

Reconfiguring Social Capital through Community-Based Beekeeping: From Livelihood Practice to Collective Agency in Southern Thailand

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This study re-examines the role of social capital in rural development by investigating how community-based beekeeping reconfigures social capital and contributes to the emergence of collective agency in Southern Thailand. Challenging conventional perspectives that treat social capital as a pre-existing resource, the study conceptualizes social capital as a dynamic and relational process that is continuously produced through everyday livelihood practices. Drawing on Husserlian phenomenology, qualitative data were collected through in-depth interviews, focus group discussions, non-participant observation, and document analysis with beekeepers and community stakeholders in Na Bon District, Nakhon Si Thammarat Province. The analysis focuses on participants' lived experiences and the relational processes through which economic activities generate social connections, shared meanings, and collective action. The findings reveal that beekeeping functions not only as a livelihood activity but also as a social arena in which trust, reciprocity, knowledge exchange, and institutional linkages are actively cultivated. Through these processes, social capital is reconfigured through new forms of participation and collaboration, strengthening community capacities and fostering collective agency. Community members gradually develop the ability to coordinate actions, negotiate identities, and engage with external actors such as state agencies and market institutions. At the same time, the study highlights uneven access to networks and resources, suggesting that community-based development may generate both inclusion and exclusion. The study argues that participation should be understood not merely as an outcome of social capital but as a generative mechanism through which social capital is produced and reconfigured. By linking social capital theory, community economy perspectives, and phenomenological inquiry, the research offers a process-oriented framework for understanding grassroots rural development in the Global South.

Keywords: social capital, community participation, beekeeping, community economy, collective agency, rural development

Social capital has long been recognized as a key factor in fostering cooperation, trust, and collective action within communities. In rural development contexts, it is often conceptualized as a resource that enables individuals to collaborate, share knowledge, and achieve common economic goals (Putnam, 2000; Coleman, 1988). This perspective emphasizes the positive role of social capital in strengthening social cohesion and facilitating development outcomes. However, such interpretations tend to treat social capital as a pre-existing asset, thereby overlooking the processes through which it is constructed, reconfigured, and transformed in everyday social life.

Critical scholars have challenged this static understanding by highlighting the relational and power-laden nature of social capital. For instance, Bourdieu (1986) conceptualizes social capital as a form of capital embedded within social structures that can reproduce inequality and reinforce existing power hierarchies. Similarly, Woolcock (1998) emphasizes the importance of linking social capital across different institutional levels, suggesting that access to networks is uneven and often shaped by structural constraints. These perspectives shift the focus from viewing social capital as inherently beneficial to understanding it as a dynamic and contested process.

Building upon these critical perspectives, recent debates conceptualize social capital as something that is continuously produced, negotiated, and reconfigured through social practices and economic activities (Lin, 2001; Portes, 2014). This processual perspective highlights the importance of examining everyday livelihood practices as key sites where social relations are enacted, sustained, and transformed. In this regard, community-based economic activities provide a valuable lens for understanding how social capital emerges through ongoing interactions, cooperation, and shared experiences.

Beekeeping represents one such community-based livelihood. Unlike many household economic activities, beekeeping relies on shared ecological resources, seasonal flowering cycles, continuous knowledge exchange, and collaborative relationships among producers, local communities, government agencies, and market actors. These characteristics require sustained interaction, mutual trust, and collective coordination, making beekeeping an appropriate empirical setting for examining how social capital is actively produced and reconfigured through everyday collaborative practices. Previous studies have demonstrated that beekeeping contributes to livelihood diversification, strengthens local capacities, and supports sustainable rural development (Ananga & Naiga, 2023; El Agrebi et al., 2021). However, existing research has primarily emphasized its economic and developmental outcomes, while paying relatively limited attention to the social processes through which participation, social capital, and collective agency are co-produced.

Na Bon District in Nakhon Si Thammarat Province provides a particularly relevant setting for examining these processes. Like many rural communities in Southern Thailand, households have traditionally depended on rubber plantations and oil palm cultivation as their primary sources of income. However, declining rubber prices and fluctuations in oil palm prices have increased economic uncertainty, encouraging many households to seek supplementary sources of livelihood. In response to these changing socio-economic conditions, community-based beekeeping has gradually expanded as an alternative livelihood strategy that utilizes local ecological resources while creating additional household income. Supported by local knowledge, community cooperation, and collaboration with government agencies, beekeeping has evolved beyond an individual income-generating activity into a community-based economic practice. This transformation provides an important context for examining how livelihood practices reshape social relations, strengthen participation, and foster collective forms of action within rural communities.

The success of community-based beekeeping depends not only on technical knowledge but also on the active participation of diverse community actors. Beekeepers regularly exchange practical knowledge, share equipment and production resources, coordinate production and harvesting activities, and collectively engage with government agencies and market actors. These everyday interactions illustrate that participation is embedded within routine livelihood practices rather than emerging only after strong social capital has already been established. Contemporary scholarship therefore suggests that participation should be understood as a dynamic social practice through which individuals negotiate roles, exercise agency, and engage with broader socio-economic structures (Cornwall, 2008; Gaventa, 2004). Through these ongoing interactions, participation contributes to the emergence of collective agency, defined as the capacity of communities to act together in shaping their own economic and social trajectories.

Although previous studies acknowledge the importance of social capital in rural development, they continue to conceptualize it primarily as a pre-existing community resource. Far less attention has been devoted to understanding how everyday livelihood practices actively generate, negotiate, and transform social capital

through participation. Consequently, the relational processes through which livelihood practices give rise to collective agency remain insufficiently understood, particularly within rural communities in the Global South.

Addressing this gap, this study examines how community-based beekeeping reconfigures social capital and facilitates the transition from livelihood practice to collective agency in Na Bon District, Nakhon Si Thammarat Province, Thailand. Drawing on a phenomenological approach, the research explores the lived experiences of community members and investigates how social relations, participation, and economic practices are mutually constituted through everyday livelihood activities. In doing so, the study contributes to the reconfiguration of social capital theory by conceptualizing social capital as a dynamic, relational, and processual construct within community-based economic development.

Research objectives

- To examine how community-based beekeeping reconfigures social capital through everyday livelihood practices.
- To analyze the role of community participation as a mechanism shaping social relations, trust, and collaborative economic activities.
- To explore how beekeeping contributes to the emergence of collective agency and community economic development.
- To contribute to the theoretical reconceptualization of social capital as a dynamic, relational, and processual construct in rural development contexts.

Literature Review

Rethinking Social Capital: From Resource to Process

Social capital has been widely conceptualized as a resource embedded in social networks that facilitates cooperation and collective action (Coleman, 1988; Putnam, 2000). These classical perspectives emphasize trust, reciprocity, and shared norms as essential elements contributing to social cohesion and economic development. Within this tradition, social capital is generally viewed as a pre-existing community asset that enables individuals and groups to cooperate more effectively in pursuing shared social and economic goals. However, such interpretations have been criticized for their tendency to portray social capital as inherently positive and universally accessible, while paying insufficient attention to the social processes through which it is created, maintained, and transformed.

Critical perspectives challenge this static interpretation by emphasizing that social capital is deeply embedded in power relations and unequal access to resources. Bourdieu (1986) argues that social capital is accumulated through durable social relationships that provide differential access to resources and opportunities, thereby contributing to the reproduction of social inequality. Likewise, Portes (2014) contends that social capital may generate exclusionary effects, as dense internal networks can reinforce group boundaries, restrict access to outsiders, and reproduce existing social hierarchies. These critiques demonstrate that social capital should not be understood solely as a beneficial community resource but also as a socially constructed phenomenon shaped by historical, institutional, and relational contexts.

More recent scholarship has moved beyond this resource-based perspective by conceptualizing social capital as a dynamic and relational process that is continuously produced through social interaction, participation, and everyday practices (Lin, 2001; Woolcock, 1998). Rather than treating social capital as a fixed asset possessed by communities, this perspective emphasizes how trust, reciprocity, and social networks are constantly negotiated, reinforced, and reconfigured through lived experiences and collaborative activities. Accordingly, the analytical focus shifts from asking whether communities possess social capital to examining how social capital emerges, evolves, and is reproduced through ongoing social practices within particular socio-economic contexts.

Contemporary transformations in post-industrial societies have further extended social capital beyond geographically bounded and exclusively face-to-face relationships. Institutional and digital networks increasingly enable social ties, information exchange, and reciprocal support to develop across spatial and

organizational boundaries (Castells, 2010; Ellison et al., 2007). These developments reinforce the need to conceptualize social capital as an evolving relational process rather than a fixed community resource.

Community Participation as Social Practice

Community participation is widely recognized as a central component of sustainable development and is commonly associated with empowerment, inclusivity, and local ownership (Cornwall, 2008). Traditional approaches conceptualize participation as a mechanism through which communities contribute to development processes, primarily through consultation, collaboration, and local involvement. However, such perspectives have been criticized for treating participation as a technical or instrumental process rather than a socially embedded practice. Gaventa (2004) argues that participation is fundamentally shaped by power relations and institutional arrangements, which influence who participates, how participation occurs, and whose voices are ultimately recognized. Accordingly, participation should be understood not merely as involvement in development activities but as a dynamic social practice through which individuals negotiate relationships, exercise agency, and collectively construct shared meanings and social identities.

This perspective is particularly evident in rural communities across Southeast Asia, where development initiatives frequently depend on collaborative relationships among local communities, government agencies, civil society organizations, and local markets. Rather than occurring only through formal planning processes, participation is embedded in everyday practices such as reciprocal labour exchange, collective resource management, local knowledge sharing, and community decision-making. These routine interactions strengthen social relationships and enhance communities' capacity to respond collectively to economic, social, and environmental challenges.

Evidence from Thailand further demonstrates that participation is closely associated with the development of social capital within community-based resource management and rural governance. Mahaarcha and Sirisunhirun (2023), for example, found that farmers' active participation in irrigation governance strengthened trust, cooperation, social networks, and collective decision-making, thereby improving institutional effectiveness and long-term resource management. This suggests that participation should be viewed not only as an outcome of existing social capital but also as an ongoing process through which social capital is continuously generated, reinforced, and transformed.

In this sense, participation becomes a key site for the production and transformation of social capital. Through participation, individuals establish networks, cultivate trust, exchange knowledge, and engage in collective action, thereby actively shaping both social relationships and local economic processes. Participation therefore functions as a generative mechanism through which communities continuously reproduce shared norms, reciprocal relationships, and collective capacities rather than simply reflecting pre-existing levels of social capital. Importantly, these processes also contribute to the emergence of collective agency, as communities progressively develop the capacity to organize, coordinate actions, and pursue shared development goals through sustained social interaction.

Community Economy, Collective Agency, and Livelihood Practices

The concept of community economy provides an alternative framework for understanding economic development beyond market-centric models. Gibson-Graham (2006) emphasizes diverse economic practices, including cooperation, reciprocity, and collective resource management, as central to community-based development. Within this framework, collective agency becomes a crucial analytical concept, referring to the ability of communities to mobilize resources, coordinate actions, and shape their own development trajectories. Unlike individual agency, collective agency emerges through shared practices, interactions, and institutional engagements, particularly within local economic activities.

Community-based livelihood practices provide an important empirical setting in which these processes become visible. Rather than functioning solely as income-generating activities, livelihoods create opportunities for repeated interaction, reciprocal exchange, collective learning, and the development of shared responsibilities among community members. Through these ongoing social practices, communities gradually strengthen

interpersonal trust, expand social networks, and enhance their collective capacity to respond to common challenges.

Beekeeping represents a particularly appropriate case for examining these dynamics because successful production depends on continuous cooperation rather than individual effort alone. Unlike many household livelihood activities, beekeeping relies on shared ecological resources, seasonal flowering cycles, coordinated hive management, regular knowledge exchange, and collective problem-solving among producers. Beekeepers must also cooperate in monitoring environmental conditions, exchanging technical knowledge, preventing disease outbreaks, maintaining production quality, and coordinating harvesting periods. Furthermore, collaboration with government extension agencies, local organizations, and market actors enables producers to improve production standards, expand marketing opportunities, and strengthen local value chains. These interdependent relationships make beekeeping not merely an economic activity but a socially embedded practice through which trust, reciprocity, social networks, and collective capacities are continuously developed.

Studies have shown that such livelihood practices can enhance local capacities, promote sustainable resource management, and strengthen community resilience (Ananga & Naiga, 2023; El Agrebi et al., 2021). Similar evidence has also been reported across Southeast Asia. In Indonesia, community-based rural development initiatives demonstrate that participatory governance, collaboration, and social innovation strengthen local resilience and sustainable rural development (Nadjib et al., 2023). Likewise, research in the Philippines indicates that participatory resource management encourages social learning, collective action, and long-term cooperation among community members (Allasiw et al., 2023). Complementing these findings, Yoopetch and Chirapanda (2024) argue that sustainable community development depends not only on economic opportunities but also on learning processes, local capabilities, and active participation in shaping development pathways. Collectively, these studies suggest that livelihood activities are not merely economic practices but also social processes through which relationships, trust, shared knowledge, and forms of collective agency are continuously constructed and strengthened.

Consequently, livelihood practices should not be viewed simply as outcomes of existing social capital. Rather, they constitute dynamic social arenas in which social capital is actively produced, negotiated, and continuously reconfigured through everyday participation, cooperation, and shared economic experiences. This perspective provides the theoretical foundation for understanding how community-based beekeeping contributes to the emergence of collective agency and the development of a community economy within rural development.

Research Gap and Theoretical Positioning

Although social capital and community participation have been extensively examined within rural development scholarship, existing studies have primarily focused on their developmental outcomes, such as improved livelihoods, community resilience, and local economic performance. Consequently, social capital is often treated as a pre-existing resource that facilitates participation and collective action rather than as a phenomenon that is itself produced through social practice.

Similarly, community participation is frequently conceptualized as either an outcome of development interventions or a mechanism for implementing development programmes. Far less attention has been devoted to understanding participation as a generative social process through which trust, reciprocity, social networks, and collective capacities are actively created, negotiated, and transformed within everyday livelihood activities. As a result, the dynamic relationships among participation, social capital, and collective agency remain insufficiently theorized.

This limitation is particularly evident in studies of rural livelihoods in the Global South, where economic activities are commonly evaluated in terms of productivity, income generation, and household welfare. Comparatively little attention has been paid to how everyday livelihood practices function as social arenas in which community members continuously construct relationships, exchange knowledge, negotiate shared identities, and strengthen collective capacities through repeated interaction and cooperation. Although

previous studies acknowledge that community-based livelihoods contribute to rural development, they generally assume that social capital already exists before collective economic activities take place. This assumption overlooks the possibility that livelihood practices themselves may constitute the very processes through which social capital is produced, reconfigured, and sustained over time.

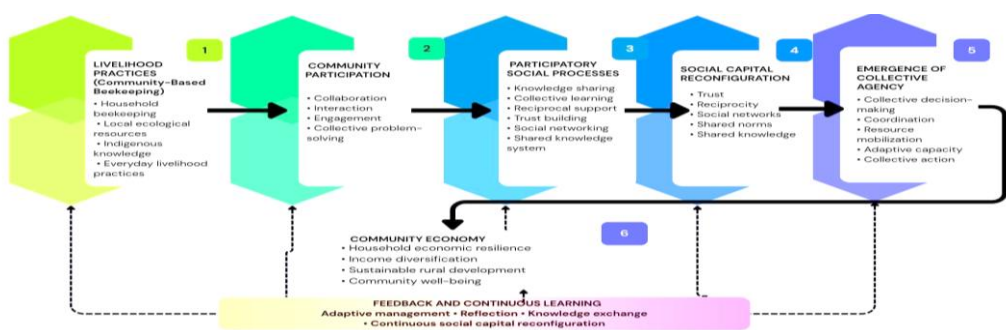
This study addresses these gaps by examining community-based beekeeping as a form of community economy through which social capital, participation, and collective agency are continuously produced and transformed. Drawing on Husserlian phenomenology, the study foregrounds the lived experiences of community members and explores how everyday economic practices shape social relations and collective action. Rather than viewing social capital as a fixed resource, the study conceptualizes it as a processual and relational phenomenon that emerges through participation, interaction, and shared livelihood practices.

Theoretically, this study advances the literature in three important ways. First, it reconceptualizes social capital as a dynamic and processual phenomenon that is continuously produced and reconfigured through everyday livelihood practices rather than existing as a stable community asset. Second, it positions community participation as a generative mechanism through which social capital is actively constructed, maintained, and transformed. Third, it explains how sustained participation in community-based livelihoods gives rise to collective agency, thereby providing an integrated theoretical framework for understanding the mutually constitutive relationships among livelihood practices, social capital, participation, and community economy in rural development.

Based on the reviewed literature and the identified research gaps, this study proposes a conceptual framework that explains the dynamic relationships among livelihood practices, community participation, social capital reconfiguration, and collective agency. As illustrated in Figure 1, community-based beekeeping is conceptualized not merely as an economic activity but as a participatory social process through which trust, reciprocity, shared knowledge, and social networks are continuously generated and transformed. These processes ultimately contribute to the emergence of collective agency and the development of a community economy.

Figure 1

Conceptual Framework of Social Capital Reconfiguration through Community-Based Beekeeping



Research Design

This study employed a qualitative research design grounded in phenomenology, drawing on the philosophical tradition of Edmund Husserl. Phenomenology seeks to explore and understand lived experiences by examining how individuals perceive, interpret, and construct meaning in their everyday lives (Husserl, 1997). Rather than focusing on external causal explanations, this approach emphasizes subjective experiences and the meanings participants attach to social practices and interactions.

In the context of this study, a phenomenological approach was adopted to explore how community members experience and interpret their involvement in community-based beekeeping and how these experiences contribute to the formation of social capital, community participation, and collective agency. The study focuses on participants’ lived experiences, meaning-making processes, and the relational dynamics that shape community-based economic development.

Study Site and Participants

The study was conducted in Na Bon District, Nakhon Si Thammarat Province, Southern Thailand (Figure 2), where community-based beekeeping has emerged as an important livelihood strategy and a mechanism for strengthening local economic resilience. The district was selected because community members have collectively developed beekeeping as an alternative livelihood in response to fluctuating agricultural incomes, particularly from rubber and oil palm cultivation. As shown in Figure 2, Na Bon District is located in the central part of Nakhon Si Thammarat Province, Southern Thailand, an area characterized by abundant forest resources and diverse flowering plants that provide favorable ecological conditions for beekeeping. The research focused on individuals directly involved in beekeeping activities and community development processes, including beekeepers, community leaders, and relevant local stakeholders.

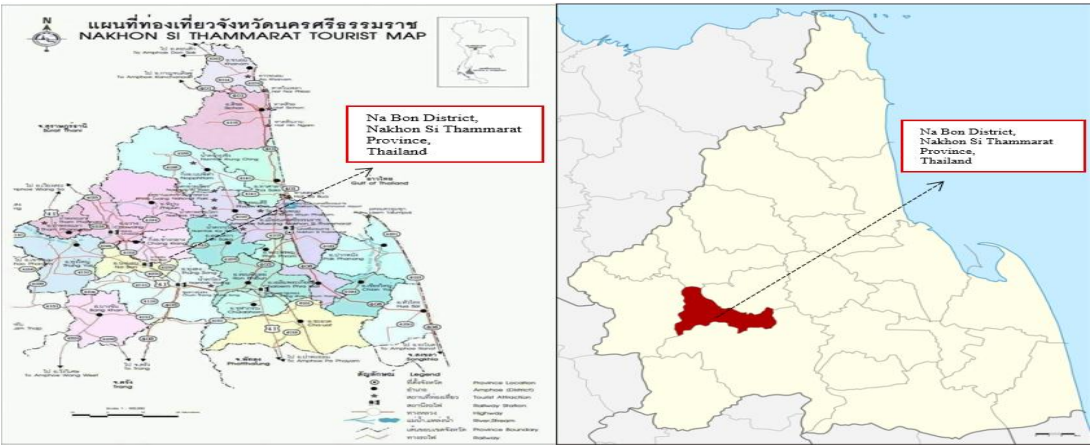


Figure 2. Location of Na Bon District, Nakhon Si Thammarat Province, Southern Thailand.
Source: Adapted from Institutional Repository Walailak University (2026).

Participants were selected using purposive sampling to ensure that all informants possessed direct experience and knowledge relevant to the research objectives. The participants consisted of community beekeepers, community leaders, and relevant local stakeholders involved in community-based beekeeping. Community beekeepers were required to have actively engaged in beekeeping activities for at least five years, while community leaders and local stakeholders were selected based on their direct involvement in supporting or coordinating community-based beekeeping initiatives. Snowball sampling was subsequently employed to identify additional participants through referrals from the initial informants, enabling access to diverse perspectives and social positions within the community network. In total, 15 participants took part in the in-depth interviews. Subsequently, eight participants representing the three participant groups were purposively selected to participate in a focus group discussion (FGD) to validate the emerging themes and deepen the interpretation of the findings (Table 1).

Table 1
Characteristics of Participants

Participant Group	Number	Selection Criteria	Contribution to the Study
Community beekeepers	10	Actively engaged in community-based beekeeping; at least 5 years of experience	Shared lived experiences of beekeeping practices, livelihood transformation, knowledge sharing, and community participation
Community leaders	2	Recognized leaders with knowledge of community development and beekeeping activities	Provided perspectives on community organization, participation, and local governance
Relevant local stakeholders	3	Representatives from organizations supporting community-based beekeeping and rural development	Provided insights into institutional support, knowledge transfer, and market linkages
Total	15	Purposive and snowball sampling	Diverse perspectives on the development of community-based beekeeping

A total of 15 unique participants were included in the study. All 15 participated in in-depth interviews, and eight of them also took part in the focus group discussion. Their extensive involvement in beekeeping and community development provided rich experiential knowledge regarding livelihood transformation, social relationships, and collective action. Community leaders also facilitated access to local networks and provided contextual insights that enhanced the depth and relevance of the data collected.

Data Collection

Data were collected over a five-month period through multiple qualitative methods to generate a comprehensive understanding of participants' lived experiences and the processes through which social capital and collective agency emerged within the community.

First, in-depth interviews were conducted with all 15 participants. The interviews explored participants' experiences, perceptions, motivations, and interpretations of beekeeping practices, community participation, knowledge sharing, and livelihood transformation. A semi-structured interview format was employed to allow participants to freely express their experiences while ensuring consistency across interviews.

Second, a focus group discussion involving eight participants was conducted to explore collective experiences, shared meanings, and community dynamics associated with beekeeping activities. The discussion generated insights into collaborative learning, collective decision-making, and community problem-solving processes.

Third, non-participant observation was conducted on 20 occasions throughout the fieldwork period. Observations focused on beekeeping activities, community meetings, training programs, knowledge-sharing practices, and interactions among community members. These observations provided contextual understanding of everyday practices and social relationships that could not be fully captured through interviews alone.

Fourth, document analysis was undertaken using local records, community reports, project documents, and relevant secondary sources. Documentary materials were used to contextualize empirical findings and strengthen methodological triangulation.

Data collection followed an iterative process in which emerging insights informed subsequent interviews, observations, and discussions. The process continued until thematic saturation was achieved, meaning that no substantially new themes or insights emerged from additional data collection.

Data Analysis

Data were analyzed using a phenomenological interpretive approach informed by Husserlian phenomenology. The analytical process began with repeated readings of interview transcripts, field notes, observational records, and documentary materials to gain familiarity with participants' lived experiences and interpretations of community-based beekeeping.

To maintain phenomenological sensitivity, the researcher engaged in reflexive bracketing throughout the analytical process in order to minimize the influence of prior assumptions and remain attentive to participants’ perspectives. Significant statements relating to participants’ experiences of beekeeping, community participation, social relationships, and collective action were identified and organized into meaningful units.

Thematic analysis was subsequently employed as an analytical technique to systematically organize and interpret the data. Initial codes were generated inductively from the empirical materials and continuously refined through constant comparison across interviews, focus group discussions, observations, and documentary sources (Table 2). Related codes were then grouped into higher-order themes representing the processes through which social capital was formed, participation was enacted, and collective agency emerged within the community.

Table 2
Illustration of the Thematic Coding Process

Informant Code	Participant Role	Sample Excerpt	Interview	Initial Code	Interpretive Meaning	Category	Theme
BK01	Community beekeeper	“We started sharing techniques...”		Knowledge sharing	Practical knowledge is collectively produced through repeated interaction	Community participation	Social capital reconfiguration
BK04	Community beekeeper	“Honey income helps us...”		Supplementary income	Beekeeping reduces vulnerability during agricultural price fluctuations	Livelihood adaptation	Household resilience
CL01	Community leader	“We meet regularly...”		Collective decision-making	Regular meetings transform individual practices into coordinated action	Group collaboration	Collective agency
ST02	Local stakeholder	“Government agencies provided training...”		Institutional support	External institutional connections expand access to technical resources	External networking	Linking social capital
BK07	Community beekeeper	“We exchange ideas...”		Collective learning	Experience-sharing creates a locally embedded shared knowledge system	Shared knowledge system	Social capital reconfiguration

To enhance analytical rigor, themes were repeatedly reviewed against the original data sources to ensure consistency, credibility, and interpretive validity. The final themes were interpreted through engagement with social capital theory and community economy perspectives, enabling the integration of participants’ lived experiences with broader theoretical explanations of community-based development.

Trustworthiness and Validity

Several strategies were employed to ensure the credibility, dependability, and trustworthiness of the study. Methodological triangulation was achieved through the integration of multiple data sources, including in-depth interviews, focus group discussions, non-participant observations, and document analysis. The use of diverse methods enabled cross-verification of findings and enhanced the robustness of interpretations. Credibility was further strengthened through prolonged engagement in the field over a five-month period, allowing the researcher to develop an in-depth understanding of the community context and participants’ experiences. Reflexivity was maintained throughout the research process to critically examine potential researcher biases and their influence on data collection and interpretation.

Dependability was supported through systematic documentation of research procedures, coding processes, and analytical decisions. In addition, the inclusion of participants with diverse social roles and experiences contributed to a more comprehensive understanding of the phenomenon under investigation. These procedures enhanced the overall trustworthiness of the findings and ensured that the analysis reflected multiple dimensions of lived experience within the community-based beekeeping context.

Results

Beekeeping as an Emergent Livelihood Practice

The Na Bon community, located in Na Bon District, Nakhon Si Thammarat Province, Southern Thailand, is characterized by ecological diversity, including forested hills, agricultural landscapes, and wetland ecosystems. These environmental conditions provide favorable habitats for various bee species, particularly stingless bees, which are commonly found nesting in trees, residential structures, and agricultural areas. Such ecological characteristics distinguish Na Bon from many other rural communities in Southern Thailand and have contributed to the development of community-based beekeeping as an alternative livelihood practice.

Initially, the presence of bees within household and farming areas was widely perceived as a disturbance and potential threat. Community members often attempted to remove bee colonies using smoke or physical methods to prevent bees from inhabiting residential spaces. However, repeated encounters with bees gradually altered local perceptions. Through observation and experience, villagers began to recognize the ecological importance of bees and their potential economic value as producers of honey and related products. This shift in perception marked the beginning of beekeeping as an emergent livelihood strategy within the community.

As one participant explained:

“At first, we were afraid of the bees and tried to drive them away from our homes. Later, we realized that they could generate income and become part of our livelihood.” (BK01)

Another participant reflected on the learning process involved in developing beekeeping practices:

“Nobody taught us formally. We learned by observing the bees, experimenting with different methods, and sharing experiences with one another.” (BK04)

These accounts illustrate how local knowledge was not transferred through formal training alone but emerged through experiential learning and continuous interaction with the environment. Through processes of observation, experimentation, and mutual learning, community members gradually developed practical techniques for hive management, including the construction of hive boxes using locally available materials. Knowledge was continuously adapted and refined according to local ecological conditions and collective experiences.

Importantly, the emergence of beekeeping was not solely an economic adaptation but also a social process through which villagers began to exchange knowledge, share experiences, and establish collaborative relationships. Early interactions surrounding hive management and bee conservation created opportunities for trust-building, reciprocal learning, and collective problem-solving among community members. These interactions gradually strengthened social ties and laid the foundation for broader forms of cooperation within the community.

From a phenomenological perspective, participants described beekeeping not merely as a means of generating income but as an activity that reshaped their relationships with nature, their neighbors, and the wider community. In this sense, beekeeping represents a socially embedded livelihood practice through which relationships between humans and nature are continuously reconfigured. At the same time, the practice facilitated the emergence of social capital by creating new spaces for interaction, knowledge exchange, and collective engagement. These processes provided the basis for subsequent forms of community participation and collective agency that developed through the expansion of beekeeping activities.

Beekeeping, Household Economic Resilience, and the Reconfiguration of Social Capital

At the household level, beekeeping functions as a supplementary economic activity that contributes to income generation while requiring relatively low investment. Households rely on locally available materials and indigenous knowledge to establish and maintain beekeeping practices with minimal financial input. Participants described how beekeeping emerged from everyday interactions with local ecology rather than formal training or institutional support. As one beekeeper reflected on the gradual shift in perception:

"At the beginning, we did not think much about the bees. They would come into our houses, sometimes under the roof or inside old wooden structures, and we saw them only as something disturbing our daily life. We would try to remove them, sometimes using smoke or other simple methods, but they kept returning. Over time, instead of only trying to chase them away, we began to observe them more carefully. We started to notice how they behaved, where they nested, and how they interacted with the environment around us. From these small observations, we slowly realized that what we once saw as a problem could actually become something meaningful for our livelihood. That is when we began to change the way we relate to them, not as pests anymore, but as part of our living environment that could also provide income if managed properly." (BK01)

This shift illustrates how livelihood transformation is grounded in experiential learning embedded in everyday human-nature interaction. Beekeeping is closely tied to environmental conditions. The absence of chemical use in agriculture is essential for sustaining bee populations, reinforcing environmentally sustainable practices within the community. A participant noted:

"In our experience, everything is connected. When people start using chemicals in their rubber gardens or crops, we immediately see the impact on the bees. Sometimes they disappear completely or move away to other areas. That is why many of us now try to avoid chemicals as much as possible. We have learned that if we want the bees to stay with us, we also have to take care of the environment around them, especially the forest areas and the plants that produce flowers. It is not just about protecting bees, but about maintaining a balance between our livelihood and nature." (BK04)

This interdependence highlights how economic practices are deeply embedded within ecological systems. Beyond income generation, beekeeping contributes to household economic resilience. Participants reported that income from honey production reduces financial vulnerability and reliance on external markets. One respondent explained:

"For our household, honey income may not be large, but it becomes very important during times when we have no other income, especially when rubber prices are low or when we cannot go to work every day. In those moments, even a small amount of money from honey helps us buy daily necessities and reduces pressure on the family. It gives us a sense that we still have something we can rely on within our own community." (BK01)

This account demonstrates that household economic resilience is experienced not only in material terms but also as a sense of security and self-reliance rooted in locally available resources and community-based support systems.

However, sustaining these livelihood benefits depends on continuous knowledge sharing, practical learning, and collaborative problem-solving among beekeepers. Participants explained that knowledge related to hive maintenance, honey harvesting, pest control, and environmental management is not acquired individually but is continually refined through observation, hands-on experience, and interaction with other members of the community. Traditional practices, including the use of locally available materials to prevent pests, are therefore preserved and improved through repeated exchanges among beekeepers rather than through formal training alone.

"I am very happy to have become involved in the community beekeeping activities because I do not have any other source of income. Beekeeping has provided me with additional earnings, but what is equally valuable is the opportunity to interact with and learn from other members of the community. We regularly exchange experiences, share practical knowledge, and help one another solve problems related to beekeeping. Through these interactions, I have gained not only new skills but also a stronger sense of belonging to the community." (BK07)

The above account demonstrates that knowledge exchange is embedded in everyday social interaction and functions as an important mechanism through which trust, reciprocity, and mutual support are strengthened among community members. Beyond its contribution to household income, beekeeping therefore serves as a mechanism for the production and reconfiguration of social capital at the household level. Participants described how knowledge regarding hive management, honey harvesting, and environmental conservation was regularly exchanged among relatives, neighbours, and fellow beekeepers, enabling households to access practical knowledge and collectively address production challenges. Economic resilience was therefore achieved not solely through income generation but also through continuous participation in knowledge sharing, reciprocal support, and collective problem-solving. These everyday interactions strengthened social relationships, expanded opportunities for collaborative learning and resource sharing, and ultimately contributed to the ongoing reconfiguration of social capital through community-based livelihood practices.

From Household Livelihoods to Community Economy through Participation

As beekeeping practices expanded, they evolved from individual household activities into a collective economic system at the community level. This transition was facilitated by processes of community participation, including group formation, knowledge sharing, and collaborative decision-making. Community members engaged in joint discussions to plan beekeeping strategies, exchange techniques, and address challenges such as environmental changes and pest management. These participatory processes enabled the circulation of knowledge and resources, strengthening both economic outcomes and social relationships within the community. A participant noted:

"At first, each household worked independently, but later we began sharing techniques and helping each other solve problems related to hive management." (CL01)

Participation extended beyond production activities to include market engagement, pricing strategies, and product development. Community members collaborated to create value-added products and establish connections with external markets, thereby expanding economic opportunities. These interactions also involved engagement with government agencies and external organizations, which provided technical support, training, and access to funding. Through these processes, beekeeping became a mechanism for transforming household-level activities into a broader community economy. This transformation reflects the role of participation as an active process through which economic practices are coordinated, negotiated, and expanded. Beyond economic coordination, participation also facilitated the reconfiguration of social capital. Through repeated interactions, community members developed stronger networks, reciprocal relationships, and shared norms that supported collective forms of economic organization. Participation therefore functioned not only as a mechanism for

economic expansion but also as a process through which social capital was continuously produced and transformed. A participant noted:

"After we formed the beekeeping group, it became much easier to collaborate with buyers and government agencies. Instead of working and selling individually, we were able to coordinate our efforts, negotiate better prices, and participate in training programmes that enhanced our beekeeping techniques and improved the quality of our honey products. Working together as a community has created far more opportunities than any of us could have achieved alone." (ST02)

Table 3 summarizes the iterative process through which household-level beekeeping evolves into a community economy through community participation. Rather than representing a linear sequence, the stages illustrate a dynamic and mutually reinforcing process in which knowledge sharing, collaborative decision-making, and institutional engagement continuously reshape social relationships. As participation expands, livelihood practices become embedded within a community economy characterized by cooperation, shared resource management, and collective governance.

As shown in Table 3, social capital is progressively reconfigured through successive stages of participation. Initial interactions generate trust and experiential knowledge exchange, which gradually develop into reciprocal relationships, shared norms, and broader institutional linkages. These cumulative processes ultimately strengthen collective capacities, enabling the emergence of collective agency and the development of a sustainable community economy.

Table 3
Process of Social Capital Reconfiguration through Community-Based Beekeeping

Stage	Livelihood Practices	Participatory Mechanisms	Social Capital Reconfiguration Process	Collective Outcomes
Emergence	Household experimentation	Informal interaction	Initial trust formation and experiential knowledge exchange	Livelihood adaptation
Group formation	Sharing equipment	Collaborative meetings	Reciprocity, mutual support, and network expansion	Group coordination
Production development	Joint production	Collective learning	Shared norms, collective learning, and strengthened bonding ties	Production capacity
Market integration	Joint marketing	Institutional collaboration	Linking social capital and external resource mobilization	Market expansion
Institutionalization	Continuous evaluation	Collective governance	Sustained social networks and adaptive collective capacity	Collective agency and community economy

Furthermore, Table 3 demonstrates how these participatory processes contribute to the co-production of social capital and the emergence of collective agency. Through repeated interactions, trust, reciprocity, social networks, and shared norms are progressively reinforced, enabling community members to coordinate actions, mobilize resources, and respond collectively to emerging challenges. Rather than simply summarizing the development process, Table 3 provides an analytical framework that explains how participation mediates the continuous reconfiguration of social capital and facilitates the transition from household livelihood practices to a community economy.

Co-production of Social Capital and Collective Agency

The analysis of community-based beekeeping in the Na Bon community demonstrates how social capital and collective agency are continuously generated through the interaction of ecological resources, social relationships, and locally embedded knowledge systems. Rather than existing as fixed or pre-established resources, both social capital and collective agency are dynamically reconfigured through everyday livelihood practices and collective participation. Social capital develops through ongoing relationships of trust, cooperation, and mutual support among community members, while a shared knowledge system emerges through the integration of local experience, collective learning, and external technical support, enabling the community to adapt continuously to changing environmental and economic conditions. Together, these

mutually reinforcing processes strengthen collective capacities that enhance household economic resilience and community-level coordination.

Importantly, these capacities are not static assets but are continuously reproduced through everyday social and economic interaction. Beekeeping functions as a relational livelihood practice in which economic production, environmental stewardship, and social relationships are closely interconnected. As community members engage in shared problem-solving, knowledge exchange, and collaborative decision-making, they simultaneously strengthen interpersonal relationships and expand their collective ability to respond to emerging challenges.

This process is reflected in participants lived experiences. One beekeeper described how a gradual change in everyday interaction with the local environment became a shared learning experience within the community:

"We did not start this as a business or even as something we thought would become an income source. At the beginning, bees would come into our houses and we only saw them as something disturbing our daily life. We tried many ways to remove them, but they always came back. Over time, instead of chasing them away, we began to observe their behavior more closely. We started sharing what we noticed with neighbors, and slowly we realized that these bees were not just part of nature around us, but something we could actually live with and learn from. That is how we started learning together, not from books or formal training, but from everyday experience." (BK04)

This account illustrates that learning emerged as a collective social process rather than an individual achievement. Knowledge was created through observation, shared experience, and continuous interaction among community members, gradually forming a shared knowledge system that supported both livelihood adaptation and stronger social relationships. At the community level, these learning processes gradually evolved into coordinated forms of collective organization. Beekeeping became more than an individual livelihood activity as members increasingly worked together to manage production, exchange technical knowledge, and coordinate market activities. A community leader explained:

"When we began to organize ourselves as a group, everything changed in the way we worked together. Before that, each household worked on its own, and we faced many problems alone, especially when pests attacked the bees or when we did not know how to improve production. But after forming a group, we started to meet regularly, discuss our problems openly, and share solutions. Some members had experience in building better hives, others knew how to manage pests, and some had connections with buyers outside the village. By bringing all of this together, we were able to solve problems faster, reduce losses, and sell our honey in a more organized way. It is not just about selling products anymore; it is about working together as one system." (BK07)

The quotation demonstrates that collective agency emerged through sustained coordination, complementary expertise, and shared responsibility rather than through the efforts of any single individual. Regular interaction enabled community members to mobilize diverse knowledge, coordinate production, and strengthen their capacity to respond collectively to economic and environmental challenges. Nevertheless, the findings also reveal that participation in these collective processes is uneven. Access to social networks, practical knowledge, and market opportunities varies according to the extent of members' involvement in community activities. One participant reflected:

"In our community, being part of the group makes a big difference. Those who join regularly and stay active in meetings tend to receive more information, more training opportunities, and better access to markets. But those who are not in the group or who rarely participate often miss out on these opportunities. Sometimes they want to join later, but they feel they are already behind because they do not have the same connections or knowledge. So even though we say everyone can participate, in reality, the level of benefit is not the same for everyone." (BK01)

This perspective highlights that social capital is relational rather than uniformly distributed. Participation creates valuable opportunities for learning, cooperation, and resource access, yet unequal levels of engagement also shape different capacities to benefit from collective action. The findings therefore reveal that social capital simultaneously enables inclusion while producing differentiated patterns of participation and access within the community.

Overall, the findings demonstrate that social capital should not be understood as a pre-existing community asset but as a dynamic social process that is continually generated, negotiated, reinforced, and reconfigured through participatory livelihood practices. Community-based beekeeping provides an empirical setting in which ecological resources, social relationships, and shared knowledge systems converge through everyday interaction. Through these ongoing processes, participation facilitates not only the development of social capital but also the emergence of collective agency, enabling community members to coordinate actions, mobilize resources, and shape their own development trajectories. These findings support a process-oriented understanding of rural development in which social capital and collective agency evolve together through sustained community-based economic practices.

Policy Implications: Scaling Collective Agency for Sustainable Rural Development

The findings of this study suggest that sustainable rural development extends beyond the provision of economic resources and depends fundamentally on the social processes through which participation, trust, knowledge exchange, and collective action are cultivated. The Na Bon experience demonstrates that community-based livelihood practices can generate broader forms of social capital and collective agency, offering important implications for rural development policy and practice. Rather than being driven primarily by resource endowment, sustainable development emerges through socially embedded practices that strengthen cooperation, learning, and community coordination over time.

First, development interventions should shift from top-down resource provision toward participation-centered facilitation. Rather than introducing externally designed projects, government agencies should invest in creating interaction spaces where community members can collaboratively engage in livelihood practices. In this context, beekeeping should be understood not merely as an economic activity but as a social platform that enables knowledge exchange, trust-building, and collective problem-solving.

Second, policies should prioritize strengthening the social and knowledge-based processes that sustain community participation and collective action rather than focusing solely on economic outputs. Programs designed only to increase household income are unlikely to produce sustainable rural development. Instead, integrated support mechanisms should simultaneously strengthen natural capital through biodiversity-friendly and chemical-free practices, foster shared knowledge systems through the integration of local experience and technical expertise, and reinforce social capital through continuous participation, collaborative learning, and practice-based interaction among community members. Such an integrated approach can enhance communities' capacity to adapt to changing environmental and economic conditions while sustaining long-term collective action.

Third, state agencies and non-governmental organizations should adopt a process-oriented approach to development. The findings indicate that social capital and collective agency are not static assets but are continuously reproduced through shared practices and participation. Policy frameworks should therefore move beyond short-term output indicators and support long-term engagement, iterative learning, and adaptive community-led experimentation.

Fourth, policymakers should invest in community facilitators or local brokers who can mediate relationships between external institutions and local actors. Such individuals play a critical role in translating knowledge, sustaining participation, and maintaining trust, thereby creating conditions that support the emergence and expansion of collective agency.

Finally, policies should seek to institutionalize collective agency through the strengthening of community-level governance structures. This may include supporting cooperatives, producer groups, and informal networks that enable communities to manage production, access markets, and negotiate with external stakeholders. Such efforts can enhance community autonomy and reduce dependency on externally driven development initiatives.

Overall, the Na Bon model suggests that scalable and sustainable rural development does not depend on replicating specific livelihood activities such as beekeeping itself, but on replicating the social processes through which participation, social capital, and collective agency are generated. Policies that recognize and invest in these processes are more likely to produce resilient, inclusive, and context-sensitive development outcomes.

Discussion

This study contributes to ongoing theoretical debates on social capital and rural development by challenging the dominant assumption that social capital is a stable and pre-existing resource. In contrast to conventional perspectives that conceptualize social capital as an asset facilitating cooperation and coordination within communities (Putnam, 2000), the findings from the Na Bon community demonstrate that social capital is continuously produced, negotiated, transformed, and reconfigured through everyday economic practices. In this sense, beekeeping is not merely an economic livelihood but a generative site where social relations are actively constructed and reshaped.

The case of community-based beekeeping in Southern Thailand illustrates that livelihood practices themselves function as social infrastructures through which trust, reciprocity, and networks emerge. Rather than being a precondition for economic cooperation, social capital is an outcome of iterative interactions embedded in ecological and economic activities. This extends processual and relational perspectives on social capital (Lin, 2001; Portes, 2014) by empirically grounding them in rural, ecology-dependent livelihoods where survival and cooperation are tightly interwoven. This interpretation is also consistent with Toyon's (2022) argument that social capital should be understood as an interactive configuration of resources, relations, and returns rather than a fixed community asset. The Na Bon case further demonstrates that these dimensions are continually reproduced through everyday livelihood practices and collective participation.

A key contribution of this study lies in reinterpreting community participation not as a secondary effect of social capital but as a constitutive mechanism in its production. Participation in the Na Bon community operates through group formation, shared experimentation, collective problem-solving, and engagement with external institutions. These practices enable the coordination of resources and the expansion of economic activities while simultaneously reshaping social relations. This finding aligns with critical participation scholarship (Cornwall, 2008; Gaventa, 2004), while extending it by demonstrating that participation is not only shaped by power relations but also actively produces new forms of economic capacity at the community level.

Importantly, the study highlights the emergence of collective agency as a relational outcome of these participatory processes. Collective agency is not simply the aggregation of individual intentions but is constituted through sustained interaction, shared knowledge, and coordinated action. In the Na Bon context,

this is evident in the formation of beekeeping groups, the development of shared production strategies, and the ability of community members to collectively engage with markets and governmental actors. This finding contributes to rural development literature by linking social capital and participation to the production of collective agency as a distinct analytical category of community transformation.

Beyond the local context, the findings have broader theoretical implications for social capital theory in global development studies. In contrast to dominant Western-centric models that treat social capital as a relatively stable and institutionalized resource (Putnam, 2000; Coleman, 1988), the Na Bon case demonstrates that in Global South rural contexts, social capital is more fluid, emergent, and deeply embedded in livelihood practices. Economic activities such as beekeeping operate simultaneously as economic, ecological, social, and institutional processes, thereby producing and reconfiguring social capital through practice rather than merely mobilizing it as a pre-existing condition.

When compared to dominant conceptualizations of social capital derived from Global North contexts, the case of Na Bon offers important theoretical contrasts. In many established studies, particularly those based on urbanized and institutionally dense settings, social capital is often assumed to operate within relatively stable institutional frameworks where trust and cooperation are reinforced by formal governance structures (Putnam, 2000; Coleman, 1988). In such contexts, social capital is typically treated as an enabling resource that enhances coordination within already-structured systems.

In contrast, the Na Bon case demonstrates that in rural, ecology-dependent communities of the Global South, social capital emerges under conditions of institutional fluidity and environmental uncertainty. Here, cooperation is not primarily supported by formal institutions but is generated through livelihood practices that directly depend on ecological systems. Beekeeping functions simultaneously as an economic, ecological, and social practice, thereby collapsing the distinction between production and social organization. This challenges conventional models that conceptualize social capital as a stable resource and suggests that social relations are continuously reconfigured through interactions between livelihoods, ecological conditions, and community practices. Similar dynamics have been observed in informal agrifood systems in the Global South, where coordination emerges through everyday livelihood interactions rather than formal institutional arrangements (Salman et al., 2026).

Furthermore, unlike Western-centric frameworks that tend to separate economic activity from social relations, the Na Bon case illustrates their deep entanglement. Trust, reciprocity, and collective coordination are not preconditions for economic activity but are continuously produced through it. This suggests that existing theories of social capital may benefit from contextual refinement when applied to rural Global South settings, where livelihood security, ecological dependence, and collective survival are tightly interwoven.

These findings also have broader implications for understanding social capital in post-industrial societies, where social relationships increasingly extend beyond geographically bounded communities and are mediated through institutional and digital networks (Castells, 2010). While the present study focuses on face-to-face interactions within a rural community, its processual perspective suggests that social capital is generated through continuous social interaction rather than confined to particular organizational or technological settings. This interpretation is consistent with research demonstrating that social capital may be cultivated through both offline and online social networks, provided that sustained interaction, trust, and reciprocal exchange are maintained (Ellison et al., 2007). Consequently, the processual understanding of social capital advanced in this study may also provide a useful conceptual lens for examining how community relationships evolve in increasingly interconnected and digitally mediated societies.

At the same time, the findings reveal important tensions within these processes. The production of social capital and participation is not evenly distributed, and differential access to knowledge, networks, and resources may reproduce internal inequalities. This resonates with critical perspectives that emphasize the exclusionary dimensions of social capital (Bourdieu, 1986; Portes, 2014), highlighting that processes of community-based development can simultaneously generate cohesion and stratification. Notably, these

disparities are often intertwined with localized gender dynamics, as socio-cultural expectations may condition the degree to which women and men can access and actively mobilize these emerging networks. These tensions underscore the importance of analyzing power relations and gender differentiation within participatory economic systems rather than assuming inherently positive or egalitarian outcomes.

The findings also carry practical implications for rural development policy and community-based economic initiatives. Development programs should move beyond viewing social capital as a pre-existing community asset and instead recognize the importance of supporting participatory livelihood practices through which social capital is generated and strengthened. Policies that facilitate knowledge sharing, collective learning, and collaboration among local producers may contribute not only to economic improvement but also to the development of collective capacities necessary for long-term community resilience and sustainability.

Overall, this study advances theoretical discussions by repositioning social capital as a dynamic, processual, and practice-based construct that is continuously reconfigured through livelihood activities and community participation. It further demonstrates that participation is not merely an outcome of social capital but a central mechanism through which it is generated and transformed. By linking these processes to the emergence of collective agency, the study offers an integrated framework for understanding community-based economic development in rural and Global South contexts.

Conclusion

This study has demonstrated that community-based beekeeping in the Na Bon community is not merely an income-generating activity but a dynamic social process through which social capital, participation, and collective agency are continuously co-produced and reconfigured. Moving beyond conventional perspectives that conceptualize social capital as a pre-existing and stable resource, the findings show that social capital is actively produced, negotiated, and transformed through everyday livelihood practices, particularly through collaboration, shared knowledge, and sustained engagement with both internal and external actors.

By tracing the transformation from household-level livelihoods to a broader community economy, this study highlights participation as the central mechanism linking individual economic activities to collective development outcomes. Participation enables the coordination of resources, strengthens trust-based relationships, and facilitates the emergence of collective agency, allowing rural communities to actively shape their own development trajectories rather than passively respond to externally driven interventions.

Theoretically, this study contributes to the advancement of social capital theory by conceptualizing social capital as a processual, relational, and practice-based phenomenon. The findings challenge static and resource-oriented interpretations by demonstrating that social capital is not simply a prerequisite for development but is continuously generated, maintained, and reconfigured through lived economic and social practices. Furthermore, the study reconceptualizes community participation as a generative mechanism through which social capital is produced while extending rural development scholarship by demonstrating how everyday livelihood practices serve as critical sites for the emergence of collective agency.

Practically, the findings suggest that sustainable rural development policies should move beyond narrowly economic interventions and instead prioritize participatory governance, shared knowledge systems, and multi-level institutional linkages. Supporting community-based economies requires attention not only to material resources but also to the social processes that foster trust, collaboration, reciprocal learning, and collective decision-making. Such an approach is particularly relevant for grassroots economies in the Global South, where livelihoods remain closely intertwined with ecological systems and community relationships.

In conclusion, the Na Bon case demonstrates that sustainable rural development is fundamentally shaped by the ways communities organize, interact, learn, and act collectively within their local contexts. Rather than being driven solely by external resources or institutional arrangements, development emerges through the continuous reconfiguration of social relationships embedded in everyday livelihood practices. By offering a process-oriented framework that integrates social capital, community participation, and collective agency, this

study provides a conceptual foundation that may inform future research and community-based development initiatives across rural communities in the Global South.

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