

Local Knowledge as a Strategy for Village Resilience in Hanjeli Tourism Village, Sukabumi, Indonesia

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ABSTRACT

Local knowledge plays a crucial role in strengthening village resilience amidst the challenges of modernization and environmental change. This study examines the contribution of local knowledge to village resilience through four main aspects: ecology, social, economic, and institutional, with a focus on Hanjeli Tourism Village, Sukabumi, Indonesia. Using a qualitative approach with in-depth interviews and literature review methods, this research analyzes how local practices support village sustainability. The findings indicate that in terms of ecology, hanjeli-based agricultural practices contribute to biodiversity conservation and sustainable natural resource management. From a social perspective, strong social capital and intergenerational knowledge transfer play a crucial role in preserving traditional practices. In the economic aspect, the diversification of hanjeli-based enterprises, including educational tourism and derivative products, enhances the community's economic resilience. Meanwhile, the institutional aspect is reflected in the community's role in resource management and the village's recognition as part of the UNESCO Global Geopark. This study recommends policies that strengthen the documentation of local knowledge, enhance community participation in resource governance, and encourage the integration of traditional practices into sustainable village development strategies.

Keywords: *Village resilience, local knowledge, Hanjeli Tourism Village.*

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INTRODUCTION

Village resilience is a multidimensional concept that refers to the capacity of a rural community to face, adapt, and recover from various challenges, both social, economic, and ecological (Wilson, 2012). In the context of sustainable development, village resilience emphasizes the importance of community-based adaptive strategies to maintain a balance between environmental conservation, social welfare, and economic growth (Adger, 2000)

According to (Norris et al., 2008), community resilience—including village resilience related to four main dimensions, namely social capital, economic systems and livelihoods, infrastructure and public services, and natural resource engagement and management. Meanwhile, (Cutter et al., 2008) emphasizing that rural resilience also depends on the capacity of communities to manage environmental risks and social change. Therefore, the understanding of village resilience must include social, economic, ecological, and institutional aspects.

As the world grapples with the complexities of globalization, the importance of preserving and reviving local knowledge is becoming increasingly apparent, especially in the context of rural communities facing diverse socio-economic challenges. As globalization progresses, this often leads to the erosion of local and indigenous ecological knowledge (*indigeneous ecological knowledge/IEK*), which is critical for sustainable development and

community resilience. A comprehensive review by Aswani et al. (2018) highlighted that 77% of studies reported a loss of local knowledge due to globalization and modernization, especially in areas such as medical knowledge and ethnobotany. These trends underscore the urgent need to recognize and integrate local knowledge systems into broader ecological assessments and policy-making frameworks. The integration of IEK into large-scale ecological assessments has been advocated as a means to increase the relevance and effectiveness of these initiatives. McElwee et al. emphasized that involving IEK can improve ecological assessments by identifying trends through biocultural indicators and driving sustainable development goals (McElwee et al., 2020a). This mutual engagement not only validates local knowledge but also enriches scientific understanding, creating a more holistic approach to environmental management. Furthermore, discuss the importance of integrating local knowledge with scientific knowledge in early warning systems for disaster risk reduction, suggesting that such integration can lead to more effective and culturally sensitive responses to environmental hazards (Hermans et al., 2022).

In the context of rural innovation, local knowledge plays an important role in the decision-making process. García et al. propose a methodological framework for harnessing local knowledge among Colombian cocoa producers, illustrating how a participatory approach can improve rural innovation and resilience (Gutiérrez García et al., 2020). This is in line with the findings of who argue that local knowledge can be effectively leveraged in a variety of domains, including agriculture, to adapt to changing environmental conditions (Huynh et al., 2022). The recognition of local knowledge as a valuable asset in this context is essential to encourage sustainable practices that are culturally relevant and economically viable. In addition, the challenges posed by climate change require a collaborative approach that combines indigenous knowledge with scientific research. Makondo and Thomas advocate for linking these knowledge systems to improve adaptation strategies, emphasizing that local insights can inform more effective responses to climate impacts (Makondo & Thomas, 2018). Who highlight the increasing recognition of IEK in sustainability transformation research, suggesting that integrating diverse knowledge systems is essential to address pressing social and environmental challenges (Lam et al., 2020).

Rural areas in developing countries often experience a confluence of problems, including resource scarcity, environmental degradation, economic marginalization, and erosion of traditional practices. These problems are often exacerbated by the forces of globalization and industrialization, which have transformed the landscape and rural economies in complex ways. For example, highlight that while some rural areas may experience economic and social prosperity through initiatives such as rural tourism, others find themselves trapped in a cycle of decline due to the pressures of urbanization and the loss of traditional livelihoods (Liu et al., 2020). This dichotomy illustrates the uneven impact of modernization on rural communities, where the benefits of development are not universally shared. Environmental degradation is another critical issue affecting rural areas, often associated with agricultural practices and land use changes driven by urbanization. discuss how land consolidation efforts in China aim to revitalize rural areas by reshaping socioeconomic structures and addressing ecological problems (Long et al., 2019). This approach is very important because it seeks to balance agricultural productivity with environmental sustainability, thereby reducing the adverse

effects of land fragmentation and resource depletion. Furthermore, the integration of urban and rural development strategies is emphasized who argue that urbanization can increase agricultural production through large-scale agriculture, which can also contribute to environmental protection (Wang et al., 2021). Such an integrated approach is critical to driving resilience in rural economies while addressing the urgent challenges of resource scarcity and environmental degradation. Economic marginalization in rural areas is often a consequence of inadequate access to markets and services, which can lead to a decline in traditional practices and community cohesion. point out that the Fourth Industrial Revolution (4IR) presents challenges and opportunities for rural areas, as technological advances can exacerbate existing inequalities or provide a pathway for development if properly utilized (Cowie et al., 2020). The authors advocate for proactive engagement with 4IR technologies to ensure that rural communities are not left behind in the global economic landscape. This perspective is in line with the findings of Li et al., who explore the factors that contribute to rural decline and emphasize the importance of tailored development strategies that take into account local contexts and needs (Li et al., 2019). In addition, the erosion of traditional practices is often associated with the imposition of external narratives about rural life, which can damage local culture and identity. Shucksmith criticized romantic notions of rural beauty, arguing that such representations often obscure the realities of exploitation and marginalization faced by rural residents (Shucksmith, 2018). This critique is essential for understanding the socio-cultural dynamics that play a role in rural areas, as it highlights the need for inclusive development strategies that respect and integrate traditional practices and knowledge systems.

The integration of local knowledge and traditional practices is increasingly recognized as an important strategy to catalyze sustainable development and increase community resilience, especially in rural areas facing significant socio-economic and environmental challenges. This approach not only recognizes the unique insights and experiences of local residents but also leverages these assets to foster adaptive capacity in the face of climate change and other environmental stresses. Local knowledge plays an important role in increasing community resilience, especially in the context of climate-related challenges. For example, studies have shown that communities in Bangladesh are leveraging local knowledge to adapt to flooding, shifting from purely coping strategies to more proactive adaptation measures (El-Magd et al., 2020). This shift underscores the importance of understanding and integrating indigenous knowledge practices and systems into broader development strategies. In addition, knowledge co-production, in which local communities collaborate with external experts, has been shown to facilitate effective adaptations to water scarcity in developing countries (Zarei et al., 2020). Such a collaborative approach not only empowers local communities but also enhances their ability to respond to environmental challenges, thereby promoting sustainable development. In addition, the concept of community resilience is closely related to social capital and local government. Studies show that social networks and community engagement significantly influence resilience outcomes, especially in rural environments (Panday et al., 2021). For example, the role of social capital in disaster resilience has been highlighted in a variety of contexts, suggesting that societies with strong social ties are better prepared to recover from adverse events (Panday et al., 2021). In addition, the integration of traditional practices into community-based initiatives, such as sustainable tourism and social

entrepreneurship, has been shown to increase local engagement and support for development projects (Dahles et al., 2020). These initiatives not only provide economic benefits but also strengthen community identity and cohesion, which is essential for long-term resilience. In the context of rural development, the concept of "smart villages" has emerged as a promising framework for integrating local knowledge and modern technology to achieve sustainable outcomes. This approach emphasizes the importance of strengthening the relationship between rural and urban communities, facilitating knowledge exchange and resource sharing (Adamowicz & Zwolinska-Ligaj, 2020). By fostering such relationships, rural areas can better utilize their unique assets while addressing socio-economic challenges.

Hanjeli, a village located in the heart of Indonesia's rural landscape, serves as an interesting case study in this regard, showing how the revitalization of local knowledge can be a powerful tool to empower communities, foster socio-economic sustainability, and foster a more just and resilient future.

Previous research has acknowledged the importance of integrating indigenous ecological knowledge (IEK) in rural development. For example, Berkes et al. (2000) emphasized the role of traditional ecological knowledge in adaptive management, showing how communities that incorporate local practices are better prepared for environmental uncertainties. Similarly, Altieri and Toledo (2011) highlighted the value of agroecological practices rooted in indigenous knowledge for building socio-ecological resilience, especially in Latin America. However, these studies largely focus on global south contexts without deeply engaging with the Indonesian rural landscape. The novelty of this research lies in its application of the village resilience framework to the case of Hanjeli village in Indonesia, focusing on the revitalization of local knowledge as a catalyst for social, economic, and ecological sustainability.

The main objective of this study is to analyze how the revitalization and integration of local knowledge contribute to strengthening rural community resilience, using Hanjeli Village as a case study. The study aims to explore how local practices, indigenous ecological knowledge, and traditional social systems can be leveraged to overcome rural socio-economic and environmental challenges. The benefits of this research include providing a contextualized framework for community-based rural development, informing policy formulation that respects and incorporates local wisdom, and promoting inclusive, sustainable strategies in rural resilience-building. This study is also expected to contribute to the broader discourse on sustainable development and knowledge co-production in Southeast Asia.

RESEARCH METHOD

This research adopts a qualitative descriptive approach to explore the role of local knowledge in strengthening rural resilience, with Hanjeli Village as the focal case study. The qualitative method is chosen to gain deep insights into community-based practices, traditional ecological knowledge, and their integration into sustainability strategies. The study focuses on understanding perceptions, behaviors, and socio-cultural values related to resilience and sustainability at the village level. The data population includes community leaders, elders with indigenous ecological knowledge, farmers, local government officials, and representatives from community-based organizations. From this population, a purposive sampling technique

is applied to select 15 key informants who are considered to have significant experience and understanding of local knowledge practices and rural development dynamics in Hanjeli Village.

The research instrument consists of a semi-structured interview guide, observation sheets, and a literature review matrix. To ensure validity, the instruments undergo expert judgment involving qualitative researchers and rural development practitioners. Credibility of the data is ensured through triangulation across sources (interviews, field observations, and documents), while dependability is assessed through an audit trail of the research process. In-depth interviews are conducted using open-ended questions, allowing informants to elaborate on their experiences and knowledge. The interviews are recorded (with consent), transcribed verbatim, and thematically coded. A literature review is also conducted to support the findings and to compare global discourses on village resilience and traditional knowledge integration.

Data is collected through field observations, in-depth interviews, and document analysis of relevant policy documents and community archives. The data collection process follows ethical procedures, including informed consent and confidentiality. The analytical tool used in this research is NVivo 12 software, which assists in managing and coding qualitative data. The data analysis technique follows Miles and Huberman's interactive model, consisting of data reduction, data display, and conclusion drawing/verification. This step-by-step method enables the researcher to identify emerging patterns, themes, and relationships within the data, allowing a nuanced understanding of how local knowledge contributes to rural resilience in the face of environmental and socio-economic challenges.

RESULTS AND DISCUSSION

Hanjeli as the local knowledge of the village

Hanjeli Tourism Village, a small village in the province of West Java, Indonesia, exemplifies the enduring relevance of local knowledge in the face of contemporary development pressures. The integration of local knowledge and traditional practices in Hanjeli has proven essential to drive sustainable development and increase community resilience amid challenges such as environmental degradation and economic marginalization. Local knowledge, often rooted in centuries of experience, provides communities with unique insights into sustainable resource management and environmental management. In Hanjeli, local farming practices, tailored to the specific ecological conditions of the region, demonstrate how traditional knowledge can inform sustainable farming methods that improve food security and environmental health. In addition, the resilience of communities through Hanjeli cultivation is closely linked to their ability to adapt to changing circumstances while preserving their cultural heritage. highlight that IEK is not static; rather, it evolves as communities respond to environmental changes (Aswani et al., 2018). This adaptability is especially important for Hanjeli, where residents are leveraging traditional farming techniques alongside modern practices to navigate the pressures of globalization and climate change. By utilizing traditional practices, villages can increase their economic resilience. While Abeywardana et al. discuss community participation in resource management in different contexts, the principles of revitalization of indigenous agricultural systems can be applied to Hanjeli, leading to increased sustainability and economic outcomes (Abeywardana et al., 2019). Community-led initiatives

focused on sustainable agriculture and local resource management can help mitigate the impact of economic marginalization, ensuring that development benefits are distributed equitably among residents.

Historically, the people of Hanjeli have relied on a rich tapestry of traditional agricultural practices, community-based resource management systems, and cultural rituals to navigate the complexities of their rural environment. Traditional farming practices in Hanjeli are deeply rooted in the community's understanding of the local ecosystem. The adaptability of these practices reflects the historical experiences and observations of communities, enabling them to respond effectively to environmental challenges. The community-based resource management system further illustrates the importance of local knowledge in Hanjeli. McElwee et al. highlight the effectiveness of integrating Indigenous and Local Knowledge (ILK) into ecological assessments and resource management strategies (McElwee et al., 2020a). In Hanjeli, local governance structures often involve a collective decision-making process that empowers community members to manage their resources sustainably. This participatory approach fosters a sense of ownership and responsibility among residents, ensuring that resource management practices are aligned with local needs and ecological realities. For example, the management of water resources for irrigation is often carried out through communal agreements, which reflect traditional practices and local customs that have evolved over time. Cultural rituals also play an important role in strengthening community bonds and promoting sustainable practices in Hanjeli. Ifocus on the impacts of climate change and environmental pressures on livelihoods, they underscore the importance of community resilience in adapting to these challenges (Ahmed et al., 2019). In Hanjeli, this ritual not only serves to strengthen community bonds but also reinforce the values of sustainability and respect for nature that are integral to the villagers' way of life.

However, the village of Hanjeli faces significant challenges that threaten its traditional way of life and agricultural practices. The declining interest of the younger generation in agriculture, driven by the allure of modern lifestyles and economic opportunities in urban areas, has resulted in a dwindling workforce and a gradual loss of traditional agricultural knowledge that is passed down from generation to generation. In addition, the overexploitation of natural resources, such as soil and water, has exacerbated environmental degradation, lowered agricultural productivity, and endangered food security. In addition, globalization has accelerated a shift in people's priorities, especially among the younger generation, who increasingly view traditional agricultural practices and local culture as less relevant. These challenges put Hanjeli village in a dilemma between adapting to modernization and preserving its cultural heritage and environmental preservation (Dizitha et al., 2024).

Nonetheless, the resilience and adaptability of the Hanjeli people have enabled them to not only withstand these pressures but also leverage their local knowledge as a catalyst for sustainable development. The integration of local indigenous knowledge into resource management and agricultural practices has proven to be essential for the sustainable development of Hanjeli. affirm that involving local communities in ecological assessments can improve the effectiveness of resource management strategies, enabling the co-production of contextually relevant knowledge (McElwee et al., 2020). At Hanjeli, this means leveraging traditional farming techniques alongside modern practices to create a hybrid approach that

maximizes productivity while maintaining ecological integrity. In addition, the adaptability of local knowledge is essential in the face of environmental changes and socio-economic pressures. highlight that local ecological knowledge (LEK) is dynamic and evolving as communities respond to new challenges (Aswani et al., 2018). In Hanjeli, this adaptability is reflected in the ability of communities to modify traditional practices to better adapt to changing climatic conditions and market demand. For example, farmers can include drought-resistant crop varieties or adjust planting schedules based on observed weather patterns, thereby increasing their resilience to climate variability. Community resilience is also underpinned by strong social networks and collective action, which is critical to mobilizing resources and knowledge. Emphasized that community resilience is influenced by a variety of factors, including social cohesion and collective preparedness (Ahmed et al., 2019). In Hanjeli, community members often gather to share knowledge and resources, fostering a sense of solidarity that strengthens their ability to cope with external pressures. This collaborative spirit is essential to implement sustainable practices and ensure that development benefits are distributed equitably among citizens. In addition, the revitalization of traditional practices can serve as a powerful tool for economic empowerment. Abeywardana et al. illustrate how community participation in resource management can lead to sustainable agricultural systems that improve food security and economic resilience (Monnat, 2018). In Hanjeli, the community's commitment to preserving traditional farming methods not only supports local livelihoods but also promotes biodiversity and ecological health, creating a more sustainable economic foundation.

Resilience of Hanjeli Tourism Village

Hanjeli Tourism Village offers a case study of how local knowledge can play a role in strengthening village resilience through the integration of traditional practices with contemporary development strategies. In this context, village resilience includes not only the community's ability to maintain social and economic stability, but also ecological resilience in the face of environmental changes as well as institutional governance that supports long-term sustainability (Folke et al., 2002).

From the social and economic aspects, the Hanjeli people have developed a livelihood system based on Hanjeli agriculture and educational tourism that not only strengthens the local cultural identity, but also creates sustainable economic opportunities. The social resilience of the village is reflected in the involvement of the community in the management of community-based resources, where social relations and social capital play an important role in supporting common prosperity (Pretty, 2003). Meanwhile, economic diversification through the tourism sector and processed hanjeli products helps reduce dependence on a single agricultural sector, thereby increasing the economic stability of communities against external shocks (Scoones, 1998).

In the ecological aspect, local knowledge-based farming practices contribute to environmental sustainability by maintaining the balance of the ecosystem. Hanjeli cultivation that has been carried out for generations not only maintains soil fertility, but also plays a role in water conservation and biodiversity. This approach is in line with the concept of agroecology, which emphasizes the importance of maintaining agricultural practices that are in harmony

with local ecological conditions to ensure long-term sustainability (Altieri, 1999). In addition, community-based resource management in Hanjeli is a form of adaptation to environmental change, where communities collectively manage agricultural land and water resources to support food security and village economy (Berkes et al., 2000).

Meanwhile, the institutional aspect in village resilience can be seen in the role of village governments and community organizations in supporting community-based development. The sustainability of this system depends on the extent to which village policies can accommodate traditional practices while adapting to modern needs. In the case of Hanjeli, the village government has played a role in supporting the revitalization of Hanjeli as part of the educational tourism strategy, which reflects the importance of village governance in supporting economic and ecological resilience (Ostrom, 1990). However, challenges in institutional strengthening are still seen in the limited policy support from higher levels, especially in ensuring that traditional agricultural systems retain a place in rural development policies (Adger, 2000).

Why local knowledge and Hanjeli are important for village resilience: The importance of this research

Hanjeli Village, located in the heart of the Himalayas, has long been a testament to the resilience and adaptability of rural communities. For generations, the Hanjeli people have leveraged their deep understanding of the local environment, traditional agricultural practices, and communal resource management to sustain their livelihoods and maintain a harmonious relationship with the land (Zhou et al., 2018; Chauhan et al., 2021)

Traditional knowledge systems have become the cornerstone of Hanjeli's ability to adapt to social, economic, and environmental changes. This system, rooted in the cultural heritage of the community, has enabled villagers to develop innovative solutions to the challenges they face, from managing scarce water resources to maintaining the balance of their mountain ecosystems (Zhou et al., 2018; Chauhan et al., 2021)

However, as the forces of modernization and globalization exert their influence in the Himalayan region, the traditional way of life in Hanjeli is threatened. The erosion of local knowledge, disruptions in communal resource management, and pressure to adopt more commercial agricultural practices all contribute to the vulnerability of the Hanjeli community.

In this context, the revitalization of local knowledge emerged as a vital strategy to increase the resilience of Hanjeli Tourism Village. By examining the role of local knowledge in village efforts to address social, economic, ecological, and institutional challenges, this study aims to shed light on the importance of broader local knowledge for sustainable rural development in the Himalayan region and beyond.

This research paper aims to explore the nuances of Hanjeli's experience, exploring how the local knowledge of the community plays an important role in shaping its development trajectory and improving overall social, economic, ecological, and institutional resilience.

This study uses a qualitative research approach, through in-depth interviews and a comprehensive review of relevant literature to explore the multifaceted dimension of Hanjeli and its potential to promote socio-economic resilience and sustainability in rural Indonesia. This research was conducted in selected communities in Cianjur Regency, West Java, where

Hanjeli is still actively practiced, through collaborative partnerships with local stakeholders, including farmers, community leaders, and representatives from non-governmental organizations and government agencies. Data collected from fieldwork, along with insights gained from literature reviews, were analyzed using thematic analysis to uncover key themes and patterns emerging from the research.

RESULTS AND DISCUSSION

The Role of Local Knowledge in the Ecological Resilience of Hanjeli Tourism Village

Biodiversity is the main foundation for the ecological resilience of an ecosystem, especially in the face of climate change pressures and agricultural modernization. However, in many regions, changes in consumption patterns, the expansion of monoculture agriculture, and urbanization have led to the loss of many local plant species, including hanjeli. Hanjeli Tourism Village, with its heritage of local knowledge, offers an example of how communities can play an active role in preserving biodiversity through the revitalization of local crops and sustainable agricultural practices.

As one of the food crops that has once been an important part of the traditional agricultural system in the archipelago, according to information from one of the speakers, it is said that hanjeli has experienced a decline in its use due to the dominance of other food commodities such as rice and corn. This decline not only threatens the sustainability of hanjeli as a food crop, but also reduces the genetic diversity of local food crops that play a role in food security and the environment. However, through local knowledge-based practices, the people of Hanjeli Tourism Village have managed to maintain and even revitalize these plants as part of their agricultural ecosystem.

The Hanjeli people's approach to agriculture has long been shaped by their deep understanding of local ecosystems. The crop rotation and intercropping system, which has been passed down from generation to generation, allows for efficient resource management and strengthens the ecological resilience of agriculture. In this practice, hanjeli is not only maintained as an alternative food crop but also combined with other crops to increase soil fertility, reduce erosion, and control pests naturally. The sustainability of this system confirms that biodiversity-based agriculture is more resilient to environmental shocks compared to monoculture systems that are vulnerable to climate change and soil degradation (Aswani et al., 2018)

In addition to its benefits in sustainable agricultural systems, hanjeli also has a role in the preservation of local ecosystems and biodiversity. Studies show that the more diverse the plant species in an area, the higher the ecosystem's ability to recover from external disturbances, such as drought or pest outbreaks (Berkes et al., 2000). Hanjeli, which has high resistance to different environmental conditions, contributes to the ecological stability of the village by providing habitat for various soil microorganisms that support the health of agricultural ecosystems.

The preservation of hanjeli in Hanjeli Tourism Village shows that ecological resilience does not only depend on technological interventions or government policies, but also on how the community is able to maintain their local knowledge systems. By integrating traditional knowledge with modern adaptation strategies, hanjeli can not only be maintained as part of

local biodiversity, but can also continue to thrive as an agent in the social and economic life of communities. Thus, Hanjeli Tourism Village is a model for how local knowledge can be the main instrument in maintaining the balance of the ecosystem and the ecological resilience of the village in an era of increasingly dynamic environmental change.

The Role of Local Knowledge in Social Resilience of Hanjeli Tourism Village

The Hanjeli community's approach to natural resource management is firmly embedded in their social and cultural institutions. Indigenous laws and practices, such as community role regulation, equitable distribution of resources, and collective maintenance of agriculture, are critical in ensuring the sustainable use of their natural assets.

These communal resource management practices are underpinned by a strong sense of social cohesion and collective responsibility, which are reinforced through traditional rituals, communal decision-making processes, and intergenerational knowledge transfer. The ability of communities to adapt their resource management strategies to changing environmental and socio-economic conditions is a testament to the resilience of their social institutions and their capacity for self-government.

Community empowerment through involvement in tourism activities and the production of hanjeli-based handicrafts shows a positive transformation in the social aspect. Hanjeli Village is now an example of how local communities can be empowered to be the main actors in the management of their resources. This process creates a stronger sense of social cohesion, increases community confidence, and strengthens the social structure of the village (*see Figure 1*).



Figure 1. The people of Hanjeli Tourism Village routinely gather at the Hanjeli Indonesia House. Source: Researcher documentation

The Role of Local Knowledge in the Economic Resilience of Hanjeli Tourism Village

The success of Hanjeli Village lies not only in its traditional agricultural practices but also in socio-economic innovation through hanjeli-based educational tourism. Rumah Hanjeli Indonesia as a symbol that also provides added value as a means of literacy to encourage insight into local culture, as well as attract tourists who want to learn about village life. These interactions create a reciprocal relationship between local communities and tourists, strengthening the social sustainability of the village.



Figure 2. Hanjeli Information Board. Source: Researcher Documentation

In addition, the management of Hanjeli Gardens and Saung Lisung as educational tourism destinations features traditional processes such as harvesting hanjeli and processing agricultural products. Figure 3 and figure 4 show local and international tourists actively participating in trying traditional activities in the Hanjeli tourist village, such as pounding hanjeli using traditional tools. This activity is not only the main attraction that supports the village economy but also preserves local traditions that are rich in cultural value.



Figure 3. Local tourists who visit Hanjeli Tourism Village. Source: <https://majalahindonesia.id/desa-wisata-hanjeli-sukabumi-masuk-50-besar-adwi-2022/>



Figure 4. International Tourists who visit Hanjeli Tourism Village. Source: <https://www.kompasiana.com/phadli/636e73e841ec7a0eb5667252/pengolahan-produk-pangan-lokal-dan-pemberdayaan-mantan-tenaga-kerja-wanita-di-desa-wisata-hanjeli>

Through the empowerment of communities, especially women, in the production of hanjeli handicrafts, Hanjeli Village has shown how local innovation can produce products of high economic value such as crackers, cosmetics, and other accessories (*see Figure 5*).



Figure 5. Hanjeli processed products. Source: (Dizitha et al., 2024)

The Role of Local Knowledge in the Institutional Resilience of Hanjeli Tourism Village

The institutional resilience of a village depends not only on a formal governance system, but also on how local communities can leverage their knowledge to gain wider recognition and strengthen their position in the larger social and economic system (Ostrom, 1990). Hanjeli Tourism Village in Sukabumi is an example of how local knowledge can contribute to the institutional resilience of the village, especially with the village's success in becoming part of the UNESCO Global Geopark Ciletuh-Palabuhanratu, an achievement that places hanjeli as a symbol in the cultural diversity category.

The local knowledge of the Hanjeli people about the preservation and utilization of the Hanjeli plant is a key factor in this recognition. As a food crop that has long been rooted in the history of agriculture in West Java, hanjeli not only has ecological value but is also part of the local cultural identity. The people in this village have collectively succeeded in elevating hanjeli as a symbol of cultural heritage through various initiatives, including educational programs, hanjeli-based product development, and the integration of hanjeli in the village's tourism narrative. This effort is in line with the principles of community-based institutional resilience, where communities have an active role in building and maintaining social and economic systems that support the sustainability of their villages (Pretty, 2003).

The success of Hanjeli Tourism Village in the UNESCO Global Geopark Ciletuh-Palabuhanratu reflects how local knowledge can provide institutional benefits for the village community. This recognition not only increases the village's attractiveness as a culture-based tourist destination, but also strengthens the community's position in the broader economic value chain. With its status as part of a UNESCO geopark, Hanjeli Tourism Village now has greater access to various forms of support, both in the form of funding, international networks, and collaboration opportunities with academics and environmental organizations.

In addition, hanjeli's integration within the UNESCO Geopark Ciletuh-Palabuhanratu shows that local knowledge is not only valuable in a local context, but can also be part of a global narrative about sustainability and cultural diversity. In many cases, communities that are able to manage and document their traditional knowledge well are more likely to gain broader institutional recognition, which can ultimately provide long-term benefits to the well-being of their communities (Agrawal, 2001)

However, the sustainability of this achievement also depends on how the people of Hanjeli Tourism Village can maintain and develop a community-based institutional system to support the management of hanjeli in the long term. The main challenge that may be faced is how to keep the cultural and ecological values of Hanjeli relevant in the midst of social and economic changes. Therefore, a strategy is needed that ensures that local knowledge about hanjeli continues to be passed on to the next generation, both through formal education and community-based knowledge transfer mechanisms.

The success of hanjeli as a cultural symbol in the UNESCO Geopark Ciletuh-Palabuhanratu can also serve as a model for other villages in utilizing local knowledge as an instrument to gain institutional recognition and improve their position in the sustainable development system. While maintaining a balance between tradition and innovation, Hanjeli Tourism Village has proven that institutional resilience comes not only from formal policies, but also from how communities can use their knowledge to shape a sustainable future.

Hanjeli Cultivation for Village Resilience

The hanjeli gardens managed by the community show the important role of this plant as part of the village's food security and economy. By cultivating native plant varieties, communities not only conserve local genetic resources but also create self-sustaining production systems (see *Figure 6*). Hanjeli as the main ingredient of handicrafts and consumption provides added value to the village economy, while community-based agricultural practices ensure long-term sustainability.



Figure 6. Farmer Women Workers in Hanjeli Plantation. Source: Researcher Documentation

The local knowledge and traditional practices of the Hanjeli people not only play an important role in ensuring the sustainability of their agricultural systems and natural resource management, but also contribute significantly to the overall socio-economic resilience of the community.

The diverse nature of Hanjeli agricultural systems, the community's expertise in the cultivation of native and nutritious crop varieties, and the integration of agricultural practices with tourism all contribute to the community's food, economic, and social security.

In addition, the community's emphasis on collective resource management and social institutions has fostered a strong sense of social cohesion, mutual support, and resilience in the face of external shocks and pressures.

Challenges and Threats to Local Knowledge Resilience

Despite the resilience and adaptability of the Hanjeli people's local knowledge, they face a variety of challenges and threats that threaten to erode this valuable resource. The encroachment of modern development, the entry of external influences, and the disruption of traditional social structures all contribute to the gradual erosion of people's traditional ecological knowledge and related practices.

The integration of traditional ecological knowledge, as demonstrated by the Dayak Tunjung people in East Kalimantan, can offer valuable insights into the interconnectedness between agricultural practices, forest management, and local culture. (Siahaya et al., 2016).

Similar to the Iban community in West Kalimantan, the Hanjeli community has developed traditional mechanisms to pass on their knowledge to the next generation, such as through community-based schools and internship programs. However, the survival of these knowledge-sharing systems is increasingly threatened by modernization pressures, disruptions of traditional livelihoods, and the migration of younger community members (Leo et al., 2021).

Integrating Traditional Knowledge with Modern Approaches

The findings of the study show that the integration of traditional ecological knowledge and modern agricultural practices can be a powerful strategy to improve the sustainability and resilience of rural communities in Indonesia.

By combining empirical insights and scientific understanding gained through modern agricultural research with the accumulation of place-based wisdom and knowledge from local communities, it is possible to develop a holistic, context-specific, and adaptive approach to sustainable land use and natural resource management.

As highlighted in the case of the Iban community in West Kalimantan, the scientific knowledge gained through the modernization process needs to be carefully integrated with local knowledge and empowered to ensure the continued relevance and resilience of rural communities (Leo et al., 2021).

Similarly, the experience of the Dayak Tunjung community in East Kalimantan (Siahaya et al., 2016) and residents of Mekar Jaya village in Purwakarta Regency (Heryanto et al., 2018) demonstrate the value of recognizing and incorporating traditional ecological knowledge into agricultural development and forest management strategies.

Policy Recommendations to Strengthen the Hanjeli System

The findings of the research emphasize the need to develop and implement a policy framework that recognizes, supports, and empowers the traditional ecological knowledge of the Hanjeli community and natural resource management practices. These policy

recommendations aim to maintain community resilience and sustainable development, while encouraging the integration of traditional and modern approaches.

Policy recommendations to strengthen the Hanjeli community system include: Establishing legal and institutional mechanisms to recognize and protect the practices of indigenous resource management of communities; Invest in the documentation, preservation, and intergenerational transfer of people's traditional ecological knowledge; Promote the integration of traditional and modern agricultural practices through participatory research and extension services; Ensure the active participation of the Hanjeli community in the design and implementation of development programs and policies that impact their livelihoods and natural resources; and Provide financial and technical support to strengthen society's traditional institutions and social safety nets, which are critical to maintaining their resilience in the face of external shocks and pressures.

By implementing these policy recommendations, the people of Hanjeli can be empowered to continue to manage their natural resources sustainably, while benefiting from the integration of traditional and modern approaches to improve their socio-economic development and resilience.

CONCLUSION

The findings from this case study of the Hanjeli Tourism Village in Sukabumi, West Java, Indonesia, affirm that local knowledge is a central pillar of village resilience across ecological, social, economic, and institutional dimensions. Traditional ecological knowledge, such as the hanjeli-based farming system, has enabled sustainable land use, biodiversity preservation, and adaptation to environmental changes, particularly in mitigating the impacts of land degradation and climate shifts. Socially, community cohesion is maintained through cultural traditions and collective agrarian practices, which demonstrate strong social capital and reinforce a sense of environmental stewardship. Economically, the revival and innovation of hanjeli-based products and tourism initiatives have diversified livelihoods and enhanced local food sovereignty amid global pressures. Institutionally, the designation of Hanjeli Village within the UNESCO Ciletuh-Palabuhanratu Geopark illustrates the potential of local knowledge to elevate a village's standing in formal systems, providing greater access to networks and structured support, despite the ongoing challenge of youth disengagement from traditional knowledge. Future research should explore intergenerational knowledge transfer mechanisms and develop participatory models that integrate indigenous knowledge with digital tools to ensure long-term sustainability. Additionally, comparative studies across regions could identify scalable patterns for replicating similar resilience-building strategies in other rural contexts.

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