

Implementing Nyaah Ka Parahyangan as A Social Innovation Through Corporate Social Responsibility: Integrating Biodiversity Conservation, Circular Economy, And Community Empowerment in North Bandung, Indonesia

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ABSTRACT: The North Bandung upland area plays an important ecological role as a water-catchment and biodiversity-supporting landscape while also sustaining local livelihoods through horticulture and dairy farming. Environmental degradation, livestock-waste management challenges, limited value addition of local commodities, and institutional capacity are interconnected challenges in the area. This study examines the implementation of the Nyaah ka Parahyangan Social Innovation Program developed by AFT Husein Sastranegara as a Corporate Social Responsibility (CSR) initiative and identifies how its integrated approach generates social innovation. A qualitative case study was conducted in Suntenjaya Village, Lembang District, West Bandung Regency. Data were collected through field observation, in-depth interviews, discussions, program documentation, social mapping, monitoring and evaluation records, and literature review. Data were analyzed using the interactive model of data condensation, data display, and conclusion drawing, supported by source and method triangulation. The results show that the main innovation of Nyaah ka Parahyangan lies not in the individual use of agroforestry, biodigesters, organic fertilizer, or dairy processing technologies, but in their integration within a community-based system linking biodiversity conservation, circular resource use, local economic development, and institutional strengthening. Program data indicate 319 tons/year of cattle manure available for management, 74,872 liters/year of milk production, 20 tons/year of vegetable production, 10 tons/year of coffee production, and emerging economic activities through organic fertilizer and processed dairy products. The program also involved local groups and reached 177 households or approximately 540 people, while Puseur Diajar recorded 436 visitors through July 2026. The findings indicate that culturally embedded program design and multi-stakeholder collaboration can strengthen community ownership and support the transition of CSR from activity-based assistance toward adaptive social innovation. The case provides a context-sensitive model for integrating environmental and livelihood objectives in upland communities

KEYWORDS: social innovation; corporate social responsibility; community empowerment; circular economy; biodiversity conservation; collaborative governance; North Bandung

I. INTRODUCTION

North Bandung is a strategically important upland landscape because it functions as a water-catchment area, supports biodiversity, and contributes to the ecological balance of the Greater Bandung region. Its environmental functions are closely connected with the livelihoods of communities living and working in the area. Agricultural and livestock activities provide income for households, but they also create pressures on land, water, and waste-management systems. Changes in land use, intensive cultivation, and inadequate management of livestock waste can therefore produce consequences that are simultaneously ecological and socioeconomic. Regional statistical and environmental publications identify the importance of environmental management and the vulnerability of upland areas to development pressure (Badan Pusat Statistik Kabupaten Bandung Barat, 2024; Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia, 2023).

Suntenjaya Village in Lembang District, West Bandung Regency, illustrates this interdependence. Local livelihoods are strongly associated with horticulture and dairy farming. These activities provide an existing economic base and local knowledge, but they also generate challenges that cannot be addressed through a single intervention. Livestock manure requires appropriate management; productive land needs to retain ecological functions; agricultural and livestock commodities need greater value addition; and community organizations require capacity to manage activities beyond the initial period of external assistance. The situation suggests that environmental conservation and community development should not be treated as separate agendas.

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Conventional Corporate Social Responsibility (CSR) programs are often implemented through individual activities such as infrastructure support, training, or direct assistance. Such interventions can provide immediate benefits, but their longer-term contribution may be limited when activities are not connected with local livelihood systems and institutional capacity. The development of CSR toward shared value has encouraged companies to consider how social and environmental objectives can be pursued together with sustainable economic value (Porter & Kramer, 2011). From this perspective, the role of a company can move beyond providing resources toward facilitating a process in which communities, government, technical actors, and businesses jointly address local problems.

Social innovation provides a useful lens for understanding this shift. Murray, Caulier-Grice, and Mulgan (2010) describe social innovation as the development of new ideas, practices, and relationships that respond to social needs and create social value. Howaldt and Schwarz (2017) further emphasize that social innovation can involve changes in social practices and relationships rather than only technological invention. Accordingly, a program may be considered socially innovative even when it uses technologies or practices that already exist, provided that those practices are reconfigured in a new social arrangement that is relevant to local needs.

The Nyaah ka Parahyangan Program was developed by AFT Husein Sastranegara as a CSR-based social innovation initiative in Suntenjaya. The program connects environmental management, local economic development, and community empowerment through three culturally embedded pillars: Nyaah ka Leuweung, Nyaah ka Cai, and Nyaah ka Lembur. Nyaah ka Leuweung focuses on agroforestry, land rehabilitation, and endemic-tree planting. Nyaah ka Cai focuses on the utilization of livestock waste for biogas and organic fertilizer. Nyaah ka Lembur strengthens cooperatives, MSMEs, Puseur Diajar, and community mentoring. The three pillars are designed as mutually reinforcing components rather than independent projects.

The program is particularly relevant to the discussion of social innovation because its activities are based on resources and practices already present in the community. Coffee cultivation, dairy farming, horticulture, and local environmental management are not introduced as completely external activities. Instead, the program provides additional knowledge, facilities, organizational support, and opportunities for value creation. This approach can reduce the gap between program design and everyday community practice. It also creates opportunities for community members to reinterpret existing resources: livestock manure can become energy and fertilizer, agricultural land can simultaneously serve productive and ecological functions, and raw commodities can become processed products with greater value.

Although the connection between CSR, environmental management, and community empowerment has received considerable attention, there remains a practical need to document how integrated social innovation is implemented in specific upland communities. In particular, the way conservation, circular economy practices, local enterprise, institutional strengthening, and cultural identity are linked within one CSR intervention is important for understanding why a program may become more embedded in community life. The Nyaah ka Parahyangan case therefore provides an opportunity to examine not only what activities were delivered, but also how the relationships among activities and stakeholders created an integrated development process.

Based on this context, this study aims to analyze the implementation of the Nyaah ka Parahyangan Social Innovation Program in Suntenjaya Village and to identify how its integrated approach constitutes social innovation. The study focuses on four questions: (1) how local problems were translated into program strategies; (2) how biodiversity conservation, circular economy, and community empowerment were integrated; (3) how multi-stakeholder collaboration supported implementation; and (4) what environmental, economic, social, and learning outcomes were documented. The study contributes a context-sensitive case of CSR implementation in an upland community and highlights the importance of integration, local ownership, and cultural embeddedness.

II. LITERATURE REVIEW

Social innovation is increasingly used to explain forms of change that address social needs through new or reconfigured practices, relationships, and institutional arrangements. Murray et al. (2010) position social innovation as a process through which new ideas and approaches meet social needs and create social value. Howaldt and Schwarz (2017) broaden this understanding by emphasizing the relationship between social innovation and human development, including the capabilities of people and communities to shape change. In this study, social innovation is therefore understood not simply as technological novelty, but as the reconfiguration of existing resources, practices, relationships, and institutions to respond to interconnected community problems.

Corporate Social Responsibility provides an institutional context in which companies can participate in addressing social and environmental challenges. Porter and Kramer (2011) argue that business and social value can be connected through the concept of Creating Shared Value, in which social problems are addressed in ways that also create economic value. Although CSR and

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Creating Shared Value are conceptually distinct, the shared-value perspective is useful for interpreting programs that intentionally connect environmental outcomes, community capabilities, and economic opportunities. In the Nyaah ka Parahyangan case, the company does not only provide assistance; it facilitates activities that connect conservation with productive livelihoods and local enterprise.

Community empowerment is another important dimension. Empowerment-oriented development emphasizes participation, capacity, agency, and the ability of local actors to manage resources and make decisions. A community program becomes more sustainable when local actors are able to maintain facilities, organize production, manage finances, develop products, and coordinate activities. Patton (2015) and qualitative program-evaluation approaches also emphasize the importance of understanding processes and context rather than relying only on numerical outputs. This is particularly relevant to CSR programs because the sustainability of an intervention depends on changes in organizational capacity and ownership that may not be captured by simple output indicators.

The circular economy perspective adds a resource-flow dimension to community empowerment. Rather than treating waste as an endpoint, circular approaches seek to reduce waste and retain the value of materials through reuse, recovery, recycling, and productive transformation. In rural communities, circularity can be closely connected with everyday livelihood systems. Livestock manure, for example, can become an input for biogas and organic fertilizer, while agricultural by-products can support other productive activities. The social dimension is important because resource recovery requires changes in routines, knowledge, cooperation, and organizational practices, not merely the installation of technology.

Biodiversity conservation in an upland agricultural landscape also requires attention to the relationship between ecological functions and local livelihoods. Conservation measures that exclude or ignore community economic needs may be difficult to sustain when households depend on the landscape for income. An integrated approach can instead connect vegetation management and land rehabilitation with productive activities such as agroforestry. In this way, conservation can become part of the livelihood system rather than an external restriction. The Nyaah ka Leuweung pillar reflects this approach by linking agroforestry and endemic-tree planting with productive land use and community awareness.

Collaborative governance helps explain the role of different actors in implementing integrated social innovation. Ansell and Gash (2008) describe collaborative governance as a process in which public and non-public actors work collectively toward objectives that cannot be achieved by one actor alone. Emerson and Nabatchi (2015) similarly emphasize shared motivation, institutional arrangements, and collaborative capacity. In a CSR setting, the company may provide resources and facilitation, while local government contributes institutional legitimacy, communities contribute local knowledge and labor, and technical actors provide specialized expertise. The quality of these relationships can influence both implementation and long-term ownership.

Finally, cultural embeddedness can influence whether an externally initiated CSR program becomes meaningful to local communities. The use of familiar language, symbols, and local values can make program objectives easier to relate to everyday life. In Nyaah ka Parahyangan, the use of Sundanese expressions—Nyaah ka Leuweung, Nyaah ka Cai, and Nyaah ka Lembur—creates a recognizable narrative around forests, water, and village life. This does not by itself prove program success, but it provides a mechanism through which environmental and empowerment objectives can be communicated within the cultural context of the community.

Drawing these perspectives together, this study uses four analytical dimensions: system integration, circular resource use, collaborative governance, and cultural embeddedness. System integration refers to the connection among environmental, economic, social, and learning activities. Circular resource use refers to the transformation of materials previously treated as waste into energy or productive inputs. Collaborative governance refers to the distribution and coordination of roles among stakeholders. Cultural embeddedness refers to the adaptation of program communication and identity to local social and cultural conditions. These dimensions guide the interpretation of the Nyaah ka Parahyangan case.

III. METHODOLOGY

This study employed a qualitative case-study approach to examine the implementation of the Nyaah ka Parahyangan Social Innovation Program in its real-life context. A qualitative case study was selected because the research focuses on implementation processes, stakeholder relationships, community participation, and the interaction between environmental, social, and economic dimensions of the program (Yin, 2018; Creswell & Poth, 2018). The design allows the program to be examined as a bounded case in which activities, actors, local conditions, and outcomes are interpreted together.

The study was conducted in Suntenjaya Village, Lembang District, West Bandung Regency. The location was selected purposively because it is part of the North Bandung upland landscape and because the program addresses interconnected issues of environmental conservation, livestock-waste management, agricultural and dairy livelihoods, local economic development, and

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community empowerment. The village context is therefore relevant for examining how CSR can be organized around existing livelihood systems.

Primary data were obtained through field observation, in-depth interviews, discussions, and program documentation. Informants were selected purposively based on their involvement in the program and included the AFT Husein Sastranegara CSR team, Suntenjaya Village Government, farmer groups, livestock groups, cooperative representatives, MSME actors, community leaders, technical facilitators or academics, and community members involved in the program. Secondary data consisted of social-mapping documents, program implementation reports, monitoring and evaluation records, statistical publications, local-government documents, and relevant literature on social innovation, CSR, conservation, circular economy, and community empowerment.

The researchers were involved in planning, facilitation, and documentation of the CSR program. This position provided direct access to implementation dynamics but also created a need for reflexive attention to researcher positionality. To strengthen credibility, findings were compared across data sources and collection techniques. Program observations were examined alongside interviews, documentation, social-mapping information, and monitoring records. This triangulation was intended to reduce dependence on a single perspective and to strengthen the traceability of the interpretation (Patton, 2015; Moleong, 2021).

Data analysis followed the interactive qualitative model of Miles, Huberman, and Saldaña (2018), consisting of data condensation, data display, and conclusion drawing and verification. Analysis was conducted iteratively. First, information from observations, interviews, and documents was organized according to the research questions. Second, relevant information was grouped into categories related to local problems, program strategies, stakeholder roles, resource flows, community capacity, and documented outcomes. Third, patterns and relationships among categories were interpreted using the analytical dimensions identified in the literature review.

The analysis focused on four dimensions: (1) program implementation and the transformation of local problems into intervention strategies; (2) integration of biodiversity conservation, circular economy, and community empowerment; (3) multi-stakeholder collaboration and local ownership; and (4) environmental, economic, social, and learning outcomes. Particular attention was given to relationships among activities rather than treating each activity as an isolated output. This was important for identifying where the social innovation of the program was located.

Program production and income figures are presented as documented program outcomes rather than as causal impact estimates. The available evidence does not include a counterfactual or longitudinal control design. Therefore, statements about change are interpreted cautiously, especially for economic indicators. The figures are used to describe the scale and direction of activities, while qualitative evidence is used to explain the processes through which those activities were connected.

Trustworthiness was strengthened through source triangulation, technique triangulation, and comparison with program documents. The study also maintained a distinction between documented facts and interpretive conclusions. This approach is consistent with qualitative case-study research, where the objective is to provide a credible and context-rich explanation rather than to claim statistical generalization (Creswell & Poth, 2018; Yin, 2018).

IV. RESULT

A. Local Problems and Integrated Program Response

The findings show that the starting point of Nyaah ka Parahyangan was not a single environmental problem but a set of interconnected conditions affecting the ecological and socioeconomic system of Suntenjaya. The community's dependence on horticulture and dairy farming means that environmental conditions directly influence livelihoods. Land degradation, livestock waste, low value addition of agricultural and livestock commodities, and limited institutional capacity were therefore treated as mutually related issues.

The program translated these conditions into an integrated response. Nyaah ka Leuweung addressed land and biodiversity concerns through agroforestry, land rehabilitation, and endemic-tree planting. Nyaah ka Cai addressed livestock waste through biogas and organic fertilizer production. Nyaah ka Lembur addressed community organization and economic development through cooperatives, MSMEs, Puseur Diajar, training, and mentoring. The qualitative evidence indicates that the intervention was designed to connect these responses rather than implement them as separate projects.

Table I. Transformation of Local Problems Into Program Strategies

Local Challenge	Program Strategy	Expected Direction of Change
Land degradation and ecological pressure	Agroforestry and land rehabilitation (Nyaah ka Leuweung)	Improved vegetation management, biodiversity conservation, and productive land use
Livestock waste	Biogas and organic fertilizer (Nyaah ka Cai)	Waste reduction, resource recovery, alternative energy, and agricultural inputs
Low value addition of	Coffee and dairy processing (Nyaah ka	Product diversification and increased value-added

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commodities	Lembur)	opportunities
Limited institutional capacity	Cooperative strengthening, training, Puseur Diajar, and mentoring	Improved local organizational capacity and learning

Table I indicates that the program was structured around relationships among ecological, economic, and institutional conditions. The intervention did not begin by selecting technologies and then searching for a community use for them. Instead, the program identified problems already experienced in the local livelihood system and connected each problem with a practical response. This is important because the relevance of an innovation depends partly on whether community members can relate the intervention to activities they already understand. The table also shows that the expected direction of change is multidimensional: land rehabilitation is linked with both ecological protection and productive land use, waste management is linked with both pollution reduction and resource recovery, while value addition is linked with both enterprise development and income opportunities. The qualitative evidence therefore supports the interpretation that the program was designed as an integrated development pathway rather than a collection of independent CSR activities.

B. Integration of Conservation, Circular Economy, and Community Empowerment

The three pillars provide the operational structure of the program. Nyaah ka Leuweung focuses on agroforestry, rehabilitation, and endemic-tree planting. Nyaah ka Cai uses livestock waste as a resource for biogas, organic fertilizer, and vermicompost. Nyaah ka Lembur strengthens cooperatives, MSMEs, Puseur Diajar, and community mentoring. Their integration creates a sequence in which environmental resources, productive activities, enterprise development, and learning can reinforce one another.

Table II. Integration of The Three Nyaah Ka Parahyangan Pillars

Program Pillar	Core Activities	Integration Mechanism	Main Outcome
Nyaah ka Leuweung	Coffee agroforestry, land rehabilitation, endemic-tree planting	Conservation linked with productive land and livelihoods	Improved environmental management and community awareness
Nyaah ka Cai	Livestock waste, biogas, organic fertilizer, vermicompost	Waste converted into energy and agricultural inputs	Resource recovery and potential production-cost efficiency
Nyaah ka Lembur	Cooperatives, MSMEs, Puseur Diajar, mentoring	Community capacities connected with economic development and learning	Institutional strengthening and value addition
Integrated three pillars	Cross-linking environmental, economic, social, and learning activities	Activities reinforce one another within one community system	Community-based sustainability model

Table II demonstrates that the principal integration mechanism is the connection between activities. Agroforestry provides an environmental and productive-land pathway; livestock-waste processing creates a circular pathway from waste to energy and agricultural inputs; and local enterprise and learning activities provide organizational and economic pathways. The relationship among these activities is more significant than the existence of any single technology. Qualitatively, the program changes the way resources are positioned in the community: manure becomes an input rather than merely a waste product, agricultural land becomes both productive and ecological space, and local commodities become potential materials for value-added products. This integration also affects community learning because groups need to understand not only how to operate an activity but also how the output of one activity can support another.

C. Multi-Stakeholder Collaboration and Local Ownership

Implementation involved AFT Husein Sastranegara, Suntenjaya Village Government, farmer groups, livestock groups, cooperatives, MSMEs, technical facilitators or academics, and community members. The company primarily acted as an initiator and facilitator, while local actors increasingly assumed operational responsibilities. The distribution of roles reduced the concentration of implementation responsibility in the company and created opportunities for local ownership.

Table III. Stakeholder Roles in Program Implementation

Stakeholder	Primary Role	Contribution
AFT Husein Sastranegara	Initiator and facilitator	Funding, facilitation, capacity building, monitoring
Suntenjaya Village Government	Implementation partner	Institutional support, coordination, community facilitation

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Farmer groups	Implementers	Agroforestry, land rehabilitation, coffee cultivation
Livestock groups	Implementers	Dairy farming, manure management, biogas, organic fertilizer
Cooperatives and MSMEs	Business development	Product processing, marketing, value addition
Technical facilitators/academics	Knowledge support	Training, technical assistance, capacity building
Community members	Primary actors	Implementation, maintenance, and further development

Table III shows a complementary governance arrangement. AFT Husein Sastranegara provides organizational and financial resources, the village government contributes institutional coordination, community groups provide local knowledge and operational labor, and technical actors provide specialized knowledge. This division of roles is consistent with collaborative governance because the program requires resources that are distributed across different actors. The qualitative findings also indicate a shift in the community's position from beneficiary toward actor and manager. This shift is important for sustainability because facilities and activities can only continue when local groups have the capacity to maintain equipment, organize production, manage products, and coordinate responsibilities. At the same time, collaboration remains dependent on communication and mentoring because stakeholders differ in organizational capacity, routines, and priorities.

D. Environmental, Economic, Social, and Learning Outcomes

The documented outcomes show that the program has progressed from the provision of facilities and training toward resource utilization, production, enterprise development, group participation, and knowledge sharing. Environmental outcomes are represented by manure management, biodigester use, and organic fertilizer production. Economic outcomes include milk, vegetable, and coffee production as well as income from fertilizer and processed dairy products. Social outcomes include group participation and village-level coverage, while the learning dimension is represented by Puseur Diajar.

Table IV. Documented Environmental, Economic, Social, And Learning Outcomes

Dimension	Indicator	Documented Program Data
Environment	Cattle manure available for management	319 tons/year
Environment	Biodigester capacity	14 m ³ (program table)
Environment	Biogas utilization	6 stoves, approximately 4 hours/day
Environment	Cow-manure fertilizer	300 bags × 15 kg + 100 packs × 4 kg
Environment	Vermicompost	200 bags × 15 kg + 150 packs × 4 kg
Economy	Milk production	74,872 liters/year
Economy	Vegetable production	20 tons/year
Economy	Coffee production	10 tons/year
Economy	Organic fertilizer unit income	IDR 15.5 million/year
Economy	Nyaah ka Cai partners' income	IDR 561.54 million/year
Economy	MilkSuka MSME income	IDR 26.21 million/year
Economy	Processed dairy products	6 product types
Social	Organic fertilizer unit members	10 people
Social	Nyaah ka Cai members	10 people
Social	MilkSuka members	16 people
Social	Community coverage	177 households / approximately 540 people
Learning	Puseur Diajar visitors through July 2026	436 people

Table IV indicates that the program has generated a combination of physical, economic, social, and learning outputs. The environmental data show that livestock waste has become a managed resource through biogas and fertilizer activities. The economic data indicate that existing dairy, horticulture, and coffee activities are connected with value-added opportunities. The

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social indicators demonstrate organized participation, while Puseur Diajar extends the program's learning function beyond the immediate groups involved in production. These data should not be interpreted as causal impact estimates because there is no counterfactual design. Nevertheless, taken together with the qualitative evidence, they show that the program has moved beyond one-off assistance toward a system in which environmental management, livelihood activities, and institutional learning are connected.

E. Resource Recovery and Local Value Addition

One of the clearest examples of integration is the management of livestock waste. Program data identify approximately 319 tons of cattle manure per year as available for management. The program uses biodigesters with a documented capacity of 14 m³, and biogas is utilized at six stove points for approximately four hours per day. The process also generates slurry that can be used as a material for organic fertilizer. This creates a circular relationship between livestock production, energy, fertilizer, and agriculture. The organic fertilizer activity provides a second layer of value creation. The Unit Produksi Pupuk Organik Motekar, involving local youth and livestock actors, produces cow-manure fertilizer and vermicompost. Documented income of IDR 15.5 million per year indicates that waste management has developed into an economic activity at the group level. The value is not only financial. The group also develops knowledge about processing, packaging, production routines, and market activity, thereby strengthening local capacity to manage a resource that was previously treated primarily as an environmental burden. Value addition is also visible in the dairy sector. Milk production is documented at 74,872 liters per year, with Nyaah ka Cai partners' income reported at IDR 561.54 million per year. Part of the local production is connected with MilkSuka, an MSME that develops processed dairy products. Documented products include milk sticks, caramel milk candy, coffee milk candy, milk-based cireng, and milk crackers. MilkSuka's reported income of IDR 26.21 million per year indicates an emerging value-added pathway. The qualitative significance lies in the movement from raw commodity production toward processing, packaging, marketing, and product identity.

F. Learning, Cultural Embeddedness, and Replication

Puseur Diajar provides an additional mechanism through which program knowledge can be shared. Through July 2026, 436 visitors were recorded. The learning function is not limited to displaying facilities; it creates opportunities for communities and visitors to exchange experience concerning waste management, agroforestry, dairy production, product processing, and community organization. This learning function increases the possibility that knowledge generated through implementation can travel beyond the immediate beneficiary groups.

Cultural identity is another important qualitative feature. The use of Sundanese expressions in Nyaah ka Leuweung, Nyaah ka Cai, and Nyaah ka Lembur makes the program's environmental and social objectives recognizable within the local context. The terms connect forests, water, and village life with a language of care and belonging. This does not mean that cultural naming alone creates sustainability, but it can support communication and ownership by making the program feel less like an external intervention.

The findings also suggest that replication should focus on principles rather than identical activities. The program's transferable logic is to identify local problems, map local assets, connect environmental and economic functions, strengthen local institutions, build multi-stakeholder roles, and adapt communication to local culture. A different village may use different commodities, technologies, organizational structures, or cultural expressions while retaining the same system-level logic.

IV. DISCUSSION

A. Social Innovation through System Integration

The central finding is that the social innovation of Nyaah ka Parahyangan lies in system integration rather than technological novelty. Agroforestry, biodigesters, organic fertilizer, dairy processing, and community learning are established practices. What is distinctive in this case is the way these practices are connected to local problems, existing livelihoods, community organizations, and stakeholder collaboration. This interpretation is consistent with Murray et al. (2010) and Howaldt and Schwarz (2017), who view social innovation as involving new or reconfigured practices and relationships that respond to social needs and create social value.

The case also supports the shared-value perspective of Porter and Kramer (2011). Environmental activities are connected with economic opportunities, while economic activities can reinforce environmental management. Manure management illustrates this relationship: a material previously treated primarily as waste becomes a resource for energy and fertilizer. Similarly, dairy production is extended into processed products, creating opportunities for additional value within the local economy. The company therefore participates not only as a donor but as a facilitator of a system in which social, environmental, and economic objectives are linked.

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B. Circular Economy as a Community Empowerment Mechanism

The circular economy dimension is important because resource recovery is combined with community participation. The transformation from manure to biogas and organic fertilizer is not only a material process; it also involves changes in routines, knowledge, and perceptions of local resources. Community members learn that an environmental burden can become an input for another productive activity. This is consistent with the broader principle that circularity requires organizational and behavioral change in addition to material recovery.

However, the documented production and income figures should be interpreted carefully. They demonstrate that economic activities exist, but they do not by themselves establish causal impact, profitability, or household welfare improvement. Future assessment should distinguish gross revenue from net income and should include operating costs, adoption rates, resource-efficiency indicators, and changes over time. The current evidence is strongest for describing the emergence and integration of activities rather than proving long-term economic impact.

C. Collaborative Governance and Local Ownership

The implementation pattern reflects the logic of collaborative governance described by Ansell and Gash (2008) and Emerson and Nabatchi (2015). Different actors contribute different resources and capabilities: the company provides facilitation and resources, the village government supports coordination, community groups provide local knowledge and labor, and technical actors provide specialized knowledge. The arrangement is particularly relevant because the problems addressed by the program cross organizational boundaries.

An important qualitative finding is the shift in community position from beneficiary toward actor and manager. Sustainability requires groups to maintain facilities, organize production, record activities, manage products, and make decisions about subsequent development. External support can initiate change, but local ownership determines whether the system can continue to function. At the same time, collaborative governance is not automatically stable. Differences in capacity, routines, and priorities require continuing communication, facilitation, and mentoring.

D. Cultural Embeddedness and Replication

The use of Sundanese cultural expressions in the three pillars provides a locally recognizable framework for communicating environmental and community values. Nyaah ka Leuweung, Nyaah ka Cai, and Nyaah ka Lembur connect program objectives with the community's own landscape and social identity. In this sense, cultural embeddedness can support ownership by reducing the distance between program language and everyday community experience.

The replication implication is that the program should not be copied mechanically. The transferable component is the design logic: identify local problems, map community assets, connect environmental and economic functions, build multi-stakeholder roles, strengthen local institutions, and adapt communication to local culture. Different villages may use different commodities, technologies, institutions, and names while retaining the same underlying principles. This makes replication more realistic than attempting to reproduce a fixed package of activities.

E. Implications for CSR Practice and Research

For CSR practitioners, the case indicates that integrated programs may be more sustainable when they start from existing livelihood systems rather than introducing activities disconnected from daily community practices. Investment in local institutions is also as important as physical infrastructure because community capacity determines whether program assets can continue to generate value. CSR can therefore be designed as a facilitation process in which the company gradually strengthens community capacity and distributes operational responsibility.

For research, the case highlights the need for stronger longitudinal measurement. Future studies could examine whether observed changes are sustained after reductions in corporate support, whether household welfare improves, how environmental indicators change over time, and whether the integrated model can be adapted successfully in other upland communities. Comparative research would also help identify which elements are context-specific and which represent more general mechanisms of social innovation.

V. CONCLUSIONS

This study shows that Nyaah ka Parahyangan can be understood as a social innovation-oriented CSR program because it integrates biodiversity conservation, circular resource use, local economic development, community empowerment, institutional strengthening, learning, and cultural identity within one community-based system. Its principal innovation is not the introduction of entirely new technologies, but the reconfiguration of existing resources, practices, and stakeholder roles into an integrated development approach.

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The three pillars—Nyaah ka Leuweung, Nyaah ka Cai, and Nyaah ka Lembur—provide a practical structure for this integration. Agroforestry connects conservation with productive land use; livestock-waste management connects environmental improvement with energy and fertilizer; and community enterprise and learning connect local resources with value addition and institutional development. Multi-stakeholder collaboration further distributes resources and responsibilities among the company, village government, community groups, technical actors, and residents.

Documented program data indicate meaningful activity at environmental, economic, social, and learning levels, including management of 319 tons/year of cattle manure, 74,872 liters/year of milk production, 20 tons/year of vegetable production, 10 tons/year of coffee production, participation across several community groups, coverage of approximately 177 households or 540 people, and 436 Puseur Diajar visitors through July 2026. These figures are interpreted as documented outputs and emerging outcomes rather than causal impact estimates.

The broader lesson is that CSR in upland communities can move beyond short-term assistance when it is designed around local problems, existing livelihoods, circular resource flows, institutional capacity, multi-stakeholder collaboration, and cultural context. Replication should focus on these principles rather than copying identical activities. Future work should strengthen longitudinal impact measurement, profitability analysis, household welfare assessment, and ecological monitoring so that the sustainability of the model can be evaluated more rigorously.

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