

Print ISSN: 2288-4637 / Online ISSN 2288-4645
doi: 10.13106/jafeb.2014.vol1.no4.15.

Proposal of Eco-M Business Model : Specialty Store of Eco-friendly Agricultural Products Joined with Suburban Agriculture*

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[Received: August 16, 2014 Revised: October 23, 2014 Accepted: November 14, 2014]

Abstract

The main purpose of the research is to suggest a new business model of direct distribution of organic agricultural products cultivated in suburban area. To secure competitiveness, logistics cost reduction is important through direct transaction of organic agricultural products cultivated on suburban area. The research addresses food safety, farmers' income and unemployment issues with Eco-M business model.

The research methods include investigation on the followings: current domestic agriculture; related problems on the existing literature reviews; the current status of suburban agriculture; specialty store of eco-friendly agricultural products.

Eco-M business model can solve various problems of suburban agriculture supply system, challenges of organic farming specialty stores, unemployment issues, and difficulties of processing verticalization.

Future research should include followings. First, there should be comparative analysis between businesses of environment-friendly specialty stores through suburban agriculture and producer's agriculture connected with organic farming market. Second, it is required to develop strategy of environment-friendly specialty stores. Finally, analysis of the potential of Sextic industries is necessary throughout production-process-service process.

Keywords: Eco-M, Business Model, Eco-friendly, Agricultural Products, Suburban Agriculture.

JEL Classifications: L11, L22, M13, Q12, Q13.

1. Introduction

Currently, product boundaries have been vanished throughout the world and a global market has been emerged, and securing agricultural competitiveness is becoming a core task as South Korea is facing strong requests of external opening through South Korea-United States FTA, South Korea-China FTA, etc. Furthermore, with a big difference between domestic agricultural competitiveness and agricultural developed countries, there are serious issues to be solved out as decreased farm income, elderly agricultural society, phenomenon of young adults' leaving rural area, traditional small farming structure, and the gap between urban and rural lives.

At this point, with announcing promotion of activating urban agriculture, the government is suggesting policies to solve problems through Sextic industry, and each local government is also showing a lot of interests and invest to suburban agriculture. Also, with a five-day workweek, urban residents' interest not only in leisure but also in agriculture is getting bigger and though it's a small quantity, phenomenon of young adults' returning to farm even occurs, so it's an encouraging situation of expanding participation in suburban agriculture.

The main purpose of the research is to suggest a new business model of direct distribution of organic agricultural products cultivated in suburban agriculture for domestic agriculture facing many difficulties in radically changing global market to get competitiveness. Recently, research on suburban agriculture and organic food is increasing. Suburban agriculture needs strategic promotion such as increase of kitchen garden supply and active relationship between consumer and producer Kim et al. (2010). Jeon (2001) and Lee (2012) suggested a variety of plans that can promote city agriculture in Gyeongnam and Daegu area. Lee et al. (2022) and Yoo (2011) demonstrated winning cases and drivers of success factors in organic food market and organization of organic marketing. Yoo (2011) suggested strategy for direct transactions of organic agricultural products. For researches of customer response on organic food, many researchers (e.g. Choi & Lee, 2012; Jo & Yoo, 2009; Kim et al., 2013; Kim et al., 2013; Yang & Han, 2014) suggest rationales on consumers' purchasing intention and selection criteria on their behavior.

* This paper was presented at the KODISA 2014 Summer International Conference. The comments and suggestions from three anonymous reviewers have been incorporated in the paper.

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Specifically, with securing competitiveness by logistics cost reduction through direct transaction of organic agricultural products cultivated based on suburban agriculture, the research is trying to solve the current problems by supplying safe foods to consumers who are sensitive in food safety, and contributing to increase the income of farmers by vigorous interchanges with Sextic industry as farm experience and making urban residents participated in agriculture to narrow the gap between urban and rural lives, and solve social problems of youth unemployment and early retirement by creating new jobs through Eco-M business model of joining suburban agriculture with specialty store of environment-friendly agricultural products.

The research methods included investigating the current domestic agriculture and related problems on the existing literature reviews and see the current status of suburban agriculture and specialty store of environment-friendly agricultural products, and find whether it's applicable to make a business model by joining eco market as a sales point with suburban agriculture through the analysis of internal and external success cases.

2. Theoretical Background

First, if we see the current status of domestic agriculture, ag-

ricultural area covers 18.4% of the total territory and cultivating area is 0.6ha for each person and agricultural population is decreased down by radically aging phenomenon. In detail, though agricultural productivity and agricultural GDP are showing growing trends, the rate of agricultural GDP comparing to the gross value added is showing a decrease trend. So we find that agriculture falls behind the growth of other industries. Also, agricultural population was 2,912,000 people in 2012 decreasing 34% from 4,400,000 people in 1998 and cultivating area also was decreased down to 10% from 1,910,000ha in 1998 to 1,730,000ha in 2012.

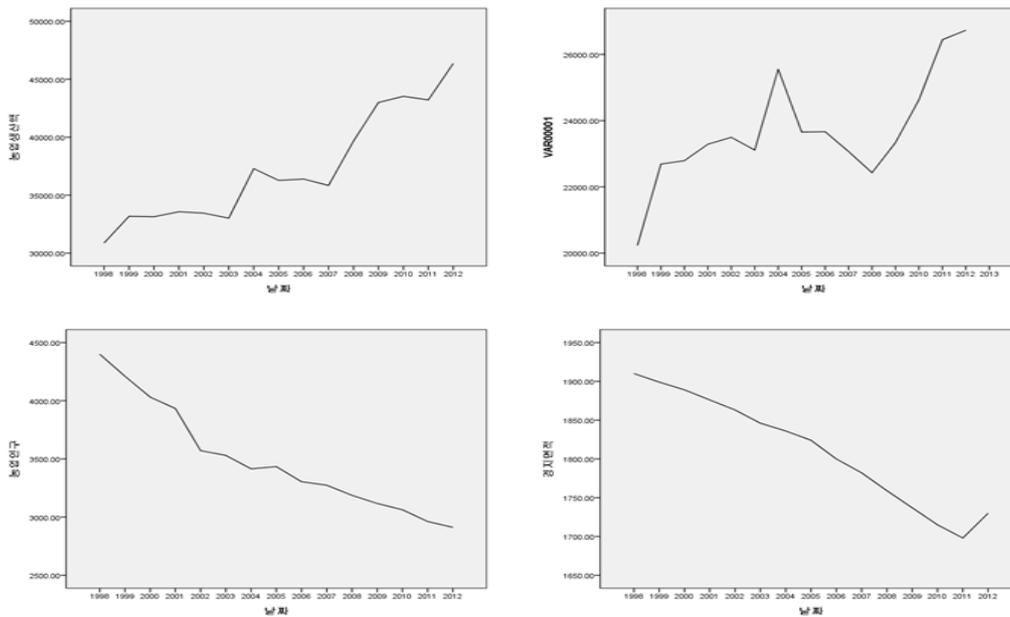
Meanwhile, if we see the current agricultural status of developed countries, China is on the top of GDP level in agriculture, forestry and fishery and India, USA and Indonesia are following it. Concretely, GDP level of China in agriculture, forestry and fishery is showing a big growing trend every year and it's the same for Indonesia and Argentina. However, if we see the agricultural population per country, it shows that even though the world population is growing trend constantly, agricultural population of main countries like South Korea is stagnant or decreased. For example, in China, agricultural population of 731,312 was appeared to be decreased 3.2% to 715,845 in 2011.

<Table 1> Annual status of domestic agriculture

(Units : One billion won, One thousand people, Thousand hectares)

Year	Agricultural Output	Value-added	Gross value-added ratio	Agricultural population	Cultivated Area
1998	30,870	20,232	4.6	4,400	1,910
1999	33,177	22,689	4.8	4,210	1,899
2000	33,140	22,790	4.4	4,031	1,889
2001	33,568	23,288	4	3,933	1,876
2002	33,445	23,495	3.7	3,571	1,863
2003	33,016	23,111	3.4	3,530	1,846
2004	37,289	25,555	3.4	3,415	1,836
2005	36,273	23,655	3	3,434	1,824
2006	36,389	23,666	2.9	3,304	1,800
2007	35,837	23,068	2.6	3,274	1,782
2008	39,663	22,427	2.4	3,187	1,759
2009	42,995	23,336	2.4	3,117	1,737
2010	43,523	24,629	2.3	3,063	1,715
2011	43,214	26,442	2.4	2,962	1,698
2012	46,357	26,729	2.3	2,912	1,730

Note) source of data : Ministry of Agriculture, Food and Rural Affairs, 『Statistical Yearbook of Agriculture, Forestry and Food』



<Figure 1> Results of annual time-series analysis of domestic agriculture

About South Korea' current agricultural status, Kim et al. (2013) pointed out that it's required to develop technologies against global warming to stabilize cultivation and also develop and supply agricultural techniques to control carbon dioxide as issues of global warming and food crisis are spreading throughout the world. Especially, food crisis is related to food security of agricultural importing countries or famine of developing countries. Yoon (2010) also pointed out in the research of future development model for agriculture and rural lives that the structural problems of South Korea's agriculture and rural lives are from the typically small scale of agriculture, elderly rural population by developed medical technologies and increased interest in health, phenomenon of young adults' leaving rural area by urbanization. And he also discussed that changed food preference pattern, developed information and communication technology and the low marketing ability of domestic farmers comparing to distribution enterprises like the big-box retailers cause slow creation of nonfarm income even though increased experience tours were activated by urban residents' leisure and hobbies.

So, main domestic agricultural problems are as below. First, decreased agricultural cultivation due to expanded open market as WTO and FTA, and typically small scale of domestic agriculture, second, broaden gap between urban and rural lives, and decreased agricultural income and increased dept, third, elderly agricultural society and decreased farm families by leaving rural area, fourth, weakening of food security and decreasing food self-sufficiency continually.

Various solutions are suggested to solve these problems. After reviewing research reports, the main problems below should be solved first to revitalize domestic agriculture. First, aging population. Second, decreasing farm families. Third, leaving

rural area. Fourth, farm household debts and typically small scale of agriculture. Yoon (2010) suggested that these problems can be solved out by suggestions below. First, secure rural household incomes and increase nonfarm income. Second, shared labour. Third, solve out issue of aging population and leaving rural area by blocking and systemization of agriculture. Fourth, develop domestic agriculture by stable supply of agricultural products. Also he insisted that in terms of creating new values and revival of local economy, agriculture can be developed as Sextic industry by business perspectives of settling fusion&complex agriculture that there will be win-win opportunities for urban-rural areas and a major step forward in related industry, releasing consumer centered products to meet customer needs by increasing communities for both of consumers and producers, and increasing farm income by minimizing distribution network of agricultural products.

The research is to suggest Eco-M business model joined with suburban agriculture as a method of solving domestic agricultural problems. Suburban agriculture is defined to be a small scale agriculture in urban area. You (2000) defined it as a concept of complex industries by adopting process and service concept of secondary and tertiary industries based on agriculture with production concept as a meaning of primary industries in spatial concept as a rural area in cities. Kim (2002) defined it as an alternative agriculture to solve environmental issues in cities by environmental approach.

Gwon and Choi (2005) defined it as an appearance of new paradigm toward sustainable ecological community in cities for emphasizing functional aspects and considering various trends of agricultural activities. Meanwhile, With the establishment of <ACT ON FOSTERING AND SUPPORTING CITY AGRICULTURE> in 2011, city agriculture is defined as "a behavior of cultivating or

planting crops using various living spaces as lands and buildings in cities, and the range of city agriculture is a behavior of cultivating or planting crops for hobbies, leisure, learning or experiences using various living spaces as lands and buildings in cities at number 1 under article 2 of <ACT ON FOSTERING AND SUPPORTING CITY AGRICULTURE>.”

Pros and cons of suburban agricultures are as below. first of all, the advantages are social function of forming communities and creating new values in aging society, economic function of supplying safe agricultural food, job creation and enhancing food self-sufficiency, ecological function of beautifying city scenery and improving atmospheric environment in cities. Kang et al. (2007) described that the advantages of suburban agriculture are, in terms of preserving city environment, supplying agricultural products to urban population as well as functioning as an absorber of rainwater, promoting circulation, preventing city warming, and air cleaning and becoming one of the methods to solve environmental climate issues of environmental pollution and green-house gases, and social aspects of contributing to recover community spirit by using vegetable garden in downtown as a place of local community.

However, most of suburban agricultural places are located at the outskirts of cities, so the accessibility is relatively not easy and it's hard to lease lands with low cost due to lower supply comparing to number of consumers, and the profitability of farmland is lower than commercial land in economic perspective. In spite of these weaknesses, the reason why the research is focusing on suburban agriculture is that there is a limit in development of suburban agriculture without commercialization, and the synergistic effect of business will be considerable by securing sustainable consumers and reforming it as agricultural production base with positive business system to meet consumer needs with adopting various environment friendly cultivation methods as aquaculture.

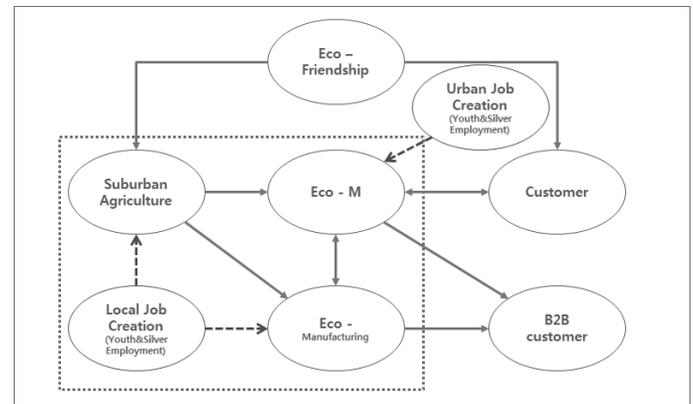
To suggest specialty stores of environment friendly agricultural products connected with suburban agriculture, the current status of specialty organic farming stores operated are informed as below. Domestically, total number of specialty organic farming stores are 1568 in 2007, a big jump from 1091 in 2004 and 352 in 2000. In the past, most of the sales of organic agricultural products were based on direct dealing, but it's decreasing due to growing organic agricultural products market and the importance of distribution through specializing stores and growing big-box retailers (Food Policy Dept, Ministry of Agriculture and Forestry, 2080). And this is the same phenomenon from the growing market breadth of environment friendly agricultural products with 3 trillion won in 2012 and covering 9% of the total agricultural products market.

But as the research of Yoo et al. (2010) pointed out, limited storable products to connect with customers, lack of specialty of specialty stores, lack of marketing know-how and investment from discount stores, lack of role as brokers, absence of horizontal and vertical cooperation for mass supply are huge weaknesses. So it is summarized that the problems of circulation market for organic food are general connectivity with organic

farming market and lack of marketing for organic food. In other words, the problem of connectivity with markets and lack of transparency cause opaqueness in production, process and distribution of organic food, scalable limit due to inefficient organic food business, problem of distribution organization, and absence of positive marketing activities. Kim (2010) also described that excessive social distribution cost, inefficient mediation of collecting and distribution process for organic food, order imbalance due to functional absence of appropriate price formation and standard price have been occurred. For example, while producers are not able to sale their products, end customers face supply issue with lack of product diversities in specialty stores.

3. Business Model

Therefore, the research suggests Eco-M business model as below to solve the above problems and limits.



<Figure 2> Eco-M Business Model

The definition of Eco-M business model applying distribution system of daily fresh food delivery for organic agricultural food produced by suburban agriculture is a business model focusing on local food direct stores or organic agricultural food markets with dual sales channels of a direct delivery to consumers in membership system once or twice a day and sales of environment friendly agricultural products at designated spaces. Details per project entities are shown in <Table 2>.

The main issue of the business model is the shelf life as fresh food. In other words, it's difficult to have competitive price due to the loss of economic value by wasting food if they are not sold out within the expiry date of average ten days after production through suburban agriculture.

<Table 2> Details per project entities

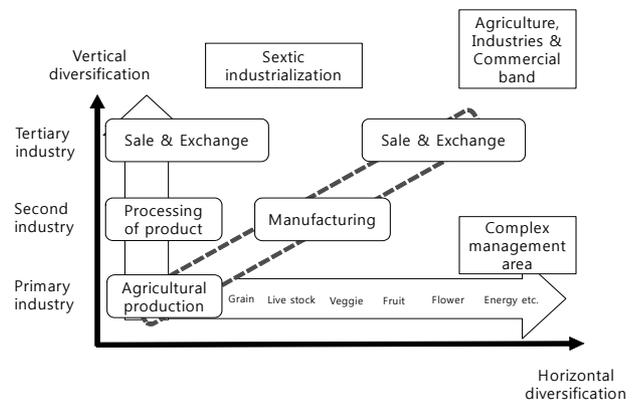
Entity	Purpose and direction
Suburban agricultural complex	<ul style="list-style-type: none"> - producing organic agricultural products applying skills of maximizing outputs per unit as aquaculture - Technical guidance by local government and establishing cooperation system - Establishing available system to supply social enterprises, etc. - Propelling employment for local silvers.
Environment-friendly production and process	<ul style="list-style-type: none"> - Commercializing through processing of uncompetitive products as fresh food, B2B direct sales through processing and producing environment friendly food required from feeding, restaurants, and retail stores. - Job creating for local youths - Planning business stabilization through cooperating with local governments
Eco-M	<ul style="list-style-type: none"> - Shop sales by securing display space for daily fresh foods supplied from suburban agricultural complex - Opening permanently established markets or stores sponsored by local government - Composing social enterprises or cooperative society - Solving stocks by adopting permanent low price supplying system of fresh food to immediate food services as environment-friendly communal food services - Job creation for youths, silvers and vulnerable members of society
Eco-Friendship membership customers	<ul style="list-style-type: none"> - Using daily on-line service for ordering food material and get direct delivery - Using membership program for customers - Giving experiences or chances of participation in suburban agriculture
Customers	<ul style="list-style-type: none"> - Purchasing fresh food from Eco-M stores at any time - Getting experiences on suburban agriculture
Local & central government	<ul style="list-style-type: none"> - Supplying Eco-M spaces (permanent market) - Technical or financial supply for suburban agricultural complexes - Establishing cooperative system for job creation

It is normal for many businesses to reflect the cost of wasting or donating in sales price. One of main strategy of Eco-M business model is to overcome the above concern by "D-2" or "D-3" products sales strategy. For example, by establishing and operating stable inventory handling system, cabbages with 7 days of shelf lives are having 4~5 days of sales period, after the period, they are supplied to pre-contracted environment-friendly communal feeding services by lower price. So it is a win-win system as stores can always be supplied with fresh food while environment-friendly communal feeding services can be supplied foods with lower price.

4. Conclusion

The advantages of Eco-M business are first of all, it's a business model to solve various problems of current suburban agriculture and organic farming specialty stores by current organic farming specialty stores' direct participation in establishing production and supply system through suburban agriculture, and verticalization led by Eco-M. So, not only current issues of high distribution cost and higher price than normal agricultural food will be solved out by Eco-M's organic agricultural food production and specialized distribution system, but also competitiveness will be secured by reflecting consumer needs through forming appropriate prices, balancing of demand and supply, and direct connection. Second, from producer's side of view, it is possible to contribute on improving productivity and quality by producing organic agricultural products with maximizing productivity per unit through aqua-culturing suburban agricultural products and propelling cooperative technology development

connected with local governments. Social problems as local unemployment can be solved out by creating work forces connected with silvers, vulnerable members of societies and propelling youths employment. Finally the mentioned business model above reflects many parts of sextic industrial model as suggested on <figure 3>, so the model will be able to contribute to the development of Sextic industry based on domestic agricultural products.



<Figure 3> Direction of Sextic industrialization based on agriculture¹⁾

Though the research suggests vitalization and potential development of suburban agriculture and also potential business with Eco-M strategy of selling organic agricultural products to consumers through environment-friendly specialty stores connected

1) modified from Kim et al. (2013)'s <Figure 1> p.7

with suburban agriculture, there are some limitations as below.

First, The connection only occurs between suburban agriculture and environment -friendly specialty stores, and there is no analysis of connection between producer's agriculture and environment-friendly specialty stores.

Second, strategic elements about potential development of suburban agriculture and environment-friendly specialty stores should be more specific. Third, there is no concern about inter-arrival issues of negative competition between suburban agriculture with environment-friendly specialty stores and existing organic farming specialty stores or big/small distribution enterprises.

Therefore, future research should include things as blow. First of all, there should be comparative analysis between businesses of environment-friendly specialty stores through suburban agriculture and businesses of producer's agriculture connected with organic farming market. Also, it's required to research about developing strategy of environment-friendly specialty stores as suburban agriculture is already under various developing strategies by the government and local governments. Finally, to sound out potential development of Sextic industries as a form of production-process-service and arrange the basis of successful businesses, variables and scales related with producers, processors and consumers of Sextic industries and also qualified measurements of factors as perception, quality, value, satisfaction and potential should be developed.

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