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| Research Article |

Data-Driven Educational Planning at the Subdistrict Level: Sprague Multiplier Projections and Policy Recommendations for Makasar, East Jakarta (2025–2030)

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Abstract: Rapid population growth and high density in urban areas increase pressure on equitable and high-quality educational provision. This study diagnoses the educational conditions of Makasar Subdistrict, East Jakarta, and formulates evidence-based programs for 2025–2030. A mixed-methods descriptive design was employed, with data collected through observation, interviews, documentation, and literature review involving subdistrict officials, the Education Implementation Unit, and school representatives. Qualitative data were analyzed through data reduction, display, and conclusion drawing, while school-age population, enrollment, and teacher needs were projected using the Sprague Multiplier and ratio methods. The subdistrict has 218,282 residents dominated by productive-age and school-age cohorts; by 2030, it will require 1,792 teachers and 627 non-teaching staff. Although enrollment and internal efficiency indicators are high, two bottlenecks persist: unequal access caused by the zoning system amid limited public school capacity, and uneven, flood-prone school infrastructure. This study recommends density-based adaptive zoning with subsidized private school partnerships, infrastructure strengthening for safe schools, and learning digitalization with teacher quality improvement, supported by an integrated subdistrict education data system.

Keywords: educational planning; Sprague Multiplier; enrollment projection; zoning system; subdistrict education policy

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Introduction

Educational planning is intrinsically linked to demographic patterns, socio-economic dynamics, and the broader community profile. Demographic variables such as total population, school-age distribution, and migration patterns directly dictate the institutional demand for educational facilities, teaching personnel, and supporting infrastructure. An expansion in the school-age cohort inherently amplifies the volume of educational services that the state must provide. Furthermore, uneven spatial distribution of the population frequently results in structural disparities regarding educational access across different regions. Within urban contexts, particularly in Makasar District, East Jakarta, educational planning becomes critically paramount due to the high population density and multifaceted social dynamics. Makasar District exhibits a highly heterogeneous community profile alongside significant population growth, which directly inflates the demand for formal education. Based on recent demographic registries, the district possesses a massive productive-age and school-age population baseline, thereby necessitating equitable, inclusive, and fair access to education. If left unmanaged, this demographic pressure can trigger systemic bottlenecks, including restricted school capacities, overcrowded classrooms, and maldistribution of teachers across educational units.

Conceptually, planning is defined as a systematic instrument utilized to construct execution frameworks designed to achieve specific organizational objectives; it is inherently complex and significantly influenced by the professional background of the formulators (Nardawati, 2021). The ultimate success of educational planning depends not only on the empirical availability of field data but also on the structural capacity of stakeholders to interpret and operationalize that data effectively (Rahmawati, 2025). Within this framework, educational planning shares an inseparable relationship with analysis and diagnosis, both of which constitute the most critical phases in the planning pipeline. Educational planning is fundamentally a rational, systematic, and data-driven process; thus, analysis and diagnosis transcend mere procedural routines to form the core of scientific decision-making (Rahman, 2025). Analysis is employed to identify and comprehend educational discrepancies by leveraging empirical data, whereas diagnosis functions to isolate specific internal and external variables that determine the success or failure of an educational program (Rahman, 2025). For instance, when a low graduation rate is identified, analysis does not merely record the quantitative drop but systematically benchmarks it against predetermined targets. This comparison exposes the operational gap, which is then formally diagnosed as an institutional educational challenge.

In practice, the formulation of educational policy is a highly complex process involving various strategic actors with distinct roles. These actors encompass the legislative body acting as the supervisory entity, executive organs such as the Ministry of Education and the Ministry of Religious Affairs as technical implementers, and administrators at the school level (Nurhakim et al., 2025). Beyond formal actors, this process is continuously shaped by political parties, interest groups, and the substantive contributions of academics and higher education institutions (Hamidah, 2020). Concurrently, the mass media and civil society organizations play an essential role as external watchdogs that socialize public policies while reporting real-time structural constraints from the field (Ghazali et al., 2021). The policy formulation process—spanning from initial agenda-setting to the selection of policy alternatives—frequently encounters significant challenges, such as the interference of personal interests, factional agendas, and external political pressures (I.M et al., 2025). Socio-cultural and political dynamics during the formulation phase can cause a severe misallocation of priorities if not managed transparently (Darsyah & Chanifuddin, 2020). Therefore, an ideal educational policy formulation must be grounded in rational, equitable, and context-specific decisions to generate a tangible impact that addresses community needs while maintaining nationwide educational quality in an accountable manner (Nurhakim et al., 2025).

The subsequent phase of policy formulation involves the elaboration of macro policies into operational programs and tangible projects. Elaborating educational policies into action plans constitutes a crucial bridge that translates normative mandates into concrete field actions. Without systematic elaboration through detailed planning, resource organization, and clear evaluation mechanisms, a policy loses its functional utility within the perspective of public policy. In this transition, the bureaucracy plays a central role as the primary vehicle that translates abstract policies into concrete programs, such as teacher professional development or infrastructure procurement, while simultaneously serving as a coordinating link between central, regional, and institutional levels (Noviyanti et al., 2025). The successful transition from policy to program is heavily determined by implementational variables, including information transparency, leadership commitment, financial security, and infrastructural readiness (Muthanna & Sang, 2023). A recurring challenge in this domain is the over-reliance on rigid top-down planning approaches, which often creates an operational mismatch between the macro program design and the empirical needs of field implementers. Consequently, the active involvement of multi-stakeholders, ranging from schoolteachers to the broader

community, is a mandatory prerequisite to ensure that the designed programs possess local relevance and robust resource support. Procedurally, policy elaboration must follow a systematic and adaptive implementation lifecycle, encompassing technical preparation, pilot projects, full-scale execution with supervision, and comprehensive outcome evaluations (Mayangsari et al., 2021).

A substantial body of prior literature has attempted to formulate strategic zoning mechanisms and optimize educational facility readiness within the DKI Jakarta province. A study by Trialdy and Yuza (2025) contends that the strict reliance on coordinate distance within the current zoning system (*zonasi*) often triggers geographic exclusion for school-age populations residing in peripheral zones due to the uneven distribution of public school developments. Meanwhile, research by Tamajil (2021) offers practical solutions through multi-functional space optimization and the adoption of information technology to mitigate physical land limitations in urban schools. Nonetheless, the majority of prior studies have predominantly focused on educational policies at a macro provincial level or isolated their analysis to singular sectoral domains, such as purely spatial constraints or physical infrastructure independently. There remains a distinct analytical gap regarding integrated research that combines localized sub-district (*kecamatan*) educational indicators with long-term student cohort projections using specific quantitative instruments.

To bridge this analytical gap, this study offers an integrative approach by performing a comprehensive educational planning diagnosis at the district level in Makasar District. The academic novelty of this research lies in its integration of qualitative empirical field data with quantitative single-year cohort projection models via the Sprague Multiplier method, providing a predictive outlook of future localized student capacity demands. By executing a holistic diagnosis of existing planning indicators and operational bottlenecks on the ground, this study serves as a strategic reference. Ultimately, it delivers actionable, measurable, relevant, and sustainable educational policy recommendations through targeted programs for local educational authorities and institutional decision-makers.

Methods

This study employs a mixed-methods approach with a descriptive quantitative-qualitative design to delineate the current conditions and project the future educational planning in Makasar District, East Jakarta City, DKI Jakarta. Data collection was centered at the Makasar District Office and the Makasar District Education Implementation Unit.

Research subjects were selected through purposive sampling based on their involvement in the educational sector, comprising district officials, the Education Implementation Unit, and school representatives. Data gathered via observation, interviews, documentation, and literature review were facilitated by respective instruments, namely observation checklists, interview guides, and documentary study protocols. To achieve the research objectives, data analysis was executed through a dual approach: qualitative analysis encompassing data reduction, data display, and conclusion drawing; and simple quantitative analysis utilizing the Sprague Multiplier and Ratio methods to project educational needs as a foundational reference in the educational planning process.

Results and Discussion

Demographic and Economic Diagnostic of Makasar District

Makasar District is administratively divided into five urban villages (*kelurahan*): Cipinang Melayu, Halim Perdanakusuma, Kebon Pala, Pinang Ranti, and Makasar. Based on the Civil Registry data for the third semester of 2025, the total population of Makasar District reached 218,282 residents, showing a balanced gender distribution of 109,141 males and 109,141 females. The structured age-cohort distribution is displayed in

Table 1: Population Distribution by Age Cohort in Makasar District (2025)

Age Cohort	Male	Female	Grand Total
0-4	6,861	6,665	13,526
5-9	9,113	8,650	17,763
10-14	9,419	9,074	18,493
15-19	8,952	8,454	17,406
20-24	8,744	8,435	17,119
25-64 (Abriged)	59,510	60,322	119,832
65+	5,906	6,581	12,487
Grand Total	109,141	109,141	218,282

Demographic analysis reveals that the district is dominated by the productive age group (15–64 years) and a massive concentration of school-age cohorts (5–19 years). This structure induces high daily commuter mobility, particularly driven by students navigating toward educational institutions. Economically, the district is heavily sustained by micro, small, and medium enterprises (MSMEs), focusing primarily on retail grocery shops (*toko kelontong*) and culinary industries, with modern minimarkets evenly distributed across all *kelurahan* to support domestic consumption.

Educational Data

In total, the Makasar Subdistrict possesses 50 kindergarten (Taman Kanak-Kanak/TK) and playgroup (Kelompok Bermain/KB) institutions, 50 elementary schools (Sekolah Dasar/SD), 15 junior high schools (Sekolah Menengah Pertama/SMP), 9 senior high schools (Sekolah Menengah Atas/SMA), and 9 vocational high schools (Sekolah Menengah Kejuruan/SMK). According to data from DAPODIK, kindergarten and playgroup institutions have at least one classroom and one library room, although the majority of these early childhood education centers lack a designated library space. The majority of educational units at the elementary school level possess at least one laboratory room and one library room, albeit a small fraction of these schools do not have a laboratory. Regarding the condition of educational infrastructure and facilities at the secondary level (junior high, senior high, and vocational high schools), no significant differences are observed; every educational unit across these three levels possesses at least one laboratory room and one library room.

The accessible student demographic data comprises enrollment records uploaded by schools within the Makasar Subdistrict region for the even semester of the 2025/2026 academic year. The data are detailed as follows:

Table 2: Student Demographic Data in Makassar District 2025/2026

Level of Education	Public	Private	Total
TK	55	1620	1675
KB	30	76	106
SD	13308	3560	16868
SMP	5749	1269	7009
SMA	4199	1569	5768
SMK	-	2033	2033

Based on the calculations utilizing the Sprague Multiplier formula, the projections for the school-age population are as follows:

Table 3: School-Age Population Projection Data for the Makasar Subdistrict

Jenjang Pendidikan	Rentang Usia	Jumlah Penduduk
KB	2-4 Tahun	8.940
TK	5-6 Tahun	6.830
SD	7-12	22.127

SMP	13-15	10.897
SMA/SMK	16-18	10.431

Based on the aforementioned school-age population projections, the student enrollment projections for the Makasar Subdistrict can be calculated in accordance with the annual student growth trend.

Tabel 4: Student Enrollment Projection Data for the Makasar Subdistrict

Level Of Education	**Annual Student Growth Trend**	**2026**	**2027**	**2028**	**2029**	**2030**
KB	+0,10%	144	159	175	193	213
TK	+0,08%	1.821	1.973	2.138	2.317	2.511
SD	-1,40%	16.843	16.607	16.374	16.145	15.919
SMP	-0,85%	6.969	6.910	6.851	6.793	6.735
SMA	0,00%	6.826	6.826	6.826	6.826	6.826
SMK	-0,05%	2.042	2.041	2.040	2.039	2.038

Regarding the educational personnel, data for teaching and non-teaching staff were extracted from the Makasar Subdistrict DAPODIK platform for the 2025/2026 academic year. These data facilitated the calculation of projected teacher requirements, guided by the ideal teacher-student ratio under national education standards. The relevant data, comparisons, and projected figures are outlined below:

Table 5: Ideal Teacher-Student Ratio by Level of Education in Makasar Subdistrict

Level of Education	Ideal Ratio (Teacher : Student)
PAUD/TK	1:15
SD/MI	1:20
SMP/MTS	1:20
SMA/MA	1:20
SMK	1:15

Table 6: Teacher Requirement Projection Data for 2025 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2025	PAUD/TK + RA	1.812	121
2025	SD/MI	1.681	84
2025	SMP/MTS	17.082	854
2025	SMA/MA	7.029	351
2025	SMK	6.826	455
2025	**Teacher Total**		**1.865**
2025	Non-Teacher (35%)		653
2025	**Teacher and Non-Teacher Total**		**2.518**

Table 7: Teacher Requirement Projection Data for 2026 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2026	PAUD/TK + RA	1.965	131
2026	SD/MI	16.843	842
2026	SMP/MTS	6.969	348
2026	SMA/MA	6.826	341
2026	SMK	2.042	126
2026	**Teacher Total**		**1.788**
2026	Non-Teacher (35%)		626
2026	**Teacher and Non-Teacher Total**		**2.414**

Table 8: Teacher Requirement Projection Data for 2027 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2027	PAUD/TK + RA	2.132	142
2027	SD/MI	16.607	830
2027	SMP/MTS	6.910	345
2027	SMA/MA	6.826	341
2027	SMK	2.041	136
2027	**Teacher Total**		**1.794**
2027	Non-Teacher (35%)		628
2027	**Teacher and Non-Teacher Total**		**2.422**

Table 9: Teacher Requirement Projection Data for 2028 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2028	PAUD/TK + RA	2.313	154
2028	SD/MI	16.374	819
2028	SMP/MTS	6.851	343
2028	SMA/MA	6.826	341
2028	SMK	2.040	136
2028	**Teacher Total**		**1.793**
2028	Non-Teacher (35%)		628
2028	**Teacher and Non-Teacher Total**		**2.421**

Table 10: Teacher Requirement Projection Data for 2029 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2029	PAUD/TK + RA	2.510	167
2029	SD/MI	16.145	807
2029	SMP/MTS	6.793	340
2029	SMA/MA	6.826	341
2029	SMK	2.039	136
2029	**Teacher Total**		**1.791**
2029	Non-Teacher (35%)		627
2029	**Teacher and Non-Teacher Total**		**2.418**

Table 11: Teacher Requirement Projection Data for 2030 in Makasar Subdistrict

Year	Level of Education	Projected Student Enrollment	Teacher Requirement
2030	PAUD/TK + RA	2.724	182
2030	SD/MI	15.919	796
2030	SMP/MTS	6.735	337
2030	SMA/MA	6.826	341
2030	SMK	2.038	136
2030	**Teacher Total**		**1.792**
2030	Non-Teacher (35%)		627
2030	**Teacher and Non-Teacher Total**		**2.419**

Educational Challenges

Evaluations against national educational planning indicators show that Gross Enrollment Rates (APK) and Net Enrollment Rates (APM) remain structurally high, supported by optimal internal efficiency, characterized by low repetition rates and high transition rates. However, empirical interviews and field diagnostic mapping highlighted two systemic bottlenecks:

1. The Zonary System (Sistem Zonasi)

The zoning system implemented for new student admissions is perceived to complicate access for school-age demographics in securing the closest educational institution to their residence. Based on conducted interviews, the number of public schools in the Makasar Subdistrict is disproportionate to the school-age population. Consequently, under this zoning policy, school-age residents living at a significant distance from educational units face difficulties in enrolling in public schools. Paradoxically, the zoning system was originally implemented to ensure the equitable distribution of educational quality and to facilitate students' access to the nearest schools (Chotimah, et al., 2023).

2. Infrastructure and Facilities

   Although infrastructure and facilities are generally fulfilled, data obtained from the DAPODIK website indicates that several schools experience deficiencies, such as a lack of adequate classrooms, laboratories, and libraries. Data derived from questionnaire results further substantiate this finding; while the majority of schools possess adequate infrastructure, there remain institutions with incomplete facilities, substandard infrastructure conditions, and facilities prone to flooding during heavy rainfall.

To address these challenges, this study proposes two evidence-based planning interventions. First, the local government must transition from strict distance-based boundaries to Density-Based Adaptive Zoning. This mechanism redistributes intake quotes relative to the population density of each *kelurahan* rather than a simple geometric radius. Second, to manage excess demand without overextending capital expenditure for new public constructions, the district should deploy a Public-Private Partnership (PPP) Voucher Scheme, subsidizing low-income students to attend accredited local private schools for free (Trialdy & Yuza, 2025). Concurrently, capital budgeting must prioritize adaptive flood-mitigation architecture for vulnerable school clusters.

Strategic Planning Indicators, Challenges, and Solutions

Evaluating the macro-educational planning indicators reveals the operational efficiency and community involvement within the formal school system in Makasar District. In terms of community participation, the Gross Enrollment Rate (*Angka Partisipasi Kasar* or APK) and Net Enrollment Rate (*Angka Partisipasi Murni* or APM) serve as critical metrics to analyze institutional absorption. While APK typically exceeds 100% due to the inclusion of over-age or under-age students across specific tiers, the APM demonstrates that the local community actively ensures their children are enrolled in age-

appropriate schooling levels. This strong demand for education is framed within a highly productive demographic base, where the working-age population (ages 15–64) reaches 148,769 residents, with an estimated 70% (104,138 individuals) categorized as active participants, and around 28,000 residents deeply engaged in neighborhood social development activities.

On the supply side, school services are measured through the numerical volume, spatial distribution, and overall accessibility of institutions. Public and private primary (*SD*), junior high (*SMP*), and senior high/vocational schools (*SMA*/*SMK*) are spatially distributed across all *kelurahan*, operating with generally sufficient infrastructure. The internal efficiency indicators within these institutions showcase positive performance across multiple metrics:

a. Teacher Workload: Evaluated from the student-teacher ratio and weekly instructional hours, the district displays a proportional and balanced workload distribution, ensuring teachers are not critically overextended.
b. Intake Ratio: The percentage of children entering the initial grade of each tier (Grade 1, 7, and 10) remains consistently high, signifying open and non-discriminatory admission access for local citizens.
c. Repetition and Progression Rates: The repetition rate (*angka tinggal kelas*) is structurally low, paired with high promotion and graduation rates (*angka kelulusan*). These figures confirm that instructional designs are pedagogically effective, enabling students to progress on schedule.
d. Dropout and Transition Rates: The dropout rate (*angka putus sekolah*) is successfully kept at a minimum, indicating strong retention efforts by both families and schools, which correlates with an elevated school-continuation rate (*angka melanjutkan studi*) from primary to secondary tiers.
e. Classroom Utilization and Size: Classroom usage is structurally optimized through multi-shift schedules (morning and afternoon sessions) where necessary. The average class size falls within the national ideal standard of 30 to 35 students per class, creating a manageable environment for student-centered learning.
f. School Governance: Institutional management across Makasar District is driven by principals and school committees under the structural guidance of the Jakarta Regional Education Office, heavily adopting standard School-Based Management (*Manajemen Berbasis Sekolah*) frameworks.

Macro Policy Formulation for Regional Advancement

Based on the empirical diagnostics of Makasar District, the proposed educational policies must move beyond basic service provisions toward localized, targeted interventions that respect the unique socio-economic and spatial features of each *kelurahan*. Four integrated policy pillars are formulated to direct mid-term planning:

1. Area-Based Educational Access Equity Policy. This policy focuses on precise spatial school mapping, demographic capacity adjustments, and adaptive zoning to bridge the gap between high-density neighborhoods and institutional supply, ensuring public and private assets cooperate to absorb local student cohorts.
2. Climate-Resilient Infrastructure and Safe School Environment Policy. This structural framework drives physical rehabilitation, drainage expansion, and digital infrastructure integration. It ensures that campuses are transformed into disaster-safe learning centers while advancing digital spaces to counter localized land constraints.
3. Continuous Pedagogical Quality and Teacher Professional Development Policy. Recognizing that infrastructure must be driven by instructional quality, this policy mandates ongoing teacher training, robust academic supervision, and the formation of professional learning communities to foster critical thinking, digital literacy, and practical life skills.
4. Community Participation and Multi-Stakeholder Educational Partnership Policy. This initiative builds active communication channels between families, school boards, local businesses, and municipal authorities. It strengthens community monitoring functions and links local small businesses with vocational and entrepreneurial skill programs.

Subdistrict Educational Programs and Projects

Subdistrict-level educational programs and projects in the Makasar Subdistrict for the future can be formulated into several main frameworks: the Equitable Access and Adaptive Zoning Program, the Infrastructure Strengthening and Safe Schools Program, and the Digitalization of Learning and Teacher Quality Improvement Program. These programs are structured by taking into account the analysis of educational indicators as well as the empirical challenges identified in the field.

One of the primary issues identified in the field is the imbalance between the number of public schools and the school-age population, which directly impacts capacity limitations within the zoning system. Under these conditions, the development of the

zoning system needs to be executed more flexibly by considering population density in each area. Furthermore, this must be reinforced through partnerships with private schools to ensure that educational access remains open to all students. This approach is expected to establish a more equitable distribution of educational access that does not rely solely on geographical distance.

In addition, infrastructure and facilities challenges represent a crucial focus in future educational planning. Several schools continue to experience limitations in classrooms, laboratories, and libraries, alongside environmental conditions that are highly vulnerable to flooding. The Infrastructure Strengthening and Safe Schools Program is directed not only toward physical construction and rehabilitation but also toward enhancing the quality and safety of the learning environment. This effort can be achieved through school infrastructure improvements, drainage system upgrades, and the development of facilities that are more resilient to disaster risks. Concurrently, physical facility limitations can be mitigated through the utilization of technology, such as the development of virtual laboratories and digital libraries, ensuring that students continue to receive adequate instructional services.

Beyond the aspects of access and facilities, educational development in the Makasar Subdistrict is also aimed at improving learning quality, strengthening community participation, and optimizing data-driven educational governance. This is essential given that several educational indicators-such as enrollment rates, graduation rates, and low dropout rates-already exhibit favorable conditions and must be maintained. The Learning Quality and Community Participation Improvement Program focuses on strengthening teacher competencies, developing innovative pedagogical methods, and increasing parental and community involvement in supporting education. All these efforts must be supported by the Educational Governance and Data System Strengthening Program to ensure that program planning, implementation, and evaluation are precisely targeted. Consequently, the designed educational programs and projects will not only resolve existing challenges but also enhance overall and sustainable educational quality in the Makasar Subdistrict.

Proposed Activities for Enhancing the Quantity and Quality of Subdistrict Education

The direction of educational policy in the Makasar Subdistrict fundamentally encompasses various crucial aspects of educational development, ranging from access to service quality, as reflected in the comprehensive formulation of the prepared programs and projects. Conceptually, these programs are highly relevant to educational indicators

and are capable of addressing general challenges within the education system. However, when correlated with field findings, it becomes evident that two primary issues are most pressing: access disparities resulting from the zoning system, and the limitations and vulnerabilities of infrastructure. This condition demonstrates that efforts to increase the quantity and quality of education cannot be executed uniformly without prioritization; instead, they must focus on the aspects that exert the greatest influence on the quality of educational services in society.

The first activity focuses on restructuring the zoning system through a population density-based approach and partnerships with private schools. The core issue does not stem from low educational participation, but rather from the limited capacity of public schools, which is disproportionate to the school-age population. This condition causes segments of the community to experience difficulties in gaining access to close and affordable schools. In this context, the proposed activity does not merely address policy regulation but actively expands educational service capacity. Mapping area-based school needs serves as the initial step to ascertain student distribution and school availability in greater detail. The mapping outcomes are subsequently utilized to adjust student admission quotas so that they are more proportional to regional population density. Additionally, the capacity limitations of public schools are balanced by utilizing private schools, supported by subsidies for students affected by the zoning system. This approach integrates private schools into the educational service delivery system, thereby expanding access to education without imposing a financial burden on the community. Through this activity, an increase in educational service provision can be achieved in a more equitable and just manner.

The second activity is directed toward improving infrastructure and creating a safe learning environment as part of educational quality enhancement. Although educational facilities in the Makasar Subdistrict are generally considered adequate, disparities persist among schools regarding classroom availability, supporting facilities like laboratories and libraries, and environmental conditions vulnerable to flooding. This indicates that educational quality is determined not only by the presence of a school but also by the adequacy of the facilities utilized in the learning process. The proposed activities encompass the rehabilitation of substandard classrooms, the provision of basic learning facilities, and structural improvements to schools to make them more resilient to environmental risks. Addressing flood-affected schools is critical because such conditions directly disrupt the continuity of teaching and learning activities. Furthermore, physical facility constraints can be counterbalanced through technological integration, such as

developing virtual laboratories and digital libraries, so that students retain access to adequate learning resources. Through this activity, the improvement of educational quality can be achieved comprehensively, both in terms of physical infrastructure and the instructional process.

To ensure the effective execution of the proposed activities, improvements in governance and the educational data system are required as a baseline for policy planning and evaluation. The proposed initiatives include developing an integrated educational data system at the subdistrict level, conducting periodic monitoring of educational indicators, and executing continuous program evaluations. With enhanced and data-driven governance, efforts to increase the quantity and quality of education in the Makasar Subdistrict can be implemented in a more targeted, measurable, and sustainable manner.

Conclusion

The results of the regional analysis indicate that the Makasar Subdistrict possesses a large school-age population and high demographic mobility, thereby demanding the availability of equitable, high-quality, and sustainable educational services. Emerging challenges include limited school capacity, potential disparities in the distribution of educational facilities, the need for teacher quality improvement, and the importance of multi-stakeholder engagement in educational development. Therefore, educational planning must be supported by synergies among the government, schools, the community, and related sectors so that the formulated policies are not merely administrative but can be tangibly implemented through relevant educational programs and projects. Ultimately, the success of educational planning is determined by its implementation capacity to enhance equitable access, learning quality, and graduate outcomes, thereby establishing an inclusive, adaptive, and future-oriented educational system centered on human development.

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