International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 8, 2025
https://theaspd.com/index.php

Auditing Regional Health Governance Readiness For SDGs Achievement: Evidence From Central Java And North Sulawesi, Indonesia

Stefani Lily Indarto[1]; Gregorius Yoga Panji Asmara[2]; Joko Purwoko[3]; Lintang Jata Anggita[4]; Vione Deisi Oktavina[5]; Margaretha Septiani Triastuti[6]; Devia Lauren[7]
Emails: sli@unika.ac.id[1]; gego@unika.ac.id[2]; joko.purwoko@unika.ac.id[3]; lintang.jata@unika.ac.id[4]; vionesumakul@gmail.com[5]; 21g10025@student.unika.ac.id[6]; 22g10037@student.unika.ac.id[7];
[1,2,3,4,5,6] Soegijapranata Catholic University
[7]Gunung Maria Tomohon Health College

Abstract
The achievement of the Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being, is crucially determined by the capacity of health governance at the regional level. In the context of health decentralization in Indonesia, provincial and district/city governments play a strategic role in ensuring the quality of health services, program planning, resource allocation, provision of health workers, and the use of data for decision-making. Despite a strong national commitment to achieving the SDGs, the reality on the ground shows that regional disparities persist, both in terms of health indicator performance and governance quality. The 2023/2024 Indonesian Nutrition Status Survey (SSGI) showed that stunting prevalence, maternal and child health status, and basic immunization coverage still vary across regions, illustrating differences in governance readiness between provinces. Central Java and North Sulawesi are two regions with distinct geographic, demographic, and health burden characteristics, yet both face similar governance challenges. Central Java, as a large province, faces challenges related to health data integration, distribution of health workers across regions, and consistency in program planning across various levels of government. North Sulawesi, on the other hand, faces geographical challenges in the form of an archipelago, limited primary healthcare facilities in remote areas, and suboptimal data utilization. These differences make the two provinces relevant subjects for comparative studies to assess health governance readiness in the context of achieving the SDGs.
The main questions in this research focus on the readiness of regional health governance in the two provinces, which governance components influence the effectiveness of health program implementation, and the extent to which actual conditions align with the principles of good governance. Furthermore, this research aims to identify gaps between ideal governance and the reality on the ground, and formulate policy directions that can strengthen regional health governance systems in supporting the achievement of the SDGs. This research draws on several globally recognized health governance models, including the WHO Health System Governance Framework, the UNDP Governance Principles, and the Good Governance framework, which encompasses transparency, accountability, effectiveness, participation, and cross-sectoral coordination. Furthermore, previous studies on health governance in Indonesia have focused more on technical evaluations of health programs or assessments of performance indicators. Few studies have used a governance audit approach to comprehensively assess regional readiness, particularly those that integrate routine health data, planning documents, the quality of health information systems, and the alignment between the Regional Medium-Term Development Plan (RPJMD), Strategic Plan (Renstra), and SDGs. This knowledge gap suggests that a health governance audit study using case studies from two different provinces has both academic and practical significance. This state-of-the-art research lies in its approach, which integrates regional planning analysis, SSGI 2024-based health indicators, human resource and health facility capacity, data integration quality, and cross-sectoral coordination mechanisms within a single audit framework. This approach allows for a more objective and in-depth assessment of governance readiness than program evaluation or indicator analysis alone.
Keywords: *Health governance; Governance Readiness; SDGs; Policy Audit*

INTRODUCTION

The achievement of the Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being, is crucially determined by the capacity of health governance at the regional level. In the context of health decentralization in Indonesia, provincial and district/city governments play a strategic role in ensuring the quality of health services, program planning, resource allocation, provision of health workers, and the use of data for decision-making. Despite a strong national commitment to achieving the SDGs, the reality on the ground shows that regional disparities persist, both in terms of health indicator

performance and governance quality. The 2024/2025 Indonesian Nutrition Status Survey (SSGI,2024) showed that stunting prevalence, maternal and child health status, and basic immunization coverage still vary across regions, illustrating differences in governance readiness between provinces.

Central Java and North Sulawesi are two regions with distinct geographic, demographic, and health burden characteristics, yet both face similar governance challenges. Central Java, as a large province, faces challenges related to health data integration, distribution of health workers across regions, and consistency in program planning across various levels of government. North Sulawesi, on the other hand, faces geographical challenges in the form of an archipelago, limited primary healthcare facilities in remote areas, and suboptimal data utilization. These differences make the two provinces relevant subjects for comparative studies to assess health governance readiness in the context of achieving the SDGs (BPJS, 2024).

The main questions in this research focus on the readiness of regional health governance in the two provinces, which governance components influence the effectiveness of health program implementation, and the extent to which actual conditions align with the principles of good governance. Furthermore, this research aims to identify gaps between ideal governance and the reality on the ground, and formulate policy directions that can strengthen regional health governance systems in supporting the achievement of the SDGs.

This research draws on several globally recognized health governance models, including the WHO Health System Governance Framework, the UNDP Governance Principles, and the Good Governance framework, which encompasses transparency, accountability, effectiveness, participation, and cross-sectoral coordination. Furthermore, previous studies on health governance in Indonesia have focused more on technical evaluations of health programs or assessments of performance indicators. Few studies have used a governance audit approach to comprehensively assess regional readiness, particularly those that integrate routine health data, planning documents, the quality of health information systems, and the alignment between the Regional Medium-Term Development Plan (RPJMD), Strategic Plan, and SDGs. This knowledge gap suggests that a health governance audit study using case studies from two different provinces has both academic and practical significance. This state-of-the-art research lies in its approach, which integrates regional planning analysis, SSGI 2024 based health indicators, human resource and health facility capacity, data integration quality, and cross-sectoral coordination mechanisms within a single audit framework. This approach allows for a more objective and in-depth assessment of governance readiness than program evaluation or indicator analysis alone.

LITERATURE REVIEW

The Sustainable Development Goals (SDGs), particularly SDG 3 on good health and well-being, emphasize the importance of strengthening health systems to ensure access to quality services for all. Global literature confirms that achieving SDG 3 is not solely determined by the availability of health services but is also strongly influenced by the quality of health governance at all levels of government. The WHO (2021–2024) defines health governance as the functions of leadership, coordination, regulation, accountability, and resource management that enable health systems to function effectively. In the context of a developing country with a decentralized character like Indonesia, health governance at the provincial and district/city levels plays a crucial role in determining the quality of services and the achievement of health indicators (WHO, 2021).

Various studies have shown that a strong regional health governance system characterized by transparency, accountability, effectiveness, and participation is directly correlated with increased health service coverage, reduced maternal and infant mortality rates, accelerated elimination of infectious diseases, and reduced stunting prevalence. These principles align with the Good Governance framework developed by the UNDP and serve as a reference for many countries in strengthening public sector governance. In the health sector, this principle is translated into evidence-based planning, efficient budget allocation, strong data integration, cross-sectoral coordination, and consistent monitoring and evaluation.

The WHO Health Systems Framework emphasizes that governance is one of the six pillars of a health system, along with health financing, health workers, information systems, health services, and essential medicines/vaccines. The governance pillar serves as stewardship, ensuring the effective functioning of all other pillars. In the Indonesian context, various reports indicate that a number of governance challenges persist, such as the lack of synchronization between the Regional Medium-Term Development Plan (RPJMD) and the Health Office's Strategic Plan, weak integration of health information systems

(including SIKDA and routine community health center data), and suboptimal use of data for program planning and evaluation (De Leeuw, 2021).

Health governance audits have emerged as an increasingly relevant approach to assessing local governments' readiness to achieve the SDGs (Kickbusch & Leung, 2022). This audit approach not only examines compliance with procedures but also evaluates the effectiveness of planning processes, data management, health worker distribution, budget allocation, and inter-agency coordination mechanisms. In developed countries, governance audits have become a crucial part of strengthening health systems, while in Indonesia, this approach remains limited to program audits and internal government audits. Research specifically examining governance readiness audits for achieving the SDGs is still rare.

A literature review shows that most health research in Indonesia focuses on health indicators such as stunting, maternal mortality rate (MMR), infant mortality rate (IMR), tuberculosis, and other infectious diseases. Some studies highlight the determinants of health, but few evaluate governance as a determinant of intervention success. Similarly, research on regional health governance tends to be descriptive in nature without using a comprehensive audit approach. Yet, evaluating governance readiness is crucial, especially when regions must integrate various planning instruments such as the SDGs, the National Medium-Term Development Plan (RPJMN), the Regional Medium-Term Development Plan (RPJMD), the Health Office's Strategic Plan, and central and regional performance indicators (IKP).

From the health information system perspective, the literature highlights challenges related to data fragmentation between agencies, limited interoperability, and reliance on manual input. A WHO study confirms that poor data quality directly impacts decision-making (Biermann, et al, 2022). This is relevant to the findings of various studies in Indonesia, which show that health data is often outdated, unintegrated, or not optimally utilized in program planning. In this study, the health information system aspect is a crucial part of the readiness audit, considering that the SDGs demand accurate and sustainable data to ensure target achievement (Sachs, et al, 2023).

The literature review also includes studies on health human resources, which show that the distribution of health workers in Indonesia is uneven. Some provinces face shortages of certain health workers, while others have surpluses. This imbalance is often influenced by ineffective governance in the placement, rotation, and incentives of health workers. In North Sulawesi, for example, the island region is a geographic factor that influences the distribution of health workers, while in Java.

RESEARCH METHODS

This study uses a governance readiness audit approach to assess the extent to which provincial governments are able to meet the health governance prerequisites necessary to achieve SDG 3 indicators. The audit approach was used because it provides a more objective and systematic framework for identifying the adequacy of structures, processes, capacities, and stakeholder coordination within the regional health system. This method is relevant to answering the research question regarding health governance readiness in Central Java and North Sulawesi, particularly in the context of disparities in health indicator performance and institutional capacity across regions. By design, this study employed a mixed-method sequential explanatory approach, beginning with a descriptive quantitative analysis of health indicators based on data from the 2024 Indonesian Nutrition Status Survey (SSGI, 2024), Provincial Health Profiles, BPJS Kesehatan data, official publications from BPS, the Ministry of Health, and regional planning documents. The quantitative analysis was conducted to measure performance gaps in key SDG 3 indicators, including stunting prevalence, basic immunization coverage, maternal and child health (MMR), infant and child health (IMR), primary care status, and health worker distribution. The results of this quantitative analysis then served as the basis for identifying governance risk areas requiring further examination using audit techniques. The next stage was qualitative analysis through semi-structured interviews with key stakeholders, including officials from the Provincial Health Office, the Regional Development Planning Agency (Bappeda), the Main Branch of the National Health Insurance (BPJS Kesehatan, 2024), and representatives from provincial referral hospitals. Informants were selected using purposive sampling, with the following criteria: having authority over planning, budgeting, data management, or coordinating health services. Interviews focused on governance aspects, namely health data integration, planning and budgeting processes, cross-sector coordination mechanisms, health worker capacity, and the quality of basic services as core components of readiness governance.

The readiness audit procedure was conducted through three main stages: (1) mapping current governance capacity, which maps existing conditions using health governance indicators; (2) gap and risk analysis,

which compares current conditions with governance standards based on the WHO Health System Building Blocks framework and the UNDP SDG 3 readiness indicators; and (3) formulating a governance readiness score, which assigns a score to each governance dimension structure, process, capacity, coordination, and accountability—based on empirical evidence from quantitative data and interview findings.

To ensure data validity, this study applied source triangulation through cross-verification between SSGI data, official government documents, and stakeholder interviews. Reliability was further enhanced by the use of standardized global and national indicator-based audit guidance instruments. Data analysis was conducted in an integrative manner, compiling audit results into key findings that map the health governance readiness of each province, along with the underlying factors and their implications for accelerating the achievement of the SDGs (Allen et al, 2021). This research method allows for a comprehensive evaluation that not only quantitatively describes regional health performance but also assesses governance capacity, which directly determines program effectiveness. Using a readiness audit approach, this study provides a more comprehensive and solution-oriented analytical framework for local governments to strengthen health systems to meet SDG 3 targets at the provincial level.

RESULTS AND DISCUSSION

Methodologically, this study uses a descriptive-evaluative audit approach combined with a gap analysis between actual and ideal governance conditions. Data were obtained from official documents such as the RPJMD (Rencana Pembangunan Jangka Menengah Daerah/RPJMD), the Health Office's Strategic Plan, the Health Profile, SSGI data, BPJS reports, as well as interviews and field observations at several relevant agencies. This method allows for triangulation between quantitative and qualitative data to comprehensively understand the governance context. The findings of this study are expected to provide a clearer picture of the governance readiness of the two provinces, identify critical factors hindering the achievement of SDG targets, and offer policy recommendations that can be practically implemented by local governments.

Readiness of Local Government Health Governance for Achieving the SDGs

Health Profile & Key Indicators

According to the latest data from the official publication of the Central Java Province Statistics Agency (BPS) in 2023, maternal health services (K6 services) in Central Java reached approximately 90.0% provincially. This achievement demonstrates a relatively high level of fulfillment in terms of basic access to pregnancy services. This is a positive indicator in moving the province closer to the SDG target for maternal and child health. Regarding nutrition and stunting, the 2024 Indonesian Nutrition Status Survey (SSGI) reported that the national average stunting prevalence decreased to 19.8%. Although specific provincial data for North Sulawesi is not yet available in the latest national publication, the 2022 stunting survey recorded a prevalence of approximately 20.5%. Meanwhile, within Central Java, this province is among the six provinces with the highest number of stunted toddlers, making it a focus for national intervention.

From a governance readiness perspective, the high level of pregnancy service indicators (K6) in Central Java is a crucial indicator, indicating that basic service mechanisms are in place. However, even with access to services, this is not sufficient to guarantee the success of the SDGs unless accompanied by sound data, evidence-based planning, and consistent nutrition intervention strategies.

Priority Programs & Planning Documents

Based on the regional health profile and planning documents (RPJMD/Renstra Dinas Kesehatan) analyzed in the audit, Central Java prioritizes maternal-child intervention, immunization, and nutrition programs. However, the audit revealed that the integration of SDG targets (such as the national stunting target) in regional planning documents is not consistent across districts/cities. Some districts have more conservative targets or do not explicitly include nutrition/stunting indicators. This indicates gaps in the harmonization of provincial-district planning. For North Sulawesi, based on interviews with provincial and district Health Office officials (internal audit data), priority programs focus on primary care in island regions, basic immunization, and health workforce availability. However, official provincial-district planning documentation shows variation in specific targets and indicators. This poses a challenge to consistent implementation across the region.

Availability and Utilization of Routine Health Data

The audit revealed that in Central Java, a routine health information system (SIKDA/Puskesmas data) is in place, but data utilization for program planning and evaluation is suboptimal. Much data is not regularly updated, and analysis of health trends (e.g., stunting, immunization coverage, maternal/infant mortality) is rarely used as the primary basis for intervention planning. This indicates that although data structures exist, data governance aspects (analysis, monitoring, and program improvement) remain weak. In North Sulawesi, geographical challenges (island region, transportation access) are exacerbated by limited IT infrastructure and human resources in remote districts, resulting in delayed or incomplete routine data. Consequently, evidence-based planning is extremely difficult at a province-wide level.

Governance Aspects Influencing the Effectiveness of Regional Health Program Implementation within the SDG Framework

Structure, Process, and Quality of Governance

An analysis of the health governance structure indicates that both provinces have established Health Offices and provincial/district health planning units. However, authority in determining budgets and program priorities often overlaps between provinces and districts, sometimes hindering decision-making. In Central Java, the planning process tends to be technocratic. Health planning lacks involvement of non-health stakeholders (food, education, and sanitation sectors), even though SDG interventions require a multisectoral approach. In North Sulawesi, coordination between districts and provinces often faces logistical and communication challenges, particularly in the archipelago. Health program implementation is often hampered by the distribution of resources, supervision, and coordination of subsidies/support from the province to the district.

Quality of Planning and Integration of SDG Targets

The audit found that in many districts in Central Java, the RPJMD/RKPD documents do not explicitly include SDG 3 or stunting reduction targets. This suggests that commitment to the SDGs is largely rhetorical and has not been fully internalized in regional planning. Only a small number of districts systematically integrate nutrition and maternal-child health targets. This inconsistency leads to significant variation in health indicator performance across districts. In North Sulawesi, provincial planning documents also tend to focus on general basic services without specific nutrition indicators or stunting targets. Consequently, nutrition interventions are often ad-hoc programs, such as immunization campaigns, integrated health posts (Posyandu), and supplementary food distribution—rather than integrated programs with regular monitoring and long-term targets.

Availability and Utilization of Routine Health Data

As explained, even when data is available, its utilization is suboptimal. In Central Java, data on pregnancy and immunization services are available at high levels, but gaps in data on nutrition and toddler growth and development status persist, with many reports between districts not updated regularly. This complicates analysis of stunting trends and evidence-based intervention strategies. In North Sulawesi, limited infrastructure and human resources often delay routine data; in some remote districts, health service reporting is done manually and sporadically, exacerbating information gaps and decision-making.

Cross-Sector Coordination and Program Collaboration

The audit revealed that cross-sector coordination in both provinces is not optimal. In Central Java, although there are intersectoral forums (health, education, sanitation, and regional planning), the frequency of meetings and policy follow-up are very low. Nutrition intervention programs such as integrated health posts (posyandu) or supplementation rarely involve the food or sanitation sectors. This reduces program effectiveness in the long term. In North Sulawesi, coordination is further challenged by geography and inter-island communication. Many districts implement health programs independently without provincial synergy, resulting in program duplication or gaps in certain areas.

Budget Availability and Resource Utilization

In Central Java, provincial and district health budgets are relatively adequate for basic services such as maternal and child health and immunization; however, allocations for nutrition programs, surveillance, and long-term stunting interventions remain limited, often deprioritized by curative and administrative services. This indicates that despite the existence of structures and budgets, allocation policies have not been consistently directed towards SDG targets. In North Sulawesi, budgetary challenges are greater, with some districts having low regional original revenue (PAD), relying on general allocation funds, and

difficulty attracting dedicated funds for nutrition programs or preventive interventions. The utilization of human resources and health facilities is highly dependent on provincial support, resulting in remote districts often lacking health workers, medicines, or logistics.

Health Facilities and Personnel Capacity

The audit noted that in Central Java, there is a relatively good distribution of community health centers (Puskesmas) and hospitals in urban areas; however, in rural and remote areas, access remains difficult and the quality of services varies. Some Puskesmas lack health workers, particularly general practitioners and nutritionists. On the other hand, the relatively good coverage of maternal and immunization services suggests that despite existing capacity, regional disparities remain significant. In North Sulawesi, island regions and remote districts often lack health workers, and many Puskesmas only have nurses or midwives, without full-time doctors. This limits primary health care and nutrition interventions, particularly in small islands or mountainous areas.

Monitoring, Evaluation, and Public Accountability

One of the most significant audit findings was the weakness of monitoring, evaluation, and public accountability mechanisms in both provinces. In Central Java, although routine service data and reports are available, formal evaluations of program impacts (e.g., stunting reduction) are rarely conducted, and the public is not actively involved in oversight. In North Sulawesi, transparency of data and reports is often minimal, making it difficult to assess the actual effectiveness of health and nutrition intervention programs.

Gap Analysis of Regional Health Governance Against Good Governance Principles

Compliance of Governance with Good Governance Principles

From the audit analysis, it can be concluded that the basic governance structures and components (institutions, regulations, planning units) are in place in both provinces. This demonstrates the formal commitment of local governments to health care delivery. However, other important aspects—such as transparency, public participation, cross-sector coordination, monitoring and evaluation—have not been optimally implemented. Therefore, current Governance only partially meets the principles of good governance.

Identifying Gaps: Ideal vs. Reality

Ideally, regional health governance planning should consistently incorporate SDG 3 targets, including priority indicators such as nutritional status and stunting, into medium-term and annual planning documents. Up-to-date, standardized, and integrated routine health data across systems serve as the primary foundation for developing evidence-based policies. Ideally, local governments allocate adequate budgets for promotive and preventive interventions, not just curative services. Furthermore, multisectoral coordination between the health office, the Regional Development Planning Agency (Bappeda), education, social services, and other partners is systematic. Monitoring and evaluation processes are conducted regularly with transparent accountability mechanisms, and communities are involved through village forums, health cadres, and other participatory mechanisms to ensure interventions are targeted. However, the reality on the ground reveals many gaps. In a number of regions, planning documents do not explicitly include targets for nutrition or stunting, despite these issues being national priorities. Health data that should inform policy is often out of date, incomplete, or even unused in the planning process. Regional budgets tend to be allocated more heavily to curative services, such as financing regional hospitals (RSUD), while preventive interventions like immunization, nutrition education, and maternal-child health services receive a limited share. Cross-sectoral coordination remains weak, often sporadic, and unstructured within clear institutional mechanisms. Program evaluations are often conducted as a formality, with minimal public accountability, so recommendations for improvement are not always consistently implemented.

Key Causes of Gaps

Regional health governance readiness still faces several structural challenges that impact the effectiveness of achieving SDG 3. Many regions, particularly remote and island areas, have limited human resource capacity and health facilities, preventing comprehensive basic services from always being provided. Furthermore, the planning process remains fragmented; SDG targets, including nutrition, maternal-child health, and infectious diseases, have not been systematically integrated into the Regional Medium-Term Development Plans (RPJMD) or Regional Strategic Plans (Renstra). This situation results in health

development directions in various regions not being aligned with the broader sustainable development agenda.

Health data and information systems also do not optimally support evidence-based decision-making. In several districts/cities, data collection is still carried out manually, is not integrated with provincial or national platforms, and lacks analysis that can be used for priority setting. Furthermore, budget commitment to preventive interventions and nutrition programs remains low, as allocations are largely allocated to curative services and operational costs. Weak cross-sectoral coordination mechanisms and minimal public participation exacerbate the situation, as health issues inherently require collaboration across various sectors, such as education, social services, planning, sanitation, and community empowerment. Without improvements in these governance aspects, the acceleration of achieving SDG 3 indicators has the potential to be slow and uneven.

The Impact of Gaps on the Effectiveness of Program Implementation and SDG Targets

Gaps in regional health governance directly impact the effectiveness of program implementation and the achievement of SDG targets. Although basic services such as prenatal care (K6) and immunization have shown significant progress in some regions, particularly in Central Java, programs focused on improving long-term nutrition and health indicators still face serious obstacles. Lack of integrated planning, poor data utilization, and limited budget allocation for prevention efforts have resulted in suboptimal implementation of interventions for stunting, maternal-infant health, infectious disease control, and equitable distribution of primary care services. In North Sulawesi, challenges are exacerbated by its archipelagic geography and capacity gaps between regions, creating significant disparities in access to services and the quality of health programs. As a result, some districts/cities lag behind in achieving SDG indicators, while others are more advanced, resulting in uneven achievement of overall provincial targets. These gaps are further exacerbated by ad-hoc, unsustainable program implementation practices, and minimal monitoring and evaluation based on performance indicators. Without clear follow-up mechanisms, interventions yield only short-term impacts and fail to address more fundamental health determinants. The lack of evaluation also prevents recommendations for improvement from being integrated into the annual planning cycle, thus missing opportunities for continuous improvement for local governments. In the long term, this situation risks having minimal impact on population health in both provinces and significantly delaying the achievement of SDG 3 targets.

Policy Directions for Strengthening Regional Health Governance to Support SDG Targets

Policy directions for strengthening regional health governance to support the accelerated achievement of SDG targets need to focus on integration, system strengthening, and long-term funding commitments (United Nations, 2023). Audit findings indicate that the most strategic step is to ensure that SDG targets, particularly nutrition and stunting indicators, are explicitly integrated into regional planning documents such as the RPJMD (Regional Medium-Term Development Plan) and the Regional Apparatus Strategic Plan. This integration forms the basis for policy consistency, program priorities, and sustainable budget allocations. Furthermore, regional governments need to strengthen health information systems through the integration of SIKDA (School-Based Health Information System), DHIS-2 (Health Information System), and Community Health Center-based nutrition reporting, including ensuring updated data on toddler status, service coverage, and other health risk indicators. Better data utilization enables responsive planning and more rigorous program evaluation.

In terms of funding and capacity, policy recommendations include increasing budget allocations for promotive and preventive interventions, particularly for nutrition and maternal-child health programs, which have traditionally received less priority than curative services. Strengthening the capacity of health workers is also crucial, particularly in remote or island areas facing human resource shortages, through incentive mechanisms, training, and more equitable workforce distribution. Furthermore, cross-sectoral coordination needs to be strengthened so that interventions in nutrition, sanitation, education, and food security can be implemented comprehensively and complement each other. Finally, establishing regular monitoring, evaluation, and public accountability mechanisms with transparent reporting and community involvement will ensure the quality of program implementation and maintain the sustainability of SDG targets at the regional level.

As a result of the audit, a governance readiness score was compiled for each province (structure, process, capacity, coordination, accountability). Central Java has moderate to high readiness for basic services but low for nutrition interventions and multisectoral coordination; while North Sulawesi has low to moderate overall readiness, particularly for data, capacity, and coordination. Detailed scores are presented in Table

1 below, on a scale of 1–5: 1 = very low, 5 = very high. The scores were compiled based on data analysis, planning documents, interviews, and WHO governance standards.

Table 1. Health Governance Readiness Score – Central Java & North Sulawesi Province

Governance Components	Assessment Indicators	Central Java (Score)	North Sulawesi (Score)
Structure and Regulation	Availability of Health Service structure, regulations, role of province/district	**4.2**	**3.6**
SDGs Planning & Integration	Integration of SDG 3, stunting targets, consistency of RPJMD–Renstra	**3.4**	**2.9**
Information Systems and Data Quality	Completeness of data, regular updates, SIKDA interoperability	**3.1**	**2.5**
Health Workforce Capacity	Distribution of health workers, competency, availability of village/remote health workers	**3.6**	**2.7**
Basic Health Services	K1–K6 coverage, immunization, toddler services	**4.4**	**3.5**
Cross-Sector Coordination	Frequency, effectiveness of multisectoral forums (Bappeda-health-food)	**3.0**	**2.4**
Budget and Financing	Promotive-preventive allocation, provincial government support, district funds	**3.2**	**2.6**
Monitoring & Evaluation	Routine monitoring and evaluation, feedback programs, internal audits	**3.1**	**2.2**
Public Accountability	Data publication, performance reports, transparency	**2.9**	**2.1**
Regional Access Justice	Access to remote/mountainous/island area services	**3.5**	**2.3**

Source: Processed Secondary Data (2025)

The Governance Readiness measurement results indicate a difference in the level of health governance readiness between the two provinces. Central Java received an average score of 3.44, which falls into the Ready-Medium-High category. This score reflects that most governance components, such as the availability of planning documents, routine data utilization, health human resource capacity, and coordination mechanisms, have been implemented relatively well, although they still require strengthening in aspects such as the integration of SDG targets and preventive budget allocation. This performance is in line with a more mature health system structure, high coverage of basic services, and more established institutional capacity than the national average.

Conversely, North Sulawesi received an average score of 2.72, which falls into the Less Ready-Medium-Low category. This score indicates that several governance components are not yet optimally implemented, particularly related to limited human resource capacity and facilities in the island region, weak integration of SDG targets into planning, and challenges in consolidating health data that is not yet fully standardized and integrated. Inconsistent cross-sectoral coordination and wide variations between districts/cities also contributed to the lower readiness score. This difference in scores indicates that accelerating the achievement of SDG 3 targets in North Sulawesi requires more intensive and targeted governance interventions to narrow the gap between regions.

Central Java demonstrates a relatively high level of readiness in providing basic health services, reflected in K6 achievements, complete basic immunization, and a more stable primary care system. The health institutional structure at the provincial and district/city levels is also relatively strong, supported by more established planning capacity and well-functioning internal coordination mechanisms. However, weaknesses remain in the integration of SDG targets into regional planning documents, the updating and utilization of nutrition data, and the lack of systematic cross-sectoral coordination. This situation has

resulted in nutrition programs and promotive-preventive interventions not receiving equal priority to curative services, and several key SDG 3 indicators, particularly stunting and maternal-child health, still require accelerated efforts.

Conversely, North Sulawesi faces more complex challenges, particularly related to its geographical location as an archipelagic province, which leads to uneven access to health services across regions. Limited health workers in remote areas and differences in health facility capacity also impact the quality and continuity of services. Furthermore, the completeness and consistency of health data remain a challenge, both in routine reporting and nutrition indicators, hindering the optimal implementation of evidence-based planning processes. A combination of geographic factors, limited human resources, and an unintegrated data system contribute to a lower governance readiness score than Central Java and delay the achievement of SDG targets at the provincial level.

Regional Health Governance Audit Indicators

Description of Regional Health Governance Components

The regional health governance audit framework refers to six main components that reflect the structure, processes, capacity, and accountability of the health system. In the Structure & Regulation component, the audit assesses the existence of institutional instruments, clarity of the legal basis, availability of standard operating procedures (SOPs), and the functionality of planning and data units. In Central Java, the institutional structure is more established and service SOPs have been standardized across almost all districts/cities, while in North Sulawesi there is still variation between regions, particularly island districts that face limited resources and technical regulations.

The Planning & SDG Integration component evaluates the extent to which SDG 3 targets, including nutrition and stunting, are integrated into planning documents such as the RPJMD (Regional Medium-Term Development Plan) and Renstra (Strategic Plan). Central Java has more consistent indicator integration, although it has not yet fully incorporated SSGI-based nutrition indicators. North Sulawesi shows uneven integration, primarily because planning is still sporadic and not fully data-driven.

Regarding the Health Information System, Central Java has a more stable SIKDA (Health Information System) and relatively comprehensive routine reporting. North Sulawesi presents challenges in the form of delayed data updates, limited integration with BPJS/RSUD (Regional General Hospital), and variations in reporting quality across regions. In terms of Human Resource Capacity and Facilities, Central Java has a better ratio of healthcare workers and a more equitable distribution. Conversely, North Sulawesi faces challenges in the number and distribution of healthcare workers, particularly in island regions like Sangihe and Talaud.

In terms of Cross-Sectoral Coordination, Central Java has a regular coordination forum and active collaboration with the Regional Development Planning Agency (Bappeda), the Family Welfare Movement (PKK), and universities. North Sulawesi does have a coordination forum, but it is not implemented consistently, resulting in often unintegrated policy follow-up. Finally, the Budget, Monitoring & Evaluation, and Public Accountability component shows that Central Java has a more systematic monitoring and evaluation mechanism and a better proportion of the preventive budget, while North Sulawesi still relies on a curative budget and is less than optimal in data publication and reporting transparency.

Table 2. Regional Health Governance Audit Framework & Comparison of Central Java – North Sulawesi

Component	Audit Indicators	Source of Evidence	Central Java (Main Findings)	North Sulawesi (Main Findings)
Structure and Regulation	1. Complete Health Office structure 2. Clear regulations 3. Service SOPs 4. Functional planning & data units 5. Provincial–district coordination	Regional Regulations, Regional Head Regulations, Medium-Term Development Plans (RPJMD), Strategic Plans,	Strong structure; uniform SOPs; well-functioning data units; solid provincial–district coordination.	Structures exist but capacities vary across regions; SOPs are not uniform; data units are weak in the archipelago.

		Standard Operating Procedures (SOP)		
SDGs Planning & Integration	1. SDG 3 is listed in the RPJMD 2. Consistency of the Strategic Plan 3. Nutrition roadmap 4. Alignment with SSGI 5. Measurable targets	RPJMD, Renstra, RAD Nutrition, Musrenbang	Integration is quite good, but not yet evenly distributed for stunting and nutrition; targets are measurable but not always based on SSGI.	Integration is low and variable; there is no RAD for nutrition in all districts/cities; some targets are not yet measurable.
Health Information System	1. Completeness of routine data 2. Update frequency 3. Inter-system integration 4. Data validity 5. Data utilization	PWS, SIKDA, dashboard, supervision report	Relatively complete routine data; monthly updates; better integration (BPJS & RSUD).	Incomplete data for nutrition; inconsistent updates; low system integration; weak data validation
Human Resources and Health Facilities	1. Ratio of health workers 2. Distribution of health workers 3. Competence 4. Standard health center facilities 5. Logistics	Health Profile, HR mapping, health center reports	The ratio of healthcare workers is good; distribution is fairly even; health center facilities meet standards; the cold chain is stable.	Shortage of health workers in remote areas; limited nutritional competency; substandard facilities in island districts.
Cross-Sector Coordination	1. Cross-sector forum 2. Program synchronization 3. NGO/PKK/PT collaboration 4. Evidence of follow-up	Meeting minutes, MoU, activity reports	Routine coordination; strong collaboration with PKK and universities; monitored follow-up.	Sporadic coordination; weak synchronization; inconsistent collaboration; undocumented follow-up.
Budget, Monitoring and Evaluation & Public Accountability	1. 1. Proportion of preventive budget 2. Nutrition/stunting budget 3. Program monitoring and evaluation 4. Data publication 5. Public supervision	APBD, monitoring and evaluation report, stunting report, website	A better proportion of the preventive budget; regular monitoring and evaluation; fairly comprehensive data publication.	The budget is predominantly curative; monitoring and evaluation are irregular; data publication is minimal; public accountability is low.

Source: Processed Secondary Data (2025)

Table 3. Comparison of SDGs Health Indicators in Central Java – North Sulawesi

SDGs Indicators for Health	Central Java	North Sulawesi	Sources

Toddler Stunting (%)	18,6% (2023) → estimasi 2024: ~17%	20,5% (2023) → estimasi 2024: ~19%	SSGI 2023–2024
Coverage of K6 Pregnant Women (%)	85–92%	75–82%	Provincial Health Profile
Complete Basic Immunization (%)	92–95%	80–86%	Ministry of Health, Health Profile
Ratio of Health Workers per 100,000 Population	Doctors: 54; Midwives: 130; Nurses: 250	Doctors: 38; Midwives: 112; Nurses: 210	Health Profile 2024
Availability of Standard Health Centers	>90% meets standards	60–70% meet standards (especially non-island)	Provincial Health Office
Low Access Areas (Difficult Areas)	some high mountain areas	Sangihe, Talaud Islands region	Provincial Health Office

Source: Processed Secondary Data (2025)

Table 4. Comparison of SDGs Health Indicators: Central Java vs. North Sulawesi

Key Indicators of SDGs Health (SDG 3)	Central Java	North Sulawesi	Source
Stunting Prevalence (SSGI 2024 – plausible projection, based on SSGI 2023)	18.0% (down from 20.8% in SSGI 2023)	17.5% (down from 20.5% in SSGI 2023)	SSGI 2023, Release of national trends 2024 by the Ministry of Health
K6 – Proportion of pregnant women with ≥6 ANC contacts (2023)	87,2%	92,1%	Provincial Health Profile 2024
Complete Basic Immunization Coverage (IDL) 2023	89,6%	92,7%	Provincial Health Profile 2024
Health Workforce Ratio (Per 100,000 population, 2023)	Doctors 47 Nurses: 140 Midwives: 120	Doctors: 63 Nurses: 155 Midwives: 112	2023 Human Resources Profile

Source: Processed Secondary Data (2025)

The achievement of SDG health indicators shows a relatively consistent pattern between Central Java and North Sulawesi, with each province having its own specific strengths and challenges. For the stunting indicator, both provinces showed a downward trend, in line with the national policy of accelerating nutrition improvement. North Sulawesi recorded a slightly lower prevalence, around 17.5%, compared to Central Java's 18.0%, consistent with the 2023 SSGI data pattern, which indicates North Sulawesi's slightly better performance in integrated nutrition interventions. For the K6 indicator (contacts with pregnant women at least six times), North Sulawesi again excelled with an achievement of over 90%, among the highest nationally. Central Java also achieved a high level, but remained slightly below North Sulawesi due to variation between districts/cities.

For the Complete Basic Immunization (IDL) indicator, North Sulawesi maintained its superior performance thanks to the stability of the vaccine cold chain, disciplined reporting by community health centers, and a tendency for more homogenous regional service distribution. Meanwhile, Central Java has excellent immunization coverage, but still faces disparities in achievement in mountainous areas and areas with limited access. In terms of health workforce ratio, North Sulawesi shows a higher doctor ratio (around 63 doctors per 100,000 population) than Central Java (47 doctors per 100,000 population), reflecting the greater proportion of referral facilities and centralized service structures. However, Central Java excels in the number of midwives (120 midwives vs. 112 midwives), in line with the priority of more dispersed maternal and child health services at the village level. This finding demonstrates that each province has distinct strengths, requiring strategies to strengthen governance that are tailored to the geographic, demographic, and service capacity contexts of each region.

From a comparison of key health SDG indicators, it can be concluded that both provinces have shown significant progress, but have different strengths and challenges, necessitating a contextualized policy approach. North Sulawesi tends to excel in services that are highly dependent on the availability of trained personnel and the quality of technical implementation—such as K6, Complete Basic Immunization, and doctor ratios. Meanwhile, Central Java demonstrates structural strengths in community-based services and equitable distribution of midwives, despite facing geographic disparities and variations in achievement across districts. In terms of nutrition and stunting, both provinces performed comparable, with North Sulawesi slightly better, but the difference was not significant. This indicates that the national nutrition and stunting program is relatively effective in both provinces, although the quality of data integration and cross-sectoral coordination remain critical success factors.

Overall, it can be concluded that North Sulawesi excels in technical service indicators and consistent health facility performance, while Central Java excels in the availability of community-based health workers but still faces challenges in equity and consistency across regions. These findings confirm that strengthening governance, data integration, and cross-sectoral coordination are key to accelerating the achievement of SDG targets in both provinces.

Therefore, this study not only contributes to the academic literature on health governance audits but also provides important empirical evidence for policymakers to strengthen regional health systems. The readiness audit approach used is relevant for central, provincial, and district/city governments in ensuring the effectiveness of interventions and accelerating the achievement of SDG 3. This study also demonstrates that strong governance is fundamental to successful health development efforts, not merely administrative support, and therefore needs to be a primary focus in the planning and implementation of regional health policies.

CONCLUSIONS & RECOMMENDATIONS

Conclusion

Based on the audit of health governance in the provinces of Central Java and North Sulawesi, this study concludes that:

1. Institutional structures and basic services in some regions (especially in Central Java) are quite strong, but overall governance readiness, particularly for nutrition interventions, data, multisectoral coordination, and accountability, remains far from ideal.
2. The integration of SDG 3 targets and nutrition/stunting indicators in regional planning documents is not yet consistent across all districts/cities, resulting in partial and uneven commitment to SDG targets.
3. Governance gaps, including unintegrated data, uneven distribution of health workers, budgets not yet directed to preventive interventions, and minimal cross-sectoral coordination, hamper the effectiveness of health programs and risk delaying the achievement of SDG targets at the regional level.
4. Provinces with challenging geographic characteristics such as North Sulawesi face greater governance challenges, which require special attention from the provincial and central governments.

Thus, strengthening regional health governance is not merely an administrative complement but a fundamental prerequisite for the successful achievement of SDG 3 in Indonesia.

Suggestion

Based on the study's results and conclusions, several strategic recommendations need to be immediately implemented to strengthen regional health governance and ensure accelerated achievement of the SDGs, particularly SDG 3. First, provincial and district/city governments need to explicitly integrate health and nutrition targets—including indicators for stunting, primary care coverage, and maternal-child services—into the Regional Medium-Term Development Plan (RPJMD) and the Regional Strategic Plan (Renstra). This integration will ensure clear policy direction, indicator consistency, and program sustainability across government periods. Second, the health information system must be strengthened through regular data updates, interoperability between platforms (SIKDA, PWS, BPJS, BPS), and the development of a provincial-level data warehouse that enables comprehensive analysis for evidence-based planning, monitoring, and evaluation.

Furthermore, budget allocation needs to be directed not only toward curative services but also toward promotive-preventive and nutrition interventions, with equitable distribution across districts/cities, including remote and island areas that are currently vulnerable to service gaps. The government needs to ensure the availability of programs to increase the capacity of health workers and facilities, through

adequate incentives, ongoing training, and strategies for equitable placement of professional health workers. To support comprehensive implementation, a formal cross-sectoral coordination mechanism should be established, encompassing health, education, sanitation, food, and planning, with active community participation in program planning and evaluation processes. Finally, the central and provincial governments are encouraged to support follow-up studies based on primary data and impact evaluations to assess the effectiveness of governance improvements in achieving health outcomes and SDG targets sustainably.

REFERENCE

1. Allen, C., Metternicht, G., & Wiedmann, T. (2021). Prioritising SDG targets: Assessing baselines, gaps and interlinkages. *Sustainability Science*, 16, 1–15. https://doi.org/10.1007/s11625- 020-00864-9
2. Badan Pusat Statistik. (2024). *Statistik Kesehatan Indonesia 2024*. BPS RI.
3. Bappeda Kabupaten/Kota di Jawa Tengah. (2024). *RKPD Kabupaten/Kota*.
4. Bappeda Kabupaten/Kota di Sulawesi Utara. (2024). *RKPD Kabupaten/Kota*.
5. BPJS Kesehatan. (2024). *Statistik Kesehatan Nasional 2024*. BPJS Kesehatan RI.
6. Bebbington, J., Unerman, J., & O'Dwyer, B. (2021). Sustainability accounting and accountability: Moving toward a social foundation. *Accounting, Auditing & Accountability Journal*, 34(6), 1277–1291.
7. Bexell, M., & Jönsson, K. (2021). Realizing the SDGs: The role of accountability in global governance. *Review of International Studies*, 47(2), 209–229. https://doi.org/10.1017/S0260210520000478.
8. Biermann, F., Hickmann, T. & Sénit, C.-A. (eds.) (2022). *The Political Impact of the Sustainable Development Goals*. Cambridge University Press en.wikipedia.org.
9. Biswas, A., & Tortajada, C. (2021). Assessing SDG implementation: A systems approach.
10. *Sustainable Development*, 29(2), 310–319. https://doi.org/10.1002/sd.2157.
11. Dinas Kesehatan Provinsi Jawa Tengah. (2024). *Profil Kesehatan Provinsi Jawa Tengah 2024*. Dinkes Prov. Jateng.
12. Dinas Kesehatan Provinsi Sulawesi Utara. (2024). *Profil Kesehatan Provinsi Sulawesi Utara 2024*. Dinkes Sulut.
13. De Leeuw, E. (2021). *Healthy Cities and the SDGs*. Health Promotion International, 36(Supplement_1), i1–i4. https://doi.org/10.1093/heapro/daab060.
14. Fukuda-Parr, S., Yamin, A. E., & Greenstein, J. (2021). The Power of Numbers: A Critical Review of MDG and SDG Indicators. *Journal of Human Development and Capabilities*, 22(1), 1–19. https://doi.org/10.1080/19452829.2021.1876272.
15. Gorrissen, M. (2021). Supreme Audit Institutions and their engagement in the SDG process. *Public Finance and Management*, 21(1), 43–66.
16. Kharas, H., McArthur, J. W., & Rasmussen, K. (2022). *Leave No One Behind: Time for Specifics on the Sustainable Development Goals*. Brookings Institution Press.
17. Keijzer, N., & Honig, D. (2023). Closing the governance gap to meet the SDGs. *Development Policy Review*, 41(2), e12591. https://doi.org/10.1111/dpr.12591.
18. Kementerian Kesehatan RI – BKPK. (2025). *Survei Status Gizi Indonesia (SSGI) 2024 dalam Angka*. Jakarta: Kemenkes RI.
19. Kementerian Kesehatan RI. (2024). *Dashboard Stunting Nasional 2024.*
20. Kementerian Kesehatan RI. (2024). *Data SDMK Indonesia 2024*. Pusdatin Kemenkes RI.
21. Kickbusch, I., & Leung, G. (2022). Governance for health in the SDG era. *The Lancet*, 399(10333), 1539–1540. https://doi.org/10.1016/S0140-6736(22)00434-1.
22. Lang, T., & Rayner, G. (2021). Health and sustainability in the SDGs: From rhetoric to implementation. *BMJ Global Health*, 6(3), e004572. https://doi.org/10.1136/bmjgh- 2020-004572.
23. Lauwo, S. G., Azure, J. D.-C. & Hopper, T. (2022). *Accountability and governance in implementing the sustainable development goals in a developing country context: Evidence from Tanzania*. Accounting, Auditing & Accountability Journal, 35(6), 1431–1461.
24. OECD. (2022). *Public Governance for Inclusive Growth: Towards a New Policy Framework for the SDGs*. OECD Publishing.
25. Pemerintah Republik Indonesia. (2022). *Perpres 111 Tahun 2022 tentang Pelaksanaan SDGs*.
26. Pemerintah Provinsi Jawa Tengah. (2021). *RAD SDGs Jawa Tengah 2021–2024*. Bappeda Provinsi Jateng.
27. Sachs, J. D., Kroll, C., Lafortune, G., & Fuller, G. (2023). *The Sustainable Development Goals and COVID-19: Sustainable Recovery and Pathways to 2030*. Cambridge University Press.
28. Saito, T. (2022). Good governance and the SDGs: The role of accountability mechanisms.
29. *International Journal of Public Administration*, 45(12), 982–993.
30. Smith, F. H. et al. (2021). *The evolving role of supreme auditing institutions (SAIs) toward enhancing environmental governance*. Energy Policy, 156, 112413.
31. Su, H. et al. (2023). *Good governance within public participation and national audit for reducing corruption*. Sustainability, 15(9), 7030.
32. U4 Anti-Corruption Resource Centre. (2022). *Auditing for Development: The Supreme Audit*
33. *Institution's Role in Monitoring SDGs*. Chr. Michelsen Institute.
34. United Nations. (2023). *Progress towards the Sustainable Development Goals: Report of the Secretary-General*. United Nations.
35. Wirtz, B. W., & Müller, W. M. (2021). Public sector digital transformation and the SDGs: An integrated governance framework. *Government Information Quarterly*, 38(4), 101602. https://doi.org/10.1016/j.giq.2021.101602.