Urban Farming in a Rapid Urban Transformation: Community Initiatives and Policy Challenges in Bandung and Yogyakarta

Bakti Setiawan[1], Sri Tuntung Pandangwati[2]

[1] *Universitas Gadjah Mada, Faculty of Engineering, Department of Architecture and Planning, Jalan Grafika No. 2 Sekip, Kampus Gadjah Mada, Yogyakarta 55281, Indonesia. e-mail: bobi.setiawan@yahoo.com*
[2] *Universitas Gadjah Mada, Faculty of Engineering, Department of Architecture and Planning, Jalan Grafika No. 2 Sekip, Kampus Gadjah Mada, Yogyakarta 55281, Indonesia. e-mail: sri.tuntung@ugm.ac.id*

Abstract: Under a rapid-unplanned urban transformation of Indonesian cities, which brings more pressures to already marginalized urban farming/agricultural practices in this country, the future of food security of Indonesian cities is in a big question. As already predicted by Central Bureau of Statistic/BPS, two-third of about 250 million Indonesian people would reside in cities in the next two decades and therefore their welfare including their basic needs particularly food would be depended how the country guarantee food security for the whole nation. The fact that many productive-agricultural areas in the urban and rural fringes, which are under pressures of unplanned-organic-scattered pattern of urban growth, suggests that there is a crucial need of reforming the existing urban policy and planning system which are not supported and protected to urban farming ideas and practices. The paper discusses this issue and documents the practices of urban farming in two creative cities of Indonesia, Bandung and Yogyakarta, and evaluates how the existing urban policy and planning guidelines support urban farming initiatives. This paper argues that it is crucially important to reform the Indonesian urban policy and planning guidelines and practices to accommodate the new paradigm of cities and urban areas as productive sources for sustaining food security for the whole nation.]

Keywords: urban farming, community, policy challenges

Introduction

It has been predicted that two-third of about 250 millions Indonesian people would reside in cities in the next two decades and therefore their welfare including their basic needs particularly food would be depended how the cities guarantees food security for their inhabitants (Bakti Setiawan, 2000). This rapid urbanization affects agricultural lands in suburbs. Most of them have been converted to housings and commercial buildings. This condition may affect food production in the future. Even though land is not the only aspect to enhance food production, farmland is still essential in food production and it needs to be expanded to meet the demand of the future population. Converting vacant lands within urban area for urban farming is one example of strategies to expand farmland. It has been predicted that more than half of global population will live in cities. There will be less people living in rural area and less labour for rural agriculture. So, integrating food production and urban development may address this issue.

In terms of nutrition and access to food, urban farming activities enhance food security by enabling urban dwellers to produce fresh produce in limited lands. In the era of rapid urbanisation, people living in urban area are relatively more vulnerable to food insecurity than rural population due to lack of access to agricultural land. Poor people living in a village can survive and maintain their health by growing their own food in their gardens or paddy fields. However, people living in cities depends on grocery stores and supermarkets to get food. Even in some cities in developed countries, there are some areas defined as food desert because of low access to fresh produce (vegetables and fruits) (Jettner, 2017). Food prices in cities are also relatively high and fluctuating because of transportation cost and unexpected weather events (Gaballa & Abraham, 2007). These problems rising awareness of urban communities in many cities in the world, to develop urban farming. For example, urban farming has been developed by low income communities in Indonesia since 1990s and a study found that urban farming in six cities in Indonesia was able to reduce communities' food expenditures (B Setiawan & Rahmi, 2004).

Unfortunately, urban farming has been relatively neglected in urban planning policies and literatures (Cohen, 2014; Morgan, 2014; Pothukuchi & Kaufman, 1999). Studies regarding urban farming are relatively limited in Indonesia and there is no recent study that specifically analyses Indonesian cities' planning policies in terms of its support for establishing urban food security. Therefore, this paper aims to discuss urban farming practices in two Indonesian cities, Yogyakarta and Bandung. These two cities are quite different in terms of population. Yogyakarta with population of 412.704 represents Indonesian small city. Bandung which has more than two million population, is one of big city in Indonesia (Central Bureau of Statistic, 2015). However, both two cities are famous of their innovation and creativity, including their urban farming movement.

The main inquiries of this study are: (1) What are types of urban farming initiatives in Yogyakarta and Bandung? (2) How did urban farming initiatives grow in Yogyakarta and Bandung and how do they manage their organisation? (3) How do government and spatial planning policies support these initiatives?

This study may raise awareness of urban planners and local government to redevelop the link between urban land use planning and food security. Food system is a part of urban system which is not less important than other urban elements such as water and air (Morgan, 2014). There is a need to reconnect urban land use planning and zoning regulations to agriculture activities. Most Indonesian cities are naturally blessed with tropical climate, fertile soil and plenty of water which enables people to grow various types of vegetables and fruits all year long. These resources must be managed through urban farming.

Methods

This study used qualitative approach and embedded multiple case study design. The case study cities are Yogyakarta and Bandung. This research design enables comparison between two cases and discussion of contrasting findings. Yogyakarta and Bandung are two cities in Indonesia that are famous of its creativity. These cities currently have a lot of communities including urban farming communities which were developed from the initiatives of the young generation. However, Bandung's urban farming community is relatively more well-known than the ones in Yogyakarta because the Mayor of Bandung, Ridwan Kamil, was the initiator of national scale urban farming

community namely *Indonesia Berkebun*. The members of this community communicate by using social media. Any kinds of information and invitations are posted to its followers (Ardianto, Aarons, & Burstein, 2014). Unlike Bandung, urban farming initiatives in Yogyakarta are developing with limited exposure to national media. Therefore, it is interesting to compare contrasting findings from these two different cities.

Data was collected from various sources such as semi structured interviews, field observation and some documents from different sources such as websites of urban farming communities, land use planning authorities, ministry of agriculture and Central Bureau of Statistics/ BPS. Interviews were conducted to eight participants who represent leaders of seven urban farming communities, four of them are in Bandung and three of them in Yogyakarta. The samples were chosen to represent different approaches and types of organisation. Some samples are initiated by government and some of them are a kind of grass root movements. Some of them run as a business, while some of them focuses on food security, social empowerment and environmental sustainability.

The data collected from interviews was transcribed, coded by using NVivo software and analysed by using thematic analysis. The coding was based on the major patterns appeared in participants' responses across interview questions. These codes then grouped into several broader themes. Additionally, data from government's websites (land use planning authorities and ministry of agriculture) was also collected for analysing policy challenges of urban farming development in these two cities. The documents collected are Urban Sustainable Home-yard Food Garden (Kawasan Rumah Pangan Lestari) Program and Report, Detailed City Spatial Planning (RDTR) and Zoning Regulation of Yogyakarta and Bandung.

Urban Farming in Indonesian Planning Literature

Several studies have been done to explore urban farming in Indonesia. Some articles relate urban farming with food security issue. For example, an article by B Setiawan (2000) provides a literature review discussing urban planning best practices in various cities in the world and draw a conclusion regarding the potential role urban farming in establishing urban food security in Indonesia. This study followed by an empirical research examining the role of urban farming for urban poor household in six Indonesian cities (B Setiawan & Rahmi, 2004). This study suggests that urban farming does not only enhance food security, but also improve households' economy through business opportunities and reducing food expenses. However, this study also mentions several problems and challenges for development of urban farming in Indonesia, such as lack of access to financial support, limited gardening skill and knowledge, and limited support from government. In this study, the authors recommend an urban land use planning that accommodate urban farming activities in the zoning regulation. Similar study has been done to specifically explores urban farming in several Green Kampongs in the City of Yogyakarta (Pasha, Widyaningsih, & Rijanta, 2013). The findings of this study depict that urban farming has been spontaneously implemented since a long time ago in Yogyakarta. Various types of simple verticulture (vertical agriculture) and container gardens even has been implemented in these Kampongs to deal with limited vacant land available for gardening. Another study in Jakarta that also suggest that urban farming has been implemented since 1990s by migrants who utilising vacant non-agricultural land in peri-urban areas for producing leafy green vegetables (Siregar, 1999).

Other studies specifically discuss the community aspect of urban farming. Puriandi (2013) explored urban farming activities of a farming community in the City of Bandung namely *Bandung Berkebun* (farming Bandung). This study suggests that *Bandung Berkebun* has a critical role in assisting and empowering the urban community to manage their gardens and sustain their farming activities. A recent study by Adinurani & Wuryantoro (2015) emphasises the role of a community in enabling people to share gardening experiences and knowledge as well as exchanging seeds and seedlings.

Based on the studies mentioned above, although urban farming may not be a new theme in Indonesian urban studies, it is still considered as a new issue in urban planning. There are still relatively limited studies that links urban farming and planning in Indonesia. The existing studies mostly explores urban farming from the side of food security and community development. However, only a few discussions regarding land use planning and urban zoning regulation for urban farming.

Types of Urban Farming Initiatives in Bandung and Yogyakarta

Yogyakarta

Although rarely exposed by national media, urban farming and local food communities in Yogyakarta (Jogja) are growing rapidly in the last five years. Each community has different approach, but they have a similar goal which is establishing more sustainable urban food system. Their activities are not limited to gardening and harvesting, but also includes discussions for raising awareness, sharing seedlings and selling products in organic farmer market. This study discusses three examples of prominent urban farming initiatives in Yogyakarta, *Pemablitz Jogja*, *Jogja Berkebun* (Farming Jogja) and *Kawasan Rumah Pangan Lestari*/ *KRPL* (Urban Sustainable Home-yard Food Garden).

Permablitz Jogja is one example of urban farming initiatives in Yogyakarta. This community was initiated in 2012, by a group of young people who are inspired by permablitz movement in Melbourne, Australia. Permablitz comes from words Permaculture, which is a kind of gardening approach developed by an Australian biologist, Bill Mollison (Mollison, Slay, Bourgignon, & Bourguignon, 1991) and Blitz, which means a project that is done in a short time. So, permablitz means a gardening project that involves a group of volunteers (community members) to create an edible garden in a kind of idle land (usually backyard/residential garden) in a short time. Unlike other urban farming community, permablitz Jogja implement sustainable agricultural method that focus on maximizing the use of natural resources and energy for gardening and ensuring no damage to the ecological system. The technological innovation in permaculture is similar with biomimicry, imitating what has been established in nature. This community has its own website and social media to post their activities (DALEY, 2015). In 2016, this community assisted students of Undergraduate Programs at Department of Architecture and Planning (DETAP), Universitas Gadjah Mada to develop an edible garden in the inner court of the campus building. A group of students in this undergraduate program formed a student community called *Perma DETAP* which aims to be a place for students to explore further and practice permaculture design trough urban farming.

Figure 1. Urban Farming Activities of *Permablitz Jogja* (left) and *Perma DETAP* (right)

Permablitz Jogja has converted several private residential gardens to permaculture gardens and there is no obstacle in terms of land use regulation so far. In terms of social side, there is also no significant social problem due to the development of these permaculture gardens. This may be because the projects were implemented in private lands. A small problem may occur when this project implemented in a public land such as the one in the university. *Perma DETAP* had to ensure that the garden design is agreed by all the academic staff and students. This was done by inviting the lecturers and students in the design process and accommodating comments and suggestions from the attendees.

Another urban farming community in Yogyakarta is *Jogja Berkebun* (*Jogbun*) that was developed in 2013. Similar with *Permablitz Jogja*, this community also converted vacant lands to edible gardens. However, unlike *Permablitz Jogj*a, this community does not work alone. It is part of national movement in urban farming, *Indonesia Berkebun*, and it usually engages with private companies, state owned enterprises and government institutions in conducting gardening activities. Moreover, this community does not only manage private lands, but also utilising lands owned by some government institutions. Currently, this community is managing a vacant land owned by the department of forestry of Yogyakarta Province (Jogja Berkebun, 2017; Petani Muda, 2017)

Figure 2. Community Garden site of *Jogja Berkebun*

In terms of organisational arrangement, the membership of these communities is open and the members are free to join, contribute and even go out from this communities. *Jogbun* has an organising committee, but its formation is often reshuffled due to its open membership. *Permablitz Jogja* even does not have a fixed organising committee. This was designed to enable each of its members to

contribute similarly in this community. Each member is a leader in this community. In this kind of organisation, members can be more flexible to run these communities, but this condition is also vulnerable in terms of its sustainability. Some communities fail to maintain their sustainability due to this kind of membership and leadership management. People are free to come and go, so there is no fix organisational succession to ensure the continuity of urban farming movement. Learning from *Jogbun* and *Permablitz Jogja*, *Perma DETAP* combines formal and informal organisational structure. It was started from an informal initiative of the undergraduate students in Gadjah Mada, but its organisation was developed under the existing student organisation to ensure its continuity. *Lintang Panglipuran* also has fixed organisational committee that is divided into several divisions with specific responsibilities and duties. People are free to join, but once joined this community, a member has responsibility to contribute based on his division duties. Although it was recently formed in 2016 and still considered small and young, this community has a quite good informal organisational arrangement that may maintain its continuity and development.

Slightly different from *Permablitz Jogja* and *Jogja Berkebun*, *Kawasan Rumah Pangan Lestari*/ KRPL (Urban Sustainable Home-yard Food Garden) was initiated by a government institution, The Ministry of Agriculture. This program is a national program and was developed in almost every cities and villages in Indonesia. This program aims to bring agri-food production close to people and to increase agricultural land by utilising vacant spaces in residential areas. In the City of Yogyakarta, Kauman, a kampung located in the city centre, is one of successful model of Urban Sustainable Home-yard Food Garden.

Figure 3. KRPL in Kauman, Yogyakarta.

Bandung

Another urban farming initiative in Bandung is *1000 Kebun*. This community is relatively young because it was founded in 2015. Slightly different with other urban farming communities mentioned before, the members of *1000 Kebun* comes from different islands in Indonesia. So, it was initially founded as a local community, but then grow as a national movement. *1000 Kebun* does not only focuses on converting urban vacant lands to edible gardens, but it also manages a farmer market called *Pasar Sehat 100 Kebun* (Komunitas Indonesia, 2017).

Similar with *1000 Kebun, Agritektur* is a social enterprise in Bandung that concerns in both production and distribution of local produce in Bandung. This community is similar with POJOG in Yogyakarta which aims to cut food supply chain by meeting the consumers directly with the producers or farmers. However, *Agritektur* was not initiated by the producers. This community was founded by five young people with various education backgrounds who followed sociopreneurship competition in 2012. Two of the founders are an architect and a bachelor of agriculture. That is why the name of this community include *agri*, which is part of agriculture and *tektur* from *Arsitektur* (Architecture). The founders of this community engage with local farmers and help them to market their products to urban dwellers. The activities of this community are not only running a farmers' market, but it also has activities that enables people to experience growing vegetables such as table to farm, camp on farm and farming Kampong (*Kampung Berkebun*). Some restaurants in Bandung are interested to engage with this community to get vegetables, fruits and herbs from local producers (Agritektur, 2017; Bekraf, 2017).

Figure 4. Activities of *Agritektur* (left & middle) and 1000 Kebun (right)

Some urban farming activities in Bandung were initiated by non-urban farming communities. For example, Yayasan Pengembangan Biosains dan Bioteknologi (YPBB)/ *Bioscience and Biotechnology Development Institute,* is a non-profit organisation developed in 1993 that aims to develop sustainable communities. This organisation focuses on assisting urban communities in Bandung to manage their solid waste. This activity enables people to recycle their waste including recycling organic waste into compost. Producing compost leads people to start thinking about growing veggies around their houses. The same approach occurred in Maleer, a district in Bandung that is a model of sustainable Kampung developed by the municipal government. Maleer is considered as a waste free Kampung in Bandung. Similar with YPBB, People living in Maleer started urban farming activities after being successful in composting their organic waste.

Missions, Management and Dynamics of Urban Farming Communities.

Missions illustrate perceived benefits of urban farming

Based on the interview, some urban farming initiatives began from awareness of the quality of food. The interviewees assert that urban farming enables people to care about and reconnect with their food. Urban agriculture initiatives enable people to grow their own food or engage with others who grow or make food for them. For example, one interviewee said,

“Nowadays, many food available in cities, but we do not know that they may contain chemicals that can harm our health. People do not care where their food comes from, how it was produced and how it was cooked. Therefore, this community was developed to address this issue. 1000 Kebun often brings our members to visit the organic farmers and educates our members how to make compost and grow their own food. (Interviewee 1).

Furthermore, urban farming initiatives also encouraged by low access to organic food which is considered healthy. This kind of food is much more expensive than non-organic ones because of the cost of organic certification. Therefore, not all people can afford to eat organic food. An interviewee said, “Organic vegetables are usually consumed by rich people because it is expensive, but actually we can grow our own organic vegetables”. (Interviewee 8). In terms of accessibility, urban farming brings food close to people, so they can reduce time and money to travel to markets. Urban farming also helps people to deal with spiking prices of some food commodities. One interviewee explained,

Growing food at home has several benefits. Firstly, we can grow our own organic food. This is cheaper than buying it at supermarkets. Secondly, we can save time and money. We do not need to go to the market every day to get fresh vegetables and herbs because we grow them at home. So, we can reduce our expenditure on food. Moreover, sometimes food prices are spiking, for example the price of chili that was more than doubled recently due to flooding. Actually, growing chili at home is very easy. You can see over there, I have plenty of chilies at the front yard. (Interviewee 3).

Most of interviewees also showed that their missions are related with awareness of conserving urban natural environment is a critical aspect of their initiatives. One interviewee from Bandung commented that urban farming provides urban greening and integrates waste management into urban food production. This interviewee said,

Nowadays, every neighbourhood in the City of Bandung is encouraged to be waste free by implementing sorting, reusing and recycling solid waste. Sorting is a process of separating the waste into organic and non-organic waste. In my neighbourhood, there is no waste sent to landfill because the organic waste is composted and used as fertilizer in our residential gardens, and the non-organic waste is sold to junk dealers to be recycled. (Interviewee 7)

So, urban farming is not just about producing food but also reducing waste by composting organic waste. This process is like recycling of nutrition within an urban area. Food consumed and generated food waste, then the waste is composted to grow food again.

Most interviewees also mentioned that there is no use of chemical fertilizers or pesticides in their gardens. Conventional agriculture usually uses synthetic fertilizers that can create pollution to the natural environment. Therefore, most of urban farming initiatives in Yogyakarta and Bandung stick to the use natural pesticides and fertilizers. However, some of them still use chemical fertilizers in low dosage to boost the production. One interviewee said, “This garden used fertilizers from cows’ urine, compost and a little bit of low dosage chemical fertilizers” (Interviewee 3).

One interviewee with a permaculture background commented that urban farming is just one part of sustainable living. This depicts that urban farming creates benefit for broader natural environment. This interviewee said, “Permaculture is not just about growing food with no chemical, but more broadly, it gives guidance to how to create sustainable living” (Interviewee 4).

Even though these initiatives have serious missions in food security and sustainability, most of them were started from informal meetings of a group of people. People with similar interest and hobby met and initiated urban farming communities. Urban farming become a leisure activity for them. For example, one interviewee said,

In this community, we usually spend our leisure time on weekends to meet, conduct discussions and gardening together. These programs become positive leisure activities for us especially the stay-at-home mothers. Finally, mothers can develop their neighbourhood, not only meet for shopping and gossiping. (Interviewee 7).

Management

In terms of internal organisation, all urban farming communities were initiated by people from non-agricultural background, except KRPL program which was initiated by the Ministry of Agriculture. The community members consist of people from various backgrounds, even in KRPL. They are interested in urban farming and get gardening skills from self-learning or investing their money in non-degree training programs like permaculture design course. Only KRPL that get training and 3-year community outreach program provided by government. One interviewee said,

"At that time, the members did not have any gardening skill at all, but they participated in various trainings provided by BPTP (Assessment Institute for Agricultural Technology). The trainers also came to visit the gardens and help community members to deal with gardening problems. This program last for 3 years and now the community is independent enough to manage their gardens." (Interviewee 6).

Furthermore, almost all communities have a clear organisational structure although some of them are considered informal community with no strict or paid membership. Everyone are welcome to join with no membership fees. At least these community has a leader and members. Some communities have more complex structure with defined divisions. For instance, 1000 Kebun has four divisions: community, commercial, research and organic certification divisions. However, Permablitz Jogja is the only one which implement fluid structure with no leader. This community defined itself as a movement not community and want its members to be the leaders, so there is no hierarchy in this community.

These communities varied in terms of program developed. Some of them focus on gardening. They sell some of the produce directly to consumers or share the produce among the members or neighbours. One interviewee said, "The produce is usually sold to [informal] food vendors. However, the members are free to take veggies from the gardens, as much as they want. [Then, the rest will be sold]." (Interviewee 6). Another interviewee said, "We prefer not to sell our produce. We consume it for ourselves or give it to our neighbours. It is too valuable to be sold." (Interviewee 8). These communities see urban farming not as business but as a self-satisfaction. One interviewee expressed this,

We do not see benefit as monetary value. We enjoy gardening. We are happy and feeling satisfied seeing the veggies grow. Sometimes, we sell the produce, so that we can raise fund for the community (Interviewee 7).

In my opinion, a community [in Yogyakarta] may survive without money. For example, the program we run last August was succeed without money. That program was developed based on volunteering. Participants contributed through their actions, time or thoughts. (Interviewee 5).

However, a few communities developed complex programs that deal with production and marketing. For example, 1000 Kebun mainly works as a food hub focussing on connecting organic farmers to consumers. This community also developed a certification board that based on trust. So, people can get affordable organic products. Agritektur even has more varied programs, including community supported agriculture (CSA) and designing urban farms for offices. However, this community currently focuses on developing urban agriculture for tourism purposes. This kind of communities see urban farming as a business, as described by one interviewee as follow,

"We have developed various programs. However, this kind of business need process and serious maintenance [to be developed]. We have created a good business plan and framework, but it seems that this business is still less interesting for young generations who prefer to work in big companies. So, we currently prefer to focus on developing Camp on Farm program because it is more [economically] prospective. We hope agriculture in [Indonesia] can sustain and to sustain it needs money not just altruism. Therefore, [in this community,] the programs were designed based on monetisation, but also implement justice, fairness and transparent. So, both farmers and consumers will benefit [from our programs]. We have to be patient to achieve that." (Interviewee 2).

Some urban farming communities received or seek for external funding such as from government, donor or private institutions. They get external funding, then tried to sustain by selling produce or processed products. However, some of them have no external funding because they are based on volunteering. One interviewee expressed this, "We are not a kind of NGO that received fund from donors or sponsors. We depend on our own money which is limited." (Interviewee 4).

In terms of inter-community network, some communities already reached international network. Agritektur has ever partnered with Hivos, Netherland, to develop a CSA. Permablitz Jogja was initiated through informal partnership with members of Permablitz Melbourne, Australia. It was the first permaculture community developed in Indonesia. Based on the interview, Jogja Berkebun (since 2011) is also considered as the first urban farming community in Indonesia and it becomes a part of national movement, Indonesia Berkebun (since 2013). These communities are usually supporting each other as described by an interviewee, "We have ever helped other urban famring communities in Bandung, such as Bandung Berkebun and 1000 Kebun. However, we only designed the garden." (Interviewee 2). A community even become a member of a more formal community. An interviewee explained, "We have participated in Bandung Agri Market (BAM) three times and our community is a member of Green Farmers Group that is listed at the Department of Agriculture." (Interviewee 7).

The management and community dynamics

In terms of continuity, some communities are struggling to sustain their activities due to low commitment. One community is struggling to conduct regular meetings and programs in the last 2 years, because their members are busy with their work or study. For example, one interviewee said, "Our community has no activity in the last 1.5 years. We were initially met because we love urban

farming. However, [we also have to work], we cannot earn money from this community." (Interviewee 2). Another interviewee added,

The last program was in 2016. It is hard for us to arrange a meeting because many of our members are very busy especially the key members who master gardening skills. One is studying overseas, one moved to another city, one went back for good to Australia, and other members are busy working or running their business. (Interviewee 4).

Nonetheless, some other communities can maintain their sustainability may be due to the characters of their members. One community has members that mostly students. Other communities are mainly followed by stay at home moms. These groups of people have relatively more time to spend in communities than working people. Furthermore, some communities do not only sustain, they even expanded or spread urban farming activities to neighbouring areas as described by an interviewee, "Urban farming was firstly developed in RW 11 (an administrative division), then people from RW 11 helped people in RW 9 to develop their urban farming." (Interviewee 7).

Interviewees commented that the key success of urban farming community are organisation management, varied members, support from government and commitment. An interviewee argues, "The key success of a community is organisation. With good organisation, a community can run any kind of program with little [or even no] stimulation from government." (Interview 3). In terms of variety of members in terms of age. An interviewee commented,

A good community is the one that has members from different ages. In my opinion, 1000 kebun can be a good example because its members range from older people to youngsters. For example, when the young members are busy working or studying, the older members can fill the gap. When the older members have less creativity, the young members can help by providing plenty of creative ideas. (Interviewee 2).

Another key aspect is support from government. One interviewee explained, "Our community got 3-year support from government, and now we already know gardening skills needed. So, we can be independent now, but government is welcoming us to ask help if needed." (Interviewee 6). Another interviewee added, "Government support is important for us. We got 1-year funding support from city government. Green kampong competition [arranged by city government] also raise eagerness in developing this community." (Interviewee 7). Lastly, it seems that commitment is the most important aspect as described as by an interviewee, "The key is our consistency and commitment [to develop this community] no matter we get award from government or not. If we focus on getting awards [or grant], we cannot sustain in long term period." (Interviewee 6)

Policy Challenges

Based on interview, there is no conflict emerged between urban farming and land use planning policies or other government policies. However, this does not mean that there is no problem regarding this issue. This part discusses several policy challenges that may be faced by urban farming communities in Bandung and Yogyakarta. Urban farming activities may be limited with no support from land use planning and zoning regulation. Furthermore, without support from formal organisation, these urban farming communities may face problems to sustain, expand and develop their activities.

Land use planning policies

According to the existing spatial planning policies, Detailed Spatial Planning of the City of Yogyakarta does not mention a regulation regarding agricultural activities or land uses (Yogyakarta City Council, 2015). This may be because no agricultural lands lefts in this city. Unlike Yogyakarta, detailed Spatial Planning of the City of Bandung (Bandung City Council, 2015) has a regulation regarding lands for sustainable agricultural zones (*LP2B*). These lands are in three districts of Bandung: Madalajati, Ujungberung and Cibiru. However, this plan only focuses on preserving the existing agricultural land and does not mention any strategies in expanding agricultural land or integrating agriculture in the residential lands. The programs regarding green open space and residential zone do not mention urban farming as a part of urban open space strategies or residential facilities. This depicts that although urban farming activities have been developed in grass root level, it has not yet been accommodated in the land use planning both in Bandung and Yogyakarta.

Even though urban farming is not acknowledged in the existing urban planning strategies, it has been included in a national program of the Ministry of Agriculture, Republic of Indonesia. Ministry of Agriculture has developed an urban farming models called *Kawasan Rumah Pangan Lestari*/ KRPL (Urban Sustainable Home-yard Food Garden) in several Indonesian cities in 2012. The examples of this neighbourhood models are in *Bener* and *Kadipaten,* Yogyakarta and *Astana Anyar*, Bandung (Indonesian Ministry of Agriculture, 2012; Nurnayetti & Sadikin, n.d.). However, this national program is less famous than *Indonesia berkebun* because it is slightly exposed to popular media. This program is funded by the government and engage with the residents and agricultural authorities. Coordination between KRPL and city spatial planning policies is needed to support the existing urban farming initiatives and the growth of new urban farming community innovations in the future.

The absence of urban farming in urban land use policies does not only occurs in Yogyakarta and Bandung. This issue is also emerging in cities in developed countries. Some urban planning scholars such as (Morgan, 2014), Pothukuchi & Kaufman (1999) and Budge (2012) suggest that most of the existing planning policies in global north has not explicitly accommodate urban food strategies. However, many cities in global north already have specific urban food strategies. For instance, City of Melbourne Food Policy includes a strategy regarding sustainable and resilient food system which aims to enhance urban farming within the city boundary (City of melbourne, 2012). The City of Yarra and the City of Darebin, a municipality in inner suburbs of Metropolitan Melbourne, even have a specific urban agriculture advisory committee under the municipal government that developed urban agriculture strategies (Darebin City Council, 2014; Yarra City Council, 2014). In New York, the city government already created several planning policies and zoning regulation that aim to ensure all of the city dwellers have good access to fresh, local and healthy food (Ackerman et al., 2011; Morgan, 2014). Furthermore, some cities in Europe even have developed and implemented a food-sensitive urban design concept called *Continuous Productive Urban Landscape (*CPUL) which integrates green open space design, storm water management and urban farming (Bohn & Viljoen, 2011). These sort of planning policies particularly zoning policies are needed to be developed to support urban farming activities. Government policies should provide permit for urban farming in a residential zone and provides more facilities for urban farming and farmers markets (Cohen, 2014). This may support the continuity and the growth of urban farming movement in the future.

Local government policies

Interviewees commented that many local government policies developed to support urban farming especially in Bandung. Media reported that Ridwan Kamil, the city mayor of Bandung, created several policies to support urban farming development in his city. However, in realtity, there are several drawbacks of these policies. An interviewee from Bandung said,

[Local] government donates fertilizers, seeds and other types support to every village [or kampung] that develop urban farming in Bandung. This is a very good policy, but in practical, the procurement of the donations is not as we expected. For example, we have ever submitted a proposal to government to get donations of [vegetable] seedlings, but we finally get donations of seedlings of big trees. The programs look good only in the beginning, in pictures and reports, but they cannot sustain and are usually not right on target. (Interviewee 1)

In the beginning, this community was supported by the city mayor, when he was nominated as the city mayor. We get several helps from him as a person and as a city mayor. We partnered with Bandung Agrimarket which is a government initiative. However, lately I feel that this initiative is not in line with our expectation. We tried to criticise this program, but then it is hard for us to contact the government for further partnership" (Interviewee 2).

Another flaw is related to hydroponics. Government provide grants and supports for the development of hydroponics farming, but some urban communities sees that hydroponic is not organic method and requires advanced technology and electricity. An interviewee said,

Hydroponics method does not suit to our community because it needs significant amount of water, electricity and we must buy special fertilizers for hydroponics. However, we get a donation of [a set of] hydroponics system from government. We do not benefit from this donation program. Moreover, many donations from government that came without any community outreach program. So, people cannot use the donation and benefit from it. The money is wasted through this program." (Interviewee 8).

Conclusion

To sum up, urban farming initiatives in Indonesia has been rapidly spread over Indonesian cities in the last five years. More than five local urban farming communities was founded in 2012 in Yogyakarta and Bandung. The use of social media has significant role in spreading this green movement virus to urban population. Each community develops its own social media page to post its activities and inspire others to replicate or modified its urban farming initiatives. Even though it seems that each community has different urban farming approach and work separately, these communities are working together to greening the city and bringing back food production close to urban dwellers. However, this movement has not been supported formally by the existing land use planning and zoning regulation. This condition may be a drawback for the continuity of this movement. This kind of community initiatives may be diminished and soon changed to a profit-oriented corporate's business ideas if there is no protection and support to legalize this urban farming activities.

This study may be considered as an initial study in Indonesia, that briefly examines the local land use planning policies in terms of its support for urban farming. Further studies that thoroughly analyse urban farming aspect of different types of Indonesian urban planning policies are needed. Besides, a study regarding the development of food sensitive planning theories is also interesting to

accommodate this current issue in urban planning theories. In terms of planning practice in Indonesia, it is also needed to develop urban planning and urban design concepts that includes urban farming as a part of urban landscape elements.

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