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The Components of Social Dimension for Community Gardens in Housing Residential

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Abstract

Community gardens are known as space for people to plant vegetables and fruits for their daily use. Various social benefits could be obtained through the implementation of community gardens in the urban neighbourhoods. This paper aims to give a better understanding relationship between the social dimension and community garden. The objectives of this paper are to identify the social dimension elements of sustainable development and to explore the benefits from community garden implementation towards social dimension. This paper analyses established references from previous articles and theses to identify a relationship between the social dimension and community garden.

Keywords: Community Garden; Social Dimension; Gardening Benefits; Sustainable

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1.0 Introduction

Sustainable development has been introduced to meet the current and future needs without neglecting aspects of economic, environmental and social needs (Brundtland, 1987). This concept aims to promote well-being through economic and social development to create a harmonious community (Abdul Halim, Mohammad Sukeri, & Yusuf, 2013)). Sustainable development through social dimensions involves dealing with social problems by increasing economic productivity, improving human capital and reducing inequality to drive development outcomes towards sustainability (Unrisd, 2014). Globally, people are facing health problems such as malnutrition, obesity and depression. The number of malnourished people in the world increased from 777 million in 2015 to 815 million in 2016 (Food and Agriculture Organization of the United Nations, 2017). Studies in 2010 have shown the number of obese people is 774,000,000 from 7,505,257,673 which is equivalent to 10% of the world's population (Renew Bariatrics, 2018). According to World Health Organization (WHO) in 2017, there were more than 300 million people worldwide suffered from depression (WHO, 2018). Community gardens are considered as sustainable community development strategies and play a role in achieving social sustainability in the urban context (Jeffrey & Alexander, 2004; Ohmer, Meadowcroft, Freed, & Lewis, 2009). However, studies have shown numbers of issues related to the community gardens implementation such as lack of skill and knowledge regarding gardening activities and its advantages (Hallberg, 2009; Landry, Chittendon, Coker, & Weiss, 2015; Filkobski, Rofè, & Tal, 2016), lack of interest and commitment from communities (Saldivar-tanaka, Krasny, & Hall, 2003; Rafiqah & Aziz, 2015; Filkobski et al., 2016) and time constraints among communities make it difficult for them to engage in garden activities (Olawepo, 2012; Rateike, 2015; Rafiqah & Aziz, 2015).

Recognizing the importance of social dimension and community gardens, this paper aims to give a better understanding relationship between social dimension and community garden implementation to improve community life to support sustainable development. The

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objectives are to identify the social dimension elements of sustainable development and to explore the benefits from community garden implementation towards social dimension. This paper analyses established references from previous articles and theses in orders to identify the relationship between the social dimension and community garden.

2.0 Literature Review

2.1 The Components of Social Dimension

Social sustainability is regarded as a place for communities to meet their needs today and in the future, protecting the environment and contributing to a better quality of life (Lupala, 2014). It is dealing with the process of enhancing the quality of life and community well-being (McKenzie, 2004; Yahaya, Badaruddin, & Singh, 2017). Social sustainable reflect a resilient system of community life (Ngah, 2007). Seven social dimension components for sustainable development have been identified from previous studies consists health (McKenzie, 2004; Littig & Griessler, 2005; Murphy, 2012; Unrisd, 2014; Nevado-Peña, López-Ruiz, & Alfaro-Navarro, 2015), security & safety (Arsić, Mišić, & Prlinčević, Mladen Radojković, 2004; Littig & Griessler, 2005; Dempsey, Bramley, Power, & Brown, 2011; Woodcraft, Caistor-Arendar, Hackett, & Peter, 2012; Unrisd, 2014; Nevado-Peña et al., 2015; Eizenberg & Jabareen, 2017), social cohesion/interaction (Malcoci, n.d.; Arsić et al., 2004; Littig & Griessler, 2005; Unrisd, 2014; Nevado-Peña et al., 2015, sense of belonging (McKenzie, 2004; Dempsey et al., 2011; Woodcraft et al., 2012), leisure/recreation (McKenzie, 2004; Woodcraft et al., 2012), education and skill (Malcoci, n.d.; Arsić et al., 2004; Littig & Griessler, 2005; Murphy, 2012; Unrisd, 2014) and political activities (McKenzie, 2004; Unrisd, 2014). Table 1 shows the summary of social dimension components.

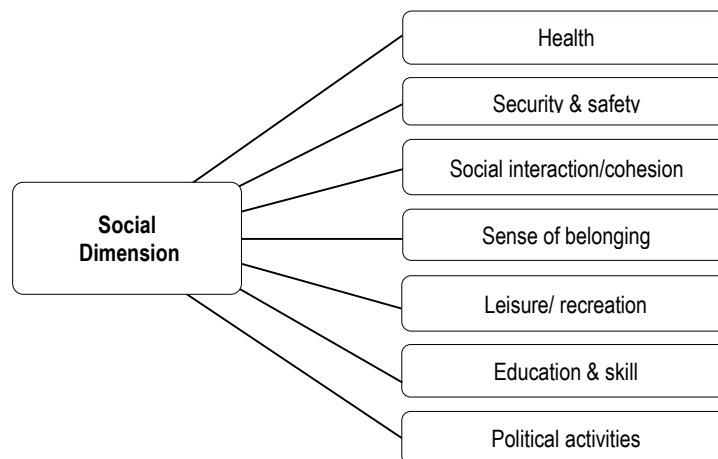


Fig. 1: Social Dimension of Sustainable Development

(Source: McKenzie, 2004; Arsić, Mišić, & Prlinčević, Mladen Radojković, 2004; Littig & Griessler, 2005; Murphy, 2012; Unrisd, 2014; Nevado-Peña, López-Ruiz, & Alfaro-Navarro, 2015; Eizenberg & Jabareen, 2017)

2.2 Community Garden

The term community gardens refer to a piece of private or public land planted with food by a group of people (community) collectively in the neighbourhood for their daily use (Baldwin et al., 2009; Kearney, 2009; Smith & Kurtz, 2010; JPBDSM & KPKT, 2012; Okvat & Zautra, 2011; Rateike, 2015). It involves with the cultivation of fruits, vegetables, flowers and herbs for own use and educational purposes (Smith & Kurtz, 2010; Guitart, Pickering, & Byrne, 2012; Victoria, Melody, & El Shadan, 2016). Community gardens are managed and maintained voluntarily by non-profit oriented organizations (JPBDSM & KPKT, 2012; ACGA, 2018). In summary, community gardens can be defined as a place in the neighbourhood planted with plants for local food supplies voluntarily carried out by non-profit organizations.

2.3 Community Garden Benefits

The establishment of community gardens contributes to the community well-being and social sustainability through strategic food planning to improve food safety and nutritional food intake. (Lovell, Husk, Bethel, & Garside, 2014; Rafiqah & Aziz, 2015). Community gardens are needed to address the food crisis and the socioeconomic issues of urban dwellers because of its potential as a catalyst for community development (Rasmuna Mazwan & Mohd Rashid, 2015; ACGA, 2018). Based on previous studies, community gardens have shown a positive impact on community living from the 74 benefits identified through the enhancement of health, security/safety, social cohesion/ interaction, sense of belonging, leisure/ recreation, education & skill, political activities elements. Each of community garden benefit is discussed below.

a. Health

Previous studies have identified 17 health benefits from community gardens. It includes the increase food supply, improve access to fresh food, improve access to healthy food, improve access to medicinal herbs and flowers, offer variety of food, consume healthy diets, improve nutritionally balanced, reduce fast food consumption, increased consumption of fruits and vegetables, increase joy and happiness, increase feeling fresher, active & more energetic, induce relaxation, reduce stress, fear and anger, reduce blood pressure, reduce muscle tension, reduce obesity and chronic diseases and provides physical exercise. Therefore, it has been proven that community gardens have improved the physical and mental health of the community through physical activity and balanced diet. Table 1 shows the summary of health benefits of community gardens.

Table 1: Summary of health benefits of community garden from literature

Health Benefits of Community Garden	References
1. Increase food supply	(Gulick, 2007); (Kearney, 2009); (Adedeji & Ademiluyi, 2009); (Flachs, 2010); (Allison, Solana, & Rebecca, 2012); (Rezai, Shamsudin, Mohamed, & Sharifuddin, 2014); (Martellozzo et al., 2014); (Yusoff, Hussain, & Tukiman, 2017); (Martin & Vold, 2018)
2. Improve access to fresh food	(Gulick, 2007); (Kearney, 2009); (Corrigan, 2011); (Jones, 2012); (Poulsen et al., 2014); (Nicholas, Stephanie, & Madhavappallil, 2015)
3. Improve access to healthy food	(Flachs, 2010); (Corrigan, 2011); (Rezai et al., 2014); (Evans et al., 2015); (Yusoff et al., 2017); (Jettner, 2017); (Seguin et al., 2017);
4. Improve access to medicinal herbs and flowers	(Thompson, Corkery, & Judd, 2009);
5. Offer variety of food	(Middle et al., 2014)
6. Consume healthy diets	(Jeffrey & Alexander, 2004); (Alaimo, Packnett, Miles, & Kruger, 2008); (Zick, Smith, Kowaleski-Jones, Uno, & Merrill, 2013); (Rezai et al., 2014)
7. Improve nutritionally balanced	(Hynes & Howe, 2004); (Kearney, 2009); (Adedeji & Ademiluyi, 2009);
8. Reduce fast food consumption	(Ellen K Barnidge et al., 2013); (Alger, Lucy, Marian, & Leslie, 2016)
9. Increased consumption of fruits and vegetables	(Twiss et al., 2003); (Alaimo et al., 2008); (Allen, Alaimo, Elam, & Perry, 2008); (Barnidge et al., 2013); (Castro, Samuels, & Harman, 2013); (E. K. Barnidge et al., 2015); (Seguin et al., 2017)
10. Increase joy and happiness	(Poulsen et al., 2014);
11. Increase feeling fresher, active & more energetic	(Thompson et al., 2009) (Ellen K Barnidge et al., 2013)
12. Induce relaxation	(Bellows, Brown, & Smit, 2003); (Thompson et al., 2009)
13. Reduce stress, fear and anger	(Bellows et al., 2003); (Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007); (Lovell et al., 2014) (Thornbush, 2015); (Soga, Kevin, & Yamaura, 2017); (O'Donnell, 2016)
14. Reduce blood pressure	(Bellows et al., 2003); (Thompson et al., 2009)
15. Reduce muscle tension	(Bellows et al., 2003)

- | | |
|---|---|
| 16. Reduce obesity and chronic diseases | (Bellows et al., 2003); (Hynes & Howe, 2004); (Zick et al., 2013); (Castro et al., 2013); (Lovell et al., 2014); (E. K. Barnidge et al., 2015); (Litt, Lambert, & Glueck, 2017) |
| 17. Provides physical exercise | (Bellows et al., 2003); (Hynes & Howe, 2004); (Thompson et al., 2009); (Yusoff et al., 2017) |

(Source: Developed by the authors)

b. Security/Safety

Previous authors have discussed and identified three positive effects of community gardens on safety and security. Its include reducing crime, increase safety feeling and reduce negative behaviour. Community gardens have a significant positive impact on the safety and security through the improvement of the neighbourhood environment. Table 2 shows the summary of security/safety benefits of community gardens.

Table 2: Summary of security/safety benefits of community garden from literature

Security/Safety Benefits of Community Garden	References
1. Reduce crime	(Bellows et al., 2003); (Hynes & Howe, 2004); (Kearney, 2009); (Nicholas et al., 2015)
2. Increase safety feeling	(Thompson et al., 2009); (Teig et al., 2009); (Poulsen et al., 2014); (Middle et al., 2014)
3. Reduce negative behaviour	(Allen et al., 2008)

(Source: Developed by the authors)

c. Social Interaction/ cohesion

Community gardens contribute to enhancing social interaction cohesion in the neighbourhood through 11 benefits identified from previous researchers. The benefits are such as to create new social interactions, an opportunity for community gathering, improve people connection & interaction in the neighbourhood, increase family involvement, improve adult and youth interaction, developed friendship, enhance the sharing spirit, decrease levels of anti-social behaviour, reduce feelings of isolation and alienation, develop cultural diversity and build strong social cohesion. It was proven that community gardens have a good impact to improve the community interaction and cohesion through gardening activities conducted together and often meet in the garden. Table 3 shows the summary of security/safety benefits of community gardens.

Table 3: Summary of Social Interaction/ cohesion benefits of community garden from literature

Social Interaction/ Cohesion Benefits of Community Garden	References
1. Create new social interactions	(Jeffrey & Alexander, 2004); (Glover, Parry, & Shinew, 2005)
2. Opportunity for community gathering	(Flachs, 2010); (Poulsen et al., 2014); (Lovell et al., 2014); (Nicholas et al., 2015)
3. Improve people connection & interaction in neighbourhood	(Wakefield et al., 2007); (Kearney, 2009); (Imas & Ruth, 2012); (Jones, 2012); (Poulsen et al., 2014); (Nicholas et al., 2015)
4. Increase family involvement	(Nicholas et al., 2015); (Martin & Vold, 2018)
5. Improve adult and youth interaction	(Kearney, 2009); (Allen et al., 2008)
6. Developed friendship	(Glover et al., 2005); (Thompson et al., 2009); (Poulsen et al., 2014); (Montgomery, Wesener, & Davies, 2016)
7. Enhance sharing spirit	(Bellows et al., 2003); (Jeffrey & Alexander, 2004); (Thompson et al., 2009); (Teig et al., 2009); (Algert, Baameur, & Renvall, 2014); (Poulsen et al., 2014)
8. Decrease levels of anti-social behaviour	(Jeffrey & Alexander, 2004)
9. Reduce feelings of isolation and alienation	(Scott-Tunstall, 2007)
10. Develop cultural diversity	(Corkery, 2004); (Thompson et al., 2009); (Middle et al., 2014); (Yusoff et al., 2017)
11. Build strong social cohesion	(Hynes & Howe, 2004); (Poulsen et al., 2014); (Lovell et al., 2014) (Badami & Ramankutty, 2015); (Crossan, Shaw, Cumbers, & McMaster, 2015); (Thornbush, 2015); (Thornbush, 2015)

(Source: Developed by the authors)

d. Sense of Belonging

The establishment of community gardens has improved the sense of belonging involve with enhancing the feeling of community belonging and ownership (Corkery, 2004; Thompson et al., 2009; Kearney, 2009; Imas & Ruth, 2012) and creates the sense of pride (Wakefield et al., 2007; Poulsen et al., 2014; Nicholas et al., 2015).(Martin & Vold, 2018) Community gardens have shown benefits to enhance the community sense of belonging through cooperation among the communities. Table 4 shows the summary of the sense of belonging benefits of community gardens.

e. Leisure/ recreation

Community garden contributes to leisure and recreation opportunity to the community by providing places for recreation and relaxation activities (Bartolomei et al., 2003; Hochberg, 2014; Flachs, 2010; Yusoff et al., 2017). Community gardens have shown a positive impact on leisure and recreation activities through the provision of space for gardening activities.

f. Education & Skill

Community garden contributes to the development of education and skill. It have been identified through learning various technic and procedure of horticulture and planting, learning to respect for nature and environment, learn about sustainability and sustainable practices in urban life, widening nutrition and physical activity education, educate value of gardens, educate young generation with local and healthy food, improve practices and develop the knowledge base of community gardens, enhance local knowledge and self-reliance, enhance youth skill building, increase awareness about issues of food security and learning different cooking techniques and recipe. Community gardens have been viewed to improved education and skills of the community through gardening programs and activities. Table 6 shows the summary of education and skill benefits of community gardens.

Table 4: Summary of education and skill benefits of community garden from literature

Education & Skill Benefits of Community Garden	References
1. Learning various technic and procedure of horticulture and planting	(Corkery, 2004); (Poulsen et al., 2014); (Cherry, 2015); (Gersky, 2015)
2. Learning to respect for nature and environment	(Cherry, 2015)
3. Learn about sustainability and sustainable practices in urban life	(Nicholas et al., 2015)
4. Widening nutrition and physical activity education	(Twiss et al., 2003); (Brown-Fraser, Forrester, Rowel, Richardson, & Spence, 2015)
5. Educate value of gardens	(Saldivar-tanaka et al., 2003)
6. Educate young generation with local and healthy food	(Bellows et al., 2003)
7. Improve practices and develop the knowledge base of community gardens	(Jeffrey & Alexander, 2004)
8. Enhance local knowledge and self-reliance	(Gulick, 2007)
9. Enhance youth skill building	(Kearney, 2009)
10. Increase awareness about issues of food security	(Corrigan, 2011)
11. learning different cooking techniques and recipe	(Kearney, 2009) (Hochberg, 2014)

(Source: Developed by the authors)

g. Political Activities

Community gardens have been contributed to the community political activities. It has been traced through creating the organized and efficient community association empowered to take action on a local level, broaden their spaces of political engagement and develop social leadership. The community gardens have a positive impact on improving political activities through community involvement in local affairs as well as administering and managing neighbourhood associations. Table 7 shows the summary of political activities benefits of community gardens.

Table 5: Summary of political activities benefits of community garden from literature

Political Activities Benefits from Community Garden	References
1. Creating an organized and efficient community association	(Kearney, 2009); (Baker, 2010); (Ghose & Pettygrove, 2015)
2. Empowered to take action on a local level	(Ghose & Pettygrove, 2014); (Crossan et al., 2015)
3. Broaden their spaces of political engagement	(Ghose & Pettygrove, 2014)
4. Develop social leadership	(Ghose & Pettygrove, 2014)

(Source: Developed by the authors)

3.0 Methodology

The literature review has been conducted using a variety of relevance such as relevant journals, articles, theses, websites, guidelines and reports. It involves the words 'social dimensions', 'social sustainability', 'community garden', 'urban agriculture' and 'urban farming'. All relevant references are reviewed regarding the use of existing theories on definitions, concepts, methods and approaches. To obtain extensive literature studies, this study have collected 90 references from 2003 to 2018.

Authors have found the similar study conducted by (Victoria et al., 2016). It identified the roles of community garden towards well-being by categorizing community garden benefits into Nutritional Health Environment and Social Health Environment. But this paper intended to explains detail on benefits of community gardens related to seven components of social dimensions. The methodology for this paper involves the following stages:

Stage one: Identification of sustainable development

Knowledge of sustainable development and social dimension have been identified through relevant references comprising definitions, theories, elements, advantages and the implementation of this concept globally and locally. The components of the social dimension of sustainable development have been identified at this stage. Each component was examined to get a clear understanding. Seven

components of social dimension were reviewed based on the role of supporting sustainable development involving health, security & safety, social cohesion/interaction, sense of belonging, leisure/ recreation, education and skill and political activities

Stage two: Identification of community gardens and benefits

This stage involves the identification of community gardens definition and its benefits to the community. Benefits of community gardens that have been identified are collected and organized according to the category of social dimension components.

Stage three: Conceptualizing a theoretical framework of social dimension and community gardens

Further investigation has been conducted on each community garden benefit and its function to community social development. Social dimension components have been synthesized with the benefit of community gardens based on its contribution to each of the seven social components. The literature review on the significant relationship between social dimensions and community gardens has been demonstrated in the conceptual framework to give a clear picture and understanding.

The limitation of this paper is that most of the literature review obtained from previous studies overseas due to the limited information in this country. Therefore, it doesn't reflect the experience of community gardeners in this country.

4.0 Findings and Discussion

The analysis of literature reviews reveals the initial conceptual framework to provide a clear understanding of the relationship between social dimensions and community gardens. Community gardens could act as a catalyst to support sustainable development. A total of 49 community gardens benefits have been organized based on seven social dimension components. The classification of each component was grouped in the similar item of components. The health component consists of 17 benefits, security/safety component comprises three benefits, social cohesion/interaction contains of 11 benefits, sense of belonging involves one benefit, education and skill consist of 11 benefits and political activities have four benefits. Fig. 2 shows the conceptual framework relationship between the social dimension and community gardens.

Based on the conceptual framework, this paper discovered that community gardens contribute various positive impacts on the physical and mental health of the community. It provides healthier lifestyle through food intake and physical activity performed during gardening. Crime could be reduced, thereby enhancing the sense of security among the community through the implementation of community gardens in the neighbourhood. Gardening activities contribute to enhancing social interaction and cohesion as these activities help to connect people by strengthening cooperation among the community including the younger generation and adults. The enhancement of the sense of belonging among community from community garden implementation could be identified through the feeling part of the community and improve willingness to actively participate in every activity organized by the local community. Community gardens also have the significant contribution to the positive impact on increasing leisure and recreation activities through the provision of space for gardening activities. Community gardens contribute to the positive impact on the development of education and skills by educating and enhance awareness on sustainability at all ages. Components of political activity can be enhanced through community gardens as it can increase community involvement in local affairs. As a summary, the implementations of community gardens certainly have the positive and significant relationship with the social components of sustainable development.

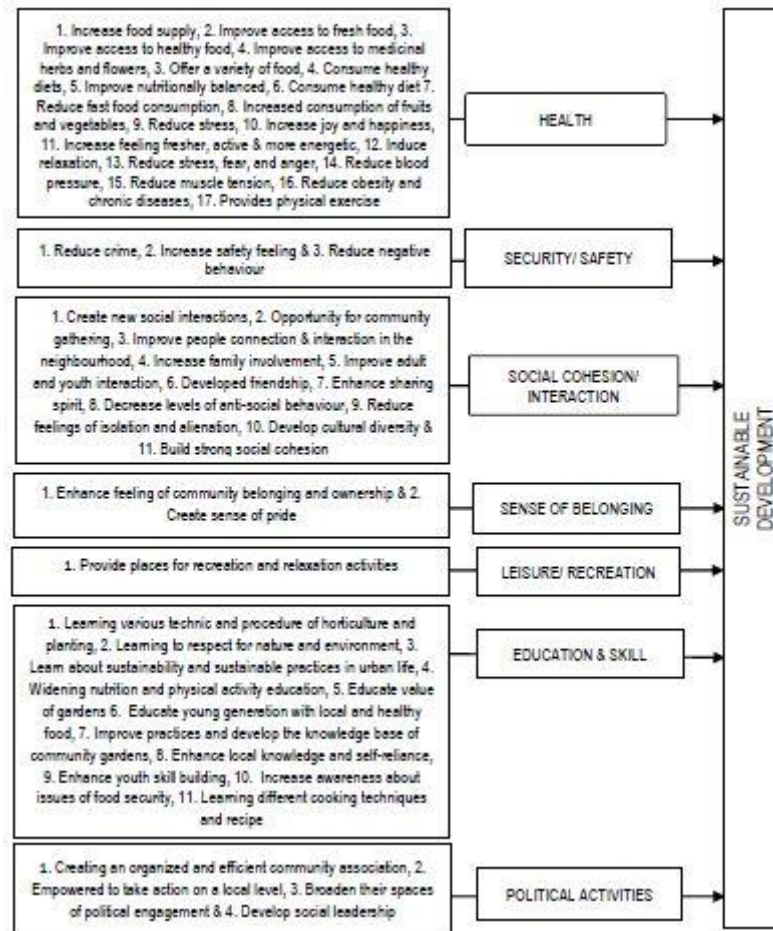


Fig. 2: Conceptual framework relationship social dimension and community gardens
(Source: developed by the authors)

5.0 Conclusion and Recommendation

Community gardens offer a wide range of benefits to the well-being of the community. The proposed initial conceptual framework may contribute to a better understanding the relationship between social components of sustainable development and the benefits of the community garden. This paper is a scientific study that can be considered as a reference for researchers, urban planners, urban communities, community gardeners and stakeholders to enhance their knowledge of community gardens. It can also be used as a supporting document in consideration of the implementation of the community gardens. The authors have found that research and written documents of community gardens in this country are very limited. Therefore most of the literature was obtained from community gardens in overseas. This study believes many communities in this country refused to run community gardens due to the lack of knowledge and misunderstanding about community gardens. It is also possible due to lack of scientific research and evidence of existing community gardens in Malaysia.

Future research should study on the community gardeners experience in Malaysia to investigate the most significant benefit of the community garden and social components of sustainable development compare to the literature review that has been conducted. In this way, all the information to be obtained will be more significant and appropriate to be used as a reference to the local community in this country.

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