A Study of Korea Garden Industry's Profile and Development Direction

Junghoon Ki*

Department of Public Administration, School of Social Science, Myongji University, Seoul 03674, Korea

Abstract

In 2013, the Suncheon Bay Garden Expo was successfully accomplished in Korea. This has increased Koreans' interest in garden and its industry. Although Korea central and local governments make efforts to support the garden industry, there isn't a sufficient data or statistics for the garden industry and its economic impacts. It is necessary to make a practical and meaningful definition and range of garden industry in Korea. This study is designed to overcome these problems by defining a garden and the garden industry, estimating garden industry's statistics, and pointing a favorable direction of the industry. According to Huh et al. (2015b), the garden industry is defined with garden material production, garden service and distribution, and garden tourism. Estimating based on this definition and range, Korea's garden industry generates 1.2 billion dollars in production, 1.5 billion dollars in distribution, and 80 million dollars in tourism (consumption). In total, about 2.7 billion dollars are generated in the garden industry in Korea. I suggest three strategies for a favorable development in Korea garden industry. First, in garden material production, private gardens need management improvement, while public gardens and Korean traditional gardens need government sustainable supports and R&D. Second, in garden distribution, a specific role should be assigned in Korea Agro-Fisheries & Food Trade Cooperation aT Center to connect the garden industry and distribution sectors. Third, a government-leading new industrial strategy should be made to promote consumption and tourism in the garden industry in Korea.

Key words: *aT Center, garden distribution industry, garden production industry, garden tourism, industrial strategy*

I. Introduction

As the Suncheon Bay Garden Expo was successfully held in 2013, Korea has seen a rapid increase in attention towards gardens that offer eco-friendly places to relax and enjoy leisure activities. The Korean government and local municipal authorities have also expanded their support to the garden industry. In particular, the United Kingdom, Australia, New Zealand, and other advanced countries with a long history of gardening have developed the industry into an "urban-rural convergence industry" led by horticulture, especially floriculture and urban agriculture. (Huh et al., 2015b) This shows that the garden industry has a great potential to be developed further by converging and integrating horticulture, forestry and landscaping.

The modern concept of the garden industry was built in the middle of the 19th century, and developed along with gardenesque type (John Loudon), wild garden type (William Robison) and cottage garden type (Gertrude Jekyll) in England and British colonies (the United States and the British Commonwealth). The industry has been developed recently as part of the floriculture industry along with flower garden type. (Huh et al., 2015b) Advanced countries have well established the structures and statistics of the garden industry through related organizations—for instance, in the United Kingdom, the Horticultural Trade Association (2012) and the i2i Events Group (2014). While advanced countries have made efforts to analyze and develop related cultures and businesses for a long time, Korea is yet at an early stage in terms of understanding the status of the garden industry and conducting statistical surveys. In addition, under the Ministry of Agriculture, Food and Rural Affairs (MAFRA), both the Rural Development Administration (RDA) and the Korea Forest Service (KFS) are competing each other to administer the garden industry, which remains as a barrier to the development of the industry.

This study will review directions for analyzing and addressing

Received on December 9, 2015. Revised on January 17, 2016.

Accepted on January 20, 2016.

*Corresponding author: johnki@mju.ac.kr

This paper is partially revised from "A Study on Promotion and Development Plans for the Korean Garden Industry" written by Geunyoung Huh, Junghoon Ki, Jaeil Song, Inhye Kim, Wansoon Kim, Aekyeong Lee, et al. 2015b funded by the Ministry of Agriculture, Food and Rural Affairs in 2015.

such issues in the garden industry as follows: First, this study will define a garden and the scope of the industry in detail, and, based on the definition, suggest the identity and directions for the industry in Korea. Second, the current status of the Korean garden industry will be reviewed. As statistical surveys for the Korean garden industry have not been conducted officially as of now, its size and status will be estimated by analyzing the horticulture, landscaping and forestry sectors. Third, this study will suggest development directions for the garden industry based on the definition and reviewed status.

II. Practical definition of gardening and scope of garden industry

The dictionary definition of a garden is a piece of land next to a house, with flowers, vegetables, and other plants. This is a classical definition, and its definition is mainly limited to “private garden” today. Gardens can be grouped into private gardens and public gardens, and the latter include botanical gardens, arboretums, and private gardens that are open to the public (Huh et al., 2015a). Private garden can be defined as a ‘piece of land next to a house, with flowers, vegetables, and other plants’ or a ‘land used to grow flowers, vegetables, herbs, fruits or ornamental plants’. Public gardens are those having various public values, and pursuing one or a couple of purposes among scientific research, conservation, exhibition, education, etc., and they include botanical gardens, arboretums, and private gardens that are open to the public.

In order to define the scope of the garden industry, the activities of gardeners, who are the final consumers in the industry, and garden tourism (or garden visits) need to be reviewed in advance. Gardeners herein are those who are or will be engaged in gardening activities. Hence, gardening activities and garden tourism can be defined and the scope of the garden industry can be limited as follows:

Gardening activities include activities that are involved with designing and building a garden on a land; planting plants and managing gardens; enjoying leisure time such as appreciating, socializing and relaxing; and visiting gardens or gardening shops for the purpose of enjoying leisure time or obtaining materials and information. In other words, gardening

activities in the 21st century include garden tourism as well as conventional gardening activities. Thus, the scope of the garden industry covers businesses related to gardening materials and services as well as garden tourism (Huh et al., 2015b).

III. Size and current status of Korean garden industry

The garden industry can be grouped into the following three sectors—gardening materials including plants, fertilizers, pesticides, gardening tools, furniture, etc.; gardening services including building and managing gardens; and garden tourism such as visiting gardens and garden centers. The Korean garden industry, however, lacks related statistics and analysis focusing on gardening unlike the United Kingdom.

Therefore, available statistics in Korea were herein integrated and analyzed based on the abovementioned scope of the industry. Sectors related to the garden industry were selected and grouped into gardening materials production and service, and garden tourism including garden visits and education, and each was sub-categorized into horticulture, landscaping and forestry as shown in Table 1¹⁾. The production output of gardening materials and the economic effects of garden tourism were estimated as shown in Table 2 based on the statistics of the Korean Statistical Information Service and the MAFRA (Ministry of Agriculture, Food and Rural Affairs), and the forest products statistics of the KFS (Korea Forest Service). Due to the lack of official statistics on gardening services such as building and managing gardens, they were not included in this economic feasibility analysis.

1) Table 1 referred to the following statistic information.

- (1) Korea Association of Botanical Gardens and Arboreta. 2012. Estimating the Economic Impact of Botanic Garden and Arboretum. Korea Forest Service.
- (2) Korea Agro-Fisheries & Food Trade Cooperation. 2014. 2013 year Distribution Statistics Summary. Ministry of Agriculture, Food and Rural Affairs.
- (3) Ministry of Agriculture, Food and Rural Affairs. 2014. 2014 year Agricultural Major Statistics. 2014 Flower Cultivation Investigation Manual. Ministry of Agriculture, Food and Rural Affairs.
- (4) Ministry of Agriculture, Food and Rural Affairs. 2015. Master Gardener Operating Manual. Jeonju: The Rural Development Administration.
- (5) National Statistical Office. 2015. e-National Index (<http://www.index.go.kr>). National Statistical Office.

Table 1. Garden Industry's Category and Contents.

Category		Contents	Horticulture	Landscape Architecture	Forestry	etc
garden material production & service	production	- garden plant material & tool production industry - garden production based research & education	- private garden activities; flowers, vegetables, potato, sweet potato, corn, grass, etc.	- garden construction & management oriented materials & tools production	- public garden & private garden: landscape tree, wild flowers production	- garden R&D - garden education
	logistics	- garden plant material & tool distribution industry	- flowers, vegetables, grass distribution	- garden construction & management oriented materials & tools distribution	- landscape forest product distribution	- garden stones, farming tools, fertilizer, pesticide, etc.
garden tourism	consumption	- garden tourism - garden consumption based research and education	- botanical garden based garden tourism, research, & education	- park, historical garden, ecological garden tourism, research & education	- arboretum based tourism, research, & education	- garden facilities tourism

Table 2. Garden Industry's Statistics by Category (2013 year) (unit: \$1=W1,000).

Category		Contents	Horticulture	Landscape Architecture + Forestry	etc	Total Amount
garden material production & service	production	- garden plant material & tool production industry - garden production based research & education	\$1.08 billion* (W1,080 billion) (2014 year Agricultural Major Statistics, 2014 Flower Cultivation Investigation Manual)	\$0.1155 billion* (W115.5 billion) (National Statistical Portal)	\$1.1 million (W1.1 billion) (the Ministry of Agriculture and Forestry, 10% of Farm Value Promotion R&D)	\$1.1966 billion (W1,196.6 billion)
	logistics	- garden plant material & tool distribution industry	\$0.8845 billion (W884.5 billion) (45% of Agricultural Distribution Cost, 2013 year Distribution Statistics Summary)	\$94.5 million (W94.5 billion) (45% of Agricultural Distribution Cost, 2013 year Distribution Statistics Summary)	\$0.4903 billion* (W490.3 billion) (e-National Index, http://www.index.go.kr/)	\$1.4693 billion (W1,469.3 billion)
garden tourism	consumption	- garden tourism - garden consumption based research and education	\$82.8 million (W82.8 billion) (Korea Association of Botanical Gardens and Arboreta, 2012)**			\$82.8 million (W82.8 billion)

*Estimated under the assumption that 10% of total agricultural production comes from the garden industry

**Replaced with economic impact of total botanical garden and arboretum in Korea

1. Gardening materials and services

The production sector of the garden industry can be sub-categorized into horticulture, landscaping and forestry. First, horticulture involves mainly private gardening activities, and includes flowers, vegetables, potato, sweet potato, corn, grass, etc. Flowers are divided into cut-flowers, pot-plants, flowering plants, bulbs and tubers, seed plants, flowering trees, and ornamental trees and shrubs. Given that cut-flowers are cut for the purpose of selling (The Department of Horticulture Management of the MAFRA, 2015), cut-flowers were viewed to have a little relation with the garden industry and excluded

in the estimated production output. Vegetables, corn, potato, sweet potato and grass were included in the output as they are key plants in the industry.

Second, the production output of landscaping herein includes gardening materials and tools. Third, the forestry sector includes the production of trees and shrubs centering on private and public gardens considering that some of this sector is overlapped with the landscaping sector. The landscaping and forestry sectors include saw timbers, bamboo shoots, bamboos and landscaping materials, and landscaping materials include landscaping trees, potted trees, wild flowers, etc. Once public

and private gardens are distributed widely going forward, they will be built mainly with herbaceous plants, trees and shrubs unlike urban parks, and the production of gardening materials will increase greatly. Other production areas include research and development activities as well as education related to gardening.

The logistics sector of the garden industry was herein divided into as follows: First, the horticulture sector includes distributing flowers, vegetables, grass, etc. Second, the landscaping sector includes gardening materials and tools. Third, the forestry sector includes forest products for garden planting. Others such as garden stones, farming equipment, fertilizers and pesticides were also included in the logistics sector.

2. Garden tourism

In terms of consumption in the garden industry, garden tourism should be reviewed mainly, and this is because some part of garden-related research and education activities are conducted by garden tourism or related organizations. (The Horticultural Trade Association, 2012) Garden tourism including consumption of tourism as well as education were herein divided into as follows: First, the horticulture sector included herein botanical garden tourism, research and education. Second, the landscaping sector included tourism of park, historic garden, and ecological garden, and research and education. Third, the forestry sector included arboretum tourism, research and education. Others such as tourism of museums and art museums that have gardens were also included.

In terms of garden tourism in Korea, there has been no sufficient data collected nation-widely unlike Australia does. The Korea Arboretum and Botanical Garden Association, however, estimated that the total economic effects of arboreturns and botanical gardens in Korea would be 82.9 billion won in 2012.

1) Public garden visits

The number of public garden visitors was 1,700,000 for Daegu Botanical Garden and 1,120,000 for Hanbat Arboretum. Both are located close to a large city and their entrance fee is free. On the other hand, the number of visitors for Hwasung Botanical Garden and Wando Arboretum, of which entrance is

charged, were 168,000 and 102,000 respectively. The number of privately-owned public gardens was on average over 100,000 — Chollipo Arboretum 195,000; Hantaek Botanical Garden 118,000; Kohwun Botanical Garden 100,000; Pyeonggang Botanical Garden 132,000; and Jade Garden 133,000. On the contrary, the Garden of Morning Calm featuring ornamental flowers and unique garden style has had 900,000 visitors. Most public gardens, except some, have less than 500,000 visitors and in order to conserve and research such public gardens and to increase their financial self-reliance, more visitors should be attracted through various services such as garden exhibition, promotion and marketing activities.

2) Flower and garden expo visits

The International Horticulture Exhibition in Goyang, Korea was held first in 1991, and its size was expanded as an international expo in 1997. It has been held 9 times by 2015, and since 2012, the Exhibition has been held annually. Its early exhibition was more like an flower industry expo, but more recently it has been integrated with various features such as cultural flower and garden exhibitions and performances. Its total budget was 5.1 billion won in 2012, 3.5 billion won in 2013, and 3.5 billion won in 2014.

The Goyang Horticulture Exhibition is held on the site of 150,000m² three times larger than the Chelsea Flower Show of the 45,000m² size in the United Kingdom. The number of visitors of the Goyang Exhibition is around 500,000 per year on average (568,339 in 2012, 553,912 in 2013 and 451,002 in 2014). The Chelsea Flower Show has a charity fundraising event, of which cheapest entrance fee is around 500,000 won. The entrance fee of the Goyang Horticulture Exhibition, however, is 10,000 won per adult.

Like in the Glee Garden Retail Show in the United Kingdom, flowers and plants are traded in the Goyang Horticulture Exhibition, and the export contracts of 33,154,000 US dollars (38.7 billion won) were signed in 2012, 31,060,000 US dollars (36.3 billion won) in 2013, and 34,400,000 US dollars (40.2 billion won) in 2014.

3) Garden education

The Royal Botanical Gardens Kew, Royal Horticultural

Society Wisley Garden, and Royal Botanic Garden Edinburgh in the United Kingdom offer paid garden education programs for both local residents and foreign tourists. In Korea, several organizations also offer green education programs including the Master Gardener Program of the RDA; the Arboretum Professional Program of the KFS; the Landscaping and Garden College and Citizen Gardener Program of the Gyeonggi Green and Agriculture Foundation; the Seoul Landscaping Academy; the Seoul Gardener School and etc.

The Master Gardener Program that the RDA offers now was first started in 1973 in the United States and 49 states among 50 states have such master gardener programs and around 100,000 people join them. In Canada, the program was first adopted in 1996, and 6 out of 10 provinces offer such programs and around 2,000 people work as master gardener. In Korea, the Master Gardener Program was organized by the RDA and the Jeju Agricultural Research and Extension Services started the program in 2011, followed by Gyeonggi in 2012, Yangju in 2013 and Goyang in 2014. As of 2014, 207 master gardeners were graduated from the program (MAFRA, 2015).

In addition, in order to spread the Master Gardener Program throughout the country, the RDA provided the Coordinator Program for local agricultural development agencies. Under the program, 14 people were selected from local offices of the Agricultural Research and Extension Services (Seoul, Busan, Daegu, Dalsung, Gwangju, Suwon, Goyang, Pocheon, Buyeo, Yeosu, Yeongju, Sangju, Kimhae, Jinju, etc.) and they joined a conference on the Master Gardener Program held in Taean Chollipo Arboretum in Chungnam, Korea for 2 nights and 3 days (June 10-12, 2014). To promote the Master Gardener Program further, the RDA allocated the budget of 500 million won for the year of 2015 to 10 local offices of the Agricultural Research and Extension Services (Seoul, Busan, Daegu, Gwangju, Ansan, Cheongju, Cheonan, Sangju, Kimhae, Jeju), and for 2015-2016 each office with the government budget of 50 million won will nurture master gardeners who will lead the advanced gardening culture through productive leisure activities (Oh, 2015).

In line with that, the Korea Master Gardener Association acquired the permission of incorporation (Rural Development Administrator Permission No. 129) on October 1, 2014, and the purposes of its foundation are to establish ideology and

philosophy for Korean master gardener; develop and spread master gardener programs; plan and adjust related events and projects; facilitate international cooperation and exchange activities; and other roles required by the permission mentioned above.

The Arboretum Professional Program of the KFS is now operated by three arboretums and botanical gardens that acquired a license from the KFS. Among them, the Chollipo Arboretum offers the program funded by the KFS and professionals who graduate the program receive a certificate from the Arboretum and additional points when they apply for a job in the Arboretum. The Chollipo Arboretum was the first one who acquired a license from the KFS in 2009 as an education institute for arboretum professional education programs, and, before that, it had started to nurture arboretum professionals and produced 203 trainees in total up until 2013.

The Landscaping and Garden College of the Gyeonggi Green and Agriculture Foundation trained 5,810 students from 2006 to the first half of 2015, and the tuition fee per person was 650,000 won (400,000 won funded by the Foundation, and 250,000 won paid by student). Under its Citizen Gardener Program, 306 people received an education certificate from the Governor of Gyeonggi Province between 2013 and 2014 (Gyeonggi Greenbelts Conservation Municipal Ordinance Article 21 paragraph 2) and the tuition fee per person was 750,000 won (500,000 won funded by the Foundation and 250,000 won paid by student).

Seoul planned to set aside its budget of 15 billion won for 5 years from 2013 for the “Seoul Becomes a Flower” campaign, and actively encourages citizens to join green and gardening activities and offers the Citizen Landscaping Academy and the Seoul Gardener School for 700 people annually (Kim, 2015).

3. Garden industry statistics

Based on the collected statistics related to the garden industry, the production output of the garden industry was approximately 1,196.6 billion won, logistics 1,469.3 billion won, and consumption 82.8 billion won, and the total output was around 2,748.7 billion won, which was a whopping 3 trillion won. The figure, however, was calculated by assuming that the garden industry would take up around 1/10 of the gross agricultural output, so that the total output of the garden

industry is expected to surpass the figure. In detail, the horticulture sector accounted for 1,081 billion won out of the production output (Ministry of Agriculture, Food and Rural Affairs, 2014), the landscaping and forestry sectors 115.5 billion won (National Statistics Office, 2015), and others 1.1 billion won. In terms of the logistics output, the horticulture sector accounted for 884.5 billion won, and the landscaping and forestry sectors 94.5 billion won if assuming that the industry would take up 45% of the gross agricultural logistics output (Korea Agro-Fisheries & Food Trade Cooperation, 2014.) Others such as garden stones, farming equipment, fertilizers and pesticides accounted for 490 billion won.

IV. Development directions of Korean garden industry

The current challenges that the Korean garden industry faces will be first discussed and future development directions will be suggested based on them.

1. Current challenges

The current challenges that the Korean garden industry faces in the way for the promotion and development of the industry can be grouped into production, logistics, consumption and tourism sectors as follows.

First of all, in terms of the production of gardening materials, the awareness level of horticultural farms on the garden industry is very low. This means that horticultural farms even do not know what plants they can supply to gardens or do not want to plant them at all. Worse yet, the government has not sufficiently invested in gardening facilities. Private gardens lack the management ability and their management conditions have worsened. The government has no statistics on the production output of the garden industry. At the same time, parts of the industry (horticulture, landscaping and forestry) do not properly cooperate with each other. From the global perspective, countries who reserve gardening plants started to strengthen their protection policy and the destruction of the eco-system by climate changes has been threatening the production foundation of the garden industry.

Second, the logistics sector also lacks related statistics, but

this challenge can be easily addressed with the growing awareness and the development of the garden industry. The bigger problem, however, is that its logistics system has not been properly established, which should be immediately fixed. Again, each part of the industry (horticulture, landscaping and forestry) should closely cooperate with each other.

Third, the consumption and tourism sectors face similar challenges. There is not enough statistics on this sector and the close cooperation and coordination is also required within the industry. In addition, it is important to develop and spread gardening culture especially for garden tourism.

2. Improvement plan

The promotion and development plans for the Korean garden industry will be discussed herein by each sector including production, logistics, consumption and tourism.

First, for gardening materials production, it is recommended to establish a support system for the improvement of management conditions of private gardens and for the distribution of public gardens. Korea's traditional garden styles should be further developed and supported. From the government side, international cooperation for the protection of biological resources related to gardens needs to be strengthened, and infrastructure to support domestic production should be expanded. The government should set up a control tower to administer the garden industry and provide related statistics. In this process, it is recommended to establish the collaboration system between industry, academia, government and research fields, and to enhance competitiveness through an evaluation scheme for gardens.

Second, for garden logistics, the Korea Agro-Fisheries and Food Trade Corporation (aT Center) needs to have a bigger role in expanding connectivity between the garden and logistics industries. Starting from this, supporting infrastructure for logistics related to the garden industry should be expanded, and statistics surveys should be regularly conducted. Promotion activities and marketing strategies will also help further develop the logistics sector.

Third, in order to promote garden consumption and tourism, it is recommended to establish the sixth industry strategies to cover experience and education activities. Supporting infra-

structure for domestic consumption and statistics related to garden consumption should be established. At the same time, legal and institutional frameworks should be enhanced to designate national and local gardens and to facilitate collaboration between garden-related sectors.

Public awareness on the garden industry can be also raised through various activities such as promoting garden culture, planning marketing strategies, nurturing garden professionals and creating related jobs. It is also required to develop garden-welfare infrastructure for the public and programs for expanding the welfare functions of gardens. Lastly, it is recommended to expand the platform for garden cultures, to specialize gardens for added values, and to strengthen the network between private organizations related to gardens. By doing so, garden consumption and tourism will be accelerated sooner.

V. Conclusions

This study recognized the growing attention toward the garden industry in Korea, and define the meaning and characteristics of a garden and the garden industry. Based on the definition, the current status and basic statistics of the industry were analyzed and its ideal future directions were suggested. According to the definition set out in the paper of Huh et al. (2015b), the scope of the garden industry was determined as materials and services required for gardening activities, and garden tourism. Based on the scope, the production output of the garden industry was around 1,196.6 billion won, logistics output 1,469.3 billion won, and consumption 82.8 billion won, and the gross output was 2,748.7 billion won, which was close to a whopping 3 trillion won. The figure was below that of other advanced countries such as the United Kingdom and Japan, but given the fact that the scope and output is expected to increase, government agencies, local municipal offices and private sector should thoroughly plan and prepare for this.

For the ideal development of the garden industry, this study suggested three strategies as follows: First, the production sector of gardening materials is recommended to improve the

management conditions of private gardens; to establish supporting systems for the distribution of public gardens; and to further research and support Korea's traditional garden styles. Second, for the logistics sector, administrative agencies such as the Korea Agro-Fisheries and Food Trade Corporation (aT Center) need to have a bigger role in expanding connectivity between gardening and logistics industry. Third, in order to promote garden consumption and tourism, it is recommended to establish the sixth industry strategies to cover experience and education activities.

VI. References

- Kim, W.S. 2015. Horticultural Garden Industry's Size and Prospect. Korea Flower Industry Network and Industrialization Symposium. pp. 29-38.
- Huh, K.Y., J.H. Ki, J.I. Song, I.H. Kim, E.J. Cho, and K.S. Hur. 2015a. A Role Setting for Horticulture in Garden Industry with Interpretation of Related Laws. Jeonju: The Rural Development Administration.
- Huh, K.Y., J.H. Ki, J.I. Song, I.H. Kim, W.S. Kim, and A.K. Lee. 2015b. Garden Industry Promotion and Development Strategy. Ministry of Agriculture, Food and Rural Affairs.
- i2i Events Group. 2014. The UK Garden and Leisure Market -Your Independent and Authoritative Report on the UK Retail Market for Garden and Leisure. i2i Events Group.
- Korea Association of Botanical Gardens and Arboreta. 2012. Estimating the Economic Impact of Botanic Garden and Arboretum. Korea Forest Service.
- Korea Agro-Fisheries & Food Trade Cooperation. 2014. 2013 year Distribution Statistics Summary. Ministry of Agriculture, Food and Rural Affairs.
- Ministry of Agriculture, Food and Rural Affairs. 2014. 2014 year Agricultural Major Statistics. 2014 Flower Cultivation Investigation Manual. Ministry of Agriculture, Food and Rural Affairs.
- Ministry of Agriculture, Food and Rural Affairs. 2015. Master Gardener Operating Manual. Jeonju: The Rural Development Administration.
- National Statistical Office. 2015. e-National Index (<http://www.index.go.kr>). National Statistical Office.
- Oh, D.M. 2015. Korea Master Gardener's Present and Future. J. Korean Soc. People Plants Environ. 18(3):191-195.
- The Horticultural Trade Association. 2012. Rising To The Challenge -HTA Marketing & Communication Strategy 2012-2015. The Horticultural Trade Association.