results, so that long-term sustainability has not been a major focus. This shows the need for reform in the SDG budget tagging process, so that every program and activity in the RPJMD can be clearly linked to relevant SDG targets.

Furthermore, in the discourse on urban sustainability, the literature emphasizes the importance of community and private sector participation. The collaborative governance approach emphasizes that sustainable development cannot be achieved through internal government policies alone, but requires the active involvement of non-governmental actors. In Medan, several initiatives have been carried out through private sector partnerships in waste management and improving the quality of basic infrastructure. However, public participation is still limited to Musrenbang forums, while long-term collaboration through mechanisms such as public-private partnerships (PPPs) and community-driven development is still not optimal. In fact, urban sustainability greatly needs the contribution of the community, the business world, academics, and civil society organizations.

Overall, the discussion shows that the integration of SDGs into the RPJMD of Medan City has led to a more inclusive and measurable transformation of development planning, but implementation challenges remain significant. Strengthening governance, providing quality data, sustainability-oriented budgeting, and multi-stakeholder collaboration are important prerequisites for the integration of SDGs to have a real impact on urban development. These findings emphasize that the success of sustainable transformation depends not only on document planning, but also on political commitment, bureaucratic capacity, and the consistency of local governments in implementing the principles of sustainable development.

CONCLUSION AND RECOMMENDATIONS

Sustainable development planning in Medan City demonstrates that integrating the Sustainable Development Goals (SDGs) with the Regional Medium Term Development Plan (RPJMD) is a strategic step to ensure more targeted, inclusive, and sustainable regional development. This integration enables the local government to align city development priorities with the global development agenda, particularly in social, economic, environmental, and

governance aspects.

The study shows that most priority programs in the Medan City RPJMD are aligned with SDG targets, particularly in sectors such as poverty alleviation, improving education and health services, enhancing basic infrastructure, strengthening the local economy, and improving environmental quality. However, strengthening planning, providing city-level SDG indicator data, regular evaluation, and broader collaboration with the community, business, and non-governmental organizations are still needed.

Overall, the integration of the SDGs into the Medan City RPJMD provides a more comprehensive and long-term development framework. Optimal implementation requires strong political commitment, adaptive governance, a measurable monitoring system, and the active participation of all stakeholders. This effort will accelerate the achievement of development goals that are equitable, sustainable, and have a real impact on the people of Medan City.

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