TATA LOKA
VOLUME 14 NOMOR 3, AGUSTUS 2012, 186-200

Urban Agriculture Activity and Its Potentials to Eradicate Urban Poverty in Jakarta

Galuh S Indraprahasta[12] and Imas Agustina[3]

Diterima: 2 Juli 2012 Disetujui: 9Agustus, 2012

Abstract: Rapid urbanization has affected urban areas in developing countries, including in Jakarta, in several ways. One of the impacts is the increasing number of poor inhabitants. Urban agriculture is recently re-raised as one of the answers for eradicating urban poverty, a condition that has an effect on, among other, food crisis. This paper aims to identify the potentials of urban agriculture development in Jakarta by learning from several best practices in other countries. This study employs qualitative descriptive analysis by considering precondition factors for urban agriculture development, most notably physical, institutional, and socio-economic factor. It can be concluded, from many cases, urban agriculture in Jakarta has, either directly or indirectly, impacts on people's livelihood.

Keywords: urban agriculture, poverty, Jakarta

Introduction

Background

The early 21st century is marked by the phenomenon of rapid urbanization taking place especially in developing countries. In 1950, there was only about 17% of third world countries' population who live in urban areas, while in the early 21st century, the number has been estimated to reach 45%. Southeast Asia region alone has an urban population growth rate that exceeded the average rate of Asia since 1995. In Indonesia especially, the rate, which was originally below the average, is now increasing rapidly and has even exceeded the average of Southeast Asia. Since 2010, Indonesia population living in urban areas has also surpassed the rural population. (see Table 1)

Dutt et al. (2004) considers the 21st century as the century of Asia, in the same way the 20th century was of America. Cities in Asia, including Indonesia, are thereby experiencing increasing challenges and thus need to be parsed. As it is stated by Beatley (2000), the world is in the midst of a disturbing period of growing consumption, population, and environmental degradation. From global warming to biodiversity loss to sprawling patterns of land consumption, the environmental trends are increasingly dire. Consequently, cities will play an increasingly important role in addressing these problems.

[1] Indonesian Institute of Sciences (LIPI) and
Jl. Jend. Gatot Subroto 10, Jakarta, 12710
[2] Indonesian Association of Planners (IAP)
Jl. Tambak No. 21 (Lt. 2), Pegangsaan - Jakarta Pusat
[3] Energy Efficiency and Conservation Clearing House Indonesia (EECCHI)

Korespondensi: gsyahbana@yahoo.com

Acceleration of urbanization provides a variety of implications on various aspects in Indonesia, include social, economic, political, and environmental aspect. Based on study conducted by Chen and Ravallion (2007) in Matuschke (2009), the poverty rates are becoming more and more urbanized. Despite the fact that the majority of the poor continues to reside in rural areas, the incidence of urban poverty in comparison to total poverty incidence increase with urbanization. Matuschke (2009) explains that although the share of migration in total urban growth is smaller than natural growth rates, the absolute number of people pouring into cities every year is enormous.

Table 1. Population Living In Urban Areas (%)

Year	World	Asia	Indonesia
1950	29.1	16.8	12.4
1955	30.9	18.2	13.5
1960	32.9	19.8	14.6
1965	34.7	21.5	15.8
1970	36.0	22.7	17.1
1975	37.3	24.0	19.3
1980	39.1	26.3	22.1
1985	40.9	29.0	26.1
1990	43.0	31.9	30.6
1995	44.7	34.4	35.6
2000	46.6	37.1	42.0
2005	48.6	39.7	48.1
2010	50.6	42.5	53.7
2015	52.7	45.3	58.5
2020	54.9	48.1	62.6
2025	57.2	51.1	65.9
2030	59.7	54.1	68.9
2035	62.2	57.2	71.8
2040	64.7	60.3	74.5
2045	67.2	63.3	77.1
2050	69.6	66.2	79.4

Source: World Population Prospects the 2007 Revision, United Nations

According to FAO (2010), the increase level of urbanization especially in developing countries would likely increase the number of poor people live in urban areas. The organization projected that those people will reach 85% or 50% of total population live under the poverty line in Latin America or Asia and Africa, respectively by 2025. In Indonesia, based on data 2009, the majority of people live under the poverty line is still concentrated in rural areas, by 63,38%. However, Indonesian Statistical Bureau (BPS) data show that the decrease level of poor people in rural areas is much higher than that in urban areas which might be indirectly influenced by the urbanization itself. This means that urban poverty will still be a problem in urban areas in the future, thus a solution still need to be found.

Overman and Venables (2005) in Matuschke (2009) stated that urbanization per se is often a positive development, as urban areas tend to be more productive than rural areas; and therefore a driver for economic growth and development. Furthermore, Matuschke (2009) viewed rapid urbanization, as it is currently occurring in many developing countries, can outstretch the cities' capacity to absorb and cater for an ever growing number of inhabitants. However, if they are unabsorbed, urbanization may lead to the development of slums and pose a considerable threat to all dimensions of food security. This is because the majority of urban dwellers is net food buyers and spent a large part of their disposable income on food.

The above situation might bring a condition towards food crisis in the future, considering the high dependency on the hinterland's products or even other further regions, which provide high transportation cost and less fresh food. Jakarta for example, could only

provide 1,2% of rice demand, 0,5% of vegetables demand, and 19,6% of fruits demand on its own (Purnomohadi, 1999). This statistic is considerably low compared to the US, whose metropolitan areas could contribute to 33% of total agriculture production; while Shanghai has fulfilled its' metropolitan areas' demand on vegetables and meat on its own. With the local production, the income spent for food could be reduced, and more often than not, those who are engaged with the activities could even get free vegetables, thus increase their quality of life. Therefore, urban agriculture is recently re-raised as one of the answers for eradicating urban poverty, which is one of big problems faced by developing countries.

Tabel 2. Population Of Poor People

Year	Number of Poor People (million)		
	Urban	Rural	Total
1990	9.4	17.8	27.2
1993	8.7	17.2	25.9
1996	9.4	24.6	34.0
1998	17.6	31.9	49.5
1999	15.6	32.3	48.0
2000	12.3	26.4	38.7
2001	8.6	29.3	37.9
2002	13.3	25.1	38.4
2003	12.2	25.1	37.3
2004	11.4	24.8	36.2
2005	12.4	22.7	35.1
2006	14.5	24.8	39.3
2007	13.6	23.6	37.2
2008	12.8	22.2	35.0
2009	11.9	20.6	32.5
2010	11.1	19.9	31.0

Source: Indonesian Statistical Bureau, 2010

The success of urban agriculture approach in other countries is interesting to be learned, but might be practically difficult to be adopted in Indonesia for reasons. This paper, therefore, aims to investigate best practices of urban agriculture development in other countries, and then bring them down for potential application in Indonesia, particularly in Jakarta. Although there is a normative issue in regard of urban areas definition (based on Law or *Undang-Undang* 26/2007 on Urban Planning) that discourages agricultural activities in urban areas, the development of urban agriculture does not mean changing urban characteristics into the rural one due to the introduction of agricultural activities. As it is revealed by Subanu (2008), the development of cities in the developing countries often takes on a character of a certain mixture between modernity and traditionality. This mixture can be seen in the mixture between structured urban forms of the modern sector and organic landscape of the traditional compounds.

Study Objective

Against previous background, this study tries to identify the potentials of urban agriculture development in Jakarta by learning from several best practices in other countries.

Methodology

Analytical Framework

The development of urban agriculture in Jakarta is still at a very beginning phase. Therefore, the analythical framework employed in this study should be in line with current condition. Preconditons analysis is used to explore urban agriculture development in Jakarta, with special emphasize on relation between urban agriculture and poverty reduction. According to Jacobi et al. (2000), there are 5 basic factors/preconditions in the development of urban agriculture, especially for the urban poor to overcome crisis as shown at the table below.

Table 3. Precondition Factors Of Urban Agriculture Development

Factor	Description
Natural conditions	Climate condition (rainfall and temperature)
Physical infrastructure and services	Availability of space and water
Socio-cultural conditions	Farming traditions and food preferences
Institutional conditions	Access to space and water
Economic conditions	Shortage of adequate and accessible income and opportunities; and unsatisfied demand for agricultural product

Source: Jacobi et al., 2000

From those five factors related to urban agriculture development, the discussion will then be specified into physical infrastructure and services in terms of land/space availability, socio-cultural conditions, institutional conditions (especially on land) and economic conditions. The natural conditions aspect is excluded from the discussion here considering that Jakarta has physical land/soil and weather conditions which generally support the average agriculture production. Although these days, rainfall is difficult to be precisely predicted due to the global climate change's effect. Other exceptions of physical conditions (including water availability) that need to be considered in gardening or agriculture practices should be discussed further in a more specific research considering its high dependency on the vegetables/crops types.

Urban Agriculture in Other Countries

Urban agriculture has shown its existence in many countries over the world, both in developing and developed countries since the beginning of 1970s. Halweil and Nierenberg (2007) reveal that the increase of urbanization level nowadays requires a significant increase of urban food supply. With the current supply from urban fringe or even rural areas, there will be a significant need to improve the existing transport infrastructure in the near future. Research conducted by FAO (2001) predicted that in 2010, there will be a need for 205.000 additional truckloads/year in Jakarta, 217.000 additional truckloads/year in Karachi, 303.000 additional truckloads/year in Beijing, and 360.000 additional truckloads/year in Shanghai (in Halweil and Nierenberg, 2007). This situation would have been a good reason for developing countries to have a look at urban agriculture as a promising alternative considering their less (financial) capacity to meet infrastructure necessity compared to the developed countries.

However, despite their capacity to improve such infrastructure, many developed countries have also adopted and elaborated urban agriculture within their strategies for better and healthier urban food supply. For example, Australia is holding school gardens and community gardens for public housing program to support urban agriculture activities in a form of community garden. Table below shows the basic principles of urban agriculture de-

velopment in developed and developing countries as considerations for adopting best practices.

Table 4. Typical Characteristics Of Urban Agriculture In Developing And Developed Countries

Characteristics	Developed Countries	Developing Countries
Types and Forms of Urban Agriculture	Backyard food production in residential areas Community or allotment-type gardens on public open space Entrepreneurial commercial urban agriculture ventures Commonly exist as formal land use supported by the Governments	Home (backyards) gardens Informal gardens (cultivating marginal land—along roadsides, railway and riversides) Small-scale city farms Community Gardens (very limited)
Reasons for the development	Urban food production was viewed mainly in terms of 'recreation' and 'lifestyle' that returns greenery and a sense of nature to sprawling cities (carbon footprint awareness), with a few examples of entrepreneurial motivation;	Urban agriculture was mostly born out of compelling need (UNDP, 1996) considering 50-90% of the urban poor's income, in average, goes to afford food. As one of solutions for urban health issue, poverty, unemployment and urban sustainability as a whole.
Government's Policy in supporting Urban Agriculture	Land use zoning policy is strictly adhered to, preventing agricultural land being used for urban development (as in Netherland) Implementing many programs for supporting Urban Agriculture development, for examples: a government funded "City Farmer" program to encourage urban food production (as in Vancouver that has been running for over 20 tahun) (Barrs, 1997) Encouragement for developing gardens through i.e. Australian Sustainable Schools Initiative, Growing Green Plan, Melbourne 2030 in Australia	Urban agriculture is mostly developed in a way that the Government has no attention on it. They (in average) don't even provide sufficient guidelines for the activities to be considered as formal urban activities. However, some places (cities) in developing countries (i.e. Accra, and Beijing) have strategically provided a legal support for urban agriculture development as they prescribe it within their urban planning documents.
Benefits of Urban Agriculture (Fast Facts and Figures)	Netherlands : 33% of their total agriculture production came from Urban Agriculture The former West Germany: had more than 800.000 public garden allotments, covering area of 24.000 ha (Somers & Smit, 1994) Montreal dan Toronto (Canada): each has 10.000 public garden allotments that is protected by the Government 10% of total urban population in the US participated in urban agriculture activities, and thus contributed to a third of total agriculture production	Help stabilizing food price during financial and monetary crisis through government's big policy on urban agriculture, and thus be a solution for bringing the local food price down and be competitive to those being imported (as in Accra, Ghana) Improve farmers' prosperity and bring their quality of life above the poverty line (especially for irrigated vegetable farmers) (as in Accra dan DKI Jakarta when facing 1998 crisis)

Characteristics	Developed Countries	Developing Countries
Potential Development	Prospective to be developed commercially (large-scale agriculture), yet there is no sign of well-managed system that has been developed for that particular purpose.	Urban agriculture development in some countries have shown a positive trend towards a commercial agriculture (such as in China), but the majority is still facing challenges especially on land use conflict with highly value activities (e.g. trading and services activities as in Indonesia).
Other Significant Issues	"Urban agriculture was not seen as the 'highest and best use' of vacant inner city land by most local government policy officials who would have preferred to attract 'better' tax paying uses on urban land. Policy officials and urban planners were found to take the view that food-growing was something that takes place and belongs on rural land. The idea of turning urban land into areas where a viable food crop could be produced was still foreign to most people." (Kaufman and Bailkey (2000) in Bodlovich, 2001, p.26) Even though this issue has been gradually solved by the increase awareness of urban agriculture benefits (especially in developed countries), this issue is still a hindrance in many cities (countries).	

Sources: Bodlovich, 2011; Halweil and Nierenberg, 2007; Addo, 2010; Lesher Jr., n.d

Based on those general characteristics identified for developed and developing countries in terms of urban agriculture activities, below is presented an overview of urban agriculture development in two cities, namely Accra, Ghana (West Africa) and Melbourne, Australia as representative of two different worlds. These two best practices are chosen for their experiences in addressing urban agriculture as being economically viable (within their cultural context). Moreover, they also demonstrate strong qualities of sustainability such as long-term maintenance of fertility, minimal polluting effluents, and efficient energy use, as they are used by Bodlovich (2001) as a base for identifying successful example of urban agriculture.

The development of urban agriculture in Accra was induced by the increase price of urban food during the period of 1972-1976s due to the food shortage. Realizing its significant impact on the urban (households') economy, the government came forward by executing a program called "the Operation Feed Yourself (OFY), which is implemented both in rural and urban areas. Under this program, the government supports and encourages the citizens for being active in producing food on their own, and thus meeting the region's need on food supply. The supports were put in a way of relaxing stringent regulations and by-laws that curtailed the practice so that the urban farming activities were then tolerated as part of formal urban activities (Addo, 2010). As the results, many unemployed youth and retirees found another source of livelihood that improves farmers' family budgets. Besides, it makes food more accessible and affordable, thus enhances price stability that eventually contributes to poverty reduction.

Practically, characterized as a developing country, urban agriculture developed in Accra is typically done along water bodies and drains and backyards that use irrigated vegetable production, backyard gardening or seasonal crop farming systems (Cofie et al, 2003; Danso et al., 2002; Zakaria et al., 1998; and Armar-Klemesu et al., 2000 in Addo, 2010). One of significant factors for the successful urban agriculture program in Accra is the fact that most urban farmers have rural backgrounds (practicing agriculture) back in their hometown. Their skills and capacity in growing food were being used for initially meeting their main needs. Later on, when they have better income levels, it is proven that most of them (66% or urban farmers) still continue to practice agriculture and have no intention to stop it

even if they were offered regular paid employment (according to research result presented in Addo, 2010). However, apart from those successful stories, land use management is still being a problem in urban agriculture implementation due to the unplanned siting of farmlands and indiscriminate usage of available spaces that cultivate conflicts among urban dwellers.

Different from Accra case, the establishment and development of urban agriculture in Melbourne, Australia in the 1970s was in response to the high rise development policy that has an impact on the loss of backyard. In addition, an increasing awareness on global warming (attributable to food transports) and packed food's impacts on people's health has consequently brought urban agriculture into account. Lately, the booming of these activities has been associated with immigrants' activities in providing a better connection to their home countries by growing culturally related plants that are hardly found in host country. Besides, the advantage of making local food and vegetables available and accessible is a strategic way to reduce their expences on food.

In practical, urban agriculture activities are found in this country in a form of community garden, in which many people get involved for both the physical activities and the social benefits. Some of social benefits to be cultivated are to be familiar with more people (neighbors), to increase mutual trust and thus enhance social connections (Teig et al., 2009). Similar to the previous case, an important aspect of government's encouragement on urban agriculture is leading in Melbourne, provided for a sustainability guarantee. For example, Department of Human Services Office for Housing is the one who has the responsibility to establish and maintain community gardens in Melbourne, especially for public housing tenants. A program is held to provide and establish community gardens, which are attached to each public housing built in Melbourne. The garden is then primarily dedicated to those who live in a high rise building with no backyards. The program has been going for almost 10 years that engages a non profit organization, called Cultivating Community, which is responsible for the implementation, monitoring and evaluation of the activities.

Given a fact that the majority of public housing tenants are migrants, those who get involved in the community gardens are thus mostly migrants from various countries, who mainly have a problem with language barrier and thus have less access to jobs available. The unique characteristic of such community gardens is that the activities within a communal land can open up communication between the gardeners, who previously sosialized only within their etnique group. Different from Accra case, most of the gardeners who participate in public housing's community gardens in Melbourne have no gardening experience back in their home country. Therefore, Cultivating Community assigns "Garden Support Worker" in each garden to assist the novel gardeners (especially) in conducting a good/sustainable agriculture/gardening practices. This action consequently opens another job opportunity for those who have gardening knowledge, though the learning process is also happening throughout the year among the gardeners themselves as a progressive learning.

Results and Discussion

Urban Agriculture and Its Benefits

Many studies on urban agriculture in Indonesia demonstrated the potential use of land/space to urban agriculture development in the form of, among other, paddy/crops, horticulture, and medicinal herbs gardens. However, the detail research showing the connection of urban agriculture role in eradicating urban poverty in Indonesia as a formal land use and urban activities is absent. Therefore, this section aims to initially examine the above issue by considering the normative and the actual situations in Indonesia, so that the gap can be identified for further research.

According to Setiawan (2000), there are three main benefits of urban agriculture development, namely: social, economic, and environmental benefits. In a condition where urban agriculture is properly developed, each aspect might have benefits as shown at the table below.

Table 5. Benefits Of Urban Agriculture

Aspect	Benefits
Social	Increasing food supply
	Improving the urban poor nutrition
	Improving public health
	Reducing unemployment rate
	Increasing community solidarity
	Reducing the likelihood of social conflict
Economy	Providing employment opportunities
	Increasing people's incomes
	Reducing poverty
	Increasing the number of self-employed
	Increasing the productivity of urban environment
Environment	Result in land and water (resources) conservation
	Recycling urban waste (garbage for compost utilization, and others)
	Efficiency of land resources
	Help create a healthy microclimate
	Improving the quality of the environment

Source: Setiawan, 2000

Speaking about urban poverty cannot be separated from taking socio-economic problems into account. Based on BPS (Indonesian Statistical Bureau), "poverty" is defined as a condition that refers to the level of communities' ability (economically) to meet their basic needs, in relation to both food and non-food needs. The definition is then used as the reference to set up a poverty line, namely food poverty line and non-food poverty line. During the period March 2010 - March 2011 in Jakarta, the contribution of food aspect had no change at the percentage of 64.46% to the total poverty line.

Looking at a deeper perspective, it is interesting to look at DKI Jakarta's food poverty line in detail per commodities. In March 2011, the annual inflation rate of food commodity was the largest, at 11.96%, followed by clothing at 8.83%. Broken down to the food poverty line elements, rice as a staple food in Jakarta contributed to the line by 27,06%. Other elements that also contributed quite significantly to the line are cigarette filter (13.48%), eggs (6.39%), chicken meat (6.06 %), instant noodles (4.20%), tempe (3.22%), sweetened condensed milk (3.16%) and red pepper (2.94%) (Jakarta Government, 2011a). These statistics indicate that the increase price of food in Jakarta is evident, and the need for better food supply is also obvious. In other words, access to food purchases becomes one important element for reducing poverty in Jakarta, with potential derived benefit on the social aspects as expressed by Setiawan (2009), presumably through collective food production activities.

Basically, it is not an impossible action to provide agriculture products locally in urban areas, although it will not fulfill the total urban needs on food. According to "The Urban Agriculture Network", it is noted that in Jakarta, almost 20% of food consumption by the regional migrants is supplied by producing food on their own. However, the successfullness of urban agriculture development vary, depends on some influencing components.

The Importance of Land Availability and Accessibility

The availability of land (and water) becomes the fundamental factor in agriculture sector, so that the development of urban agriculture should firstly consider the provision of

"cultivatable land". According to DKI Jakarta Agriculture Department (2002), about 17% of total area of Jakarta (or 11,240 hectares land) is used for farming. The area consists of 2845 hectares wetland and 8395 hectares parcel of land (Kombinasi, 2009). Back in 1998, the expansion of agriculture land in Jakarta was also influenced by the action of land looting (i.e. illegal actions against State Land) following the political reform in Indonesia that caused chaos. Land owned by the state and the former state officials, including former president Soeharto's family and cronies', became the main target of the looters. As it is noted by Purnomohadi (2001), there were at least 300 people involved in the action that illegally claimed and used the area around Pulo Mas, Jakarta Timur in mid-1998. At the same time, hundreds of others penetrated the Soeharto family-owned farmland on the outskirts of Jakarta.

Besides such action, renting land to the landowners was also mushrooming, due to the support from Sutiyoso, the former governor of Jakarta, as it is seen as a legal alternative to get access to farmland. In response to the increase need of land access, Sutiyoso had given permission to the people to cultivate unused land, with the consent from the landowners. This policy ended up with the mushrooming spinach and chaisim plants on the construction land for toll road in West Jakarta back in 1998. Such temporary farmland was also found on the construction land for corporate office complex in Kuningan area (South Jakarta), Priok (North Jakarta) and on vacant lots around the former Kemayoran airport (Kombinasi, 2009).

From those facts, it can be said that the government's supports for urban agriculture in Jakarta is still limited to the semi-formal land use policy. This means that the government formally legalized it, but did not position urban agriculture as formal urban activity that is competitive to other high value urban activities. At this stage, the sustainability of urban agriculture is then questioned.

Regulatory Support for Urban Agriculture Land

Kusumawijaya (2006) argues that currently, urban agriculture is not accommodated to be part of urban planning and urban land use in Indonesia. This makes its existence being spatially informal and thus highly depending on the market mechanisms. Compared to other countries, like Britain and Canada, Indonesia is far left behind since they have enacted regulation on farming town in 1925 and around 1924-1947, respectively. Some cities such as Amsterdam, London, Stockholm, Berlin, Montreal and New York have also placed the idea of urban agriculture within their urban planning and urban land-use policy.

Without a strong regulatory support, the existence of urban agriculture would be threatened. Lately, it was evidenced in Jakarta that the area of agriculture land experienced a drastic shrinkage. This is partly because (Kombinasi, 2009):

A project executed for expanding East Jakarta Flood Control had reduced the space along the riverside that has been used for urban agriculture.

Recovery in the property sector in the past five years has great influence on the shrinking of agricultural land area of the city. Some examples are in Kuningan area, where the former green area (for vegetables, peanut and corn growing) was replaced by the then office building's construction site.

In regard to the idea of urban agriculture's role in increasing urban green open space (GOS), the existing Indonesia's regulations on spatial planning have not fully considered and accommodated it yet. Currently, there are two regulations associated with GOS, namely the Minister of Home Affairs Decree (*Permendagri*) 01/2007 on Urban GOS Planning, and Minister of Public Works Decree (*Permen PU*) 05/2008 on Guidelines for GOS Provision and Utilization in Urban Areas. According to *Permendagri* 01/2007 (Article or *Pasal* 6), GOS may also be in a form of agricultural land, therefore the development of urban agri-

culture in Indonesia can be implemented under the concept of GOS. In the contrary, *Permen PU* 05/2008 has not categorized urban agricultural land as a form of GOS. This overlapping and opposed regulation could drive conflicts during the implementation. Unfortunately, the practical provision of GOS particularly in spatial aspect tends to refer to the second decree, so that urban agriculture in many cases is not considered as part of urban GOS, and consequently the land market mechanism tends to discourage the development of such activities.

The present regulation in place that is considered strong enough to support the development of agricultural land in urban areas is Law (*Undang-Undang*) 41/2009 on Sustainable Food Agricultural Land due to its wide coverage of agricultural land management. However, this regulation is still in the process of socialization and dissemination to the local governments, and thus the implementation phase will depend on their interpretation and understanding.

Recently on 24 August 2011, DKI Jakarta Spatial Plan (RTRW 2010-2030) has been officially issued (Jakarta Government, 2011b). This means that spatial planning for the next 20 years will refer to this planning document, which has put farms land in place as one of development strategies, even though detail discussion of urban agriculture has not been visible. Within this document, several articles have shown potential prime locations for urban agriculture development in Jakarta. Although there are some inconsistencies found within the document about the relationship between urban agriculture and GOS, the development planning of agricultural land in Jakarta has at least taken its place.

In addition, the Head of Jakarta Department of Agriculture, Livestock and Marine, Edy Setiarto, encourages the citizens to take advantage of unused land throughout Jakarta by farming the land. The area of vast idle land in Jakarta is about 2,000 hectares where the majority is privately owned and the rest is owned by the government. The idle land that has been cultivated is 1.000 hectares, which is planted by vegetables (througout Jakarta), rice (North Jakarta and East Jakarta), and pulses (South Jakarta). According to Edy Setiarto, idle land management system is basically not complicated, as long as there is an agreement between land owners and the users (farmers) (Land Policy, 2010). This agreement is therefore the key success for developing urban agriculture through this method. Moreover, some companies have also shown their interest in supporting urban agriculture development, especially under their corporate social responsibility (CSR) scheme. For example, the Rasuna Epicentrum developer gives permission for people, coordinated by Family Welfare and Empowerment Community (*Pemberdayaan dan Kesejahteraan Keluarga* or *PKK*), to take advantage of their undeveloped land (Konsumen Propoerti, 2012).

At the national level, the Ministry of Agriculture has also looked at the potential of urban idle land to be cultivated through urban agriculture. To implement this, the Ministry has already coordinated with a number of parties. For example, PT East West Seed Indonesia, which is a seeding crops company who has special interest to participate in making use of idle land. With the aim to optimize agricultural production, especially vegetables and fruits, PT East West Seed Indonesia conducted a series of activities in urban farmer empowerment. The company also provides training on financial management and entrepreneurship in order to increase farmers' income, especially those who are farming on other people's land (Koran Jakarta, 2011).

From the above discussion, it can be concluded that both national and regional regulation and policy are needed to support the implementation of urban agriculture development in certain regions. A study conducted by Adiyoga et al. (2004) revealed that 71.8% of people have agreed on the idea of clear and good regulation or policy on urban agriculture is a must for the activities to be successfully implemented. Moreover, it is also stated that 94.1% of people consider farming activities are still relevant to be developed in Jakarta. Therefore, the support needed is not only in a form of policy or regulation, but also any

practical incentives and disincentives to encourage people to do or assist the urban agriculture development.

Socio-Economic Factor: Between Post-Crisis Safeguarding and Sustainable Economy

The role of urban agriculture in improving the local economy has been shown by a strong indication. In research by Takeuchi (2005), it is found that although the agricultural green space in Jakarta is relatively small but several benefits can be cultivated, such as accommodate the workforce, increase incomes, improve food safety, as well as nutrition and diet variation for urban residents. However, this fact has not yet answerred the detail relationship between the local economy improvement and urban poverty eradication in Indonesia.

In her research, Purnomohadi (2001) mentioned that urban agriculture became one of alternative employment opportunities, especially for seasonal workers affected by the economic crisis of 1998, which resulted in jobs lost. Most farmers in Jakarta were originally from West Java and Central Java. At that time, the wages earned from being urban farmers were between Rp 10.000-15.000/day, from involving in the process of planting, crop maintenance to harvesting. Similarly, Kusumawijaya (2006) mentions that the economic problem is the trigger of agriculture activities in Jakarta. At its beginning development, urban agriculture was the answer to cope with unemployment while at the same time it could help meet the need of cheap agricultural products. As it is found in Accra, this pattern of economic trigger is typically found in developing countries.

Urban agriculture has actually been proved effective to increase people's income in Jakarta. For example, Andi, who is cultivating the intersection area in Pramuka, reported that the average monthly income that he can earn is around Rp.500.000-750.000. Besides, he has also paddy field in Bogor, to which he visits every (rice) planting season (Petani Kota, 2009). Additionally, the Head of Jakarta Department of Agriculture, Livestock and Marine, Edy Setiarto, says that farmers cultivating idle land in Jakarta in average can earn between Rp 1-2 million (Land Policy, 2010). Regardless the variations of income earned (depending on the land condition, commodities, and market access differences), the nominal income mentioned above can be categorized relatively above poverty line (= monthly expenditure Rp 355.480/capita). In addition, some income variations are also equivalent to the average minimum wage in Jakarta, which was set up at Rp 1.29 million/month based on Jakarta Governor Regulation (*Pergub*) 196/2010.

Learned from Accra, the next big question is whether such livelihood will continue to exist as the economic conditions grow better in Jakarta. It is difficult to find the answer before practically implementing this, but the land market mechanism that is currently happening in Jakarta will not give a good opportunity for urban agriculture to sustain. However, the successful urban agriculture in Accra with its sustainability could bring a hope for similar implementation in Jakarta, as long as a need of good regulator is provided by the government. A good regulator should surely have a positive perception of urban agriculture. However, in fact, such activities tend to be regarded as a problem, as the remnants of omission, or as a result of incompleted rural areas in Indonesia. Kusumawijaya (2006) reveals that in fact, urban agriculture remains as formal activities, even in developed countries' urban areas. Therefore, the sooner the government adopts this perspective, and then accommodates it in spatial planning, the sooner they will find it useful.

Apart from the upstream sector, business development of urban agriculture in the downstream sector can also provide its own charm. Such business includes agricultural shops that provide seeds, fertilizers, plants, agricultural equipments, and other agricultural goods. The story below (although located in Surabaya) can be a general picture of how

such store can induce and attract the economic prospective of urban agriculture development.

A story of Sugeng could provide a good example how business in agricultural sector is very potential (see furthermore: Infogue, n.d.). Sugeng's childhood was not far from farms. He was already familiar with hoeing or wrestling with dirty animal cage since he was a child. Understandably, his father is a farmer and his mother is a merchant. Sugeng entered agricultural high school in Boyolali (due to financial limitation), then went to Jakarta and worked at Trubus magazine.

When Trubus Magazine expanded the business on agribusiness, Sugeng became one of the employees who participated in patronizing the business. Following the new business operation, Trubus opened up a farm shop in Jakarta in 1984. Due to his diligence and knowledge of agriculture, Sugeng's career thus climbed up rapidly, from an ordinary staff to be a store head within two years. In the fourth year, he became a marketing manager and was assigned to the outer island. He reached his top career when he held a director position of Trubus in Surabaya.

After 12 years working in Trubus Surabaya, Sugeng decided to retire early. He felt he had found a way of life, namely to develop urban agriculture in Surabaya. On 17 August 2006, Sugeng officially opened up a shop, called Subur Tunas Mandiri, which lately became one of urban agriculture icons. The store is located on an area of 1.500 square meters, together with the farm, which mostly grown by fruits. Sugeng's turnover is quite large for an agricultural business, at least Rp 250 million per month and can be Rp 400 million if it is in a high season.

Another example of urban agriculture development that has been done in Jakarta is in a form of cultivating river banks areas that can also support the carrying capacity of the watershed. In December 2009, the government executed plantation of 50.200 fruit trees on the banks of Ciliwung River in South Jakarta as a step for potential development of river tourism. As it is revealed by Oktarina (2005) and Utami (2005), urban agriculture can also be developed as agro-tourism with the requirements of the condition of agricultural landscape, the accessibility, the supporting facilities, and community acceptance.

Such tourism activity might certainly influence the economic development due to the potential employment opportunities generated (Warta Kota, 2009). According to South Jakarta Mayor, Syahrul Effendi, the utilization of river banks area can be more effective if the community has also been aware of environmental conservation. One example is in the story below, which shows the economical and ecological utilization of Pesanggrahan River Banks, South Jakarta. A story of Bang Idin could provide a good example how urban agriculture could be developed on river banks and managed in conjunction with urban forestry (see furthermore: Vivanews, 2008 and Hidayat, 2011).

The present greenery and beauty along Pesanggrahan River was begun from a concern of Bang Idin about its miserable condition in the late 1980s. This man, who was born at 13 April 1956, felt a huge loss of his childhood-river-scenery, such as birds singing, bunch of fish, and the variety of wildlife on the river banks. It was an intensive process undertaken by Bang Iding to assess every detail of damage along the area. Using a traditional raft made from banana paper, he has sailed down the river for five days and six nights. He was searching for answers for those losses, and trying to find answer why the river is so dirty and barren.

Currently, it has been two decades from Bang Idin started the conservation of 40 hectares forest on the Pesanggrahan River banks, by planting over 60 thousand fruit and other scarce trees (e.g. *buni, jamblang, chiral, mandalka, krowokan and bisbul*). There were also 20 thousand fishes and various species of birds that are released in order to liven up habitat in the river.

Nowadays, the results can already be harvested. Thousand families in the region of Pesanggrahan River rely their life on the forest conservation products. The economy sector has also shifted, as the forest robustly growing. The surrounding residents can now harvest different species of fishes such as carp and tilapia at about 1 ton per week. Besides, they cultivate fresh and good vegetables and fruits since they are free to grow everything they like.

From those hard works and efforts over the years, Bang Idin has received some awards like the Kalpataru, the award of water rescue, the charter of Abu Dhabi, Germany, and Holland. Apart from those achievements, he still expects for further government aid to support his efforts to embrace the surrounding community to get actively involved in environmental conservation activities (Vivanews, 2008). Learned from the successful urban agriculture development in Melbourne Australia that has stress on a community basis, adopting the system of community garden into Bang Idin case for supporting community enhancement is an alternative to be considered. By applying the system, it can be expected that the advantage attained from urban agriculture development is not merely on food security, environmental and economic aspect but also touch on social aspect. Furthermore, community gardens can also be applied in other areas considering its suitability with Jakarta context, where the majority of poor people have no yard at home.

Conclusion

To conclude, the development progress of urban agriculture in Indonesia, especially in Jakarta is now promising, with noticable support from the individuals, private and public sector. Many cases have shown the impacts of such activities, either directly or indirectly, on people's livelihood, thus economy and social aspects. However, one of the biggest challenges that need to be resolved is a need of consistent government regulations or policies to effectively encourage people to get involve in such activities. This factor is expected to solve the issue of land availability and accessibility in urban areas, through a flexible land management and a legal acknowledgment of agriculture as part or urban activities. Thus, the issue of market mechanism as a hindrance for developing urban agriculture can be gradually unraveled, and provide for a better perspective in achieving future sustainable cities.

Secondly, it can be concluded that there is a positive trend of urban agriculture development in a form of agro-tourism, as fully supported by the current government. This transition can be viewed as an opportunity to develop urban agriculture through different methods that combine social and economic benefit of such activities at the same time. Supporting agro-tourism method means put a concern on local economy development and income generation for the inhabitants. Whereas adopting community gardens system in place means provide an activity to be a unique tourism attraction and provide a space for people to get involve in communal forums or activities. In addition, the growing and harvesting activities can also be regarded as a leisure as well as educational activity. Specifically for educational purposes, it will certainly give remembrance for the existence of urban agriculture, and may help the activities to sustain longer. However, in order to make this system work, more works need to be done in the area of transportation (infrastructure), tourism, agriculture, trade, and other regional development sector, as it is argued by Sulistyantara (1990).

Lastly, the development of urban agriculture along the river banks can be regarded as a prospective development, especially as a combination of maintaining ecological function and pursuing economic development. Additionally, the development of idle and abandoned land, as previously discussed, can be economically sustainable if there is a legal support for land productivity. Back to the idea of government's reinforcement through clear regulation,

there is also a need for land acquisition mechanisms in regard of farmers and landowner agreement for cultivating such unused land. In terms of developing urban agriculture to eradicate urban poverty, combination of all strategies above can be an initial framework, but obviously, more research is needed to specifically look at the most appropriate form of urban agriculture to be applied in Jakarta, especially related to urban poverty eradication purpose.

Reference

Addo, Kwasi Appeaning. 2010. Urban and Peri-Urban Agriculture in Developing Countries Studied using Remote Sensing and In Situ Methods. *Remote Sensing 2010* (2): 497-513.

Adiyoga, W., A. Dimyati, T.A. Soetiarso, M. Ameriana, and R. Suherman. 2004. Public Perception on Urban Agriculture Existence in Jakarta and Bandung. *Jurnal Hortikultura*. 14(2):134-149. (in Indonesian)

Beatley, Timothy. 2000. *Green Urbanism: Learning from European Cities.* Washington DC: Island Press.

Bodlovich, Andrew. 2001. *Urban Agriculture and Sustainable Cities*. Master Thesis. Sydney: the University of Sydney.

Dutt, Ashok K., A. G. Noble, G. Venugopal, and S. Subbiah. 2003. *Challenges to Asian Urbanisation in the 21st Century.* Dordrecht: Kluwer Academic Publishers.

FAO. 2010. *Growing Greener Cities.* Rome: FAO Publication.

Halweil, Brian and Nierenberg, Danielle. 2007. Farming the Cities (Chapter 3). *State of the World 2007: Our Urban Future.* Washington D.C.: The Worldwatch Institute.

Hidayat, Nanda. 2011 (7 February 2011). *Reaping Bang Idin's Forest Conservation*. Retrieved from http://www.facebook.com/note.php?note_id=501520904914 on 29 September 2012. (in Indonesian)

Infogue. (n.d.). Rp 400 Million from Urban Agriculture. Retrieved from http://metropolis.infogue.com/rp_400_juta_dari_pertanian_kota on 24 August 2011. (in Indonesian)

Jacobi, P., A. W. Drescher, and J. Amend. 2000. Urban Agriculture – Justification and Planning Guidelines. Urban Vegetable Promotion Project. Ministry of Agriculture and Co-operatives (MAC) and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ). Dar es Salaam.

Jakarta Government. 2011a (4 July 2011). Jakarta Poverty Level. Retrieved from http://www.jakarta.go.id/jakv1/item/halaman/0/0/4445/1/6/2/124/3/6/4/113/5/124 on 24 August 2011. (in Indonesian)

Jakarta Government. 2011b (25 August 2011). Jakarta RTRW 2020 Has Been Approved. Retrieved from http://www.jakarta.go.id/web/news/2011/08/Perda-RTRW-2030-Disahkan on 24 August 2011. (in Indonesian)

Kombinasi. 2009 (30 April 2009). Agriculture Under Sparkling Jakarta. Retrieved from http://kombinasi.net/pertanian-di-balik-gemerlap-jakarta/ on 24 August 2011. (in Indonesian)

Konsumen Properti. 2012 (21 March 2012). Jakarta Government Records Iddle Land for Agriculture and Fishery Activities. Retrieved from http://www.konsumenproperti.com/Umum/dki-data-lahan-tidur-untuk-pertanian-dan-perikanan.html on 28 September 2012. (in Indonesian)

Koran Jakarta. 2011 (12 August 2011). Private Sectors Intensively Utilize Iddle Land. Retrieved from http://m.koran-akarta.com/?id=68947&mode_beritadetail=1 on 24 August 2011. (in Indonesian)

Kusumawijaya, Marco. 2006 (27 August 2006). Urban Agriculture. Retrieved from http://petahijau.wordpress.com/ 2006/08/27/ pertanian-kota/ on 24 August 2011. (in Indonesian)

Land Policy. 2010 (5 April 2010). Crops: Iddle Land as Urban Agriculture. Retrieved from http://www.landpolicy.or.id/news/1/tahun/2010/bulan/04/tanggal/05/id/390/tellmyfriends/ on 24 August 2011. (in Indonesian)

Lesher Jr, C. W. (n.d.). Urban Agriculture: A Literature Review, Urban Agriculture: Differing Phenomena in Differing Regions of the World Journal. Retrieved from http://www.docstoc.com/docs/10244232/Urban-Agriculture on 24 August 2011.

Matuschke, Ira. 2009. Rapid Urbanization and Food Security: Using Food Density Maps to Identify Future Food Security Hotspots. Paper Presented at the International Associaton of Agricultural Economist Conference. Beijing, China, 16-22 August 2009.

Oktarina, Dita. 2005. Potency Study of Urban Agriculture Landscape for Agro-Tourism Development in Padang. Undergraduate Thesis. Bogor: Bogor Agricultural University.

Petani Kota. 2009 (26 September 2009). Jakarta to Develop Urban Agriculture. Retrieved from http://kelompokpetanikota.wordpress.com/2009/09/ 26/jakarta-buka-lahan-pertanian-kota/ on 24 August 2011. (in Indonesian)

Purnomohadi, Ning. 2001. Urban Agriculture as an Alternative Strategy to Face the Economic Crisis. In N. Bakker, M. Dubbeling, S. Guendel, U.S. Koschella, H. de Zeeuw (eds.). Growing Cities Growing Food: Urban Agriculture on the Policy Agenda. Leusden: RUAF Publication: 453-465.

Setiawan, Bakti. 2002. Urban Agriculture Development to Improve Urban Area Productivity and to Achieve Sustainable Urban Development. Jurnal Manusia dan Lingkungan 7(2): 3-19. (in Indonesian)

Smit, Jac; Joe Nasr, and Annu Ratta. 2000. Urban Agriculture: Food, Jobs, and Sustainable Cities. UNDP. The Urban Agriculture Network.

Subanu, Leksono Probo. 2008. Governing Urban Development in Dualistic Societies: A Case Study of the Urban Region of Yogyakarta, Indonesia. In T. Kidokoro, N. Harata, L.P. Subanu, J. Jessen, A. Motte, E.P. Seltzer (eds.). Sustainable City Regions: Space, Place, and Governance.Tokyo: Springer: 41-60.

Sulistyantara, Bambang. 1990. Agro-Tourism Dvelopment in Urban Areas. Proceeding of the National Symposium and Seminar on Indonesian Horticulture. Bogor, 13-14 October 1990. (in Indonesian)

Takeuchi, Kiyomi. 2005. Identification of Urban Agriculture Activities Characteristics: an Urban Agriculture Study in Jakarta. Master Thesis. Bogor: Bogor Agricultural University. (in Indonesian)

Teig, E., Amulya, J., Bardwell, L., Buchenau, M., Marshall, J. A., & Litt, J. S. 2009. Collective Efficacy in Denver, Colorado: Strengthening Neighborhoods and Health through Community Gardens. Health & Place 15(4): 1115-1122.

Utami, Ni Wayan Febriana. 2005. Potency Study of Urban Agriculture Landscape for Agro-Tourism Development in Denpasar. Undergraduate Thesis. Bogor: Bogor Agricultural University. (in Indonesian)

Vivanews. 2008 (27 October 2008). River Bank Warrior. Retrieved from http://metro.news.viva.co.id/news/read/5385-pejuang_tepian_sungai on 24 August 2011. (in Indonesian)

Warta Kota. 2009 (20 December 2009). Developing Tourism in Ciliwung. Retrieved from http://www.wartakota.co.id/read/news/18461 on 25 August 2011. (in Indonesian)