

Adapting Taiwan's Rural Regeneration Policy for Indonesia: A comparative study for sustainable rural development

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Abstract

Rural communities in both Taiwan and Indonesia face persistent challenges such as youth outmigration, aging populations, limited agricultural innovation, and ecological pressures. Taiwan addressed these issues through the Rural Regeneration Act (RRA), which institutionalizes participatory planning, capacity building, youth engagement, and ecological-cultural protection. Indonesia has established a comparable framework through the Village Law (2014) and the Farmer Protection Law (2013), but implementation remains fragmented and biased toward infrastructure. This study aims to examine the potential adaptation of RRA components to Indonesia's rural development system. A qualitative comparative case study was employed, combining policy analysis, SDG mapping, and SWOT-based evaluation. Primary data were collected through interviews and questionnaires with eight key informants, including a village head, neighborhood leader (RT), farmers, members of the youth organization (karang taruna), BUMDes representatives, cultural activists, and fishermen. The findings indicate that Indonesia's policies structurally resemble the RRA but diverge in practice, with Kesongo Village positioned in the WO quadrant requiring turnaround strategies through training and youth revitalization, while Gempolsewu Village is in the ST quadrant requiring diversification strategies to leverage governance capacity and ecological-cultural assets. Overall, four components of the RRA—participatory planning, structured training, youth engagement, and ecological-cultural sustainability—emerge as most suitable for adaptation. Aligning these with SDGs 1, 2, 8, 11, 12, and 13 can enhance participation, human capital, generational renewal, and resilience in Indonesia's rural development.

Keywords: Rural Regeneration Act; Policy adaptation; Indonesia; Taiwan; SDGs; SWOT analysis

1. Introduction

Rural areas are pivotal for national development due to their integral roles in agriculture, food security, cultural preservation, and maintaining ecological balance. However, both Taiwan and Indonesia face significant challenges in rural regions, including urban migration, aging populations, underdeveloped infrastructure, and a deficiency in innovative agricultural practices. Urban migration has intensified, particularly as young adults leave rural areas in search of better job prospects, resulting in a demographic imbalance where older individuals remain in those areas (Van Neste et al., 2020)

In response to various pressing issues facing rural areas, Taiwan enacted the Rural Regeneration Act (RRA) in 2010, aiming to enhance living conditions, foster community development, and preserve ecological and cultural integrity. The Act promotes community-driven efforts to rejuvenate rural economies and social structures, critical given the ongoing depopulation of rural areas due to urban migration. The RRA specifies key initiatives such as community-based planning, government-supported training programs, and incentives aimed at encouraging youth to return to their rural roots and engage in agriculture. This aligns with broader Sustainable Development Goals (SDGs) by emphasizing

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ecological sustainability, cultural heritage, and the need for educational and entrepreneurial opportunities for youth (Lai et al., 2021). The Act's community-based planning approach facilitates local stakeholder participation, which has been shown to improve the effectiveness of agricultural and socio-economic initiatives. Training and funding provided by the government under the RRA are designed to empower individuals, particularly youth, with the necessary skills to thrive in agriculture and community development, thereby addressing both economic and social challenges (Wenqi & Li, 2021)

Indonesia's approach to rural development is primarily framed through Law No. 6/2014 on Villages and Law No. 19/2013 on Farmer Protection and Empowerment, which promote decentralization, local empowerment, and infrastructure development. However, challenges persist in areas such as effective community engagement, sustainable practices, youth involvement in farming, and alignment with long-term development goals.

While Indonesia has made policy progress through decentralization and village empowerment programs, the current frameworks often fall short in areas such as community capacity building, sustainable agriculture, youth engagement, and integrated rural planning. By contrast, Taiwan's RRA provides structured provisions such as Article 5 (community-led planning), Article 6–7 (training and capacity building), Article 8 (government funding mechanisms), Article 13 (youth return and entrepreneurship), and Article 15 (ecological and cultural protection) that directly address these gaps.

To date, there has been limited research comparing these specific policy mechanisms and evaluating their adaptability to Indonesia's socio-political and cultural context. Thus, this study is needed to assess what Indonesia can learn from Taiwan, and how selected RRA policies can be effectively adapted to strengthen Indonesia's rural development in line with the SDGs.

1.1. Research Questions

What are the key components of Taiwan's Rural Regeneration Act, particularly in relation to:

- Community participation and planning (Article 5)
- Capacity building and training (Articles 6–7)
- Funding support mechanisms (Article 8)
- Youth engagement strategies (Article 13)
- Ecological and cultural sustainability (Article 15)
- How do Indonesia's existing rural and agricultural policies address these areas?
- In what ways do Taiwan's and Indonesia's rural policies align with the SDGs, particularly SDGs 1, 2, 8, 11, 12, and 13?
- Which components of Taiwan's RRA are most suitable for adaptation to the Indonesian policy context?
- What practical recommendations can be made for implementing adapted RRA components in Indonesia's rural development system?

1.2. Research Objectives

- To examine the structure and implementation of Taiwan's Rural Regeneration Act, focusing on key policy components.
- To analyze Indonesia's rural and agricultural development policies in relation to similar policy areas.
- To compare both countries' rural development approaches using key variables derived from the RRA.
- To evaluate the feasibility of adapting Taiwan's rural regeneration strategies to Indonesia's context.
- To recommend policy adaptations that support Indonesia's progress toward relevant Sustainable Development Goals (SDGs).

1.3. Scope and Limitations

This research focuses on policy-level analysis and strategic recommendations. It does not involve the implementation of pilot projects but may include expert interviews or surveys to assess policy feasibility. The primary scope includes comparative policy analysis, document analysis, and SDG alignment evaluation.

2. Literature Review

2.1. Theoretical Framework and Comparative Analysis

Rural regeneration has been extensively addressed within the literature as a critical strategy for sustainable development. Cai et al.(2024) highlight the intricate link between rural revitalization and sustainable development, suggesting that the design and implementation of effective policies are essential for achieving desired outcomes. This relationship is also emphasized by Yudiatmaja et al. (2021), who argue that ignoring the socio-cultural context can lead to policy failure, specifically within Indonesian rural coastal communities. Theoretical constructs surrounding rural regeneration suggest that policies must not solely focus on content but also on the context in which they are implemented, reinforcing the necessity for a locally adapted approach.

Moreover, the need for coherent frameworks for evaluating and guiding rural development is essential. Li et al (2022) propose an evaluation index system that includes diverse dimensions of rural growth, ensuring that factors such as governance, economic vitality, and ecological sustainability are comprehensively assessed by establishing such frameworks, regions can better tailor policies that resonate with their unique socio-economic conditions and cultural values.

2.2. Taiwan Rural Regeneration's Act

Taiwan's Rural Regeneration Act was passed in 2010 to address rural depopulation, loss of agricultural vitality, and environmental degradation. It introduced a comprehensive framework for bottom-up planning, community training, funding access, and youth revitalization.

Key Articles and Components:

- Article 5 – Emphasizes community-led planning
- Articles 6–7 – Mandate training and capacity building
- Article 8 – Establishes central-local funding mechanisms
- Article 13 – Promotes youth return and entrepreneurship
- Article 15 – Protects ecological and cultural heritage

The Act is closely aligned with Taiwan's efforts to localize the SDGs, particularly SDG 11 (Sustainable Communities), SDG 2 (Zero Hunger), and SDG 13 (Climate Action).

2.3. Indonesia's Rural and Agricultural Development Policies

Indonesia's rural development is governed mainly by:

- Law No. 6/2014 on Villages (UU Desa): Grants authority and funding to villages for local development.
- Law No. 19/2013 on the Protection and Empowerment of Farmers: Seeks to improve agricultural productivity and farmer welfare.

Programs such as Dana Desa (Village Fund) and Petani Milenial have been launched to empower communities and encourage youth participation. However, implementation challenges remain due to capacity gaps, limited youth incentives, and weak sustainability integration.

2.4. Rural Development and the SDGs

Both Taiwan and Indonesia have committed to the SDGs, but Taiwan's rural policies are more structurally aligned. Taiwan's rural regeneration supports at least six SDGs:

- SDG 1: No Poverty
- SDG 2: Zero Hunger
- SDG 8: Decent Work and Economic Growth
- SDG 11: Sustainable Cities and Communities
- SDG 12: Responsible Consumption and Production
- SDG 13: Climate Action

Indonesia's challenge is aligning its large-scale rural programs with measurable SDG indicators and ensuring that local governments can integrate sustainability targets into village-level planning.

3. Research Methods

3.1. Research Design

This research adopts a qualitative comparative case study approach to analyze and evaluate Taiwan's Rural Regeneration Act (RRA) and Indonesia's rural development policies. The study is designed not only to compare policy components, but also to assess their feasibility for adaptation in the Indonesian context.

The research follows three major phases:

- Policy analysis and comparison
- Contextual feasibility and alignment with SDGs
- Policy recommendation and adaptation strategy development

3.2. Data Collection

3.2.1. Secondary Data

- Official documents: Taiwan's Rural Regeneration Act, Indonesia's Village Law (UU No. 6/2014), and Farmer Protection Law (UU No. 19/2013)
- Policy implementation reports (Taiwan's COA, Indonesia's Bappenas, Kemendesa)
- National SDG reports from both countries
- Statistical data (rural population, youth employment, agricultural productivity)
- Peer-reviewed journals, government white papers, and academic studies

3.2.2. Primary Data

- **Expert Interviews** with policymakers, academics, or rural development practitioners in Taiwan and Indonesia
- **Surveys** of Indonesian village officials or youth for feasibility assessment

3.3. Decision-Making Process

Key informants were selected through purposive sampling, based on their active roles in village governance, economic activities, and socio-cultural life. Semi-structured interviews allowed flexibility while ensuring coverage of the five policy dimensions derived from Taiwan's RRA. Data from different informants were cross-validated through triangulation and then organized thematically. Perceptions gathered during the interviews were quantified into SWOT scoring, producing mean values of internal and external factors (X_mean and Y_mean). These scores determined the positioning of each village within the SWOT matrix, which in turn guided the formulation of adaptation strategies. This process ensured that the final recommendations were grounded in both empirical evidence and participatory perspectives.

3.4. Data Analysis

3.4.1. Comparative Policy Analysis

The five policy components (variables) from the RRA are used as comparison dimensions.

Indonesia's rural laws and programs are assessed for the presence, absence, or adaptation potential of these variables.

A **comparison matrix** will be developed to structure similarities and gaps.

3.4.2. SDG Mapping

Each policy variable is linked to specific SDGs (especially SDGs 1, 2, 8, 11, 12, and 13). The level of alignment in both Taiwan and Indonesia will be evaluated.

3.4.3. SWOT Analysis

To evaluate the feasibility of policy transfer at the local level, a SWOT analysis was conducted using both qualitative insights and quantified perceptions from key informants. Primary data were obtained through interviews and questionnaires with eight informants representing diverse roles in the villages: the village head, a neighborhood leader (RT), farmers, members of the youth organization (karang taruna), representatives of the village-owned enterprise (BUMDes), cultural activists, and fishermen.

Informants' perceptions were translated into Likert-scale scores and aggregated into internal and external factors. These scores were then averaged to produce mean values (X_mean and Y_mean) for each village. The calculated values determined the strategic positioning of Kesongo and Gempolsewu within the SWOT matrix. Specifically, negative X_mean values indicated internal weaknesses, while positive Y_mean values highlighted external opportunities. Conversely, positive X_mean values reflected internal strengths, whereas negative Y_mean values indicated external threats.

The final quadrant positions—Kesongo in Quadrant II (WO, Turnaround) and Gempolsewu in Quadrant IV (ST, Diversification)—formed the basis for determining appropriate adaptation strategies. This process ensured that the decision-making was both empirically grounded and reflective of local perspectives.

4. Results and discussion

4.1. Key Components of Taiwan's RRA

Article 5 establishes community-led planning, ensuring that regeneration projects are designed and owned by local residents. This bottom-up mechanism has been linked to stronger community participation and more sustainable outcomes (Yu et al., 2022). Articles 6–7 mandate capacity building that extends beyond technical farming skills to include managerial and leadership training, reinforcing community governance (Hsiao & Chen, 2021). Article 8 provides a flexible, multi-level financing system that supports infrastructure, social, ecological, and cultural initiatives (Yen, 2018). Article 13 promotes youth engagement through return migration incentives, start-up support, and collaboration with universities. Finally, Article 15 integrates ecological and cultural sustainability by mandating biodiversity protection and heritage preservation (Liu, 2025; Yang, 2022). Together, these provisions form a holistic framework that addresses social, economic, and environmental dimensions of rural regeneration.

4.2. Indonesia's Rural Policies

Indonesia's Village Law (2014) and Farmer Protection Law (2013) provide formal mechanisms similar to the RRA but face significant implementation challenges. The RPJMDes allows for village planning, yet participation often remains symbolic and dominated by officials (Damayanti & Syarifuddin, 2020). Capacity building is promoted through farmer field schools and BUMDes, though the lack of systematic training limits long-term impact (Hermanto & Swastika, 2011). The Village Fund mirrors Taiwan's financing model, but most allocations prioritize physical infrastructure rather than social or ecological projects. Youth programs such as Petani Milenial attempt to attract young farmers, yet inconsistent incentives contribute to ongoing urban migration. Ecological and cultural sustainability is recognized in policy, but short-term priorities often overshadow long-term concerns. In sum, Indonesia mirrors the structure of the RRA but diverges in practice due to weak institutionalization and limited integration of sustainability.

Taiwan's Rural Regeneration Act (RRA) demonstrates strong alignment with several Sustainable Development Goals, particularly SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action). Community-led planning (Article 5) and structured capacity building (Articles 6–7) directly contribute to poverty alleviation and food security, while youth engagement (Article 13) ensures decent work opportunities and generational continuity in agriculture. Ecological and cultural sustainability (Article 15) supports responsible production and strengthens resilience to climate change.

4.3. Alignment with SDGs

Indonesia's rural policies, particularly the Village Law (2014) and Farmer Protection Law (2013), also address these global goals, though implementation gaps remain. While the Village Fund has the potential to reduce poverty and improve local infrastructure, it often prioritizes short-term projects over long-term sustainability. Youth programs such as Petani Milenial seek to address SDG 8 but have limited effectiveness due to weak incentives. Ecological and cultural

objectives are formally acknowledged but rarely integrated into practical village planning, which constrains progress on SDGs 12 and 13.

In sum, both Taiwan and Indonesia share broad alignment with the SDGs, but Taiwan provides clearer institutional mechanisms to operationalize these goals at the community level. This contrast underscores the need for Indonesia to strengthen institutional capacity and integrate sustainability more systematically in order to ensure measurable contributions toward the global development agenda.

4.4. SWOT Analysis

While alignment with global frameworks demonstrates shared aspirations, effectiveness ultimately depends on feasibility at the local level. To capture this dimension, a SWOT analysis was conducted to evaluate the internal and external conditions of selected villages.

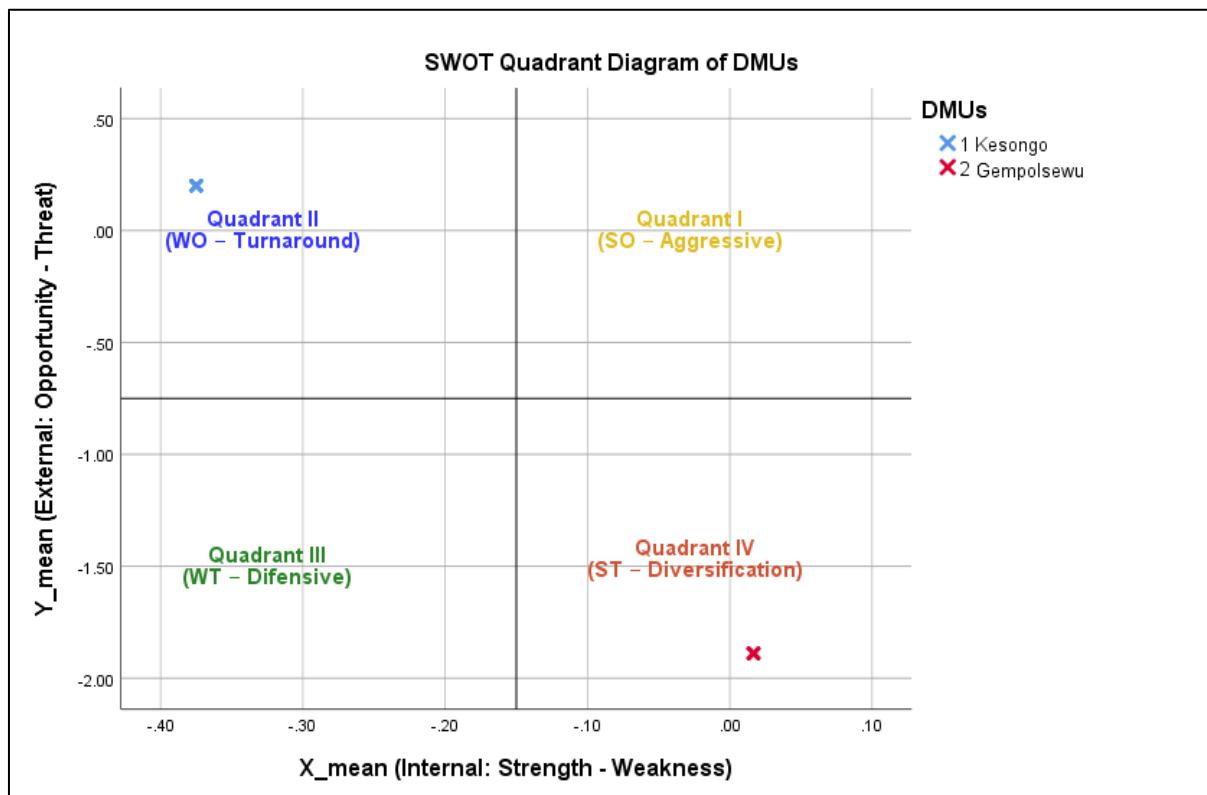


Figure 1 SWOT Quadrant diagram of DMUs

The SWOT-based comparative analysis provides a nuanced understanding of how Taiwan's Rural Regeneration Act (RRA) may be adapted within the Indonesian rural development framework. Empirical results obtained from survey data were converted into mean scores of internal (X_mean) and external (Y_mean) factors. Desa Kesongo recorded X_mean = -0.38 and Y_mean = 0.20, placing it in Quadrant II (WO – Turnaround), whereas Desa Gempolsewu obtained X_mean = 0.02 and Y_mean = -1.89, situating it within Quadrant IV (ST – Diversification). These contrasting positions indicate that while both villages share structural challenges in rural development, they require distinct adaptive strategies to effectively integrate elements of the RRA.

In the case of Desa Kesongo, the findings reveal relatively weak internal conditions, particularly regarding the availability of agricultural infrastructure and the regeneration of human resources, despite the presence of community participation forums and access to training programs. Respondents emphasized persistent limitations in agricultural facilities and youth involvement, which are reflective of broader national challenges related to demographic transitions in rural communities (Yudiatmaja et al., 2021). At the same time, Kesongo benefits from significant external opportunities, including partnerships with universities and government agencies, as well as a positive orientation among youth toward environmentally sustainable farming practices. The positioning of the village within the WO quadrant highlights the need for a turnaround strategy, whereby weaknesses are addressed through the exploitation of external opportunities. In this context, Articles 6–7 (capacity building) and Article 13 (youth engagement) are

particularly important, as they enhance human capital, support entrepreneurship, and encourage youth to remain in rural areas. This strategic orientation is consistent with Hsiao and Chen (2021), who underscore the centrality of participatory training and collaborative learning processes for achieving sustainable rural transformation.

By contrast, Desa Gempolsewu demonstrates stronger internal capacities, including an articulated agricultural vision, functioning village planning institutions, and commitments to cultural and ecological preservation. Nevertheless, the village faces pronounced external threats, particularly in terms of declining youth engagement, difficulties in irrigation, and dependence on chemical inputs. Farmers and youth respondents also highlighted recurring environmental and infrastructural constraints, which compound the risks of agricultural decline. The village's placement in the ST quadrant (Diversification) underscores the strategic importance of leveraging internal strengths to confront these external pressures. The most relevant RRA components for adaptation are therefore Article 5 (community-led planning), which reinforces inclusive and participatory governance, and Article 15 (ecological and cultural sustainability), which integrates environmental stewardship with economic diversification. This approach resonates with Liu (2025), who emphasizes that ecological integrity and cultural continuity are prerequisites for resilient rural regeneration in contexts vulnerable to climate and demographic pressures.

Taken together, the SWOT analysis demonstrates that although both villages face similar structural issues such as limited rural infrastructure, generational gaps in farming, and pressures from external threats the pathways for adaptation diverge significantly. Desa Kesongo requires strategies centered on capacity building and youth revitalization, while Desa Gempolsewu necessitates diversification strategies that strengthen ecological and cultural assets to counter external threats. These findings align with Cai et al. (2024), who argue that rural regeneration strategies must be contextually embedded, ensuring that interventions resonate with the socio-economic and ecological realities of each locality rather than adopting a uniform model.

The components of Taiwan's RRA with the greatest potential for adaptation in Indonesia include: (1) community-led planning (Article 5), (2) capacity building and training (Articles 6–7), (3) youth engagement programs (Article 13), and (4) ecological and cultural sustainability (Article 15). While these components provide a comprehensive framework for rural regeneration, their practical application must be calibrated to the specific conditions of each village. Effective policy transfer thus requires not only alignment with Indonesia's legal and institutional frameworks but also contextualized strategies that reflect local strengths, weaknesses, opportunities, and threats.

Recommendations

The SWOT and comparative analyses suggest four priorities for adapting Taiwan's RRA in Indonesia. First, community-led planning (Article 5) must be reinforced to ensure genuine participation. Second, structured training (Articles 6–7) is needed to improve local capacity in technical, managerial, and ecological aspects. Third, youth engagement (Article 13) should provide consistent incentives such as land access, funding, and mentoring. Fourth, ecological and cultural sustainability (Article 15) must be integrated into village planning to secure resilience. Aligning these measures with SDGs 1, 2, 8, 11, 12, and 13 would enhance participation, human capital, generational renewal, and sustainability in Indonesia's rural development system.

5. Conclusion

This study shows that while Indonesia's rural policies share structural similarities with Taiwan's Rural Regeneration Act (RRA), their effectiveness remains constrained by weak institutionalization, limited youth participation, and insufficient integration of sustainability. Comparative analysis indicates that community-led planning, capacity building, youth engagement, and ecological-cultural sustainability are the most relevant RRA components for adaptation. SWOT results further highlight that Kesongo Village requires turnaround strategies focused on training and youth revitalization, while Gempolsewu Village requires diversification strategies leveraging governance and ecological assets. Anchoring these strategies within the SDGs (1, 2, 8, 11, 12, and 13) can strengthen Indonesia's rural development by enhancing participation, human capital, generational renewal, and resilience. Successful policy transfer therefore demands not only structural alignment but also context-specific adaptation to local conditions.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

All informants were informed of the research objectives, and their participation was entirely voluntary. No personal or sensitive data were disclosed.

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