

Local Aset Analysis in the Cultural Tourism Development of the Sangiran Conservation Area, Central Java

*Received: 5th May 2025; Revised: 19th May 2025
Accepted: 7th July 2025; Available online: 31st July 2025*

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Abstract

This study explores the sustainability of local communities through the lens of the Sustainable Livelihoods Framework (SLF), focusing on the Sangiran Cultural Heritage Site—a protected area with high tourism potential yet persistent poverty. Using a qualitative case study approach with cross-sectional and comparative analysis, the research investigates how local communities utilize livelihood assets and transform their strategies in response to tourism development. Findings reveal that while natural, human, social, and economic capitals form the basis of community livelihoods, efforts to diversify through cultural and nature-based tourism face constraints. Limited financial literacy, restricted access to financing, and weak internalization of training hinder progress. Sustainable livelihoods depend on innovation, capacity building, strong social networks, and inclusive economic policies. The study highlights the need for future longitudinal research to better understand the dynamic relationship between tourism and community livelihoods.

Keywords: *Sustainable Livelihoods; Tourism Development; Local Community; Sangiran Site; Livelihood Assets*

How to cite: Titik D, Sri S, Aldi Herlinda L, Titi Susilawowati P. (2025). Local Aset Analysis in the Cultural Tourism Development of the Sangiran Conservation Area, Central Jawa. *Jurnal Ilmu Sosial*, 24 (1): 145-165 (doi: 10.14710/jis.24.1.2025.145-165), [Online]

Permalink/DOI: <https://doi.org/10.14710/jis.24.1.2025.145-165>

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INTRODUCTION

The concept of sustainable development approach ensures the fulfillment of the needs of all stakeholders, including the local community. Therefore, it is only right that the community receives primary attention and is placed at the center of development. A sustainable development should not only focus on achieving economic growth or maintaining the sustainability of certain sectors, but also ensure that the local community can directly benefit from the development pembangunan (Chambers, 1994). Placing the community at the center of development also means ensuring the sustainability of their livelihoods through an approach that considers local potential, empowering and involving the community in decision-making (DFID, 1999).

In a sustainable development approach, it is only fitting that communities are positioned at the center of development. A sustainable development should not only focus on generating economic growth or maintaining the sustainability of certain sectors, but also ensure that the local community can directly benefit from that development (Chambers, 1994). Placing communities at the center of development also means ensuring the sustainability of their livelihoods through an approach that values local potential, empowers communities, and involves them in decision-making (DFID, 1999).

However, in practice, tourism development often focuses more on the sustainability of the industry and macroeconomics rather than on the sustainability of local livelihoods. Mosedale (2016) and Saarinen (2014) found that many tourism development efforts tend to focus on creating destination competitiveness and macroeconomic growth, while the needs and well-being of local communities are less considered. In conservation areas, this situation becomes more complicated due to the demands of preserving biodiversity, which often conflict with the economic needs of the community masyarakat (Brockington 2004; Wells & McShane, 2004).

In line with that perspective, this research focuses on the analysis of the sustainability of local communities through the utilization of their livelihood assets. This approach uses the Sustainable Livelihoods Framework (SLF), which emphasizes the importance of interaction and interconnection between livelihood assets, including natural, human, physical, social, and financial resources (Chambers & Conway, 1994; Scoones Ian, 1998). Natural Capital is the reserve of natural resources from which the flow and services of resources useful for obtaining livelihoods are derived. Physical Capital is a resource in the form of basic infrastructure and production goods needed to support livelihoods. Social Capital is the social resource (relationships) that people use to achieve their livelihood goals. Meanwhile, Human Capital is defined as skills, knowledge, the ability to work, and good health that together enable people to achieve livelihood strategies and reach livelihood goals. The last type of capital is Financial Capital, defined as the financial resources used by people to achieve livelihood goals, sourced from two main sources of financial capital: savings and family cash flow (DFID, 1999). The discussion on sustainable livelihoods in the context of tourism has started to be widely addressed in scientific writings. However, previous research generally discusses the concept of sustainable livelihoods with a focus that is often limited to just one livelihood asset, such as natural resources or human capital (Ellis, 2000). However, livelihood assets are an integrated whole that mutually influence each other in supporting the sustainability of community livelihoods. Therefore, this

research aims to comprehensively analyze the livelihoods assets that influence the sustainability of the local community's livelihoods.

This research focuses on the communities living in the conservation area of the Sangiran Site, a protected region renowned as a site of ancient human fossils and a cultural tourism destination. Sangiran was designated as a World Heritage Site by UNESCO in 1996 and became part of the Strategic Tourism Area (KSP) of Sragen Regency (Therik & Handayani, 2018). This area has great potential, both in terms of natural landscapes, historical value, and culture, which can be utilized for sustainable tourism development. However, BPS (2024) shows that this area still faces poverty issues, with Sragen Regency ranking among the top eight with the highest poverty rates in Central Java.

This poverty not only threatens the welfare of the local community but also the sustainability of the conservation area itself. Most of the land in Sangiran belongs to the community, which faces limitations in terms of education and access to economic resources (Widianto, 2020). The low level of welfare among the local community can affect conservation efforts, especially if the community is not actively involved in the management and utilization of local potential.

Using the perspective of the Sustainable Livelihood Framework, this research elaborates on the utilization of livelihood assets by the community living in the Sangiran Conservation Area in their efforts to sustain their livelihoods amid development pressures. This research also aims to identify the livelihood strategies employed by the Sangiran community to maintain their livelihood sustainability. It is hoped that, with a comprehensive approach, this research will provide new insights into the utilization of livelihood assets that support the sustainability of the local community's livelihoods.

METHOD

This qualitative case study is set in Sangiran, Central Java, a tourist destination. Qualitative research examines the experiences, meanings, and perspectives of study subjects to understand social phenomena or problems. Data is collected and analyzed inductively by the researcher in qualitative research (Fadli, Rijal 2021). Qualitative approaches are useful for grasping a phenomenon's complexity, identifying and describing its components, and forming a holistic picture. (Thompson & Walker, 1998) This method can reveal sensitive and hidden issues and answer queries like "What is happening here?" How can I explain?

(Thomson & Walker, 1998) According to Patten & Patten (2018), this is a descriptive, qualitative study. Data was collected through Site Observation, Focus Group Discussions, In-Depth Interviews, and Existing Document Studies. This study uses field notes, digital voice recorders, and image recording devices (cameras) to present complete data on the community's livelihood transformation in the Sangiran Conservation Zone and livelihood strategy efforts in the Sangiran Co.

Cross-sectional and comparative analysis are used to review livelihood transformation patterns periodically (Mushongah & Scoones, 2012). Long-term dynamic studies, such as the lack of route and impact analysis of rural transformation, are also supported from a historical perspective (Huang & Shi, 2021). Cross-sectional or longitudinal analysis may be appropriate to explore dynamic transitions (Chapin & Kofinas, 2009), especially to assess community life transformation patterns in the Sangiran Conservation Zone, which has 5 villages and has been a UNESCO conservation area or world heritage site since 1996. This can be used to analyze the change in behavioral patterns in the Sangiran Conservation Zone, both inside the territorial system and rural administrative limits and as a whole. Behavioral change is examined periodically in light of the area's history and past dynamics that may continue to shape the Sangiran Conservation Zone (Prado et al., 2015).

RESULTS & DISCUSSION

Sangiran, from agricultural area to cultural heritage site

The lives of the people in Sangiran are facing fundamental changes as they respond to and adapt to significant changes in their living environment, since this area was designated as a cultural heritage conservation site and a world heritage site. In the past, many residents relied on searching for fossils and selling them to fossil collectors or researchers for their livelihood. This trade activity has been carried out since the first discovery of vertebrate fossils in 1864, and it was exacerbated by the local community's belief that these fossils could cure diseases. The development of fossil excavations became increasingly discussed worldwide following the discovery of ancient human fossils and prehistoric tools by archaeologists in the early 20th century. The government immediately took preventive measures against fossil smuggling, fossil trade, and ensured the preservation of cultural heritage for future generations by designating Sangiran as a cultural reserve area in 1977 through SK Kepmendikbud No 070/O/1977, because at that time, fossil exploitation was already out of control.

In 1996, the Indonesian government proposed Sangiran to UNESCO, and finally, this area was officially recognized as a World Cultural Heritage site with registration number 593. Since then, Sangiran has become a popular historical and educational tourist destination frequently visited by archaeologists and students. However, the practice of fossil trading continues to occur, prompting the government to issue Law No. 11 of 2010 on Cultural Heritage, which strictly prohibits all activities related to the search and trade of fossils. On the other hand, the recognition of Sangiran as a UNESCO World Cultural Heritage site encourages the development of Sangiran as a tourist destination. This situation opens up new opportunities for the local community to engage in businesses in the tourism sector.

To develop tourism potential, the government continues to strive to improve infrastructure and policies that support this sector. One of the strategic steps taken was the establishment of the Wonderful Sangiran Tourism Awareness Group (Pokdarwis) in 2016, aimed at involving the community in the management of local tourism. This effort was reinforced by the issuance of Regional Regulation of Sragen Regency Number 13 of 2018, which established a master plan for tourism development, as well as the formation of Sangiran Tourism Village in 2021. With this initiative, new business opportunities have emerged, such as homestays, tour guide services, and the production of Sangiran's distinctive souvenirs.

Livelihood Journey at Cultural Heritage Site

Sangiran livelihoods alter with rules and the area's conservation zone status. Most of the community, especially those in conservation zone villages like Krikilan, Ngebung, and Manyarejo, depends on agriculture. Rice, cassava, vegetables, and legumes are planted. The hamlet survives on agriculture, but yields vary by season and weather.

Due to unpredictable agricultural outputs, the community needs more income to survive. After discovering valuable fossils, the Sangiran community began farming and looking for and selling fossils at the old human site. Local and international collectors and researchers buy most fossils. This generates big income. At that time, fossils sold for far more on the illegal market than in museums. For instance, fossils sold to international collectors might fetch over Rp8,000,000, whereas museums only earn Rp1,000,000. This occupation has been passed down for generations.

Since Sangiran was declared a UNESCO World Heritage Site in 1996 and strengthened by Law No. 11 of 2010 on Cultural Heritage, fossil hunting and trafficking are prohibited. It is illegal to sell fossils found by the community, and they must give them to the museum. According to Manyarejo farmer Mr. Parmin, "it used to be better, searching for fossils was free, and if you found a good one, you could sell it for a high price." Now it's illegal, so you can only keep or give one to the museum."

Farmers also face this regulation. Many farmers struggle to survive due to conservation policies that limit land management. Due to landlessness or restricted employment choices, some farmers are forced to work in agriculture. Small-scale livestock farming is a viable career option. The neighborhood raises cows, buffaloes, chickens, ducks, and tilapia in their yards. This animal husbandry produces largely home meals and is not widely sold.

As mentioned, Sangiran's tourism sector has grown since its World Heritage Site designation. Tourism business opportunities have led the people to adopt new livelihoods. Farming is still the main source of income, although many people now work in creative industries and tourism services. By empowering the community to make handicrafts, souvenirs, and homestays, the local government, Pokdarwis (Tourism Awareness Group), and other institutions hope to grow the tourism-based economy.

Mr. Parmin, a Manyarejo farmer, shows how the community combines agriculture and tourism. Conservation restrictions that ban fossil hunting have pushed him to find other revenue sources despite running his property. He says "in the past, I used to search for fossils and farm a lot, but now because it is prohibited, I have switched to making crafts and selling souvenirs." The farming company is managed by cultivating his property to feed his family. Mr. Parmin uses harvest waits to start a craft company manufacturing ancient-themed tables and chairs from local resources. This artisan company has opened new opportunities, especially at cultural events or scheduled cultural fairs, helping his income steadily improve. However, Mr. Parmin also acknowledged the limitations, including limited market access and the need for training to better his handcraft items.

The group makes fossil miniatures, stone and wood monuments, and Sangiran-themed t-shirts as souvenirs. "Before, we only searched for bones, now we make our own fossil replicas to sell to tourists." "Although it's not as expensive as the original fossils, at least it can be a source of income," remarked a souvenir salesman. Souvenir sellers initially sold only at museums and cultural markets.

Most of these things are sold at museums and cultural fairs, but souvenir entrepreneurs have started working with shops in Solo and Yogyakarta. Local merchants have even started selling online to attract more customers.

Krikilan farmer Mr. Dengkloh outlines a vibrant entrepreneurial experience. He worked as a stationery salesman, a museum construction worker, and a tour guide after searching for "balung" (the local term for fossils) as a child. Mr. Dengkloh said, "Now I more often work as a tour guide, telling tourists about Sangiran's history." My farming business is still going, but tourism helps the family more.

Schoolchildren and anthropology students visit Sangiran for educational purposes. Scientists visiting Sangiran sometimes ask farmer Mr. Dengkloh for a tour. He accompanied researchers to observation sites as a side employment due of his proximity to Palaeolithic Museum tour guides. Mr. Dengkloh learned to guide Sangiran tourists from this.

Besides those two examples, farmers have diversified into batik production and homestay management to capitalize on tourism potential. Farmers who relied only on agriculture are now making batik with local themes that tell Sangiran's history and culture. Batik entrepreneur Mrs. Tukinah said, "Now, in addition to farming, I also make batik." My designs are inspired by old stories to entice travelers who want to take home heritage. Collaborations with universities and training institutions help batik craftsmen improve their skills. "Mrs. Tukinah, Mrs. Winarni, and Mrs. Indri, as batik makers in Sangiran, learned from the training, and now they can create batik with fossil motifs," said tourism awareness group representative Mr. Karyadi. It's different from other batik, therefore tourists like it." The designed bone motifs in this batik enterprise boost income and local cultural identity.

However, some farmers have operated tourist homestays in their traditional dwellings. Homestay manager Mr. Darso said, "Before, I only farmed, but now I rent out my house to tourists." Holidays are busy, so this extra revenue helps the family's economy. Tourism does not inherently benefit all social classes. High

dependence on tourists and holiday-season volatility are the biggest challenges in the tourism sector. Tourism incomes rise on holidays and weekends due to increased visitor numbers. A tiny shop owner near the museum said, "If there is a big event or holiday, it gets crowded, but on regular days, it's quiet." Depending solely on tourists can be difficult. According to Krikilan village leader Narno, "During the holiday season, there are many visitors, but on regular days, it is quiet." People who sell or run enterprises surrounding the museum frequently have few consumers.

In addition to tourist numbers, the Sangiran community, which is mostly farmers, has inadequate tourism capabilities. Training is essential for Sangiran tourism firms. This was stated by Mrs. Darmi. "We are now starting to sell batik and souvenirs, we never thought we could make money from that before." We need marketing and training aid to grow." The lack of community training is a training hurdle. However, the community is less proactive in following up on training. Mrs. Ika of the Tourism Office said, "Training has been held frequently, but many residents are not proactive." After training, they may not use the talents, reducing their benefits. Sometimes people don't use the abilities provided after training, therefore the benefits are fewer. Access to business funding and stakeholder collaboration are constrained. Despite government and university training programs, many people fail to use their information, hence the economic benefit has been small.

Manage Livelihood Capital in Cultural Heritage Sites

Natural Resources

Natural capital is essential in Sangiran, where the community survives on agriculture and fossil collecting. Accordingly, the sustainable livelihoods theory highlights the relevance of natural capital for agricultural communities (Chambers & Conway, 1992; Scoones Ian, 1998). Sangiran's access to natural capital changed when the village became a cultural heritage conservation site and world heritage site. Farmers and fossil hunters depend on natural capital, which this change affects.

The Sustainable Livelihoods Theory states that access to natural capital comprises land, water, and sustainable management to maximize use. Since fossil hunting is illegal, the Minister of Education and Culture Decree Number 070/O/1997 and Law Number 11 of 2010 have cut fossil hunters' access to natural capital. The fact that fossil searchers were also farmers was useful at the time. So fossil hunters might optimize their livelihood methods by establishing agricultural land and yards and growing cattle. The laws also limit farmers' access to conservation areas because some of their yards cannot be optimally cultivated. These constraints are necessary to preserve historical assets, but they have also generated new issues for communities that depend on natural capital (Chambers & Conway, 1992; Scoones Ian, 1998).

The need for new livelihoods offers several methods to strengthen natural capital. Tourism as an alternative livelihood empowers natural capital without violating restrictions. Development of historical and educational tourism destinations in Sangiran uses fossils, natural landscape, and agriculture as tourist attractions and natural resources. Natural resources and local culture inspire local handicrafts, which boost tourism. The Wonderful Sangiran Tourism Awareness Group (Pokdarwis) and Tourism Villages combine conservation and economic development. Tourism development creates new economic options such as homestays, tour guide services, shops, and souvenirs based on local natural and cultural resources. These new companies diversify livelihoods and may help the Sangiran community sustain their livelihoods. For example, the Sangiran community uses natural capital in reserve areas sustainably without breaking conservation legislation (Nugroho et al., 2021; Widodo, 2022).

The story of Sangiran also indicates that diversification and innovation are crucial to a community's livelihood survival. Since they were farmers, the Sangiran community could still exploit their natural resources once fossil hunting was banned. When conservation area restrictions damage agricultural land, the Sangiran community must innovate in tourism to retain their livelihoods. Innovation in

corporate diversification is also important to overcome limited natural capital, according to recent studies. Syahrani et al. (2020) show that tourism-based livelihood diversification can boost conservation area residents' economic resilience with policy assistance and continuing training.

Human Resources

Human capital is one of five Sustainable Livelihood Framework (SLF) livelihood capitals. Skills, knowledge, health, and job capacity enable people to pursue different livelihood choices and attain desired objectives (Chambers & Conway, 1992; Scoones, 1998). In Sangiran, human capital helps the community adapt and build sustainable livelihood strategies despite natural capital limits (Chambers & Conway, 1992; Scoones Ian, 1998). The community's flexibility to livelihood capital limits depends on human capital availability and quality. Since the Sangiran community comes from agriculture, their lack of tourism skills is well known. Human capital is linked to social and financial capital, according to Bebbington (1999). Same in Sangiran. Lack of tourism skills requires external social capital, or support. The tourism bureau and educational institutions trained the community to manage homestays, advise travelers, and make Sangiran-inspired souvenirs. This program's effectiveness depends on participant intensity and training program continuity. Tourism awareness organizations and government linkages promote access to training and market knowledge, which boosts economic welfare. To enhance human capital, capacity development programs must include social network strengthening. Communities with greater education, nonagricultural skills training like handicrafts, tour guiding, and organizational experience can adapt to tourist industry changes and find new livelihoods. According to Ellis (2000), human capital facilitates cross-sector mobility, especially in livelihood diversification.

The Social Capital

Social capital—networks, trust, norms, and inter-group relationships—help communities access information, resources, and support to develop sustainable livelihoods (Bebbington, 1999; Woolcock & Narayan, 2000). As a cultural heritage conservation site and world heritage site, Sangiran affects access to natural capital, community livelihoods, and social capital use. The community had to diversify livelihoods to respond to conservation restrictions and fossil exploitation bans. The Sangiran community used social capital to develop the Wonderful Sangiran Tourism Awareness Group (Pokdarwis). The community manages tourist locations and works with the village government, tourism office, and educational institutions to gain training and market access through the Pokdarwis. Collaboration allows farmers and local entrepreneurs to access knowledge and skills previously unavailable, enabling tourism and creative industry company breakthroughs (Tao & Wall, 2009).

Culture-based tourist development relies on social capital, according to Syafrini & Putri (2023). The study found that stakeholder participation and strong social networks promote sustainable tourist development. Social capital from Sangiran community trust and partnership with Pokdarwis and other stakeholders supports the transition from traditional livelihoods to tourism-based businesses. The collaborative development of souvenirs, batik with unique motifs, and hospitality services diversifies revenue and strengthens local cultural identity (Putnam, 2000). The community's restricted access to broader networks and lack of integrated crosssector collaboration make social capital utilization difficult. Mahato et al. (2023) state that stakeholder contact and information exchange greatly affect social capital's ability to support sustainable livelihoods. In Sangiran, the biggest constraints are lack of monitoring on training sustainability and community activities to integrate training information. This suggests that, while social capital has helped the community transition from fossil trade to tourism and creative

industry businesses, more work is needed to strengthen networks and collaborations to achieve sustainable livelihoods (Biggs et al., 2012).

Economic Resources

Sustainable Livelihood (SL) theory, notably Shen et al. (2008)'s Sustainable Livelihood for Tourism (SLT) approach, defines economic capital as physical and financial capital. Physical capital contains infrastructure, technology, transportation, and other fundamental amenities that enable economic activity, whereas financial capital includes income, savings, credit, and financial aid that support household livelihoods. Both forms of capital help establish sustainable lives, especially in regions like Sangiran undergoing economic transformations. The community's economy has changed as Sangiran went from agriculture and fossil exploitation to conservation and tourism. Most of the community has trouble obtaining financial capital due to low financial literacy and inadequate formal funding, according to field data. Homestay owners, souvenir makers, and Pokdarwis actors typically start their businesses with personal funds or informal loans from family, which is insufficient to scale up production or increase service quality. Scheyvens & Russell (2012) found that the lack of inclusive financial institutions in poor countries hinders community-based tourism.

However, the government's physical capital, such as museums, access roads, and other public amenities, has allowed the community to leverage this infrastructure to start new businesses. Human capital limits in managerial skills, entrepreneurship, and digitization have limited this usage. The SLT approach states that integrating different capitals is the key to enhancing the economic resilience of tourism communities (Gascón & Milano, 2017; Shen et al., 2008), emphasizing the importance of synergy between economic and human capital to create sustainable livelihoods. Despite their tourism potential, local efforts like homestays, tourist cafes, and handicraft production face marketing and market access issues. Mitchell & Ashley (2009) found that connecting small company operators to the tourism

sector is difficult, especially in developing nations where major actors dominate distribution networks and supply chains. In Sangiran, local products are sold directly to visitors without digital marketing or online platforms. Some research recommend policy-based approaches to address this gap. Novelli et al. (2012) stress the necessity of local training, microfinance, and community-based business ecosystems for inclusive tourism. Sangiran can use these findings to create a community-based micro-financing system supported by local financial institutions and government partners to overcome financial capital constraints.

Conclusion

The management of the livelihoods of the community in the conservation area of the Sangiran Cultural Heritage Site shows that the sustainability of their livelihoods is highly dependent on their ability to access and utilize natural capital, human capital, social capital, and economic capital. In the status of transformation from a free area to a conservation area, which ultimately leads to restrictions on the exploitation of natural resources (such as excavation for fossil hunting) and limited agricultural management due to reliance on rain-fed agriculture, the community is encouraged to diversify their livelihoods. Some, with the ability and capacity for financial and social capital, are moving towards the development of culture and nature-based tourism businesses.

The enhancement of human capital capacity in managing tourism businesses in the Sangiran area can be achieved through basic tourism training, taking into account the available local resource potential. Although there are still obstacles due to the suboptimal participation and social networks of the community. Strengthening human capital through basic training in the tourism sector has proven to be an important foundation in this transition, although its effectiveness is still greatly influenced by the level of participation and social networks possessed by the

community. Social capital, particularly through the establishment and strengthening of institutions like Pokdarwis, has enabled collaboration between the community and external stakeholders in expanding market access and enhancing community capacity. However, the challenge is that the internalization of knowledge and skills from the training conducted by the government cannot be maximally implemented. This is due to the partial intensity of cross-sector interactions in carrying out the function of community capacity building.

Meanwhile, the management of economic capital, particularly in the financial aspect, the Sangiran community, which is mostly composed of traditional farmers, faces challenges when transitioning from agricultural livelihoods to the tourism business sector, especially due to low financial literacy and limited access to business financing. However, the availability of financial capital is crucial to support business diversification and initial investments in the tourism sector and culture-based creative industries.

From all these findings, it can be concluded that the success of sustainable livelihood strategies for communities in conservation areas like Sangiran highly depends on the synergy between livelihood capitals (human, social, and economic). Innovation and adaptation based on local resource potential, supported by community capacity building, strong social networks, and inclusive economic policies, are the key elements in building a resilient and sustainable livelihood system. Local governments and other stakeholders need to ensure the sustainability of training and mentoring programs, not just as short-term project activities, but as long-term social investments.

Strengthening the institutional capacity of local organizations such as Pokdarwis needs to be accompanied by broader access to market networks and financing. The provision of microcredit schemes tailored to local community conditions and the integration of financial literacy into training are crucial to overcoming financial capital limitations. Lastly, the development of the governance paradigm needs to be enhanced by creating integrated cross-sector collaboration

networks, bringing together communities, academics, the private sector, and the government in designing adaptive and inclusive livelihood-based development strategies at world heritage sites like Sangiran. Future research needs to deepen the understanding of the relationship between livelihoods more systematically, including the exploration of the dynamics of institutional capital within the framework of sustainable livelihoods. In addition, longitudinal studies are needed to monitor the transformation of community livelihoods in the long term, to see to what extent their adaptive strategies truly result in social, economic, and ecological sustainability.

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