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FRACTURED ECOSYSTEMS: A BRONFENBRENNER ANALYSIS OF SYSTEMIC BARRIERS TO INCLUSIVE EDUCATION IN LEMBATA REGION

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Abstract

This study aimed to analyze and map multi-level systemic barriers and their interactions in the implementation of inclusive education policies in Lembata Regency, East Nusa Tenggara Province, Indonesia. This qualitative study applied Bronfenbrenner's Ecological Systems Theory. This study employed a qualitative approach within the framework of Bronfenbrenner's Ecological Systems Theory. Data were collected over a five-month period from 22 key informants (government officials, educators, parents, and community leaders) using purposive and snowball sampling techniques, and triangulation was conducted using local policy documents through hybrid thematic analysis. The research findings revealed an imbalance in the burden borne at the microsystem level, as well as weaknesses at each level of the ecosystem, which were further exacerbated by geographical factors. These findings underscore that inclusive education requires improvements in the integration of government data and the ratification of specific instruments at the local level, a transformation of the local government's structural paradigm, and holistic integration of the management of the inclusive education ecosystem. This study is limited to the geographic scope and sociocultural dynamics of a single island regency classified as a "3T" area frontier, outermost, and underdeveloped. The study contributes strategic recommendations for local governments, academics, and practitioners to develop sustainable, ecosystem-based governance for inclusive education. The novelty of this study lies in its integration of managerial and sociological perspectives to comprehensively analyze the interplay of cross-level barriers in isolated island regions

Keywords: *governance, public policy, people with disabilities, inclusive education, ecological theory*

Abstract

Penelitian ini bertujuan untuk menganalisis serta memetakan hambatan sistemik multi-level dan interaksinya dalam penyelenggaraan kebijakan pendidikan inklusif di Kabupaten Lembata, Provinsi Nusa Tenggara Timur, Indonesia. Studi kualitatif ini menerapkan Teori Sistem Ekologi Bronfenbrenner. Studi ini menggunakan pendekatan kualitatif dengan kerangka Teori Sistem Ekologi Bronfenbrenner. Data dikumpulkan selama lima bulan

dengan melibatkan 22 informan kunci (aparatur pemerintah, pendidik, orang tua, dan tokoh masyarakat) menggunakan teknik *purposive* dan *snowball sampling*, serta Triangulasi dilakukan dengan dokumen kebijakan daerah menggunakan analisis tematik hibrida. Hasil penelitian mengungkapkan adanya ketidakseimbangan beban yang di tanggung pada level mikrosistemik, serta kelemahan pada setiap level ekosistem. yang juga di perkuat oleh faktor geografis. Temuan ini menegaskan bahwa pendidikan inklusif menuntut perbaikan integrasi data Pemerintah serta pengesahan instrumen spesifik pada tingkat lokal, transformasi paradigma struktural pemerintah daerah, dan integrasi penanganan ekosistem pendidikan inklusif secara holistik. Penelitian ini terbatas pada cakupan geografis dan dinamika sosial-budaya satu kabupaten pulau tunggal yang termasuk dalam daerah (3T) terdepan, terluar, dan tertinggal. Studi berkontribusi memberikan rekomendasi strategis bagi pemerintah daerah, akademisi, dan praktisi dalam menyusun tata kelola pendidikan inklusif berbasis ekosistem yang berkelanjutan. Kebaruan penelitian ini terletak pada bentuk integrasi perspektif manajerial dan juga sosiologis untuk mengurai interaksi hambatan lintas level di wilayah kepulauan yang terisolasi secara komprehensif

Kata Kunci: *tata kelola pemerintahan, kebijakan publik, penyandang disabilitas, pendidikan inklusif, teori ekologi*

INTRODUCTION

Although Indonesia has ratified the Convention on the Rights of Persons with Disabilities, the reality of inclusive education in Lembata Regency, East Nusa Tenggara Province, remains mired in complex challenges. The lack of supporting infrastructure and facilities for people with disabilities, coupled with the region's geographical isolation, further compounds the complexity of the barriers faced. Therefore, mapping these barriers is essential to understanding the root causes of the issues and identifying strategies to strengthen the sustainable governance of inclusive education.

Essentially, people with disabilities are not defined solely by their impairments; rather, their condition is largely attributed to factors stemming from their social environment (United Nations 2006). In a broader sense, inclusive

education can be defined as an educational concept that emphasizes anti discrimination, the fight for equal rights and opportunities, justice, and the expansion of access to education (Khasanah and Salim 2018). In Indonesia, regulations governing education are contained in Minister of National Education Regulation No. 70 of 2009 on inclusive education. Although the national policy framework guarantees the right to inclusion, implementation at the regional level suffers from dysfunction due to structural fragmentation

Various studies across different regions in Indonesia have found that the challenges facing inclusive education encompass a range of issues, from cultural stigma that limits teachers' capacity (Kristiyanti 2019) to the importance of having special educational needs teachers (Sulthon 2019) and the weakness of the

local legal framework in Gorontalo (Hadi et al. 2020). However, recent literature is beginning to shift toward recommending an adaptive approach. Sharma, Loreman, and Simi (2017) found that archipelagic regions face obstacles in implementing Western-style inclusive education concepts because of the mismatch between traditional culture and the adopted formal education system. This is also the case in archipelagic regions such as Papua, where the existing curriculum is not yet fully aligned with the local social and cultural context (Sharma et al. 2017). However, these conditions have actually spurred adaptations that restore the function of education to its traditional concept; in Indonesia, this is evident in the province of Jambi, which combines formal and informal approaches through Community Learning Centres (PKBM) as a pillar of inclusive education (Andriana, Kiling, and Evans 2025).

Various previous studies have made significant contributions to the development of inclusive education; however, they have limitations because they adopt a sectoral perspective without identifying and strengthening the ecosystem holistically (Ainscow 2020). The imbalance in focus in previous studies has left a gap that this study aims to address. Research that comprehensively examines the educational ecosystem tends to be conducted at the national or macro level;

therefore, it often fails to focus on the specific dynamics occurring in a particular region. Meanwhile, although there is a considerable amount of research focused on the district or city level, these studies remain centered on sectoral analysis and have not sufficiently elucidated the holistic interactions of the entire ecosystem.

Accordingly, this study comprehensively analyzes inclusive education in a specific region, particularly within the geographical context of an archipelago at the district level. This study adopts the ecological theory framework (Bronfenbrenner 1979) to examine cross actor interactions.

This study focuses on two main research questions.

RQ 1: What are the multi level barriers to inclusive education in Lembata?

RQ 2: How do these barriers interact and reinforce each other across various ecosystems?

This study aims to map systemic barriers within the educational ecosystem at each ecosystem level (microsystem, mesosystem, exosystem, and macrosystem) and to analyze the interactions between these interdependent ecosystems to identify the primary determinants hindering the fulfillment of the right to education amidst economic underdevelopment. These findings are expected to enrich the literature

on educational accessibility and serve as a basis for strategic recommendations for human resource development in the Lembata Regency, East Nusa Tenggara Province.

LITERATURE REVIEW

In the current global discourse, inclusive education has shifted from merely physical placement toward a rights based systemic transformation (United Nations 2006). However, this normative shift does not automatically guarantee changes in practice. In his study, Ainscow (2020) criticized the tendency to attribute the problem to student characteristics, arguing that the primary limitation lies in the school system's failure to respond to diversity. From this perspective, inclusive policies risk remaining mere rhetoric unless accompanied by a reorganization of school culture and the development of classroom practices that support the participation of all students. This contradiction is evident in Indonesia, where, on the one hand, there is formal and physical acceptance of students with disabilities. In contrast, the quality of services and learning experiences remains unequal (Wibowo and Muin 2018). This constitutes formalistic compliance, where inclusion is limited to the formal framework of regulations without addressing the substance of learning or meaningful participation. In other words, the problem

lies not in the absence of policies but in the system's lack of capacity to operationalize them in the classroom.

The complexity of this failure cannot be explained by a single factor alone. An ecological approach indicates that barriers emerge and reinforce one another simultaneously across various levels, ranging from microsystems, such as teachers, to macrosystems, such as policy frameworks and curricula. Consequently, partial interventions at a single level are ineffective unless synchronized with other levels (Geldenuys and Wevers 2013). In the context of inclusive education practices in Indonesia, these cross level dynamics are evident in the limitations of teacher training and teachers' efficacy in teaching students (Junaidi et al. 2023). This situation is exacerbated by limited accessibility, facilities, infrastructure, and technology (Sulaeman & Trustisari, 2024), which ultimately systematically reinforce exclusion within the classroom environment.

Indonesian literature reveals an ongoing debate regarding the causes and solutions. Several studies have highlighted stigma and social exclusion as systemic challenges that limit students with disabilities (Andayani and Afandi 2016). Conversely, the institutional management approach places greater emphasis on strengthening the governance of inclusion

programs and the availability of Special Education Teachers as prerequisites for learning services (Sulthon 2019; Wiratrianida and Sujarwanto 2024). Both are important, but when considered in isolation, they are deemed insufficiently comprehensive, as they tend to overlook external factors beyond the school-family relationship. Such as social environmental support, institutional policies, and the adequacy of physical accessibility and facilities (Andayani and Afandi 2016; Putra, Herningrum, and Alfian 2021).

These two perspectives have led to a fragmented body of literature on disability in Indonesia. Some studies emphasize managerial aspects (Gusti 2021), whereas others focus narrowly on family or parental dynamics (Tugiah and Trisoni 2022). A geographical bias is also evident in the literature, as most studies originate from regions with relatively stable infrastructure, such as Java and Sumatra. Consequently, policy generalizations tend to fail to capture the reality of 3T regions (remote, outermost, and poorest). As one of the island districts experiencing geographic isolation, Lembata faces challenges in ensuring access, services, and cross sectoral coordination that unfold in a manner vastly different from districts located on the mainland.

Given these theoretical tensions and limitations in the literature, this study

aims to bridge managerial and sociological perspectives while mitigating mainland specific biases. By adopting the ecological systems theory framework (Bronfenbrenner 1979), this study aims to holistically map the structural root causes hindering the fulfillment of the rights of persons with disabilities and to formulate adaptive resolution strategies within the Lembata Regency ecosystem

METHODS

Research Design

This study employs a qualitative research design conducted in the Lembata District, East Nusa Tenggara, over a five month period (November 2025 to March 2026). The study aims to map systemic barriers to inclusive education as an ecological phenomenon (Rubin and ER 2009). A qualitative approach was chosen as the Lembata district is characterized by distinctive geographical isolation; this study allows for an in depth exploration of motives, perceptions, relationships among actors, and decision making processes within the context of inclusive services (Kuckartz and Radiker 2023).

Participants and Sampling

In conducting this study, the researcher identified participants for the inclusive education study using the snowball or chain sampling method, a tiered approach that relies on key informants

(Creswell. J. W. and Poth 2018). The researcher identified 22 informants selected using purposive sampling with strict inclusion criteria. The selection of government officials (E1–E5) specifically targeted individuals holding structural positions at the policy making level (Department of Social Affairs, Department of Education, and Department of Health) to

evaluate regulations at the Exosystem and macrosystem levels. Meanwhile, informants at the microsystem level (A1–A4) were selected based on their direct involvement as education practitioners in the field. To maintain ethical integrity and protect informants, all identities were anonymized using alphanumeric coding (A1–F1).

Table 1. Informant

No	Informant Code	Interviewee Category	Ecosystem Level	Institution / Affiliation
1	A1	Teacher at a State Special Education School (SLB Negeri Tunagrahita Teacher)	Mikrosistem	Special Education Schools
2	A2	Teacher at a State Special Education School (SLB Negeri Tunagrahita Teacher)	Mikrosistem	Special Education Schools
3	A3	Teacher at a State Special Education School (SLB Negeri Lewoleba)	Mikrosistem	Special Education Schools
4	A4	Teacher at State Elementary School Inpres 2 Waikomo	Mikrosistem	Educational Institution
5	B1	Parents of Children with Disabilities	Mikrosistem	Family Environment
6	B2	Parents of Children with Disabilities	Mikrosistem	Family Environment
7	B3	Parents of Children with Disabilities	Mikrosistem	Family Environment
8	B4	Parents of Children with Disabilities	Mikrosistem	Family Environment
9	C1	Pondok Perubahan Community	Mesosistem	Community Based Organization
10	C2	Forum for the Wellbeing of People with Disabilities and Families (FPKDK)	Mesosistem	Community Based Organization
13	D1	NGO Plan Indonesia	Exosystem	Non Governmental Organization
14	D2	NGO Plan Indonesia	Exosystem	Non Governmental Organization

17	E1	Department of Social Services	Exosystem	Government
18	E2	Department of Social Services	Exosystem	Government
19	E3	Department of Education	Exosystem	Government
20	E4	Department of Health	Exosystem	Government
21	E5	Department of Health	Exosystem	Government
22	F1	Religious Leader	Exosystem	Religious Leader

Sources: Processed by researchers 2026

Data Collection and Analysis

To ensure the absence of bias, the researcher employed data triangulation techniques. Primary data were collected through in depth semi structured interviews, observations at one regular schools (State Elementary School Inpres 2 Waikomo) and two special education schools (State Special Education School for Intellectual Disabilities Tunagrahita and Special Education School Negeri Lewoleba) in the Lembata Regency, and an analysis of local policy documents. Specifically, the Lembata Regency Regional Regulation No. 6 of 2022, the Lembata Regency Regional Government Work Plan (RKPD) 2025, and the Regional Medium Term Development Plan (RPJMD) 2025–2029 were examined to identify gaps between policy narratives and implementation realities.

Data analysis was conducted using a hybrid deductive–inductive thematic analysis approach. This integrated methodology was formulated by Fereday and Muir-Cochrane (2006), combining the principles of data-driven inductive coding from Boyatzis (1998) with the theory-driven deductive template-based

organizational style of Crabtree and Miller (2023). The analysis process was carried out in several stages. First, deductive coding guidelines were developed based on Bronfenbrenner’s ecological systems framework, which establishes the predefined categories of microsystem, mesosystem, exosystem, and macrosystem. Second, the researcher repeatedly read the transcripts to identify data-driven (inductive) codes that reflected the local context of Lembata. Third, these inductive codes were mapped into the deductive template. Through continuous comparison, the initial codes were grouped into subthemes and then formulated into broader concepts. For example, the raw data repeatedly indicated that while regulations existed, they were not implemented in practice, particularly highlighting the exclusion of people with disabilities from regional planning formulation meetings (Musrebang). This was initially grouped under inductive codes such as “unimplemented regulations,” “overlapping data collection,” “lack of memorandum of MoU between departments,” and “institutional passivity.” These codes were

then mapped to the deductive category of the Exosystem and later redefined into the overarching concept of “Pseudo-Collaboration” (Ramlan 2026). This concept was also validated through data triangulation by reviewing inter-agency

administrative records, which confirmed the actual absence of any formal, binding cooperation agreements (MoU) or integrated data frameworks among the relevant government departments.

Table 2. Illustrating the Analytical Transition

Raw Data Excerpts	Inductive Code	Deductive Category	Overarching Concept
“The instability of this region, where we know firsthand that fuel shortages are common, combined with the distance to home, makes me unconsciously feel easily exhausted and prone to emotional outbursts.” B1, B3	Extreme physical fatigue due to geography, economic stress affecting parenting capacity emotional instability.	Microsystem	Emotional depletion (Masarik and Conger 2017)

RESULTS AND DISCUSSION

This section presents the findings regarding the ecological aspects that influence the implementation of inclusive education in the Lembata Regency, East Nusa Tenggara. The data analysis is based on the perspectives of various participants in inclusive education, which were then conceptualized within Bronfenbrenner’s Ecological Systems Theory 1979

framework. A summary of these ecological system interactions is presented in Table 3. To preserve the richness of the qualitative data, the narrative of the findings is supported by direct quotes from the participants. The researchers found that the majority of elementary to high schools in Lembata have not fully implemented inclusive education due to various factors.

Table 3. The Inclusive Education Ecosystem in Lembata Regency

MACROSYSTEM			
The Old Paradigm and mismatch	Lembata Local Government Work Plan (RKPD) 2025	Lembata Regency Local Regulation	Regulation of The Minister of National Education No.48 of 2023 And Regulation of The Minister of National Education No. 6 of 2026

Lack of human resource readiness, institutional mismatch, and outdated paradigms	Use of outdated/discriminatory paradigms despite national paradigm shifts; inability to absorb macro-level blueprints.	The absence of specific regulations governing the implementation of inclusive education (a fragmented ecosystem)	Regulatory Shift: The role of specialized guidance teachers in individual schools is being transferred to the Disability Service Unit (ULD). and was not updated in the latest regulations
EXOSYSTEM			
School Administration	Public Sphere / Society	Government Agencies (Dept. of Social Affairs, Education, Health)	Non-Governmental Organization & Religious Leaders
Formalistic Compliance	Reinforcement of Stigma: Hiding of children reduces visibility of people with disabilities, weakening political urgency for local policy changes.	Pseudo-Collaboration: Fragmented ecosystem, no formal agreements, and inaccurate data blocking proper budgeting.	Capacity Limits: Vulnerable informal initiation bounded by the limits of ecosystem capacity
MESOSYSTEM			
Home-School Interaction: Asymmetric Reciprocity: Failure of communication platforms (booklets, WhatsApp) due to external pressures on parents; lack of feedback overburdens the school.			
MICROSYSTEM			
Home	Peer	Teachers	
The Intersection of Deprivation and emotional depletion	Social Exclusion	<ul style="list-style-type: none"> • Absence of specialized teachers (GPK) • Infrastructure and facility deficit • Lack of incentives 	

Sources: Processed by researchers 2026

Microsystemic Aspects

Microsystemic aspects refer to the immediate social environment that forms the core of the development of students with disabilities. After conducting interviews with several participants within the students' immediate social circle, it was found that the majority of students are in family environments where parental involvement is minimal, and this level of involvement is also influenced by parents' educational attainment.

“Most parents delegate all responsibility to the school; they are busy working. Parents who have not received higher education tend to lack a strong sense of awareness regarding their children's education.” A1, A2, A3

In addition to economic factors, field findings revealed the presence of strong social stigma in the surrounding community. Many local residents still view disability as a stigma, creating

psychological pressure; this ultimately becomes the primary driver for families to withdraw from public interaction.

“Parents are influenced by the stigma of their neighbors, so many parents are secretive and even hide their children’s existence.” C1, C2, D1

In addition to misconceptions about parental roles and the perpetuation of stigma, other factors act as ecological barriers to the intensity of parent and child interaction. The findings identified two mutually reinforcing variables: geographical isolation and economic pressure.

“Their seasonal employment, combined with the fact that their homes are far from Lewoleba, for example, in the districts of Omesuri, Atadei, and others, means parents exhaust their energy on the time consuming journey.” C1, C2

“The instability of this region, where we know firsthand that fuel shortages are common, combined with the distance to home, makes me unconsciously feel easily exhausted and prone to emotional outbursts.” B1, B3

During observations of both in school and out of school activities, it was found that only a few peers initiated conversations, and it was clearly

documented that some students made physical insults, such as, “Poor you, you don’t have legs,” while others deliberately mimicked the communication style of deaf students as a joke. On the service provider side, the school operates under a resource deficit.

“Government assistance has not been sufficient, so to be honest, the existing building structure and facilities remain a major challenge for us.” A1, A2, A4

“We only have one special education teacher with a degree in social sciences; I myself do not have a degree in education, but due to the shortage of teachers, we end up helping each other out.” A2

All these obstacles ultimately force teachers to carry out their duties without adequate infrastructure and expert support. The absence of Special Education Teachers (GPK) compels regular teachers to improvise roles beyond their academic qualifications

Mesosystemic Aspects: The Burden and Substitution of Institutional Care

Analysis at the mesosystemic level highlights the interactions between families, schools, and peers. Field findings indicate that socioeconomic barriers and cultural repression in the form of stigma have distorted parents’ perceptions,

resulting in a lack of meaningful participation on their part in their children's educational ecosystems. Parents' failure to be present, both psychologically and physically, creates a burden that must be borne entirely by the school. Educators strive to bridge this communication gap through various technical interventions to maintain mesosystemic relationships. As one educator stated:

“We strive to maintain communication by creating a communication logbook, assigning homework that requires parental signatures, and establishing a WhatsApp group comprising parents and teachers.” A1, A2, A3

“In practice, these administrative innovations are ineffective. The WhatsApp group and communication logbook are often ignored or, at best, responded to merely as a matter of administrative compliance.” A1, A2

The relationship between families and schools does not take the form of an equal partnership, but rather operates unilaterally, with the school acting as the sole active party.

Exosystemic

The Exosystemic research explores environmental structures that directly involve individual students but can

influence their cognitive and social development (Bronfenbrenner 1979). These findings analyze existing ecosystems, ranging from the government, non governmental organizations, and religious leaders. In practice, structural paralysis has been observed in the educational infrastructure and basic local services. One of the mandates of Lembata Regency Regulation No. 6 of 2022, specifically Article 30 regarding the Disability Service Unit (ULD), has not been implemented.

“It is in the regulations, but it does not exist in practice. Many public service standard awareness campaigns or meetings for regional planning formulation, such as the Development Planning Consultation (Musrembang), do not involve people with disabilities.” C1, C2, D2

“It should already exist according to the regulations, but what I have encountered is that it doesn't exist. Even the Social Affairs Office struggles with data. Assistive devices, such as wheelchairs, and disability friendly access in various public service offices are still lacking and rarely reach those in need” B2, C1, C2

This stagnant policy is further exacerbated by the overlapping jurisdictions. Institutional coordination has

not been achieved because government agencies operate rigidly and passively, resulting in the absence of integrated data across departments.

“Data collection usually involves going directly to villages with SIKS-NG operators. As for data from the Social Affairs Department, the Population and Civil Registration Department, and the Health Department, each has its own and they haven’t been consolidated yet.” E1, E2

“Each community health center (Puskesmas) has its own data, which is reported to the department every month. However, regarding schools like the Special Education School (SLB), I’m not sure; but if we receive a letter regarding an event requiring our support, we will certainly provide it.” E4

This aligns with the data on students with special needs in the Lembata Regency from the Ministry of Education, Culture, Research, and Technology as of April 3, 2026, as follows:

Table 4. Students with Special Needs in Lembata Regency

Subdistrict	Validated Students with Special Needs	Single Disability Total	Single Disability (Meets Classification)	Single Disability (Does Not Meet Classification)	Total Multiple Disabilities	Multiple Disabilities (Meets Classification)	Multiple Disabilities (Does Not Meet Classification)
Atadei	1	1	1	0	0	0	0
Lebatukan	27	27	0	27	0	0	0
Wulandoni	6	6	3	3	0	0	0
Naga Wutung	19	18	5	13	1	0	1
Ile Ape	18	18	2	16	0	0	0
Omesuri	2	2	0	2	0	0	0
Buyasuri	18	18	3	15	0	0	0
Nubatukan	107	102	66	36	5	0	5
Ile Ape Timur	3	3	2	1	0	0	0
TOTAL	201	195	82	113	6	0	6

Source: Ministry of Education, Culture, Research, and Technology As of April 3, 2026

This data reveals systemic failure. A total of 59.2% of students with disabilities (119 out of 201 students) failed to pass the administrative classification process. This massive validation gap creates administrative exclusion, which directly hinders the accuracy of policy

interventions and exacerbates existing barriers. In contrast, the current disability service ecosystem remains limited to basic assistance and fails to address efforts to eliminate stigma or the essence of inclusive education.

“Given the budget allocated to us, we prioritize in kind assistance for the elderly and people with disabilities, there is no program to address stigma. With limited funds, we decided to focus solely on basic needs for now.” E1

“The assistance we provide consists of basic food and financial aid based on existing criteria; this assistance is provided only once a year, making it difficult to measure its impact.” E1, E2

“When we conduct advocacy or support, it is not uncommon for extensive data collection to be carried out by the government or other parties, instead of providing assistance, the aid never actually reaches its intended recipients.” C2, B4

Furthermore, this study found fragmentation of sectoral interests, in which interagency cooperation operates without a binding legal framework in the form of a memorandum of understanding (MoU). The relationship between local government institutions and non governmental actors is very passive; the study found that, in practice, local governments have failed to serve as initiators within the inclusion ecosystem.

“There is no formal inter agency cooperation; health centers still

operate independently, and there are no specific clusters addressing the needs of people with disabilities.” E1, E4, E5

“Agencies rarely take the initiative. If the community organizes new activities, they might attend, but this is often limited to personal initiatives.” C2

“A joint task force decree does exist, but its implementation on the ground is merely symbolic, lacking any binding form of cooperation.” E3, E4

This lack of government initiative has ultimately led to the emergence of non governmental organizations (NGOs) and volunteers attempting to fill the gaps in this ecosystem.

“There are certain individuals, including doctors and midwives, who frequently engage in volunteer work by providing free checkups.” E4, E5

“We once collaborated with a disability advocacy NGO in North Sulawesi to distribute wheelchair donations. The wheelchairs were purchased in Kupang, but it took a very long time for them to arrive, not to mention that the cost ended up being twice as high due to the distance.” C2, F1

“This is a complex issue; for example, sign language varies by region, making it extremely difficult to align perceptions. Further training is needed, especially given our remote location far from the provincial capital.” D1, C1, E1, E3

In practice, the participation of people with disabilities is reduced to a mere formality to fulfill bureaucratic requirements, as institutions fail to provide an adaptive academic framework. Consequently, students with disabilities experience systemic marginalization in the classroom.

“Many people think that special education schools are places where crazy people gather, so parents end up sending their children to schools that are not ready for inclusion. Ultimately, some schools only issue report cards but not diplomas” A1, C1, E1, E3.

“Learning is carried out to the best of their ability, however, one or two things still feel like a one size fits all approach, because the tools are inadequate” B2, C1, E3

Exclusion occurs within the relationships between ecosystems. The barriers faced by students with disabilities in this context do not stem from deficits in their individual capacities, but are also influenced by a series of ecosystem level

issues that reflect a fragmented educational ecosystem.

Macrosystemic Aspects

Analysis at the macrosystemic level focuses on the ideological blueprint, cultural paradigms, and legislation that underpin the entire educational ecosystem. Within the macrosystemic context, there are several weaknesses that have the potential to trigger a domino effect of exclusion, starting from the highest level. There are structural weaknesses at the macrosystemic level that create a domino effect of exclusion extending down to the lowest level.

There has been a shift in national policy regarding the provision of Special Education Teachers (GPK), specifically in Ministry of Education Regulation No. 70 of 2009, particularly Article 10, Paragraph 1, which mandates the presence of Special Education Teachers in educational institutions. However, in the latest regulation, Ministry of Education, Culture, Research, and Technology Regulation No. 48 of 2023, specifically in Article 10, the exclusive position of Special Education Teachers has been transferred to the Disability Service Unit (ULD), and they may perform duties at more than one educational institution. Furthermore, the requirement for Special education teachers is not specifically replicated and has

actually faded in the latest education policy, namely Ministry of Education Regulation No. 6 of 2026.

Furthermore, although recognition of the rights of persons with disabilities have been enshrined in various provincial and district regulations in Lembata, there remain gaps in its implementation within the inclusive education sector, to date, there are still no specific local instruments establishing technical operational standards for inclusive education, such as the provision of standardized assessment matrices, clear guidelines for the recruitment of Special Education Teachers, and appropriate accommodation standards for Special Education Teachers in the field.

In the context of the right to education without discrimination, which mandates the provision of Individualized Education Programs (PPI) and Special Education Teacher (GPK), these requirements have been enshrined in Law No. 8 of 2016 and Ministry of Education, Culture, Research, and Technology Regulation No. 48 of 2023. In response to the shortage of Special Education Teachers, the central government has initiated accelerated digital training through the Sustainable Professional Development Management Information System (SIMPKB) and the Merdeka Mengajar Platform (PMM) via a mechanism that bypasses bureaucracy by leveraging digital

information technology, where programs are offered directly to teachers by cutting through the old, convoluted bureaucracy. However, this mechanism clashes with institutional unpreparedness in the Lembata Regency. This is triggered by a mismatch in human resource competencies within the Education Office and schools, where policy making, lacking in pedagogical and digital literacy, still clings to old habits.

“There are still many people who are not certified teachers but they continue to teach to help address the shortage.” A2

“This is what we are still lacking some of our technical staff are not teachers, and some don’t even have a degree. The mindset has long been focused on physical infrastructure and development, so the true spirit of education has shifted somewhat.” A4, E3

This training innovation clashes with the authorities’ lack of readiness to respond to the system, as they remain trapped in a paradigm focused on the physical infrastructure. This phenomenon underscores that regulations and technology adoption without institutional human resource readiness will only lock the inclusive education ecosystem in Lembata into a stage of stagnation.

Ideological stagnation and inertia have occurred in regional development

planning regarding inclusion issues. Since the enactment of Law No. 8 of 2016, this instrument has officially revoked the validity of Law No. 4 of 1997 on Persons with Disabilities. This paradigm shift was previously reaffirmed through the ratification of the Convention on the Rights of Persons with Disabilities (CRPD) via Law No. 19 of 2011, which dispels past stigmas by adopting the term “people with disabilities.” Nevertheless, a documentary study found the use of the term “defective persons” in the 2025 Regional Work Plan (RKPD) of the Lembata Regency.

DISCUSSION

Theoretical reorientation

Within the framework of developmental ecology, interaction between person and environment is viewed as two-directional, that is, characterized by *reciprocity* (Bronfenbrenner 1979). In the implementation of inclusive education in Lembata, reciprocity operates in two domains simultaneously. First, between ecological structures and the agency of local actors. Second, within the ecological level itself, involving mutual accommodation or what is known as a process of mutual adjustment, in which each level simultaneously influences and is influenced by the other levels (Bronfenbrenner 1979),

However, in practice, The transition from Minister of National Education

Regulation No. 70 of 2009 to Regulation No. 48 of 2023, and its subsequent omission in Regulation No. 6 of 2026, demonstrates a significant Regulatory Shift in the national framework regarding the mandatory provision of special education teachers (GPK). This structural shift creates a legal vacuum at the regional level. This finding aligns with (Anwar et al. 2025), who argued that inclusive education policies in Indonesia often lack systemic evaluation and minimum standardized assessment matrices, leaving local governments without clear operational guidelines. In practice, the absence of GPKs has actually prompted an adaptive response from regular teachers, who are forced to improvise in roles outside their academic qualifications, as one teacher explained: “We only have one special education teacher with a degree in social sciences; I myself do not have a degree in education, but due to the shortage of teachers, we end up helping each other out.” (A2).

This phenomenon illustrates the mechanism that Bronfenbrenner (1979) refers to as “the growing person” that is, an actor who acquires a more differentiated conception of the environment and becomes motivated to maintain or restructure that environment. Teachers do not passively accept structural gaps; rather, they actively restructure their learning microsystems, even under less-than-ideal conditions..

However, this reciprocal relationship is asymmetric; the ability of these local actors to restructure the mesosystemic environment is limited by the changing properties of the immediate settings in which the developing person lives, as this process is affected by relations between these settings, and by the larger contexts in which the settings are embedded (Bronfenbrenner 1979). The teachers' initiative to create a communication booklet and a WhatsApp group for parents and teachers failed to serve as an effective platform at the mesosystemic level. This was not caused solely by the failure of individual actors, but was also influenced by the capacity of the microsystem. (Bronfenbrenner 1979). Parents face economic and geographic pressures as well as social stigma, which ultimately prevent them from providing full feedback on school initiatives; as a result, a reciprocal mesosystem does not form, and the school ends up being overburdened.

Reciprocal Mechanisms Between Levels ***Bottom-Up from Microsystem to Macrosystem***

The developing person is viewed not merely as a tabula rasa on which the environment makes its impact, but as a growing, dynamic entity that progressively moves into and restructures the milieu in which it resides (Bronfenbrenner 1979).

This allows for a bottom-up influence. This phenomenon is evident when parents are forced to hide their children due to negative stigma in society; in other words, this stigma arises from a culture that is actually produced and reinforced through the daily practices of microsystemic actors. The act of hiding the child actively reinforces stigma at the exosystemic level by reducing the visibility of people with disabilities in public spaces. Ultimately, this lack of visibility has an impact at the macrosystemic level by weakening political pressure and urgency to bring about policy changes at the local level.

Furthermore, this cultural stigma at the microsystem level creates an ideological gap, as evidenced by the use of the discriminatory term “defective persons” in the 2025 Lembata Regency Local Government Work Plan (RKPD) document, even though this paradigm has been reformed to “people with disabilities” at the macro level through the ratification of Law No. 8 of 2016. When the blueprint changes, the setting structure should result in corresponding changes in behavior and development (Bronfenbrenner 1979). This ideological gap reflects the inability of the local system to absorb changes in the broader macrosystemic blueprint. In response, teachers have sought to improvise by filling the void left by the absence of Special Guidance Teachers (GPK), which

has created limited positive feedback. In this context, the effectiveness of development within this two-way relationship is largely determined by how that relationship intersects with third-party relationships. (Bronfenbrenner 1979). Without ecosystemic support in the form of training, budget allocation, and coordination among agencies, these improvisations risk leading to burnout or instability.

Intersection between Exosystem and Microsystem

The impact extends from the ecosystem to the microsystem and vice versa. Data on people with disabilities remains fragmented across the various agencies in Lembata Regency, resulting in incomplete and inaccurate data at the macrosystem level, particularly in policy planning. Without accurate data, budget and program priorities cannot be allocated. Furthermore, coordination among agencies, as part of the ecosystem is carried out without a formal, binding agreement. This reflects what Ramlan (2026) refers to as “pseudo-collaboration.” From the opposite perspective, there is a shortcoming in that at the macrosystemic level, regulations regarding inclusive education do not include an incentive system, minimum standards, or systematic evaluation (Anwar et al. 2025).

Mechanisms from the Macrosystem to the Microsystem

Every ecological transition is both a consequence and an instigator of developmental processes (Bronfenbrenner 1979). However, in the field, we found that the ecological transition from the macrosystem to the microsystem did not proceed smoothly. A mechanism that bypasses bureaucracy by leveraging digital information technology, namely the Sustainable Professional Development Management Information System (SIMPKB) and the Merdeka Mengajar Platform (PMM), which were initiated at the macrosystem level encountered a lack of preparation on the part of local governments, such as lack of human resources, inadequate organisation and management (Madubun 2023), which was then compounded by geographical factors such as distance and high logistics costs, ultimately preventing mutual accommodation from taking place.

CONCLUSION

The issue of inclusive education cannot be resolved through partial sectoral interventions; rather, it requires holistic improvement of the entire regional education ecosystem. This study confirms that the challenges of inclusive education in Lembata Regency stem from an imbalance in the burdens borne by stakeholders at the

microsystem level, as well as from deficiencies in interactions between ecosystem levels, which are further exacerbated by geographic isolation.

The resilience and improvisation of microsystemic actors must be supported by their ecosystem; therefore, this study advocates a paradigm shift in systemic interventions. To reconstruct this fractured ecosystem, three strategic interventions are recommended: First, the government must improve data integration governance and enact local regulations on the implementation of inclusive education as a binding operational framework. Second, a paradigm shift in development is needed, where local policy planning shifts its focus from physical infrastructure to inclusive, human rights-based governance. Third, the government cannot work alone; it must collaborate with actors at the ecosystem level, namely non-governmental organizations (NGO), religious leaders, community leaders, and existing volunteer communities to develop and institutionalize appropriate local adaptation practices as innovations that combine formal and informal educational practices.

Although this study provides deep insights into the dynamics of inclusive education in geographically isolated areas, its findings are limited to the geographical and cultural context of a single district. Future research should conduct cross

regional studies in areas with similar geographical conditions to evaluate the effectiveness of ecological interventions in a measurable way. Ultimately, inclusive education cannot be realized if it relies solely on policy; rather, it requires a supportive ecosystem at every level to ensure that every child receives their full right to education.

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