# URBAN REGENERATION AND PUBLIC SPACE: LESSONS ON EARLY INTERVENTION OF COMMUNITY-BASED MICRO-PLANNING

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## Abstract

Documenting lessons learned from revitalization projects through community-based micro-planning is crucial in developing countries, as it lacks mainstream urban regeneration recognition. This research aimed to evaluate the early intervention of community gardening or urban farming initiatives under an urban regeneration project: the Special Area Action Plan Section 13, Petaling Jaya City, Malaysia. This single case study was investigated using the mixed-methods approach. In the quantitative approach, 200 samples were collected via questionnaires and analyzed using descriptive statistics. In the qualitative approach, eight interviews were conducted and analyzed via thematic analysis. The findings show that the respondents are sceptical about the awareness, safety infrastructure and support services, caretaker, and land ownership concerns surrounding the proposal for community gardening at the Sungai Penchala monsoon drain area. When revitalizing left-over urban public spaces, authorities are recommended to plan more awareness intervention campaigns, enhance safety infrastructure designs, provide policy support in appointing caretakers, and resolve land acquisition matters to realize and sustain the regeneration projects in the public interest. This study contributes lessons learned by auditing the early intervention urban regeneration initiatives in development plans, particularly in fourth-tier-community-based micro-planning in a developing country.

*Keywords*: Community Planning, Development Plans, Malaysia, Urban Farming, Urban Revitalisation

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## INTRODUCTION

Urban regeneration is an important concept of and an instrument for revitalizing abandoned, ignored, or vacant public spaces in city areas. Applying this strategy would add value to such public spaces by maximizing land usage and function, generating economic benefits and income for the local community, enhancing social interaction, beautifying the environment, cultivating local culture, and promoting tourism activities (Figueiredo et al., 2022; Liao & Liu, 2023). Many interventions can be applied within the concept of urban regeneration through community-based micro-planning, including revitalizing historical buildings, infilling construction in open areas, renewing deteriorating urban areas by assimilating new communities, starting urban farms, and others (Shach-Pinsly, 2022; Wang et al., 2021). Particular types of intervention like urban farming or community gardening are becoming popular ways of enhancing social integration, community and individual health, and food security (Cattivelli, 2023).

However, stakeholders' interventions and responses regarding upholding urban farming activity for urban regeneration have scarcely been documented in developing countries. The keywords of urban farming or community gardening did not explicitly appear as the themes of the output in the urban regeneration review papers such as Figueiredo et al. (2022), Liao and Liu (2023), and Wang et al. (2021), and sustainable urban regeneration indicators in Malaysian context (Nik Hashim et al., 2023). Nevertheless, Nemoto and Biazoti (2017) present a case of community vegetable gardens in São Paulo, Brazil, funded by public policies and almost entirely managed by the community. Saporito (2017) shows evidence of a private-led regeneration initiative revitalizing abandoned or underutilized urban buildings in Turin, Italy, through roof-top community vegetable gardens. Robert-Boeuf (2023) documented sustainable farming for promoting rural regeneration in France. In Malaysia, the importance of fourth-tier-community-based micro planning development in addressing local needs and fostering community engagement in decision-making processes is being highlighted in the recent National Planning Congress (NPC) 2023 (Vigneswarasamy, 2023) and by Mohd Anafi et al. (2023) in comparing Malaysia and Turkey. Still, there is a lack of evidence linking the relationship between urban regeneration and urban farming intervention.

Urban farming was often isolated and not integrated into mainstream urban regeneration strategies (Firth, 2024; Mabon et al., 2023; Nowysz et al., 2022). This lack of recognition hindered their adoption and integration into urban redevelopment strategies, limiting their potential to address urban sustainability challenges. Therefore, taking the case of the urban farming initiatives developed under the Section 13 Petaling Jaya Special Area Action Plan (SAAP), this study aimed to examine the early intervention of such initiatives from the fourth-tier-community-based micro planning perspective. To achieve this aim, three research

questions were formulated: 1) What is the status of the community garden initiative developed under the urban regeneration project, the Special Area Action Plan Section 13, Petaling Jaya? 2) What are the community levels of satisfaction with the community gardening initiative in Section 13, Petaling Jaya? and 3) How can the community gardening initiative in Section 13, Petaling Jaya be improved?

The following sections are structured as follows: a literature review related to urban regeneration and farming, the methodology of the mixed-methods approach, the findings and discussion, and the concluding remarks.

## LITERATURE REVIEW

Urban regeneration is a dynamic concept that has evolved from the early version, which was short-term, fragmented, ad-hoc, project-based and without an overall strategic framework for city-wide growth (Hausner, 1993). The comprehensive modern concept integrates vision and action, leading to the resolution of urban problems (Roberts, 2017; Tallon, 2021). The latest holistic approach includes smart building and district retrofitting for intelligent urban environments (Guillermo, Jan, Han, & Irena, 2023).

Urban regeneration in the Malaysian context is similar to the global trend, with the Town Planning Dictionary (PlanMalaysia, 2022) defining the concept as "the rehabilitation of an old, dilapidated and abandoned site through the construction of new buildings or the provision of facilities and infrastructure without destroying the overall design, layout or function of the area. This development will regenerate the area's economic, social or environmental activities." In Malaysia, urban regeneration gained traction in early 2010, with the first edition of the urban regeneration guideline published in 2013 and the latest revised version published in 2023. This latest guideline indicates six municipal issues and scenarios where urban regeneration can be implemented, which include areas involving or containing 1) dilapidated buildings, 2) abandoned development projects (brownfield sites), 3) non-viable areas (greyfield sites), 4) declining real estate values, 5) social problems; and 6) the deterioration of infrastructure and facilities (KPKT, 2023).

Of these areas, urban farming/ community gardens are one of urban regeneration projects for revitalizing abandoned/ non-viable areas to add value to the local community. This can be achieved by, for example, beautifying the space, strengthening neighbourhood relationships, and addressing any food crisis, safety, and economic issues facing the urban population (Muhammad et al., 2020). Community gardens have historically been utilized to enhance local food sources. Throughout the late 19th century and into the 20th century, mass migration into urban areas and economic depression increased the demand for accessible and inexpensive food, particularly during World War I, World War II, and the Great Depression (Saldivar-Tanaka & Krasny, 2004). During the recent

COVID-19 outbreak, community farming was also widely discussed as an intervention for food security solutions in urban areas (Murdad et al., 2022).

Community gardens are planned on shared plots of ground/ open spaces/ vacant properties where individuals, particularly the destitute, gather voluntarily and cooperatively to cultivate plants, vegetables, fruits, and flowers. Community gardens are essential for enhancing the local food supply and boosting options for open space, greenery, leisure, and recreational activities (Ferris et al., 2001). Individuals gain directly from both the physical exercise involved in gardening and having daily access to fresh, cheap produce. On the other hand, community gardens also face challenges such as community engagement and awareness, garden layout and accessibility, lack of resources, lack of available and committed volunteers, and limited availability of open space rights (Diaz et al., 2018; Djan, 2023)

In the United States, the Denver Community Garden Project (Denver Urban Garden) declared that health benefits are experienced by the inner-city people who participate each year, who number more than 25,000. These urban oases strengthen neighbourhood ties while promoting physical, social, and mental wellbeing (Alaimo et al., 2023). However, the primary obstacle to sustaining the Denver Urban Gardens is the limited availability of open space rights, crime and vandalism, volunteerism and governance (Djan, 2023). *"When community gardens are pitted against other important land uses, such as an affordable housing project, a health clinic or a soccer field, they often do not fare well…"* (Denver Urban Gardens, 2012, p. 23). Therefore, local authorities play a crucial role in providing community gardens with free or low-cost use of public property, land leases, or outright land dedication.

In another case in San Jose, California, specific health advantages due to increased physical activity and eating fresh vegetables and fruits have been established among community gardeners. Compared to non-gardeners, those engaging in gardening consume far more vegetables. The prospect of improved health can motivate people to participate in community gardening activities (Algert et al., 2016). Nevertheless, waitlists and limited availability, cost and affordability, and maintenance and resource management are some of the challenges that community gardens in San Jose need to overcome. Maintaining soil fertility over time is crucial, as it can impact the quality and yield of crops. Additionally, they may need to purchase fertilizer or soil amendments independently, which can be a financial burden (Reese, 2021).

In China, the community gardens established in 2010 have involved citizens in their construction and management. Shanghai, a representative of the country's many high-density and rapidly growing cities, has introduced such changes in an attempt to achieve sustainable growth. Several documents have been issued regarding the mobilization of citizen initiatives to create a healthy environment. The Shanghai Urban Regeneration Implementation Measures

Policy, which proposed people-oriented approaches to improve public space and neighbourhood revitalization, marked an evolution in the urban regeneration paradigm from land expansion to enhancing the quality and efficiency of land use in old urban areas (Kou et al., 2019; Zhong & Chen, 2017). In terms of community gardens under the Shanghai Urban Regeneration policy, challenges that are being identified include legitimacy issues, capacity building, urban renewal models, differentiated community needs, informal urban gardening, balancing public participation and professional interventions (Kou et al., 2019; Lu & Lu, 2022; Xie & Xing, 2024). Urban gardening policies in China primarily focus on community gardens but lack research on the distinct needs of different urban gardeners, such as urban natives and migrants. This lack of understanding can lead to ineffective policy implementation (Xie & Xing, 2024).

In Malaysia, Since the early 2010s, the government has been preparing to transform Malaysia into a Garden Nation by 2020 (National Landscape Department, 2011). A National Landscape Guideline has been developed to achieve this vision. At the state level, the Selangor State Government, through all the local authorities in the state, has implemented community gardens under the Local Agenda 21 Action Plan to encourage agricultural activities among urban residents (Abidin et al., 2016). These community gardens act as organizations that promote local food production and agricultural product supply to boost the community's economy.

The authors observed one of these community gardens in Bukit Bandaraya, U12 Shah Alam City, Selangor). It is under the Shah Alam City Council (MBSA) supervision. Although the U12 Bukit Bandaraya community garden is located beside a sewage treatment plant and a monsoon drain, it is clean, green, and beautifully well-managed by the local community.

From the review, Malaysia has also faced issues with community gardens in urban regeneration, such as weather fluctuations, access to land, financial problems, lack of commitment, increased pests, and technical factors such as education level (Chong et al., 2024; Ishak et al., 2022; Zainal & Rosmiza, 2021). The lack of commitment from some individuals is another problem that can hinder the overall success of community garden initiatives. From the comparison of US, China and Malaysian cases, the most common challenges facing community gardens in urban regeneration cases are lack of commitment/ awareness/ participation, cost and affordability, land and open space rights, and other cultural barriers.

## METHODOLOGY
In this study, the single case study method was applied (Yin, 2018) and the mixed-methods approach was used (Creswell & Creswell, 2018). The single case study method focuses on a particular case, and a deep investigation is conducted by collecting data from multiple sources and presenting the findings through

triangulation (Yin, 2018), such as Xie and Xing (2024) focused on Chongqing city, and Ishak et al. (2022) focused on Kuala Lumpur. The authors selected the community garden case under the Special Area Action Plan (SAAP) Section 13, Petaling Jaya City, Selangor State, Malaysia. The selection rationale is this initiative is in the primary proposal stage and seeking to draw lessons on how to plan the early stages of community gardens better. The following sub-section explains the case study, data collection, and analysis approach.

**The Case Study of Section 13, Petaling Jaya City**
Petaling Jaya (PJ) was a satellite city planned 60 years ago to cater for the working population spillover from the Kuala Lumpur conurbation that had occurred since independence. PJ began with the development of a commercial area, community centres, and industrial area, and it has now evolved into a mature city with a vibrant city image. As it is an old city, numerous of its public spaces were abandoned, under-utilized, or unable to compete with developing environments. One example in the city centre is Section 13 in the old industrial area, along with its surrounding monsoon drain area along Sungai Penchala.

To regenerate unoccupied public spaces, Majlis Bandaraya Petaling Jaya (MBPJ) decided to gazette the Section 13 area in 2013 and execute an SAAP in 2019, aiming to revitalize the industrial and water elements of Sungai Penchala, improve walking connectivity from Section 13 to Section 51, and add new images and value to the local communities (Majlis Bandaraya Petaling Jaya, 2019). The SAAP comprises three major parcels: the Business, Linear Park, and Knowledge-Based Parcels. The Linear Park proposal along the monsoon drain of Sungai Penchala (within the Jalan 13/6 and Jalan 13/4 industrial area) consists of a community garden, wetland, a floodgate, a wading pool, a bioswale, and a weir bridge

The authors observed the current condition of the proposed Linear Park and community garden area, which is located between the buildings of Hospital Columbia and the Pharmaceutical Services Division owned by the Ministry of Health Malaysia and runs along the reserve of the Sungai Penchala monsoon drain. The area was full of bushes and lacked maintenance, and frequent blockages occurred due to rubbish dumping (refer to Figure 1).
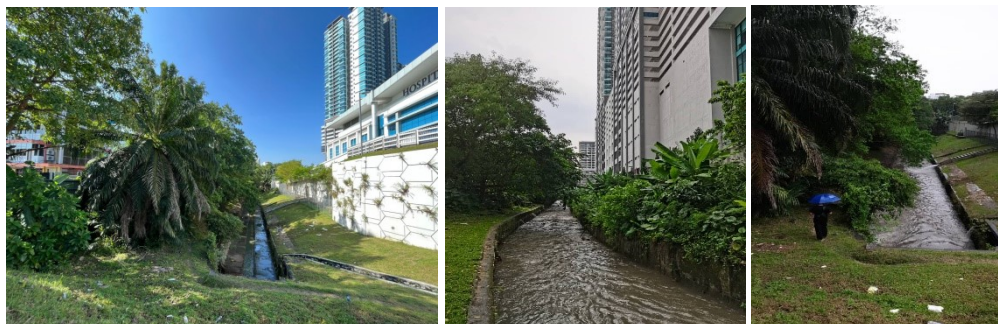
**Figure 1**: The existing condition of the proposal Linear Park and Community Garden
*Source: The authors*

**Data Collection and Analysis Approaches**
The data was obtained using a mixed method of qualitative and quantitative research. The quantitative approach utilized questionnaire surveys, and the qualitative approach involved stakeholder interviews. The questionnaire survey design was divided into four parts: 1) respondents' profiles, 2) respondents' knowledge of the proposed project, 3) satisfaction level (marked on a five-point Likert scale) of the proposed project, and 4) opinions. The semi-structured interview protocol was designed to verify the quantitative data and address the challenges. This protocol was divided into three sections: 1) understanding the status of the community garden initiative, 2) examination of community members' levels of satisfaction with the community garden initiative, and 3) proposed strategies for the community garden initiative in Section 13 Petaling Jaya.

To analyze the data, descriptive statistics were applied to the collected quantitative data using SPSS version 25. Meanwhile, for the qualitative interviews, thematic analysis was executed using Atlas.ti version 23 and various themes were formed. The current population of PJ is 619,925 (Majlis Bandaraya Petaling Jaya, 2019). For the questionnaire survey sampling size, 200 samples were collected to achieve a confidence level of 95%, at the precision level of ±7% (Israel, 1992). Stratified random sampling was applied to collect questionnaire responses in three different areas: Area A (upper left of Jalan 13/6), Area B (central area between Jalan 13/6 and Jalan 13/4), and Area C (bottom right of Jalan 13/4). The data collection was undertaken from May to December 2023.

For the stakeholder interviews, snowball sampling was applied to informants from different backgrounds, including the government, residents, the private sector, and NGOs. The interviews ceased when the informant count reached eight because the answers began to repeat and the content had reached saturation (Laher & Botha, 2012). The interviews were conducted from September 2023 to February 2024, each lasting for half an hour and one hour.

# FINDINGS

The study findings are explained in two subsections: 1) quantitative results from the questionnaire survey and 2) qualitative results from the interviews.

## Quantitative Questionnaire Survey Results

For the quantitative questionnaire survey, of the 200 samples, the respondents were nearly equal in terms of gender (male 53%; female 47%) and consisted of both locals (45%) and outsiders (55%) who were active in the study area. The outsiders include those not staying but working in the factories in Section 13, PJ, Selangor. In terms of their age groups, the highest number of respondents were aged 30-39 years old (37%) and the smallest age group were those between 40 and 49 years old (4%). The majority of respondents were Malay (67%), married (65%), and working in the private sector (53%)

*Respondents' knowledge of and satisfaction with the urban regeneration initiative*

Based on the survey, the majority (68.3%) of the respondents did not know about the community garden–urban regeneration initiative along the monsoon drain of Sungai Penchala. Those who were aware had noticed the general urban regeneration initiative through construction signboards and construction activities in industrial areas (30%) (refer to Figure 2).
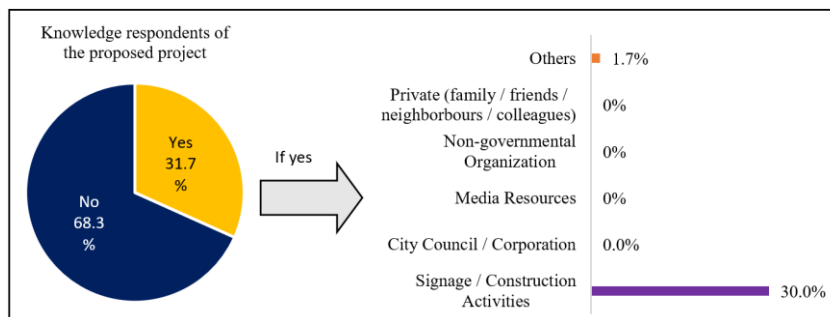


**Figure 2:** Respondent's knowledge of the Seksyen 13, Petaling Jaya urban regeneration initiative.
*Source: The authors*

As for the levels of satisfaction with the community garden and other initiatives under the Linear Park Parcel, the survey results showed that community gardening activities were the least satisfying item (3.03 mean value) of all those listed (refer to Table 1). Some respondents mentioned that, firstly, the location of the proposed community garden is in a steep area that is lower than the road level and, secondly, it lacks a staircase and hand bars along the monsoon

drain. They had safety concerns and thought that this was not a suitable or strategic area in which to develop a community garden.

**Table 1:** The satisfaction level of the Linear Park initiatives

| Item | Scale | | | | | Mean | Total |
|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | | |
| - Safe and well-planned recreational facilities area | 0 (0%) | 4 (4.0%) | 16 (16.0%) | 43 (43.0%) | 37 (37.0%) | 4.13 | 100 |
| - Effective drainage management system in Section 13, Petaling Jaya | 0 (0%) | 5 (5.0%) | 48 (48.0%) | 30 (30.0%) | 17 (17.0%) | 3.59 | 100 |
| - The Wading Pool is safe for kids | 1 (1.0%) | 11 (11.0%) | 50 (50.0%) | 31 (31.0%) | 7 (7.0%) | 3.32 | 100 |
| - Active community gardening activities in the surrounding Penchala River area | 7 (7.0%) | 19 (19.0%) | 49 (49.0%) | 14 (14.0%) | 11 (11.0%) | 3.03 | 100 |

Note: 1 is the least satisfying, 5 is the most satisfying *Source: The authors*

*Respondents' opinions on the community garden–urban regeneration initiative*
Based on the survey, most respondents (23%) stated that the proposed community garden might help them fill their free time doing simple farming. The second most common response (15% of respondents) was support for the idea that the garden might strengthen relationships and unity among the surrounding community in Section 13, PJ. The third opinion (10% of respondents) was that the community garden could generate income for residents through cultivation.

**Qualitative Interview Results**
This second stage, the qualitative interviews, involved exploring in more detail the statistical findings from the first stage. Eight respondents from different backgrounds, i.e., two local authority officials (LA), two government official (G), two private-sector employees (P), two residents (R), and one NGOs (N) - were selected. A variety of backgrounds is important to represent the diverse voices of stakeholders. The informants' real names and organizations were not disclosed to protect their privacy and safety (Creswell & Creswell, 2018). Themes were formed according to the research questions, as explained in the introduction.

When answering the first research question about the status of the community garden initiative developed under the urban regeneration of Special Area Action Plan Section 13, PJ, the local authority official mentioned that the community garden was in the proposed stage and did not yet have a detailed layout design, "*The project of a community garden is not started yet, even the layout of the project is not prepared. Why? Because the meeting was not being called.*" (LA1)

Another local authority official (LA2) added that nobody from the local authority had visited the site (at the time of the survey), and part of the proposed

area was the private property of factory owners. The government official (G1) from the Pharmaceutical Services Division, Ministry of Health also confirmed that they had never heard of the proposed community garden next to their buildings. If MBPJ wished to execute that initiative, they would need consent from the Ministry of Health because the reserve area was managed by them. None of the other non-government informants – the private hospital manager (P1), the resident (R1), and the non-governmental organization (NGO) staff (N1) - were aware of the proposed community garden initiative but they supported it.

When answering the second question concerning the community levels of satisfaction with the community gardening initiative in Section 13, PJ, two residents (R1 and R2) strongly welcomed and were satisfied with the proposal. They suggested that MBPJ conduct more awareness campaigns about that project and address the safety issues facing those involved in urban farming. The private-sector employee (P2) was also satisfied with the proposal but cautioned that MBPJ needed to ensure the crowd would not affect the hospital's operations. Informant P2 also added another concern that the proposed land was held by private factor owners, hospitals, and the Ministry of Health, saying that both time and consensus would be needed for all parties to agree to and support the proposal.

Regarding the third question about how the community gardening initiative in Section 13, PJ can be improved, LA1 mentioned that MBPJ lacked supporting documents for the community garden project and said that very few members of the public knew about it. She emphasized that no stakeholders had yet taken responsibility for the project. On the issue of overseeing the project, N1 was very willing to help and connect the residents to MBPJ, and they were waiting for MBPJ to call them to discuss the project.

## DISCUSSION
Based on the findings, the responses to the community garden proposal were positive, while the concerns were related to enhancing healthy lifestyles, creating social relationships, and generating side income. None of the respondents touched on food security issues. These findings are compatible with those obtained by Liao and Liu (2023) and Shach-Pinsly (2022), whereby community garden–urban regeneration can enhance healthy lifestyles and social interaction among the elderly community. However, some residents might believe that such a community garden is a micro-scale form of urban farming, while the cultivation output might be only for self-consumption and be unable to sustain the food security of the whole community, as imagined by Cattivelli (2023) and Chong et al. (2024) or discussed in the context of the COVID-19 outbreak by Murdad et al. (2022).

From the quantitative survey findings, the community garden was the least satisfying item of the Linear Park initiatives. This finding did not mean that

the community garden was not welcomed by the local community; it just reflects a lack of awareness of the benefits of urban farming. The respondents did not support it because they thought it would be dangerous to conduct farming activities along the 20-foot-wide monsoon drain. However, in the authors' opinion, that safety issue could be resolved by redesigning the river reserve with handrails along the monsoon drain, a pavement walkway, a non-slippery staircase, signboards, and fencing for the compound.

Most importantly, according to the authors' idea, approximately 123 garden boxes, each measuring 4'x8' in size, could be designed to accommodate the suggested 0.26-acre site. With this number of garden boxes, the site could be divided into different segments for communities or families, and residents could plant whatever vegetables they like. Moreover, resting gazebos, store rooms, benches, and children's playgrounds could be provided to make the gardening site more inclusive, multi-purpose, and attractive. Referring to the successful case of the community garden in Bukit Bandaraya, U12 Shah Alam, water sources could be easily accessed from the monsoon drain, and the soil along it is fertile and suitable for vegetable planting.

Based on the qualitative interviews, MBPJ was yet to find caretakers for the community garden initiative. Upon receiving instruction from the management, MBPJ will roll out awareness campaigns, improve the safety facilities, and connect to NGOs or residents' associations; this community garden will then become another success story of the Section 13 community. Informants from civil society also support the initiative and have volunteered to champion the project. As learned from the cases in Denver and San Jose, urban farming activities can also cultivate local leadership and voluntarism among the community, which is essential for cohesive community development (Alaimo et al., 2023; Algert et al., 2016). Other than that, the land rights/ ownership involves both public and private parties (Ishak et al., 2022; Zainal & Rosmiza, 2021), which could be an issue for the proposed community garden initiative. However, this could be resolved with deliberation and stakeholder participation.

The above findings and discussion are summarised in the thematic diagram shown in Figure 3. First, the issues facing the community garden–urban regeneration include low awareness, safety concerns, and reserved land ownership. Second, regarding the satisfaction levels, the community is satisfied and supportive. Third, future improvement can only be ensured through stakeholder participation, i.e., taking part in awareness campaigns, involvement in safety infrastructure designs, and volunteering as caretakers.
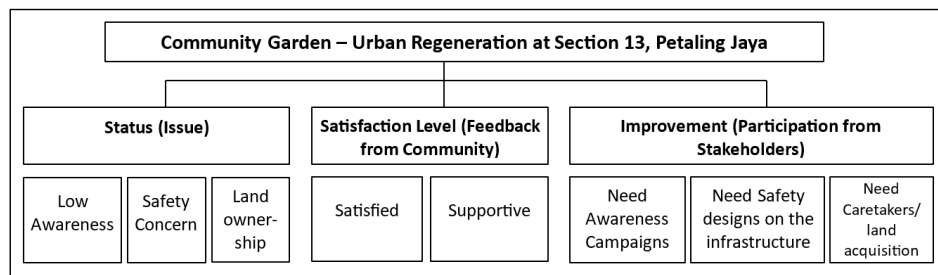
**Figure 3**: The thematic diagram of the community garden–urban regeneration initiative
*Source: The authors*

## CONCLUSION

This study demonstrates that urban regeneration is an important instrument for fourth-tier community planning in developing countries. Intervention in this under-utilized, unoccupied public space, i.e., the monsoon drain reserve in this case study from Malaysia, could mean this functional community garden becomes a genuine proposal. Although it is still in the initial proposed stage, the quantitative and qualitative survey results indicate its potential for improving healthy lifestyles and enhancing social interaction among the community, as well as creating income for the community by harvesting the cultivated food. Evidently, the community garden projects in Shanghai (China), Denver, and San Jose (United States) have improved the environmental health of the respective communities, with vacant barren plots transformed one after another into gardens that are shared by residents and that have aesthetic, ecological, and social functions. The increased social exchange among neighbours and people's proximity to nature should promote harmonious neighbourhood relations, community cohesion, and residents' mental health (Kou et al., 2019).

This study reveals that the community garden project faces issues - such as a lack of public awareness, poor safety along the monsoon drain, and reserved land ownership - which are worth considering by the local authorities. These can be solved by encouraging participation and deliberation from all stakeholders. The limitations of this study could be the single case study, the small sample size, and the lack of a detailed proposed layout for planning the community garden and determining the execution and management of the initiatives. Thus, further study could be carried out involving cross country multiple case studies, a larger sample size for generalization, and design-based analysis of the detailed community garden layout and the execution and management plans for effectively sustaining the initiatives. In brief, this study contributed important evidence regarding urban farming regeneration initiatives, particularly in relation to fourth-tier-community-based micro-planning in developing countries, and how to plan the early stage of community garden better.

## ACKNOWLEDGEMENTS

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