

An Adaptive-Applicative Model for the Empowerment of Transmigrant Communities: A Capability Ecosystem Approach to Regional Self-Reliance

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Abstract

Transmigration remains an instrument for regional development in Indonesia; however, many transmigration areas continue to experience infrastructure deficits, weak institutional capacity, unresolved land conflicts, limited community participation, and dependence on government assistance programs. This study aimed to identify the systemic factors underlying unsuccessful transmigration empowerment and formulate an adaptive-applicative model to support sustainable regional self-reliance. A qualitative approach with a policy design research strategy was employed. Data were collected through document analysis, four focus group discussions involving 45 stakeholders, field observations, in-depth interviews conducted in 12 transmigration areas across Sumatra, Kalimantan, Sulawesi, and Papua, and consultations with eight experts. Data were analyzed using thematic content analysis, cross-site comparison, policy analysis, and source and method triangulation. The findings identified five fundamental challenges: contextual incompatibility of empowerment programs, inadequate infrastructure, ineffective economic institutions, social and agrarian conflicts, and limited community ownership. The study proposed a two-level model integrating five dimensions of individual capability with three typologies of regional readiness, supported by a ten-year continuous mentoring system and a phased 2025–2045 roadmap. The model demonstrated that sustainable empowerment requires coordinated capability development, institutional strengthening, contextualized interventions, integrated financing mechanisms, and a planned transition from external assistance. It provides an evidence-based framework for transforming transmigration communities into self-reliant actors in regional development.

INTRODUCTION

Transmigration is one of Indonesia's longest-standing regional development policy instruments, with a history spanning more than a century since the Dutch East Indies colonial period. By 2026, transmigration areas had been established across more than 619 districts/cities throughout the Indonesian archipelago, involving millions of residents who settled in new areas with substantial resource potential that had not yet been fully optimized (Ministry of Transmigration, 2026).

However, despite the extensive scale of this program, a fundamental paradox remains. Many transmigration areas that have existed for decades continue to experience structural dependence on government intervention, limited community participation in development processes, and slow transformation from subsistence-based economies into competitive productive economies. Evaluations of previous empowerment programs have consistently

identified recurring challenges, including unsustained training activities, incomplete mentoring processes, and local institutions that are unable to operate independently after program termination (Tjiptoherijanto, 2020; Sugiyanto, 2022).

Meanwhile, the global development paradigm has increasingly emphasized a human capability-based approach (Sen, 1999), which views empowerment not merely as an increase in income or production but as the expansion of people's substantive freedoms to determine the direction of their own lives. Combined with an institutional ecosystem perspective (North, 1990; Ostrom, 2008), this approach provides a foundation for designing empowerment models that are more holistic, contextual, and sustainable.

Despite their strategic role, many established transmigration areas have not yet achieved sustainable regional self-reliance. Policy evaluations and field observations have identified recurring constraints, including inadequate infrastructure, such as roads, electricity, clean water, and digital connectivity; unresolved land legality and agrarian conflicts; weak village-owned enterprises and cooperatives; limited market integration; and insufficient community participation. Empowerment activities are also frequently implemented as short-term projects, where training programs end without continuous mentoring, institutional strengthening, or measurable transfer of responsibility to local actors. This pattern reinforces dependency because communities are positioned primarily as program recipients rather than as decision-makers and managers of local development.

Previous studies have highlighted several dimensions of these challenges. Tjiptoherijanto (2020) identified infrastructure availability, economic opportunities, and social integration as persistent issues affecting the contribution of transmigration to sustainable development. Similarly, Sugiyanto (2022) found that transmigration community empowerment programs implemented between 2014 and 2022 were constrained by fragmented interventions, uneven institutional capacity, and weak program continuity. These findings indicate that the success of transmigration should not be assessed solely through relocation outcomes, settlement development, or the number of training activities provided. Instead, evaluation should also consider communities' ability to manage resources, maintain institutions, access markets, and determine their own development priorities.

International development literature provides a relevant conceptual foundation for addressing these limitations. Sen's, (1999) capability approach defines development as the expansion of substantive freedoms that enable individuals to pursue lives they have reason to value, while (Alkire, 2005) emphasizes the importance of operationalizing this multidimensional perspective through measurable indicators. (Nussbaum, 2011) further explains that human development depends on opportunities created through interactions between individual capabilities and supportive social conditions. From this perspective, transmigration empowerment should extend beyond economic programs to include social participation, technological capacity, environmental resilience, institutional agency, and meaningful involvement in development decision-making.

Institutional studies further demonstrate that individual capabilities cannot produce sustainable collective outcomes without effective local institutions and governance mechanisms. (North, 1990) explains that institutions shape incentives and influence the performance of economic and social interactions, while Ostrom (2005, 2008) demonstrates that communities can effectively manage shared resources when governance arrangements are

locally legitimate, participatory, and adaptive. Experiences from South Korea's Saemaul Undong also illustrate that rural transformation requires the integration of government support, community leadership, collective action, and gradual institutional independence (Rha, 2009). These perspectives support an ecosystem-based empowerment approach; however, they do not yet provide an operational model specifically designed for the diverse socioecological and institutional conditions of Indonesian transmigration areas.

A critical research gap therefore exists between the theoretical concepts of human capability and institutional governance and their practical implementation within transmigration policy. Existing studies generally examine individual aspects, such as infrastructure, livelihoods, participation, land conflicts, or local institutions, without integrating them into a multilevel framework that connects individual empowerment, regional readiness, continuous assistance, financing mechanisms, and planned transition strategies. Previous programs have also frequently applied standardized interventions across areas with substantially different social, ecological, and institutional conditions. An adaptive model is therefore needed because uniform interventions may provide overly basic assistance to advanced areas while introducing market-oriented programs to communities that have not yet achieved sufficient infrastructure, land certainty, or institutional capacity.

This study addresses this gap by proposing an Adaptive-Applicative Transmigration Community Empowerment Model based on a capability ecosystem approach. The novelty of this study lies in integrating five dimensions of individual empowerment—economic and livelihood capacity, social cohesion, technology and innovation, environmental sustainability, and institutional governance—with a regional classification system representing different levels of readiness. The model is further connected to a ten-year Continuum Support System, a phased implementation roadmap for 2025–2045, multisource financing mechanisms, and a planned transition of responsibility from government institutions and facilitators to community organizations. This integration links people-centered capacity development with place-based regional transformation within a unified policy framework.

Accordingly, this study aimed to identify the systemic causes of unsuccessful transmigration empowerment, formulate a contextual and operational empowerment model, and develop an evidence-based implementation roadmap for national policy development. Using document analysis, focus group discussions involving 45 stakeholders, field observations and interviews in 12 transmigration areas, and consultations with eight national experts, the study compared diverse regional conditions and validated the proposed framework through source and method triangulation. Theoretically, this research extends the capability approach by demonstrating that substantive individual freedoms depend on supportive institutional and territorial ecosystems. Practically, it provides policymakers, local governments, facilitators, village enterprises, cooperatives, and transmigrant communities with a framework for selecting interventions, monitoring multidimensional progress, organizing long-term assistance, and establishing pathways toward sustainable regional self-reliance.

METHOD

This research employed a qualitative descriptive approach with a policy design research strategy. Data were collected through four main instruments:

1. Document Analysis: A comprehensive review was conducted of transmigration policy documents, including Law No. 29/2009, Government Regulation No. 3/2014, the Strategic Plan of the Ministry of Transmigration 2025–2029, previous program evaluation reports, and international literature related to community empowerment and institutional development.
2. Focus Group Discussions (FGDs): Four FGDs were conducted involving 45 selected informants from the Ministry of Transmigration, academics, practitioners, local government representatives from eight districts, and transmigrant community leaders.
3. Field Studies: In-depth observations and interviews were conducted in 12 purposively selected transmigration areas based on variations in accessibility, leading commodities, and development phases across Sumatra, Kalimantan, Sulawesi, and Papua.
4. Expert Consultations: Consultation sessions were conducted with eight national experts in community empowerment, transmigration policy, ecology, and institutional governance.

Data were analyzed using thematic analysis supported by source and method triangulation. Internal validation was conducted through member checking with relevant stakeholders. The analytical framework integrated the capability approach (Sen, 1999), the Institutional Analysis and Development framework (Ostrom, 2005), and systems thinking to develop a comprehensive empowerment model.

Approaches and Types of Research

This research uses a qualitative approach with a descriptive-analytical research type based on policy design research strategies. The qualitative approach was chosen because the focus of the research is to understand in depth the social, institutional, and capacity transformation processes of transmigration society phenomena that are complex, contextual, and cannot be reduced to a purely quantitative measure (Creswell & Poth, 2018). The research paradigm used is critical interpretivism, which allows researchers not only to describe the reality of the field, but also to analyze the power structures, policies, and institutional dynamics that shape the conditions of transmigration societies.

Policy design research was chosen as a strategy because the ultimate goal of research is not just to produce an academic description, but to produce policy design documents that are operational, implementable, and empirical evidence-based (Howlett & Mukherjee, 2018). This strategy integrates theoretical analysis with field data to generate models and roadmaps that are relevant to policymakers.

Research Location and Time

The research was carried out at two levels of locations. First, the national level includes the Directorate of Transmigration Community Empowerment of the Ministry of Transmigration in Jakarta as the location for policy studies and multi-stakeholder FGDs. Second, the field level includes 12 purposively selected transmigration areas on four major islands: Sumatra (South Sumatra and Jambi Provinces), Kalimantan (East Kalimantan and

Central Kalimantan Provinces), Sulawesi (Southeast Sulawesi and Central Sulawesi Provinces), and Papua (South Papua Province). The selection of the region is based on the diversity of typologies of regional readiness, infrastructure accessibility, superior commodities, and the development phase of empowerment.

The research was carried out for eleven months, from February to December 2025, with stages: (1) preliminary study and secondary data collection (February–April 2025); (2) the implementation of FGD and expert consultations (May–July 2025); (3) UI Patriot Expedition field study (August–September 2025); (4) data analysis and model preparation (October–November 2025); and (5) validation and finalization of documents (December 2025).

Data Source

This research utilizes two types of data sources in an integrated manner. Primary data were obtained from: (a) FGD participants consisting of 45 informants selected purposively based on relevance and expertise; (b) in-depth interview resource persons in the field consisting of village heads, heads of BUMDes, heads of farmer groups, field assistants, agricultural extension workers, and community leaders; (c) 8 national experts who provide a consultative perspective on the design of the model; and (d) the results of direct observation of the physical, social, and institutional conditions of the transmigration area.

Secondary data were obtained from: (a) national transmigration policy documents (Law No. 29/2009, Government Regulation No. 3/2014, Strategic Plan of the Ministry of Transmigration 2025–2029, related Presidential Regulation); (b) evaluation reports of transmigration programs from various periods; (c) national and international scientific publications related to community empowerment, institutional economics, and development studies; (d) statistical data on transmigration areas from BPS and the Ministry of Transmigration; and (e) regional planning documents from the district government of the research location.

Data Collection Techniques

Data collection is carried out through four complementary techniques, as described below.

1. **First, the Documentation Study.** This technique is carried out through searching, critical reading, and content analysis of policy documents, evaluation reports, and scientific literature. The literature search used the academic databases Google Scholar, Garuda, and Scopus with the keywords: transmigration community empowerment, capability approach, institutional ecosystem, and community development Indonesia. Policy documents are obtained through official access to the websites of the Ministry of Transmigration, JDIH, and BPS.
2. **Second, Focused Group Discussions (FGDs).** A total of four FGD sessions were held with different informant compositions: (a) Policy FGD (participants: officials of the Ministry of Transmigration Echelon II-III, representatives of Bappenas, and the Coordinating Ministry for PMK); (b) Academic FGD (participants: professors and researchers from the fields of sociology, development economics, public policy, and ecology from five universities); (c) Practitioner and Regional FGD (participants: heads of transmigration offices from 8 districts, experienced field assistants, and empowerment program coordinators); and (d) Model Validation FGD (joint participants to provide

feedback on the initial design of the model). Each FGD session lasts 3–4 hours and is recorded with the consent of the participants.

3. **Third, In-Depth Observation and Interview (UI Patriot Expedition).** The field study was carried out through the University of Indonesia's Patriot Expedition program, where the research team lived and worked with transmigration communities for 14–21 days in each region. Observations were made on: the condition of the infrastructure and accessibility of the area, the daily economic activities of the community, the institutional dynamics of BUMDes and farmer groups, agricultural practices and land management, and social interaction between transmigrants and local communities. In-depth interviews were conducted in a semi-structured manner using interview guidelines developed based on the framework of the capability approach and the five dimensions of empowerment. Each region produces an individual field report that is then integrated in a cross-region comparative analysis.
4. **Fourth, Expert Consultation.** A total of eight national experts were involved in individual consultation sessions lasting 90–120 minutes. The experts were selected based on expertise in the fields: community empowerment and rural sociology (2 people), transmigration policy and regional development (2 people), institutional governance and regional autonomy (2 people), ecology and sustainable agriculture (1 person), and inclusive development economics (1 person). The consultation was focused on testing the conceptual validity of the designed model and sharpening policy recommendations.

Data Analysis Techniques

Data analysis was carried out iteratively using three mutually reinforcing techniques. First, thematic content analysis was applied to FGD transcripts, interview notes, and policy documents to identify key themes, recurring patterns, and points of tension in transmigration empowerment. Coding is done in two rounds: open coding to identify the initial categories, followed by focused coding to build relationships between categories.

Second, cross-site comparative analysis was carried out to identify similarities and differences in empowerment conditions in the 12 study areas, so that the resulting model is adaptive to various contexts. Third, policy analysis uses a policy cycle framework to examine the gap between existing policies and actual needs on the ground, as well as formulate recommendations that can be implemented.

A theoretical framework that integrates the capability approach (Sen, 1999), institutional analysis and development framework (Ostrom, 2005), and systems thinking is used as an interpretive lens to ensure that data analysis produces findings that are not only descriptive, but able to explain the cause-and-effect mechanisms behind the success and failure of transmigration empowerment.

Data Validity

The validity of the data is guaranteed through four strategies. (1) Triangulation of sources: each finding is verified from a minimum of three different sources (policy documents, FGD participants, and field data) before being designated as a valid finding. (2) Method triangulation: the same information is obtained through different methods (documentation studies, interviews, and observations) to ensure the consistency of findings. (3) Member checking: the initial model design was returned to 12 key informants from various layers (ministry officials, academics, practitioners, and transmigrant citizens) to obtain confirmation

and correction, so that the findings truly reflect the reality experienced by the perpetrators. (4) Audit trail: the entire process of data collection and analysis is documented systematically so that it can be traced and verified by independent parties.

RESULT AND DISCUSSION

Diagnosis: Five Root Problems of Transmigration Empowerment

The results of the document analysis and FGD identified five root systemic problems that have been hindering the success of transmigration community empowerment in Indonesia:

Table 1. Five Root Problems of Transmigration Community Empowerment

Yes	The Root of the Problem	Manifestations in the Field	Policy Implications
1	Model incompatibility with the regional context	Uniform programs in regions with very diverse socio-ecological characteristics	Contextualization based on regional readiness classification
2	Infrastructure deficit as a prerequisite for empowerment	Empowerment fails due to lack of road, electricity, and clean water connectivity	Basic infrastructure as a prerequisite, not a complement
3	Village economic institutions are not optimal	BUMDes and cooperatives exist formally but do not function substantively	Strengthening institutions, human resources and long-term capacity building-based governance
4	Unresolved social and agrarian conflicts	Transmigrant-indigenous land disputes hamper productivity	Settlement of land legality before economic program begins
5	Low participation and a sense of belonging	Residents are passive in waiting for government programs	Transformation from beneficiaries to community building agents

Adaptive-Applicative Empowerment Model

Based on this diagnosis, this study formulated an Adaptive-Applicative Empowerment Model that operates at two simultaneous levels. The first level is the Transmigration Individual Empowerment Metric in the form of a 10-year pyramid model that measures an individual's holistic capacity on five dimensions. The second level is the Regional Classification System which divides transmigration areas into three typologies based on the level of readiness.

Table 2. Five Dimensions of the Adaptive-Applicative Empowerment Model

Dimensions	Focus on Empowerment	Key Indicators	Final Goal
Economy & Livelihood	Strengthening production capacity and market integration	RT income, business diversification, market access, circular economy	An independent economic ecosystem based on local leading commodities
Social & Cohesion	Strengthening community participation and social capital	Participation rates, transmigrant-local cohesion, local leadership	Empowered communities with strong social governance
Technology & Innovation	Production modernization and governance digitalization	TTG adoption, business digitalization, digital literacy	Innovative communities with an adaptive technology ecosystem

Environmental Sustainability	Regenerative natural resource management	Sustainable agriculture, waste management, climate mitigation	Ecologically and sustainably resilient areas
Institutional & Governance	Strengthening local institutions and good governance	Functions of BUMDes/Cooperatives, land legality, transparency	Self-sustaining institutions with professional governance

The uniqueness of this model lies in the adaptive-applicative principle that rejects the 'one-size-fits-all' approach. Each region starts the empowerment process based on its typology of readiness. 'Green' typological areas (good accessibility, developing institutions) can directly enter the market integration phase, while 'red' typological areas (limited accessibility, weak institutions) start from the completion of basic needs and minimum infrastructure.

Continuum Support System

The critical finding of this study is that the failure of transmigration empowerment so far is not caused by a lack of programs, but by the failure to build a sustainable mentoring mechanism. The old formula 'training completed = empowerment completed' proved ineffective in all the regions studied.

As a solution, this model proposes a Continuum Support System through the Patriot Transmigration Program which is positioned as an instrument of long-term assistance to the state. The system consists of five stages that evolve as the community matures:

Table 3. Continuum Support System — Patriot Transmigration Program

Stages	Period	Companion Role	Transition Indicators
1: Trust Builder	Years 1–2	Socio-economic mapping, baseline preparation, citizen participation activation	The formation of an initial picture of regional readiness and social networks
2: Growth Catalyst	Years 3–5	Institutional strengthening, business technical mentoring, facilitation of access to funding	Local institutions function stably, initial operational independence
3: System Integrator	Years 6–7	Connecting the value chain with the market, consolidation of multi-actor partners	Professional BUMDes/Cooperatives, ready to take over the role of companion
4: Innovation Agent	Years 8–9	Digitalization of business systems, applied research, strengthening the circular economy	Autonomous areas in innovation, digitized systems
5: Planned Exit	Year 10	Intergenerational coaching, local roadmapping, asset handover	The community is able to maintain an independent ecosystem without external companions

Implementation Roadmap 2025–2045

The implementation roadmap is structured in three major phases that are mutually continuous, with the principle that differences between regions only affect the entry strategy, not the target time of achievement:

1. Phase I – Core Foundations and Empowerment (2025–2035): Ensuring the fulfillment of minimum infrastructure, the completion of land legality, the preparation of regional typology baselines, and community capacity building through intensive counseling, training, and mentoring. The main target is to change the mindset from aid recipients to development actors.

2. Phase II – Acceleration and Transformation of Regional Economies (2035–2040): Focusing on local-based industrialization, circular downstreaming of leading commodities, strengthening supply chains, integrating regional-national markets, and digitizing regional governance.
3. Phase III – Consolidation, Independence, and Exit Strategy (2040–2045): The central government shifts from an operator to a facilitator-regulator. Local institutions and local governments take over the management of the program. The empowerment model is ready to be replicated for the new transmigration area.

Integrated Financing System

The implementation of the roadmap requires an integrated and gradual multi-source financing strategy. In Phase I, the State Budget dominates as an instrument for foundation development. Entering Phase II, the role of the APBD, financial institutions (KUR, cooperatives), and business partnerships is increasingly significant. In Phase III, community-based financing (BUMDes, community corporations) became the backbone of the region's economy.

The critical principle formulated is that investment in downstream in the expansion phase must always be reconnected with strengthening the capacity of transmigrants as main producers. The benefits of industrialization must revolve to the community through this fair benefit-sharing mechanism called the Circular Economy-Based Downstream model (circular value ecosystem approach).

The findings of this study strengthen and develop the theoretical framework of the capability approach (Sen, 1999) in the context of empowering transmigration communities. The case of Indonesia shows that the expansion of individual capabilities cannot take place without the support of a strong institutional ecosystem—in line with the findings of Ostrom (2008) on the importance of self-governing institutions in the management of shared resources.

The original contribution of this research lies in the integration of two approaches that have been running separately: people-centered capacity measurement and place-based development. The proposed 10-year pyramid model provides an operational framework that brings the two together in one coherent and scalable system.

The findings on the importance of continuum support systems also expand the community empowerment literature that has been more focused on program design than post-program sustainability mechanisms. This study shows that a planned and gradual exit strategy is an equally important component of the entry strategy in the empowerment cycle.

The limitations of this study lie in the scope of field studies that have not yet represented all transmigration areas in Eastern Indonesia, as well as in the nature of the model design that is still prescriptive and needs to be validated through empirical implementation. Follow-up research with quasi-experimental methods is strongly recommended to test the effectiveness of the model in various regional contexts.

CONCLUSION

This study successfully formulated the Adaptive-Applicative Transmigration Community Empowerment Model as a strategic framework to address the fundamental

weaknesses of existing transmigration empowerment approaches. The main contributions of this research are the identification of five systemic root problems in transmigration empowerment that have not been comprehensively addressed within an integrated policy framework; the formulation of a two-level empowerment model that integrates the capacity measurement of transmigrant individuals through five empowerment dimensions with the classification of regional readiness into three typologies, enabling more precise, contextual, and measurable interventions; and the development of a Continuum Support System through the Patriot Transmigration Program, which shifts the mentoring paradigm from a temporary project approach toward a long-term state-supported empowerment mechanism that develops alongside communities until sustainable self-reliance is achieved. Furthermore, the proposed 2025–2045 roadmap provides structured, adaptive, and evidence-based implementation guidance for the Ministry of Transmigration and relevant stakeholders. The policy implication of this study highlights the need for fundamental reform, shifting from fragmented sectoral projects toward a long-term empowerment ecosystem approach that strengthens the sustainable self-reliance of transmigrant communities.

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