META-JOURNAL

Management Economics Trade and Accounting Journal (META JOURNAL)
https://abadiinstitute.org/index.php/META
Online 3031-0938

# Green innovation Bamboo House Jemparing Wangi: collaboration between Pertamina and residents of Kampung Papring, Banyuwangi

Original Article

**Narotama Aulia Fazri[1*], Surya Suganda[2], Jimmy Wijaya[3], Sudarmiatin[4], Trisetia Wijijayanti[5]**

[1-5]Management, Faculty of Economics and Business, Universitas Negeri Malang, Indonesia
Email: [1*)] surya.suganda.2504138@students.um.ac.id

**Received : 6 December 2025**
**Accepted : 8 December 2025**
**Published online : 9 December 2025**

## Abstract

This study discusses the green entrepreneurship model developed through Pertamina's CSR program in Kampung Papring, Banyuwangi, emphasizing the role of biogas innovation and the use of bamboo as the foundation of the local economy. The Jemparing Wangi Program is designed through a comprehensive social mapping process, involving FGDs, village potential surveys, and identification of basic community needs. The mapping results were used to build relevant interventions, including the establishment of bamboo houses as training centers, production, environmental education, and collaboration spaces for residents. Rumah Bambu plays an important role in creating a green business ecosystem, especially through the development of bamboo handicraft products such as woven bags, besek, lanterns, and decorative products that have economic value. Energy innovation through the use of biogas from livestock waste is a key element in the circular economy practices developed at Papring. Biogas is used for household needs and supports the production process, thus helping to reduce the use of conventional fuels and environmental pollution. In addition, this CSR program strengthens women and youth-based MSME groups through entrepreneurship training, product quality improvement, and marketing access through CSR e-catalogs and local retail networks. Multi-stakeholder collaboration, including the community, village government, media, and Pertamina, encourages the birth of an adaptive, creative, and independent social environment. Overall, research shows that the integration of environmental innovation, strengthening community institutions, and structured CSR support can drive socio-economic transformation of rural communities. This green entrepreneurship Model deserves to be replicated in other areas that have the potential for biomass and local crafts, as a real contribution to sustainable development.

**Keywords**: Green innovation, green entrepreneurship, CSR, MSME, Pertamina.

# 1. Introduction

Innovation that aligns environmental preservation with community empowerment is essential for sustainable development. Green entrepreneurship is a necessary approach for promoting environmentally friendly, resource-efficient, and locally rooted business practices. Several studies highlight that green innovation can strengthen the economic resilience of rural communities and increase citizen participation in sustainable resource management (Chongbang et al., 2025; Ramos Farroñán et al., 2024). In addition, community-based approaches foster more adaptive innovation processes by integrating local wisdom and the unique characteristics of each region. Rural areas rich in natural resources yet limited in technological access are ideal locations for implementing community-based green entrepreneurship models. One example is Papring Village in Banyuwangi Regency, which demonstrates how businesses and communities can collaborate to establish a green business ecosystem.

Residents receive mentoring, training, and facilities to develop MSMEs based on local resources—such as batik, coffee, bamboo crafts, and renewable energy—through the CSR program of Pertamina Patra Niaga Jatimbalinus. This approach is consistent with the findings of Harjanti et al. (2025), who argue that renewable energy innovation based on biomass is among the most effective ways to implement green innovation in regions with abundant organic waste. A key innovation in Papring Village is the utilization of livestock manure (kepong) as biogas for household needs and for supporting the production processes of bamboo crafts.

Within a circular economy framework, waste is transformed into energy that is both economically and ecologically beneficial. Furthermore, the community-based innovation ecosystem is strengthened through the establishment of Rumah Bambu Jemparing Wangi as an educational hub and MSME incubator. This aligns with Serio et al. (2020), who state that adopting environmentally friendly production processes enhances the sustainability and competitiveness of small enterprises. Thus, Papring Village serves as a model of integrated green innovation, community-based entrepreneurship, and multi-stakeholder collaboration.

Its success illustrates that implementing green innovation can increase local economic performance, reduce waste, and create employment opportunities rooted in renewable resources. This transformation can be replicated in other rural regions, especially those with strong potential in biomass and local crafts, thereby contributing to the achievement of sustainable development goals.

This study employs a qualitative method. A document study approach is used to analyze official documents, CSR reports, news articles, and scientific publications related to the development of Papring Village into a green innovation–based village. This method enables researchers to gain a deeper understanding of the context, collaboration processes, and green innovations produced through multi-stakeholder partnerships.

# 2. Literature Review

## 2.1. Green Entrepreneurship and Green Innovation

Green entrepreneurship integrates economic objectives with environmental sustainability. Its primary focus lies in creating products, processes, and business models that utilize resources efficiently, reduce waste, and minimize energy consumption. Wicaksono (2025) states that three key factors influence the success of green ventures: environmental innovation, network collaboration, and policy support. These elements form an enabling environment for the competitive growth of green businesses.

In addition, community-based empowerment methods that rely on waste-management training—such as ecobricks and used cooking oil processing—have received attention in recent studies (Ayubi et al., 2024). Their findings indicate that green innovation not only addresses environmental problems but also creates profitable economic opportunities for businesses. Community-based green entrepreneurial capacity requires systematic training and mentoring.

## 2.2. Renewable Energy and the Circular Economy in Rural Communities

Circular economy theory emphasizes the importance of transforming waste into resources that have economic value and practical utility. Biogas technology can convert organic waste, such as livestock manure, into an alternative energy source for rural areas. Afrizal Miradji et al. (2025) investigated a biogas-based clean energy business model in rural settings and found that its application can enhance energy efficiency, reduce household expenses, and strengthen local economic value chains. The findings show that livestock-waste utilization strategies in Kampung Papring can generate energy for households as well as small and medium-sized enterprises (SMEs).

Research by Buasan et al. (2016) demonstrates that village-scale biogas technology improves local energy resilience while serving as a solution for environmental mitigation. Their study compared several villages implementing biogas and found that community participation, access to training, and institutional support from village government were key factors influencing successful implementation. This reinforces the idea that community-based renewable energy produces significant social and ecological benefits.

## 2.3. Community Empowerment through Green Energy and Community-Based Entrepreneurship

Community-based entrepreneurship has emerged in response to the need to optimize local resources through innovations aligned with the community's social context. Kevin and Sari (2025) researched the use of biogas derived from cow manure and found that this method improves quality of life by providing access to clean energy and reducing fuel costs. To enable communities to manage renewable energy independently, the study highlights that empowerment efforts must be accompanied by training, technical assistance, and the formation of working groups.

A study by IBEKA (Institut Bisnis dan Ekonomi Kerakyatan) (Swasti & Sutriyono, 2021) also examines green empowerment models. IBEKA developed micro-hydropower plants and community energy programs in remote areas. These efforts include technology transfer, strengthening village institutions, and establishing community-managed energy business units. These findings are highly relevant to the development of Kampung Papring, which emphasizes multi-stakeholder collaboration to build SMEs based on local resources and green energy.

## 3. Methods

The research method applied in this study adopts a qualitative approach by combining a case study design with documentary analysis. This approach aims to uncover processes, social dynamics, and the relationships between local communities and stakeholders in the implementation of green innovations—elements that are difficult to measure using quantitative methods. It enables a deeper understanding of the context and the meanings embedded in the phenomena observed in the field.

More specifically, the case study method is used to examine Kampung Papring as a single, holistic unit of analysis. Case studies are highly valuable for exploring complex social issues, in which archival research—including documentary analysis—serves as an essential component. According to Ilhami et al. (2024), "the case study approach provides a framework for determining research themes, relevant data collection techniques, thematic analysis, and contextual conclusion drawing." In this study, existing documents were also examined.

Documentary analysis serves as the primary method for collecting secondary data. CSR reports, official village publications, SME training materials, and articles from local and academic media were all analyzed. The underlying principle of this method is that documents represent "records of past events" that can be used to explore themes related to social phenomena within their context. Documentary analysis strengthens research validity and enhances data triangulation, as emphasized in qualitative case studies. This method was applied by Ilhami et al. (2024) to obtain "systematic evidence from various written sources," allowing their analysis to accurately reflect real conditions in the field.

In practice, data triangulation integrates both the case study and documentary analysis approaches. Within this triangulation process, data from various documents—such as government publications, local archives, and CSR reports—are compared and cross-verified. This approach provides strong analytical depth. The case study offers contextual narratives and insights into processes (such as how companies and communities collaborate), while documentary analysis provides structured written evidence. Together, these methods allow researchers to form a more comprehensive picture of how green innovation in Kampung Papring emerged, was governed, and produced socio-economic impacts.

## 4. Results and Discussion

The CSR program implemented by Pertamina in Kampung Papring demonstrates that such social initiatives do not merely aim to assist; they also seek to build an organized system of green innovation. A crucial foundation ensuring that the program does not operate in a top-down manner is the initial process of social mapping, which includes focus group discussions, community needs assessments, and surveys of local potential. This approach aligns with the findings of Andhika Putra et al. (2021), who argue that the success of Jemparing Wangi depends heavily on accurate social mapping, which enables the precise identification of opportunities, challenges, and community needs before any intervention.

The results of this mapping process were embodied in the establishment of the Jemparing Wangi Bamboo House, which functions as a center for production, education, training, exhibitions, and community coordination. In the study by Hudaya et al. (2022), the development of community facilities such as the Bamboo House is considered a crucial component of social transformation, as it serves as a collective learning space where residents acquire new skills while strengthening their local bamboo-based identity. The Bamboo House thus acts as a meeting point between local traditions and modern innovation, enabling the community to enhance creativity while increasing the economic value of bamboo products.

The CSR program focuses on green innovation in two key domains: the development of bamboo craftsmanship and the utilization of biogas as a renewable energy source. Beyond providing production facilities, Pertamina also facilitates training to improve product quality, design innovation, and more efficient production methods. According to Andhika Putra et al. (2021), skill enhancement and artisan training are the two primary drivers that enable residents to create high-quality bamboo crafts. This also encourages the adoption of bamboo as a more environmentally friendly alternative to plastic. Product diversification—such as lanterns, bamboo bags, coasters, and besek—illustrates that innovation does not only arise from production techniques but also from design concepts adapted to market needs.

Energy innovation through biogas utilization represents another dimension that strengthens the green character of the Jemparing Wangi program. Biogas generated from livestock waste not only reduces river pollution but also provides households with clean energy and supports the bamboo-drying process. Hudaya et al. (2022) found that biogas usage has transformed ecological habits among Papring residents, who have begun to view waste as a valuable resource rather than a pollutant. This indicates that the CSR program successfully fosters environmental awareness and circular-economy practices at the community level.

Beyond technical aspects, community empowerment is also pursued by strengthening various community-based groups, including women's artisan groups, youth groups, coffee groups, and clean-water management groups. This group-based empowerment model fosters a more inclusive and collaborative social structure. Hudaya et al. (2022) show that a bottom-up approach through community groups helps prevent social jealousy and increases the sense of ownership residents feel toward the program. The training provided by Pertamina not only enhances production skills but also strengthens managerial capabilities, business knowledge, and the competitiveness of local SMEs. As a result, empowerment produces not only tangible products but also a more self-reliant community.

The economic impacts of the program can be seen in improved marketing of bamboo crafts through CSR e-catalogs and edu-tourism initiatives, as well as the strengthening of the Papring coffee brand supported by Pertamina's regular purchasing. Andhika Putra et al. (2021) note that broader market access provides residents with opportunities for additional income. Furthermore, the program's ecological impact is substantial. Papring has made a commitment to sustainable development by increasing bamboo replanting, reducing waste through biogas, and minimizing the use of plastic-based materials.

Overall, the Jemparing Wangi CSR program demonstrates that bamboo, biogas, circular-economy approaches, and the strengthening of community groups collectively enable simultaneous social, economic, and environmental transformation through integrated green innovation. This combination of ecological approaches, product innovation, and group-based empowerment positions Papring as a successful example of sustainability-oriented CSR that can be replicated elsewhere.

## 5. Conclusion

The Jemparing Wangi CSR program in Kampung Papring demonstrates that communities can be effectively empowered when green innovation is integrated with local potential. Through social mapping, Pertamina successfully developed bamboo resources, biogas energy, and community creativity within a mutually reinforcing system. The Bamboo House has become a learning and production hub that promotes skill improvement, inter-group collaboration, and the growth of a bamboo-based circular economy. The program has also fostered environmentally responsible behavior while opening new economic opportunities through local crafts and coffee production.

Moving forward, sustaining the program requires strengthening independent marketing for local SMEs to reduce dependence on CSR, expanding the use of biogas, and enhancing the technical and managerial capacities of community groups. Support from village governments, educational institutions, and other partners is essential to maintain stable local institutions and ensure continued innovation. With a clearer long-term strategy and broader collaboration, the program has the potential to become a consistent and self-sustaining model of green community empowerment.

## 6. References


Afrizal Miradji, M., Mariana, P., Frischa Nadira, A., Aji Pratomo, T., Rizki Rizal Maulana, M., & Adi, B. (2025). *Business model analysis of biogas from livestock waste as a renewable energy solution in the green economy era*. Kajian Ekonomi dan Akuntansi Terapan (KEAT), 109–121. https://doi.org/10.61132/keat.v2i2.1098

Andhika Putra, M., Yudha Hutama, A., Sudarsono, G., Lutviana Aulia, M., Ratnawati, P., & Budiarti Santoso, M. (2021). *Lesson learned: Corporate Social Responsibility Integrated Terminal Tanjung Wangi in the Jemparing Wangi Program at Kampoeng Batara*. Jurnal Pengabdian dan Penelitian Kepada Masyarakat, 2(2), 307–316.

Antara Foto. (2023, September 13). *Development of regional potential in Pertamina-assisted villages*. https://www.antarafoto.com/id/view/2059944/pengembangan-potensi-daerah-mitra-binaan-pertamina

Antara News. (2023, September 13). *Pertamina supports the marketing of handicraft products from Kampoeng Papring Banyuwangi*. https://www.antaranews.com/berita/3725808/pertamina-bantu-pemasaran-produk-kerajinan-kampoeng-papring-banyuwangi

ANTARA News Jawa Timur. (2023, October 20). *Implementing CSR programs with a positive impact*. https://jatim.antaranews.com/berita/740304/menjalankan-program-csr-yang-berdampak-positif

Ayubi, N., Istianah, L., Fanshuri Ahmad Fasya, I., Thania Aurelli, A., Adi Saputra, Y., Jannah, S., Alfina Salsabilla, L., Aini, M., Sebila Rahayu, F., Safarah Diva Maharani, O., & Politeknik Negeri Jember, J. (2024). *Green entrepreneurship in exploring business potential and waste processing*. ADM: Jurnal Abdi Dosen dan Mahasiswa, 26(10), 15. https://doi.org/10.61930/jurnaladm

Bappeda Jawa Timur. (2022). *The Jemparing Wangi CSR Program by Pertamina focused on developing a self-sufficient community environment in Papring Village*. http://csrjatim.bappedajatim.id/news/detail/39/program-jemparing-wangi-csr-pertamina-yang-fokus-kembangkan-lingkungan-masyarakat-mandiri-di-desa-papring

Berita Jatim. (2022, July 18). *Pertamina develops a self-sufficient community in Papring Village*. https://beritajatim.com/pertamina-kembangkan-masyarakat-mandiri-di-desa-papring

Buasan, B., Armawi, A., & Martono, E. (2016). *The role of biogas power plants in realizing regional energy security (Study in Dendang District, East Belitung Regency, Bangka Belitung Islands Province)*. Jurnal Ketahanan Nasional, 22.

Chongbang, N., Sharma Rawal, D., & Iskamato, D. (2025). *Green enterprises as a catalyst for strengthening community capacity in local reconstruction efforts in Western Nepal*. ADPEBI International Journal of Business and Social Science, 5(2). https://doi.org/10.54099/aijbs.v5i2.1330

Harjanti, S., Prabowo, H., & Rahim, R. K. (2025). *Unlocking circular economy and green innovation pathways for sustainable biofuel: A global bibliometric analysis with insights from Indonesia's B40 transition*. Frontiers in Sustainability, 6. https://doi.org/10.3389/frsus.2025.1668947

Hudaya, M. R., Galis, N. E., Naufal, M., Fahmi, A., Hutama, A. Y., Sudarsono, G., Titis, D., & Dewi, P. (2022). *Empowering the Papring community through the Jemparing Wangi Program towards social transformation*. Indonesian Journal of Social Responsibility Review (IJSRR), 1(2), 109–120.

Ilhami, M. W., Vera Nurfajriani, W., Mahendra, A., Sirodj, R. A., & Afgani, W. (2024). *Application of the case study method in qualitative research*. Jurnal Ilmiah Wahana Pendidikan, 10(9), 462–469. https://doi.org/10.5281/zenodo.11180129

Kevin, D., & Sari, D. A. (2025). *Community empowerment through the utilization of cow*

*manure into biogas as a renewable energy source*. Abdi: Jurnal Pengabdian dan Pemberdayaan Masyarakat, 7(1), 119–127. https://doi.org/10.24036/abdi.v7i1.1043

Radar Surabaya. (2022, July 18). *Jemparing Wangi, Pertamina's CSR program developing a self-sufficient community environment*. https://radarsurabaya.jawapos.com/jatim/77981635/jemparing-wangi-program-csr-pertamina-kembangkan-lingkungan-masyarakat-mandiri

Ramos Farroñán, E. V., Arbulú Ballesteros, M. A., Mogollón García, F. S., Heredia Llatas, F. D., Farfán Chilicaus, G. C., Guzmán Valle, M. de los Á., García Juárez, H. D., Silva León, P. M., & Arbulú Castillo, J. C. (2024). *Sustainability and rural empowerment: Developing women's entrepreneurial skills through innovation*. Sustainability (Switzerland), 16(23). https://doi.org/10.3390/su162310226

Sahabat News. (2023). *Pertamina conducts social mapping before implementing CSR programs*. https://news.sahabat.com/baca/pertamina-lakukan-pemetaan-sosial-sebelum-melaksanakan-program-csr

Serio, R. G., Dickson, M. M., Giuliani, D., & Espa, G. (2020). *Green production as a factor of survival for innovative startups: Evidence from Italy*. Sustainability (Switzerland), 12(22), 1–12. https://doi.org/10.3390/su12229464

Swasti, C., & Sutriyono. (2021). *Community-based social entrepreneurship movement in rural villages by IBEKA*. Asketik, 5(2), 241–264. https://doi.org/10.30762/asketik.v5i2.829

Times Indonesia. (2023, October 31). *Pertamina's initiatives transform Papring Banyuwangi residents into a more empowered community*. https://timesindonesia.co.id/ekonomi/474646/sentuhan-pertamina-sulap-warga-papring-banyuwangi-jadi-lebih-berdaya

Times Indonesia Banyuwangi. (2023, September 15). *How Pertamina transforms Papring Banyuwangi into a more prosperous community*. https://banyuwangi.times.co.id/news/ekonomi/lb0e06soee/Intip-Cara-Pertamina-Mengubah-Masyarakat-Papring-Banyuwangi-Jadi-Lebih-Sejahtera

Wicaksono, T. (2025). *Green entrepreneurship: Transforming challenges into profitable solutions*. Jurnal Pengabdian dan Kewirausahaan, 9(1). http://journal.ubm.ac.id/