Komunitas: Jurnal Pengembangan Masyarakat Islam
ISSN: 2540-9182 (online)
ISSN: 2086-3357 (print)

BEST PRACTICES IN CSR PROGRAMS: EMPOWERMENT OF URBAN HOME INDUSTRY ENVIRONMENTAL SUSTAINABILITY

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Received: date; Accepted: date; Published: date

Abstract:
The concept of an urban village aligns with the sustainability development framework by enhancing urban civilization and socioeconomic culture. However, inadequate environmental management has led to problems, such as irresponsible household industries and small and medium enterprises exacerbating socio-environmental issues through poor waste management and unsanitary food production practices. The presence of companies plays a crucial role in community development through Corporate Social Responsibility (CSR) programs. An example is the "Innovative Food Urban-Village" initiative by PT KPI RU III, which addresses urban issues. This study aims to showcase CSR best practices. It employs both qualitative and quantitative methods, using a phenomenological approach. The results demonstrate that CSR best practices effectively address issues through various innovations, including: 1) household industry waste management, 2) urban village planning, 3) creative food products, and 4) good manufacturing practices. Some innovative tools include Green IPAL (waste management), Hygiene Saucepan, and Hygiene Production Table, with diverse products such as tempeh chips, taucho, and herbal tea.

Keywords: *CSR Programs, community development, social innovation, and Kampung Pangan Inovatife.*

1. Introduction

Cities have become central hubs of human activity, continuously evolving and experiencing significant development (Hardilla dan tim, 2020). The hustle and bustle of city life have become routine for residents, profoundly shaping their lifestyles. Urban living culture has emerged as a notable phenomenon, reflecting the character of its inhabitants, whether consciously recognized or not. Urban settlements are diverse, comprising both 'formal' and 'informal' settlements, the latter often referred to as kampungs (Nugroho, 2019).

Kampungs, located either within or on the periphery of urban areas, are commonly known as urban kampungs. As an empirical reality, these urban kampungs serve as residential areas for city dwellers and have the potential to be sources of urban civilization, shaping the city's cultural, social, and economic character despite various limitations (Nugroho, 2009). Kampungs typically exhibit a complex interplay of social, economic, and spatial factors,

making their integration with the city a critical issue (Hamidah dan tim, 2016). Therefore, attention to the development of urban kampungs is essential, emphasizing their unique local characteristics as key determinants of their development (Purbadi dan Lake, 2019).

During the developmental phase, the concept of *kampung* is emphasized as a positive entity within the framework of sustainable development (Heryati, 2011). *Kampung* represents a vital component of the typical urban settlement model, demanding serious attention in its management across social, economic, cultural, and physical (Purbadi and Lake, 2019). Recognizing the strategic potential and unique settlement models of urban *kampungs* is imperative, placing them on par with other settlements in terms of effective management. However, urban kampungs integrated into urban settings are often perceived as challenges for urban communities.

Issues with urban *kampungs* often stem from surrounding communities' lack of awareness regarding the inadequate living conditions prevalent in terms of physical, environmental, infrastructural, and socio-economic aspects. Population movement back and forth towards urban *kampungs* is driven by the perception that economic opportunities in cities better cater to livelihood needs compared to the sustainability status of the physical environment in rural areas. The development and population growth within urban *kampungs* stand as primary factors inducing significant changes to their internal conditions. These changes manifest through heightened population densities and increased settlement demands, impacting the limited land availability in urban *kampungs* and leading to the emergence of slum areas. The continuous development of urban *kampungs* amidst rising population figures without adequate infrastructure results in these areas becoming pockets of unhealthy, unproductive, and environmentally unfriendly urban habitats (Akbar dan Alfian, 2018).

Given the unique attributes and challenges associated with urban kampungs, this discussion will focus on a specific city in South Sumatra, namely Kota Palembang. According to data from the Central Statistics Agency (BPS) of South Sumatra Province in 2022, Kota Palembang's population reached 1,686,073 people in 2021, positioning it as one of the most densely populated cities in the region of South Sumatra and the fifth most populous city

nationally (BPS Provinsi Sumatera Selatan, 2022). Moreover, South Sumatra Province ranks third lowest in terms of the proportion of households implementing Clean and Healthy Behavior (PHBS) at 25.1%, falling below the national average (Purwanto 2021). This underscores the necessity for Kota Palembang, as the capital city of South Sumatra Province, to prioritize PHBS implementation to mitigate deteriorating conditions within dense and slum-like urban kampungs. In a proactive effort to monitor and address slum areas, the Mayor of Kota Palembang, through decision number 325/KPTS/DPRKP/2020, identified a total of 53 locations of Slum Housing and Slum Settlements requiring collective attention (SK Walikota Palembang, 2020).

One of the areas identified as slum housing and slum settlements in Kota Palembang is *Kelurahan Plaju Ulu*. According to the decree issued by the Mayor of Palembang, *Plaju Ulu* encompasses an area of 7,000 hectares, housing a population of 611 households. This indicates a population density of up to 76 people per square kilometer in the *Plaju Ulu* area (SK Walikota Palembang, 2020).

The issue of dense and slum-like urban kampungs in *Kelurahan Plaju Ulu* is exacerbated by the presence of household industries unaware of the environmental impact of their activities. Particularly, some household industries in the *Plaju Ulu* area, including Food Processing Places (TPM), fail to meet health standards. Health data from Palembang City for the years 2019/2020 reveals that out of 37 TPMs documented in Plaju District, only 5 comply with health standards (Dinas Kesehatan Kota Palembang, 2020). The lack of health standardization in TPMs in *Kelurahan Plaju Ulu* is exemplified by one tempeh producer, which still utilizes used oil drums and disposes of production waste in the environment.

The tempe production activities in the aforementioned village generate tempe wastewater reaching *7 million liters* annually. Additionally, the accumulation of solid tempe waste in the residential areas of *Kelurahan Plaju Ulu* can reach *54 tons* per year. Consequently, an unpleasant odor emanates from the drainage due to pollution caused by the tempe industry's waste. Consequently, it is not uncommon for the surrounding community to voice complaints about this situation. Nonetheless, tempe producers in *Kelurahan Plaju Ulu* possess the

potential to be one of the pillars of the local economy, with an annual turnover reaching *one billion rupiahs*. The significant turnover generated by the *24 tempe production kitchens* serves as a potential reinforcement that the tempe industry in *Plaju Ulu* must be preserved alongside its historical significance.

Furthermore, tempe producers in the *Plaju Ulu* area constitute the oldest tempe industry hub in Palembang. Local accounts state that tempe producers in *Kelurahan Plaju Ulu* have been present since *1952*. Additionally, the business cycle of this tempe industry also serves as one of the potential job opportunities, with a current record of *96 workers* employed. However, despite reflecting on this historical aspect, the community still struggles to raise awareness among tempe producers regarding production standards and environmental status.

Acknowledging the emerging urban *kampung* issues, PT KPI RU III *Plaju Ulu* collaborates with other stakeholders to address these problems through community empowerment approaches. The community empowerment program by PT KPI RU III *Plaju Ulu* is implemented as part of the company's Corporate Social Responsibility and Environmental Responsibility (CSER) program, which aligns with the company's vision and mission. This condition is aligned with the results of social mapping in *2019*, recommending programs related to waste processing and utilization as well as the optimization of urban *kampung* backyard land in *Kelurahan Plaju Ulu*, strengthened by the social potential related to tempe producers.

In light of the aforementioned conditions, a Focus Group Discussion (FGD) was conducted with the community to gather all pertinent issues and potentials, tailored to the needs and aspirations of the residents. PT KPI RU III Plaju not only addresses issues, potentials, and the company's vision and mission but also aligns with the national-scale sustainable development agenda. This agenda is outlined in Ministerial Regulation No. 14 of 2018, which focuses on the prevention and improvement of the quality of slum housing and slum settlements.

PT KPI RU III *Plaju Ulu* also implements community empowerment programs that resonate with this national-scale sustainable development agenda. These programs encompass

environmental drainage, wastewater treatment, waste management, and fire protection aspects (Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2018). Through the ***Kampung Pangan Inovatif*** (Innovative Food Village Program), positioned as a flagship innovation for health, the company endeavors to enhance the quality of cultural, socio-economic, and environmental facets by leveraging the unique local-based characteristics of the community. This includes tapping into the historical significance of tempe production and optimizing land productivity through yard utilization. Furthermore, this program seeks to elevate the quality of the community's food industry, reflecting the company's support for the South Sumatra Province government's agenda through the South Sumatra Independent Food Movement (*Gerakan Sumatera Selatan Mandiri Pangan*).

This research employs a mixed methods research approach, which combines both qualitative and quantitative methods. According to Creswell & Clark, mixed methods research design is rooted in philosophical assumptions about inquiry methods. It provides guidance on data collection and analysis, with the blending of both approaches occurring during the writing process. Creswell and Clark argue that the simultaneous use of qualitative and quantitative approaches can offer a deeper understanding of research issues than when used separately (Creswell & Clark, 2007).

The qualitative approach utilized in this research is phenomenological, which involves the philosophical study of phenomena. Rooted in the interpretive constructivist paradigm, phenomenology emphasizes that reality emerges through an active process of consciousness but does not equate to idealism, which denies objective reality (Delfgaauw, 2021, p. 105). On the other hand, the quantitative approach in this study employs a comparative technique. Comparative research aims to assess the level of difference in a variable between two distinct groups.

Qualitative data collection techniques in this research include interviews, observations, and literature studies. Interviews serve as a crucial tool in qualitative research writing, typically focusing on three central themes: behavior, value systems, and the emotions of the research subjects (Salim, 2006, p. 18). Observations adhere to two primary principles: qualitative

observers should refrain from interfering with the affairs of the research subjects, and they must maintain the natural aspects of the research subjects (Salim, 2006, p. 14). In the literature study data collection technique, data is gathered through desk studies based on supporting program documents and secondary data sources.

2. Result and Discussion

The Innovative Village Food Initiative represents a social innovation aimed at addressing the challenges posed by dense and squalid Urban Villages by harnessing the available local potential. This initiative introduces various innovations focusing on 1) Tempe Industrial Waste Processing, 2) Urban Village Area Arrangement, 3) Creative Food Processed Products, and 4) Clean Production. These innovations, aimed at mitigating the issues of urban villages, prioritize locality-based uniqueness as a key factor in sustainable development. By leveraging the constraints (such as limited land) and challenges (such as waste management) encountered by urban villages, the Innovative Village Food Initiative transforms them into viable opportunities for development. The initiative capitalizes on the historical and social significance of the tempe industry, which has been present since 1952, as one of the community's assets to drive innovation and preserve the distinctiveness of *Plaju Ulu* Village within Palembang City. Employing a micro-level problem-solving approach, PT KPI RU III Plaju aims to contribute positively to sustainable development, rejecting the notion that it is merely theoretical or unattainable. Instead, it emphasizes the practical implementation possibilities inherent in such initiatives.

The Social Innovation embodied by the Innovative Village Food initiative underscores the urgency of addressing external factors in tandem with internal factors, particularly the individuals themselves. This aligns with the notion of a sustainable future, which encompasses considerations of human sustainability alongside economic, social, and environmental aspects. Within the Innovative Village Food initiative, the promotion of human sustainability entails efforts to enhance ethical human capacity, spanning education, health, and the

fostering of spiritual, emotional, and intellectual well-being. PT KPI RU III undertakes these efforts to empower the community, enabling them to understand their environment and behave in a humane and responsible manner. The aim is for the community to become self-reliant once the company's assistance concludes, leveraging the knowledge, skills, and experiences gained during the program.

Interventions targeting attitudes and the cultivation of independent human behavior necessitate a gradual process. Therefore, it is imperative to comprehend the characteristics of the community and the region, which are then translated into various activities and innovations. The array of innovations facilitated through the collaboration between PT KPI RU III *Plaju Ulu* and the community fosters an integrated innovation cycle encompassing all sustainable activities. This cycle is epitomized by the Taman IPAL Mandiri Energi initiative. Implemented through various strategies, including the construction of IPALs for tempe craftsmen in 2021 and 2022, this initiative signifies a pioneering approach to waste management. In 2021, the construction of tempe IPALs in *Plaju Ulu* Village embraced the Community-Based IPAL Development concept, wherein individuals within the community undertook IPAL construction individually rather than collectively. Subsequently, in 2022, the community, in collaboration with the company, innovatively introduced solar-powered IPALs, which are utilized collectively and feature an integrated cycle. This 2022 construction marks a novel and unique application of energy-based waste management in Palembang City.

The cycle emphasizes the utilization of Communal Wastewater Treatment Plants (IPAL Komunal) by the tempe community in *Plaju Ulu* to process liquid waste present in the community. Environmental impact studies indicate a reduction in pollutant parameters, as demonstrated in the table below. The levels of contaminants notably improve compared to pre-treatment levels through Communal Wastewater Treatment Plants. The environmental impact observed in this cycle includes a reduction in BOD pollution levels by 1212.09 tons per year, COD by 51215.78 tons per year, TSS by 18.10 tons per year, and an increase in pH from 3.8 to 6. In addition to utilizing Communal Wastewater Treatment Plants, some tempe artisans (4 individuals) also utilize individual wastewater treatment plants. The construction of

both individual and communal wastewater treatment plants is capable of treating a total of 1916.25 m3/year of liquid waste for 8 tempe artisans. The reduction in levels of tempe production liquid waste pollution not only impacts the environmental status and the health of the tempe artisans but also benefits the entire community in *Kelurahan Plaju Ulu*.

Mitigation of issues regarding the installation of Communal Wastewater Treatment Plants for tempe artisans is conducted through various discussions and studies to prevent potential losses or conflicts in the future. One evidence of successful implementation through discussions and studies is the installation of solar panels (solar cells) as the electrical power source for wastewater treatment plant utilization. The solar panels used to power the wastewater treatment plant serve as the driving force for oxygen circulation inside the plant. Additionally, the electrical power generated is utilized to extract treated liquid waste from the wastewater treatment plant outlet using an electric pump generator. The use of solar panels is deemed effective and does not burden the tempe artisans utilizing the Communal Wastewater Treatment Plants, as it helps reduce electricity usage costs by Rp. 2,615,444 per year. The potential energy saved amounts to 1934.5 kWh/year. Furthermore, solar panels also represent a technology supporting Renewable Energy Sources (EBT) to promote a better environmental impact. The potential reduction in greenhouse gas emissions amounts to 1.644325 tons of CO2 per year.

The social impact of this cycle is profound, transforming waste from a source of discord between tempe artisans and the community into a processed resource through the Independent Energy Wastewater Treatment Plant (IPAL) Garden cycle. This transformation eliminates odors and provides tangible livelihood benefits. The Innovative Village Food Initiative positively affects 300 households in the area. The program's social impact extends to fostering social cohesion through community gatherings, both among artisans and non-artisans, in gazebos, thereby enhancing security in the surrounding area. This effort is recognized with the POSKAMLING award at the Palembang City level.

Solid waste processing and utilization play a significant role in the community, serving as animal feed and maggot feed. Animal feed, primarily used by cattle breeders before Eid al-

Adha, adds nutritional value to cattle during their growth or fattening process, enhancing the solid waste's value by Rp. 5000/10Kg. Furthermore, tempe solid waste serves as maggot feed, benefiting not only the tempe association in *Plaju Ulu* but also the Barokah Fish Farming Group (POKDAKAN) in the Sungai Rebo area. This collaboration fosters social relationships between regions and increases protein nutrition for fish by 60.2%.

In addition to wastewater treatment plant utilization, PT KPI RU III *Plaju Ulu* collaborates with the community to seek innovations processing liquid waste for environmental benefits. Liquid Organic Fertilizer (POC) production emerges as an alternative for unprocessed or underutilized liquid waste. POC serves as additional nutrition for plants in vertical gardens, reducing community reliance on chemical fertilizers. Through these initiatives, the community achieves sustainability while enhancing environmental stewardship. Penggunaan POC ini berdampak pada pengurangan penggunaan pupuk kimia di masyarakat.

The next innovation focuses on optimizing land utilization, providing community education to maximize the productivity of urban village backyard land. This innovation encompasses three methods: 1) Vertical Gardens, 2) Hydroponics, and 3) Family Medicinal Gardens. Medicinal plants such as sambiloto, telang, stefia, mint, and betel are utilized in these gardens. The utilization of hydroponics introduces the concept that water, not just soil, can support plant growth, with crops like mustard greens, bok choy, lettuce, and stefia thriving in this system. Family Medicinal Plant Gardens, meanwhile, cater to yards with larger planting areas and feature plants like bidara and roselle, which require strong creeping roots.

As a program centered on food, innovations are closely tied to processed products derived from local potential. This program has been ongoing since 2020 and continued until 2022. Community capacity-building efforts include product diversification training. Support activities from Small Medium Enterprise Economic Competition students and training sessions by the Faculty of Public Health (FKM) of UNSRI have led to an expansion of processed food varieties, from tempe alone to include tempe chips, taucho, and nuggets. Diversifying tempe derivative products has boosted the income of tempe artisan groups by Rp 90,000,000/year.

Regarding products resulting from land optimization, herbal tea products, trendy herbal drinks, puddings, and pempek (a type of Indonesian fish cake) are notable. The diversification of products from backyard land utilization, such as Family Medicinal Plant Gardens, has increased sales by 1,980 packets, generating a total revenue of Rp 39,600,000. Hydroponic sales have increased by 165 kilograms/year, with a total sales value of Rp 3,300,000. Additionally, the initiative has positively impacted the diversification of complementary feeding products (MPASI) from Family Medicinal Plant Gardens, totaling 4,400 units, resulting in savings of Rp 26,400,000/year for 50 toddlers. Herbal tea products have gained popularity as souvenirs during G20 activities in Bali Island. These outcomes demonstrate that diversifying processed food products based on local potential and land optimization can lead to significant changes in community practices.

A novel aspect of empowerment undertaken by the company within the Innovative Village Food program is the establishment of a clean production process chain in managing the food industry. This clean production process chain encompasses four key pillars: 1) marketing and raw materials, 2) production facilities, 3) production processes, and 4) the environment. Within the marketing and raw materials process, two hindering issues in the clean production process were identified: fluctuations in raw material prices and market competition. To address these challenges, PT KPI RU III Plaju, in collaboration with the community, established a cooperative named the Plaju Tempe Artisans Cooperative. While primarily structured to support tempe artisan groups, this cooperative represents a significant breakthrough for local housewives and MSMEs. The cooperative's formation involved the establishment of structural guidelines and Articles of Association (AD/ART) with the assistance of a local notary. Beyond sustaining business ventures, the cooperative serves as a learning platform and fosters social cohesion within the community.The establishment of this cooperative was accompanied by the socialization of cooperative management and infrastructure development. The cooperative's management has successfully implemented an improved distribution and marketing management system. Collaborating with PRIMKOPTI Kota Palembang, the cooperative

manages the distribution of quality soybean raw materials at affordable prices, particularly benefiting tempe artisans. Through cooperative marketing initiatives, backyard entrepreneurs can also promote their products. Furthermore, the cooperative's management facilitates partnerships between artisans and livestock groups, enabling the utilization of waste from tempe production for various purposes. This cooperative management exemplifies how the concept of social innovation has enhanced organizational capabilities through the development of structural frameworks, transforming what was once solely tempe artisan associations into cooperative groups.

In addressing issues related to production facilities within the value chain process, two primary concerns were identified: the use of non-food grade equipment and inadequate production safety measures. To tackle the challenge of non-food grade equipment, four key initiatives were implemented: the innovation of hygienic drums and tables, organization of production kitchens, and the provision of equipment such as ovens or *Dehidrator Makanan Energi Panas dan Cahaya* (DEMANG PANCA). The innovation of hygienic drums directly addresses the issue faced by housewives and MSMEs in *Plaju Ulu*, where tempe artisans previously utilized used oil drums for production—a practice with potential health risks if the products are consumed. Recognizing the hazards associated with used oil drums classified as hazardous waste (B3), endangering human health, a shift to stainless steel hygienic drums was undertaken for 20 tempe artisans in *Plaju Ulu* Village. This transition involved collaboration between the company and the community, ensuring the drums met safety standards before distribution. Equipped with handles for mobility, these hygienic drums facilitate safer production processes.

Field data indicates a significant increase in efficiency, with hygienic drums boiling tempe considerably faster, reducing the consumption of LPG gas by 3 kg per cycle. Prior to this innovation, one gas cylinder was typically used per day of production, but with hygienic drums, one cylinder now lasts for two days, leading to a substantial reduction in CO2 emissions by 16.2 tons CO2eq for 20 tempe production households. Furthermore, the transition from traditional fuel sources like firewood to LPG gas also results in an annual reduction of 11.07

tons CO2 emissions per artisan. Economically, the savings accrued from reduced LPG gas refill purchases amount to Rp. 21,600,000/year for the group, with additional savings of Rp. 23,040,000 over three years from not having to purchase traditional production drums.

An additional advancement concerning production facilities pertains to the introduction of hygienic fermentation tables. Previously, artisans utilized makeshift tables crafted from tarpaulin as the base and wood as the frame, with some resorting to black plastic as an alternative base. Unfortunately, the utilization of tarpaulin or black plastic as the table base for fermentation led to the adherence of mold spores to the product, rendering it unfit for consumption due to the substances present in these materials. Consequently, the implementation of hygienic fermentation tables constructed from stainless steel has significantly enhanced the quality of the resulting products.

The fabrication of these fermentation tables entails collaborative efforts between companies and the community in their design. One significant challenge encountered during their production is the varying dimensions of each household's production kitchen, making it challenging to tailor the tables to suit individual kitchen sizes. To tackle this issue, PT KPI RU III *Plaju* has developed two standard sizes deemed proportional for general production use. The smaller variant measures 160 cm in length, 80 cm in width, and 90 cm in height, facilitating the production of up to 50-60 kg. Conversely, the larger table spans 200 cm in length, 90 cm in width, and 90 cm in height, accommodating production volumes of up to 100 kg. The distinctive feature of these innovative fermentation tables lies in their multifunctionality, serving purposes such as washing, draining, and fermenting, thereby optimizing equipment utilization. Alongside the perceived efficiency gains, the adoption of these hygienic fermentation tables diminishes the necessity to procure tarpaulin or plastic, resulting in an estimated annual cost savings of approximately Rp 22,800,000 in fermentation table production expenses.

Achieving the standardization of clean production undoubtedly hinges on maintaining pristine kitchen conditions. Tempeh artisans have received education on upholding cleanliness standards in their kitchens. Notably, four production kitchens have been designated as demonstration sites for clean production practices. These kitchens not only

adhere to stringent cleanliness standards but also necessitate ample space and proper waste disposal mechanisms. The initiatives revolving around drums, tables, and kitchens are aimed at ensuring product hygiene. Furthermore, additional provisions have been made for household industries (IRT) or micro, small, and medium enterprises (UMKM), including ovens or DEMANG PANCA, to facilitate efficient drying processes in tea production.

Another ongoing concern in the domain of facilities and infrastructure pertains to ensuring the safety of the production process. To address this, PT KPI RU III Plaju has equipped artisans with Personal Protective Equipment (PPE) and Ready-to-Use Fire Extinguishers (APAR). The production PPE provided to tempeh artisans encompasses head protection (hairnets), two pairs of gloves, boots, and protective clothing (aprons). The provision of PPE aims to heighten awareness among tempeh artisans regarding health and safety protocols in the workplace, thereby mitigating the risk of workplace accidents. Additionally, as part of the mitigation strategy, PT KPI RU III Plaju furnishes one APAR per tempeh artisan. Both initiatives are geared towards fostering safe production practices.

The third crucial component in the clean production value chain is the production process itself. Within this domain, challenges arise concerning the limited production capabilities of businesses. Consequently, PT KPI RU III Plaju endeavors to enhance individual capacities through training, diversified product practices, and clean production guidance. Collaborating with academics from the Faculty of Public Health (FKM) at the University of Sriwijaya (UNSRI), the training sessions yield various derivative products related to tempeh, such as tempeh chips, taucho, tempeh nuggets, tempeh cookies, and tempeh flour. Moreover, alongside tempeh derivative products, offerings extend to Traditional Herbal Medicines (TOGA), including pudding and blue pea flower pempek.

Moreover, the advent of innovative food village initiatives has catalyzed novel social practices within society, fostering collaboration in waste processing and utilization, optimizing yard space, diversifying products, and engaging in community-based disaster mitigation efforts. This collaborative effort involves various groups such as tempeh associations, maternal and child health posts (posyandu), and the Barokah Community Empowerment

Facilitation Group (POKDAKAN). Individually, these innovative food village initiatives instigate changes in each participant, whether directly or indirectly involved, raising awareness about the collective responsibility in developing potentials and addressing urban village challenges. This is achieved through initiatives like utilizing household yards for vertical gardens, Traditional Herbal Medicine (TOGA) cultivation, and hydroponics, thereby maximizing land use and fostering a cleaner and more pleasant environment.

The overarching concept of innovation within the Innovative Food Village Program not only fosters social cohesion by tackling issues in densely populated urban areas and addressing tempeh and household waste pollution in the *Plaju Ulu* Sub-District but also revolutionizes systems and generates various new products. These products include liquid organic fertilizer derived from tempeh waste, animal feed from solid tempeh remnants, fish and vegetable products from BIKASEM aquaculture, and a plethora of innovations in TOGA, vegetable, and tempeh processing. The creation of these new products is facilitated by a novel system implemented by the local community, leveraging PT KPI RU III's core competencies in aspects such as hygiene, safety, clean food industry production, and renewable energy management. This innovation process serves as a more effective and efficient alternative to previous methods. The Innovative Food Village social innovation program has the potential to spawn new groups producing a variety of innovative products that mutually support each other in the production process.

3. Conclusions

Densely populated and slum urban settlements represent intricate residential areas with inherent local challenges and potentials. Often, issues in urban villages stem from a lack of awareness within the surrounding community regarding inadequate living conditions, encompassing environmental, infrastructural, and socio-economic aspects. These villages constitute a fundamental component of the urban settlement model, demanding comprehensive management across social, economic, cultural, and physical dimensions. Consequently, PT Kilang Pertamina Internasional RU III Plaju collaborates with the community

to address urban village issues and explore alternative solutions. Through techniques such as social mapping, stakeholder engagement, and conducting Focus Group Discussions (FGD) with the community, the Innovative Food Village social innovation initiative is launched.

The Innovative Food Village Program, initiated in 2021, is an extension and replication of PT KPI RU III's ongoing area management program since 2018, known as the *Mari Berkreasi* Program. Operating within the *Plaju Ulu* Sub-District, the Innovative Food Village Program aims to alleviate challenges in slum areas and densely populated urban settlements by engaging in waste processing activities and optimizing limited land for green spaces and innovative food production. Tangible outcomes of this program encompass Independent Energy Self-Sustaining Waste Treatment Plants (Taman IPAL Mandiri Energi), Community-Based Tempeh Waste Management, TOGA garden management for area beautification, diversification of processed food products, and establishment of production process chains. Notable products resulting from these endeavors include solar-powered wastewater treatment plants, hygienic tables and drums, Liquid Organic Fertilizer derived from Tempeh Waste, utilization of maggots from tempeh waste, and the creation of innovative food products derived from TOGA, vegetables, and tempeh.

This scenario underscores the significance of knowledge sharing initiatives led by the dedicated personnel and stakeholders of PT KPI RU III in conjunction with the local community. These knowledge-sharing endeavors encompass various facets, including wastewater treatment plant management, food hygiene practices, and food production safety protocols. The genesis of new innovations, such as the pioneering Solar Cell-powered wastewater treatment plant in Palembang City, owes much to the active involvement of the community in identifying challenges and co-creating viable and sustainable solutions. The collaborative innovation between PT KPI RU III, the community, and governmental bodies has not only mitigated social tensions arising from the odor of tempeh waste but has also heightened residents' awareness regarding environmental conditions.

Ultimately, all innovative products and processes emerging from the Innovative Food Village are interconnected and mutually sustainable. Tempeh waste, once a pollutant, is now

repurposed into a valuable resource for households managing TOGA and vertical gardens after being converted into fertilizer. Subsequently, the TOGA and plants cultivated serve as ingredients for complementary and supplementary feeding for infants, adhering to stringent hygiene standards and contributing to improved child nutrition. Moreover, residual food production processes and food waste are combined with solid waste to produce maggots, which serve as nutritious fish feed for the Barokah Community Empowerment Facilitation Group. The fish, in turn, are redistributed as food within the community, thus completing a virtuous cycle of resource utilization and community empowerment.

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