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Enhancing urban agriculture through participants' satisfaction: The case of Seoul, Korea

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ABSTRACT

South Korea has been lending a variety of official support to promote the urban agriculture (UA), especially after enacting Act on Development and Support of Urban Agriculture (Act of UA) in 2011. Under this policy, which aims at spreading the UA effectively in dense cities, in particular, the government categorizes spaces used for the UA into five types in accordance with their characteristics and has extended customized support. But it has never been explored if the Korean version of the UA has satisfied the participants and there exist any differences in the satisfaction level among participants of each spatial type.

With a goal to explore the policy effectiveness, therefore, this research carried out interviews and surveys involving 808 citizens who have taken part in UA activities in 68 farmlands in South Korea's capital city of Seoul and then analyzed them with the ANOVA and the hierarchical regression analysis methods The results revealed statistically significant differences among the different UA types in terms of the respondents' overall satisfaction, the current status of the UA operation, and policy measures that affect the satisfaction level as well as their effects. Overall, however, the participation of female citizens, the supply of physical facilities by public entities, and the increase in the time respondents were involved in UA and their cultivating areas turned out to positively affect their satisfaction level.

1. Introduction

Urban Agriculture (UA), which had mainly been witnessed in underdeveloped nations, has spread fast throughout the world after the economic crisis (Bryld, 2003), with it gaining ground in advanced countries such as the United States as more have concerned about the food security and tried to find ways for a sustainable land use. (Bohn and Viljoen, 2011; Lovell, 2010; Viljoen and Bohn, 2009) Over the course, UA got to be understood as part of the landscaping to boost the quality of the urban life as well as agricultural activities to vitalize local communities. Such extended meanings have led many governmental entities to set up diverse laws and action plans to officially introduce and extend UA. Since then, a slew of researches, including the one by Lovell (2010), have proven that UA has positive effects on the self-supply of crops within a city, the productive landscape and the creation of sustainable urban environments. Also, a variety of attempts have been made recently to overcome limitations the current way of the UA operation has by, for example, integrating it with the urban planning and the land use. Such attempts have served as a catalyst for policy-makers in many countries and cities to either draw or revise relevant laws to make the UA official (Deelstra and Girardet, 2000), which have nor only boosted the size of its cultivation areas but sparked the interests of urban residents directly and indirectly. (Nugent, 2000).

In this sense, the multi-stake holder action plan for the urban management is needed with long-term perspectives to maintain the policy in a stable and sustainable fashion (Mougeot, 2000). The evaluation of the public participation, which is one of the key pillars of UA, is also required with a short-term view for its immediate implementation. (Moskow, 1999; Guitart et al., 2012), and major researchers, including Travaline and Hunold (2010), Moskow (1999), and Guitart et al. (2012), have adopted the participation-observation methods as practical research tools to draw the general picture of the UA in different regions.

Asia, which is expected to house some 66 percent of the world's total population by 2050 (United Nation, 2014), has never been an exception: the nations there have recently begun to perceive the importance of the sustainable urban development and the value of UA for urban planning and land use (Hara et al., 2005; Roberts and Kanaley, 2006), and they have actively pushed for relevant policy measures particularly over the past 20 years.

South Korea set up the Act on Development and Support of Urban Agriculture (Act of UA) in 2011. Albeit being belated compared to other

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nations, Korea made the policy comprehensive by systematically arranging UA which had mainly been operated by individuals and local communities in a small scale after factoring in diverse factors such as land types and their way of being managed and supported (Kim et al., 2016). In particular, the Act of UA stipulates a total of five spatial categories of farmlands in consideration of UA activities in major metropolises such as the capital city of Seoul, whose population density is 17,000/km^2, and set up legal foundations to support them. As a result, the area reserved for UA in South Korea has grown over sixfold in five years, (Seoul Metropolitan Government, 2015a), which proves that the policy has had some positive effects for the densely populated city.

Despite such a history of the policy-based UA development, however, no in-depth researches and evaluation on South Korea's UA policy have been made so far, and little has been known in the international arena. Many non-Korean studies have stressed the need to look into different types of UA-related measures in different regions (Bakker et al., 2000; Brown and Jameton, 2000; Cole et al., 2008; Drakakis-Smith et al., 1995), and local experts have also pointed to the significance of the policy improvement through a consistent monitoring of participants' satisfaction level (Kim et al., 2016). In addition, despite the need for risks and benefits to be addressed for an active policy making (Mougeot, 2000), there do exist limitations in active discussions to improve policy measures or to make them be legally binded, as UA activities are often deemed recreational rather than something that plays a major role in land use. In order to overcome the aforementioned limitations, South Korea let its Act of UA be based upon the National Land Planning and Utilization Act, which makes it compulsory in terms of creating farmlands. But it has not been evaluated either at home or abroad about how the policy tool has affected the UA development in Korea.

Accordingly, this paper put the focus on the quantitative comparison and the analysis of the user satisfaction level by mobilizing a total of 808 UA participants in Seoul, which is one of the most brisk cities in terms of the municipal government's support for UA and its growth accordingly, via face-to-face interviews, surveys and their statistical analysis. Also, research models were drawn up with several independent variables, such as the socio-demographic characteristics of different groups of the respondents, their major reasons for joining UA, their satisfaction with official support, in order to learn which elements mainly affected the participants' satisfaction level. Through such an analysis of major policy measures and their effectiveness, this paper tried to explore ways to fine-tune them to promote the sustainability of UA.

2. Background

2.1. History and status of implementing UA in Korea and Seoul

Since 1990s, voices have been grown in South Korea for the necessity to introduce the UA after local researchers began to look into a variety of agricultural activities in urban areas. As the comprehensive opinion poll in 2011 showed that many citizens were in favor of the UA, the government was encouraged to set up the Act of UA in November of the year (MAFRA, 2013). What boost the public interests in the UA were (1) the increased demand for safe agricultural products and (2) increased income and leisure time (Park and Yang, 2014). In line with the growing popularity of community gardens and home gardens in advance nations, more local people have also got to pay attention to the UA and a growing number of environment groups and private organizations led the moves and supported them, which finally resulted in the government's enactment of the Act of the UA which has 24 articles.

In accordance with the provision of Article 1, the goal of the regulation is to “develop a nature-friendly urban environment and contribute to harmonious development of cities and rural communities by raising urban residents‘ understanding of agriculture.” What it means can be understood in two aspects: firstly, the subject of this crop-raising project is neither specific organizations nor practitioners but general urban residents (Oh and Kim, 2014), and secondly, the main goal of the UA in Korea is to contribute to the sustainable landscape within a city, rather than promoting the production of crops, as stated in researches by Kim et al. (2016), Le Roux et al. (2014) and Lovell (2010), among others. It also runs counter to some existing views, such as Zezza and Tasciotti (2010), which define the UA as “the production of crop and livestock goods within cities and towns.”

The Act of UA states five spatial types – *UA in residential buildings, UA in neighborhood, UA in city centers, UA in a farm or park, and UA for school education* (National Law Information Center of Korea, 2016) – to make the UA more efficient in extremely dense metropolises. But, as mentioned above, the statute serves as a guideline, rather than a mandatory legislation, and recommends each local government to choose a suitable type and apply details in enacting an ordinance of their own.

2.2. Morphological characteristics of UA in Seoul

As seen in Fig. 1, the capital city of Seoul, which is the most densely-populated city in Korea, puts forth a total of four types of the UA by modifying the five categories stated in the Act of UA: (1) “Housing” uses interior/exterior spaces of private and multi-unit houses, including residential buildings with neighborhood type UA (2) “In-city” employs the rooftops of public facilities, (3) “Farm-park” takes advantage of city land that has been abandoned, and (4) “Education” uses schools or other locations where experiential and educational UA can occur (Seoul Metropolitan Government, 2014).

Since setting up the ordinance in 2011, the municipal government has come up with relevant supportive measures, such as lending support for creating vegetable gardens on rooftops of 267 buildings and providing 43,785 box-typed vegetable pots for 15,866 places (Seoul Metropolitan Government, 2015a). Such efforts led the surge in UA in the city: in 2011, a total of 29-ha land was reserved for UA, but the area mostly quadrupled to 118 ha as of the end of 2015, which constitutes 0.2 percent of the city's total area. Noteworthy is that around 35 percent of this land is in some leftover spaces within the downtown or schools in the city while the rest is located in its suburban regions, which means that both the *peri*-UA and the intra-UA have grown at the same time.

As shown in Table 1, the Seoul city government has also extended

Fig. 1. Four main types of UA by the Seoul Metropolitan Government.
(a) Housing UA on an apartment rooftop using box gardens; (b): In-city UA on a public rooftop;
(b) Farm-park UA on large plots that private entities offer to applicants; and (d): Educational UA providing training and experiences to citizens.