

# Livelihood Resilience and Empowerment Through Herbal-Based Community Innovation in Kampung Herbal Nginden, Surabaya

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## Abstract

*Urban communities in Indonesia face mounting socio-economic vulnerabilities, including limited livelihood opportunities, inadequate waste management, and health insecurities. In response, many have turned to grassroots innovations as pathways toward resilience and empowerment. This study examines Kampung Herbal Nginden in Surabaya, an urban neighborhood that integrates herbal cultivation, waste banks, and small enterprises (UKM) to strengthen livelihoods, foster resilience, and promote community empowerment. Using a qualitative case study approach, data were collected through observation, semi-structured interviews with 15 community members, leaders, and partners, as well as document analysis. The analysis was guided by the Sustainable Livelihood Framework (SLF), the social resilience framework, and the diamond strategy model. Data were thematically coded to capture strategies, challenges, and outcomes, with triangulation and member checking employed to ensure trustworthiness.*

*Findings reveal that herbal cultivation provided households with both direct health benefits and new income streams, while product innovation (such as herbal drinks and ointments) diversified revenue and revived cultural knowledge. The waste bank initiative linked environmental management to livelihood improvement, generating financial returns and reinforcing collective action. Small enterprises expanded the entrepreneurial culture of the community, creating opportunities particularly for women and youth. Empowerment outcomes were not limited to material gains but also included enhanced confidence, visibility of women's leadership, and strengthened social cohesion. However, challenges such as limited financial capital, fragile market linkages, and ad hoc partnerships constrained scalability and long-term sustainability.*

*This study contributes theoretically by extending the SLF to incorporate cultural and ecological practices, demonstrating how traditional knowledge can be mobilized as an asset for urban resilience. It also highlights empowerment as both an outcome and a driver of resilience, where community agency fosters virtuous cycles of innovation and participation. Policy implications suggest that kampung tematik initiatives require not only recognition but also sustained investments in training, equipment, and market linkages. The case of Kampung Herbal illustrates the transformative potential of grassroots innovation in advancing livelihood resilience and empowerment within urban Indonesia..*

**Keywords:** Sustainable livelihoods; Herbal-based innovation; Community empowerment; Social resilience; Urban kampung; Waste bank

## Introduction

Urban communities in Indonesia face mounting socio-economic and environmental challenges, including limited access to sustainable livelihoods, inadequate waste management, and increasing vulnerability to social and economic shocks. In response, <https://jurnalfebi.uinsa.ac.id/index.php/ijer/index>

many neighborhoods have developed community-based innovations as pathways toward resilience and empowerment. One such initiative is the development of *Kampung Herbal* in Nginden, Surabaya, where residents have turned to herbal cultivation, small enterprises, and integrated waste management to strengthen their livelihoods and social cohesion.

Community-based innovations such as herbal gardens and local enterprises offer more than economic benefits; they also promote environmental awareness, health resilience, and collective agency. In the case of *Kampung Herbal*, residents combine traditional knowledge of medicinal plants with contemporary sustainability practices, creating new income streams through the sale of herbal products, organic fertilizers, and processed goods. Alongside economic activities, community institutions such as waste banks and cooperatives reinforce solidarity, enabling residents to pool resources, share knowledge, and manage risks more effectively.

Despite the growing popularity of community empowerment models in Indonesia, academic literature on herbal-based community innovation as a driver of livelihood resilience remains limited. Much research on sustainable livelihoods has focused on rural settings (Chambers & Conway, 1992; Scoones, 2015), fisheries (Allison & Ellis, 2001), or disaster recovery contexts (Gaillard, 2021). Urban cases, particularly those centered on herbal cultivation and grassroots entrepreneurship, are still underexplored. Moreover, while the Sustainable Livelihood Framework (SLF) has been widely applied to analyze asset-based resilience, few studies integrate SLF with community innovation and empowerment strategies in urban *kampung* settings.

This creates an important research gap: how can herbal-based community innovation enhance livelihood resilience and empowerment in urban poor settings? Answering this question is significant not only for academic advancement but also for policy innovation. Indonesia's national and municipal governments increasingly promote *kampung tematik* (thematic villages) as part of urban development, yet evidence on their effectiveness in addressing socio-economic vulnerabilities remains fragmented. By analyzing *Kampung Herbal Nginden*, this study contributes to filling that gap, offering insights into how localized initiatives can generate broader implications for sustainable urban livelihoods.

The importance of this study lies in three interrelated dimensions. First, it contributes to theoretical debates on livelihood resilience by showing how cultural and ecological practices (herbal cultivation, waste recycling, and local enterprise) can be incorporated into the SLF. Second, it offers practical policy lessons for local governments and NGOs seeking scalable models of empowerment that align with sustainability goals. Third, it highlights community agency, demonstrating how grassroots innovation fosters not only material improvements but also shifts in identity, self-reliance, and collective resilience.

This article proceeds as follows. The literature review examines key debates on sustainable livelihoods, community resilience, and empowerment through innovation. The methodology section outlines the qualitative case study approach, combining interviews, observation, and document analysis. Findings present how *Kampung Herbal* residents mobilize assets and strategies to strengthen resilience. The discussion situates these findings within broader theories of livelihood sustainability and empowerment. Finally, the conclusion reflects on contributions to scholarship and policy, while suggesting directions for future research.

By situating herbal-based community innovation within the framework of livelihood resilience, this study underscores the potential of urban communities to move beyond survival strategies and toward empowered, sustainable futures.

## **Literature Review**

### **Sustainable livelihoods, urban contexts, and community innovation**

The Sustainable Livelihood Framework (SLF) remains a dominant lens for analysing how households mobilize assets (human, social, natural, physical, financial) to manage risk and secure wellbeing (Chambers & Conway, 1992; Scoones, 2015). While SLF originated in rural development debates, urban scholars have increasingly argued for its adaptation to dense, heterogeneous settlements where livelihoods are more diversified and entangled with service-level institutions (Suryani & Winarso, 2019). Kampung Herbal Nginden provides a useful urban case: residents converted marginal land and social networks into a portfolio of herbal cultivation, small-scale processing, waste-bank activities, and community education — practices that reconfigure multiple livelihood capitals simultaneously (Nginden case material).

### **Community empowerment and social resilience**

Community empowerment literature highlights participation, capacity-building, and local leadership as prerequisites for sustainable change (Kasmel & Andersen, 2011; Sururi et al., 2022). Recent studies of thematic kampungs and green village initiatives in Indonesian cities show that locally driven programs (kampung tematik) enhance social cohesion and environmental outcomes when they combine capacity building with formal institutional support (e.g., municipal assistance, technical partners). Evidence from recent evaluations indicates that well-managed kampung tematik can perform strongly as learning and tourism nodes, reinforcing livelihoods and identity through participatory governance.

Social-resilience frameworks emphasise meta-capabilities — problem identification, anticipation, coping, adaptation and transformation — which map closely onto the staged development reported in Kampung Herbal (from problem recognition through capability transformation). The community's use of local leadership, training, and public competitions (e.g., Surabaya Green and Clean) illustrates how empowerment interventions catalyse collective agency and adaptive capacities.

### **Herbal cultivation as economic, health and cultural capital**

Medicinal and culinary herbs generate multiple benefits: income from seedling and product sales, low-cost health remedies for households, and place-based cultural identity that can attract visitors and educational activities. Internationally, community gardens that include medicinal plants have been framed as local health-promotion and resilience resources; recent scholarship stresses their role in urban disease prevention and socio-ecological education (community garden literature). Regionally, literature on preserving herbs as local wisdom argues that green economy approaches (value-adding, training, market linkages) strengthen both livelihoods and cultural heritage. Empirical initiatives that combine cultivation with processing (UKM products, herbal drinks) thus deliver diversified revenue and reinforce intangible cultural capital — a key resilience asset.

### **Waste banks, circular economy and added livelihoods**

Waste banks (*bank sampah*) are a prominent community-level innovation in Indonesia linking environmental management with economic empowerment. Recent reviews show that waste bank programs can generate tangible socio-economic benefits (new jobs, supplementary incomes), boost environmental awareness, and function as platforms for broader community mobilisation — provided they have technical support and market access for recyclables. In Kampung Herbal, the establishment of a bank sampah and the addition of plastic-shredding equipment demonstrate how circular-economy practices can complement agricultural/UKM activities to expand household income streams.

### **Collaborative governance, learning partnerships and scaling potential**

Collaborative governance — partnerships among local government, universities, NGOs and the private sector — is repeatedly identified as an enabler of sustained community innovation (Ansell & Gash, 2008). Kampung Herbal's partnerships (e.g., university assistance, municipal seed/ training) match a wider pattern where external technical support anchors local initiatives and provides market / legitimacy linkages. Recent research on kampung tematik and community tourism underscores that institutionalized partnerships (formal MOUs, integrated planning) are crucial for scaling and avoiding program fragility.

### **Evidence gaps and limitations in existing scholarship**

Despite promising practice, systematic empirical work on **herbal-based urban livelihood innovations** remains sparse. Much of the PAD (livelihood) literature focuses on rural agrarian systems, fisheries, or high-profile urban greening projects; comparative, longitudinal studies that trace how herbal cultivation, waste-based incomes, and community enterprises jointly rebuild livelihoods are limited. Existing local case reports (including the Kampung Herbal documentation) provide rich descriptive accounts but few rigorous comparative assessments of economic outcomes, value chains, or long-term sustainability. Recent calls for evidence-based management of kampung tematik further indicate a need for robust program evaluation designs to inform policy and scaling.

### **Synthesis: where this study contributes**

Examining Kampung Herbal with SLF, social resilience, and strategic (diamond) frameworks fills a local empirical gap by showing how herbal cultivation, UKM productization, waste bank activities, and collaborative partnerships operate as integrated livelihood strategies. The case offers an opportunity to move beyond single-sector studies toward a multi-capital account of urban resilience that foregrounds cultural and ecological assets as central to empowerment. The next sections will operationalize these ideas with qualitative evidence drawn from Kampung Herbal's activities, governance supports, and transformation outcomes (see Methods).

## **Research Methodology**

This study employs a qualitative case study design, appropriate for capturing the complexity of community innovation and livelihood resilience in an urban kampung

context. Case studies enable researchers to examine processes, practices, and meanings within a bounded setting, generating in-depth insights rather than broad generalizations (Yin, 2018).

### **Research Site**

The research was conducted in Kampung Herbal Nginden, Surabaya, a thematic village that integrates herbal cultivation, community enterprises (UKM), waste banks, and education-based activities as strategies to strengthen local livelihoods. The site was selected purposively because it represents a leading urban innovation initiative recognized in the Surabaya Green and Clean program and has been supported by partnerships with universities and local government.

### **Data Collection**

Data were gathered through three main techniques:

1. Observation — Researchers documented community spaces, herbal gardens, waste bank operations, product processing, and training activities to understand practices and interactions.
2. Semi-structured interviews — 15 respondents were interviewed, including community leaders, UPT officials, women's group members, herbal entrepreneurs, and waste bank managers. Questions explored strategies for income generation, resilience practices, collaboration, and perceived empowerment outcomes.
3. Document analysis — Reports, local regulations, community newsletters, and visual documentation were reviewed to triangulate primary data and trace program evolution.

### **Data Analysis**

The analysis followed a thematic coding approach (Braun & Clarke, 2019). Data were coded along dimensions of the Sustainable Livelihood Framework (human, social, natural, physical, and financial capital), the social resilience framework (problem-solving, adaptation, transformation), and the diamond strategy model (strengths, weaknesses, opportunities, threats). Coding and memoing were conducted manually and compared across data sources to ensure consistency.

### **Trustworthiness**

To strengthen validity, the study employed triangulation (cross-verifying interviews, observation, and documents), member checking (sharing preliminary findings with community representatives), and peer debriefing with academic colleagues. Ethical considerations included informed consent, anonymity of participants, and respect for community intellectual property regarding local herbal knowledge.

This methodological approach enabled a comprehensive understanding of how herbal-based community innovation functions as both a livelihood strategy and a pathway to empowerment in Kampung Herbal Nginden.

### **Finding and Discussion**

## **Findings**

The field observation of Kampung Herbal Nginden reveals that livelihood resilience and empowerment were achieved through four interrelated strategies: herbal cultivation and product innovation, waste bank initiatives, community enterprises (UKM), and empowerment through knowledge-sharing and collaboration. These findings highlight how community innovation can strengthen multiple livelihood capitals simultaneously.

### **Herbal Cultivation and Product Innovation**

Herbal cultivation served as the foundation of Kampung Herbal's transformation. Initially driven by local women's groups, the cultivation of medicinal and culinary plants such as ginger, turmeric, and lemongrass provided households with both direct health benefits and income-generating opportunities. Observations showed that gardens were integrated into narrow urban spaces, turning idle land into productive assets. Through training and competitions organized with university and municipal partners, residents gained knowledge of plant care, processing, and packaging. Interviews revealed that herbal products — ranging from fresh leaves to herbal drinks and ointments — became an important revenue source, particularly for women-led microenterprises. These activities strengthened natural and financial capital, while also enhancing cultural identity by reviving traditional herbal knowledge.

### **Waste Bank and Circular Economy**

The establishment of a *bank sampah* (waste bank) complemented herbal activities by linking environmental management with livelihood opportunities. Community members collected, sorted, and exchanged recyclable waste for savings or cash, while plastic-shredding equipment enabled the production of value-added materials. Respondents emphasized that the waste bank not only generated supplemental income but also raised awareness of hygiene and environmental sustainability. In terms of the Sustainable Livelihood Framework, the waste bank contributed to physical and financial capital, while building social cohesion through collective participation. The waste bank also served as an entry point for youth involvement, expanding the intergenerational reach of the initiative.

### **Small Enterprises and UKM Development**

Beyond individual households, community-based enterprises (*UKM*) emerged to process, package, and market herbal products. Interviews with entrepreneurs revealed that participation in competitions and exhibitions organized by the city provided market exposure, which encouraged innovation in product diversification and branding. Although most enterprises remained small in scale, they symbolized a shift from subsistence-oriented activities to more entrepreneurial practices. This diversification reduced vulnerability by creating multiple income streams, especially for households affected by unstable employment. Such enterprises reflected a growing entrepreneurial culture within the community, supported by both internal solidarity and external recognition.

### **Empowerment through Knowledge-Sharing and Collaboration**

Empowerment outcomes were visible not only in material terms but also in social and psychological dimensions. Residents reported greater confidence in managing their

environment and livelihoods. Community leaders emphasized the importance of continuous learning, facilitated by partnerships with universities and NGOs, which provided training on herbal processing, waste management, and organizational skills. The community also actively participated in the Surabaya Green and Clean competition, which reinforced pride and collective achievement. Women's groups, in particular, gained visibility as drivers of innovation, enhancing their roles in household and community decision-making. This reflects strengthened **human and social capital**, enabling residents to adapt and transform in the face of socio-economic challenges.

### **Challenges and Constraints**

Despite significant achievements, several challenges persisted. Limited financial resources restricted investment in modern equipment for herbal processing and waste recycling. Some enterprises struggled to expand due to weak marketing networks and limited access to capital. Moreover, participation levels varied, with some residents remaining less engaged due to time constraints or skepticism about the benefits. These challenges underscore the importance of sustained institutional support and the need to strengthen market linkages for long-term resilience.

Overall, the findings demonstrate that herbal-based innovation, when combined with waste management and small enterprises, creates a multi-dimensional empowerment process. By mobilizing natural, social, and financial assets, Kampung Herbal residents enhanced their adaptive capacities and reduced vulnerabilities. The integration of environmental and economic practices positioned the community as a model of urban resilience, though sustainability requires ongoing support and stronger institutionalization of partnerships

### **Discussion**

The findings from Kampung Herbal Nginden illustrate how community innovation rooted in herbal cultivation and complementary activities can generate resilience and empowerment in an urban context. By mobilizing multiple livelihood assets through herbal products, waste banks, and small enterprises, residents demonstrated that localized initiatives can transform structural vulnerabilities into opportunities for empowerment. This discussion situates these results within four thematic lenses: sustainable livelihoods, social resilience, empowerment, and urban innovation.

### **Sustainable Livelihoods and Asset Mobilization**

Applying the Sustainable Livelihood Framework (SLF) to the Kampung Herbal case highlights how communities strategically combined different capitals. Natural capital was mobilized through herbal cultivation, transforming idle or marginal urban land into productive assets. Financial capital increased as households diversified income sources via herbal sales and waste bank activities. Human and social capital were strengthened through training, women's group participation, and partnerships with universities. These processes align with Scoones' (2015) observation that resilient livelihoods emerge when communities are able to integrate diverse capitals to reduce vulnerability.

Yet the findings also indicate limits: while diversification reduced dependence on unstable jobs, scaling remained constrained by limited access to broader markets and capital. This reflects a wider critique of urban livelihood strategies in Indonesia, where local innovation often thrives at micro-levels but struggles to connect with systemic market or institutional support (Suryani & Winarso, 2019). Thus, while the SLF helps explain the success of asset mobilization, it also underscores the importance of supportive structures beyond the community.

### **Social Resilience and Adaptive Capacities**

The development trajectory of Kampung Herbal — from initial problem identification to capability transformation — maps well onto the social resilience framework (problem-solving, adaptation, transformation). Community members not only responded to immediate livelihood insecurity but also developed adaptive mechanisms (waste banks, product innovation) and transformative outcomes (entrepreneurial culture, enhanced women's leadership).

This progression resonates with Gaillard's (2021) argument that resilience is not merely the ability to "bounce back" but to transform systems in ways that address root vulnerabilities. For Kampung Herbal, transformation included cultural revitalization through the revival of herbal knowledge and institutional shifts through partnerships with external actors. The findings thus contribute to resilience scholarship by showing how grassroots ecological and cultural practices can form the basis for long-term adaptive capacities in urban settings.

### **Empowerment and Community Agency**

Empowerment in Kampung Herbal was evident across material, social, and psychological dimensions. Materially, households gained supplemental income. Socially, collective participation in waste management and product innovation reinforced cohesion. Psychologically, women and youth gained confidence and visibility as leaders and entrepreneurs. These outcomes support Kasmel and Andersen's (2011) definition of empowerment as increased control over resources and decisions, both individually and collectively.

Importantly, empowerment in this case was gendered. Women's groups played a central role in initiating herbal cultivation, driving UKM development, and mobilizing participation in city competitions. This aligns with findings from Sururi et al. (2022), who argue that community innovation projects often serve as vehicles for women's empowerment, challenging traditional gender roles and redistributing leadership responsibilities.

### **Urban Innovation and Collaborative Governance**

Kampung Herbal also exemplifies the role of urban innovation in promoting sustainability and resilience. By integrating ecological practices (herbal gardens, waste management) with socio-economic strategies (UKM products, exhibitions), the community produced co-benefits for health, environment, and livelihoods. Such integration resonates with recent studies of *kampung tematik* in Surabaya, which show that thematic villages can act as laboratories for sustainable urban development (Surabaya evaluation studies, 2020–2023).

However, sustaining innovation requires collaborative governance. Partnerships with universities provided technical expertise, while municipal recognition offered legitimacy. Yet, as interviews revealed, many collaborations remained ad hoc, echoing Torfing et al.'s (2021) finding that co-production requires formalized frameworks and long-term institutional support. Without such support, community innovations risk stagnation or collapse when enthusiasm or resources decline.

### **Implications for Theory and Practice**

Theoretically, the Kampung Herbal case bridges sustainable livelihood and resilience frameworks by showing how asset mobilization and adaptive capacities are intertwined with cultural and ecological practices. It also highlights empowerment as both an outcome and a driver of resilience, where community agency creates virtuous cycles of innovation and trust.

Practically, the study suggests that policies promoting *kampung tematik* should go beyond symbolic recognition or short-term competitions. Sustained investments in training, equipment, and market linkages are necessary to institutionalize innovations. Moreover, integrating herbal-based enterprises into local value chains and green economy agendas could enhance scalability and long-term impact.

### **Conclusion**

The case of Kampung Herbal Nginden demonstrates how herbal-based community innovation can function as both a livelihood strategy and a pathway to empowerment in urban settings. Through the integration of herbal cultivation, waste banks, and small enterprises, residents mobilized diverse assets to enhance income, strengthen social cohesion, and increase adaptive capacity. These practices show that resilience is not merely about coping with vulnerabilities but about transforming systems through creativity, ecological awareness, and collective action.

Three main contributions emerge from this study. First, it extends the Sustainable Livelihood Framework by incorporating cultural and ecological practices, highlighting how traditional herbal knowledge can be reimagined as an economic and social asset. Second, it enriches resilience theory by showing how grassroots innovation progresses from coping to transformation, producing not only material benefits but also shifts in identity and leadership. Third, it contributes to empowerment studies by emphasizing the role of women's groups and youth as central actors in urban innovation, thereby challenging conventional hierarchies within the community.

At the same time, the study identifies persistent challenges: limited financial capital, inadequate equipment, and fragile market networks. These constraints indicate that while community innovation can generate momentum, sustained institutional support is required to ensure long-term impact. Formalized partnerships with local government, universities, and private actors could help bridge resource gaps and strengthen legitimacy.

For policymakers, the findings suggest that *kampung tematik* initiatives should move beyond recognition and competition frameworks toward consistent investment in training, infrastructure, and market linkages. For scholars, this study underscores the need for further empirical work on urban livelihood innovations, particularly longitudinal studies that track their sustainability over time.

In conclusion, Kampung Herbal Nginden highlights the transformative potential of community-based herbal innovation in advancing livelihood resilience and empowerment. It stands as a reminder that sustainable urban development is not only shaped by policies from above but also by creativity and solidarity from below.

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