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Systematic Literature Review: A Model of Synergy Between CSR and the Circular Economy for Community Waste Management and Food Security of the Pasar Teras Bersama Program

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Corporate Social Responsibility; Circular Economy; Community-Based Waste Management.

ABSTRACT

Community-based waste management often remains limited to collection and recycling, while its integration with corporate social responsibility (CSR), social innovation, disaster preparedness, and food security has not been comprehensively assessed. This research develops a CSR–circular economy synergy model and examines its contextual applicability to the PASAR TERAS BERSAMA Program in Kuin Cerucuk, Banjarmasin. The main method was a Systematic Literature Review of 40 journal articles published between 2008 and 2025, complemented by a 109-page program-document analysis that was not counted as an SLR unit. Five themes emerged: circular-economy foundations and value-retention hierarchies; transformative CSR and circular business models; institutional conditions for community waste management; collaborative governance and social innovation; and organic-waste valorization through Black Soldier Fly, composting, aquaculture, and urban agriculture. The program analysis aligns with the literature through a waste–maggot–fish/compost–income chain and collaboration among three companies, government, academia, and communities. Reported outputs include 72 active members, 85 trainees, 210 educated students, and a total additional income of IDR 4,000,000 for five members. Nevertheless, stronger baselines, time-bound indicators, net-income calculations, waste mass balances, and independent impact verification are required. The proposed CSR–Circular–Food Synergy Model and evaluation matrix support more autonomous, transparent, inclusive, and measurable replication.

INTRODUCTION

The urban waste crisis is not only related to the ever-increasing volume of materials, but also to weak segregation from sources, financing limitations, unstable secondary material markets, and fragmentation of roles between governments, companies, communities, and informal actors. The waste management literature in developing countries shows that technical solutions alone are not enough; the success of the system is influenced by governance, community behavior, organizational capacity, financing, and relationships between stakeholders (Guerrero et al., 2013; Marshall & Farahbakhsh, 2013).

The circular economy offers a shift from a take-use-throw pattern to a strategy that retains material value for as long as possible. However, various studies remind that the circular economy should not be narrowed down to recycling. Higher-value strategies rejecting unnecessary use, reducing, reusing, repairing, extending product life, and restoring functionality need to be put in place before energy recycling and recovery (Bocken et al., 2016; Reike et al., 2018). In addition, social dimensions such as decent work, participation,

benefit distribution, and recognition of informal actors are still less prominent in many circular economy practices (Geissdoerfer et al., 2017; Pião et al., 2023).

In this context, CSR can function as a catalyst for transformation if it does not stop at the assistance of equipment or ceremonial activities. CSR connected to the circular economy needs to build community capacity, strengthen governance, provide access to technology and markets, and create a revenue model that allows the program to survive after the company's funding period ends. The convergence of CSR and the circular economy lies in the creation of long-term value for stakeholders, innovation, responsibility for the resource lifecycle, and multidimensional impact measurement (Del Baldo & D'Anghela, 2020; Niyommaneerat et al., 2023; Puntillo, 2023).

Organic waste processing also opens up a direct relationship with food security. Bioconversion using Black Soldier Fly larvae (BSF/maggot) can reduce organic waste and produce protein biomass for feed, while the residue can be used as soil improver. When combined with fish farming, composting, community gardens, or urban agriculture, waste material flows can contribute to the availability of feed, fertilizers, vegetables, fish, income, and household resilience (Diener et al., 2011; Orsini et al., 2013; Surendra et al., 2016). This waste–feed–fertilizer–food nexus has the potential to reduce waste generation, provide food production inputs, create income, and strengthen community resilience. However, technical success depends on feedstock quality, humidity, feeding ratio, sanitation, contaminant separation, and energy management (Lalander et al., 2019; Salomone et al., 2017).

The collaborative governance framework shows that collaboration is not just about the number of institutions listed in the list of partners. Effective collaboration requires dialogue, trust, facilitative leadership, institutional design, and initial conditions that determine success (Emerson et al., 2012). In practice, each actor must have a verifiable contribution: the government provides public regulation and facilities; the company provides resources and market access; academics support validation and capacity building; communities run operations; and the buyer guarantees the circulation of the product. Social innovation occurs when collaboration permanently changes social practices and relationships, creating institutional change that distinguishes social innovation from short-term technological demonstrations (Cajaiba-Santana, 2014).

Evidence from Indonesia and developing countries shows that physical facilities do not automatically result in sustainable systems. Research affirms the importance of markets, technical capabilities, financial governance, and institutional support (Zurbrügg et al., 2012). Studies in Surabaya demonstrate the role of training, environmental cadres, waste banks, economic incentives, and public-private networks (Dhokhikah et al., 2015; Wijayanti & Suryani, 2015). A strong community organization should at least have a structure and division of tasks, operational SOPs, recording of input-outputs and cash, member regeneration mechanisms, maintenance schedules, incentive systems, and evaluation forums. Transparency is crucial when programs manage product sales and operational funds for social activities or disaster preparedness.

Although the literature on circular economy, CSR, community waste management, collaboration, and BSF technology is growing rapidly, studies linking the five fields in a single implementation model are still limited. Previous studies have tended to discuss the concept separately: the circular business model focuses on the company, community waste

management emphasizes participation, while the BSF and urban agriculture studies focus on technical or food aspects. This gap creates a need for a cross-disciplinary synthesis that can be used by companies, local governments, and communities to design programs that are independent, inclusive, and measurable.

The novelty of this research lies in several aspects: it integrates five interrelated fields CSR, circular economy, community waste management, collaborative governance, and food security in a single analytical framework, unlike previous studies that examined these fields separately; it develops a CSR–Circular–Food Synergy Model that connects transformational CSR levers, collaborative governance, community capacity, circular innovation, and market ecosystems with environmental, economic, social, and food outcomes; it tests the proposed model through contextual analysis of the PASAR TERAS BERSAMA Program, providing empirical grounding for the theoretical synthesis; and it contributes to the literature on social innovation in waste management by demonstrating how community-based programs can create institutional change and multi-dimensional impacts.

Based on these gaps, this study aims to map the characteristics of 40 articles on CSR, circular economy, community waste management, collaboration, and food security; to identify the mechanisms of success and obstacles to implementation; to develop a thematic synthesis that explains the relationships between components; and to formulate a CSR-Circular-Food Synergy Model as a framework for the implementation and evaluation of CSR programs in Indonesia. Theoretically, this research enriches the study of the circular economy and CSR by linking material flows, collaborative governance, and social innovation. Practically, this study provides a CSR-Circular-Food Synergy Model with an evaluation matrix for companies, governments, and communities to design independent, inclusive, and measurable programs, as well as provide insight into the conditions of program success and the integration of waste management with food security.

METHOD

Design and Research Questions

The research used Systematic Literature Review (SLR) with thematic qualitative synthesis. SLRs were chosen to reduce non-transparent literature selection, organize cross-disciplinary evidence, and build conceptual models of iterative findings. Because the design, context, and indicators in the selected articles were very heterogeneous, the study did not conduct statistical meta-analysis.

Research questions include: RQ1 What are the dominant themes and approaches in research on CSR, circular economy, community waste management, and food security? RQ2 What factors encourage or hinder the sustainability of the program? RQ3 What is the relationship between CSR resources, collaborative governance, circular practices, community efforts, and food security outcomes? RQ4 What is the most relevant implementation framework for the context of CSR programs in Indonesia?

Search Strategy

The search was conducted on July 29, 2026 through open indexing portals and the pages of scientific publishers, including ScienceDirect, SpringerLink, Wiley Online Library, Taylor & Francis, PLOS, as well as institutional repositories displaying article metadata and DOIs. The range of publications is limited to 2008–2025. The year 2008 was retained to include a

basic framework of collaborative governance and stakeholder participation, while the article 2026 was not included to avoid the bias of the current year.

The keywords are organized into several clusters: ("corporate social responsibility" OR CSR) AND ("circular economy" OR "circular business model"); ("community-based waste management" OR "waste bank" OR "informal waste sector") AND (collaboration OR empowerment); ("organic waste" OR "food waste") AND ("black soldier fly" OR maggot OR compost); and ("urban agriculture" OR "food security") AND (waste OR circular economy). A reverse and forward citation search was done on key articles to find additional studies.

Inclusion and Exclusion Criteria

Table 1. Article inclusion and exclusion criteria

Aspects	Criteria Inclusion	Exclusion Criteria
Types of publications	Peer-reviewed journal articles or journal proceedings articles that have DOIs and searchable methods.	Books, popular reports, news, thesis, service articles without research methods, or documents without adequate metadata.
Topics	Discuss at least two constructs: CSR, circular economy, community waste management, social collaboration/innovation, or food security/BSF.	Focus only on material technology with no social, organizational, or waste management implications.
Time and language	Published 2008–2025; English or Indonesian.	Published outside the period; the text is incomprehensible or the metadata is incomplete.
Quality of the evidence	Key objectives, methods, contexts, and findings can be identified.	Unclear methods, duplication of substance, or findings are irrelevant to the research question.

Source: Developed by the author for SLR inclusion criteria, 2026

Data Selection and Extraction Process

A total of 164 recordings were compiled from structured search and citation search. Once 31 duplicates were removed, 133 titles and abstracts were filtered. A total of 73 recordings were removed because they did not fit the scope. Full-text assessment was conducted on 60 articles; 20 articles were excluded due to irrelevant focus, not journal articles, inadequate methods/evidence, or duplication of substance. A total of 40 articles entered the extraction and synthesis stage.

The data extracted included authors and years, study focus, design/methodology, region/sector context, key findings, driving factors, barriers, and implications for community-based programs. The synthesis process uses iterative thematic coding. The initial code is combined into five main themes and subsequently compared to find a cross-theme mechanism.

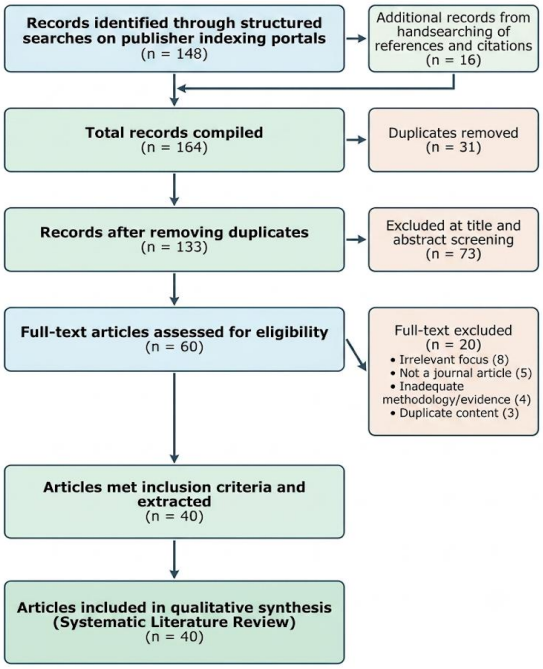

Figure 1. PRISMA Flow Diagram for Literature Selection (Adapted)
Source: SLR study selection process, 2026

Diagrams are designed with enough text space; All the information is in the box and doesn't cross the line.

Analysis of Program Documents as Contextual Material

In addition to the 40 journal articles that became the SLR analysis unit, the study used the 109-page program document "Journal Materials: PASAR TERAS BERSAMA" as contextual analysis material. The document was not included in the 40 articles because it was a program document and had not been positioned as a peer-reviewed journal article. Its function is to test whether the relationship patterns found in the literature can explain the design, process, and achievements of the program at Kuin Pilucuk.

Document analysis is carried out through five stages: (1) extraction of intervention logic and value chains; (2) identification of the role of companies, governments, academics, and communities; (3) mapping of achievements to the dimensions of natural, economic, society, and well-being; (4) matching of program evidence with five SLR outcome themes; and (5) critical assessment of baseline clarity, measurement period, denominator, calculation method, and possible impact attribution. Therefore, the program figures are treated as document-reported evidence, not as independent causal verification.

RESULTS AND DISCUSSION

Publication Profile and Theme

Forty articles are spread over the period 2008–2025. The highest concentration occurred in 2017–2018, when the circular economy literature evolved from a general definition to a hierarchy of strategies, driver-barriers, supply chains, and business models. The next wave in 2020–2025 shows increased attention to CSR, social inclusion, indicators, community waste management, and the Indonesian context. Five articles directly located or focused on Indonesia, while the other articles provide comparative evidence and an international framework.

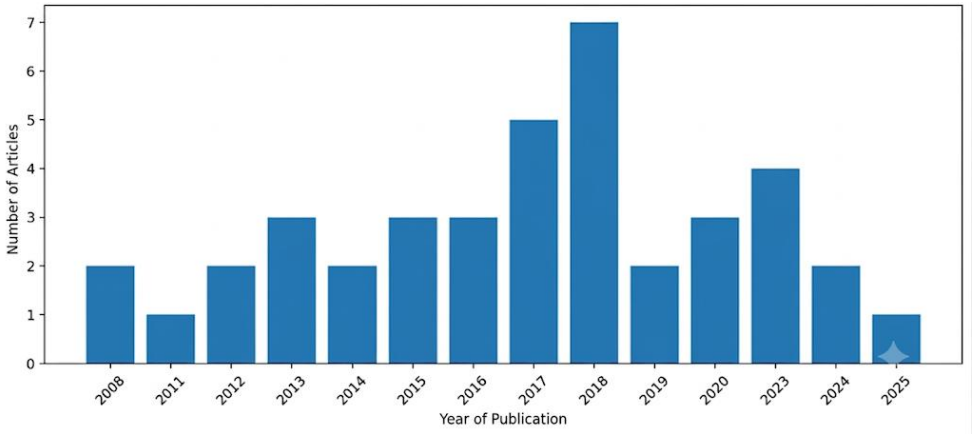

Figure 2. Distribution of 40 Articles by Year of Publication
Source: SLR article distribution analysis, 2026

The distribution of articles shows the dominance of the literature after 2016 and the continuity of research until 2025.

Table 2. Distribution of articles by theme of synthesis

Theme	Quantity	Propose yourself	Key Focus
Foundations of the circular economy	11	27.5%	Definitions, R hierarchy, transitions, driver–barriers, and system approaches.
CSR and circular business models	7	17.5%	Convergence of CSR–CE, business models, indicators, SDGs, and social inclusion.
Community waste management	11	27.5%	Participation, waste banks, informal sectors, institutions, and the Indonesian context.
Social collaboration and innovation	4	10.0%	Trust, leadership, institutional design, shared motivation, and collective action.
Organic waste and food security	7	17.5%	BSF/maggot, feed, compost, urban agriculture, LCA, and food-feed-energy nexus.

Source: SLR thematic coding results, 2026

Synthesis Matrix 40 Articles

Table 3. Characteristics of SLR

No.	Article	Theme	Context	Key Findings
1	Bocken et al. (2016)	Foundations of the circular economy	Product design and business model	Strategies for slowing, shutting down, and narrowing resource flows need to be instilled from product design and business models.
2	Ghisellini et al. (2016)	Foundations of the circular economy	Global circular economy transition	The implementation of the circular economy requires the integration of the micro, meso, and macro levels as well as policy support and behavior change.
3	Geissdoerfer et al. (2017)	Foundations of the circular economy	CE relations and sustainability	The circular economy and sustainability intersect, but the social dimension and distribution of benefits are still underdeveloped.

No.	Article	Theme	Context	Key Findings
4	Kirchherr et al. (2017)	Foundations of the circular economy	Definition of circular economy	The definition is dominated by the 3Rs and economic prosperity; The perspective of the system and intergenerational justice has not been consistent.
5	Korhonen et al. (2018)	Foundations of the circular economy	CE limitations and challenges	The circular economy is a debated concept; The limits of the system, the rebound effect, and the measure of success need to be clarified.
6	Merli et al. (2018)	Foundations of the circular economy	CE academic approach map	Research is stronger on environmental and business aspects than on social, governance, and community implementation aspects.
7	Prieto-Sandoval et al. (2018)	Foundations of the circular economy	CE concept consensus	CE needs to be understood as a regenerative system that combines eco-design, organizational innovation, and value for stakeholders.
8	Homrich et al. (2018)	Foundations of the circular economy	Research trends and gaps	CE literature is still fragmented; A clearer taxonomy and relationship between theory, practice, and indicators is needed.
9	Reike et al. (2018)	Foundations of the circular economy	Hierarchy of R strategy	High-value strategies such as refuse, reduce, reuse, repair, and remanufacture must be prioritized before energy/material recycling.
10	by Jesus & Mendonça (2018)	Foundations of the circular economy	Eco-innovation and CE transition	Regulation, market demand, technology, and networks drive the transition; Institutional lock-in and investment risks are an obstacle.
11	Govindan & Hasanagic (2018)	Foundations of the circular economy	Circular supply chain	The adoption of CE is influenced by a combination of organizational, technological, market, consumer, policy, and supply chain collaboration.
12	Lüdeke-Freund et al. (2019)	CSR and circular business models	Circular business model pattern	Key patterns include product life extension, reuse, sharing, material substitution, and resource recovery.
13	Centobelli et al. (2020)	CSR and circular business models	CE business model design	Circular business models require changes to value propositions, partner networks, value creation processes, and value capture mechanisms.
14	Dey et al. (2020)	CSR and circular business models	CE Practices in SMEs	CE practices can improve environmental, economic, and social performance, but SMEs need external resources, competencies, and support.
15	Del Baldo & D'Anghela (2020)	CSR and circular business models	Convergence of CSR and CE	CSR and CE meet on stakeholder value creation, long-term responsibility, innovation, and impact management.
16	Puntillo (2023)	CSR and circular business models	Waste management sector	Circular business models in the waste sector support the SDGs when they combine material recovery, service innovation, and cross-sector partnerships.
17	Niyommaneerat et al. (2023)	CSR and circular business models	Energy and plastic recycling CSR project, Thailand	CE and CSR indicators need to be integrated so that the economic, environmental, social, governance, and resource duration impacts can be measured.
18	Pião et al. (2023)	CSR and circular business models	Social inclusion in CE	Social inclusion demands decent work, participation in decision-making, recognition of informal actors, fairness, and benefit-sharing.

No.	Article	Theme	Context	Key Findings
19	Zurbrügg et al. (2012)	Community waste management	Gianyar Waste Recovery Project, Indonesia	Sustainability is determined by institutional support, product markets, technical competence, financial governance, and stakeholder engagement.
20	Guerrero et al. (2013)	Community waste management	More than 30 developing country cities	The performance of the waste system is influenced by technical, social, economic, institutional, and coordination factors between stakeholders.
21	Marshall & Farahbakhsh (2013)	Community waste management	Integrated solid waste management	The systems approach must connect technology to local organizational behavior, financing, policy, health, and capacity.
22	Dhokhikah et al. (2015)	Community waste management	Surabaya, Indonesia	Training, information, environmental cadres, and waste bank optimization increase participation in household waste reduction.
23	Wijayanti & Suryani (2015)	Community waste management	Surabaya waste bank	Waste banks form economic incentives, self-reliance, public-private networks, and community-based environmental governance.
24	Gutberlet (2015)	Community waste management	Scavenger Cooperative, Brazil	Cooperatives strengthen the position of informal workers, increase material value, and generate environmental and social benefits for cities.
25	Aparcana (2017)	Community waste management	Informal sector in low-middle-income countries	Formalization is successful when it is contextually tailored and includes policies, social protection, markets, institutions, and worker participation.
26	Koiwanit & Filimonau (2023)	Community waste management	Small tourist island, Thailand	Role sharing, trust, social closeness, communication, and shared commitment determine the effectiveness of waste reduction collaborations.
27	Wikurendra et al. (2024)	Community waste management	Urbanization and waste in Indonesia	CE integration promises economic and environmental benefits, but it requires infrastructure, consistent policies, data, and behavior change.
28	Leknoi et al. (2024)	Community waste management	Waste management community initiative	Local leadership, learning, belonging, collective incentives, and networking make community initiatives last.
29	Afnan et al. (2025)	Community waste management	Community-based RDF program, Indonesia	The waste-to-energy transition needs to strengthen local agencies, communications, capacity, benefit-sharing, and institutional resilience.
30	Ansell & Gash (2008)	Social collaboration and innovation	Collaborative governance	Dialogue, trust, facilitative leadership, institutional design, and initial conditions determine the success of collaboration.
31	Emerson et al. (2012)	Social collaboration and innovation	Collaborative governance regimes	Effective collaboration requires principled engagement, shared motivation, and capacity for joint action.
32	Reed (2008)	Social collaboration and innovation	Environmental stakeholder participation	Participation is more effective if it starts from the beginning, is inclusive, transparent, facilitated, and connected to local knowledge.
33	Cajaiba-Santana (2014)	Social collaboration and innovation	Social innovation theory	Social innovation is institutional change through collective action and the formation of new practices, not just new products.

No.	Article	Theme	Context	Key Findings
34	Diener et al. (2011)	Organic waste and food security	Biowaste using BSF larvae	BSF larvae are able to reduce organic waste while producing valuable biomass as feed and residue for soil improvement.
35	Orsini et al. (2013)	Organic waste and food security	Urban agriculture in developing countries	Urban agriculture can improve food supply, health, local economy, social integration, and environmental benefits with policy support.
36	Specht et al. (2014)	Organic waste and food security	Food production in/above buildings	Urban agriculture benefits local food and ecosystems, but energy feasibility, economy, space, and social acceptance must be assessed.
37	Surendra et al. (2016)	Organic waste and food security	Food waste becomes BSF	Bioconversion produces protein-rich biomass and fats for feed/biodiesel, thus linking waste management to the food-feed-energy nexus.
38	Barragán-Fonseca et al. (2017)	Organic waste and food security	BSF as animal feed	BSF has the potential to be a source of feed protein, but the quality of nutrition is affected by substrate, cultivation conditions, and safety standards.
39	Salomone et al. (2017)	Organic waste and food security	Bioconversion of food waste with BSF	The main benefits are related to land use savings and feed material substitution; Energy consumption is an important burden that needs to be optimized.
40	Lalander et al. (2019)	Organic waste and food security	Different types of BSF feedstock	The type and quality of raw materials greatly affect larval development, waste reduction, and biomass conversion efficiency.

Source: SLR article extraction results, 2026

Synthesis Thematic

Circular Economy as a Value Retention System

The foundational literature shows that the circular economy is not synonymous with recycling. Bocken et al. (2016) and Reike et al. (2018) place prevention, reduction, reuse, repair, and prolongation of life at a higher level than final processing. The implication for community waste programs is that indicators of success are not enough in the form of the tonnage of waste transported or the number of recycled products. The program needs to measure materials that are prevented, reused, returned to productive processes, and resulting in new resource substitutions.

Conceptual studies also show the need for clear system boundaries. Programs can appear circular at the site level, but move the burden of energy, cost, or pollution elsewhere. Therefore, technological decisions such as organic processing, plastic shredding, or paving production must consider energy needs, product quality, transportation distance, safety, and the end market. This approach prevents the program from ending up as a buildup of processed materials without buyers.

From Philanthropic CSR to Transformational CSR

A synthesis of seven articles shows that transformational CSR has four characteristics. First, medium-long term intervention and does not stop at asset allocation. Second, the company provides managerial assistance, technology, standardization, and market access. Third, the community is involved in design, decision-making, benefit-sharing, and evaluation.

Fourth, indicators combine environmental, economic, social, governance, and resource sustainability dimensions (Del Baldo & D'Anghela, 2020; Niyommaneerat et al., 2023).

Circular business models also change the position of communities from beneficiaries to producers of value. Waste materials are a business input, while companies can act as social investors, standard providers, regular buyers, or supply chain connectors. However, off taker relationships should be designed to be transparent so as not to create new dependencies. Contracts for quality, volume, price, purchase schedule, and problem resolution mechanisms need to be agreed upon from the start.

Community Institutions as Determinants of Sustainability

Evidence from Indonesia and developing countries shows that physical facilities do not automatically result in sustainable systems. Zurbrügg et al. (2012) affirm the importance of markets, technical capabilities, financial governance, and institutional support. Dhokhikah et al. (2015) and Wijayanti and Suryani (2015) show the role of training, environmental cadres, waste banks, economic incentives, and public-private networks. This means that the program needs to build an organization, not just a processing unit.

A strong community organization should at least have a structure and division of tasks, operational SOPs, recording of input outputs and cash, member regeneration mechanisms, maintenance schedules, incentive systems, and evaluation forums. Transparency is crucial when programs manage product sales and operational funds for social activities or disaster preparedness. Public trust can decline if transactions are not documented or benefits are concentrated in only a few people.

Collaborative Governance and Social Innovation

The collaborative governance framework shows that collaboration is not just about the number of institutions listed in the list of partners. Ansell and Gash (2008) and Emerson et al. (2012) emphasize the process of dialogue, shared motivation, capacity to act, facilitative leadership, and institutional design. In practice, each actor must have a verifiable contribution: the government provides public regulation and facilities; the company provides resources and market access; academics support validation and capacity building; communities run operations; and the buyer guarantees the circulation of the product.

Social innovation occurs when collaboration permanently changes social practices and relationships. Success is not just producing maggots, compost, or recycled products, but also changing the pattern from throwing away to sorting, from soliciting donations to managing the business, and from the recipient of the program to the decision-making partner. It is this institutional change that distinguishes social innovation from short-term technological demonstrations.

Waste–Feed–Fertilizer–Food Nexus

Seven articles on BSF and urban agriculture show the opportunity to build an organic loop. Sorted organic waste can be converted into larvae for fish or livestock feed; Processing residues can become compostable materials; compost supports vegetables or food crops; and the products of cultivation can be consumed or sold. This system connects the goals of waste reduction, feed substitution, fertilizer production, income, and access to local food.

However, technical success depends on feedstock quality, humidity, feeding ratio, sanitation, contaminant separation, and energy management. Lalander et al. (2019) showed that feedstock affects larval performance and reduction efficiency. Salomone et al. (2017) show

that environmental benefits can be reduced if energy consumption is high. Therefore, community programs require standards for receiving raw materials, recording production, quality testing, odor and leachate management, as well as a plan for the use or sale of each output.

Cross-Theme Drivers and Barriers

Table 4. Drivers and obstacles to the sustainability of the program

Dimensions	Motivating Factors	Major Obstacles
Governance	Roles are clear; regular forums; facilitative leadership; transparency; SOP.	Fragmentation of authority; conflict of interest; the dominance of strong actors; change of managers.
Economy and markets	Off taker; price/volume contracts; product diversification; cost logging.	Material prices fluctuate; products without a market; grant dependence; logistics costs.
Social	A sense of belonging; fair incentives; inclusion of women and informal workers; trust.	Symbolic participation; uneven benefits; stigma; low discipline of sorting.
Technology	Technology at scale; raw material standards; training; maintenance.	Technology is too complex; contamination; unstable quality; energy and spare parts.
Policies and data	Supporting regulations; integration of regional programs; indicators and baselines.	Generated data is inconsistent; unmeasurable targets; the rules change; weak supervision.
Food and health	Local feed/fertilizer; sanitation; quality testing; Integration of cultivation.	Pathogen/chemical risk; odor and leachate; quality gap; the product is not absorbed.

Source: SLR synthesis results, 2026

CSR–Circular–Food Synergy Model

Based on the relationship between themes, the study proposes a CSR-Circular-Food Synergy Model. This model places five levers at the input stage: transformational CSR, collaborative governance, community capacity, circular innovation, and market ecosystems. The five inputs drive the process of integrating materials of sorting, processing, value recovery, production, and distribution, which then produces four outcome groups: environmental, economic, social, and food. Relationships are cyclical: income and trust strengthen community organizations; impact data strengthens the legitimacy and support of CSR; and food and environmental products increase direct benefits for the community.

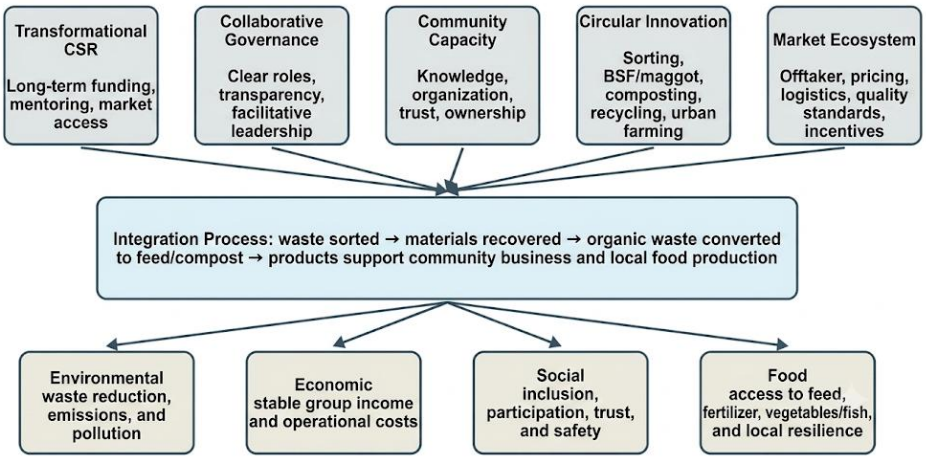

Figure 3. Community-Based CSR-Circular Food Synergy Model
Source: Developed by the author based on SLR thematic synthesis, 2026

Theoretical contributions

The first contribution of the research is to connect the material- and business model-oriented circular economy literature with the literature on collaborative governance and social innovation. Synthesis shows that the flow of material will only rotate if there is a flow of decisions, information, trust, incentives, and income that supports it. Thus, the community circular economy analysis unit cannot be limited to processing technology; The unit of analysis is the socio-technical and institutional ecosystem.

The second contribution is to include food security as an explicit outcome of organic waste management. BSF literature and urban agriculture are usually analyzed separately from CSR. The proposed model places feed, fertilizers, fish, and vegetables as circular outputs that can strengthen local food access, availability, and stability, while building community sources of income.

The third contribution is to clarify the position of CSR. CSR is not a result variable, but a lever that influences capacity, governance, technology, market, and measurement. CSR becomes transformational if it strengthens community institutions and creates a path to independence; on the other hand, CSR becomes philanthropic if the program is dependent on aid, has no market, and stops when funding is complete.

Implications for CSR Programs in Indonesia

For programs that integrate waste banks, organic processing, fish farming, sustainable food agriculture, farmer women's groups, and volunteer groups, the planning stage must begin with mapping material flows and values. Each type of waste needs to have specifications, volume, person in charge, process, output, end user, cost, price, and risk. The mapping prevents the program from having many activities that look innovative but are not operationally connected.

Companies can provide start-up capital, technology, training, certification, safety support, and off taker access. The local government needs to ensure the legality of land, integration with the waste system, licensing, and official assistance. Academics can prepare baselines, SOPs, quality tests, and impact evaluations. The community is in control of day-to-

day operations and reporting. The collaboration structure should be outlined in a work agreement that contains targets, contributions, indicators, data mechanisms, and exit strategies.

Program indicators should avoid claims of 100% achievement without a clear basis for calculation. Each indicator needs to have a baseline, formula, data source, period, person in charge, and evidence. Examples of indicators include the percentage of waste properly sorted; kilograms of converted organics; reduction ratio; larval survival rate; feed volume or compost; net income; the percentage of active members; the number of fixed buyers; the proportion of non-grant income; and the number of households receiving food benefits.

Contextual Analysis of the SHARED CORE MARKET Program

The program document describes PASAR TERAS BERSAMA as an intervention that brings together organic-inorganic waste management, maggot cultivation, fish farming, sustainable food agriculture, fire preparedness, and operational financing of volunteer groups. The designed value chain is organic waste into maggot feed and compost; maggot becomes fish feed or a commodity; inorganic waste into planting media, ecobricks, and garbage cans; while business income is used to strengthen the independence of the Disaster Preparedness Village. The structure shows that the program does not simply manage residues, but connects the circulation of materials with the circulation of economic, social, safety, and food benefits.

Suitability of Program Design with Findings 40 Articles

First, the company's position in the document shifts from a donor to a facilitator who provides infrastructure, mentoring, project management, and networking. This pattern is consistent with SLR's findings regarding transformational CSR. Second, the involvement of three companies, four elements of local government offices, one university, as well as the KSB, P2L, and KWT groups reflects collaborative governance; The added value lies in the division of functions, not just the number of partners. Third, the use of maggots, compost, fish farming, used planting media, and Eco bricks is in accordance with the principle of value retention and the waste-feed-fertilizer-food nexus. Fourth, training, local hero regeneration, and inter-subgroup replication demonstrate investment in human capital and community institutions.

The strongest conformity lies in socio-technical integration: physical facilities, operational vehicles, sorting houses, maggot houses, knowledge, work rules, market networks, and government legitimacy are treated as a single system. This supports SLR's conclusion that processing technology will not be sustainable without organization, trust, transparency, markets, and institutional support.

Multidimensional Achievement Analysis and Evidence Quality

The document reports achievements at the individual, group, and community levels. At the individual level, five members are said to have received an additional total income of IDR 4,000,000 or an average of IDR 800,000 per person. At the group level, there are 72 active members, 85 trainees from KWT elements and Posyandu cadres, operational assets, and preparedness equipment. At the community level, education reaches 210 students in seven schools. The document also recorded 492 kg of organic waste used for two years as well as the collaboration of three companies, four government elements, one university, and two community groups. These achievements show the breadth of impact, but their depth and sustainability need to be read through the quality of measurement.

Table 5. Triangulation of SLR Findings with Evidence of the PASAR TERAS BERSAMA Program

Dimensions/Elements	Evidence Reported	Compatibility with SLR	Analytical Records and Verification
Transformational CSR	Three companies support facilities and mentoring; The company is positioned as a facilitator, not just a donor.	In line with the literature that CSR needs to strengthen capacity, governance, technology, and market access.	It needs data on the amount of investment, the duration of mentoring, the contribution of each partner, and the exit strategy.
Circular economy and food	Organic waste → maggot/compost → fish feed and income; bottles/gallon → planting media and Eco bricks.	Forming a waste-feed-fertilizer-food nexus and extending material value.	It is necessary to have monthly mass balance, raw material quality, reduction ratio, feed/compost output, and food production data.
Community institutions	72 active members; replication of Sub Azkia to Sub Cipta Karya; vehicle assets and safety equipment.	Supporting the importance of ownership, regeneration, SOPs, and organizational capacity.	It needs an active level per period, incentive structure, cash statements, maintenance costs, and reserve funds.
Economic impact and welfare	Additional total income of IDR 4,000,000 for 5 members or an average of IDR 800,000/person; sale of maggot and fish.	Shows the change from aid recipients to value producers and independent operational financing.	The revenue period, turnover vs net profit, production costs, market consistency, and proportion of non-grant income are unclear.
Social, educational, and safety impact	85 trainees; 210 students from 7 schools; PPE, fire extinguishers, helmets, and boots; women's involvement.	In line with social innovation, stewardship, inclusion, and strengthening community resilience.	It is necessary to pre-test/post-test, behavioral indicators, fire incident/risk data, and separation of direct and indirect recipients.
Environmental impact	The document recorded 492 kg of organic waste/2 years, 100% organic utilization, and estimated GHG reduction.	Supports the goal of reducing the generation and closure of organic streams.	A 100% claim needs a denominator; GHG numbers need methods, emission factors, system limits, units, periods, and LCA verification.

Source: Program document analysis triangulated with SLR findings, 2026

Novelty, System Changes, and Implementation Learning

Conceptually, the novelty of the program is not primarily in maggot technology or bottle recycling, but in the configuration of "one program, multi-solution". Waste is positioned as a resource to finance disaster preparedness, support feed and agriculture, and build the dignity of volunteer groups. The paradigm shifts from responsive-dependent to preventive-independent is in line with the definition of social innovation that emphasizes changes in practices, roles, and relationships between actors. However, categorization as radical innovation needs to be strengthened by comparisons to similar programs, evidence of long-term change, and indicators that the old system has truly been replaced.

The program materials also show adaptive learning. Initial plans at other locations did not go ahead due to the rejection of the community who were worried that the area would become a new dumping point. The program was then reformulated at Kuin Pilucuk by building corporate commitment, government legitimacy, and location suitability prior to community implementation. This sequence suggests that social acceptance, land legality, and trust-building should be treated as design prerequisites, rather than additional socialization activities after the technology has been chosen.

Measurement Gaps and Analysis Strengthening Agenda

First, some of the achievements use the term "100%" with no denominators, periods, and formulas displayed. Second, additional income has not differentiated turnover, net profit, recurring income, or accumulation over a period. Third, the estimated minimum coverage of around 6,400 people mixes units of people, families, and households so that there is a risk of disproportionate summation. Fourth, emission reduction rates require clarity on LCA methods, emission factors, baseline scenarios, and system limits. Fifth, changes in knowledge and behavior have not been equipped with pre-test/post-test instruments or repeated observation.

To improve scientific strength, the program needs to build a monthly dashboard that contains waste inputs by type, contamination rate, maggot/compost/inorganic product output, final residue, costs, gross and net income, number of active members, working hours, repeat buyers, fish/vegetable production, food beneficiaries, training results, and safety indicators. Annual evaluations should incorporate data audits, stakeholder interviews, baseline–endline comparisons, and independent verification for environmental and economic claims.

Research Limitations

First, the articles come from diverse disciplines and methods so the results cannot be statistically combined. Second, not all articles measure long-term impact; Many studies are in the form of reviews or case studies. Third, search using open portals and publisher sites, not Scopus or Web of Science subscription exports. Fourth, the analysis of PASAR TERAS BERSAMA depends on a single program document prepared by the implementer, so it has the potential to contain biased reporting and cannot be considered as an independent impact evaluation. Therefore, program numbers are used for conceptual triangulation and identification of measurement needs, rather than to express causal relationships.

Fourth, the relationship between waste management and food security is mainly supported by the literature of BSF and urban agriculture, while evidence of a direct impact on household food security is still limited. Subsequent research needs to use longitudinal design, cost-benefit analysis, life cycle assessment, and food security indicators to test the model empirically.

CONCLUSION

The SLR of 40 articles and contextual analysis of the PASAR TERAS BERSAMA Program shows that the success of community-based waste management is not determined by a single technology, but rather by the alignment between value retention strategies, transformational CSR, collaborative governance, organizational capacity, markets, safety, and impact measurement. The circular economy needs to move beyond recycling towards prevention, reuse, material recovery, business creation, and strengthening community resilience. The integration of organic waste with BSF/maggot, compost, fish farming, and urban agriculture forms a waste–feed–fertilizer–food nexus. This nexus has the potential to reduce generation, provide food production inputs, create income, and strengthen community resilience. This potential can only be realized through raw material sorting, quality control, sanitation, cost recording, and a stable market. The proposed CSR–Circular–Food Synergy Model provides an implementation framework with five transformational CSR levers, collaborative governance, community capacity, circular innovation, and market ecosystems as well as four environmental, economic, social, and food outcomes. This framework can be

used to design, evaluate, and replicate waste management CSR programs in Indonesia in a more independent, inclusive, transparent, and measurable manner. The program analysis shows that the literature model can be applied to the context of Kuin Pile: the fish maggot waste chain/income compost, multi-stakeholder support, and strengthening volunteer groups creates potential natural, economic, social, and well-being impacts. Reported achievements include 72 active members, 85 trainees, 210 students educated, the utilization of 492 kg of organic waste over two years, and an additional income of Rp4,000,000 for five members giving an early indication that the integration is underway. Nevertheless, scientific replication requires defined indicators, consistent periods, net profit calculations, mass balance sheets, and independent verification.

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