RECREATING OF THE RURALITY IN THE URBAN FRINGE OF TOKYO METROPOLITAN AREA: A CASE STUDY OF KODAIRA CITY

Toshio KIKUCHI, Taro OISHI and Ryuta SAITOH*

Abstract In this paper we made a point of the rurality in Kodaira City, Tokyo metropolis as a case study of the urban fringe, and discussed about its recreating based on urban and rural establishments such as farm shops. According to characteristics of farm shops in Kodaira City, they are divided into the road side and the gate shops. Road side farm shops have the function that is ensured maintenance of agricultural land use, and their management are large-scale and cooperative including shopkeepers. Their successful development has been ensured with the higher accessibility to urban consumers and much information on their needs. On the contrary, gate shops of farm or farmland are situated within traditional rural settlements, and are small-scale and shopkeeperless establishments. They are supported with convenient and friendly connection between urban and rural residents. Both types have been developed with restructuring of the connection between the urbanity and the rurality in the urban fringe Kodaira City. Therefore, the farm shop is an indispensable establishment for both urban residents and farmers, because it is the node that has connected with the urbanity and the rurality. Furthermore, the reinforcement of this connection has led to not only develop the sustainable rural system, but also to ensure the social sustainability that nested characteristics of urban and rural communities comprehensively.

Keywords: urban fringe, farm shop, rurality, urbanity, social sustainability

1. Introduction

In the metropolitan area, a continuum from urban to agricultural areas are characterised by the concentric structure centring on a metropolitan centre (Bryant et al. 1982). This structure consists of arrangements of concentrated city or core built-up area, urban fringe, urban shadow, and rural hinterland. The areal differences of such structure are mainly related with the impact of urbanisation. Although these impact is diffused from built-up area to urban fringe, urban shadow and rural hinterland, it is most strikingly reflected on land use patterns of urban fringe (Bryant et al. 1982; Kikuchi and Moran 1990). In the urban fringe the same characteristics that make land desirable agricultural land use make it desirable urban land use. According to these conflicts, agricultural land use is decreased

* Ninomiya Publisher Ltd.
with the conversion into urban land use, and the rurality including agricultural land use is declined with the dominance of the urbanity in the urban fringe (Ilbery 1985). The urban fringe is not only characterised by land in the advanced stages of transition from agriculture to urban uses, dominant location of urban-oriented function and land subdivision, but also characterised by an area where although agricultural land use is remained as the landscape, the infiltration of urban-oriented elements is clear as regards the increase of part-time farms and the development of extensive agriculture (Bryant et al. 1982).

In Tokyo metropolitan area, the urban fringe has been characterised by strong conflicts between agricultural and urban land use, and agricultural land use has tended to be drastically reduced since the period of high economic growth in Japan. As a consequence, most of the farmers reduce their investment and intensity for agricultural production, so that most of their farmland is changed to urban land use such as residential and commercial lots, and is left idle land in order to convert it into urban land use with expectation of land price rising. Although the analyses of these land use patterns was one of important issues, restructuring and recreating of the rurality become recently more important theme as one of contemporary issues in rural geography. In this paper we made a point of the rurality as an option of the urbanity in the urban fringe of Tokyo metropolitan area, and discussed about its recreating and restructuring mechanism. Following our discussion, we tried to make clear some conditions and their interaction that supported the rurality as social sustainability in the urban fringe. Although the rurality is a fuzzier concept and atmosphere, it is defined as a socio-cultural phenomenon. Meanings of the rurality are often associated with the character of rural areas, where rural communities occurred. In these areas, environmental and economic aspects were noted expressions of their character and community locations with reference to agricultural production. Because agricultural production has been declined with the advance of urbanisation, the rurality has been generally decreased with the enlargement of urban land use. In the urban fringe, however, the rurality has been maintained and recreated with restructuring some basic elements of the rural area. Therefore, the rurality consists of agricultural production and land use, farmland, and farms and their community. Interconnections among these elements play an important role in development of the rurality (Halfacree 1995; Liepins 2000).

2. Declining of Agricultural Land Use

In Kodaira City, the cultivated farmland decreased drastically both along the Railway of Seibu Line and around the city centre. Under these circumstances, however, the cultivated farmland has been extensively remained in the northern part of this city, and its decrease rate of cultivated farmland has been kept on the lower level than other cities’ in the urban fringe. Several discussions here show that agricultural land use has been extensively remained in this city despite the considerable decrease of farmland around this city, so that this city provides a good case study on recreating and restructuring of the rurality. Kodaira City is topographically located on the Musashino Tablelands, and socio-economically situated in the western suburbs of Tokyo metropolis at distance of about 30 kilometres from the metropolitan centre.
Table 1 Changes of the number of farms, the acreage of farmland and population in Kodaira City, Tokyo Metropolis

<table>
<thead>
<tr>
<th></th>
<th>households</th>
<th>acreage (ha)</th>
<th>population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>the number of farms</td>
<td>the number of full-time farms</td>
<td>the number of part-time farms*</td>
</tr>
<tr>
<td>1950</td>
<td>1,118</td>
<td>707</td>
<td>268</td>
</tr>
<tr>
<td>1960</td>
<td>883</td>
<td>354</td>
<td>265</td>
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<tr>
<td>1965</td>
<td>768</td>
<td>277</td>
<td>305</td>
</tr>
<tr>
<td>1970</td>
<td>697</td>
<td>141</td>
<td>432</td>
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<tr>
<td>1975</td>
<td>635</td>
<td>46</td>
<td>501</td>
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<td>1980</td>
<td>577</td>
<td>43</td>
<td>424</td>
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<tr>
<td>1985</td>
<td>544</td>
<td>23</td>
<td>441</td>
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<tr>
<td>1990</td>
<td>502</td>
<td>42</td>
<td>427</td>
</tr>
<tr>
<td>1995</td>
<td>445</td>
<td>10</td>
<td>381</td>
</tr>
</tbody>
</table>

* Farm earned main income from non-agricultural jobs.
Data source: Agricultural Censuses and National Censuses

Agricultural land use changes before the 1970s

In order to discussed about agricultural land use changes in Kodaira City, we made Table 1 which indicated the changes of farmland acreage in the city. According to this table, farmland acreage under management in 1950 and 1960 amounted to 900 and 812 hectares and occupied about 45 and 40 percents for the city area respectively, so that agricultural land use was relatively dominant to urban land use. Although agricultural land use was maintained with cultivation of wheat, barley, sweet potatoes and radishes as general farming before the 1950s, their cultivated acreage was considerably decreased after 1960. Actually, upland field acreage was decreased from 864 hectares in 1950 to 732 hectares in 1960. Furthermore, there was few cultivation of wheat and barley in the 1960s because their market price was lower than other agricultural production, and because the import of low-priced wheat and barley increased. Instead of them vegetable growing has become the primary part of agricultural land use in Kodaira City, and it has been maintained with cultivation of vegetables for the metropolitan market as suburban agriculture since the 1960s. In terms of vegetable growing, cabbages. Chinese cabbages (Hakusai) and radishes were cultivated from autumn to spring for the purpose of shipping them to the metropolitan market. After their cultivation, their upland fields were utilised for the cultivation of eggplants and cucumbers in spring and summer. This double cropping system of vegetable growing was mainly characteristic of suburban agriculture in the 1960s. As well as the reduction of agricultural land use, it is characteristic for rural changes in the 1950s that the number of farms was decreased from 1,118 in 1950 to 883 in 1960, and that the number of full-time farms was decreased from 707 in 1950 to 354 in 1960. These facts led to the decrease of farm population from 7,181 to 5,781 despite the increase of total population from 21,639 to 52,523. In 1950, however, farms occupied 26.8 percent for total households of Kodaira City, so that this city was characterised as rural areas of the outer urban fringe.
From 1960 to 1975, farmland acreage under management in this city was rapidly decreased in competition with urban land use, and reduced to 396 hectares in spite of development of suburban agriculture. Particularly, upland fields were easier of conversion into urban land use than other kinds of farmland such as orchards and paddy fields, and their acreage was remarkably decreased from 732 hectares in 1960 to 261 hectares in 1975. A lot of detached houses and flats for commuters to the metropolitan centre were located with the upland fields conversion around traditional rural settlements. Above all, the constructions of flats were remarkable changes of agricultural land use around rural settlements. These constructions have been supported with the accessibility to some railway stations and the rising land price throughout the period of high economic growth in Japan. As a result of such urbanisation, most of the farmland around rural settlements was subdivided into small lots for sale and they were converted into residential or commercial lots. Farmland acreage per farm tended to decrease as well as farmland and upland field acreage, and their decrease weakened bases of the rural area with the decrease of full-time farms, which the number was considerably decreased from 141 in 1970 to 46 in 1975. On the other hand, acreage of orchards was slightly increased from 80 hectares in 1960 to 135 hectares in 1975, because Asian pear growing was developed with the establishment of pick your own farms in the suburbs. Actually, pick your own farms of Asian pear growing played an important role in the maintenance of agricultural land use, because it was difficult that tree planting land use such as orchards were converted into other land use.

Agricultural land use changes after the 1980s

In Kodaira City, decrease of farmland acreage under management has slowed down for the establishment of land use controls of productive green tract system since the 1980s, so that its acreage only reduced from 353 hectares in 1980 to 260 hectares in 1995 despite the decrease of farm population from 2,991 to 2,092 and the increase of urban population (Table 1). The decrease rate of cultivated farmland in this city was also smaller than that of other cities in the urban fringe of Tokyo metropolitan area because it was not hopeful to convert agricultural into non-agricultural land use. Among some kinds of farmland, orchards have been rapidly decreased with the conversion into other land use and the enlargement of residential areas since the 1990s, and their acreage in 1998 amounted to about 50 hectares. Indeed, it is difficult for farms to manage large-scale of orchards with the competition between agricultural and residential land uses, because Asian pear growers have to spray orchard trees with an insecticide, which has a harmful influence on residential areas around orchards. Recently, small-scale orchards are only left in this city, and farmers grow Asian pears for pick your own farms and farm shops. Although orchards are generally unsuitable for residential lots because of tree planting, their conversion into residential land use has been developed since the 1990s. This reflected the fact that Kodaira City has high accessibility to the metropolitan centre, and that land and sunny conditions of orchards are more suitable for the conversion into residential lot than the upland field conversion even if there was the additional cost of land levelling and pulling out trees.

Despite the expansion of urban land use, upland fields acreage in Kodaira City has been changed between 200 and 300 hectares since the 1980s, and vegetable cultivation on these fields has been the most leading part of agricultural land use. Although the cultivated
acreage of vegetables as well as other crops has decreased slightly since the 1960s. Its rate for total cultivated acreage has not changed at all. Kinds of vegetables were not only cabbages, radishes, and Chinese cabbages that were grown traditionally, but also carrots, onions, broccolis, and cauliflowers, so that vegetable growing has been diversified. With the advance of this diversification, vegetables are grown more than triple cropping every year. This multiple cropping of vegetables were more distinctive of agricultural land use in the 1990s, and were characteristic of the intensive agriculture in terms of land and labour uses.

The number of farms amounts to 445 in 1995, and its decrease has been slow down since the 1980s. This fact is reflected on farmland acreage per farm. It has been changed from 80 to 60 ares since the 1980s, and most of farms have maintained their land holding and agricultural production with the development of productive green land and urban agriculture. Because the policy of productive green land gives preferential treatment to land tax system under the condition that the farm continues to hold its farmland for more than 30 years, it is available for farmers in the urban fringe to maintain their farmland as productive green land. As this policy was enforced, urban farmland fulfilled more various functions such as amenity and disaster prevention functions in addition to farming function. Most of farmland in this city were designated as the productive green land, which occupied about 75 percent in the whole of this city's farmland, so that some policies of land use planning have also been one of conditions supported the maintenance of farmland. Furthermore, agricultural land use in their farmland has been spatially and seasonally diversified with multiple cropping and small amount production of vegetables, which have been on sale as fresh vegetables to urban residents directly. This farming system has been also another condition that supported the maintenance of farmland in the urban fringe.

3. The Development of Farm Shops and its Characteristics

Distribution of farm shops

Although farmland acreage has been decreased to a greater or lesser degree with the advancement of urbanisation in Kodaira City, it tends to be maintained with the operation of some policies and the enforcement of restructuring recently. In terms of this rural restructuring, farm shops play a more important role in the conservation of rural land use, because they are the key establishment of linkage between rural and urban land uses. In Japan, most agricultural products have been sold through wholesale markets. Recently, however, there has been a trend towards increasing direct sales from farms and farm shops. According to some geographical papers, the term farm shop was defined as being a place which was managed by farmers or farm employees, and which sold agricultural products harvested from their own land and/or products processed on their own farms (Takatori 1998). Here, the farm shop can be defined as a place in which many kinds of farm products are on sale for urban residents directly, and is located on the side of farmland or on the gate of a farm. Although farm shops have not had the sophisticate distribution system of farm products, many kinds of fresh and safe vegetables have been on sale through them. It is important to consider the development of farm shops and their characteristics in the urban fringe, because most of them are suitable for the environment of the urban fringe.
It is helpful to describe the distribution of farm shops in Kodaira City before discussion on their development and characteristics. Figure 1 indicated the distribution of farm shops of Kodaira City in 2000. As sketched here, there are more farm shops in the northern part than in the southern part of this city. Because the enlargement of urban land use and the maintenance of rural land use are respectively more dominant in the southern and the northern parts, it takes no time for their characteristics on land use to be reflected in the distribution of farm shops. Particularly, in the northern part of this city, where forest land was cleared on Musashino Tablelands in Edo era, many farm shops are located along main roads such as the Ome and the Tokyo Highways. Although this tablelands consists of the loam and the gravel and well-drained soil beds, its surface soil is fully adequate for agricultural land use because of the humid Kuroboku soil. Traditional distribution of farmland in this reclamation region was the rectangular pattern along some main roads as the base line. This farmland pattern is observed in places of the northern part, and farmland is remained along some main roads. Therefore, most of farm shops are located on the road side of farmland, and they have available location for the sale of farm products because of the traffic convenience. Furthermore, most of these farm shops are large-scale and the permanent establishment including shopkeepers, in which a various kind of farm products are on sale for both urban residents and passers-by. They are satisfied with the diversification of farm products as well as the freshness and the safety. Farm shops on the road side are characterised as a new type of road side shops and rural establishments in the urban fringe.

On the other hand, some farm shops are alternatively located on the side of farmland and at the gate of farm houses away from main roads. Although these farm shops are on a small scale and have small items of selling products, they have a large connection with urban residents through the sale of fresh vegetables. In Kodaira City, these farm shops have been more early developed with the advancement of urbanisation than ones on the road sides since the 1980s, and have been well suitable for the decrease and diversification of farm

Fig. 1 Distribution of farm shops in Kodaira City, Tokyo Metropolis (2000).
Data source: Field survey
products. Besides, it is easy for farmers to built and manage their farm shops, because these are simple and shopkeeperless establishments. These farm shops played an important role in securing suburban markets to sell nonstandardised and a small amount of farm products instead of urban markets. In which standardised and a large amount of farm products are on sale in response to the need of urban residents. In the most of suburbs agriculture were not suitable for this need at all, because farmers cultivated many kinds of crops on a small scale of their farmland and most of their farm products were irregular vegetables in size. Although farm shops at the side of farmland have been decreased with the distinctive increases of ones on the road side since the 1990s, their importance for rural land use has not been lost because of their raison d'être as the central rural establishment in the urban fringe.

Management of farm shops and farming

According to characteristics and management of farm shops in Kodaira City, they are divided into two types. First type is the road side farm shop which the number is 125. Another type is the gate shop of farm or farmland which the number is 65. Although there are many conversions of farmland into residential and commercial lots and many subdivisions into small lots for sale along main roads in this city. some acreage of farmland is remained around road side farm shops that are located along main road such as the Ome and the Tokyo Highways. Actually, there were many non-farm residences and some blocks of flats along main roads in this city, and many detached houses for city dwellers were extensively distributed around railway stations. Road side farm shops have the function that is ensured maintenance and continuity of agricultural land use. and their management are large-scale and cooperative including a few of shopkeepers. Farms managed road side farm shops hold farmland of 0.8 to 1.0 hectares. Although most of them are part-time farms that one farmer is mainly engaged in farming at least, a part of them have more than one full-time farmers of 40 to 60 years old. Such farmers have cultivated many kinds of vegetable, potatoes and beans little by little with multi-cropping every year. Most of their farm products are on sale for urban residents through their farm shops directly, and these farmers play a large part in the supply of fresh and low-priced farm products effectively.

These shops open at 9 a.m. to 8 p.m. every day. because not only housewives make good use of road side farm shops during the daytime, but also commuters stop at those shops on their way home. These shops are sometimes short of vegetables in the turning of the crop seasons, and their farm products are often sold out during the daytime because of their convenient location for customers. Then, supplementary farm products such as vegetables of the season are supplied from other farmers who rarely manage farm shops and put their production on the metropolitan market. Generally speaking, road side farm shops are supported with convenient traffic conditions that it is available to attract public customers and to collect supplementary farm products. In other words, the successful development of road side farm shops has been ensured with the higher accessibility to urban consumers and much information on their needs through main roads.

On the contrary, gate shops of farm or farmland in Kodaira City are situated within traditional rural settlements rather than along main roads. and are small-scale and shopkeeperless establishments. Although there are also many conversions of farmland into residential and commercial lots, and many subdivisions of them into small lots for residential
development around traditional rural settlements that were situated on the tablelands and consisted of approximately 50 farm households severally, some acreage of farmland is only remained with multi-functional land use that is not only agricultural production but also productive green land, amenity space and disaster prevention. Under these circumstances, the gate shops of farm or farmland play an important role as the key establishment in maintenance and continuity of rural land use despite small-sale ones, because these gate shops are supported with tiny farmland as productive green land and the local needs of urban residents around settlements for fresh farm products. Farms managed gate shops hold farmland of 0.4 to 0.8 hectares, and their farm acreage is smaller than farms' of road side shops. Although most of them have more than one part-time farmers of 40 to 60 years old, that are mainly engaged in non-agricultural jobs, and a part of them have one more than full-time farmers over 60 years old. Because such farmers cultivates some kinds of vegetable, potatoes and beans little by little with double cropping every year, it is difficult for them to produce these farm products on a large scale and to standardise products uniformly.

Most of their farm products are on sale for regular customers around their settlements through their farm shops directly, and these farm shops play a large part in not only the supply of fresh and low-priced farm products effectively but also the good connection between urban residents as newcomers and farmer as native residents. Particularly, housewives over middle age make good use of each gate shop just close to their residents, because they hope to cook vegetables and potatoes that are not only fresh and low-priced but also safety and onymous. Farm products of gate shops are characterised by identification of their producers, and business through gate shops is supported with the relationships of mutual trust between customers and producers. In terms of payment system of gate shops, actually, customers pay for farm products with throwing money into the shopkeeperless charge box, and the rate of collect charges is more than 80 percent. This fact is also a sign of the mutual trust between urban customers and farmers. Although these gate shops open every time because of shopkeeperless, farm products are put on sale at 9 a.m. to 11 a.m. weekdays or three days a week because of sold out. Gate shops are characterised with no supplementation of farm products from other farms even if their farm products are often sold out during the daytime. Generally speaking, the gate shop of farm or farmland is supported with convenient and friendly connection between urban and rural residents. In other words, the successful development of gate shops has been ensured with the restructuring of rural areas in the urban fringe and recreating of the rurality.

4. Restructuring from Sustainable Rural System to Social Sustainability: Creating of Alternative Rurality in the Urban Fringe

Because of the serious conflicts between agricultural and urban land uses under the environment of urban fringe, it is difficult for any farms to enlarge the management scale, to say nothing of maintenance of their present farmland acreage. Actually, farmland around railway stations has been converted into residential lots, some blocks of commercial facilities and flats since the 1970s. This conversion has been spread over the urbanisation promotion areas of Kodaira City, where the conversion from agricultural to urban land uses is allowed
as the land use zoning. Decrease of farmland acreage and farm households have led to the decline of agricultural land use, so that many urban residents live in urbanisation promotion areas as newcomers. Urban residents and farmers have been intermixed in traditional rural settlements, and the traditional rurality has been lost with increase of urban residents and decrease rural land use. The traditional rurality consisted of farms, their community, their farmland, agriculture as economic activities and some kinds of the rural establishment supported their economic activities, and was developed with the interrelationship among these elements. Although this rurality were developed with the exclusive and strong relationship of farmers, it was disrupted by the increase of urban residents, and agriculture declined with the loss of physical and socio-economic bases such as farmland, farming labours and some kinds of the rural establishment.

Instead of the traditional rurality, the urbanity has been dominant as the regional atmosphere in Kodaira City. It is general that the urbanity consists of urban residents and their community, urban land use, urban economic activities, and some kinds of the urban establishment supported their urban life. This urbanity is not supported by communities including urban residents which are not good-organised and weak relationship among residents, but it is characterised with a high regard of the individualism and the private life. These urban communities are developed with the increase of urban residents who commute between Kodaira City and the metropolitan centre and live in this city for their bed. Following this development, urban land use takes the major place of agricultural land use, and retail trade, real estate and various services are developed as urban economic activities based on some kinds of the urban establishment. Because communities, land use, economic activities and establishments in terms of the urbanity are alternative elements for the rurality, the dominance of these elements leads to weaken the rurality in Kodaira City. Therefore, the rurality and the urbanity are contrary to each other, and it is difficult that the rurality is coexisted with the urbanity in the urban fringe.

![Diagram of social sustainability](image_url)

**Fig. 2** Model of social sustainability in the urban fringe.
In Kodaira City, however, restructuring of rural land use including agricultural land use and recreating the rurality have been practised by both farmers and urban residents. Actually, as shown Fig. 2, mutual relationships among elements in terms of the urbanity have been connected with ones in terms of the rurality through farm shops as one of rural and urban establishments, in which farm products are on sale by farmers and bought by urban residents. Farm shops have had both characteristics of rural and urban establishments, and have had both function of rural and urban land uses, so that they have played an important role in the connection between the urbanity and the rurality. Most of farms have maintained their farmland and agricultural land use with the management of their farm shops, and recognised their raison d’être within urban communities. Their confidence for the existence in the urban fringe has been led to the maintenance and the restructuring of rural land use including farms, farmland, agriculture and rural establishments. As a result of this restructuring, recreating the rurality and sustainable rural system have been developed within urban communities. On the other hand, farm shops have been also supported by urban residents who often visit to them. Most of urban residents have recognised farm shops as one of the important retail trade establishment, because they can get fresh and reasonable priced farm products through those shops. They feel that their life in urban communities is not only real without places for their bed, but also the rurality should be conserved as alternative element of the amenity within the urban fringe. Therefore, the farm shop is an indispensable establishment for both urban residents and farmers, because it is the node that has connected with the urbanity and the rurality. As shown Fig. 2, the reinforcement of this connection has led to not only develop the sustainable rural system, but also to ensure the social sustainability that nested characteristics of urban and rural communities comprehensively.

References


(*: in Japanese with English abstract)