Implementation of the Urban Farming Program in Sambiroto Subdistrict, Tembalang District, for Inclusive Economic Development in the City of Semarang

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Abstract

The rapid population growth and urbanization in Semarang City have led to land scarcity and threatened local food security, necessitating innovative solutions like urban farming. This research aims to analyze the implementation of the urban farming program in Sambiroto Subdistrict, Tembalang District, and its role in fostering inclusive economic development. Utilizing a qualitative descriptive approach with library research, this study draws on secondary data from scientific literature, policy documents, and official reports to examine socio economic dynamics, community participation, and institutional barriers. The findings indicate that urban farming initiatives, driven by robust grassroots institutions such as the Women Farmers Group (KWT) and PKK cadres, leverage strong social capital specifically trust and mutual cooperation to manage communal gardens effectively without requiring high-cost technological infrastructure. These activities provide a significant safety net for vulnerable groups, including housewives, the elderly, and out-of-school youth, by creating additional income through surplus harvest sales and value-added processed products. The research concludes that urban farming acts as a strategic instrument for building an inclusive urban economy. By focusing on community empowerment, local resource optimization, and circular economic principles, this model offers a sustainable and adaptive solution for urban poverty alleviation that should be replicated to bridge economic gaps in densely populated areas.

Keyword: urban farming, Inclusive Economy, Community Empowerment

Introduction

The city of Semarang is the capital of Central Java, where every year the population growth rate becomes increasingly dense due to urbanization from surrounding cities and even from all parts of Central Java Province. In 2022, its population was recorded to have reached more than 1.65 million people (Semarang, 2023). The high rate of growth is largely driven by strong urbanization trends. This increasing concentration of population has resulted in limited residential land in city centers, which in turn has triggered the phenomenon of decentralized expansion of built-up areas (urban sprawl) extending into suburban regions (Pigawati, 2023). This massive demographic dynamic places substantial pressure on the environmental carrying capacity and urban infrastructure. Furthermore, the rapid growth of the urban population, which occurs alongside the threat of climate change impacts, has presented highly significant challenges and risks to economic stability and food security in the City of Semarang. The high population density in urban areas demands a massive food supply, while agricultural land continues to shrink. Therefore, the resilience of the food supply system becomes highly vulnerable, ultimately requiring new policy instruments such as the ecological utilization of urban spaces to ensure the survival of the community and stabilize local economic circulation.

In response to this vulnerability, urban farming or urban agriculture has emerged as a strategic approach that not only focuses on urban greening, but also on strengthening the socio-economic capacity of communities. Agricultural practices on limited land have been proven to reduce household expenditures for daily food consumption and create opportunities for additional income generation (Wibowo, 2025). More than just fulfilling nutritional needs, urban farming plays a crucial role in building an inclusive economy. The concept of an inclusive economy is realized when all segments of society, including vulnerable groups and

housewives, have equal access and opportunities to participate in productive activities driven by the community's social capital (Rahmawati and Susanti, 2022). Therefore, urban farming has become an instrument of economic empowerment that relies on direct community collaboration, instead of depending on expensive and complex agricultural technology infrastructure.

The Semarang City Government itself has made efforts to promote urban farming practices down to the Rukun Warga (RW) level as part of the urban resilience program. One area that displays interesting dynamics in the implementation of this program is Tembalang District, especially Sambiroto Subdistrict. As a densely populated residential area that continues to grow rapidly along with the presence of educational and commercial centers nearby, Sambiroto faces the challenge of drastic reduction in yard space (Indriyani, 2023). However, on the other hand, this subdistrict has strong social capital potential. The active involvement of the Women Farmers Group (KWT), PKK cadres, and neighborhood associations has initiated the use of neglected public facility land as well as narrow yards into communal gardens that produce various vegetables and micro-scale fish farming.

Although the initiative has been underway, the implementation of urban farming in Sambiroto Village still faces a number of challenges in optimally achieving the goals of inclusive economic development. Many urban agriculture programs often stop at the harvest stage for personal consumption and have not yet been sustainably integrated into the local economic supply chain (R. Haryanto, 2024). Obstacles such as limited entrepreneurial literacy within the community, fluctuating resident participation, and suboptimal management of crop distribution have prevented the financial impact of this program from being distributed evenly. In fact, if managed with the appropriate socio-economic institutional approach, the harvest from the communal gardens could serve as a stimulus to enhance the community's purchasing power and supply the needs of local Micro, Small, and Medium Enterprises (UMKM) in the food processing sector.

Based on the gap between the potential of social capital and the realization of its economic impact, this study aims to explore in depth the implementation of the urban farming program in Sambiroto Subdistrict, Tembalang District. This analysis is specifically directed to examine how urban agriculture activities influence community income enhancement and foster the creation of inclusive economic development in the City of Semarang. By investigating the socio-economic aspects of this program, the research results are expected to formulate practical policy recommendations for local government to optimize urban farming as an instrument for urban poverty alleviation based on local community empowerment.

Research Methodology

This study uses a qualitative approach with a descriptive design that focuses on analyzing the actual situation and conditions related to the phenomenon under investigation. The descriptive qualitative method was chosen because this research aims to provide an in-depth, systematic, and contextual description of the implementation of the urban farming program and its impact on inclusive economic development (Suryani, 2022). In line with this objective, this study does not test statistical hypotheses, but rather conducts a critical interpretation of the data to understand the socio-economic dynamics, community participation, and institutional barriers occurring in Sambiroto Subdistrict.

The type of data used in this study is entirely secondary data, that is, data that has been collected, processed, and published by other parties. The data collection technique was conducted exclusively through library research. The process of collecting this secondary data

involved searching scientific literature digitally through reputable databases using specific keywords such as urban agriculture, urban economic empowerment, inclusive economy, and community social capital (Wijaya, 2021). The secondary data sources used include indexed national and international scientific journals, relevant textbooks, policy documents from the Semarang City Government, as well as official reports from Sambiroto Sub-district and Tembalang District.

To maintain the relevance and validity of the information, selected journal articles are limited to publications from the last five years (2021-2026). The inclusion criteria for the literature focus on studies that examine the direct impact of urban agriculture on micro-scale community income as well as the involvement of vulnerable groups (Lestari, 2023). The data obtained from various documents and literature were then thematically grouped according to inclusive economic variables, such as the creation of local employment opportunities, equitable income distribution, and the strengthening of local institutional capacity in Sambiroto Subdistrict.

The data analysis technique applied is qualitative content analysis, which is adapted for the processing of secondary library data. This analysis process follows systematic stages that include data reduction, data display, and conclusion drawing or verification (Utami, 2024). At the reduction stage, information that is not relevant to the socio-economic dimensions and programs in Sambiroto Urban Village is eliminated. Next, the data are presented in the form of descriptive narration and comparative tables to map the relationship between communal garden activities and resident welfare indicators. The final stage involves drawing logical conclusions to address the research questions.

The validity of the data in this secondary research is ensured through data source triangulation techniques. Triangulation is conducted by comparing and cross-checking information from various different scientific literatures, government statistical reports, and program evaluation documents published by the local community (Fadilah, 2025). Through the convergence of these various secondary data sources, subjective bias from any single source can be minimized, thereby producing objective, credible, and accountable analyses regarding the effectiveness of urban farming in promoting inclusive economies in urban areas.

Results and Discussion

a. Social-Economic Empowerment and Ecological Resilience through Urban Regenerative Agriculture

Urban farming has developed into a crucial strategy for strengthening food security and enhancing the socio-economic independence of urban communities. Amidst land constraints, this practice enables communities to independently produce food while simultaneously creating additional income opportunities for local communities (Dewi, 2023).

This approach does not always have to rely on high-tech interventions, but rather focuses on community empowerment and pragmatic adaptation of the surrounding environment. Urban agriculture strategies that are based on social capital have proven more effective in building economic resilience and increasing income at the grassroots level (Wahyuni, 2022). Therefore, communal initiatives have great potential in creating a sustainable people's economic ecosystem. A concrete manifestation of this socio-economic resilience can be observed in the Makmur Sejahtera Farmer Group (Poktan) located at Jalan Kunir 6 RT 05 RW 08 Sambiroto, Tembalang District, Semarang City. Established in 2022, this group, chaired by Suparno, mobilizes 24 active members to manage a 500 square meter plot of land that was previously an unmaintained Pustu plot.

Facing the challenge of rocky soil with a soil depth of only around 30 cm, this group adaptively implements regenerative agriculture techniques. This ecological approach is highly relevant for restoring soil health in marginal urban areas, thus enabling the optimization of limited space for maximum agricultural productivity (Widodo, 2022). In its operations, Poktan Makmur Sejahtera carries out comprehensive commodity diversification, covering vegetables (such as spinach, mustard greens, chili, tomatoes), food crops (such as rice, corn, cassava), fruits, as well as medicinal plants and butterfly pea flowers. To address land limitations, cultivation techniques utilize polybags, used mineral water gallons, and sacks, in addition to direct soil planting and hydroponic systems. Plant care is performed organically using eco-enzyme, Mikro T, and rice rinsing water, with integrated pest management through yellow trap pest catchers and the planting of refugia such as cosmos and basil. The use of organic inputs and natural care methods not only reduces operational production costs but also ecologically enhances the economic value of the harvest.

From a socio-economic perspective, the harvests of this farmer group directly contribute to increasing community income through an integrative communal marketing strategy. Both fresh products and processed group products, such as wedang telang, are marketed offline as well as online through social media platforms like WhatsApp and Facebook. Furthermore, the group leverages strong local social networks by marketing products during PKK meetings at the RW and Kelurahan levels, as well as serving direct purchases or self-harvesting by consumers at the Pustu demonstration plot. The utilization of social capital such as PKK forums has proven to be a highly effective marketing instrument for expanding the market reach of local agricultural products without being burdened by high distribution costs.

The success of communal economic improvement from this initiative is strongly supported by the application of circular economy principles through strategic collaboration with environmental communities. Poktan Makmur Sejahtera collaborates with Bank Sampah Resik Sejahtera in producing eco-enzyme fertilizer, Mikro T, compost, biowash, as well as maintaining maggots and making pots from used Le Minerale gallon containers. The integration between waste bank management and urban agriculture creates a closed-loop system that effectively minimizes domestic waste while optimizing the expenditure efficiency of the farmer group (Setiawan et al., 2023). Such communal synergy strengthens the foundation of the community's economic resilience, ensuring that every increase in income goes hand in hand with the preservation of the settlement ecosystem's sustainability. The economic and ecological sustainability of this initiative is maintained through self-reliance in the provision of agricultural inputs. This group actively practices sustainable land management post-harvest and has begun producing its own seeds, including cultivating shallot seedlings from seed (Lokananta variety), tomatoes, chilies, as well as propagating medicinal plants (turmeric, ginger, aromatic ginger, lemongrass). The transformation from merely consumers of seeds into independent seed producers demonstrates a strong level of socio-economic self-reliance, which is an absolute indicator of the success of community empowerment programs (Firmansyah and Lestari, 2024). Through a combination of pragmatic ecological practices and strong institutional management, Poktan Makmur Sejahtera represents a model of inclusive people's economic empowerment in urban areas.

b. Local Institutional Dynamics and the Utilization of Social Capital

The success of the urban farming program implementation in densely populated areas such as Kelurahan Sambiroto cannot be separated from the central role of local institutions, which thrive within the community. Grassroots institutions, particularly Kelompok Wanita Tani

(KWT) and Pemberdayaan Kesejahteraan Keluarga (PKK) cadres, serve as the main driving force organizing residents. These groups are not merely technical executors of the program, but have transformed into forums for education and social consolidation. Through regular meetings held at the Rukun Warga (RW) level, these local institutions are able to synergize a shared vision regarding the utilization of public facility land as productive areas that directly support household food security (Setiawan, 2023).

The dynamics of these institutions are highly dependent on the optimization of social capital, especially trust and the gotong royong culture, which remain deeply rooted in suburban settlements. In managing communal gardens, trust among residents serves as the foundation that suppresses potential conflicts regarding plant maintenance schedules and the distribution of harvest yields. The gotong royong culture is tangibly demonstrated when residents voluntarily contribute labor, time, and even organic kitchen waste to be made into compost, without expecting immediate financial compensation at the outset of the activity. The social capital that binds this community has proven to be far more crucial in sustaining the program's longevity than merely initial funding support from external parties (Pradipta, 2024).

In addition to trust, social capital in the form of networking also plays a vital role in strengthening local institutions in this kelurahan. Horizontal networks formed among neighbors create a system of reciprocal support, where residents exchange information on simple cultivation techniques relevant to their limited land conditions. Meanwhile, vertical networks are established between communal farmer group leaders and kelurahan officials as well as field extension workers. This structural network facilitates the smooth flow of policy information and access to empowerment programs from the city government, ultimately reinforcing the legitimacy of the residents' social movement (Wahyuni, 2022).

This community empowerment approach operates optimally purely through the socio-economic interactions of residents, without relying on the adoption of complex or high-cost agricultural technologies. The Sambiroto community relies on practical management methods, prioritizing the use of locally available resources, and emphasizing the circulation of the local economy. The decision to prioritize a social approach rather than dependence on advanced technological infrastructure in fact broadens the scope of participation. This enables all segments of society, including vulnerable groups who may have limited financial capital, to remain actively involved in the chain of productive activities within their environment.

The synergy between robust local institutions and the rich utilization of social capital forms a fundamental basis for the creation of an inclusive economy at the grassroots level. Transparent and collective management of communal land ensures that the resulting economic benefits—whether daily food expenditure savings or potential profits from selling surplus harvests at community markets—can be distributed fairly. Thus, the social dynamics in Kelurahan Sambiroto affirm that the essence of urban food security initiatives lies in how strongly the community's cohesion organizes local resources independently to improve collective living standards.

c. Creation of Additional Income and Empowerment of Vulnerable Groups

The implementation of the urban farming program in Sambiroto Subdistrict demonstrates that agricultural activities on limited land possess an economic dimension that goes far beyond merely meeting household nutritional needs. This program strategically creates opportunities for additional income generation, which is crucial for vulnerable groups in urban areas, such as low-income families. Active participation in micro-scale plant cultivation and aquaculture provides the community with direct access to engage in the informal productive sector. This

aligns with the perspective that urban agriculture serves as an effective social safety net instrument to reduce the economic vulnerability of peri-urban communities amid macroeconomic uncertainty (Hidayatullah, 2023).

The mechanism for generating additional income primarily stems from the commercialization of surplus harvests managed communally. Once the community's internal consumption needs are met, the leftover produce—such as organic vegetables, chili peppers, and catfish—is distributed to local markets, nearby food stalls, or sold directly to neighboring residents through a pre-order system. This cycle of micro-scale transactions forms a localized circular economy that ensures cash circulation remains within the neighborhood community. This practice of direct commercialization between residents has proven capable of injecting funds into both family and group coffers without relying on middlemen distribution chains that cut into profit margins (N. Sulistiyowati, 2025).

Specific empowerment is especially felt by women's groups, particularly housewives who are members of the Kelompok Wanita Tani (KWT). Through this program, the role of housewives is transformed from merely managing household consumption to becoming producers with financial independence. The income obtained from the sale of garden products provides them with additional fiscal space to meet secondary needs such as children's education and health savings reserves. The literature confirms that involving women in urban farming governance significantly increases family financial resilience, as women tend to allocate their additional income directly to improving the welfare of household members (Kuswardani, 2024).

In addition to raw harvest sales, efforts to increase economic value are also realized through postharvest processing based on simple skills. Resident groups in Kelurahan Sambiroto produce a variety of home industry food products such as vegetable chips, instant herbal drinks, and the packaging of solid and liquid compost derived from the processing of domestic organic waste. This product diversification dramatically increases profit margins compared to if residents only sold raw agricultural products. The development of value-added products at the community level is an effective economic empowerment strategy because it fully utilizes the creativity and manual labor of residents, without requiring investment in expensive machinery or technology infrastructure (Hakim, 2022).

In addition to housewives, this urban agriculture program also serves as a safety net for other vulnerable groups, such as school dropouts and elderly residents (lansia) who are often marginalized from the formal labor sector. Elderly individuals can contribute to garden maintenance activities that do not require high physical mobility, such as seedling cultivation or harvest packaging, which psychologically helps them remain active and empowered. Meanwhile, young people are engaged in the logistics and marketing aspects of distributing garden produce to a wider community. This inclusive, cross-generational involvement underscores that the informal urban agriculture sector is capable of absorbing vulnerable labor, providing them with valuable social identity as well as fair economic compensation (Fitriani, 2026).

Overall, the creation of additional income through the empowerment of vulnerable groups in Sambiroto Subdistrict embodies the true essence of inclusive economic development. This approach, which emphasizes strengthening the socio-economic capacity of the local community, has succeeded in building multilayered resilience, from the individual level to the neighborhood association. The empowerment model, which is fully driven by manual initiative, social solidarity, and local wisdom, has proven to be more adaptive and sustainable

in urban areas. Urban economic governance moving forward should replicate this model, given its effectiveness in bridging economic gaps without burdening underprivileged residents with operational or technological capital requirements that often become the main obstacles to program adoption.

Conclusion

The implementation of the urban farming program in Sambiroto Subdistrict demonstrates that agricultural practices on limited land are not merely a greening effort, but serve as a strategic instrument for building an inclusive urban economy. The success of this initiative is highly dependent on the strength of local grassroots institutions, such as the Women Farmers Group (KWT) and PKK cadres, which are able to consolidate residents by leveraging social capital. Relying on trust and the culture of mutual cooperation, the community is able to manage communal gardens independently without having to depend on the adoption of complex or high-cost agricultural technologies.

From a socio-economic perspective, this program has a direct impact on increasing community income and strengthening the social safety net for vulnerable groups. Through the direct commercialization of surplus harvests among residents and the creation of value-added processed products such as vegetable chips and herbal drinks, the community has succeeded in establishing a local circular economy system. This empowerment is carried out inclusively, as it provides opportunities for active participation and financial independence for housewives, elderly residents, and out-of-school youth who are often marginalized from the formal labor sector.

Overall, urban agriculture initiatives in Sambiroto affirm that economic resilience within the community can be achieved sustainably through an approach that is purely focused on the socio-economic dynamics of residents. This empowerment model, based on local wisdom, social solidarity, and manual initiatives, has proven to be far more adaptive in bridging economic gaps in densely populated residential areas. Therefore, this approach deserves to be replicated as a policy instrument for urban poverty alleviation, given its effectiveness in maximizing communal capacity without burdening the community with technological infrastructure demands.

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