

## **Transforming Institutions and Strengthening Livelihoods in Emerging Regional Spaces: A Case Study from Indonesia**

### ***Transformasi Kelembagaan dan Penguatan Penghidupan di Wilayah Regional Baru: Studi Kasus dari Indonesia***

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#### **ABSTRACT**

*Indonesia's policy of regional expansion, initiated after the 1998 reform and formalized through Law No. 22/1999, was intended to address regional development inequalities. However, it has often led to land-use changes that pose risks to agricultural livelihoods, especially in newly established regions such as Pangandaran Regency. This research investigates the dimensions of livelihood vulnerability, the roles of institutional and policy frameworks, the composition of livelihood capital, the sustainability of livelihoods, and the prevalence of poverty in Pangandaran. Employing a quantitative descriptive approach, the study surveyed 378 farming households across the Mangunjaya and Padaherang Sub-Districts. The analysis reveals that sensitivity is the most dominant factor in livelihood vulnerability; environmental legal frameworks are the strongest among institutional and policy elements; financial capital is the most prevalent form of livelihood asset; land-use-related ecological factors are the most vital to sustainability; and housing conditions emerge as the key indicator of poverty. These findings emphasize the intricate interplay between institutional change and rural livelihoods, and they point to the critical need for cohesive policies that promote sustainable agriculture amid the ongoing challenges of regional development.*

*Keywords: Regional expansion, livelihood vulnerability, institutional transformation, agricultural sustainability, rural poverty*

#### **ABSTRAK**

Kebijakan pemekaran wilayah di Indonesia yang dimulai pasca reformasi 1998 dan diformalkan melalui Undang-Undang No. 22 Tahun 1999 bertujuan untuk mengatasi ketimpangan pembangunan antar wilayah. Namun, kebijakan ini kerap menyebabkan perubahan penggunaan lahan yang mengancam keberlanjutan mata pencaharian pertanian, khususnya di wilayah baru seperti Kabupaten Pangandaran. Penelitian ini mengkaji dimensi kerentanan penghidupan, peran kelembagaan dan kerangka kebijakan, komposisi modal penghidupan, keberlanjutan penghidupan, serta tingkat kemiskinan di Pangandaran. Dengan pendekatan deskriptif kuantitatif, data dikumpulkan dari 378 rumah tangga petani di Kecamatan Mangunjaya dan Padaherang. Hasil analisis menunjukkan bahwa sensitivitas merupakan komponen paling dominan dalam kerentanan penghidupan; aspek hukum terkait lingkungan memiliki skor tertinggi dalam indikator kelembagaan dan kebijakan; cadangan keuangan mendominasi modal penghidupan; faktor ekologis terkait penggunaan lahan menjadi aspek paling penting bagi keberlanjutan; dan kualitas perumahan muncul sebagai indikator utama kemiskinan. Temuan ini menyoroti keterkaitan yang kompleks antara perubahan kelembagaan dan penghidupan pedesaan, serta menekankan perlunya kebijakan terpadu yang mendukung pertanian berkelanjutan di tengah tekanan pembangunan wilayah.

Kata kunci: Pemekaran wilayah, kerentanan penghidupan, transformasi kelembagaan, keberlanjutan pertanian, kemiskinan pedesaan

#### **INTRODUCTION**

Since the implementation of the regional expansion policy following the 1998 Reform Era and the enactment of Law No. 22/1999, Indonesia has undergone a wave of regional proliferation aimed primarily at reducing development disparities. However, the execution of this policy has not always aligned with the principles of sustainable development. Many newly expanded regions have instead experienced increased land conversion, directly affecting the sustainability of agricultural

livelihoods (Abebe et al. 2022), (Acero 2022), (Adams 2013). A notable example of this dynamic is Pangandaran Regency—a newly established region facing both the pressures of development and the threat to local livelihood systems, particularly in the agricultural sector.

In the context of regional expansion, institutional transformation and development pressures often give rise to new challenges for the sustainability of rural livelihoods. These processes not only reshape governance structures and the distribution of resources but also affect farmers' access to livelihood assets, public services, and policies that support the agricultural sector. Such dynamics lead to various issues, including increasing socio-economic vulnerability, unequal access to institutional support, and imbalances between economic, social, and ecological dimensions in sustaining viable livelihoods (Dai, Ngan, and Dien 2013). In this situation, it becomes essential to understand how institutional changes and development pressures associated with regional expansion impact the sustainability of farmers' livelihoods (Coelho et al. 2021), (Adhami, Sadeghi, and Sheikhmohammady 2018). This research, therefore, is guided by key questions concerning how regional expansion affects livelihood vulnerability, the role of institutions and policies in shaping these changes, and how the distribution and interaction of different types of livelihood capital contribute to the resilience or fragility of farming households in newly expanded areas.

While numerous studies have explored the economic and administrative impacts of regional expansion, comprehensive analyses that interlink livelihood vulnerability, institutional dynamics, and sustainable development objectives remain limited—especially within the context of newly expanded areas such as Pangandaran (Batterbury et al. 2015), (Ahmadisharaf, Kalyanapu, and Chung 2017). This gap in the literature highlights the necessity of conducting this research. This study aims to describe the conditions of livelihood vulnerability, institutional and policy dynamics, livelihood capital, livelihood sustainability, and poverty levels in Pangandaran Regency. Employing a quantitative descriptive method, data were collected from 378 farming households in Mangunjaya and Padoherang Sub-Districts, representing agricultural regions undergoing rapid development changes.

## RESEARCH METHOD

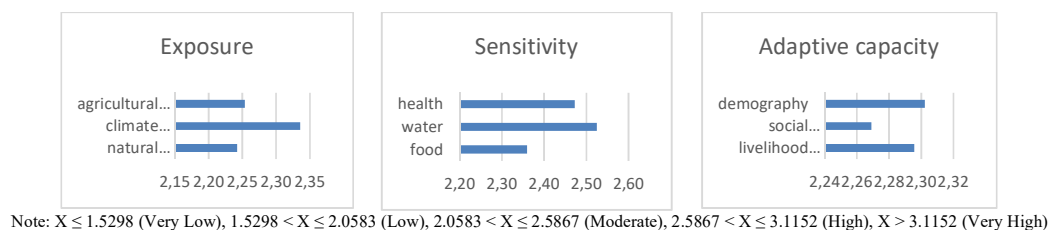
This study employed a quantitative descriptive approach to investigate the general conditions of livelihood vulnerability, institutional and policy dynamics, livelihood capital, sustainability, and poverty in Pangandaran Regency, Indonesia. The research was designed to produce systematic, factual, and accurate descriptions of the conditions and relationships among these variables, particularly in the context of a newly expanded administrative region. The population of this study consisted of farming households in Mangunjaya and Padoherang sub-districts of Pangandaran Regency. These two areas were purposively selected because they represent regions with a high level of agricultural activity and have been significantly affected by the administrative changes associated with regional expansion. The sampling technique used was proportionate stratified random sampling, ensuring adequate representation from both sub-districts while accounting for population size. A total of 378 farming households were selected as respondents. The sample size was determined using Slovin's formula at a 95% confidence level and a 5% margin of error, which is commonly used for large population-based surveys (Umar, 2003). Primary data were obtained through structured questionnaires administered directly to the heads of the selected farming households. The questionnaire was divided into several sections, each aligned with key constructs of the research: livelihood vulnerability, institutional and policy dimensions, livelihood capital, sustainability indicators, and poverty characteristics. Each section employed ordinal-scale Likert items to measure respondents' perceptions and experiences. The indicators used in this study were adapted from established frameworks, including the Livelihood Vulnerability Index (LVI) (Hahn et al., 2009) and the Sustainable Livelihood Framework (SLF) developed by the Department for International Development (DFID, 1999) (Abdullah et al. 2019), (Chinangwa, Pullin, and Hockley 2016), (Han et al. 2021). Secondary data were also collected from official documents, local government reports, previous studies, and statistical data published by the Central Bureau of Statistics and relevant agencies in Pangandaran Regency. These sources provided background information for contextualizing the findings and validating the data obtained from households. The study measured five main constructs: (1) livelihood vulnerability, operationalized through three dimensions—exposure, sensitivity, and adaptive capacity; (2) institutional and policy support, measured through legal, normative, and cognitive indicators; (3) livelihood capital, including

human, natural, physical, financial, and social capitals; (4) sustainability, assessed across ecological, economic, and social indicators; and (5) poverty, examined through housing quality, asset ownership, income, and access to services. Each variable was quantified using index scoring. For example, the Livelihood Vulnerability Index was calculated using a standardized method that normalized each indicator score to a 0–1 scale. These scores were then aggregated to produce composite values for each vulnerability component. The same procedure was applied to compute indices for livelihood capital and sustainability dimensions. Descriptive statistical analysis was conducted using means, percentages, and frequency distributions to reveal patterns and dominant conditions within the sample. Composite scores allowed for comparative analysis between households and sub-districts. All statistical calculations were performed using SPSS version 25. The analysis was aimed not only at identifying levels of vulnerability and sustainability but also at uncovering potential links between institutional dynamics and household livelihoods in the context of regional development pressures.

## RESULT AND DISCUSSION

### Vulnerability

Vulnerability is a complex and uncertain term, and its meaning often varies depending on the scope of the study (Babili et al. 2015). Broadly speaking, vulnerability refers to a condition in which a system is unable to adapt to the impacts of a change (Lee and Choi 2019). This study adopts the concept of vulnerability as defined by the IPCC (Intergovernmental Panel on Climate Change). According to the IPCC, vulnerability is the extent to which a system, community, or individual is affected by the impacts of climate change. This concept is highly relevant because farmers' livelihoods heavily depend on climatic conditions, natural resources, and production systems that are susceptible to climate change. The key components of vulnerability are Exposure, Sensitivity, and Adaptive Capacity.



**Fig 1. Farmers' Perceptions in the Newly Expanded Region Toward Vulnerability**

Pressure indicators include land conversion, climate variability, and natural disasters, which reflect the level of exposure to external risks affecting agricultural productivity. Adaptive capacity is measured through socio-demographic aspects, social networks, and livelihood strategies, which indicate farmers' ability to adapt and respond to changing conditions. Meanwhile, sensitivity is assessed through indicators such as health, water, and food, which show how vulnerable farmers' livelihoods are to disruptions. Based on the analysis shown in Figure 1, most indicators fall into the moderate category; however, the water-related sensitivity indicator is categorized as high. This is due to limited access to clean water and adequate irrigation, as well as farmers' heavy reliance on rainfall for agricultural activities. Moreover, unpredictable rainfall patterns and droughts worsen water availability, increasing the vulnerability of agricultural systems and household basic needs. This condition highlights that water availability and management are critical factors that must be addressed promptly to improve farmers' livelihood resilience to climate change and other environmental pressures.

### Institutions and Policies

The institutional and policy variables play a crucial role in supporting farmers' livelihoods through various aspects such as governance, the private sector, law, policy, culture, and local institutions (Babili et al. 2015). The government contributes by providing regulations, assistance programs, and

infrastructure that support food security, as well as access to technology and information (Ademović and Ibrahimbegovic 2023). The private sector also contributes by supplying agricultural inputs, market access, and technological innovations that improve productivity (Dutta 2019). Laws and policies serve as the foundation for regulating land ownership, protecting farmers' rights, and ensuring access to essential resources, including water and capital. Local culture influences traditional farming practices and value systems that shape how farmers manage resources and build social networks. Meanwhile, local institutions such as cooperatives and farmer groups function as platforms for collaboration that strengthen solidarity, resource distribution, and collective risk management. With synergistic support from all these elements, farmers can enhance their adaptive capacity, expand market networks, and reduce vulnerability to environmental and economic changes. Conversely, weaknesses in institutions and policies can exacerbate inequality in access and uncertainty, hindering sustainable livelihoods for farmers.



Note:  $X \leq 1.7117$  (Very Low),  $1.7117 < X \leq 2.4195$  (Low),  $2.4195 < X \leq 3.1272$  (Moderate),  $3.1272 < X \leq 3.8349$  (High),  $X > 3.8349$  (Very High)

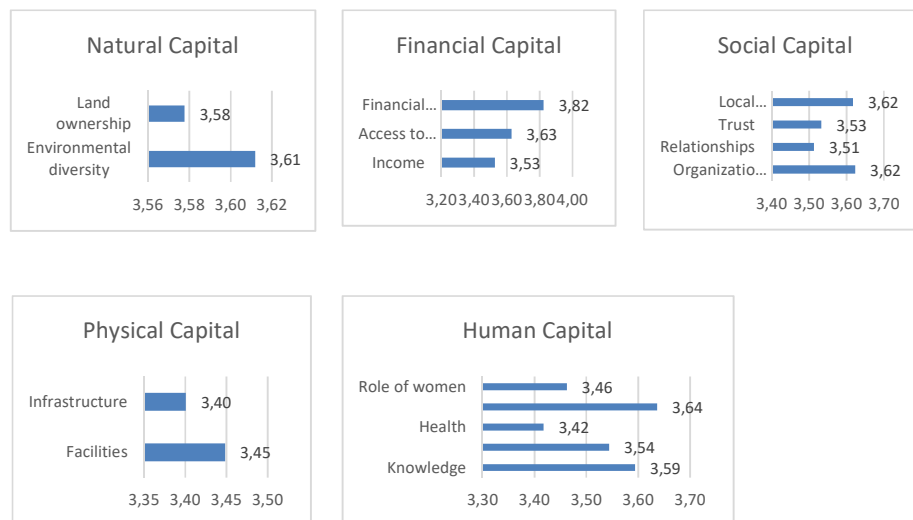
**Fig 2. Farmers' Perceptions in the Newly Expanded Region Toward Institutions and Policy**

Figure 2 shows that all indicators fall within the moderate category. The highest value is found in ethics and morality under the cultural indicator. Farmers' perceptions of cultural factors significantly influence their livelihoods, particularly in shaping mindsets, values, and agricultural practices passed down through generations. Local culture often determines how farmers manage natural resources, select crop varieties, and apply traditional farming techniques that are considered compatible with local environmental conditions (Ahmadzai, Tutundjian, and Elouafi 2021). For example, farmers in Pangandaran Regency practice *susuganeun*. When the rainy season floods the fields, they continue planting despite the inundation, holding onto hope that the harvest may still succeed. Norms and traditions also influence cooperation among farmers, such as mutual aid (*gotong royong*) in farming activities and collective land use. Moreover, cultural values that emphasize sustainability and harmony with nature can strengthen both ecological and social resilience. However, in some cases, rigid traditional beliefs may hinder the adoption of modern agricultural technologies and innovations that could potentially enhance productivity and efficiency. Therefore, farmers' cultural perceptions need to be deeply understood to design development strategies that align with local values while encouraging adaptation to climate change and evolving economic dynamics.

### Livelihood Capital

Chambers and Conway (1991) define sustainable livelihoods as comprising the capabilities, assets, and activities required for a means of living, and the ability to cope with and recover from stresses and shocks, maintain or enhance capabilities and assets, and provide sustainable livelihood opportunities for future generations, while contributing net benefits to other livelihoods at the local

and global levels, in both the short and long term (Chambers and Conway n.d.). The ownership of livelihood assets is utilized by farmers to implement strategies that enable them to adapt to various risks. Peprah (2021) stated that farmers are highly vulnerable due to land degradation, and that human capital plays the most significant role in ensuring sustainable livelihoods (Peprah et al. 2021). Livelihood assets positively influence farmers' livelihood strategies. Many sustainable livelihood approaches adopt iterations of the Sustainable Rural Livelihoods Framework (Erenstein 2011). This framework emphasizes how individuals utilize various assets—natural, physical, social, human, and financial capital—which are sometimes conceptualized in the literature as strengths [8]—to formulate livelihood strategies aimed at achieving positive livelihood outcomes.



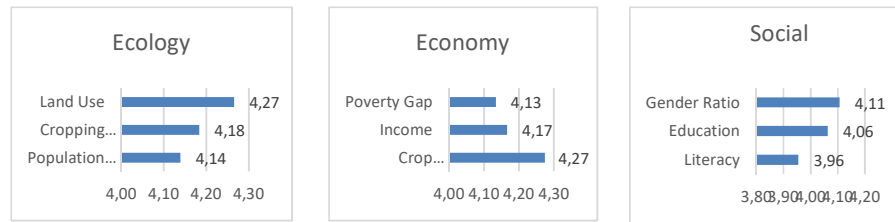
Note:  $X \leq 2.7459$  (Very Low),  $2.7459 < X \leq 3.2835$  (Low),  $3.2835 < X \leq 3.8211$  (Moderate),  $3.8211 < X \leq 4.3587$  (High),  $X > 4.3587$  (Very High)

**Fig 3. Farmers' Perceptions in the Newly Expanded Region Toward Livelihood Capital**

As illustrated in Figure 3, overall livelihood capital falls within the moderate category. Among the natural capital indicators, biodiversity scored the highest. In financial capital, financial reserves ranked the highest. For social capital, local resource utilization was the top indicator. In human capital, the education indicator had the highest score. Lastly, in physical capital, infrastructure availability scored the highest.

### Sustainable Livelihood

The sustainability of farmers' livelihoods in newly expanded regions is analyzed through ecological, economic, and social dimensions (Sustainability, Indicators, ICT, SLD, SLA, Primary data et al. 2014). From an ecological perspective, land use in these areas often faces pressure due to the conversion of agricultural land into settlements or infrastructure, which potentially reduces the area of productive land. High planting intensity can also worsen soil degradation if not balanced with sustainable farming practices, while increasing population density creates competition for natural resource utilization. Economically, poverty gaps remain a challenge, with most farmers having limited access to capital and technology, affecting income levels and crop productivity. Low agricultural production often exacerbates food security issues and slows local economic growth. Socially, an imbalanced gender ratio can affect labor dynamics in the agricultural sector, while low education and literacy levels limit farmers' capacity to adopt technological innovations and modern farming practices. Therefore, a comprehensive and sustainable approach is needed to improve farmers' welfare in newly expanded regions by strengthening ecological resilience, improving economic structures, and building social capacity.



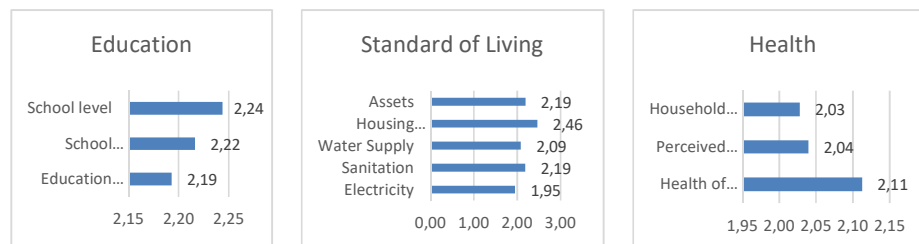
Note:  $X \leq 2.7569$  (Very Low),  $2.7569 < X \leq 3.1749$  (Low),  $3.1749 < X \leq 3.5928$  (Moderate),  $3.5928 < X \leq 4.0108$  (High),  $X > 4.0108$  (Very High)

**Fig 4. Farmers' Perceptions in the Newly Expanded Region Toward Sustainable Livelihood**

Figure 4 shows that the level of sustainable livelihoods in the newly expanded regions is predominantly very high. In the ecological dimension, land use received the highest score. For the economic dimension, crop production was the highest indicator, while in the social dimension, the gender ratio indicator scored the highest. The high value of land use in the ecological dimension is due to the availability and management of land being critical determinants of agricultural productivity in expanded regions (Batterbury et al. 2015). Well-managed land allows optimal planting intensity and supports ecosystem sustainability, making it a crucial aspect of maintaining environmental balance and production capacity. Meanwhile, the crop production indicator ranks highest in the economic dimension because high production reflects efficient resource use, increases farmers' income, and strengthens local food security (Abebaw et al. 2020). Optimal production also acts as an economic driver, creating jobs and reinforcing agribusiness markets. In the social dimension, the gender ratio indicator scores highest because a balanced gender proportion in farming communities influences the division of labor and decision-making within families and farmer groups. This ratio also reflects the potential labor force available to support agricultural activities, ensuring social and economic sustainability in the area.

### Poverty

The level of poverty among farmers in the newly expanded regions is analyzed through three main dimensions: education, health, and living standards (Adjei, Buor, and Addrah 2017). In terms of education, the low level of schooling attained by household members, limited school participation by children, and low education levels of household heads reflect restricted access to the knowledge and skills needed to improve productivity and income. In the health dimension, low household calorie consumption, high perceptions of hunger, and limited access to health services increase vulnerability to illness and reduce productive work capacity. Meanwhile, the living standards dimension shows lagging ownership of productive assets, poor housing quality, limited clean water supply, inadequate sanitation facilities, and unstable electricity supply. The combination of these factors reinforces a poverty cycle that is difficult to break, requiring comprehensive policy interventions to improve farmers' welfare in the region.



Note:  $X \leq 1.9656$  (Very Low),  $1.9656 < X \leq 2.5664$  (Low),  $2.5664 < X \leq 3.1673$  (Moderate),  $3.1673 < X \leq 3.7682$  (High),  $X > 3.7682$  (Very High)

**Fig 5. Farmers' Perceptions in the Newly Expanded Region Toward Poverty Level**

Figure 5 shows that most indicators fall into the low category. The highest value in the education dimension is school level attainment. In the health dimension, family members' health scores highest. In the living standards dimension, housing quality is the highest indicator. The high value for school level in education reflects progress in access to formal education in the expanded regions. This may be due to increased educational facilities, compulsory education programs, and various educational assistance programs such as scholarships and the Indonesia Smart Card (KIP), which encourage the community to complete primary and secondary education. However, despite relatively high school levels, school participation and education of household heads still face challenges such as economic difficulties and limited awareness of the importance of continuing education. In the health dimension, the high score in family members' health indicates improvements in access to basic health services, immunizations, and health facilities like community health centers (Puskesmas) or integrated health posts (Posyandu). Health campaigns and government nutrition programs have also raised awareness of the importance of maintaining health. Nevertheless, other indicators such as calorie consumption and perceptions of hunger remain low due to economic limitations and restricted access to nutritious food. In the living standards dimension, the high value of housing quality reflects community efforts to improve their dwellings through construction or renovation. Government-driven decent housing programs, such as home improvement assistance, have helped improve physical housing conditions. However, other indicators like access to clean water, sanitation, and electricity still require improvement to ensure better and more sustainable living standards.

### CONCLUSION AND RECOMMENDATION

This study reveals that farmer poverty in the newly expanded region is a multifaceted issue involving education, health, and livings standard. While access to formal education and basic health services has improved, challenges remain in school participation, household education levels, nutrition, and essential infrastructure like clean water, sanitation, and electricity. These factors highlight the complexity of poverty that requires comprehensive solutions. To alleviate poverty and improve farmer welfare, it is recommended to: 1) Enhance access to and quality of education, especially for household heads and children ; 2) Improve health services focusing on nutrition and preventive care ; 3) Develop essential infrastructure such as clean water, sanitation, and reliable electricity ; 4) Implement community-inclusive programs to ensure effective and sustainable interventions ; 5) These steps are crucial to fostering sustainable livelihood improvements in the region.

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