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Reclaiming Food Security: Assessing Abandoned Spaces as Potential Urban Farms in Lower-Income Kuala Lumpur

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ARTICLE INFO	ABSTRACT
	Food insecurity is an alarming issue in most countries with rapid growing population around the globe including Malaysia. This has stemmed the stress in providing a safe and adequate amount of food to all strata of society, especially for the lower-income communities. The global COVID-19 has highlighted the value of food security as boundaries remain closed and nations seek long-term solutions to fend for themselves without relying on food imports and distanced supplies. Malaysia with a total population of 34 million as of 2023, faces tension in the agriculture sector. Urban farming is a key element cited by the United Nations in their Sustainable Development Goals 2030 for self-sufficiency, reducing health and economic inequalities, poverty eradication, women's, and urban marginal social inclusion, as well as greening the city by reclaiming existing abandoned spaces to promote sustainable development. This paper will investigate potential interstitial urban farming spaces in lower-income neighbourhoods in Kuala Lumpur through space syntax studies. Based on the findings of the study, this paper will formulate the synergies of urban farming and abandoned spaces as part of a food system in shaping sustainable development and inclusive communities. The result will be fundamental data for architects or any relevant bodies to find opportunities in converting interstitial spaces into potential urban farms in making a more self-sufficient urban ecosystem.

1. Introduction

Food is a fundamental necessity and an international human right. Food security is described as a scenario in which everyone has physical, social, and economic access to adequate, safe, and nourishing food that meets their dietary needs and food choices for a flourished lifestyle (FOA,2002). Global food

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security has risen to the forefront of global debate becoming a national policy priority as well as a public concern (FOA, 2017). Greater concerns are faced as the global urban population is projected to rise to 84 percent by 2050 (United Nations, 2004) alongside climate change and environmental degradation. This has immensely escalated food insecurity and land scarcity in dense cities around the globe, which is vital in ensuring the well- being and sustainability of the cities and people. With rising concerns of food instability, four dimensions of food security has negatively impacted us at global to community scale which are- 1) Availability 2) Accessibility 3) Utilization 4) Stability.

Food insecurity is a global issue (UN WFP, 2024) that affects impoverished households in many industrialized and developing nations, including Malaysia which has been linked to poor health and nutritional results. Malnutrition effects such as wasting, overweight, obesity, stunting and anemic, have been linked to food instability where Malaysia is one of 41 countries out of 141 that had three malnutrition burdens according to the Global Nutrition Report 2018 impacting mostly the low income group. Study by Goni *et al* (2024) stated that 45.7% out of 411 participating Malaysian households experienced food insecurity during the COVID-19 MCO. Data from UNICEF (2020) shows 60% of B40 families are unable to purchase food for their families with a monthly household income of less than RM4,360.00, they make up around 76% of the Malaysian population that live in urban areas. This issue has worsened with the constant price hike of basic food (Cheong 2022). Despite Malaysia's abundance of natural resources, we heavily depend on high value imported foods with 78.4 percent, 44.6 percent, and 22.9 percent self-sufficiency in fruits, vegetables, and meat products, respectively (Yeo A.,2021). In starting of means to support sustainable food sources particularly among the vulnerable urban residents, urban farming is a critical component in ensuring a reliable food reserve including four aspects of food security (Zurayk, 2020). It is time to rethink shaping self-reliant cities.

Taking precedent from the previous documentations of city planning from our ancestors to contemporary renditions like the Ebenezer Howard's Garden City, urban farming has long been practiced serving city dwellers. Urban farming is more than cultivating, processing, and distributing food within or around the cities (Mougeot, 2000). Urban and peri-urban agriculture is said to be a feasible substitute for traditional farming. Research by Nicholls et al (2020) contends that these approaches have the potential to make a substantial contribution to sustainable food production while simultaneously promoting biodiversity. The research is based on the framework provided by the United Nations, which consists of 17 sustainable development goals.

It should not be considered as a supporting component but rather a part of the 'urban system' in economic, social, ecological, and physical infrastructure (Van Veenhizen, 2006). By exploring the potentials of food production engaging to its surrounding environment and communities, urban farming could produce up to 180 million tonnes of food per year (Clinton *et al*., 2018). With support to United Nations Sustainable Development Goals 2030 (SDGs), SDG 2: Zero Hunger, SDG 10: Reduce Inequalities, SDG 11: Sustainable Cities & Communities, and SDG 13: Climate Action, urban agriculture can fend its path to urban resilience (Sachs *et al*., 2020).

With the escalating level of food insecurity and impact from the pandemic, now is the chance for Malaysia to turn derelict lots into urban farms, addressing food problems while also making efficient use of available space (Yeo A., 2021). As we continue to face problems with land competitions in the cities, we can seek opportunities in reclaiming abandoned spaces as potential urban farms while making it possible as an urban food supply. By assessing interstitial spaces particularly within the lower-income communities' neighbourhood, it does not only promote sustainable development in retrieving lost spaces, but can also create sustainable communities to strengthen food system for the vulnerable. Utilisation of small spaces for vegetable cultivation, larger yields per unit of area can be achieved, allowing for the allotment of smaller amounts of land for urban food production to be compensated for (Kremer, 2011). At present, approximately 13.65% or 3305.26 hectares of idles lands in Kuala Lumpur which are uneconomical to be developed are empowered to be utilised creatively as community gardening, park, and many more with measures taken to ignite the spirit of collective responsibility with the Kuala Lumpur City Hall (KLSP2040, 2020). Currently there are other

supporting agencies, NGOs and agricultural policies that champions urban farming in abandoned spaces such as 12th Malaysian Plan, Sowing the Seed, and Think City.

While urban farm can grow a wide variety of fruits or vegetables, it could allow the community to have access to safe food while creating job opportunities and useful hobbies through the urban farming. From the paradigm and challenges faced by urbanization and the pandemic, it offers us an outline of how we rethink cities as an adaptive system where agriculture synergizes with the urban voids to shape a resilient urban food production especially in the lower income communities. In a survey by Urban Hijau (Mason & Wan Ahmad 2023) exemplifies the substantial contribution that small urban farms may make to the food market. Through the implementation of sustainable agricultural practices, these farms have the ability to improve local food security and decrease dependence on external food supplies. This is consistent with the overarching objective of fostering sustainability in urban settings.

As we link the central urban farm to interstitial urban farming spaces, we will be able to bridge the gap of city voids to achieve a holistic food system shaping sustainable communities. Abandoned plots are one of the most obvious kinds of undesirable real estate and the main source of urban sprawl; they are unsightly and have been linked to lower property prices and increased crime (Been & Voicu, 2006). The theories of spatial combinatorics, natural movement, economic process, and natural urban transformation process in mon grid urban layouts by Ye and van Nes (2014) provide insights into how a city be improved by identifying particular spatial weaknesses, what it consists of, and what actions can be taken to improve an area's socio-economic performance. The motivation of this research is to explore the symbiosis of agriculture and abandoned spaces by understanding urban farming in elevating food insecurity as well as identifying potential urban farms in the interstitials among lower-income Kuala Lumpur neighbourhood through space syntax studies. Perhaps this study could generate an ideation on an urban food system that cultivates urban permaculture as part of sustainable development in contribution to challenging the nation's concerns.

2.0 Methodology

A qualitative approach is applied using an obtrusive method such as space syntax analysis, questionnaire, and semi-structured interviews to identify potential urban farming spaces in lower-income communities in Kuala Lumpur with the targeted residents and advocators.

2.1 Area of Study

The study focuses on Bandar Baru Sentul, a lower-income neighborhood in Kuala Lumpur, Malaysia. Located in Sentul, it features diverse building types and communities, with a notable interest in urban farming. To rejuvenate abandoned spaces in Kuala Lumpur, particularly in Bandar Baru Sentul, catering to the needs of middle- and lower-income communities is crucial (KLSP2040, 2020).

2.2 Space Syntax Analysis

Space syntax is a research program that examines the relationship between human civilizations and space from the perspective of a general theory of occupied space in all of its forms: buildings, towns, cities, and landscapes (Hillier, 1996, Hillier and Hanson, 1998, Koohsari et al., 2014). According to Hillier and Hanson (1984), the social meaning of the environment is derived from its spatial composition, and an environment's topological structure is a major factor through which society constructs and establishes roles to build certain sorts of social connections. The objective of space syntactic study is to formulate methods of defining established, populated spaces (such as buildings, communities, or constructed complexes) in a manner allowing for the expression of their fundamental social logic (Bafna, 2003). This space syntax study will objectively evaluate the spatial locations in Bandar Baru Sentul district. For this study, a minimum of two different analyses were conducted in the urban area to read the pattern. First, land use distribution will utilise land use data collected by City

Planning System PBRKL2020 to verify the land uses of each plot surrounding each road. Four variables- residential, commercial, mix-use, and abandoned spaces were chosen for the analysis. These plans were updated by conducting site visits and Google maps. From the collected data, the current abandoned spaces in Bandar Baru Sentul as potential urban farming spaces are identified. Manual space syntax analysis involves visually mapping out spatial configurations, such as street networks and building layouts, and analyzing their connectivity and accessibility characteristics.

Next, connectivity analysis identifies street connectedness, which is related to land use, population density, and movement patterns, is the confluence of design and planning variables (Ozbil, Peponis, & Stone, 2011). The majority of accessibility is focused on street networks that direct pedestrian mobility. One of the most often utilized approaches for explaining how a place's spatial design impacts pedestrian mobility is space syntax. The analysis will define higher accessibility towards the site and the connectivity established to the surrounding zones. Through the analysis it will further show the best site context mapping of the potential urban farm in abandoned spaces in Bandar Baru Sentul for the lower-income communities.

2.3 Questionnaire and Interviews

Questionnaire was administered randomly and systematically to 20 respondents physically and 80 respondents virtually through Google Form within the duration of one month. The questionnaire was designed based on the research objectives and literature reviews with a total of 22 closed-ended and 3 open-ended questions. The first section of the questionnaire is to collect the respondent's personal information particularly their socio-demographics such as gender, age, race, profession. Section B then inquire about their knowledge, interest, and perception of urban farming using the dichotomous method 'Yes/No' and Guttman scale where respondent checks each item with which they agree. Finally, Section C addresses their perception of urban farming for Bandar Baru Sentul's abandoned spaces whether they support and is interested in the idea. Lastly, the questionnaire ends with their comments and suggestions for a better Bandar Baru Sentul.

In addition to collecting data from questionnaire, a semi-structured interview was designed. An unstructured interview, according to Van Dalen (1979), is the most flexible and can provide insight into the interviewee's sentiments, beliefs, and motives, as well as fresh techniques. Semi-structured interviews were grouped under four different domains which encompasses; Ecology, Economic, Politic, and Culture with their respective attributes. This is described in food system framework derived from literature review (Figure 2.0) which can be applied to abandoned or lost spaces driven by the 'Circles of Food' carrying their respective attributes and goals to reclaim food security in an inclusive community. The outer layer is overlaid by the local food system of Growing – Harvesting – Packing – Retailing – Transporting – Eating –Disposing, to create a resilient urban food system. The purpose of the interviews is to gain insights and collect information from existing community garden practices in order to realise urban farming activities in low-income neighbourhoods. The interview with Kebun Kebun Desa (KKD) Community Garden aided the research on the Cultural and Ecological Domain of a circular food system while the interview with Kebun Kebun Bangsar (KKB) focused on the Economic and Political aspects in achieving a holistic food system with a checklist of to be referred and analysed.
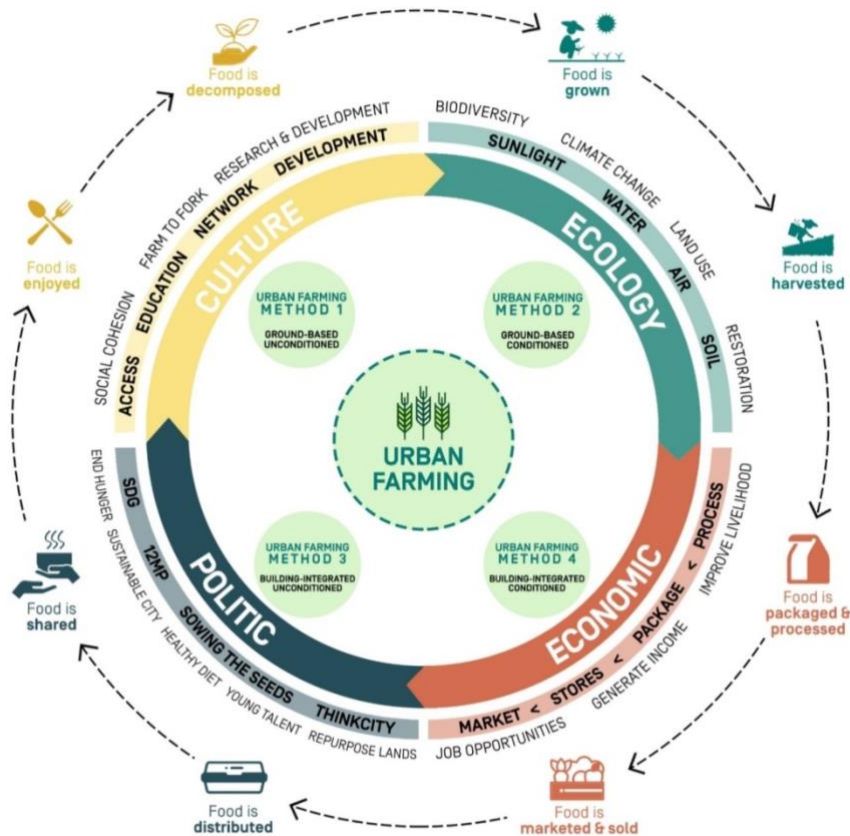
Figure 2.0: Circular Food Framework *(Source: Author.2022)*

3.0 Results

3.1 Space Syntac Findings

Land use distribution analysis examines land-use variations, a network of city roads, and distributions of facilities. The theories of spatial combinatorics, natural movement, economic process, and natural urban transformation process (Ye and van Nes 2014) all provide insight into how an urban design might work after implementation. Analysis found there is a heavier commercial urban feature surrounding the residential neighbourhood of Bandar Baru Sentul.

A brief space syntax study on the land use distribution and integration of space to determine suitable urban farming spaces within Bandar Baru Sentul was conducted. The collected data will then be supported with samples of questionnaires to see the relationship of positive residents' perception of urban farming in establishing a successful community garden. According to Figure 3.0, there are heavier residential areas followed by commercial and mixed-use zones. With street network of this pattern, it enhanced the pedestrian movement of different land uses from the residential towards the outwards of commercial zones. The abandoned spaces are intertwined in between residential blocks which are in proximity towards the residents. A walkable distance in the residential areas will establish a good connection towards the potential urban farming spaces as part of their lifestyle.

The existing network structure generates higher local inter-accessibility in the neighbourhood. Thus, the greater inter-accessibility will contribute to a greater presence of people in the streets. There are plenty of private mini-farm spaces among Pangsapuri Bandar Baru Sentul while the bigger urban farmland can be shared by the rest of the communities with shared garden plots.

The theories of the movement economy and virtual community provide a new perspective on the degree of attraction that is latent in the grid's layout, which Hillier refers to as "grid inequalities." Land uses self-organize according to the benefit they stand to gain from proximity to movement, also establishing a differential in co- presence that generates the phenomenological features of 'urban buzz'

in key areas resonant at different scales. These kinds of layouts result in a street and road network with convoluted mobility paths connecting everywhere (Karimi 2009).
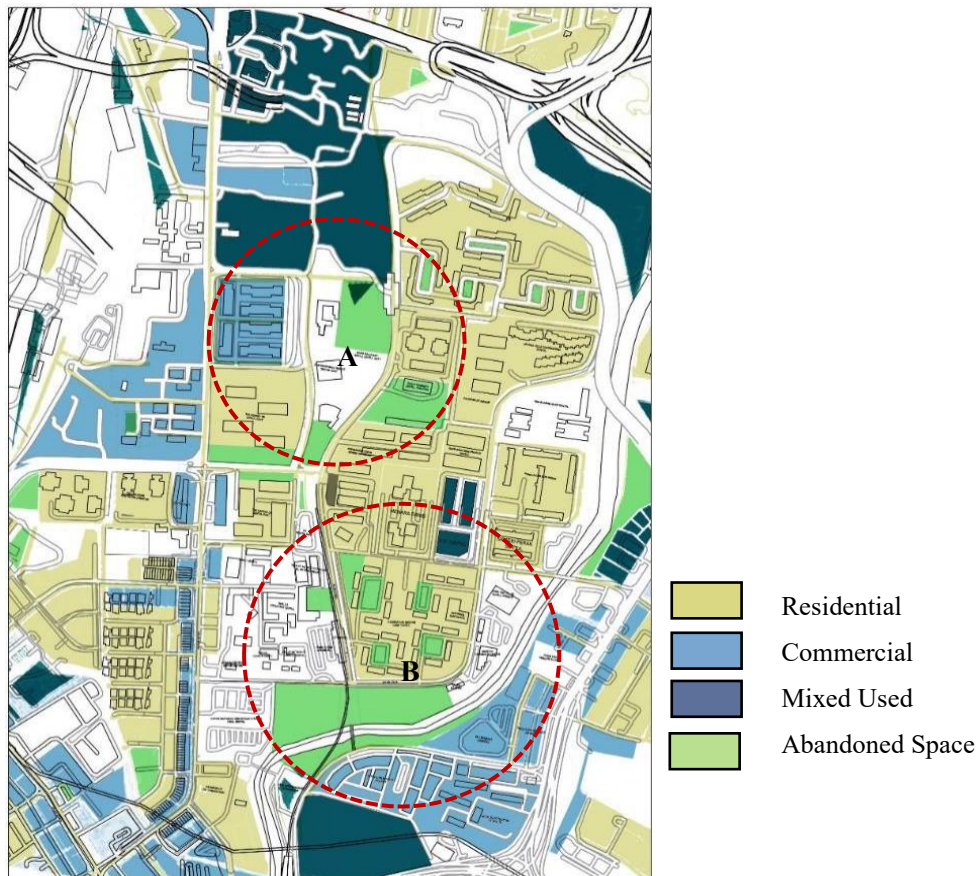

Figure 3.0: Proposed urban farming areas for Sentul *(Source: Author.2022)*

3.2 Questionnaire Findings

Most of the respondents were aged between 19-29 years of age (45%) and 15%, 22% and 8% respectively for those aged 30 to above 50 years old. The table also shows Malay (72%) followed by Chinese (15%) and Indian (5%). The neighbourhood has a higher percentage of Malays. The respondents are mostly employed (54%), students (18%), and freelance (10%) showcasing a busy lifestyle for the respondents' while the other 4% are respectively in the unemployed and retired.

Analysis shown in Table 3.0 that 88% believe there is not enough farming spaces in the neighbourhood and high response of 82% are interested in becoming an urban farmer as a hobby or career. This further supports the proposal of turning lost spaces into urban farms for the residents as they will be actively participating in it. Equal number (97%) of residents of respondent indicated preference in sharing garden plots where they can garden together in the neighbourhood as well having private garden plots near the homes. Based on the statistics, we can assess how well the respondents responded to urban farming which can provide sufficient food, adequate nutrients, income generation, and shape an independent food system in the city.

Table 3.0 Perception of farming on abandoned spaces nearby Sentul (by authors)

Questions	Response	Non-farming household (n=45)	Farming household (n=55)	Total (n=100)
Enough farming space in the neighbourhood	Yes	7	5	13 (13%)
	No	38	50	88 (88%)
Interested in becoming an urban farmer	Yes	32	50	82 (82%)
	No	10	5	15 (15%)
Shared garden plots	Yes	45	52	97 (97%)
	No	-	3	3 (3%)
Private garden plots	Yes	45	52	97(97%)
	No	-	3	3 (3%)
Market stall	Yes	45	50	95 (95%)
	No	-	5	5 (5%)

Based from the questionnaire conducted, 45% of the respondents do not farm at home while 55% of them have practiced some form of planting in their balconies (30%) and small home gardens (25%). Although 60% are unfamiliar with the term urban farming, the data shows 82% of them keen to know about it. From the Table 3.1, majority of the residents enjoy farming and have integrated this activity into their lifestyle. Most of the farming households grow vegetables (22%), herbs (20%), and fruits (13%) for their own consumption. They farm because they enjoy farming (34%), relieve stress (30%), and feel good for the environment (30%). Most importantly, 90% of them think all homes should have their own farming space to practice urban farming as part of their lifestyle. This aligns with the idea of enhancing abandoned spaces as urban farms for the benefit of the Bandar Baru Sentul communities.

Respondents expressed their suggestions where the majority wishes for more urban farming spaces and more greens in the neighbourhood. A few participants highlighted that they will be more interested in farming if access to personal farming space was available. Through the survey, it was discovered that the residents supports the idea of urban farming in abandoned spaces of Sentul as it provides nutritious food to the communities, productive use of excess land, green of the city, and have social benefits to the communities.

3.3 Interviews Result

Based on the literature review we have summarised the Circular Food Framework which can be applied to abandoned or lost spaces driven by the 'Circles of Food' which are Ecology, Economic, Politics and Culture domains carrying their respective attributes and goals to reclaim food security in an inclusive community. Interviews with Design Kebun Kebun Bangsar and Kebun Kebun Desa representatives, will further confirm, support the finding, and help strengthen the circular food framework.

To initiate any community garden, support from the Political domain and forward- thinking authority policies is an important aspect to realise the project especially in utilizing land in the city. It can be argued on the basis of the city's vision. According to Kuala Lumpur Structure Plan 2040, 20sqm of open spaces per person is to be allocated. Currently we only have 10.96sqm/person in Kuala Lumpur which is lacking 2062.22 hectares for 1.88 million urbanites. SV4 Effective Green Governance in KLSP2040 mentions the establishment of Public Trust Fund for parks and green areas by Kuala Lumpur City Hall (KLCH) and is independently managed to provide donations to programmes. This fund can be implemented in collaboration with various parties including private bodies, NGOs, local communities and is facilitated by KLCH. This ensures the optimization of green spaces in Kuala

Lumpur with efficiency in landscape industry as well as an educational outreach through partnerships and individuals which is a guideline to KKB's establishment.

Table 3.1 Perception of urban farming among Bandar Baru Sentul residents (by: authors)

Questions	Response	Non-farming household (n=45)	Farming household (n=55)	Total (n=100)
Familiar in urban farming	Yes	9	31	40(40%)
	No	36	24	60 (60%)
Interested in urban farming	Yes	28	50	82 (82%)
	No	15	5	20 (20%)
Farm at home	Yes	-	55	55 (55%)
	No	45	-	45 (45%)
Types of food grown	Vegetables	-	22	22 (22%)
	Fruits		13	13 (13%)
	Herbs		20	20 (20%)
Location of the home farm	Balcony	-	30	30 (30%)
	Home garden		25	25 (25%)
	Community garden		-	0 (0%)
Why do they farm	Enjoy farming	-	34	34 (34%)
	Save money		22	22(22%)
	Safer food		8	8 (8%)
	Release stress		30	30 (30%)
	Good for environment		30	30 (30%)
	Not interested in farming	3	-	3 (3%)
Why they do not farm	Lack of space	22	28	50 (50%)
	Do not know how to farm	11	2	13 (13%)
	Do not have time	1	2	3 (3%)
Should all homes have their own farming space	Yes	40	50	90(90%)
	No	5	5	10 (10%)

The community farm is located in the one of the large mature section of Kuala Lumpur. The long strip of land is on the reserved electrical high line land. The idea first started in 2013 inspired by Malaysian Spring political movement back in 2013 with a few thousands of Malaysians involved. With the same seed of hope, KKB was born. The founder who is also a landscape architect, proposed the idea with accommodating this 8-acre infrastructure land as a community garden. It took three years negotiation with the local authorities, to obtain permissions and a kick-starter grant from Think City to start the project in 2016. KKB runs on full public donations after that till today. The community farm still is challenged from time to time with a few people who disagree with public who are not form the neighbourhood visiting the farm and raring of animals at close proximity to their residences. Through the interviews the administrator and volunteers shared the main goals of KKB which includes advocate educational platform which is not just a farm but as a communal space, fosters community spirit and giving back to society where it is a space for urbanites and middle-class people to volunteer and maintaining its accessibility to public, Spaces are designed with the existing terrain to minimise

landfill and waste which pushes for zero waste by using natural resources and reusing materials as part of KKB and promotes creative use of abandoned lands as green open space for the community.

At the beginning of the interviews with representatives of KKB discussion focused on political and economic domains, however, when analysed the first and second goals of KKB ties to the culture domain which highlights on the importance of community spirit and trust. The administrator of KKB shares the importance of having a few permanent workers to well maintain the farm. As KKB mainly focuses to be an educational platform towards the community, 50-60 volunteers of different backgrounds and expertise are involved to make KKB running and successful. It promotes a new lifestyle towards the community through urban farming, rearing animals, and building community relationship. KKB embeds elements of education and awareness on the circular system how food is grown and, management of compose, ways to care for animals such as rabbits, chickens, fishes, gooses as well as learning the importance of being sensitive towards the environment. Harvested vegetables are shared with the under-privileged.

The interview with KKD leader shared that it first started with the Taman Desa Recycle Collection Centre 10 years ago. In the beginning, they started with a mini urban farm and further expanded it to be Kebun Kebun Desa during the beginning of Covid-19. He shared that the family members were facing troubles staying home, depression, fights and so they began KKD with the wellness of communities in mind. The farm is a charity organisation led by Yayasan Tzu Chi. To foster a better community there are three rules introduced in this urban farm philosophy including: Gratitude: Gratitude for nature, food, and the access they have to practice urban farming in the comfort of their neighbourhood, Respect: Respect the neighbours, nature, animals and do not disgrace the living beings and Love: Love nature, people, and the environment.

The organisation emphasised on the importance of education among the communities. The idea of urban farming is relatively new in our country and KKD believes it should be implemented in many more neighbourhoods. The farm has widely been visited by school trips, offices to have on-hand experience as well as learning on waste recycling. Therefore, the spaces required include a mini stage and exhibition space. They also integrate the Brickfields community police and schools to be a part of the urban farm. The organisation believes that people can change for the better. By educating the public and integrating these characteristics into their lifestyle, it is the key factor that sustains the urban farm in an excellent condition. That explains that security is not a problem in the urban farm community as they have developed trust in each other. This is a strong factor that benefits their community structure organization in the Cultural domain.

On to the Ecological domain, the farm utilises integration of stormwater pond in the landscape to recycle rainwater for irrigation and enhance the ecosystem. Irrigation also comes from integrated rainwater harvesting tank. KKD as like many other community farms were developed on the grounds to feed participants or supply food for organisations such as food banks or community kitchens. This effort helps address a variety of essential social demands, including sustaining individuals who have limited access to healthy food, educating the community about good nutrition, and the realities and benefits of food production. The existence of greens attracts diverse fauna including butterflies, birds, squirrels and other critters into the urban farm. It further pollinates the urban farm and ensures a better cultivation yield. The farm also and compose corner which allows residents to place food waste into the compose bin and use it the farm. KKD also avoids the usage of chemical fertilizers and educates the residents on using organic and natural sources including eggshells. This shows how the residents are practicing a holistic circular food system as part of the urban farm. KKD also avoids the usage of chemical fertilizers and educates the residents on using organic and natural sources including eggshells which contain high calcium for plant growth.

Table 3.2: Summary of the circular food framework based on interviews (by authors)

DOMAINS	ATTRIBUTES	STRUCTURE	FACILITIES ON SITE
Cultural	Community structure organization	**Charity organization:** NGO, facilitators, volunteers, and residents	-
	Rules and regulations	Gratitude, respect, and love	-
	Urban farm center facilities	Visitors and daily facilitators' use	• Tours • Workshops • Mini Stage • Exhibition Space • Storage • Toilet • Kitchen • Waste recycling center • Second-hand waste storage
	Resident farmers facilities	Residents' daily use	• Farmer's equipment storage • Pergola rest area • Community pergola
Ecology	Ecological conditions in maintaining urban farms	Water management	• Stormwater pond
	Climatic considerations on crop management	Reuse to minimize wastage	• Compose corner • Rainwater harvesting
Economic	Public trust fund	Top bottom, bottom top approach	• City council • Strategic partners, • Donations • Management
	Donations and fundraising events	Educational platform and establishing connections	• Workshops • Small Concert • Art Installations • Walkathon
	Small business	Business platform	• Mini market • Collaboration with under-privileged • Animal feed business
Politic	Government or private bodies	Land approval and grant application	• Kick-starter grant • Support grant • Land approval
	Authority policies	Permission of land usage for urban derelicts for green spaces and rearing animals to complete ecosystem	• Abandoned spaces for green spaces • Allowing rearing animals

3.4 Discussion

The selected methods used and analysed above are meant to serve as a point of validation. The first part discussed the potential urban farming spaces in Bandar Baru Sentul using space syntax studies. The abandoned space analysed has a good spatial relationship to its context through land-use

distribution with proximity to the neighbourhood and commercial district. We can also establish high connectivity into space through the accessibility analysis shown on the site.

The second section shows the residents' positive feedbacks on urban farming in Sentul's abandoned spaces where the majority supports urban farming in their neighbourhood and is interested in participating. The high response of 96% believes that every home should include farming space and thinks there are not enough spaces to farm currently in Sentul. This shows the positive responses of residents towards the idea.

The last section is the interview sessions to support the Circular Food Framework and discuss its respective attributes, structure, and facilities. The interviews with KKB has confirmed the 4 domains of the circular food system and further elaborated the Economic and Politic domain involved in urban farming. On the other hand, KKD has shared eye-opening experience that encompasses the Cultural domain and Ecological domain to complete the holistic food system.

4. Conclusions

The purpose of this paper is to explore the synergies of urban farming and abandoned spaces in shaping sustainable development and inclusive communities among lower-income Kuala Lumpur neighbourhood. Urban agriculture is more than just growing food in the city; it's also a part of the city's economic, social, ecological, and physical infrastructure. Urban farming can help achieve multiple SDGs as food and agriculture act as a prime connection between people and the environment. Through the findings from the space syntax analysis by mapping of potential urban farming space in Bandar Baru Sentul it can be deduced that the network structure generates higher local inter-accessibility in the neighbourhood. This creates opportunities for urban farming to happen in the residential area.

In addition, by learning the residents' perception of urban farming in their neighbourhood seen that, majority of 97% agrees to have shared garden plots in their neighbourhood as much as they want a private garden for farming space. Although 45% of them are from non-farming households, they support the idea of turning abandoned spaces into potential urban farms as there are interested in becoming urban farmers as a hobby or career (82%). From the findings it can be gauged successfully the responds to urban gardening, which can generate revenue, supply enough food and nutrients, and help form a self-sufficient food system in the city, based on the facts. Lastly, the findings include the formulation of the Circular Food Framework through literature review and support by the interviews conducted with Kebun Kebun Bangsar and Kebun Kebun Desa. The interview sessions with Kebun Kebun Bangsar and Kebun Kebun Desa further confirms and supports the circular food framework introduced in this study where they both enhanced the structure and facilities needed in the four domains including Cultural, Ecology, Economic, and Politic. Through proper spatial selection, proper organisation and curated activities precedent from Table 3.2, community farming in Bandar Baru Sentul is able to have their own community farm. This farm can address a variety of essential social demands, including sustaining individuals who have limited access to healthy food, educating the community about good nutrition, and the realities and benefits of food production.

This study is constrained by various limitations. The main challenge was restricted data availability; particularly the present urban structure of Kuala Lumpur city and precise details on abandoned areas may be limited by confidential map data and less available resources. The internet responses were mostly observed from individuals in the middle age and younger demographic. Temporal constraints prevented the survey from being conducted for more extensive data gathering. In addition, budgetary constraints to conduct a wider data collection were also contribution to the limitation due to the research being self-financed. roposed areas for further study could involve gathering additional input from various low-cost housing groups in Kuala Lumpur and performing a spatial syntactic analysis to identify abandoned land with significant potential for conversion into urban farmlands.

Acknowledgement

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