

Yasuo Ohe

Community-based Rural Tourism and Entrepreneurship

A Microeconomic Approach

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Yasuo Ohe
Department of Food and Resource
Economics
Chiba University
Chiba, Japan

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In memory of my parents

Preface

This book addresses community-based rural tourism (CBRT) and entrepreneurship from a microeconomic approach. This is because it is a widely recognized fact that CBRT activities do not always have sufficient entrepreneurship for sustainability of the business. Thus, building entrepreneurship is one of the most crucial challenges for stakeholders of CBRT. This book sheds light on many of the roles and challenges that involve CBRT in Japan and proposes “multitiered CBRT” as a way to overcome the constraints and challenges imposed by CBRT. Multitiered CBRT is characterized as CBRT based on the connection of the traditional rural community with a human network that exists outside of the traditional territorial community. This extensive network beyond the traditional territorial boundary can be complementary to conventional CBRT.

This book also aims to develop economic analysis on rural tourism and farm diversification conceptually and empirically. Among the rapidly growing output of tourism research, including rural tourism topics, from multidisciplinary perspectives, tourism studies using an economic approach have also been increasing. Nevertheless, economic approaches to agri-/rural tourism are not yet very popular. This book intends to fill this gap. The reason for this scarcity can be partially explained by the fact that economics has mainly focussed on tangible goods. For instance, the author’s original discipline is agricultural economics, which deals with the production and consumption of farm products. Agricultural economics, however, is not good at dealing with intangible goods, i.e., services, which are related to both tourism and farm diversification. Thus, researchers have to explore the conceptual framework and undertake empirical investigations together, especially in the field of agri-/rural tourism. This is, however, easy to say and hard to do. In this sense, this book is a locus of the author’s struggle during the past two and a half decades of rural tourism research to create a balance between economic framework and empirical evidence. This book attempts to address this issue by presenting a conceptual framework with microeconomics and empirical evidence obtained under a consistent framework. The author expects that this book can fill the gap between the slow pace in conceptual framework building and the rapid progress of ad hoc empirical evidence in rural tourism studies.

Although rural tourism is a wide concept that covers tourism activity in general in a rural setting, this book focusses on agricultural-based tourism activity, which is defined in diverse ways from one country to another, i.e., farm tourism, agritourism, farm holiday, green tourism, etc. In this respect, the author employs a narrow definition of rural tourism because the author uses the agriculturally focussed perspectives that were formed from his background as an agricultural economist.

This book will be useful, especially for researchers on rural tourism and policymakers with a background in economics. I will be extremely happy if this book can contribute something to the development of economic research on tourism in rural areas.

Most of the chapters are based on previously published papers by the author or with co-authors, which were revised substantially for this book from the initial draft used in my graduate school class. Students' comments and questions were quite useful for the improvement of the draft. I would like to acknowledge the co-authors of the original papers, Shinichi Kurihara (Chiba University) and Shinpei Shimoura (Kochi University), and thank them for allowing these original papers to be revised and included in this book. I am grateful to Kei Kawabata and Masako Hosono in my laboratory who carefully improved and adjusted the format of the figures, tables and manuscript for the publication of this book. Kumar P. Bhatta, my PhD student, helped me proofreading. Their assistance was essential to publishing this book. I am indebted to Chiba University, where I currently work, which offers an excellent research environment despite worsening of already tight financial constraints. Thus, my research would not have been possible without financial support from various funding bodies: a series of Grants-in-Aid for Scientific Research (KAKENHI), (A); no. 20248024 and no. 18H03965, (B); no. 16380146, (C); no. 13660213, and for Challenging Exploratory Research no. 60302535 and no. 16K14996, provided by the Japan Society for Promotion of Science (JSPS). I also received research funds from the Japan Dairy Council, Agricultural Policy Research Committee, Organization for Urban-Rural Interchange Revitalization and Chiba University. I would like to express my gratitude to Takashi Oguchi (Rikkyo University), no. 26283017; Mima Nishiyama (Utsunomiya University), no. 25450342; Yukio Hiromasa (Meiji University), no. 16580189; and Hiroaki Kobayashi, no. 17H03875, who provided me with funds from their KAKENHI projects. Yoshifumi Miyazaki, Chiba University, kindly offered funding for my research when I needed it. I am also thankful to Member of the editorial staff Juno Kawakami, Springer Japan, for her practical editorial support. Finally, I would like to thank my family, Masumi and Natsuho, who are always supportive of my never-ending academic devotion.

Chiba, Japan

Yasuo Ohe

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About the Author

Dr. Yasuo Ohe is Professor in the Department of Food and Resource Economics, Chiba University, Japan. His main research involves economic analyses of rural tourism and farm diversification to establish a viable rural business in tourism and hospitality. He is currently Chair of the Project Evaluation Committee on rural tourism in the Japanese Ministry of Agriculture, Forestry and Fishery (MAFF) and President of the Japan Society for Interdisciplinary Tourism Studies. He is also Member of the editorial board of several international journals, including *Tourism Economics*, and Founding Member of an international workshop, *Quantitative Approaches in Tourism Economics and Management (QATEM)*. He received the Sohn Hai-Sik Award from the Asia Pacific Tourism Association (APTA) in 2010, the Distinguished Service Award for Agricultural Technology from the Japan Agriculture, Forestry and Fisheries Research Council in 2014 and Best Paper Award from APTA in 2018.

Part I
Introduction

Chapter 1

Perspectives, Structure, and Conceptual Framework



1.1 Purpose of This Book and Perspective

Rural tourism has been attracting growing attention currently not only in developed countries but also in developing countries. This is because tourism activity increasingly has been considered to be an effective way to promote rural development in every part of the world. Thus, it is more important than ever to share knowledge gained from research on this topic not only for research purposes but also for practical and educational purposes.

To comply with the growing demands for scientific evidence under the common framework of rural tourism research, this book aims to explore community-based tourism and tourism-related diversification activities performed by farm households or entrepreneurs in rural areas from a consistent microeconomic approach conceptually and empirically with econometric methodology.

The term rural tourism has a broad connotation because it is also used to indicate tourism activity in general that is conducted in rural areas as well as tourism activity conducted by producers of agricultural products. Agritourism and agro-tourism indicate tourism activity only by producers of agricultural products, and rural tourism is the most commonly used term when referring to agritourism. In this sense, rural tourism has room for different interpretations. In this book, the author defines rural tourism as including agritourism that is conducted by producers of agricultural products, but which also includes community-based activities, such as tourism activity that is conducted by rural residents or a group of rural residents who are not necessarily involved in agriculture but are involved in agri-related tourism activity. The author understands that this is a wider perspective than the European one since rural tourism policy in Japan is not only directed toward agricultural producers but various groups of residents of rural communities as described in Chap. 2.

Section 1.3 was revised from the paper published as Ohe (2012). The author acknowledges the permission given by the initial publisher Nova Science Publishers Inc. through provided by Copyright Clearance Center Inc.

The areas of study in this book are agrarian communities in rural areas. Since it is not always easy to reach a consensus on the exact definition of a rural area, the author does not get deeply involved in the issue of definition but rather thinks that rural tourism can be considered to take place wherever farm activity is conducted. From this broad definition, rural tourism could include the category of rural tourism that is conducted in the urban fringe or even in urban areas as long as farm activity takes a crucial role in the tourism.

In this respect, as far as he knows, this book will be the first of its kind that can contribute to the advancement of theoretical and empirical research on rural tourism from a microeconomic perspective. Specifically, this book gives an economic definition of rural tourism as an economic activity that internalizes the externality generated by multifunctionality of agriculture or an agrarian community. The internalization indicates that there is an income generation process. Of course, agriculture generates negative externalities or external diseconomies such as water pollution caused by livestock waste and chemicals. But this book looks at the positive externalities after these diseconomies are deducted from the overall effect.

Multifunctionality has been understood as creating positive externalities generated as a result of technical jointness of farm products, which means being technically inseparable from the farm production process. In addition, in an agrarian community, community functions, i.e., social capital in the community or community capital (Nishiguchi and Tsujita 2016), that support the lives of community residents is crucial to generating multifunctionality. This function is the basic condition of community-based rural tourism (CBRT). In this respect, multifunctionality is also a consequence of institutional jointness of community function. Thus, this book sheds light on CBRT from both technical and institutional jointness of the agrarian community. Multifunctionality is not internalized nor does it generate income opportunities automatically. Therefore, internalizing efforts by CBRT stakeholders are needed.

From the above conceptual framework for rural tourism and the internalization process, entrepreneurship is defined here as activities performed by those operators who conduct complete internalization by creating innovations in products, production processes, and organization of local resource management, and eventually make a demand creation. The goal of CBRT, therefore, is to realize complete internalization and a demand shift through the collective efforts by communities.

Thus, the study results obtained under the framework of microeconomics easily allow integration of these studies with orthodox agricultural economics and the rapidly advancing field of tourism economics. Instead, it used to be common to take a case-study approach in this field of research. It cannot be denied that such studies contributed to progress in this field; thus, the author does not negate the significance of case-study approaches. Rather, this approach is particularly effective when there are only a few advanced cases to study, which does not allow us to employ statistical methodology due to the small sample size. The author himself actually took case-study approaches to some of the studies included in this book.

Nevertheless, I should keep in mind not to fall into the trap of ad hoc analyses when case-study approaches are undertaken. To counter this possible drawback, the author conceptually takes a microeconomic approach and mainly uses quantitative

methodology empirically as a common language to share study findings with those who are interested in this field across the globe.

The study area for this book is rural Japan, and the book will cover the past two and half decades of the slow evolution of rural tourism in this country. Because of this time range, this book has a historical perspective as well. Compared with Western European countries where rural tourism is relatively well developed, the development of Japan's rural tourism has been slow due to various constraints despite its large potential; that is, institutional and socio-economic factors. "Green tourism", which is the term given for rural tourism in Japan, has been promoted as social tourism, i.e., promoted under a national policy framework just like its counterparts in other countries, beginning in 1992 when this name first appeared as used by the Ministry of Agriculture, Forestry and Fisheries (MAFF). In this respect, the history of rural tourism in Japan is not short. The MAFF began in 2017 to emphasize the establishment of economically viable rural tourism operators as rural entrepreneurs. Although this is a remarkable policy change, the effects of this policy change remain to be seen at the moment.

Why was the development of rural tourism in Japan so slow compared with its Western counterparts? If the reasons are clarified, our findings could be easily applicable to late starters in other parts of the world. This is because the basic issues that agrarian communities face are more or less identical in terms of constraints for the development of rural tourism especially in Asian, East European, South American, and African countries. For Western European, North American, and Oceanian countries, their advanced experiences are more easily comparable to each other and are applicable to others that are less experienced.

The purpose of this book, therefore, is firstly to present a conceptual framework to understand rural tourism from a microeconomic perspective. Secondly, it aims to clarify what are the specific issues and constraints for the development of CBRT. Thirdly, it investigates how to overcome these issues. The author's research is still ongoing, so that this book will not be the final piece, but rather a milestone of the long and winding road taken so far.

Green tourism policy in Japan has placed an emphasis on the development of community-based tourism because the rural community is still the basic unit of life in these areas. This policy orientation is quite consistent with traditional farm policy that emphasizes the rural community. However, it cannot be denied that this community-oriented or consensus-oriented policy often results in neglecting the capability-building issues of individual entrepreneurship, although this consequence was not intentional. Put differently, how to make CBRT compatible with entrepreneurship is a common issue that needs more research scrutiny. As far as the author knows, however, this perspective has not been paid enough attention despite its importance. Therefore, this book looks at both the community-based aspects and entrepreneurship, which is another reason that this book is distinct from others on this topic.

Generally, there are two ways for internalization of externalities; policy measures, i.e., subsidies, and private initiatives. Rural tourism is promoted as social tourism in many countries, which means that policy support exists. On the other hand, private

initiative is crucial to establishing economically viable rural tourism in the long run. In this respect, entrepreneurship plays essential roles. In this context, actual internalization is undertaken by the combination of policy measures and private initiatives.

It is supposed that private initiatives by individual entrepreneurs and/or CBRT are conducted to internalize the externality into new income sources. Quite frequently, in reality both individual efforts and collective work in the community are conducted simultaneously. CBRT can be performed in territories of various sizes, starting from a hamlet, municipality, across various municipalities, and a large network of people that also forms a community. Due to the rapid progress of information and communications technology and diversification of values among people while keeping their own identity in relation to the local community, the range of communities has expanded way beyond that of a traditional rural community. Thus, we should also consider the modern network community, including social media and the Internet, which connects people with the same interests and purposes. Thus, this book examines CBRT from a wider perspective than the classic hamlet-based perspective. This is because CBRT with a narrow territorial perspective often fails, especially with regard to economic aspects as reviewed below. With a wider perspective, necessary resources that have been unavailable in the original communal boundaries will become more available.

With respect to stakeholders, CBRT in this book is broadly understood not only as a purely community initiative case but also as cases that are promoted by the local municipality and/or other entities such as non-profit organizations (NPOs) and open network organizations and conducted by groups of individual operators. Thus, this book covers different levels of communities starting from the traditional hamlet, municipality, and multiple municipalities to the emerging open community that covers a wide range to connect people. This is because the author considers that the issues of CBRT cannot possibly be solved only in consideration of the range of traditional hamlets. Thus, a territorial CBRT is the basic unit of decision-making. When that unit involves working together with local, regional, national, and even international open networks to gain experiences from each entity such as social learning, it can help CBRT overcome many constraints. The author designates this multi-networking system as multitiered CBRT (MCBRT), where community capital is multitiered. Specifically, the empirical evaluation of this multilayer perspective is described in Chaps. 15 and 16.

In summary, building MCBRT is a never-ending process of finding one's own rural heritage and constructing one's identity both for the present and for the future. This is truly an innovative process for stakeholders concerned about how to overcome difficulties and constraints, which are more or less common in rural communities in other parts of the world as well as in Japan. Thus, this book will try to show what are these common difficulties and constraints that are not always easy to overcome and to share the findings with readers so that better solutions can be found.

1.2 Literature on Community-Based Tourism and Research in Entrepreneurship

A community-based approach has been widely undertaken in developing economies to cope with various social and economic issues, e.g., Israel et al. (2013) and Hacker (2013) for public health, for natural resource management (Wilmsen et al. 2008), natural disaster management (Abbasov 2018), and local and rural development as mentioned below. In agrarian communities, the rural infrastructure such as irrigation systems is often maintained by community work (Gyasi 2005).

The range of literature on entrepreneurship is quite wide, and an abundant amount of research has been devoted to entrepreneurship. In connection with the topics of this book, the issue of local or community development and entrepreneurship has attracted growing attention in every part of the world (Dallago and Tortia 2019). Due to its practical nature, Walzer (2009) addressed issues of small business and entrepreneurship for practitioners in the context of local economic development. Robinson and Green (2011) also tried to narrow the gap between theory and practice from case studies. Fink et al. (2013) used case studies of rural small businesses from the perspective of community-based entrepreneurship by focussing on Central Europe. Haughton (1999) collected case studies of community economic development mainly in United Kingdom and Ireland. Fortunato and Clevenger (2017) dealt with entrepreneurial community development rooted in a citizen-driven culture toward entrepreneurship and nurturing of leadership.

Despite this growing attention to community development and entrepreneurship, in the tourism research arena, this issue has not been well studied as mentioned below although case studies on community-based tourism (CBT) have been accumulated (Kobayashi et al. 2010; Hatton 1999; Manhas et al. 2014).

Table 1.1 summarizes the literature related to CBT and related issues including entrepreneurship published since around 2000. These studies were classified by main and subtopics and ordered from the early to the most recent publication within each topic. We can address three main features from this table as follows: Firstly, the majority of research was conducted in or targeted at developing countries, so that poverty alleviation was the aim of CBT, and for that purpose community participation was basically one of the major topics in rural areas. Thus, it is safe to say that CBT is quasi identical to CBRT. Secondly, among the three factors, i.e., environmental, social, and economic aspects, in the realm of sustainability, environmental and social aspects have been paid the most attention although some studies addressed these two aspects together. Thirdly, methodology-wise, qualitative approaches were the most common.

Regarding the first feature, the concept of community-based approach was introduced in tourism development along the same lines as pro-poor tourism (Neto 2003; Manyara and Jones 2007; Zapata et al. 2011). It is quite common that many CBT projects in developing countries were internationally aided (Neto 2003; Kiss 2004). We also found CBT studies in Europe and East Asia (e.g., Lordkipanidze et al. 2005 for Sweden, Đurkin and Perić 2017 for Croatia, Park et al. 2012 and Kim and Park

Table 1.1 CBT literature related to entrepreneurship (around 2000's and after)

No	Main topic	Sub-topic	Type of CBT	Literatures	Data and methodology	Study area
1	Poverty alleviation	Community participation	Pro-poor tourism	Neto (2003)	Pantography	Not specific
2		Community-based enterprises	Community-based tourism enterprises	Manyara and Jones (2007)	In-depth interview	Kenya
3		CBT life cycle	Network of CBTs	Zapata et al. (2011)	Interview and qualitative approach	Nicaragua
4	Effective on environmental and socio-economic benefits	Biodiversity	Community-based ecotourism	Kiss (2004)	Pantography	Not specific
5	Challenges	Role of tour guides	Community-based cultural tourism	Salazar (2012)	Interview and qualitative ethnographic approach	Tanzania
6	Entrepreneurship	Sustainable tourism development	Farm tourism	Lordkipanidze et al. (2005)	SWOT analysis	Sweden
7		Indigenous religious entrepreneurs	Religious tourism	Shinde (2010)	In-depth interview	India
8	Social capital	Entrepreneurship	Rural tourism	Zhao et al. (2011)	Binary logistic regression	China
9		Community conflict among residents	Farm stay	Park et al. (2012)	Factor analysis, cluster analysis and regression	Korea
10	Social entrepreneurship	Community participation	Homestay ecotourism	Ahmad et al. (2014)	Interview and qualitative approach	Malaysia
11		Community participation	Indigenous tourism	Peredo and Wurzelmann (2015)	Interview and qualitative approach	Bolivia

(continued)

Table 1.1 (continued)

No	Main topic	Sub-topic	Type of CBT	Literatures	Data and methodology	Study area
12		Tourism awareness	Remote fishing communities	Porter et al. (2018)	Interview and qualitative approach	Philippines
13	Community participation	Power redistribution	Ecotourism	Okazaki (2008)	Interview, questionnaires and qualitative approach	Philippines
14		Incremental participatory process	Eco-trekking	Reggers et al. (2016)	Participatory rural appraisal	Papua New Guinea
15		Environmental knowledge	Marine ecotourism	Masud et al. (2017)	SEM (structural equation model)	Malaysia
16		Comparison of attitudes of residents and tourism entrepreneurs	Mountainous rural tourism	Đurkin and Perić (2017)	Statistical tests	Croatia
17	Community attachment	Sustainable tourism development	Tourism related to nature, culture, history, sports	Morales et al. (2018)	SEM (structural equation model)	Dominica
18	Residents' perceptions	Sustainability	Tourism communities	Lee and Jan (2019)	IPA (importance-performance analysis)	Taiwan
19	Politics	Natural resource management	Rural ecotourism	Belsky (1999)	Interview and qualitative approach	Belize
20	Visitors' perception	Satisfaction and loyalty	Community-based ecotourism	Kim and Park (2017)	On-line survey of visitors	Korea

(continued)

Table 1.1 (continued)

No	Main topic	Sub-topic	Type of CBT	Literatures	Data and methodology	Study area
21	Host-guest orientations	Comparison of perceptions of hosts and tourists	CBT in Bali	Erawati et al. (2017)	Statistical tests	Indonesia
22	Collaborative partnership	Local tourism management	Marine protected area	Burgos and Mertens (2017)	Social network analysis	Brazil
23		Roles of public sector, profit and non profit institutions	Tourism village	Manaf et al. (2018)	Interview and qualitative approach	Indonesia
24	Conflict management	Conflict management model	CBTs	Curcija et al. (2019)	On-line survey and qualitative approach	International

Note The author's sorting out

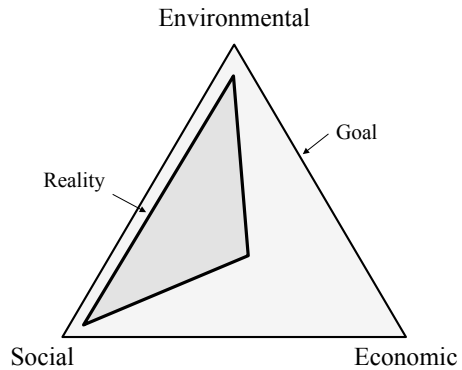
2017 for Korea). It is often pointed out that alleviating poverty through CBT, however, has many challenges (Kiss 2004; Salazar 2012), which leads to the second feature.

With respect to the second feature, the emphasis on environmental aspects is expressed through extensive studies on ecotourism (Kiss 2004; Okazaki 2008; Ahamad et al. 2014; Reggers et al. 2016; Masud et al. 2017; Belsky 1999; Kim and Park 2017) and marine protected areas (Burgos and Mertens 2017). Likewise, social aspects were extensively dealt with through the issue of community participation (Neto 2003; Ahmad et al. 2014; Peredo and Wurzelmann 2015; Reggers et al. 2016; Masud et al. 2017; Đurkin and Perić 2017) and social capital (Zhao et al. 2011; Park et al. 2012). In addition, the issues of resident awareness and perception are also popular (Porter et al. 2018; Lee and Jan 2019). Now research attention has gradually shifted from the perspective of pre-established harmony to more realistic views on community issues. This is because it is natural for conflicts to occur among stakeholders in community businesses and it is important to maintain good partnerships among stakeholders (Belsky 1999; Burgos and Mertens 2017; Manaf et al. 2018) through conflict management (Curcija et al. 2019). As Manaf et al. (2018) mentioned, it becomes increasingly necessary to consider partnerships with external stakeholders out of the local community. In this respect, I have to look at not only communities of place, which is the traditional boundary of territoriality, but also communities of interest, which have expanded with the progress in information and communications technology and the increasing importance of creating social learning opportunities.

On the other hand, the economic aspects that are another factor of sustainability have been much less explored compared with the other two aspects although economic aspects were often pointed out as important for sustainability (Kiss 2004; Salazar 2012). The topics of entrepreneurship and social entrepreneurship fall into this category. Nevertheless, studies on social entrepreneurship were connected more tightly with social aspects such as community participation (Ahmad et al. 2014; Peredo and Wurzelmann 2015), social capital (Zhao et al. 2011), and tourism awareness (Porter et al. 2018). Specifically, studies on entrepreneurship include farm tourism in Sweden (Lordkipanidze et al. 2005) and indigenous religious tourism in India (Shinde 2010) in (Table 1.1), each of which took a quite different approach to different situations. In this respect, research on entrepreneurship in CBRT has not been fully explored, yet. Territorial marketing is included in entrepreneurial activity, but this aspect is generally weak in CBT, which is one rationale for the existence of a destination management or marketing organization (DMO). I touched upon the issues of social capital in Chap. 8 and DMO issues in connection with non-profit organizations (NPOs) in Chap. 13.

Regarding the third aspect of methodology or approaches, among the few quantitative studies listed in Table 1.1, Park et al. (2012) applied multivariate analysis. Masud et al. (2017) and Morales et al. (2018) applied a structural equation model (SEM). Quantitative evaluation is effective especially related to economic aspects to expand and strengthen the sustainability of CBT and the scope of CBT research.

Fig. 1.1 Three indicators of sustainability



To summarize, while research in the field of CBT has been gradually expanding in quantity and topics covered, research on two aspects, i.e., environmental and social aspects, formed the majority of research while that on economic aspects was left behind. This means that the triangle showing the three indicators of sustainability for CBT is imbalanced, not like a positive triangle as expected, and is conceptually depicted as a biased triangle (Fig. 1.1). This is one reason why CBT activities often have difficulty in sustainability when public or international support projects end. To improve this situation, entrepreneurship in CBT should be fully investigated by quantitative approaches in addition to qualitative approaches. This is one of the basic common issues that exist in every rural area in either developing or developed economies. For the improvement of the economic viability of CBT, partnerships with external stakeholders are increasingly important and must be the topic of further research in connection with the development of CBT entrepreneurship.

1.3 Conceptual Framework of Rural Tourism and Community-Based Rural Tourism

This section provides the conceptual framework for rural tourism and community-based activity in connection with multifunctionality and entrepreneurship. Firstly, this section sheds light on the internalization of positive externalities generated by agricultural activity, which is called multifunctionality in agriculture. The multifunctionality involves positive externalities and is defined as a joint product generated with agricultural production and creating benefit. Multifunctionality presents a new social role for agriculture. This fact, however, does not mean that multifunctionality automatically generates a new income source for farm producers. Thus, to explore how to internalize the externalities is not only an issue related to the agricultural sector per se, but also provides an opportunity to redefine the role of agriculture with a wider perspective of rural resource management.

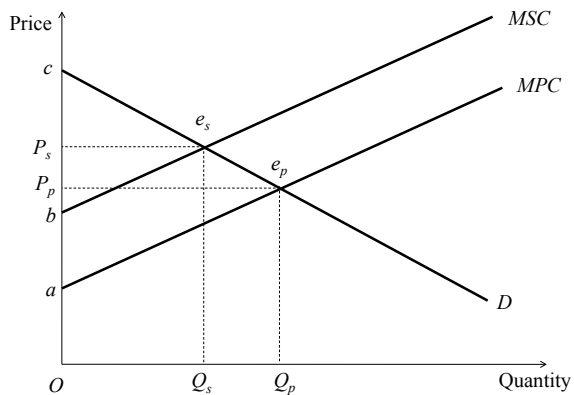
To address this issue, this section takes the following steps. First, I explain what multifunctionality is under the economic framework of externality. Second, I focus on rural tourism activity and characterize rural tourism and issues to be solved in comparison with production of traditional farm products because rural tourism is an effective measure for farm producers to internalize externalities and provides a new income opportunity. I present the stepwise internalization process of the externality that leads to a new rural business. Third, as a case study in rural tourism development, I briefly examine the trend of supply and demand for rural tourism in Japan. Finally, policy recommendations are made for more effective measures to support the creation of a new sustainable rural business and to improve resource management.

1.3.1 Externality in Agriculture

Agriculture generates externalities in both negative and positive terms along with farm production. Agriculture has been termed as a generator of negative externalities, or external diseconomies, to society such as being a source of water pollution by chemicals and livestock waste. Now since control of emission of these harmful substances has been imposed, at least in every developed country, it is safe to say that the internalization of negative externalities caused by agricultural production is mostly achieved. Legal regulations and subsidies for investment in facilities for prevention of such emissions were employed for this purpose. A detailed discussion of negative externalities is not given as that is beyond the scope of this book.

Figure 1.2 illustrates the existence and the internalization of the negative externalities in agriculture as often seen in microeconomics textbooks (for negative externalities of agriculture, see Hanley (1991) and van Huylenbroeck and Whitby (1999)).

Fig. 1.2 Case of external diseconomy



In the case of a negative externality, the curve for the marginal social cost, *MSC*, comes above the curve for the marginal private cost, *MPC*, because the social optimal production level, *OQ_s*, must be smaller than the private optimal level, *OQ_p*. Although the shape of the *MSC* curve is not limited to linearity in the case of externality in agriculture (Ohe 2011a), to simplify the discussion, the *MSC* curve is depicted as linear here. The measure needed to internalize the negative externality is to make the *MPC* curve shift upwardly to the *MSC* curve so that eventually the two curves will meet to realize social equilibrium. Price at the social optimal level, *P_s*, contains the marginal social cost of externality in addition to the private optimal price, *P_p*.

1.3.2 Multifunctionality as a Positive Externality

Now turning to the positive externalities in agriculture, multifunctionality in agriculture is a typical example of this kind of externality, which exerts benefits to society. The most widely accepted characteristics of multifunctionality are technical and/or institutional joint production of farming and positive externalities or services provided not as commodities. For conceptual considerations see OECD (2001, 2003) and Pezzini (2000), van Huylenbroeck and Durand (2003) from the European perspective and Nagata (1991), Ohe (2001) and Tabuchi and Siomi (2002) from the Japanese perspective focussing on rice paddy. Multifunctionality has been generated not only by individual farm producers, but also by communal work that has been traditionally performed for generations. This is particularly true in Japan.

In this sense, an individual farm producer and/or local farm community does not receive any monetary compensation for their generating externalities (for the connection between multifunctionality and rural tourism, see OECD 2005; Vanslebrouck et al. 2005; Ohe 2007b, 2008b, 2011a). This means that the multifunctionality has non-excludability; those people who do not pay for the benefit can receive benefit. Although multifunctionality has a variety of functions, these functions can be classified into two types: the environmental function and the socio-cultural function as shown in Table 1.2. The environmental function includes land preservation, preserving the natural environment such as biodiversity, preserving the landscape, etc.

The environmental function has non-rivalness, that is, there is no competition among beneficiaries, and no one is hampered from receiving benefits. In this sense, the environmental function has similar traits as public goods although multifunctionality is generated from producers' private activity, not provided by the public sector. Thus, it is more suitable to internalize these externalities by subsidies provided by the public sector because it is more difficult for an individual producer to internalize the externalities through farm activity than in the case of the socio-cultural function. For instance, a 'direct payment program' has been implemented in the European Union and Japan. This program provides government subsidies to producers for the positive externalities that they generate as multifunctionality in agriculture (for an empirical evaluation of the subsidy effect on rural tourism in Japan, see Chap. 6

Table 1.2 Multifunctionality and possibility of internalization as farm activity

Types of multifunctionality	Content of multifunctionality (subfunction)	Possibility of farm business
Environmental function	Land preservation: preventing flooding and soil erosion	Low
	Nurturing water resource: preserving underground water	Low
	Preserving natural environment: purifying water and air, ameliorating climate change, preserving bio-diversity and eco-system	Low
	Landscape formation	Low
Socio-cultural function	Preserving cultural heritage	Middle
	Health and recreational function	High
	Educational function	High

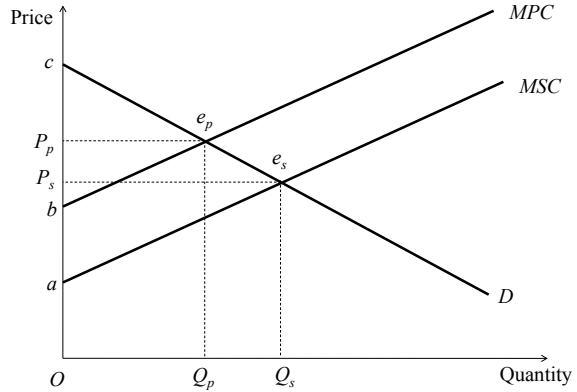
(Ohe 2006)). In the Japanese case, the farm community has been a basic unit of subsidy provision as with other farm policy measures. This is the basic idea of the subsidy program in Japan. Although I do not deny the effectiveness of subsidies to rectify a case of market failure, it should be noted that subsidies are sometimes politically motivated rather than derived from economic rationality and have the possibility to cause ‘government failure’. Another reason for the cautious attitude toward subsidies is that I should place a priority on the establishment of self-viable activity for sustainable rural development through market initiatives such as rural tourism.

Components of the socio-cultural function are preserving the cultural heritage, the health and recreational subfunction, and the educational subfunction. Especially, it is easier to specify the beneficiaries of health and recreational subfunctions and educational subfunctions. This means that farm producers, if they wish, can ask the beneficiary for monetary compensation for services provided. Put differently, the internalization of externalities through farm activity, i.e., private initiative conducted by an individual farm producer and/or local community, is relatively easier than with the environmental function and thus non-exclusiveness can be rectified in this case. Private initiative is a necessary condition toward the establishment of a new viable farm business. In reality what aspects are emphasized from one country to another varies in dealing with multifunctionality.

Thus, in multifunctionality, there are functions that are rather easy to be internalized at the farm level and ones that are not. For this reason, health, recreational, and educational subfunctions have a greater possibility to be utilized as new farm activities.

Figure 1.3 illustrates the existence and internalization of positive externalities in the case of multifunctionality measuring the activity level horizontally and the value term vertically. In this case, the marginal social cost comes below the marginal

Fig. 1.3 Case of external economy



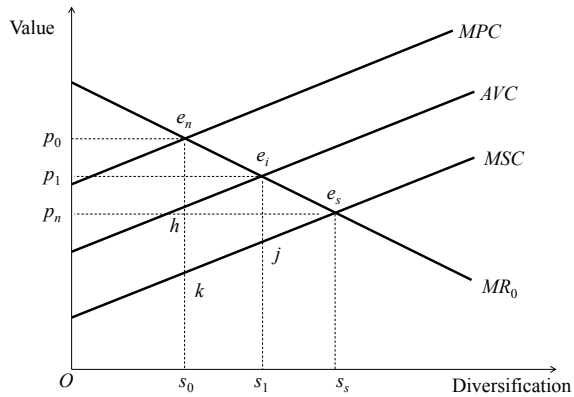
private cost, which means that the social optimal production level is greater than the private optimal level. As easily imagined from the case of negative externality, to attain social equilibrium the *MPC* curve has to shift down to the *MSC* curve. Nevertheless, unless any measure for internalization is undertaken, producers only choose to produce at the private optimal point e_p with the amount of product OQ_p , which is $Q_s - Q_p$ short from the social optimal production level, Q_s .

To summarize, from the farm policy perspective, the significance of multifunctionality issues is to create the chance to enlarge the activity domain for farm diversification. In that case, it should be noted that there are differences in terms of the level of internalization of externality in the farm activity among types of multifunctionality. Hereafter, in the following section, this book mainly focusses on the recreational subfunction to examine how a rural tourism activity was generated.

1.3.3 Internalizing Multifunctionality Through Rural Tourism: Stepwise Innovation

I explore here the measures taken for internalization of externalities generated by multifunctionality from the perspective of private initiative. The issue of internalization through the market mechanism is that the markets for multifunctionality itself have not been established fully, which means that not only consumers but even producers often do not recognize the value of externalities. Under these circumstances, it is difficult to internalize externalities all at once and therefore a stepwise approach should be taken to address the internalization (Ohe 2007b, 2011a). This stepwise internalization is an innovative process, so that we can call it “stepwise innovation”. Now I explore this issue under the framework of the subjective equilibrium of producers. Figure 1.4 depicts a stepwise process of internalization by focussing on rural tourism activity measuring the level of farm diversification horizontally and the value vertically. This is because producers can internalize the externality as the

Fig. 1.4 Diversification and internalization of externality



diversification of farm activity progresses through the operator’s managerial efforts. Thus, the more farm diversification progresses, the greater are the opportunities for operators to internalize the externality. The demand factors are assumed to be constant to simplify the discussion here. Rural tourism is often said to be a relatively successful example of the internalization process of the recreational sub-function (OECD 2005). Internalization issues pose the question of how to generate a new farm business through forming a new role for agriculture in society.

Three right upward curves for the producer are illustrated in Fig. 1.4; the average variable cost curve AVC is added here in addition to the MPC and MSC curves. In the area of diminishing return, the average cost curve always comes under the MPC curve, so this is not an exception as well here. The right downward curve depicts the marginal revenue MR because of a producers’ subjective model here, not of aggregated demand in the market.

At the initial phase, most of the consumers and producers as well do not notice the value of the positive externalities that producers generate although producers might know of the existence of externality per se. Naturally, the demand level remains low at this stage and producers’ optimal point is attained at point e_n , which is solely the private optimal point, not the social optimal point, point e_s . If externality does not exist, the private optimal point e_n is the social optimal point as well. Nevertheless, this is not the case when externality exists. At this stage, externality is not internalized at all, which means that society receives benefits without paying any price to producers (Ohe 2011a). For instance, if producers do not recognize the real value of the externality, they conduct the activity at the private optimal point. This is rational behaviour for producers when the price of externality is not paid. If producers, however, stay at this point, there is not any prospect for the development of a new rural business in the long run. Thus, something should be done to internalize the externality toward the establishment of a new economically viable activity.

The next issue is how to achieve internalization, although studies on rural tourism show that it is neither possible nor practical to jump straight to perfect internalization from scratch. The next step from the initial stage described above is undertaken on

Table 1.3 Simultaneity in services

Simultaneity	Characteristics	
Temporal simultaneity	Production and consumption at the same time	Non-stockable
Spatial simultaneity	Consumer must come to location where production takes place	Non-transportable

the *AVC* curve. At this stage, producers realize the value of externality and try to recover the average cost such as material costs, so at point e_i producers pay the average cost. However, some of the externality remains to be covered. In Fig. 1.4 the uncompensated externality is depicted as je_i , which is the vertical distance between *AVC* and *SMC*. At this stage, internalization is partially practiced to the level of average cost. Some producers conduct the activity at this level. For instance, in this case, producers assume that they provide recreational services not from a profit-seeking motivation, but only seek to cover the material costs in order not to incur a loss (Ohe 2007b, 2011a). For instance, this average cost-based optimal behaviour is often conducted as a service to the local community to gain an understanding of what dairy farming is in Japan. These behaviours depend on producers' attitudes of how they position the externalities in their farm business; that is, whether they look at externalities as a new income opportunity or as volunteer services for society. It is true that this is not a matter of enforcement, but a matter of individual choice. At this stage, rural tourism activity is not yet viable. Thus, the next stage is necessary to realize viable rural tourism activity.

To step up to the next stage, the human network must be extended through exchange between producers and consumers because extending this network helps producers to get more opportunities to devise new ideas for better internalization measures. This is because rural tourism is an intangible service product unlike traditional food production that results in tangible goods, which can be stored for a certain period, except for fresh vegetables and fresh dairy products, and transported. Features of services are summarized in Table 1.3. Service has simultaneity of production and consumption, meaning that consumers have to be physically present where and when the production takes place (Hicks 1971; Hill 1999). There are two types of simultaneity: temporal and spatial. Temporal simultaneity means that it is not possible to store services and thus inventory cannot be adjusted according to supply. Spatial simultaneity means that it is not possible to transport services and thus transportation cannot be adjusted according to supply.

In the case of rural tourism, if consumers want to enjoy rice-planting experiences, they have to come to visit the site when rice planting is implemented in the spring. Otherwise, they miss the chance. Thus, simultaneity in rural tourism is stipulated by locality and agrarian heritage, which could add the diversity to rural tourism that makes it different from other services. From these traits, two advantages are observed. First, the rural tourism market can be segmented temporally and spatially, which could create an opportunity to develop a local culture-based rural tourism activity (Ohe and Ciani 2011). Tangible and intangible factors related to the rural heritage

such as local food, traditional architecture, agrarian way of life, and warm rustic hospitality could be considered ingredients of culture-based rural tourism activity. Thus, rural tourism enables producers to more widely mobilize local resources that have been underutilized in the case of mono-farm production activity and to have a chance to achieve utilization and preservation of their rural heritage. If producers can succeed in achieving this point, price elasticity of demand becomes smaller than before, which means that producers can have room for a price initiative and there is less burden on the shift of transportation cost as mentioned below.

Another advantage of simultaneity is that exchange and feedback between producers and consumers will easily occur with the provision of service. The significance of feedback is essential for rural tourism business because this feedback from consumers tells what they are and are not satisfied with. From feedback, producers can learn the potential needs of consumers and how to improve service quality and also gain confidence in their ability as producers and in their local community where they grew up as a worthwhile destination for tourists. In this regard, feedback and exchange are necessary conditions to trigger innovations in rural tourism (Ohe 2007b).

On the other hand, simultaneity has disadvantages as well because non-stockable and non-transportable traits generate a large gap between peak and off-peak demand, which is known as an issue of seasonality in demand. Seasonality inevitably causes income fluctuations due to the inefficient resource utilization caused by congestion in the peak season and underutilization in the off-peak season. This fluctuation is even accelerated by weather conditions because rural tourism is outdoor-oriented. For these reasons, fluctuations should be minimized for the efficient utilization of farm resources and a stable farm business activity.

This means that service management is crucial for successful rural tourism development from various aspects (for service management and marketing, see Carlzon 1987; Norman 1991; Lovelock and Wirtz 2011). If producers can practice management well, internalization would be successfully achieved. This stage is illustrated in Fig. 1.3 at point e_s . Ideally, to attain complete internalization, the *MPC* curve should shift down toward the *MSC* curve and eventually become identical at social optimal point e_s . This downward shift depends on producers' management capability; thus, software aspects, such as service management, are more crucial to innovation than hardware aspects in how to mobilize rural and farm resources into rural tourism activity.

The interesting feature of rural tourism is that multifunctionality is enhanced through rural tourism, which continuously creates a new social value, which is not viable initially. Rural tourism can realize an opportunity for a new service and product from this social value. In this respect, the internalization of multifunctionality should not be underestimated. The empirical evidence for this positive recursive relationship between multifunctionality and rural tourism is demonstrated in Part 2. Since communal work generates and enhances multifunctionality, the more positive externalities would potentially be internalized through CBRT than by an individual farm producer.

1.3.4 Market for Rural Tourism and Its Characteristics

Bearing in mind the internalization of externality, now under the assumption that the internalization is completed, I examine characteristics of rural tourism. In traditional agricultural economics, farm products are generally supposed to be shipped from rural areas to markets in urban areas and consumed there. This flow is depicted as an arrow from left to right in Fig. 1.5.

A typical example of this supposition is von Thunen’s Isolated State, which is based on the assumption in Fig. 1.5. In this case, the market for farm products, i.e., foodstuffs, is solely located in the urban area. Of course, local residents in rural areas go to local farm shops to buy food as well, and this behaviour is considered to be a traditional food purchase category indicated by the same arrow from left to right.

On the other hand, city dwellers have been attracted to rural areas to buy local products from farm shops and enjoy rural tourism sites. Those people who visit rural areas not only purchase fresh farm products but also enjoy recreational aspects, which are indicated by another arrow from right to left as shown in Fig. 1.6 while the arrow from left to right is the same as in Fig. 1.5. This fact indicates that the purchase behaviour by urban dwellers is undertaken from urban to rural areas in addition to the traditional flow of farm products from rural to urban areas. This trend is considered to be a result of the rural market that is emerging.

Fig. 1.5 Rural-urban relationship with one type of product

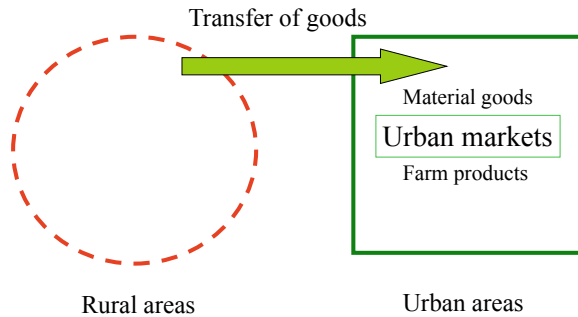
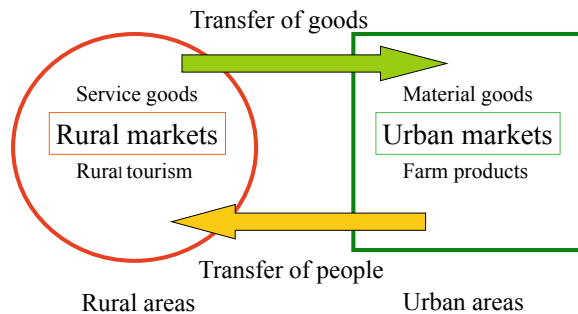


Fig. 1.6 Rural-urban relationship with two types of products



Thus, I characterize the above two markets in the model shown in Fig. 1.6 as follows in comparison with ordinary farm products. First, there are two markets that are spatially separated from each other: the urban market and the rural market. Although this means that prices are formed at each market, there is a difference as to whether or not the price formation is done where production has taken place. Thus, I assume a different location for the two markets and differences between where production takes place and where consumption occurs. Second, because of the different location of markets and differences in places for production and consumption, transportation costs are required for producers to ship farm products to the urban market and for urban dwellers to get to the rural areas to consume rural tourism. It is plausible for tourists to enjoy this transportation as a part of the tour from the urban to the rural area rather than feeling disutility as cost. Thus, the real cost after this positive utility was deducted is considered here. Put differently, whether there is a rural tourism good for which city dwellers want to pay the transportation cost is one of the conditions to judge the formation of the rural market for urban dwellers.

Third, the contents of the transportation cost are as follows: (1) direct transportation cost of farm products and processed food; (2) in the case of human transportation, the cost of public transportation and/or cost of using one's own car including an opportunity cost of driving, and (3) the psychological cost of transportation. The last, the psychological cost, depends on the preference for the countryside that may differ from one consumer to another and on the attractiveness of destinations. Thus, the psychological cost to a consumer with a high preference for the countryside is lower than that to a consumer with a low preference. Fourth, the cost involved in buying food by local residents in each market, i.e., urban market for urban residents and rural market for rural residents, is assumed to be zero. Fifth, it is assumed that the rural market is composed of local and urban residents. Because purchasing behaviour of local residents at the rural market is conducted as daily consumption behaviour, it is crucial to develop the rural market so that the number of visitors from densely populated urban areas is increased in addition to the local residents.

Bearing in mind these assumptions, I characterize rural tourism goods in the rural market in comparison with traditional farm products in the urban market as tabulated in Table 1.4, which shows the differences between the two goods. Let us look at the details. Goods dealt in the urban market are exemplified as ordinary farm products from rural areas as mentioned. Those products are generally shipped through the mass distribution system of agricultural cooperatives, retailers, and distributors to the urban market where there is a large demand and consumption takes place.

In this respect, it is safe to say that this market is a mass market. Usually producers initially pay the transportation cost for shipment. Even in the case that a distributor buys products at the field, the transportation cost is excluded in the price paid to producers.

Conversely, in the rural market, urban dwellers are expected to comprise the main component of demand. Specifically, rural tourism goods are services comprised of farm-based accommodations, farm restaurants, farm and rural experiences, and farm visits such as pick-your-own that have a recreational aspect. Direct marketing of farm products and processed goods are also included in this category because

Table 1.4 Comparison of two different farm goods

Characteristics	Rural-tourism goods	Ordinary farm products
Location of markets	Rural areas	Urban areas
Who pays transportation costs	Consumers (visitors)	Producers
Types of demand	Recreation, purchase of local foods	Food purchase
Types of goods	Service goods	Physical goods
Types of market	Niche, up-market	Mass market
Possibility of internalizing multifunctionality into farm activity	Positive	Neutral

consumers normally pay the delivery cost at the point of purchase. Service goods, as mentioned, have simultaneity of production and consumption. The essential reason that consumers pay for transportation to come to the site is because they cannot enjoy services unless they come to the place of production when and where those services are available. Whatever transportation method a consumer employs, that consumer is supposed to pay for the real travel cost including the opportunity cost for the visit. The market size for rural tourism goods is much smaller than the mass market for traditional farm products and thus the market for rural tourism goods is considered to be a niche market, as is often pointed out (OECD 1995a, b). Thus, it is assumed that these characteristics result in larger income elasticity of demand compared with that of ordinary farm products such as food.

In connection with multifunctionality, while rural tourism can realize income by internalizing the externality that multifunctionality generates, ordinary farm products can create multifunctionality, although they are considered to be neutral for utilizing multifunctionality by internalization into farming activity in terms of income generation.

It is supposed that these two markets are not substitutable but are complementary to each other for producers. When I take into account the two possible markets, it is easier to extend perspectives towards farm diversification.

1.3.5 Emerging Rural Markets and Conceptual Considerations

Here, based on the preceding considerations and supposing that externalities are perfectly internalized, the two markets are depicted under the economic framework (Figs. 1.7 and 1.8). Figure 1.7 illustrates market equilibrium in the conventional food market. As mentioned previously, producers pay the transportation cost for shipment, so the supply curve shifts upwardly from S_0^u to S_1^u to the amount of transportation cost per unit T^u .

Fig. 1.7 Case of conventional farm product with transportation cost

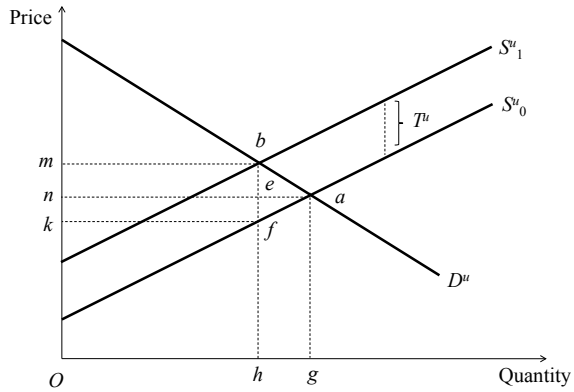
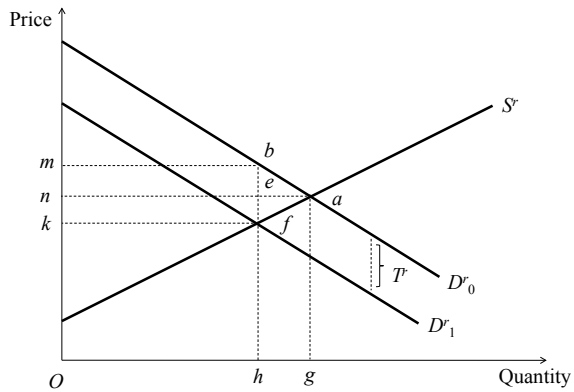


Fig. 1.8 Case of rural tourism with transportation cost



The equilibrium is attained at point *b*. In contrast, market equilibrium in the case of rural tourism goods is illustrated in Fig. 1.8. In that case, the consumers pay the transportation cost to visit tourism sites in rural areas per unit T^r , so that the demand curve shifts downwardly from D^r_0 to D^r_1 and results in equilibrium point *f*.

One thing about which we must be careful is that those producers who provide rural tourism goods do not always internalize transportation cost into income. Likewise, producers do not always pay the entire transportation cost for shipment of farm products in the end.

The reason is that the issue of the shift of transportation cost, which means that the initial payers and the final bearers are not always identical, is often discussed with regard to the effects of taxation in the arena of public finance (Musgrave and Musgrave 1989; Stiglitz 1988). Which portion that producers and consumers bear in the end is determined by price elasticity of demand and supply. In the case of traditional farm products in Fig. 1.7, producers only bear the transportation cost fe per unit in the end (total amount $fenk$); the rest of be is borne by consumers (total amount $benm$).

In the case of the rural tourism goods consumers bear the whole transportation cost only when the price elasticity is zero. Otherwise, producers also have to bear the transportation cost partially. In Fig. 1.8 producers bear fe (total amount $fenk$) and consumers bear only be (total amount $benm$).

Thus, the issue of incidence of costs is generalized as below.

$$\text{price elasticity of demand } \varepsilon_d = \left(\frac{hg}{og}\right)\left(\frac{on}{nm}\right) \quad (1.1)$$

$$\text{price elasticity of supply } \varepsilon_s = \left(\frac{hg}{og}\right)\left(\frac{on}{kn}\right) \quad (1.2)$$

$$\frac{\text{price elasticity of demand } \varepsilon_d}{\text{price elasticity of supply } \varepsilon_s} = \frac{\text{portion borne by producers}}{\text{portion borne by consumers.}} \quad (1.3)$$

From Eqs. 1.1 to 1.3, if the price elasticity of demand ε_d (in absolute value) is smaller than the price elasticity of supply ε_s , then the portion borne by consumers is greater than the portion borne by producers. Conversely, if the price elasticity of demand is greater than that of supply, then the portion borne by producers is greater than that by consumers. Subsequently, if the price elasticity of supply is constant, then the more inelastic the demand is according to price the higher is the portion borne by consumers. From this consideration, it is important for the rural side to recognize this aspect to build appropriate development measures for rural tourism.

Furthermore, since the existence of transportation cost causes a downward shift in rural tourism demand, this effect also means that it has a demand screening effect. This is one piece of evidence that indicates that rural tourism goods have characteristics of an up-market and niche market (Haines and Davies 1987; Blunden and Curry 1988; Sharpley 1996; Sharpley and Sharpley 1997; Ohe 2003a). Thus, it is safe to say that the issue of incidence of transportation cost is basically an issue of income distribution, and producers should recognize this issue for market segmentation as well.

To summarize, I characterized features of rural tourism in comparison with conventional farm products. It is true that rural tourism provides a new income opportunity for producers. It should be stated that producers are required to have a higher capability for farm and local resource management with a wider perspective than they had previously since rural tourism is different from the goods that farm producers traditionally produce. This point is elaborated in the next section.

1.3.6 Required Capacity Building of Farm and Local Resource Management

Traditionally, tourism activity has been executed by producers as a side job in the winter in snowy areas, e.g. in Northern Italy and Japan. What I call rural tourism

now is different. There are now two types of tourism activity by producers: the old type and the modern type. The modern type corresponds to ‘rural tourism’, which is the topic of this book. Table 1.5 compares the main characteristics of the two.

The old type of tourism activity was conducted by producers in Western Europe and Japan for many years before modern rural tourism began. A typical example is farmhouse accommodation, which was offered as an auxiliary business during the slack farming period in winter. This old type of activity is quite often performed around ski resort areas. The main aim of visitors is not to stay at a farm but to engage in non-farm related activities such as skiing in winter or hiking in summer. Hence, the demand for a farm stay is a derivative or a secondary one. For this reason, visitors do not expect a high level of service quality and tend to be satisfied with cheap service. Likewise, producers do not have an incentive to improve quality through the integration of farm and tourism activities and therefore can run the accommodation business with low skills. In that market, consumers can enjoy the service as a cheap leisure activity of low quality that does not require high income, which can be termed as a ‘down-market’. Many traditional farmhouse accommodations remain at this stage in Japan but are losing visitors due to the inability to cope with the modern needs of visitors. If operators want to survive, they must transform their operation to a modern type. In Italy, for instance, this transition was relatively smoothly conducted while in Japan this transition has been very slow (Ohe 2008a).

On the contrary, at the modern stage, producers newly reconfigure traditional tourism services and provide new services that meet current needs of society. Producers offer not only accommodation services but also full-fledged service goods, taking advantage of tangible and intangible rural goods such as rural amenities and heritage experiences that include local food and farm products. The demand for these modern services, therefore, is not secondary, but becomes original in the sense that people primarily come to visit the countryside and to stay at the farm. To properly comply with this modern demand, producers need to have higher management skills that enable them to grasp what tourists want through the integration of farm and tourism

Table 1.5 Comparison of old and new rural tourism

Features	Old type	Modern type
Supply side	Utilization of idle facility and labour	Utilization of multifunctionality
	Low quality of service	High quality of service
	Low level of management skills	High level of management skills
Demand side	Derivative	Original
	Low level of needs	High level of needs
Market	Down-market	Up-market
Example	Accommodation for skiers	Rural tourism

activities than the skills required by the old type of rural tourism (for the integration of farm and tourism activities, see Ohe 2010b). Because of the quality-oriented nature of rural tourism, the market at this stage is supposed to be an ‘up-market’ with services of relatively high quality and corresponding prices that reflect such quality.

Especially, service management, interior design, and provision of meals are domains in which women can exercise their potentials and set their own economic agendas. Such women can explore their capabilities, which could not be demonstrated in the conventional farming arena, which is male-dominant and in which women remain in a subsidiary role (for gender issues including rural tourism in Japan, see Tsutsumi 2000; Nakamichi 2009). This is why farm women are often proactive in engaging in rural tourism (for gender issues and rural tourism, see Ohe 2007b; Brandth and Haugen 2010).

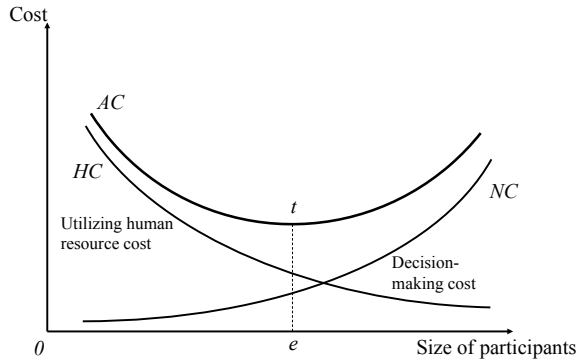
Another important issue is that rural tourism can generate jobs for the young and even the elderly on an on-farm basis, which gives a more encouraging perspective on succession in farm family businesses. The conventional way of earning income through off-farm job holding does not guarantee sustainability and development of the farm business even if the living standard of the farm household is raised with income from outside the farmyard. Rather, part-time job-holding in other industries by successors to the farm business has actually worked as a detriment to sustaining the farm business because these farm people often lose their agrarian identity. Rural tourism, per contra, enables producers and farm successors to find a new agrarian identity through the extension of the activity domain at the on-farm level. This is a crucial point in increasing on-farm jobs in a sustainable way.

In this context, for the sustainable development of rural tourism it is necessary to raise producers’ skills in service management, which becomes a necessary condition to internalize the externalities in agriculture.

1.3.7 Basic Framework of Community-Based Rural Tourism

Finally, the economic framework of CBRT has not been established yet; thus, the author presents a basic framework here. Given other conditions, I consider that two factors determine the optimal size of CBRT: decision-making cost and utilization of human resource cost. Traditionally, it has been common practice in rural Japan for community decision-making to be consensus-based. Thus, the decision-making cost will increase when the size of the decision-making unit is increased because a larger number of people need more time to reach a consensus. This means that this average cost curve will be right upward depicted as *NC* in Fig. 1.9. On the other hand, the average resource utilization cost will decrease when that size increases because people will have more opportunities to find available human resources with various talents and skills, which means that this cost curve will be right downward depicted as *HC*. Then, where the two curves meet, the optimal size *e* will be determined because the total average cost of CBRT that is the sum of the two costs is the minimum at

Fig. 1.9 Average cost curves for CBRT size



this point t . In practice it is quite common that CBRT has a high cost level for both costs due to low managerial skills, which often surpass the viable cost level and is not sustainable in the long term. The most common reason is that the territorial range of the traditional community is too narrow to secure the necessary human resources for CBRT even though consensus making is done. Further, consensus making is often difficult because of the conservative rural mentality for the new such as CBRT. Empirical evaluation with this framework is conducted in Chap. 6.

Entrepreneurship will be able to reduce these cost levels expressed by a downward shift of cost curves depending on the type of innovation. For instance, innovation in information and communication technology will reduce both costs by easing decision-making and resource utilization. If these cost reductions are realized through the open network beyond the narrow territorial domain of the rural community, organizational innovation also occurs.

1.4 Structure of the Book

Figure 1.10 shows the structure of the book, which is composed of four parts. Part 1 consists of the Introduction and is comprised of this Chapter and Chap. 2. This Chapter describes how rural tourism and CBRT are characterized conceptually from a microeconomic perspective. Chapter 2 characterizes rural tourism in Japan as still being in transition from the old style rural tourism that has been conducted as a low quality sideline business for farmers in winter to modern rural tourism that provides tourists with a higher quality experience and authentic rural hospitality.

Part 2 deals with roles of community-based rural tourism (CBRT) with four chapters. Chapter 3 describes the role of farms that provide accommodation service as pluriactivity in connection with multifunctionality by focussing on the function of farmland preservation in mountainous rural Hiroshima. Chapter 4 addresses the roles of farm women engaged in rural tourism that transforms the positive externality of multifunctionality into an income-generating opportunity, i.e., the internalization of

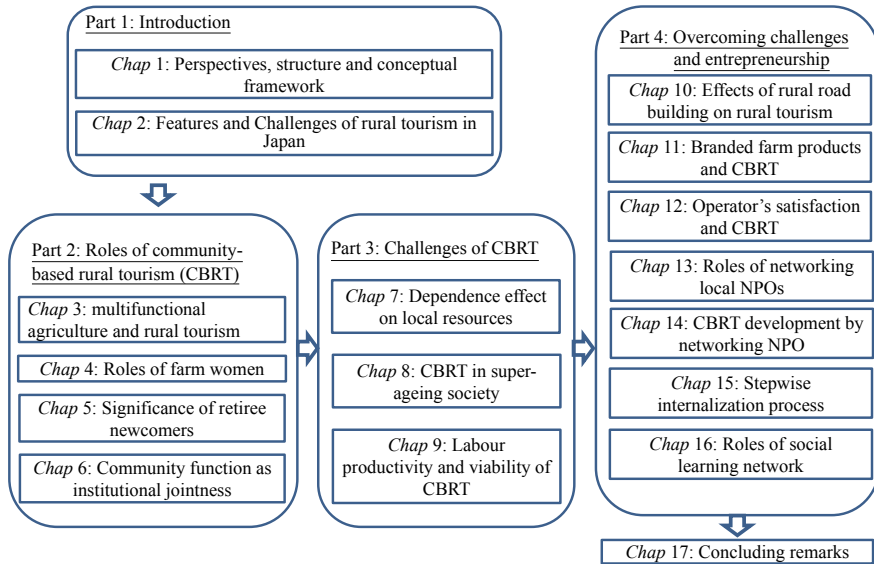


Fig. 1.10 Table of contents of this book

externality, from a life history approach. Chapter 5 examines the roles and significance of rural tourism activity undertaken by those farmers who have retired from non-farming jobs from a multifunctional perspective in Chiba, eastern Japan. Finally Chap. 6 investigates community function as institutional jointness. For this purpose, this chapter evaluated the connection between multifunctional activities and institutional hamlet conditions under the Japanese direct payment program for less favoured areas.

Part 3 addresses the challenges of community-based rural tourism, and is comprised of three chapters. Chapter 7 discusses the dilemma of the local community in which too much dependence on local tourism resources causes operators to be conservative about the future despite the present good profitability, which is termed the dependence effect. Chapter 8 deals with a common rural issue, i.e., an ageing rural population. In 2005, Japan became the first in the world to be designated as a super-ageing society. This chapter describes how a rural community conducts tourism activity and how it copes with challenges through a study of CBRT activity in Chiba. Chapter 9 evaluates labour productivity of diversified community-based rural tourism activities based on a conceptual framework on how to evaluate economic viability and the endogenous mobilization of rural resources.

Part 4, which has 7 chapters, focusses on overcoming challenges and entrepreneurship. Chapter 10 evaluates the effects of rural road building on rural tourism by focussing on pick-your-own fruit farming activity after rural road building in Gunma, Japan. Chapter 11 examines the complementary relationship between the direct effects of local brand farm products, i.e., increases in income and employment in the local community, and indirect effects, i.e., the development of tourism, by survey

data on agricultural cooperatives in Japan. Chapter 12 investigates conceptually and empirically whether rural tourism operators' individual satisfaction enhances utilization of local resources by focussing on a community-based farm-stay activity with farm and rural experience services implemented as a part of school trips in Matsuura, Japan.

Chapter 13 explores the roles that NPOs play in the development of rural tourism to help operators counter difficulties from an institutional economic perspective. Chapter 14 describes the development of CBRT by focussing on the roles of an NPO that promotes the formation of networks in Miyagi in northern Japan through a case study approach to an NPO engaged in rural tourism. Chapter 15 deals with a stepwise internalization process through open networks by focussing on the educational function provided by dairy farming, i.e., farming experience services, in Japan. This chapter also clarifies the significance of institutional jointness and an open network of farmers for the promotion of this internalization process. Lastly, Chap. 16 conceptual and empirically evaluates an open social learning network of dairy farmers who provide the educational service and formation of operators' attitude toward establishing a viable service because this open network nurtures entrepreneurship reciprocally among members.

Finally, Chap. 17 presents the concluding remarks in which the findings of the studies described in the chapters are summarized and topics that remain to be explored in the future are addressed.

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Chapter 2

Features and Challenges of Rural Tourism in Japan



2.1 Introduction

Rural tourism has been advocated as an effective means of farm diversification (Haines and Davies 1987; Slee 1989) and has been studied from the viewpoint of farm-based rural hospitality businesses in many countries (Page and Getz 1997). These studies have contributed to progress in rural tourism research and policy design for the promotion of rural tourism. Rural tourism requires us to rediscover values of local resources neglected in the modernization process of the national economy and to educate both farm producers and policymakers to adopt a wider perspective than the hitherto agro-centric mentality. Although there are commonalities in rural tourism among countries, some issues of rural tourism have tended to be different in Japan due to differences in the social and communal contexts from the Western perspective.¹ Thus, this chapter discusses rural tourism from the Japanese perspective to characterize problems, constraints, and policy orientations to address these issues as background for the following chapters. These efforts are also effective for design of suitable policy measures toward desirable dissemination of the Asian type of rural tourism that has distinctive features that differ from traditional farm activity and the Western situation. Finally, policy implications for the future development of rural tourism are mentioned.

¹For topics on rural tourism up to 2000s, for Instance see Hall et al. (2003, 2004). For Japanese studies, Ohe (2001) examined behaviours of farmhouse accommodation operators in connection with farming production. Ohe (2007) studied women's role for rural tourism. For introductory studies on gender issues in rural Japan, see Tsutsumi (2000). Ohe (2008) deals with the roles of retiree farmers in rural tourism activity and Ohe (2005) evaluated an impact of rural road building on rural tourism.

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2.2 Rural Tourism in Transition

First, I outline the evolution of rural tourism in Japan. The Ministry of Agriculture, Forestry and Fisheries (MAFF) began the “green tourism” program in 1992. Those who can conduct green tourism are those engaged in agriculture, forestry, and/or fisheries as individuals or groups. In this respect, green tourism is identical with farm tourism rather than being the same as agritourism, which is solely related to agriculture. “The law for promotion of holidays in rural areas” that aims to promote green tourism was put into effect in 1994. Under the framework of this law, green tourism farms that offer accommodation and can provide farm experience services in farming, forestry, or fishing are registered. Table 2.1 shows the number of registered green tourism farms in the each area in the mid-1990s. Area-wise, the Kanto and the Hokuriku areas that include the Tokyo capital sphere has the two largest number of green tourism farms because traditionally many farmhouse accommodations that have provided accommodation service for skiers in winter have been located in the prefecture of Nagano, a mountainous region in central Japan. These farms have been registered as green tourism farms since the law was enacted.

These farmhouse accommodations are the old type as characterized in Table 1.5 in Chap. 1. Farmers around ski resort areas in Nagano have been providing lodging service accommodations as a winter income source. Groups of skiers, normally co-workers or friends, often stayed together in a large room in the farmhouse accommodations until around the mid 1990s. Skiing has been losing popularity among the youth after the bubble economy burst in the early 1990s and hereafter. Thus, these accommodations should be transformed into the modern type as mentioned in the previous chapter.

On the demand side, those with demands for the modern type of rural tourism are understood to be in the middle class in Western Europe (Sharpley 1996). The commonality in this respect was confirmed also in Japan (Ohe 2002). We can characterize this market for rural tourism as “up-market,” which means that those with a high academic background and therefore a high income who request higher quality service products mainly constitute the demand. Hence, the quality of services becomes more important than that of the former type.

The two types, however, are not totally isolated from each other in effect. Actually, quite a few areas have been successfully transformed from the old to the new. It will be possible for old areas to transform to the modern type if demand for these services matures and operators’ skills can catch up to demand. In this context, I consider that green tourism in Japan is characterized as, firstly, at the transition stage on the way to the modern from the old type and, secondly, that this transition can take a long time.

Nonetheless, for a smooth transition, it is necessary to consider peculiar features of Japanese and Asian circumstances, as mentioned below in Sect. 2.4, which differ from those in Western Europe.

In 2005, MAFF revised the law that went into effect in 1994 to try to increase the number of green tourism operators. The main point of this revision was to expand the

Table 2.1 No. of designated green tourism (GT) farms (as of end of March, 2006)

Area	Hokuriku	Kanto	Tohoku	Tokai	Kinki	Kyushu	Chugoku/Shikoku	Hokkaido	Okinawa	Total
No. GT farms	166	159	77	37	31	28	22	16	3	539
	(30.8)	(29.5)	(14.3)	(6.9)	(5.8)	(5.2)	(4.1)	(3.0)	(0.6)	(100.0)

Source The Organization for Urban-Rural Interchange Revitalization, 2006

qualifications for becoming a green tourism operator from only farmers as well as those engaged in forestry and fisheries to non-farmer local residents. In this respect, it should be noted that the concept of green tourism has changed from farm tourism to rural tourism, i.e., a wider concept. Nevertheless, the expected increase in the number of operators was not realized. I will come back to this point later in the Sect. 2.4.3 of this chapter.

2.3 How Large Is the Market for Rural Tourism?

It has been noted that rural tourism is not a mass market but a niche market. Nonetheless, except for ad hoc surveys, there is not yet a periodic government statistical survey on rural tourism nor an established method of estimating market size. Thus, I roughly estimated market size. Table 2.2 shows the results of an estimation of the rural tourism market size performed by a team of which the author was a part. A questionnaire survey was conducted by this team in 2002 and administered to the section in charge of rural tourism in 47 prefectures. Data obtained were used for the estimation. Several estimates were performed from two different approaches: the supply side and the demand side. Results for the supply side are shown in the left side of Table 2.2, in which there is a variation from 401.9 to 598.4 billion yen (equal to \$3.6 to 5.3 billion).

These estimates were for gross revenue or the direct economic effect without considering the indirect economic impact on the local economy. It cannot be denied that there are activities that are only partially grasped.

Results of the estimates from the demand side are shown on the right side of the table, and were 861.3 billion yen for consumption estimate 2 and 969.5 billion yen for consumption estimate 1 (\$7.6 and 8.6 billion, respectively), which is roughly twice that of the supply side estimates. This is because the indirect economic impact is included in the second estimation. In considering the insufficient coverage by the survey on all rural tourism activities, since the survey was still in the initial stage it

Table 2.2 Results of estimation of rural tourism market size

Supply side estimate of gross sales			Demand side estimate of consumption	
Estimate from sample average	Estimate from sample average without outlier	Regression estimate	Consumption estimate 1	Consumption estimate 2
¥598.4 billion (\$5.3 billion)	¥450.1 billion (\$3.9 billion)	¥401.9 billion (\$3.6 billion)	¥969.5 billion (\$8.6 billion)	¥861.3 billion (\$7.6 billion)

Source The Organization for Urban-Rural Interchange Revitalization, 2002

Notes Value in US \$ was calculated by \$1 = ¥113. Consumption estimate 1 includes travel cost and consumption at local site. Consumption estimate 2 includes travel cost and consumption at farm shop

is probable that the actual size of rural tourism will reach roughly 1 trillion yen. We can say that the value is about the size of a niche market because it is much smaller than that of agricultural production, i.e., 9 trillion yen. It should be noted that the rural tourism market will increase in the future. The important point here is that the market size of rural tourism will grow while conventional agricultural production will remain stagnant.

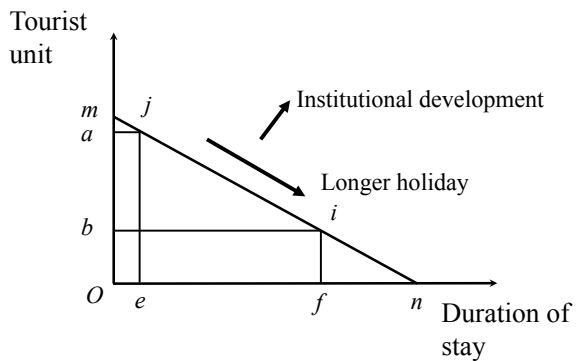
2.4 Issues of Rural Tourism in Japan

2.4.1 Institutional Aspects

Here, I examine the direction that we should take for the development of rural tourism. Figure 2.1 conceptually illustrates the demand shift of accommodation services measuring the unit of tourists vertically and duration of stay horizontally. The square by-product of the two factors expresses the size of demand. The unit of travel most often used in the past was performed by a group of people rather than by a family when income was generally low. The unit of travel tends to be large since a trip by a group of friends or colleagues more commonly was undertaken than by an individual and the duration of stay was short, being one or two nights. As a result, the square $aoej$ produced by the two factors takes a long shape vertically. This case is the pattern of the old type of tourism that was observed during the period of high economic growth in this country. This is one reason why the average capacity of farmhouse accommodation in Japan tends to be larger than that in Europe.

Nonetheless, when people begin to take longer trips after economic development, travel behaviour will change to what is usual in Western Europe. The tourist unit will be smaller because families and young, middle age, or empty nest senior couples will be common. On the other hand, stays will be of longer duration. Then the demand for rural tourism will increase to the square $bofi$ that takes a long shape horizontally. To simplify the discussion I postulate that these changes occur along with the line

Fig. 2.1 Pattern of tourist unit and duration of stay



mn. When the tourist unit becomes smaller and the duration of stay becomes longer, these changes are translated in the downward shift on the line *mn* and demand will increase.

Furthermore, the line should shift to the right upward direction in order to attain a substantial increase in demand in the long term. To this aim, the long paid holiday program that has been implemented in Western Europe should be institutionalized because this program generates demand for long stays and less expensive accommodations, which provides opportunities for rural tourism. This institutionalization, however, is not yet completed in Japan. This is an institutional constraint unlike the situation in Western Europe.

Another point that is partly connected with the first institutional constraint regarding a long holiday is that the demand for rural tourism has not yet fully matured to become part of the life style of urban habitants. Table 2.3 shows awareness of rural tourism in Japan according to age in decades. On average, only less than half of respondents knew what rural tourism means although interest is growing steadily and gradually. With regard to age group, the younger the group, the lower the proportion of those who knew what rural tourism is; recognition was about 30% among those in their 20s, about 40% among those in their 30s and 40s, and more than 50% of those in their 50s and beyond. Another question was related to actual experience with rural tourism.

In Table 2.4 two categories of tourists are described: overnight tourists and day-trippers. Whereas 70% of overnight tourists and nearly 60% of day-trippers did not experience rural tourism, there was an apparent difference among age groups. The younger the age group, the lower the percentage having experienced rural tourism.

In short, there are obvious differences among age groups in interests and experience in relation to rural tourism. Therefore, it is important to let the young know more about rural tourism through the IT methodology that they are familiar with and frequently use.

It can hardly be denied that these factors work against the development of rural tourism. These challenges, however, do not always mean that we should be pessimistic for the future of rural tourism in this country and in Asian countries. Rather

Table 2.3 Degree of recognition of rural tourism (%)

Age group	Total	Know what it is	Heard but do not know what it is	Never heard	No answer
Average	100.0	46.1	27.9	25.6	0.4
20s	100.0	29.4	22.4	47.1	1.2
30s	100.0	41.5	27.0	31.5	–
40s	100.0	39.8	30.5	29.7	–
50s	100.0	60.2	23.6	16.2	–
over 60s	100.0	50.7	32.3	15.7	1.3

Source Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF

Table 2.4 Percentage of those who experienced rural tourism (%)

Type	Age group	Total	No	Yes	No answer
Overnight stay	Average	100.0	70.0	23.8	6.2
	20s	100.0	81.2	15.3	3.5
	30s	100.0	76.3	20.8	2.9
	40s	100.0	72.0	23.1	4.9
	50s	100.0	69.0	24.5	6.5
	over 60s	100.0	57.8	30.1	12.1
Day trip	Average	100.0	57.8	37.8	4.4
	20s	100.0	68.2	29.3	4.7
	30s	100.0	63.9	32.8	2.5
	40s	100.0	61.0	35.2	3.3
	50s	100.0	54.2	37.7	3.7
	over 60s	100.0	47.1	44.8	8.1

Source Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF

we should understand that these are initial conditions that must be accepted and used as the basis of development of rural tourism.

For this reason, in the short- and mid-term, an increase in the number of visitors and in the length of stay cannot be expected to become a reality. Therefore, operators of rural tourism should count on not only overnight tourists but also day-trippers, especially when the farms are in the vicinity of urban areas within daytrip distance.

Here, I contrast the difference in characteristics of visitors between Japan (right) and Western Europe (left) in Fig. 2.2. To simplify the discussion, the area of the square is assumed as the market size of rural tourism and the areas are the same between the two. The oval shape is the market size of overnight tourists and the remaining portion is the market size of day-trippers. As can be easily recognized, the demand for overnight stays in the Japanese case is smaller while the demand for day trips is larger than in Western Europe. Therefore, it is necessary to expand the demand not only for overnight stays but also for day trips for stable development of

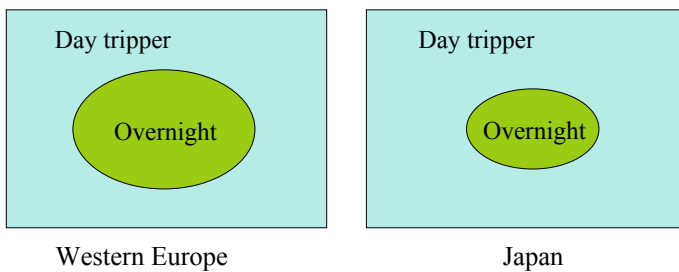


Fig. 2.2 Demand type of rural tourism

rural tourism in this country. This relatively small demand size for overnight stays is considered not only a Japanese but also an Asian characteristic of rural tourism.

The importance of day-trippers is not only limited to the aspect of demand increase but also to relieve the seasonality that is unavoidable in every type of tourism activity that includes rural tourism everywhere.

2.4.2 Issues of Service Management

The distinctive process of service production whereby both production and consumption occur all at once is critical for evaluation of service goods because the impression of visitors is largely determined during this process. Hence, this process is the most crucial moment that decisively impresses the quality of service to customers.

Carlzon (1987) called this process “the moment of truth” as the most critical production process for service management. Rural tourism is not an exception because activities such as farm experience programs, farm stays, farm restaurants, and farm shops always involve the process of interchange between producers and consumers, and during this process consumer’s evaluation of the quality of provided services is determined. Therefore, what should constitute rural hospitality and how to improve it remain to be explored.

Finally, I discuss topics to be tackled in the future. Officers in municipalities and tourists answered addressed issues as shown in Tables 2.5, 2.6, and, 2.7. Tables 2.5 and 2.6 contrast differences between urban and rural areas. Concerning municipalities, meeting the needs of urban people was the highest among the items; in particular, those in the city wanted the rural side to understand what urban people actually expect from rural tourism. In contrast, those in rural areas selected issues having hardware aspects such as farm experience facilities. The commonality for both sides was the nurturing of human resources such as coordinators and instructors who can work as go-betweeners for both the rural and urban sides.

Tourists were eager to have guidebooks and information on rural tourism, indicating that provision of information is insufficient at present (Table 2.7). Tourists in their 30s wanted lower prices, which suggests that young families with small children represent a potential demand for rural tourism.

Thus, it will be important to not only actively undertake provision of information and public relations directed toward urban people but also to improve the local tourist infrastructure such as tourist information offices and the availability of appropriate information there. Another issue is related to the development of human resources, i.e. rural hospitality skills and training of instructors and coordinators.

Nonetheless, there is actually a perception gap between the people in the two areas. The gap is elucidated in Table 2.8 where a higher portion of municipalities in urban areas than their rural counterparts answered that interchange through rural tourism between the two areas is important, although the situation is more urgent for the rural areas. This is rather unexpected and probably because the average rural area is not yet eager to tackle rural tourism in earnest in spite of a few advanced

Table 2.5 Issues on rural tourism development (Urban side) (%)

Area	No. of municipalities	Total	Meeting needs of urban people	Cultivation of advisers/coordinators	Information on destination	Transportation	Farm experience facility	Accommodation facility
Urban side	25	100.0	44.0	28.0	12.0	8.0	4.0	4.0

Source Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF
Note Urban side means Tokyo metropolitan area and designated large cities

Table 2.6 Issues on rural tourism development (Rural side) (%)

Area	No. of municipalities	Total	Meeting needs of urban people	Farm experience menu	Farm experience facility	Cultivation of human resources such as instructors	Promotion and provision of local information	Transportation	Accommodation facility	Others	No answer
Rural side	2035	100.0	22.2	19.7	17.9	17.4	9.2	5.5	5.2	2.6	0.4

Source Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF
Note Urban side means Tokyo metropolitan area and designated large cities

Table 2.7 What is necessary for rural tourism development (%)

Age group	Total	Guidebook	Low price	More information on rural tourism	Child and senior friendly	More informative at local level	Tourist information	Explanation of local foods and recipes	More instructors	Others	No answer
Average	100.0	27.1	18.0	16.5	13.6	11.2	5.4	3.6	2.4	1.4	0.8
20s	100.0	30.6	18.8	17.6	14.1	9.4	5.9	2.4	1.2	-	-
30s	100.0	26.1	24.5	18.7	10.4	10.0	4.1	1.7	2.5	1.7	0.4
40s	100.0	31.3	18.7	18.3	10.6	11.0	4.9	2.0	2.0	0.8	0.4
50s	100.0	25.9	14.8	14.8	13.0	13.4	5.1	6.5	2.8	1.9	1.9
over 60s	100.0	23.3	13.0	13.5	21.1	11.2	7.6	4.9	2.7	1.8	0.9

Source: Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF

Table 2.8 Importance of rural tourism (%)

Area	No. of responding municipalities	Total	Important issue	Will be important issue	Will not be important issue	No answer
Urban areas	35	100.0	60.0	25.7	14.3	–
Rural areas	3149	100.0	49.0	43.4	7.2	0.4

Source Agriculture, Forestry and Fishery Pocket Statistics, 2004 MAFF

Note Urban side means Tokyo metropolitan area and designated large cities

cases. This fact indicates that there is still much to be done to raise awareness for rural tourism on the rural side.

In summary, in taking into account the unique features of Japanese and Asian social conditions in relation to a long holiday system, rural tourism should positively aim at day-trippers as well as overnight tourists whereas rural tourism in general, not only in Japan but in Europe and other countries, aims at overnight tourists.

2.4.3 Market-Oriented Policy Framework of Rural Tourism

Ministry of Agriculture, Forestry and Fisheries (MAFF) launched a new rural tourism policy in 2017. The policy target of the new framework called “no-haku”, i.e., farm/countryside stay, is to create 500 viable community-based rural tourism enterprises across rural Japan by 2020. This new policy framework was built in line with the National Tourism Vision for Tomorrow (Japan Tourism Agency 2016), issued in 2016 by the Japan Tourism Agency (JTA). JTA was established in 2008, and is one of the youngest government agencies and administers tourism policy in this country. In this respect, although the rural tourism policy has a longer history than the national tourism policy, the rural tourism policy is now integrated into the national tourism policy. This National Tourism Vision outlined tourism promotion in this country and set a target of inbound tourists to 40 million arrivals in 2020 and 60 million arrivals in 2030. The actual number of inbound arrivals was 30.12 million in 2018 but was only 8.36 million in 2012, indicating a sharp increase of nearly four times in less than a decade. Nevertheless, the benefits of inbound tourism have not been evenly distributed throughout the country. The most popular trunk line of inbound tourism is the one from Tokyo to Osaka through Nagoya and Kyoto. In contrast, many rural communities are left behind this booming trend. This is the background for the formation of the National Tourism Vision and the new rural tourism program. This program is expected to promote the transition to the modern type of rural tourism.

What primarily makes the new rural tourism program different from the previous program, i.e., green tourism, is orientation toward viability as summarized in Table 2.9, which compares the main features of the previous and new programs. The commonality between the two programs is community-based rural tourism, which

Table 2.9 Comparison of profiles between two rural tourism programs

Item	Previous program	Current program
Type	Product-out	Market-in
Policy program	Green tourism	No-haku and Nagisa-haku
Community-based organization	Private	Corporate
Position of tourism activity	Not always viable	Viable
Market orientation	Unclear	Focussed
Profitability	Low	Sustainable
Operators	Women & elderly	Young and middle aged
Goal	Rural-urban exchange and rural revitalization	Establishment of sustainable rural business
Main target market	Domestic school trip	Domestic + international free independent tourists

Source Author's sorting out

is the basic principle that has not changed since the inauguration of rural tourism policy. This is because farm policy in this country always has been targeted at the rural community as the basic unit of policy support.

It is a novelty for Japan in terms of business management, differing from the previous green tourism in its distinctive shift away from “product-out” to “market-in” rural tourism, which no-haku aims at. The product-out type typically focusses on producing solely goods and services suited to the local area's resources and capabilities without looking at what can attract and serve the market of potential inbound tourists. While this approach is very compatible with the local industry it is often poorly matched to market demand and ends up with low profitability, low opportunity for younger generation involvement and employment, and is little more than a source of pocket money for the local elderly. In this sense, the previous type of rural tourism only partially internalizes the multifunctional externalities.

Of course, it is important to have programs that support Japan's rapidly ageing society, but it is also important to nurture sustainable rural businesses that future generations feel inspired or compelled to make into careers and livelihoods. In contrast to the product-out type, the market-in type focusses much more on the potential of domestic free independent tourists (FIT) and what inbound tourists demand in the first place. The previous type put a special emphasis on the school trip, which is stable, but a mass market with low margin. Thus, the new program appeals to a much larger market and thus has greater potential to achieve the level of viability that can anchor future generations into a local industry. The market-in type of rural tourism of course requires a wider perspective than the product-out type, which only considers the existing domestic traditions and markets.

In either case, we are well into the era of Internet marketing, in which social media promotion in multiple languages and well-designed portal websites are practically indispensable. Effective use of these tools can make all the difference between success

and failure. This is why community-based rural tourism organizations are supposed to be a legal entity in the no-haku program, which was not the case in the previous product-out program.

How well government policies support these tools and the transition from product-out to market-in will make a profound difference and therefore warrants careful study. Since the no-haku program will end at the end of 2020, policy evaluation will be necessary to design the post no-haku program. One thing that is clear regarding the future policy orientation is that the establishment of a viable system of local resource management becomes more and more important. Partnership with local DMOs and regional and national networks of rural tourism operators will be issues in this respect.

2.5 Conclusion

This chapter characterizes rural tourism in Japan, which has commonalities with and differences from the Western European counterpart. These characteristics are common in an Asian context to some extent, which could be suggestive for rural tourism in the Asian region.

First, it should be noted that there is no doubt that rural tourism will surely contribute to realizing a well-balanced rural society based on an open and interchangeable rural-urban relationship through exploring new roles for agriculture. In this context, rural tourism is significant not only from economic aspects but from social aspects. At the same time, rural tourism is not a panacea for rural development as is often said. There are many problems and constraints in relation to the Asian context on its viability, which should be tackled not only from the aspect of management skills focussing on hospitality and service management but also from the aspect of the institutional framework over the long term. In this sense, rural tourism in this country has more tighter constraints than the Western European counterpart.

To counter this situation, first, the rural side should widen their perspective from the standpoint of local resource management including farming through a wider network with urban people. For policy measures, market-oriented capability building and multitiered networking among stakeholders beyond the traditional territorial community should be considered. These aspects are addressed in Part 4.

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Part II
Roles of Community-based Rural Tourism

Chapter 3

Roles of Farm Pluriactivity on Multifunctional Agriculture in a Mountainous Rural Community



3.1 Introduction

The growing significance of rural policy in industrialized countries requires clarifying the new roles of pluriactive farms in connection with multifunctionality of agriculture and rural areas, such as in preserving the rural landscape and countryside.¹ In spite of the sentiment that pluriactivity plays an increasingly important role in the rural policy arena, this area needs to be more conceptually and empirically studied from this perspective.²

Declining farm activity, especially in the less-favoured areas, is causing deterioration of this local function of preserving the countryside, which is one factor that comprises multifunctionality in agriculture and rural communities. This declining positive externality of the traditional land preservation function requires evaluation of this function and clarification as to how this function may be continued. Specifically, it is necessary to clarify how to evaluate this function from a policy perspective, what mechanism is working for connecting this function with farm activity, and how to measure the function. Therefore, the purpose of this chapter is to evaluate the land preservation function provided by pluriactive farm households and then determine prospects for future policy measures for multifunctionality and rural diversification.

¹Policy evaluation of countryside stewardship programs, see van Huylbroeck and Whitby (1999). Multi-functionality has not been strictly defined, yet. However, the Japanese White Paper on Food, Agriculture and Rural Areas (Syokuryo Nogyo Noson Hakusyo) (2000) points out that it is constituted of those effects such as countryside preservation, nurturing water resources, preservation of the natural environment, preservation of traditional culture, and preservation of landscape. OECD gives a working definition of multifunctionality in connection with joint production of agriculture and externalities, see Pezzini (2000).

²For developments on pluriactivity in early 1990s, see Brun and Fuller (1991), Fuller (1990), Gasson (1990), and Hallberg, Findeis and Lass (1991).

This chapter was revised from the paper initially published as Ohe (2001). The author acknowledges the permission given by the initial publisher, the Agricultural Economics Society of Japan.

This is because for the proper evaluation and exploration of multifunctionality, we need a broad perspective of the activities of farm households.

With respect to evaluating externality in the countryside, an apparent contrast has been observed in that there is little evaluation from the supply side compared with intensive evaluation from the demand side such as the contingent evaluation method. Thus, this study tries to shed light on the supply side. However, up until now there has been no proper framework to evaluate activities of farm households in generating externality in the local community, such as in hamlets. This externality is internalized in the pluriactivity of the local community, which brings about information asymmetry between local communities and the rest of society.

This study focusses on the internalization process of externality rather than externality itself, which heretofore has been studied from the demand side.

On the other hand, intensive economic analyses of pluriactivity have been carried out, focussing on off-farm job-holding behaviour of farm households. These studies clarify the characteristics of farm households wherein off-farm jobs are held, especially by husbands and wives. However, how farm pluriactivity is involved in this internalization process has received only slight empirical attention.

Therefore, firstly, this chapter explores how to observe the internalization process of externality that pluriactive farm households are involved in within the local community by incorporating the concept of signalling as a benchmark of the contribution to land preservation and then clarifies the level of the contribution empirically. In other words, this chapter attempts to evaluate the significance of pluriactivity by incorporating the concept of internalization of externality and signalling from the land preservation viewpoint. The concept of signalling often has been used for the evaluation of economic activity for marketable goods, particularly with regard to the labour market (Spence 1974). However, there are cases of asymmetric information when signalling is sent even if the market does not exist, which can often happen in the field of agriculture, especially in connection with the rural community. One example is activities with external effects by pluriactive farms. In this case signalling has not been applied fully.

Thus, this chapter considers that signalling works as a mediator between authorities trying to monitor this function to offer support measures and those farm operators wanting to be recognized as generators of the internalization process of externality.

Secondly, this chapter investigates what kind of farm activity contributes to the preservation of local farmland at the hamlet level by focussing on the features of farm households offering accommodations, which presents an opportunity for new business in the less-favoured areas, and on prospects for the future direction of farm pluriactivity. Thirdly, this chapter examines what mechanisms are working in this process by exploring farm characteristics. In conclusion, the implications of integrated farming and rural policy measures for preserving multifunctionality and promoting rural diversification are discussed.

3.2 Background of the Analysis and the Present Situation of the Study Area

In the hilly and mountainous areas of Japan, farmland is often abandoned because farm producers have become too old to carry on farming and have no one to succeed them. This problem is especially serious in the Chugoku region, the western part of the main island of Japan, and there is concern about how to preserve farmland that has been traditionally passed from generation to generation, since this has important consequences for the conservation of the countryside (Nagata 1991). Abandonment of farmland causes not only the destruction of the traditional rural landscape, which has been preserved over centuries, but also invites crop damage due to the invasion of wild animals, which often leads to a chain reaction of further abandonment.

Around the time of the GATT Uruguay Round, there was much concern that farming communities in less-favoured areas might disappear in the future because there were no immediate prospects that these farms would become more competitive with larger farms due to geographical constraints. To ease these concerns, the national government began to promote “green tourism”, or the Japanese version of rural tourism, prior to the settlement of the Uruguay Round.

The area studied in this chapter is an area of western Japan that has the highest ratio of off-farm employed farmers in the country. Compared with other industrialized countries, Japan has one of the highest rates of off-farm employment. As mentioned later, some aspects of Japanese agriculture differ from those of other developed countries: however, the essential problems that rural areas face are identical. With progressive rural depopulation, the ageing of the rural population, and decreases in the price of farm products, the number of farm households holding off-farm jobs has increased greatly and concerns for new income sources and endogenous rural development such as green tourism are attracting growing attention.

In dealing with Japanese agriculture, we must take into account three factors that make it different from agriculture in other developed countries. First, part-time farming is already very common in Japan due to the small size of farms in general, the national average being 1.2 ha. The proportion of part-time farmers is the highest of the industrial countries (OECD 1978; Kada 1980). This is a natural consequence of small farms. Second, rice farming is the main pillar of agricultural production and thus the farmland studied here is mainly paddy fields, which are cultivated by labour-saving machinery (Hayami and Yamada 1991). Third, we cannot ignore the existence of group farming in hamlets because the hamlet has been the basic territorial and social unit of the farming community and now functions in a more contract-oriented form rather than being based on traditional interdependent relationships (Fukutake 1980; Jussaume 1991).

In the Sanyo area facing the inland sea of the Chugoku region which includes Hiroshima prefecture, the number of people taking off-farm jobs increased due to the growth in job opportunities offered by offices and factories during the period of rapid economic growth after World War II. Generally, Type II part-time farming, a farm household with over half of its income coming from non-farming jobs, is already very

common among farmers, especially in this region due to the traditionally small size of farms. The focus of this study, thus, is on the development of on-farm pluriactivity rather than the development of off-farm non-farming opportunities. This is because development of on-farm activities is more important for preserving farming and the rural community.

The area studied in this chapter is Geihoku town. Here the incidence of farmland abandonment is remarkably low even though it is located in the hilly and mountainous area of Chugoku, which has an abandonment rate far higher than the national average. Geihoku is located in the middle of the mountainous Chugoku region bordering on Shimane prefecture. This plateau area is able to produce vegetables in addition to the main crop, rice. The cooler highland climate enables farmers to produce cabbages, spinach, and tomatoes during the summer, which are shipped primarily to the market in Hiroshima. Services for rice production are provided mainly through group farming organizations formed in the hamlets. Type II part-time farming is also common.

In addition, Geihoku is well known as the southern-most ski area of the main island of Japan, Honshu. The largest ski area in Hiroshima prefecture, it attracted 53% of all skiers coming to the prefecture in 1992. Taking advantage of this local resource, farm-based accommodations targeting skiers have been promoted since the late 1960s, aiming to prevent further depopulation and to provide an outlet for family labour in the winter months. According to the results of a questionnaire administered by the author in 1993, the average total investment in farm accommodations in this area amounted to 6.66 million yen. The average accommodation capacity was 15.3 persons and the average number of rooms was 4.1 per farm. The average number of guests per year was 200.³

Overall, Geihoku is one of the most suitable areas for the evaluation of the connection between the land preservation function and pluriactivity of farms in Japan.

3.3 Framework for the Analysis of Land Preservation and Signalling

3.3.1 Conceptual Framework

This section presents a conceptual framework for the following analysis clarifying what farm activities assist land preservation and the mechanisms involved. Since the hamlet is the basic unit of the farming community as already mentioned, the author begins with hamlet level analysis. Assumptions and preconditions within the framework based on the actual situations are as follows:

³Due to the scope of this study, details on accommodation activity are not given here. For farm diversification including farm tourism, see Haines and Davies (1987) and Slee (1989) and for studies of farm tourism in European countries, for instance, see Bryden et al. (1993).

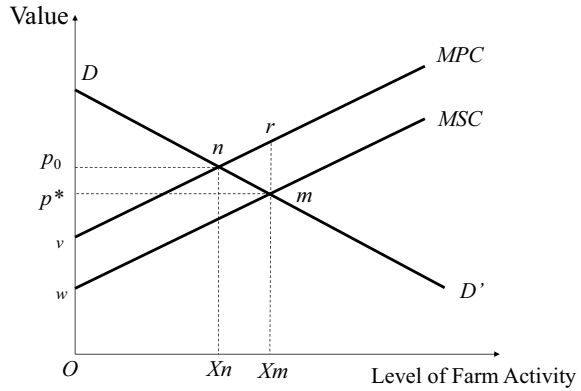
- (1) Land preservation function is brought about by farm pluriactivity in hamlets. This chapter examines farm activity from the pluriactive point of view taking into account not only farming aspects, but also other activities conducted by farm households.
- (2) This externality has been internalized in hamlets through the efforts of farm pluriactivity. In other words, the function of hamlets based on farm pluriactivity internalizes the externality, which means a reduction of land abandonment in the community and that land was well utilized for the original purpose of agricultural production to gain income. However, because situations related to this function differ from one local community to another, it is not well recognized in society due to information asymmetry between the local community and the rest of society.
- (3) As long as this externality is well internalized, there is no problem in land resource allocation even when society does not recognize it. The problem arises when this internalization process has trouble in maintaining this function due to progressive depopulation and ageing of the population in the local community. This is actually happening in the mountainous areas.
- (4) However, society still expects this function to continue without taking into account the social cost of producing this function. This under-paid situation means that optimal resource allocation in this society is not attained. Another problem is that this under-paid situation accelerates further through a decline in function of the local community with deteriorating farming conditions. Therefore, we need to detect how this function operates before its deterioration. If we can observe this function by catching signalling from the local communities, we can obtain a basis for policies to implement support measures based on the level of activity. Thus, the application of the concept of signalling is significant in monitoring this function.
- (5) The demand side is assumed to be a given because I focus on the supply side.

In summary, the basic idea above is to support a local mechanism to maintain the function of internalization of externality rather than supporting externality directly. The advantage of this way of thinking is that the policy authorities can offer support depending on the level of the activity and prompting farm pluriactivity simultaneously.

Now, keeping in mind the above preconditions, let us explore the framework depicted in Fig. 3.1. Figure 3.1 represents farm activity and the externality of the land preservation function in hamlets of less-favoured areas. The level of farm activity is measured horizontally and the price of composite farm products vertically.

When a local community functions well, externality is well internalized. In this case, equilibrium is attained at point m where the marginal social cost, MSC , crosses the demand curve. The level of farm activity is at X_m in this case and the maximum social surplus is achieved because farmland is well preserved, meaning that externality is successfully internalized in the hamlets. In this sense, this function of hamlets is defined as an incentive-compatible behaviour of pluriactive farm households with individualistic and collective rationality.

Fig. 3.1 Level of farm activity and externality



In the case of non-internalization or a non-externality, the price of the composite farm products is higher than in cases of internalization since externality makes farm activity easier in the latter case in terms of continuation of farm activity, which is illustrated so that marginal social costs, *MSC*, come under marginal private cost, *MPC*. With respect to *MSC*, recognition is limited to the local community. Policy authorities do not recognize it due to information asymmetry.

As mentioned earlier, as long as the land preservation function is maintained, there is no problem in resource allocation. Nevertheless, in the less-favoured areas this function has been declining and some of the hamlets cannot afford to maintain it. In this case, efforts for internalization must be undertaken not by hamlets as a whole but only by specific farm households in the hamlets as a private activity to try to maintain the activity level at X_m in Fig. 3.1 on the *MPC* at point r , not any point on the *MSC* because the generated externality is not internalized. Furthermore, since policy authorities fail to grasp *MSC*, support measures cannot help to attain internalization.

Thus, the activity at this point creates a dead weight loss mnr , which means that the activity at point r is neither socially nor privately an optimal point. This results in lowering the activity level at X_n which is the private optimal point. Thus, the activity at point r is not an equilibrium point in the long run but only an unstable temporary point on the way to point n . In other words, pluriactivity in the hamlets is active and high at point m , but is neither at point n nor r . We can find these points by examining pluriactivity in the hamlets.

Thus, when that activity level goes down due to the deterioration of conditions for farm activity, the internalization process eventually ceases to function well. The mechanism of the land abandonment currently happening in this country can be explained by failures of internalization and of recognition of the internalization process.

The point here is that the internalization process is a social joint product in the hamlets, whereas externality itself is a technical joint product. When the function of the local community declines, the internalization process declines as well. To

maintain this function in the long run, I need to recognize this effect not only at the local level but also at the social level, which is a pre-condition for support measures.

The difference in this function comes from differences in farm pluriactivity. If I can monitor this difference as signalling, I can recognize more easily this multi-functionality, which is more practical than measuring *MSC*, which actually is hard to estimate. Another advantage of this method is that provision of support measures can be based on the level of farm activity.

The next question to be clarified from empirical and policy perspectives is the building of an actual analytical framework to measure this externality.

3.3.2 Analytical Framework

Here, the composition of pluriactivity is examined. Table 3.1 shows the domains of farm pluriactivity in terms of “on-farm” or “off-farm” and “farming” or “non-farming.” This definition is used for its simplicity and applicability, in general. If a farm household conducts only on-farm farming activity, this does not constitute pluriactivity but mono-activity. This means that full-time on-farm farming is conducted, such as production of rice, vegetables, and flowers. With regard to on-farm non-farming activity, farm-based accommodations providing service goods is a typical example. With off-farm farming activity, group farming is the case, providing contracted farming service to other farmers in the hamlets. Off-farm non-farming activity indicates off-farm job-holding, such as employment in the public or private sector, which is typical of part-time farming. Thus, the incidence of land abandonment in the hamlet is determined by the pluriactivity that is based on combinations of the four domains of farm activity.

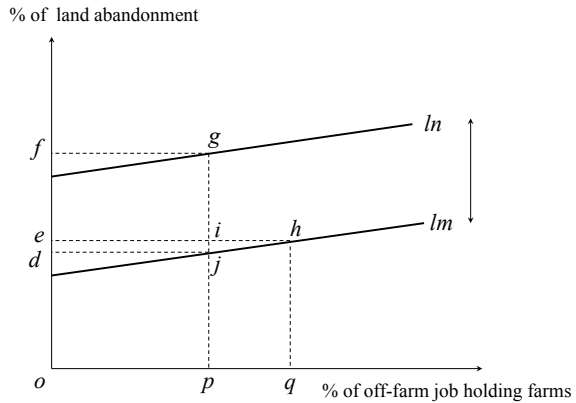
Figure 3.2 illustrates the framework, based on the framework shown in Fig. 3.1, that measures the rate of land abandonment vertically and the rate of farms having off-farm non-farming employment horizontally (all other conditions being equal). Their positive correlation is illustrated by the lines *lm* for the hamlet where pluriactivity resulting in land preservation in the hamlets is conducted actively by farm households, and *ln* for the hamlet where this type of pluriactivity is not conducted actively. Therefore, the land abandonment rates *f* on *ln* and *d* on *lm* in Fig. 3.2 correspond to the farm activity levels *Xn* and *Xm* in Fig. 3.1, respectively.

Table 3.1 Four domains of farm activity

	On-farm	Off-farm
Farming	A (rice, vegetable, flower)	C (operator of group farming)
Non-farming	B (farmhouse accommodation)	D (employee of local private or public sector)

Note Parentheses are examples in the study area

Fig. 3.2 The signalling of land preservation caused by pluriactive farms



This is based on the assumption from the reality mentioned in the former section that farming and on-farm pluriactivity have a negative effect on abandonment while a higher portion of farms having off-farm non-farming employment leads to more abandonment.

To simplify the discussion here, the slopes are assumed to be equal according to the assumption mentioned above. If the rate of farms associated with off-farm job-holding is at point p for the hamlet, the level of pluriactivity for land preservation is low, and if it is at point q for the hamlet the level of pluriactivity is high, where $p < q$, then the rate of abandonment is determined at f for the low-pluriactivity hamlet and at e for the high-pluriactivity hamlet, such that $e < f$. The vertical separation explains the difference in the incidence of abandonment. The difference is understood as a downward shift in land abandonment from ln to lm , displayed as $gj = gi + ij$; where ij is the difference in the rate of land abandonment corresponding to the increase in off-farm employment, and gi or fe is the real effect of the downward shift or the internalization process. If the difference in off-farm employment between the two types of farms is not extreme, I could consider gi nearly equal to gj generally because off-farm employment is so common in this region such that the slope is not steep, indicating that the difference between the two is virtually negligible.

Then if we can measure the shift in gi , which is considered to be signalling of the internalization process of pluriactive farms in the local community, it can be used as a benchmark for screening from the point of view of policy administration. In short, the function of the internalization generated by farm pluriactivity in the hamlets is recognized as differences in land abandonment, gj , by policy authorities in this manner.

Now rising questions are how this shift takes place and what farm activities contribute to it. These empirical questions are examined below.

3.4 Estimations of Farmland Abandonment

3.4.1 Model

A structural model of the occurrence of farmland abandonment in the hamlet is formulated in Eq. (3.1). In this model, the incidence of land abandonment in the hamlet is determined by levels of farm pluriactivity corresponding to the four domains of farm activity mentioned above.

$$H = h(a, b, c, d) \quad (3.1)$$

where,

- H rate of land abandonment
- h function of land abandonment
- a factor vector of on-farm farming activity
- b factor vector of on-farm non-farming activity
- c factor vector of off-farm farming activity
- d factor vector of off-farm non-farming activity.

3.4.2 Data and Estimation Method

Farm-based accommodation businesses are under the jurisdiction of local health centers, which oversee all lodging businesses. However, since there is no designated category for farm-based accommodations in the registration list of lodging businesses, the author examined the list of farms from the 1990 Agricultural Census and compared that list with the list of lodging businesses to identify which were farm-based accommodations. This study included 38 hamlets, with the average hamlet consisting of 20 farms. The actual variables for estimation are as described below and selected, firstly, as corresponding to the realms shown on Table 3.1 and, secondly, to avoid the possible multicollinearity among variables that often disrupts obtaining stable estimates.

- a. On-farm farming activities: This refers to the production of rice and vegetables, which are the two major crops of the area. However, it is inappropriate to use the vegetable-growing area per farm and paddy field area per farm in this estimation because of multicollinear effects with other variables such as group farming. It is therefore more appropriate to use the rate of consolidated paddy fields per hamlet instead of paddy-field area per farm. The implementation of land consolidation requires a consensus of hamlet members regarding a commitment to rice production. Thus, this variable reflects not only a long-term commitment to rice production by farmers in the hamlet, but also reflects traditional farming policy of

land consolidation, making better physical conditions for rice production due to the introduction of more efficient machinery after consolidation. In other words, this variable shows the mixed effects of on-farm farming activity and traditional farming policy.

- b. On-farm non-farming activity here refers to farm-based accommodation activity. I used a dummy variable; such that a farm operating a farm-based accommodation in the hamlet = 1, whereas a farmhouse without accommodation = 0.
- c. Off-farm farming activity refers to the proportion of farms that received operation services for rice production. Ideally I have to use a variable for the supply side, provided services, rather than the demand side, received services. However, since the supply-side variable such as the proportion of farms providing services has a multicollinear relation with other variables, the demand-side variable was used here. Group farming organizations mainly co-ordinate demand and supply for this type of work in hamlets; therefore I can regard this variable also as a group farming activity in hamlets.
- d. Off-farm non-farming activity refers to the portion of farm households that are associated with steady off-farm jobs.

The data were taken from the Agricultural Census Hamlets' Cards of 1990 with the exception of one variable, the number of farm-based accommodations; those data were obtained by matching the Census data with the list administered by the local health centre as mentioned above. The dependent variable is the sum of the area of abandoned land and uncultivated land. This is because the occurrence of abandonment would be underestimated if I only included the abandoned land given in the Agricultural Census (Odagiri 1994). In order to avoid heteroskedasticity of variables, variables are converted into ratios. This helps prevent any unequal dispersion that may be caused by differences in the sizes of hamlets and farms. As for the estimation, theoretically there is a small possibility that no land abandonment has occurred in the hamlet, and in such case the Tobit model has to be used to deal with truncated data. However, in reality, land abandonment occurs in every hamlet and the results of estimation by the Tobit model and the ordinary least squares (OLS) estimation were almost identical. Thus, the OLS method was used for the estimation.

$$H_k = \beta_0 + \beta_1 a_{1k} + \beta_2 a_{2k} + \beta_3 b_k + \beta_4 c_k + \beta_5 d_k + \mu_k \quad (3.2)$$

where,

- H_k rate of land abandonment for hamlet k , ($k = 1, 2, \dots, n$)
- a_{1k} proportion of completed rice paddy consolidation for hamlet k
- a_{2k} vegetable-planted area per farm for hamlet k
- b_k dummy variable of farms offering accommodations in hamlet k (yes = 1, no = 0)
- c_k proportion of farms receiving operation services for rice production in hamlet k
- d_k proportion of farm households associated with steady off-farm jobs in hamlet k
- β_i parameters to be estimated ($\beta_0 = \text{constant}$), ($i = 1, 2, \dots, m$)
- μ_k stochastic error for hamlet k .

3.4.3 Results of the Estimation

Table 3.2 shows the results of the estimation. Neither heteroskedasticity with the White test nor multicollinearity with Variance Inflation Factors (VIFs) showing a value greater than two was found.⁴ The adjusted goodness-of-fit value (adjusted R^2) of 0.46 was not high, so I may be able to raise the level of fitness by using different variables such as the proportion of elderly farmers. However, since this study focusses on farm activities, having stable parameters that reveal which activities actually contribute to land preservation are more important than forecasting land abandonment. As there are no other comparable precedent studies, the author thinks that these results are acceptable. For reference, the levels of significance were shown to be up to 20%.

Firstly, with regard to on-farm farming activity, the portion of paddy fields for which consolidation was completed proved to be the most significant factor in the prevention of abandonment of land among the estimated parameters. In Geihoku, land consolidation was carried out under the initiative of the local government from 1974 to 1990, aiming to preserve farmland by easing conditions for mobility of land. This

Table 3.2 Estimated result of land abandonment model (hamlet-level)

Activities	Variables	Estimation	
		Estimates (β_j)	Standardized estimates
	Constant	0.1160***	–
a_1	Proportion of completed rice paddy consolidation	–0.0659**	–0.3046
a_2	Vegetable planted area per farm	0.0025*	0.2489
b	Dummy variable of farms offering accommodation (yes = 1, no = 0)	–0.0235**	–0.2671
c	Proportion of farms receiving operation service for paddy fields	–0.0962***	–0.4359
d	Proportion of farms involved with steady off-farm jobs	0.0485 ⁺	0.2240
	ajst R^2	0.4635	

Sources Agricultural Census Hamlets' Cards (Geihoku 1990), $n = 38$ (except for data on accommodation, which was obtained from the list of lodging operators compiled by the Prefectural Local Health Center.)

Notes Activity corresponding to the variable means; a: on-farm farming activity, b: on-farm non-farming activity, c: off-farm farming activity, d: off-farm non-farming activity, Dependent variable is obtained for each hamlet by the formula below. (abandoned area + uncultivated area)/(cultivated area + abandoned area). Significance levels are shown by the results of t test, such that *** = 1%, ** = 5%, * = 10%, + = 20%, n.s. = not significant

⁴Studenmund (1992) says that the multicollinearity is severe when $VIF > 5$ as a common rule of thumb.

effect appears clearly in the estimated result. Put differently, this result has verified the importance of land consolidation projects in preventing the abandonment of farmland. In this sense it might be said that this effect is a prerequisite for farm activity rather than a result of the farm activity. As for vegetable crops, the estimate shows a positive value, although the statistical significance is not high (10%). This suggests that abandonment of farmland may be promoted by increasing the production of labour-intensive vegetable crops.

Secondly, as for the variable of farm-based accommodations, that parameter with statistical significance (5%) shows that the existence of farms providing farm-based accommodations contributes to the preservation of farmland in the hamlet.

Thirdly, concerning group farming, the proportion of farms that received operation services shows a significant negative value (1%), indicating the importance of this activity in land preservation.

Finally, concerning off-farm non-farming activity, the proportion of farm households associated with steady off-farm jobs shows a positive value, meaning that it promotes land abandonment; however, the 20% level of significance is not high. This is because there is little difference between hamlets concerning the ratios of farms associated with off-farm non-farming jobs.

To summarize, estimates that have a statistical significance of 1 or 5% are variables related to land consolidation, group farming, and farm-based accommodations, that is, on-farm farming and on-farm non-farming activities. These activities are capable of bringing about farmland preservation whereas off-farm non-farming activity, as indicated by the proportion of farms involved with the holding of off-farm jobs, has an opposite effect, although not to a highly significant extent.

Thus, the signalling gi indicates the composite effect of land consolidation, group farming activity, and activity undertaken by farms running accommodations as estimated above. The author considers this composite shift-effect as an internalization process of the land preserving externality brought about by farm activities in the hamlets.

The next point to be examined is how these effects actually work to contribute to land preservation. From these parameters I also obtained the following estimates of the actual contribution of each activity towards the prevention of land abandonment.⁵

Three tenths of the total shift is from the effect of land-consolidation policy that aims at improving labour productivity. The other seven tenths is from the effect of pluriactivity of the farms, four tenths of which is from the effect of group farming activity conducted at the hamlet level and three tenths from the effect of farm-based accommodations conducted on an individual basis. Thus, this shift effect is comprised of policy effects and pluriactivity at both the community and individual levels.

⁵The contribution to land preservation is obtained by $m/(i+j+k)$, ($m = i,j,k$), where i = the estimate of the farm-based accommodation effect, j = the estimate of the group farming effect, and k = the estimate of completed land consolidation, which are estimates showing significant negative values. The actual contribution is rounded at two decimal places to illustrate the main points of this study.

Overall, 70% of the shift effect detected as signalling of land preservation comes from activities of pluriactive farms, such as providing accommodations and group farming, and 30% from the mixed effect of farming activity and traditional policy.

The above result shows that signalling is applicable to evaluate the contribution of pluriactive farms when the effect of traditional farming policy is taken into account.

The remainder of this chapter examines what mechanism works towards the formation of these effects of pluriactive farms and examines how these effects work mutually. To this end, I will examine the characteristics of pluriactive farms and their behaviour below.

3.5 Farm Activities and Farm Characteristics

To explore farm characteristics, I will examine the relationship between farm activity and the characteristics of farms from the viewpoint of whether or not a farm offers accommodations since the effect of farm-based accommodations was detected as an outcome of farm pluriactivity. This classification enables us to perform farm-level analysis while maintaining the basic framework mentioned above.

3.5.1 *Data and Method*

This study uses data from the Agricultural Census Data on Farms, which allows us to see changes in data collected for five-year periods, beginning in 1980, 1985, and 1990. Since the data identify each farm, these data can be treated as panel data for this period. Here, farms are divided into two groups depending on whether they offer accommodations. Then differences in conditions in the two groups are compared. When I use Census data consecutively, due attention is necessary because the definition of the minimum requirement of a farm household was changed in the 1990 Census (such that the minimum requirement for sales of farm products was raised from ¥100,000 to ¥500,000, and the minimum size of a holding was increased from 5a to 10a). This study follows the definition used in the 1990 Census. Our classification of farm accommodation is also based on the 1990 registration, which means ex post evaluation from the situation in 1990 for the situations in 1980 and 1985, which enables a coherent comparison. To allow us to focus on the comparison of *a-farms*, farms that offer accommodations, and *n-farms*, farms that do not offer accommodations, with all other conditions being equal as mentioned in the framework, hamlets that had no *a-farms* were omitted from the analysis here. The land consolidation effect, which is a prerequisite of land preservation rather than an activity itself, is not considered here because there were no available data dealing with land consolidation in the Census farm data. The number of farms available for consecutive analysis of the 22 hamlets was 451, 85 *a-farms* and 366 *n-farms*. A comparative analysis was

carried out using the chi-squared test for the qualitative variables (when the sample size was too small, the Fisher's exact test was used instead), and the *t*-test for quantitative variables.

3.5.2 *Household Composition*

Table 3.3 reveals several interesting differences in farm household composition between the two groups. First, the percentage of male householders is slightly higher and the portion of married male householders among *a-farms* is higher than on *n-farms*. Put differently, *a-farms* have fewer single householders.

Regarding heirs, *a-farms* have a relatively higher rate of successors than *n-farms*, over one third in comparison to below 30% for the latter. Concerning the age of the family members, although the average age of the householder surpassed 50 in 1990, *a-farm* householders are somewhat younger. This tendency toward a younger age on *a-farms* also can be seen for the wife and successor, although the difference between the two farm groups is not significant.

A significant difference was recognized with respect to family size. The size of families had been gradually decreasing every 5 years, dropping to 3.9 persons per *n-farm* compared with 4.5 persons per *a-farm* in 1990. Regarding age composition, the number of female family members 16 years old or older on *a-farms* was significantly higher than on *n-farms*, supporting the concept that accommodation activity is generally shouldered by women. Further, the number of family members below the age of 16 declined to 0.9 persons per *n-farm* compared with 1.0 person per *a-farm*. This fact shows that the size of *n-farm* families is gradually decreasing, with a loss of momentum with regard to reproduction.

In short, the multiple-generation farm household observed traditionally in rural Japan is disappearing from *n-farms* but is often maintained on *a-farms*. Thus, *a-farms* tend to maintain better conditions for household reproduction.

3.5.3 *Employment Situation: On-Farm Farming and Off-Farm Non-Farming Activities*

Differences between *a-farms* and *n-farms* are evident with regard to the employment situation of household members (Table 3.4). First, looking at householders, the rate of Type II farming, that is, with householders involved in non-farming employment, was significantly higher among *a-farms*. It is not surprising that the number of working days *a-farm* householders spent on their own farming was also lower and therefore that the number of off-farm working days was significantly greater than for *n-farms*. As for job holding status, the proportion of householders holding regular off-farm jobs was higher throughout the period for *a-farms* than for *n-farms*, although the

Table 3.3 Household composition (chi-squared test, *t*-test)

Year	1980		I		1985		II		1990		III	
	Yes	No	No	Result	Yes	No	No	Result	Yes	No	No	Result
Accommodation												
Male householder/not	100.0	96.7	96.7	+	100.0	96.5	96.5	*	98.8	94.5	94.5	+
Married householder/not	98.8	90.7	90.7	**	96.5	88.0	88.0	**	91.8	84.4	84.4	*
Successor/not	36.5	26.0	26.0	*	34.1	24.0	24.0	*	34.1	27.6	27.6	<i>n.s.</i>
Age of husband	48.5	50.3	50.3	+E	49.8	51.8	51.8	+E	52.7	54.5	54.5	+E
Age of wife	44.8	46.3	46.3	<i>n.s.</i> E	46.6	48.1	48.1	<i>n.s.</i> E	49.8	50.8	50.8	<i>n.s.</i> E
Age of successor	25.5	25.2	25.2	<i>n.s.</i> E	24.9	26.8	26.8	+E	25.9	28.0	28.0	<i>n.s.</i> E
Family size	4.8	4.1	4.1	*** E	4.6	4.0	4.0	*** E	4.5	3.9	3.9	*** E
Females ≥ 16 years	1.9	1.6	1.6	*** E	1.9	1.6	1.6	*** E	1.9	1.6	1.6	*** N
Males ≥ 16 years	1.7	1.6	1.6	<i>n.s.</i> E	1.7	1.5	1.5	** N	1.7	1.6	1.6	+ N
Children < 16 years	1.2	0.9	0.9	** E	1.1	1.0	1.0	<i>n.s.</i> E	1.0	0.9	0.9	<i>n.s.</i> E

Source Agricultural Census Farm Data (Geihoku 1980, 1985, 1990), n = 451

Notes Results of the test of equality of variances are shown as E = equal variances, N = unequal variances. Significance levels by *t* test are the same as for Table 3.2. The methods of statistical test; chi-squared test and *t* test

Table 3.4 Type of employment (chi-squared test) % of farm households

Accommodation	1980			1985			1990			1990		
	Yes	No	Result	Yes	No	Result	Yes	No	Result	Yes	No	Result
% of Type II farm households	80.0	65.6	**	81.2	69.7	**	84.7	74.3	**	84.7	74.3	**
% of householders working on own farm over 100 days	21.2	37.2	***	12.9	30.6	***	17.7	27.9	*	17.7	27.9	*
% of householders working on off-farm non-farming jobs over 100 days	80.0	63.7	***	75.3	63.4	**	68.2	59.6	+	68.2	59.6	+
As regularly employed off-farm	61.2	36.3	***	55.3	46.2	+	64.7	57.7	n.s.	64.7	57.7	n.s.
% of householder's wife working on own farm over 60 days	52.4	57.8	n.s.	46.3	49.7	n.s.	44.9	43.4	n.s.	44.9	43.4	n.s.
As day worker/temporary worker	25.0	28.3	n.s.	32.9	29.8	n.s.	11.5	22.3	**	11.5	22.3	**
As self-employed on-farm	13.1	2.4	***	46.3	5.9	***	33.3	6.5	***	33.3	6.5	***

Note See notes for Table 3.3

difference narrowed due to a consistent rise in the rates for *n-farms*. This fact roughly confirms that *gi* nearly equals *gj*.

Briefly, *a-farms* are farms in which the householder conducts steady part-time farming while holding a regular off-farm non-farming job. In the case of householders' wives, the rate of working as a daily worker or a temporary worker dropped significantly on *a-farms* in 1990. This change in job holding behaviour is probably due to the fact that many farms started offering accommodation services around this time. For the same reason, I also see a rise in the proportion of self-employment on *a-farms*.

In summary, firstly, accommodation activity does not appear to influence the job holding status of the householder, who is in most cases the husband, but influences the status of the female family members, like the wife or the mother-in-law. Secondly, householders of *a-farms* tend to have regular off-farm jobs, which is the typical job-holding pattern of Type II farms in this region. We can thus confirm the $p < q$ relationship of Fig. 3.2, whereas the difference is narrowing.

3.5.4 Agricultural Production: On-Farm Farming Activity

Table 3.5 provides details on agricultural production and preservation of farmland for *a-farms* and *n-farms*.

First, the total size of *a-farms* tends to be larger than that of *n-farms* in terms of area of cultivated land, area of paddy fields, and forest area. Moreover, there is a significant difference in the rate of increase in cultivated land from 1985 to 1990 between the two groups: 17.4% for *a-farms* and 3.6% for *n-farms*. This difference is explained by the fact that *a-farms* have accumulated land rented from elderly farmers in these years. To put it another way, *a-farms* are expected to play a role in preserving farmland in the hamlet by increasing the area of their farmland as a part of their farm management behaviour. The lower incidence of farmland abandonment by *a-farms* comes from this function.

Farmland abandonment, which was more than 10% in 1980, has decreased greatly since then. With regard to the composition of uncultivated land and abandoned land, the share of uncultivated land was high in 1980 but had decreased by 1990. This is because the area of uncultivated land decreased as group farming progressed and land consolidation projects were completed. In short, the fall in the abandonment rate of cultivated land is due to a decrease in uncultivated land. Thus, it is safe to say that I could confirm $e < f$ in Fig. 3.2.

In terms of actual agricultural production, *a-farms* produce more rice but fewer crops such as vegetables and flowers. This means that *a-farms* have placed more emphasis on rice production in these years, whereas intensive farming such as flower and vegetable production using greenhouses is more prevalent on *n-farms*.

With respect to agricultural machinery, there is no significant difference in the rate of ownership of tractors. *A-farms* own fewer tillers, sprayers, and rice-transplanters, but own more expensive combines, which are used in rice harvesting. These facts

Table 3.5 Farming factors (*t*-test, chi-squared test)

Year	1980		I		1985		II		1990		III	
	Yes	No	No	Result	Yes	No	No	Result	Yes	No	No	Result
Accommodation	109	93	93	** E	108	95	95	* N	130	101	101	*** E
Rice paddy area (a)	124	105	105	** E	131	112	112	<i>n.s.</i> E	135	111	111	** N
Total holding area (a)	—	—	—	—	8.9	4.4	4.4	<i>n.s.</i> N	17.4	3.6	3.6	** N
% change of total holding area	—	—	—	—	-1.74	6.41	6.41	* E	10.8	2.46	2.46	* N
Change of area of rented land (a)	13.9	12.1	12.1	<i>n.s.</i> E	1.6	7.2	7.2	*** N	2.1	3.4	3.4	* N
% of land abandonment	1099	942	942	+E	1150	945	945	* N	1064	944	944	<i>n.s.</i> E
Owned forest area (a)	62.9	63.4	63.4	<i>n.s.</i> E	72.9	64.9	64.9	*** N	63.5	56.5	56.5	*** N
% of harvested rice area	43.0	37.1	37.1	<i>n.s.</i> E	37.4	38.3	38.3	<i>n.s.</i> E	33.7	48.3	48.3	*** E
% of income from greenhouse vegetables	5.65	4.11	4.11	* E	5.19	5.39	5.39	<i>n.s.</i> N	6.16	6.81	6.81	<i>n.s.</i> N
Greenhouse area (a)	—	—	—	—	1.19	3.5	3.5	<i>n.s.</i> E	0.53	6.29	6.29	* N
Greenhouse flower planted area (a)	—	—	—	—	—	—	—	—	—	—	—	—
% of owned machinery	62.4	80.1	80.1	***	67.1	75.1	75.1	+	50.6	64.5	64.5	**
Tiller	48.2	60.1	60.1	**	81.2	88.3	88.3	*	76.5	76.5	76.5	<i>n.s.</i>
Sprayer	41.2	42.1	42.1	<i>n.s.</i>	45.9	52.2	52.2	<i>n.s.</i>	40.0	48.6	48.6	+
Rice transplanter	24.7	19.7	19.7	<i>n.s.</i>	30.6	23.8	23.8	+	36.5	27.9	27.9	+
Combine auto thresher	48.2	38.8	38.8	+	57.7	44.8	44.8	**	50.6	35.3	35.3	***
% of farm households with farm sales over one million Yen	—	—	—	—	—	—	—	—	—	—	—	—

Note See notes for Table 3.3

explain the performance of *a-farms* in terms of the necessity of labour saving operations and accumulation of capital, which are related to their greater involvement in off-farm employment.

On the value of sales of farm products, the gap between the two types of farms widened every five years for the period examined. Over half of the *a-farms* were in the over one-million-yen strata in 1990, which means total sales of agricultural products was higher for *a-farms* than for *n-farms*.

In summary, *a-farms* are more active than *n-farms* with regard to on-farm farming activity. *A-farms* tended to be larger, sell more farm produce, and be more willing to take on extra farmland while putting emphasis on labour-saving strategies such as shifting towards more rice production and labour-saving machinery. This thus allows them to realize a lower level of farmland abandonment than *n-farms*, which explains how the farm-based accommodation effect measured in the former section is generated.

3.5.5 Group Farming: Off-Farm Farming Activity

Table 3.6 shows details regarding participation in group farming for rice production. This is often carried out through voluntary organizations that allow for mutual help by, for example, sharing machinery and providing operation services in the hamlet. The rate of participation has risen every five years, and has increased from around 40% in 1980 to almost 75% of all farms in 1990. This increase in participation is due to efforts to set up group farming organizations in each hamlet by the local government and the extension service, which have provided initiatives for farmers. Although the participation rate of *a-farms* tended to be higher than that of *n-farms* from 1980 to 1985, the difference was narrower in 1990.

An important finding is that *a-farms* and *n-farms* tend to play different roles in group farming. Although over 50% of farms receive services through group farming, the rate of farms offering services was less than 20% in 1990. This means that farms are divided into two classes: a large percentage that receives services and a small percentage that provides services. As to the actual farming of rice, the proportion of *a-farms* that receive services for plowing, soil preparation, harvesting, and threshing tended to be higher than of *n-farms*. This tendency is also seen for services offered; however, the difference between *a-farms* and *n-farms* is not so significant. Thus, *a-farms* tended to benefit more from group farming due to their more severe time constraints caused by their main employment being off-farm work. These findings explain how the group farming effect works.

To summarize, *a-farms* tend to maintain multiple-generation families and thus have better farming conditions in terms of family labour. As a consequence, these farms tend to be comparatively larger, renting more land for farming and concentrating more on rice production. In regard to group farming, they tend to receive rather than provide services. Thus, *a-farms* are run by part-time farmers with steady off-farm employment, but they play an important role in the preservation of farmland

Table 3.6 Factors related to group farming (chi-squared test) % of farm households

Year	1980			1985			1990			1990		
	Yes	No	Result	Yes	No	Result	Yes	No	Result	Yes	No	Result
Accommodation												
% of participation in group farming	47.1	40.4	<i>n.s.</i>	67.1	58.2	+	72.9	74.9	<i>n.s.</i>			
% of farms receiving services for operation of rice paddies												
Plowing/soil preparation	34.1	23.2	**	68.2	54.4	**	62.4	56.6	<i>n.s.</i>			
Transplanting	3.5	2.5	<i>n.s.</i>	8.2	5.5	<i>n.s.</i>	5.9	10.7	+			
Harvesting/threshing	30.6	19.7	**	55.3	44.3	*	60.0	51.6	+			
% of farm providing services for operation of rice paddies												
Plowing/soil preparation	3.5	1.9	<i>n.s.</i>	20.0	18	<i>n.s.</i>	16.5	14.2	<i>n.s.</i>			
Transplanting	1.2	1.6	<i>n.s.</i>	4.7	1.1	**	1.2	1.6	<i>n.s.</i>			
Harvesting/threshing	3.5	2.7	<i>n.s.</i>	18.8	12.8	+	16.5	14.8	<i>n.s.</i>			

Note See notes for Table 3.3

within the hamlet. Consequently, I could confirm the shift effects on the preservation of farmland brought on by *a-farms* and group farming.

3.6 Discussion

The purpose here is to examine the results of the above analysis and to clarify what mechanisms work to cause a shift towards farmland preservation. The author will then determine the implications this has for future policy measures concerning rural diversification, such as the development of green tourism, in co-ordination with traditional farm policy measures.

From the analysis so far, I see that *a-farms* have adapted their farming into that of stable Type II part-time farming in that most farmers hold an off-farm job as their main job. To cope with the severe labour constraints due to the workforce being involved in off-farm jobs, it is rational for these farmers to shift their farming to increased rice production for which labour-saving mechanization is well developed. In this sense, they are taking full advantage of the labour-saving technologies of rice production, and the time saved thus can be used for managing more farmland. Consequently, they are able to attain optimum labour allocation personally on one hand and also contribute to the preservation of local farmland on the other. In different words, this is modern incentive-compatible behaviour of farmers in the rural community, which attains both household and community rationality. In this sense, this farm-level behaviour is an aspect of hamlet function.

Thus, the analysis here clarifies how a complementary relationship between the two-internalization aspects works: that at the farm level and that at the group farming level. This farm-level aspect cannot entirely cover the whole internalization process, and neither can group farming. In this sense these aspects are complementary to each other and attain the shift effect together. According to the framework of Fig. 3.1, the social cost of preserving farmland is internalized by *a-farms* and group farming. To achieve internalization, group farming requires the role of *a-farms* and vice versa.

In this context, a prerequisite for the efficient activity of *a-farms* is the existence of group farming in the hamlet. With the help of these systems, farmers can meet the requirements of peak labour times, such as rice planting and harvesting, even when farming additional land. This is one of the main reasons why *a-farms* generally receive services rather than provide them in group farming. Put another way, the farmland-preservation role of *a-farms* would be undervalued if I only considered the role *a-farms* play as a provider of group-farming services.

Since central and local authorities are now promoting rural tourism in these areas, I have to understand that the importance of this complementary relationship in the internalization process will increase as rural tourism develops. This positive complementary relationship is caused by the vitality of pluriactivity of the farms. Thus, this complementary function of pluriactivity is reflected in the signalling of farmland preservation and this function can be used also as a logical basis for public support.

In order to maintain and further develop this complementary function, the enhancement of labour productivity is crucial through measures such as land consolidation and the establishment of direct-seeding methods which can replace the present seedling-transplant method generally used for rice. These issues are a part of traditional farming policy. However, this current analysis reveals that these farming policies can complementarily support rural diversification measures, such as the development of rural tourism as well.

3.7 Conclusion

In order to comply with the growing significance of pluriactivity in rural policy, this chapter evaluated the role of pluriactive farms in preserving farmland in the local communities. This land preservation function is declining in the less-favoured mountainous areas although it has externality which comprises one factor of multifunctionality. Thus, this function needs policy support for its continuation. However, there is no effective framework to deal with this issue.

This chapter has presented a framework showing that externality is internalized through farm pluriactivity in the hamlets and how to detect this function by incorporating the concept of signalling. Then, by empirical analysis focussing on farm-based accommodations, the behaviour and characteristics of pluriactive farms were clarified.

The results reveal that farms offering accommodations maintain favourable farming conditions in terms of family and farm size and confirm that they are shifting their farming to labour-efficient rice production while increasing the size of their farmland by taking on farmland from elderly farmers in the hamlet. This behaviour is supported by group farming, an off-farm farming activity in the hamlet which helps to alleviate the labour constraints of these farms. These efforts complement each other and have the effect of realizing a relatively low incidence of farmland abandonment in the area. This is a modern incentive-compatible behaviour of farmers in the rural community, which achieves both household rationality and community rationality. In this way the internalization process is carried out and then measured as signalling. Thus, signalling can be an effective tool for the efficient identification of necessary policy targets of farm activities having externality internalized locally but not socially recognized under the stringent government budget due to the stagnant economy.

Another point for policy implications is that it is important to enhance these complementary functions not only as an important factor of multifunctionality to preserve the local community but also to promote a diversified rural economy. Up until now we have tended to consider each subject, in this case, land consolidation, group farming, and farm tourism, separately. Therefore, recognition of this complementary internalized process will be the first step for the future integration of farming and rural policy.

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Chapter 4

Roles of Farm Women in Rural Tourism

Enhancing Multifunctionality



4.1 Introduction

Rural tourism has been promoted as a means of farm diversification (Haines and Davies 1987; Slee 1989) and has been investigated as farm-based rural hospitality businesses in many countries (Page and Getz 1997). However, how to combine multifunctionality in agriculture with farm diversification has not received sufficient attention. Multifunctionality is understood as a positive externality, exerting benefits to society and jointly produced by agricultural activity; therefore farmers are unpaid for the benefits to society. If farmers can successfully take this externality into the farm business or internalize it, multifunctionality will give farmers a chance to realize a new income source.

This point will be important for successful integration of traditional farm policy and expanding rural policy to help farmers create a new farm activity through internalizing the externality or transforming it into an income-generating process. This is why I focus on multifunctionality and farm diversification. However, to our knowledge, sufficient conceptual explorations taking into account the unique features of rural tourism¹ that differ in several aspects from traditional farm products have been lacking.

Therefore, firstly, this chapter evaluates multifunctionality from the perspective of innovation in farm activities internalizing its externalities into a new farm activity. As mentioned in Chap. 1, multifunctionality is classified into two functions: environmental functions and socio-cultural functions. Among socio-cultural functions, health, recreational, and educational functions have a greater possibility to be utilized

¹For topics around the late 1990s to early 2000s on rural tourism, see Hall et al. (2003). However, topics on the relationship between multifunctionality and rural tourism were not taken up. Ohe and Ciani (1995) and Ohe (2001) examined behaviours of farmhouse accommodation operators in connection with farming production in the area of this study.

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as new farm activities. Thus, I focus on the recreational function to examine how a rural tourism activity was generated.

Secondly, I conduct a case study on how rural tourism activity is generated by tracing the evolutionary process of farm activity focussing on one farm household in mountainous Hiroshima, Japan and on the mutual interaction between multifunctionality and rural tourism development by a life history interview. This is because pioneering farmers come into existence so sporadically that their existence is not incorporated into statistical data. This pioneering farm activity gives us an effective model for predicting the future evolution of rural tourism. Finally, I suggest future farm policy orientation that is in harmony with rural resource-environment policy.

4.2 Study Area and Rationale for Case Study

To shed light on the evolution of rural tourism I focussed on a farm household that is conducting rural tourism activity in the mountainous northern tip of Hiroshima, western Japan. Western Japan is one of the most profoundly less favoured areas in this country in terms of an ageing population, scarcity of successors, and small farms. Over 100 farmhouse accommodations for skiers have been established in this area, as it is one of the largest ski areas in western Japan. A problem has been promotion of rural tourism in the summer, so that tourism is not limited to winter sports. In response, a few farm households, differing from traditional farmhouse accommodations for skiers, are engaged in rural tourism. A typical case is the Tamura farm. Through reviewing about 40 years of evolution within this household, I contrast rural tourism activity and farming activity from an innovation perspective because these take place within the setting of two epochs. Through this case study I clarify the impact of rural tourism on farm management by elucidating the process of internalization of multifunctional externalities and try to anticipate prospects for the future direction of farm diversification in less favoured areas. Although this is, of course, a personal history of one farm, I can observe a drastic change in the farming system within this family wherein they experienced events that often reflected the general socio-economic background that this country had experienced.

4.3 Evolutionary Process of Farm Activity and Rural Tourism: A Case Study of Innovation in Farming

As a case study on how a farm operator generated innovative farm activity in connection with multifunctionality, I focus on the evolution of the Tamura farm beginning in 1963 when the Tamuras married up until 2001. The profile of the Tamura farm is summarized in Table 4.1. The Tamura farm is located in one of the deepest hilly and mountainous areas in Hiroshima. Mrs. Tamura was a pioneer of rural tourism in this

Table 4.1 Profile of the Tamura farm (as of 2001)

Item	Data
Location	Hilly and mountainous Hiroshima, height: 450 m
Family labour	Husband (rice) and wife (vegetables, rural tourism) Wife: “designated excellent farmer” by prefectural government
Acreage: land use	1.6 ha: rice (0.3 ha), green house (0.3 ha), vegetables (0.1 ha), flower field (0.75 ha), car park (0.15 ha) 10.0 ha: wood

area, although farming conditions for this family were very similar to those of other farm households there. Because of the highland climate, which is cool in summer and characterized by a large temperature difference between day and night, good quality vegetable products are produced such as tomatoes and cucumbers, which have been main crops in this area. The Tamura’s farm is slightly larger than the average in this area.

We recognize that there were two epochal events in the years during which the farm evolved. The first was mechanization and the land consolidation process that spread throughout agriculture during 1960s to the 70s. The land, or paddy field, consolidation project was a prerequisite of mechanization because traditional paddy fields were small, scattered, and irregular in form, which presented major physical obstacles for the mechanization of growing the main crop, rice. Effects of land consolidation are summarized by an illustration in Fig. 4.1. Unless this obstacle would be removed, mechanization would not truly increase labour productivity. Therefore, I should treat mechanization and land consolidation together as a unit of innovation in farming.²

This innovation resulted in increased labour productivity and stimulated crop conversion from rice to production of more profitable vegetable crops grown in greenhouses. However, this process also resulted in husbands taking off-farm jobs, unlike government expectations. This unexpected result was commonly observed all over the country during this period. Consequently, farmers attained income parity with urban households not by means of extending on-farm activity, but by means of seeking off-farm income sources, where wages were rising faster than farming wages due to high economic growth in the industrial sector at that time.

We can see that exactly the same process occurred on the Tamura farm as is shown in Table 4.2. When Mrs. Tamura was married in the early 1960s, the farming operation was still conducted by cattle and crops were harvested manually. In a short while, tillers and binders for rice harvesting were introduced, meaning the beginning of mechanization in the late 60s. Then, the farming operation was further mechanized with rice dryers, mini trucks, rice planters, etc. until the early 70s. However, land consolidation was not yet completed. The sum of 16 paddies reached the size of only

²For studies on evaluation of farming mechanization and irrigation infrastructure of Japanese agriculture see Hayami and Kawagoe (1991) and Akino and Hayami (1991). However, evaluation of land consolidation has not been conducted so far.

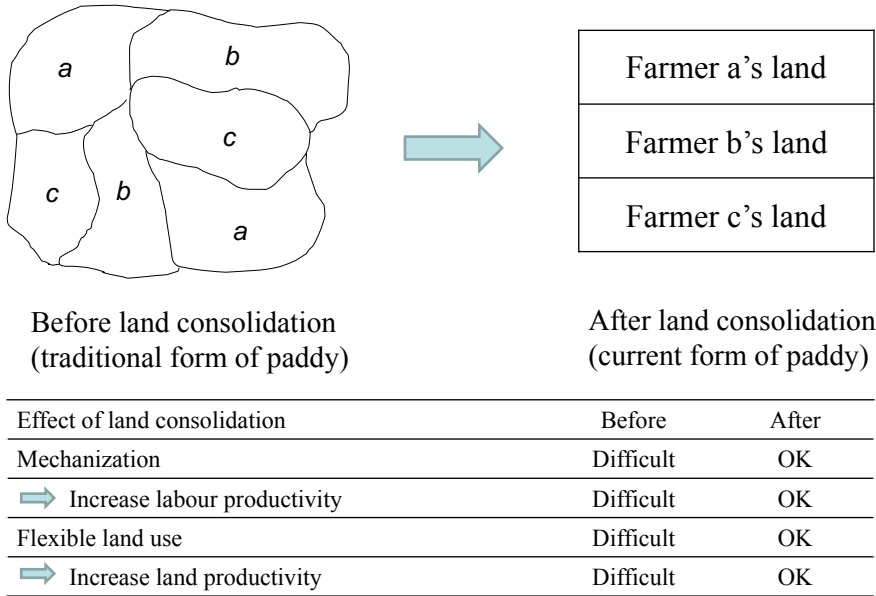


Fig. 4.1 Effect of land consolidation

0.9 ha, while the average was 0.056 ha. These were the typical scattered irregularly shaped paddies as illustrated in Fig. 4.1. This was the traditional form of paddy that ensured equal opportunity for irrigation among the farmers concerned.

At this stage, tractors had not yet been introduced. This is because the shape of the paddy had to be transformed to become suitable for mechanical operation. This was not realized until the land consolidation project was started. The above facts make it obvious that land consolidation and mechanization progressed together.

The direct effects of land consolidation is firstly improvement of labour productivity with mechanization and with crop conversion from rice to more profitable crops such as greenhouse vegetables because greenhouses require the transformation of irregularly-shaped paddies to square plots. Moreover, land consolidation not only raised productivity, but also enabled farmers to receive machinery operation services from cooperatives or other farmers. This out-sourcing behaviour eliminated the need for investment in machinery and further promoted off-farm job-holding for householders of farms.

In summary, the first epochal event resulted in transformation of this area into a vegetable-producing area, while, on the other hand, part-time farming progressed due to improvement of labour productivity under relatively high off-farm wage rates.

Table 4.2 Evolutionary process of mechanization and land consolidation: case of the Tamura farm

Year	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
Tomato							○	Conversion from rice paddy	Conversion from rice paddy	Conversion from rice paddy	---	---	---	○	Green house		---	---	---
No. paddies	16 paddies			----	----	----	----	----	----	○	Land consolidation project to 5 paddies	Land consolidation project to 5 paddies	Land consolidation project to 5 paddies	Land consolidation project to 5 paddies	Land consolidation project to 5 paddies	○	---	---	---
Ploughing	Cow	○	○	Tiller---	Tiller---	----	----	----	----	----	----	----	----	----	○	Tractor (15hp)		----	----
Rice planting	Manual	----	----	----	----	----	----	----	----	○	Rice planter (2 rows)	Rice planter (2 rows)	Rice planter (2 rows)	Rice planter (2 rows)	----	----	----	----	----
Harvesting	Manual	----	----	○	Binder and thresher	Binder and thresher	○	Rice dryer	Rice dryer	----	----	----	----	----	○	Group farming service		----	----
Rice drying	Natural drying by hanging			○	Carrier by tiller	Carrier by tiller	○	Mini truck	Mini truck	----	----	----	----	----	○	Service of agricultural cooperative		----	----
Transportation			○	Carrier by tiller	Carrier by tiller	Carrier by tiller	○	Mini truck	Mini truck	----	----	----	----	----	----	----	----	----	----

Source Survey by the author and data from the town government

4.4 New Activity for the New Market

The second epochal event was the start of rural tourism activity.

The Tamura's activity evolved starting from rice production and moving on to tomato production that aimed at ordinary shipments to the urban market; then Mrs. Tamura began making dried flowers, offering accommodation services to visitors by providing some pick-your-own services with regard to garden flowers and greenhouse tomatoes. In another way, the activity evolved from physical goods to goods containing factors of service goods. Thus, I can say that the market offering these goods with a service factor exists in the farmyard. In this case, unless people who want to enjoy these goods visit the farmyard, they cannot consume these goods. This means that a new rural market is emerging as explained in Fig. 1.6 in Chap. 1.

The starting point of rural tourism activity began accidentally when Mrs. Tamura was injured during vegetable farming. She was hospitalized and had a good chance to review her life as a farm wife after she had completed her childcare responsibilities.³ Traditionally, the job-holding pattern of Japanese women has been said to be M shaped, which has two peaks indicating their jobholding ratios. The first peak comes after their schooling is over and the second after child rearing is completed because Japanese women traditionally leave the job market after marriage. Thus, the job-holding ratio drops between the two peaks. Mrs. Tamura's rural tourism activity started at around the second peak of the M shape. She became interested in branches and wild flowers in the wooded area of her backyard and began to teach herself to make dried flowers. Then, she exhibited her work in Hiroshima and achieved a good reputation. This success gave her the momentum to launch a new activity. At the same time, she learned from people outside her region that the highland climate in her area created flowers that, when dried, had a clear colour that resisted fading and that had petals that did not easily fall. Until this time, this was an unrecognized local resource. Then word of mouth and publicity led to increased requests from visitors for accommodations and pick-your-own tomatoes and cucumbers.

The rural tourism activity grew not only by her efforts, but also by interaction with people outside of the rural community. This is a point of difference from traditional farm products. People from the outside world were involved at every important turning point. Her personal network grew in accordance with the growth of the activity.

Thus, the evolution of rural tourism is understood as a process of interaction of people outside of the rural community with a farm operator. This interaction brings about the objective evaluation of unutilized new farm and local resources, which creates a basis for a new activity. In short, multifunctionality is realized in the farm activity in accordance with deepening rural tourism activity such as a recreational function and a partial landscape-forming function by the flower garden. Therefore, I can say that the process of the development rural tourism can be attained by discovering and nurturing multifunctionality rather than utilizing ready-made local resources.

³For introductory studies on gender issues in rural Japan, see Tsutsumi (2000) and Nakamichi (2009).

This process described above was a process of creating a new farm activity that had not existed before and in this sense was product innovation. This interaction of multifunctionality and internalization added a new recreational value to the farmyard such as providing dried flowers and a flower garden for urban visitors. Thus when multifunctionality was expressed in the product, the rural tourism activity became viable as a farm business. In addition, the Tamura's case clearly shows that multifunctionality was realized in the formation of a new farm activity.

Another point that should be kept in mind is that the more extensive the rural tourism activity became, the more clearly became Mrs. Tamura's sense of entrepreneurship, which was the process of transforming a farmer into an entrepreneur. By way of recognition of visitors' needs, taking advantage of the typical climatic conditions and making dried flowers, and then trying to establish her brand, she succeeded in creating a new rural business by utilizing multifunctionality. Because of all of these pioneering accomplishments she was credited as a "designated excellent farmer" by the prefectural government of Hiroshima in 1999.

4.5 Innovation in On-Farm Activities: Comparison Between Farming Activity and Rural Tourism Activity

Here, features of the two epochs are contrasted from the perspective of innovation. Table 4.3 summarizes the main differences between the innovation that occurred in the rice farming activity and the rural tourism activity. Innovation in the farming

Table 4.3 Comparison of features of on-farm activities from innovation: case of the Tamura farm

Item	Farming activity	Non-farming activity
Content of innovation	Operation of rice farming	Creation of new activity
Place of innovation	Mechanization and land consolidation	Rural tourism
Time of occurrence of innovation	Late 1960s to early 1970s	Late 1990s to early 2000s
Time of life cycle	Young	Middle aged: latter part of M-shaped job holding curve
Origin of innovation	Exogenous	Endogenous
Type of innovation	Process	Product: service goods
Type of innovative technology	Hardware technology	Software technology
Role of wife in farm management	Subsidiary of husband	Decision maker
Impact on farm management	Deepening of off-farm activity, introducing vegetable production	Heightening on-farm activity

operation was apparently a process innovation because this was a mechanization and land consolidation process introduced exogenously and that occurred in the process of farming production. This means that the products were the same as before the innovation. Specifically, these were machinery- and farmland-related hardware technologies.

The same process innovation in rice farming operations had diffused throughout the country at a period of high economic growth, which was a modernization process of farming in this country. The effects of this exogenous innovation triggered deepening of off-farm non-farming employment for husbands and of converting crops from rice to higher-profit crops such as vegetables grown by farm women. This certainly promoted the diversification of farm activity that allowed husbands to take off-farm jobs and for wives to assume the on-farm farming activities instead. These changes, which were common throughout the country, happened exactly the same way in the Tamura farm household as studied above.

On the contrary, rural tourism in this case endogenously occurred and product innovation of service goods created a new product that had not existed on the farm previously and even in this area. This innovation was software technology such as making dried flowers and offering service goods for accommodations based on unused resources. In this case, this innovation resulted in extending on-farm activity rather than extending off-farm activity.

Moreover, another important point is that in the case of Mrs. Tamura the role of the wife switched from providing mere subsidiary family labour performed under the husband's initiative to becoming a decision-maker and taking the initiative in the new farm business. This is another example of the significance of rural tourism in realizing a gender-equality society.

4.6 Discussion: Factors of Product Innovation

Here let us consider the factors influencing product innovation. First, I can observe that Mrs. Tamura clearly has affection for the local community and farm life. Developing rural tourism involved a process of establishing clear identity as a farm woman starting from a vague identity.

Secondly, rural tourism activity created a personal network of people outside the local community and this network stimulated discovery of new local resources and eventually creation of a new activity as described above.

Thirdly, rural tourism developed stepwise, not linearly. Extension of one activity served as preparation for starting another activity and the increase in the number of activities provided an opportunity for the enlargement of the whole farm business. Thus, it is safe to say that qualitative development needs quantitative development, and vice versa.

With all of these features taken into account, I can classify the evolutionary steps as follows: preparatory stage, take-off stage, extension stage, and brand-establishment stage (Table 4.4). The preparatory stage is the stage at which rural tourism activity has

Table 4.4 Evolutionary stages of rural tourism activity: case of the Tamuras

Activity	Stage			
	Preparatory	Take-off	Extension	Brand-establishing
Year	1985–	1995–	1997–	2002–
(Age of Ms. Tamura)	–41	–51	–53	–58
Making dried flowers	○----- Self-taught	*----- Exhibition show	-----	-----
Studio and dried flower course		○-----	-----	-----
Flower garden and car park			○-----	-----
Accommodation			○-----	-----
Pick-your-own tomatoes			○-----	-----
Creating own brand by Yamahahako flower				○-----

not yet been launched. At this stage, for Mrs. Tamura there was the learning process of dried flower techniques as a pastime and the preparation to utilize opportunities to develop this activity into a farm activity.

The take-off stage is the stage when the actual rural tourism activity began. In Mrs. Tamura's case, she had an exhibition of her craft in Hiroshima due to requests from friends in the city area. The success of this exhibition gave her confidence, which led to the creation of the new farm activity.

The extension stage was when the activity was extended by such means as offering accommodations and setting up the flower field. Then, she tried to establish her own brand by featuring Yamahahako, a white wild highland flower suitable for pressed flower techniques. The idea of establishing her own brand is evidence of her becoming an entrepreneur. For that reason, I can designate the place that she has now entered as the brand-establishment stage.

The evolutionary process of farm activity was also a transformative process during which she changed from the role of a farm wife to that of an entrepreneur.

Figure 4.2 depicts the relationship between multifunctionality and farm diversification from the experience of the Tamura farm. The relationship is mutually positive. The more farm diversification evolves, the more multifunctionality is realized. In this process a human network with urban people played an important role in stimulating farm diversification by requests from these people and extending the network itself.

To summarize, multifunctionality moved from a conceptual state to an actual state through the development of rural tourism. To put it differently, farm diversification and multifunctionality interacted and developed together. Specifically, Mrs. Tamura began with dried flower making and moved on to pick-your-own flowers and offering

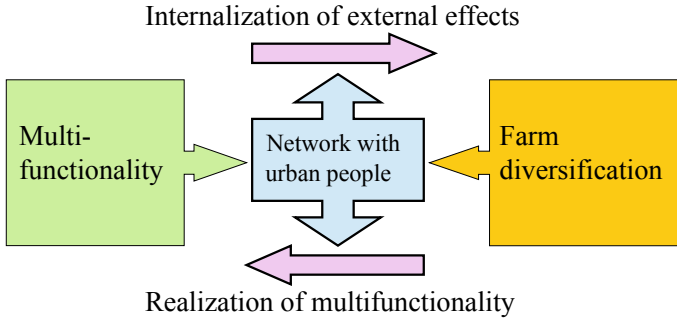


Fig. 4.2 Interaction between multifunctionality and farm diversification

an accommodation service, a dried flower course, which meant realization of the recreational function in the farm activity. Then she starting tomato pick-your-own as requested by visitors, which has added a food educational function. Therefore, I can say that creating a new activity by internalizing multifunctionality was attained stepwise by interaction with visitors rather than all at once. It was also the process of transforming herself.

4.7 Conclusion

This chapter explored the interaction of multifunctionality and rural tourism activity by focussing on the evolution of an actual farm household in mountainous western Japan. The following are the main points discussed in this chapter.

Rural tourism gives crucial chances for women to actualize their talents and enhance multifunctionality reciprocally. Rural tourism also created a personal network of people outside the local community and this network stimulated discovery of new local resources and eventually creation of a new activity.

Rural tourism developed stepwise, not linearly. This means that qualitative development needs quantitative development, and vice versa.

From a case study on the evolution of farm activity, I characterized rural tourism activity as a product innovation whereas innovations in the farming operation were characterized as a process innovation.

From the above findings, I can suggest that emphasis in policy should be placed more in promoting product innovations by farm women, particularly in promoting rural tourism.

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Chapter 5

Impact of Rural Tourism Operated by Retiree Farmers on Multifunctionality



5.1 Introduction

The expected increase in the retired generation has been attracting growing concern in terms of its impact on society since around the late 1990s in connection with the generation of baby boomers. The number of baby boomers who have been engaged in non-farming occupations but who start or return to farming after retirement has been increasing from the late 1990s to the early 2000s in Japan. We call them “retiree newcomers” here. One reason for this increase is apparently due to the prolonged stagnant macroeconomy in Japan since the 1990s, with this period having the highest jobless rate since World War II. In addition to this macroeconomic factor, I should consider other positive factors related to these retiree newcomers regarding farming and rural life.

A typical example of this rural orientation that contrasts with the depopulation due to movement from rural to urban areas is the increase in the number of middle-aged and retired newcomers. Some have launched rural tourism activities. Thus, it is necessary to investigate the significance of their activity for the development of rural tourism and for local rural tourism policy design in the face of the progression of the ageing society. In the ageing society with people reaching retirement having a longer lifespan than was previously expected, how to spend a meaningful life after retirement is a matter of concern not only to the individual but also to the entire society.

Of possible significance with regard to retiree farmers, i.e., those who retired from non-farm jobs and are involved in farm activity, is their role in enhancement of the multifunctional aspects of agriculture. Multifunctionality, which is associated with positive externalities that are generated along with farming activity and that exert benefits to society, is recognized as a new social role of farming. Specifically, the

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sub-functions included in multifunctionality are land preservation, landscape formation, biodiversity, recreational function, succession of cultural heritage, educational function, etc. Naturally, rural tourism takes advantage of the multifunctional aspects of agriculture. In this context, retired farmers who operate rural tourism sites can contribute to the enhancement of multifunctionality that eventually leads to rediscovery and reevaluation of rural resources. If so, rural tourism should be promoted among retired people as a part of rural tourism policy. This is an empirical question that should be investigated. Ohe (2001, 2006, 2007) has studied the relationship between multifunctionality and farm diversification, including rural tourism, but has not yet studied issues related to retirees.

In the tourism arena, human resources are crucial for tourism activity and its development because of its characteristic of service goods. Therefore, the utilization and management of those resources have been studied as one of the focal points of tourism research (Baum (2006), WTO (2002), Pender and Sharpley (2005)). However, there has been little examination of the roles of retiree newcomers who are engaged in activities such as rural tourism.

In the agricultural arena, Sawada (2003) conducted an intensive study of newcomers into farming in Japan, and NKRI and Tabata (2005) performed a full-fledged study on retiree farmers. Bollman and Bryden (1997) studied rural employment, including that from rural tourism, from an international perspective.

To my knowledge, however, there has not been any study on rural tourism conducted by retiree farmers. There are increasing numbers of studies on rural tourism from diverse aspects not only in Europe, but also in Asian Pacific countries. For instance, from the international perspective, Page and Getz (1997), Butler et al. (1998), Robinson et al. (2000), and Hall et al. (2003, 2005), from European perspectives Hoyland (1982), Bryden et al. (1993), Ohe and Ciani (1995), Sharpley (1996) and Sharpley and Sharpley (1997), Roberts and Hall (2001), and Petrzalka et al. (2005) from a North American perspective.

With regard to the Asian Pacific region, there have been reports from Pearce (1990), Oppermann (1998) and Hall (2005) for New Zealand, Ollenburg and Buckley (2007) for Australia, Bowen et al. (1991) for Hawaii, Sofield and Li (1997) for China, Lee (2005) for Taiwan, Lee and Thomson (2006) for Korea, and in Japan those by Ohe (2001, 2005, 2007), Thompson (2003) and Nakamichi (2003), and APO (2006a, b) for other Asian countries. Nevertheless, no study similar to our perspective in this report has been conducted.

5.2 Study Design

This chapter explores the roles and significance of rural tourism activities operated by retiree farmers. The study was designed based on two contrasting working hypotheses on the relationship between rural tourism operated by retiree farmers and the multifunctionality of agriculture.

To explore these hypotheses, the author performed an empirical study through a dual approach. Firstly, the author conducted a statistical investigation on the trend of retirees as newcomers to farming who will become a source of retiree rural tourism operators in Japan. Secondly, I performed a case study on rural tourism by retiree farmers. This is because the number of retirees who have started rural tourism activity has hardly reached a statistically visible level at this time; thus, it is useful to present a case study within the wider framework of a socio-economic trend. This dual approach should work to complement what would otherwise be an approach to analyze these factors individually. As a case study, I focus on one retiree farm household, the Suzuki farm in Chiba prefecture, which is conducting rural tourism activity. From this case study, I examine how this retiree farm household utilizes farm resources through rural tourism activity. I then examine the relevance of these hypotheses and consider how rural tourism operated by retirees will enhance multifunctionality. Finally, I suggest policy recommendations.

5.3 Working Hypotheses on the Relationship Between Rural Tourism Operated by Retiree Farmers and Multifunctionality of Agriculture

Multifunctionality of agriculture exerts external effects or benefits to society generated by agricultural production without any compensation to providers. Among the multiple functions are the environmental function, such as nurturing water resources, preserving the natural environment including biodiversity, and landscape formation; socio-cultural function such as preserving the cultural heritage; health and recreational function; and the educational function.

Although the benefits of the environmental function are so widespread that individual farm households cannot recover a return on the exerted benefit, the benefits to the socio-cultural function are said to be relatively easier to recover by producers' farm activity (Ohe 2007). Thus, it is important for us to mainly focus on the relationship between rural tourism and aspects of the socio-cultural function.

Now let us look at rural tourism conducted by retiree farmers and multifunctionality. As retiree farmers are naturally inferior in terms of physical strength and lower in motivation than the average farmers in general, their productivity is lower. If multifunctionality is accompanied by productivity, then multifunctionality will be low with retiree farmers. It does not automatically mean, however, that this parallel effect will be applied when rural tourism is conducted. Whether this parallel effect can be applied should be evaluated empirically.

I will look at the following two hypotheses on rural tourism activity by retiree farmers: multifunctionality is as low as productivity (hypothesis 1) and multifunctionality is not as low as productivity (hypothesis 2). The difference between the two hypotheses comes from how rural tourism actually influences multifunctionality.

Hypothesis 1 assumes that rural tourism by retiree farmers does not enhance multifunctionality, so multifunctionality stays at a low level along with that of productivity. The author calls it the “parallel hypothesis.” By contrast, hypothesis 2 assumes that rural tourism augments multifunctionality. The author calls this the “non-parallel hypothesis.” If the non-parallel hypothesis is justified, it means that rural tourism is effective in mobilizing rural resources.

If hypothesis 1 is verified, there is no need of support measures for rural tourism when formulating policies on tourism or rural resources. If hypothesis 2 works, such support measures will be justified.

5.4 Statistical Examination of Trend of Newcomers into Farming in Japan

I reviewed trends of entry of those newcomers into farming in Japan as background for the case study described below. Table 5.1 indicates that nearly 200,000 people newly entered into farming in 1963. Newcomers fit into two categories: those who started farming immediately after graduation from school and those who started farming by transferring from another type of work. In 1963, during the high-economic growth period, newcomers were quasi-evenly divided into these two categories; those after graduation numbered about 90,000 and those by job transfer about 110,000. Subsequently, the number of newcomers dropped in both categories. In particular, the drop was sharp for graduating newcomers and continued to decrease to reach the level of less than 10,000 in the late 70s.

On the contrary, the number of job-transfer newcomers decreased more moderately. Still, the number sunk below 110,000 in the late 1980s and the decrease continued until the 1990s. The number of persons in both categories hit bottom in the early 1990s; there were 1700 graduating newcomers in 1991 and 14,000 job-transfer newcomers in 1990. Since then, the number in both categories has increased to reach a total of 80,000 newcomers as of 2003. The cause of this upward trend is apparently a reflection of the climbing jobless rate mentioned earlier because the increase in newcomers has paralleled that of the unemployment rate since the 1990s.

The author confirmed this relationship statistically in Table 5.2. Although the regression coefficients were all positive with statistical significance (1%), the value of the coefficient differed. The coefficient of graduating newcomers was 0.13 while that of job-change was 18.8, indicating that a 1% increase in the jobless rate caused approximately 19,000 job-transfer newcomers. In examining Table 5.1, I can point out two features with regard to this large difference. The first is that the total number of newcomers increased faster than the jobless rate. Whereas the jobless rate showed a 2.5 times increase from 1990 to 2003, the number of total newcomers increased 5.1 times, which is more than double the increase in the jobless rate during the same period. When breaking down the increase by category, the increase in newcomers by job transfer reached 5.6 times while that by graduation was merely 1.2 times.

Table 5.1 Trends of unemployment rate and number of newcomers to agriculture in Japan

Year	Unemployment rate (%)	Total number of newcomers (thousand people)	No. of newcomers after finishing school	No. of newcomers through job transfer	No. age < 40	No. age > 40	No. age > 60
		(1) = (2) + (3)	(2)	(3) = (4) + (5)	(4)	(5)	(6)
1963	1.3	198.2	89.8	108.4	-	-	-
1970	1.2	116.6	36.9	79.7	-	-	-
1980	2.0	102.2	7.0	95.2	-	-	-
1990(A)	2.1	15.7	1.8	13.9	2.5	11.4	4.8
1995	3.2	48.0	1.8	46.2	5.8	40.4	24.6
2000	4.7	77.1	2.1	75.0	9.5	65.5	44.8
2001	5.0	79.5	2.1	77.4	9.6	67.8	43.0
2002	5.4	79.8	2.2	77.6	9.7	68.0	42.5
2003(B)	5.3	80.2	2.2	78.0	9.7	68.3	42.3
(B)/(A) Ratio	2.5	5.1	1.2	5.6	3.9	6.0	8.8

Sources: Labour Force Survey (1963–2003) from Statistics Bureau, Ministry of Internal Affairs and Communications, Trend of Newcomers to Agriculture (1963–2003) from Ministry of Agriculture, Fisheries and Forestry, Japan (MAFF)

Table 5.2 Results of regression analysis between number of newcomers to agriculture and unemployment rate

Items	Explained variable		
	Total no. of newcomers	No. of newcomers after finishing school	No. of newcomers through job transfer
Unemployment rate	18.9492*** (16.24)	0.1262*** (4.45)	18.8230*** (16.32)
Constant	-16.9434*** (-3.80)	1.5332*** (14.13)	-18.4766*** (-4.19)
ajstR ²	0.9529	0.5911	0.9533
Durbin-Watson Ratio	1.4199	1.9432	1.4287

Source Same as Table 5.1

Notes Estimation period was 14 years from 1990 to 2003. Figure in parenthesis is *t* ratio. *** = 1% significance. No serial correlation in any result was detected by Durbin-Watson Test

In short, the rise in newcomers was largely due to those who had become newcomers by changing jobs. This suggests that there might be socio-economic factors other than the jobless rate affecting this reversal in trend.

To look into these factors I examined the age composition of job-transfer newcomers. Job-transfer newcomers in generations over 40 years old increased more rapidly than among younger generations; the rate of increase in job-transfer newcomers under 40 years of age was 3.9 from 1990 to 2003 while the rate of increase was 6.0 fold in those over 40. As a result, the proportion of middle aged and senior newcomers comprised nearly nine tenths of all job-transfer newcomers. Among them, the proportion of those over the age of 60 years rose from three tenths in 1990 to more than half in 2003.

The reasons for this uptrend in seniors are as follows. First, those second and third sons who immigrated to urban areas during the period of high economic growth are now returning to their hometowns to take up farming after retirement. Second, those who experienced job changes under the downsizing process in the private sector chose farming for their new work and life. In any case, these reasons are influenced by socio-economic factors rather than a positive rural orientation. It should be noted that a real rural orientation is gradually emerging, but not yet with certainty.

However, at least it is safe to point out the following. The above facts suggest that support measures for middle-aged and senior newcomers ought to be strengthened because traditional measures tend to be focussed on younger generations. This fact also indicates that roles of middle-aged and senior generations in farming have been undervalued. In keeping these points in mind, I focus on a case study of rural tourism activity performed by a retiree couple and evaluate their performance.

5.5 Case Study on Rural Tourism Activity by Retiree Couple

5.5.1 Motivation for Starting Rural Tourism

Mr. and Mrs. Suzuki run a farmhouse accommodation in Tateyama town on the southern tip of Boso peninsula, Chiba. Chiba constitutes the eastern half of Tokyo Bay. This area is relatively warm even in mid-winter due to a warm ocean current, and strawberry pick-your-own farming in greenhouses is conducted beginning in January. The area is traditionally famous for the Bosyu Biwa, a major variety of biwa (loquat) fruit. However, other conditions for farming are not always favourable because of the hilly and mountainous topography, which has commonality with other rural areas in this country.

The couple had been office workers before they started the rural tourism business. The husband worked at a local bus company and the wife at a local bank. Therefore, they were type 2 part-time farmers (classification of type 2 part-time farming is indicated when household income from farming is less than off-farm income). They have 1.3 ha: 0.3 ha for rice paddy, 0.4 ha for field crops, 0.2 ha for orchard, and 0.4 ha for daffodils. Daffodils are a suitable flower for part-time farmers because they need no intensive care and early shipment to the market is possible due to the warm climate.

Farming for the couple was a way of relieving stress on the weekend from their off-farm jobs. Their two sons had already become independent. In discussing their way of life after the husband's retirement, they decided to spend their life farming because they had enjoyed doing farm activities together. The wife retired together with the husband. They, however, favoured a sociable and enjoyable way of farming rather than exclusively focussing on farm production. Initially they considered a holiday rental house with small plots for vegetable production and charging 20,000 yen (nearly equals 170 US\$ as 118 yen = 1 US\$) a week. The accommodation service law, however, does not allow tourists to cook in this type of dwelling, so they switched their plan to start an ordinary accommodation with boarding services. They have three rooms for nine people: two are western style and one Japanese style. The name of the house, "Suzuki agri," came from "agriculture" and represents their affection for farm life.

They were registered as a green tourism accommodation in 1999. The registered operators are required not only to offer accommodations and boarding services, but also to offer visitors who request them activities unique to the countryside such as farming experience, craft making, traditional food processing, etc. The aim of this programme is to provide a new income source for farmers and to give visitors a chance to relax and learn about rural life and heritage. Investment in the accommodation facility was entirely financed by their retirement allowances. The plan of the couple owning the farm was to realize sustainable farm management together with making a contribution to the local community.

As of 2004, one difference arose that deviated from the initial plan in that the husband who had retired was requested to assume an executive post in the company where he had previously worked. Thus, he commutes to the office on weekdays. The husband does farm work that involves machinery operation on weekends and the wife does manual farm work and performs activities that are related to rural tourism.

5.5.2 Accommodation Service

Mr. and Mrs. Suzuki accommodate about 100 visitors annually with no major fluctuations. The number of new visitors who consulted their website is greater than those of repeat visitors. Season-wise, weekend and holiday periods in May and summer are busy times. Visitors are mainly from the northern Chiba and Metropolitan areas of Tokyo. Although family visitors are in the majority, those who want to become retiree newcomers and male and female visitors in their 30s who are interested in agriculture and the rural environment make up more than a few of the visitors. Moreover, they annually accept about 40 elementary school children as a part of a school program in connection with their contribution to the local community.

The accommodation fee was initially 4000 yen per night per capita with breakfast and dinner for visitors older than elementary school age. Influenced by the general deflation trend in the tourism industry due to the slow economy, they reduced the fee to 3500 yen with only breakfast provided (3000 yen for a child younger than elementary school age but older than the age of three). Because it is often difficult to manage to prepare dinner and conduct a farm experience program at the same time, they felt it was better to give visitors an option for eating out. Of course, meal service is offered if requested for 1500–2000 yen.

5.5.3 Farming Experience Service

The main feature of the farm experience service is harvest experiences. A distinguishing point is that Mr. and Mrs. Suzuki utilize every available resource in the farmyard. In addition to multiple land use for farming, they utilize plum and biwa trees and daffodils to provide harvest experiences.

Thus, experience services involving multiple products on a year-round basis are available. The author can point out the following three reasons for this: first, off-farm factors; second, on-farm factors; and, third, factors related to their being retiree farmers. The first is the result of the climate in this area, in that the warm winter weather enables them to conduct such a farm operation. The second is that the farm owners originally farmed part-time, growing rice and multiple field crops, which yielded only small amounts of product. All of these factors contribute to enhancing efficient land utilization for farming. In other words, this behaviour prevents abandonment of land, which often occurs owing to an ageing population and depopulation

in rural areas. This is a land preservation function of multifunctionality. Furthermore, their small-scale production of multiple items enables them to widen the experience menu and to offer year-round experience services. This is an apparent advantage for conducting rural tourism, although it is considered a disadvantage from a farm productivity standpoint.

Table 5.3 shows the experience service menu of the Suzuki farm in which a maximum of nine services are available in September and a minimum of six services are available even in summer and winter. On average, 6.9 services are available. Thus, the table shows that harvest experience services are available for annual field crops from early summer to winter. Additionally, harvest experience services involving fruits and daffodils can complement the seeding season of these field crops from spring to early summer. In short, the combination of annual and perennial crops enables the farm family to offer a wide and varied menu and year-round experience services. Figure 5.1 illustrates how the annual crop and perennial crop work together to provide variety in the monthly experience services offered by this farm. As you can see, this combination reduces the fluctuation in the total number of experience services.

The third factor is that characteristics of retiree farmers who are not productivity oriented are reflected in their experience program. Specifically, the following two points should be mentioned.

First, the Suzuki couple takes advantage of the seasonality of each crop and realizes the provision of multiple products. They place emphasis upon the seasonality of agriculture and therefore do not conduct greenhouse production. Put differently, they realize a year-round operation not by extension of the production period but by taking advantage of the diversity of resources that already exists in the farmyard.

Second, rice harvesting is conducted not with a rice combine, but with a binder followed by the natural drying of rice by hanging on rods. This is mainly because the Suzuki couple originally produced rice for their own consumption. Although this method is rather outdated and rarely used in this era of mass production, it certainly enhances the experience program because harvesting and drying can be offered as a set of experiences in the process of the farming operation. Table 5.4 summarizes this interesting contrast between the efficiency of technology and availability of farming experience in terms of rice. Combine harvesting eliminates the need for manual harvesting and drying by hanging rice straw on rods because the rice combine smashes rice straw. If this mechanized production mode were used, it would not be possible to provide a set of experience services from harvesting to drying. Therefore, a menu that includes extra farming experiences should be prepared. On the other hand, natural drying makes it possible to integrate harvesting, drying, and threshing into a consecutive experience program in the farm operation process. Thus, it should be noted that efficiency of technology does not always parallel the availability of farming experience services.

This outdoor operation, however, depends on weather conditions, so an indoor program is also prepared. For an indoor program, the experience menu varies with seasonality of materials such as making strawberry and loquat jams and marmalade

Table 5.3 Farming experience menu at Suzuki farm

Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rice					s	-	-	-	h			
Radish	h	h							s	s	-	h
Cucumber		s	s	-	h	h	h	h				
Kidney bean			s	-	h	h	h	h				
Potato		s	-	-	-	h	h					
Egg plant			s	s	-	h	h	h	h	h		
Gumbo				s	-	-	h	h	h			
Sweet potato					s	-	-	-	h	h	h	
Sweet corn				s	s	-	h	h				
Peanut					s	-	-	h	h	h		
Aroid	h	h		s	-	-	-	-	h	h	h	h
Edible flower	h	h	h						s	s	-	-
Soy bean						s	-	-	h	h	h	h
Red bean							s	-	h	h		
Spring citrus			h	h								
Summer citrus				h	h	h						
Persimmon										h		
Plum						h						
Loquat						h						
Butterbur				h	h							
Butterbur sprout		h	h									

(continued)

Table 5.3 (continued)

Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bamboo shot				h	h	h						
Mushroom		h	h								h	h
Daffodils	h										h	h
Plum flower			h									
Strawberry ^a	h	h	h	h	h							
Flower ^a	h	h	h	h	h				h	h	h	h
No. of products for service	6	7	7	6	7	8	6	6	9	8	7	6

Notes: Author made based on the brochure of Suzuki farm. s = seeding and/or planting, h = harvesting, - = growing period. ^a = contract with other farm

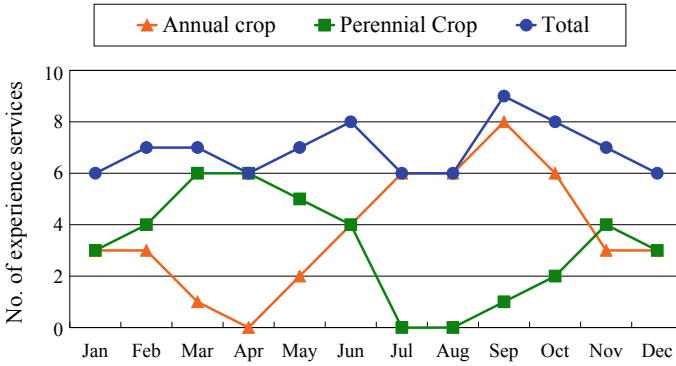


Fig. 5.1 Monthly experience services offered by Suzuki Farm. Note Data are same as Table 5.3

Table 5.4 Contrast between farm technology and availability of farming experience: a case of rice

Machinery	Adoption of technology	Level of technology	Efficiency of operation	Coverage of operation	Availability for farming experience service	Compatible farming experience service
Rice combine	Commonly adopted	Modern	High	Harvest, threshing, chopping of rice straw	Low	None
Binder	Suzuki farm's	Outdated	Low	Harvest	High	Natural drying of rice, threshing

and making rice cakes using the traditional mortar and pestle. Food processing experience services are provided free of charge for overnight visitors while 1000 yen are charged to cover the cost of materials for visitors coming only for the experience.

5.5.4 Direct Selling

This rural tourism activity provides an opportunity for direct selling. The couple sends their products by home delivery in response to orders received from visitors who have returned home. Those products include natural dried rice, handmade rice cakes, loquat, peanuts, daffodils, strawberries, etc. (Table 5.5). The Suzuki's buy the strawberries from a relative's farm and send rice to three consumers who purchase a 1-year contract (3500 yen/10 kg). The couple has shipped daffodils to markets in

Table 5.5 Suzuki Farm's home-delivery service products

Product	Season	Unit	Price	Note
Sun dried rice		10 kg	3500 yen	
Handmade rice cake		2 kg	1500 yen	
Loquat	June	3 kg	Market value	
Raw peanut		2 kg	1000 yen	
Daffodils	Dec–Jan	1 box (100–150)	3000 yen	
Strawberry	Jan–Mar	1 box	Market value	Contract with relative's farm

Note Author made from the brochure and interview with Mrs. Suzuki

Tokyo and sold them at two local farm shops. A meticulous code for size and quality is, however, required to meet standards for market shipment, although prices are higher for market shipment than for direct sales at farm shops. For this reason, their below-standard products are sold at farm shops and by the home delivery method.

As indicated above, rural tourism activity creates demand for the direct sale of farm products in spite of the small quantity of products. These sales channels did not result in an increase in farm size, but did result in more efficient resource allocation by the direct relationship between consumers and farmers rather than only by market shipment and self-consumption of goods.

5.6 Discussion

5.6.1 *Enhancement of Multifunctionality Through Rural Tourism*

Tourism activity has the drawback of large fluctuations in operation between peak- and off-peak seasons in general. Especially in the case of rural tourism with experience services, the provision of these services is determined by the farm production cycle. By contrast, the Suzuki farm can cope with seasonality through year-round provision of experience services taking advantage of the warm winter climate and small scale production of multiple items as a retiree farmer. Their behaviour eventually realizes effective utilization of underutilized farm resources and year-round operation of rural tourism in a sustainable manner.

Production of small amounts of multiple products has been considered to be a disadvantage rather than an advantage of part-time or retiree farming from a productivity viewpoint. Rural tourism, however, creates an opportunity to bring out the potential of retiree farmers with operations having these traits. It has not been shown in the literature that this effect of rural tourism enables retired farmers to overcome what has been considered the disadvantage of being part-time and retiree farmers.

Table 5.6 Types of multifunctionality generated along with activities

Activity	Types of activity	Types of multifunctionality	Breakdown of multifunctionality
Farming experience	Tourism activity	Socio-cultural function	Educational function, Preservation of cultural heritage
Accommodation			Recreational function
Multiple crop production	Farming activity	Environmental function	Land preservation, biodiversity
Local crop production			Landscape formation, biodiversity

Put differently, rural tourism services performed by retiree farmers shed light on the significance and advantages of farm life that have been missed even by farmers when only a normal productivity-oriented viewpoint is considered.

From the multifunctionality perspective, retiree farmers with abundant knowledge of life can perform recreational and educational functions in relation to the urban consumers and local community through providing farming experience services. Additionally, it is safe to say that a year-long farming experience program raises the land utility ratio, and from this viewpoint the land preservation function is also enhanced.

This manner of farm production enhances the multifunctional aspects of agriculture more than ordinary production-oriented farming. Table 5.6 clarifies activities that are connected with multifunctional aspects. Accommodation service has a recreational function and farming experience service has an educational function and, in addition, aids in the preservation of rural life and heritage, which is a socio-cultural function.

Production of multiple local crops can help retain biodiversity and maintain land preservation and landscape formation, which are environmental functions. Rural tourism activity enhances the socio-cultural function, and the method of production by those offering rural tourism experiences has an environmental function. These facts clearly support hypothesis 2, or the non-parallel hypothesis, and indicate that the level of multifunctionality is not parallel with productivity of farming in the case of retiree farmers. Thus, rural tourism operations run by retiree farmers can enhance the socio-cultural function of multifunctionality. Rural tourism is effective in securing an income source and in the preservation and utilization of the local cultural heritage.

In summary, it is important to recognize the significance of rural tourism activity by retiree farmers in raising multifunctionality that meets the new social demand for rurality and farming.

5.6.2 Roles of the Elderly in the Educational Function

Bearing in mind the discussion above, now let me focus on the educational function in connection with retiree farmers. I conceptualize the effects of the educational function in connection with farm resource utilization. Figure 5.2 illustrates the effect curves of the educational function in agriculture. The level of agricultural productivity or technological progress in agriculture is measured horizontally and the level of educational effects vertically: the left vertical axis for consumer education and the right vertical axis for professional education. Naturally, the shape of the curves apparently depends on the age of both farmers and visitors, and the farmers' level of experience in farming and in provision of farming experiences. The two differently shaped curves are based on the two types of educational function in agriculture as discussed above: job training to become a farmer and offering a farming experience to consumers. We cannot compare the vertical levels of the two effects because the contents of the two effects differ from each other, so it should be noted that comparison of the two effects are only relative. The aim of job training is to acquire basic skills and knowledge and also to master the latest technology of farm production. This is because technological innovation always depreciates acquired skills embodied as human capital in the trainees. Therefore, the job-training curve *PC* is supposed to be right upward. The main beneficiary is supposed to be the younger generation.

Conversely, technological innovation in hardware does not seriously matter in farming experience services. This is because the aim of top-notch machinery operation is to raise efficiency so that only those well trained should operate machinery. There is no room for an amateur to participate.

Even if amateurs could take part in the operation, they would be detrimental to efficient operation and at worst cause an accident. This is because productivity is largely determined by hardware technology. On the contrary, skills offered for experience services that are less dependent on machinery are rather outdated and are skills of the elderly who have not kept up with technological progress. Such skills are often effective for this purpose. These skills are well embodied in individuals and

Fig. 5.2 Effect curves of educational function in agriculture

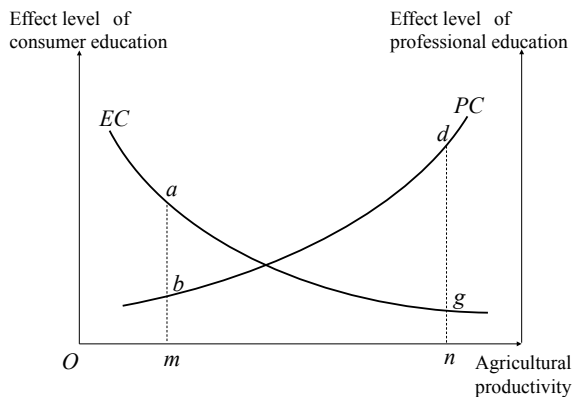
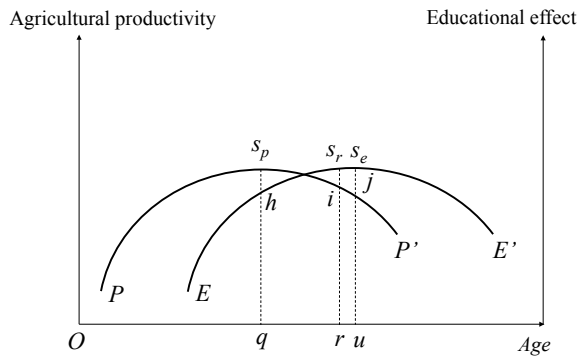


Fig. 5.3 Agricultural productivity and educational effect curves



only slightly depreciate with time. For these reasons, these skills are more suitable for an experience program and their educational effects will be greater than skills dependent on the latest technology.

Therefore, it is assumed that the educational effect curve by experience EC will be right downward as far as technological innovation for productivity improvement continues. Bearing these assumptions in mind, at a high productivity level On , for instance, the educational effect for those wanting to be farmers is high at nd while the education effect for those who come to the experience program is low at ng . Conversely, at a low productivity level Om , the effect for those wanting to be farmers is very low at $mb < nd$ while the effect for visitors for a farm experience is high at $ma > ng$.

Next, I consider the relationship between the age of the farmer and the educational effect of the experience services. Figure 5.3 depicts the relationship between productivity in farming (average productivity) on the left vertically or the educational effect of the farming experience on the right vertically and the age of operators horizontally. PP' is the productivity curve representing the efficiency level of agricultural productivity and EE' is the educational effect curve representing the efficiency level of farm resource use from a social point of view. Although the vertically measured effects are different in quality between the two curves and, in reality, there are personal differences, to simplify the discussion hereafter the maximum level of productivity and the educational effect are adjusted to be at the same level.

These two curves have commonality in which the levels go up along with the accumulation of experiences to a peak and then decline with age. This assumption is based on the common understanding of the human life cycle. As you can see, the two curves have different peaks. What matters here is that the peak of the educational effect curve comes after the peak of the productivity curve. This is because the decline of physical productivity is due to a falling-off of farmers' physical strength, and this decline of physical strength comes earlier than that of aspects related to the desire to continue to be useful and to make a contribution to the farm operation and of knowledge, all of which matters in the provision of educational services. Suppose

one farmer has reached the age of Or in Fig. 5.3, that farmer has already passed the agricultural productivity peak; the present productivity level ri is lower than the peak level qS_p . In contrast, as to the educational effect, the present level rS_r is lower than the peak at uS_e , so that the educational effect will reach the peak later. Of course, there are personal differences in productivity and the educational effect, with the educational effect being the more variable. In fact, some people might have an educational peak at a younger age and other people far later at a mature age.

In short, it is expected that the educational function offered by experiencing farm and rural life leads to an improvement in social efficiency in the use of food and rural resource allocation by letting people know about the food production process and rural heritage. Eventually it will lead to narrowing the information gap on rural life that exists between farmers and urban dwellers and rectifying modern wasteful behaviour regarding food consumption and to raise national concerns about effective and sustainable utilization of rural resources that have been neglected or abandoned despite their history and potential. This point is one feature of the educational function in agriculture in comparison with traditionally practiced industrial education in the productivity-oriented farm mode. We should recognize the significance of this educational function.

5.7 Conclusion

This chapter investigated the significance of rural tourism activity by a case study of a retiree-farming couple in Chiba, Japan from the perspective of multifunctionality of agriculture based on taking into account the trend toward retirees becoming full-time farmers. The main conclusions are as follows.

First, the characteristics of retiree farmers, such as small production of multiple products and the preference for seasonally-based production, enable these farmers to utilize farm resources effectively and enrich rural tourism in a sustainable way.

Second, in the case of retiree farmers who conduct rural tourism, multifunctionality is not in parallel with their low productivity in farming. Rather, rural tourism especially enhances socio-cultural functions such as educational and recreational functions and preservation of the rural heritage. This means that rural tourism conducted by retiree farmers will be effective in preserving the rural cultural heritage. What is important here is that these merits are not realized until rural tourism is launched.

Third, the significance of retiree farmers participating in rural tourism activities should not be underestimated. Therefore, considering the progression of the ageing society, rural tourism can provide a good opportunity for the elderly to play an important role in the community, especially in the education of consumers, which results in the creation of an income opportunity for the elderly and the enhancement of the meaning of life.

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Chapter 6

Relationship Between Community Activities as a Rural Institution and Multifunctionality



6.1 Introduction

Multifunctionality has tended to be discussed as a single concept although it actually includes multifunctional activities, and the conditions under which each is promoted are considered to differ.¹ For instance, rural tourism is an activity that internalizes the externality of multifunctionality while another activity may not.² Therefore, to ensure the effectiveness of policy measures to promote multifunctionality, each feature of a multifunctional activity should be evaluated.

Little attention has been given to the multifunctionality provided by collective action, such as hamlet activities. Yet such multifunctional activities are crucial in promoting multifunctionality from the perspective of both Japanese and East Asian rural policies³ that have been emphasizing community-based agricultural and rural development. In studying this issue, an institutional approach is effective because

¹For relation between multifunctionality and agriculture, see OECD (2003) from the policy perspective, van Huylenbroeck and Durand (2003) from the European perspective, and Ohe (2001) from the Japanese perspective.

²As an example of internalization of externality caused by multifunctionality, see Ohe (2003), which explored conceptual and empirical evaluation of rural tourism. Land-preserving activity, or countryside stewardship, see van Huylenbroeck and Whitby (1999), OECD (2001).

³According to Platteau and Hayami (1998), there are two types of rural communities: the village community where inhabitants live in the same place and the tribal community where inhabitants have a nomadic way of life. The rural community referred to here is the village community typically observed in East Asia.

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hamlet activity has been based on the institutional process and such an approach will help to clarify the institutional jointness of multifunctionality.⁴

As such an example of this jointness, a direct payment program for less favoured areas was started in 2000 in Japan and has been used to promote multifunctionality in those areas.⁵ This program mandates that the rural community agree to maintain farmland and hamlet activities that promote multifunctionality in the rural community. This is because for centuries the role of the rural community has been essential in farming and in life as an institutional foundation in this country. We feel that this program is an example that implicitly assumes institutional jointness wherein hamlet activity generates multifunctionality.

However, we do not have an effective institutional framework that can be applied to rural community issues because the institutional approach has focussed on farm organizations and policy aspects rather than on the rural community.⁶ We need an institutional framework applicable not only to hamlet activities based solely on the traditional closed human network in the rural community but also to those based on an open human intercommunity network. The latter perspective will become more important in the rural policy arena and for identification of new roles for rural communities.

In consideration of this background, this chapter focusses on multifunctional activities under the direct payment program (hereafter, this program) and aims to clarify how each multifunctional activity is connected with levels of hamlet conditions from a conceptual and empirical point of view. In addressing these aims, firstly, I briefly outline the program. Then I explore a conceptual model to deal with institutional aspects of hamlet activity and, based on the conceptual model, I estimate empirical multifunctional activity determinant models to clarify the features of multifunctional activities and factors that determine those features. Finally, I discuss prospects for future policy direction in promoting multifunctionality.

⁴For institutional jointness, see Hagedorn (2003). Little has been studied on institutional jointness conceptually and empirically. We understand that institutional jointness represents a relationship in which institutional factors are involved in generating multifunctionality in the process of farming unlike technical jointness, which is determined by technical aspects of farming. Institutional factors are those such as policy institutions, management institutions, and community institutions. This study focusses on rural community institutions.

⁵Yamashita (2001), as a designer of this direct payment program, and the National Chamber of Agriculture (2000) explained the purpose and details, while Hayami and Godo (2002) is critical of this program. The five-year first stage of this program ended in 2004 and the revised five-year second stage started in 2005.

⁶For a neo-institutional economics approach to agricultural institutions, see van Huylenbroeck et al. (2004). For a more theoretical excursion of transaction cost economics, see Williamson (2004). However, the rural community has not been studied in this literature. The author also takes a neo-institutional approach here.

6.2 Data

Data at the hamlet level are not disclosed on a nationwide basis. Therefore, this study uses data disclosed by the administrative body of this program, the Rural Development Bureau, Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF), which is “The Result of the Direct Payment Program in the Hilly and Mountainous Areas 2001,” and which were aggregated at the prefectural level in the 2001 fiscal year. Data for the 2002 version are also available but do not contain details of hamlet conditions necessary for empirical evaluation. Therefore, I used the 2001 data that cover all 47 prefectures. Included from this source are data on multifunctional hamlet activities.

6.3 Outline of Direct Payment Program and Multifunctionality

The program requires one of two kinds of agreements from participants. One is a hamlet agreement entered into by hamlets and the other is an individual agreement signed by designated farmers. These farmers are progressive model farmers designated by the prefectural government as policy targets. As of year 2001 hamlet agreements comprised 98.1% (32,067) of all agreements and individual agreements accounted for only 1.9% (605) of agreements. This is because the program places importance on hamlet functions. Therefore, this study also focusses on hamlet agreements.

This program has two aims: to preserve farmland and to promote multifunctionality in the hilly and mountainous less competitive areas based on hamlet activities that have been the foundation of farming and rural life for centuries. For this reason, hamlets that want to receive a direct payment are required to sign a hamlet agreement defining what activities they will perform for preservation of farmland and enhancement of multifunctionality as a unit of the local community.

As of 2001, this program was implemented in the 1900 towns and cities that had hamlet agreements; 613,304 farmers participated and there were 627,736 ha of beneficiary land. The total payment was 51 billion 132 million yen. On average, each hamlet agreement had 19.5 participants and 20 ha of designated farmland. Payment received was 1630,000 yen per hamlet and 83,000 yen per capita as shown in Table 6.1.

The acreage that agreements, including individual agreements, cover comprises 80.8% of the targeted farmland. Covered are 77.0% of rice paddy, 59.4% of upland, 93.1% of cultivated grassland, and 75.6% of meadow. One reason for the lower coverage for upland is that the program mainly aims at the paddy, rice being the main crop in this country in terms of land use and production, and the grassland in hilly and mountainous areas.

In examining the hamlet agreement in detail, it is evident that the first aim concerns minimum acreage for farmland preservation. A hamlet agreement must satisfy one

Table 6.1 Outline of direct payment program (as of 2001)

(1) Outline of hamlet agreement and payment				
Items	Participants	Covered acreage (ha)	Amount of payment	Payment per head
	(persons)		(thousand Yen)	(thousand Yen)
Total	613,304	627,736	51,132,000	–
Average per hamlet agreement	19.5	20	1630	83
(2) Farming consistency condition for hamlet agreement				
Composition of farming consistency conditions			% of hamlet agreement	Necessary cost bearing capability for activity
Maintenance of irrigation and farm road lines			73.80%	Low
Exchange of farming operation and joint farming operation			23.70%	Middle
Farming groups or farming corporate bodies			4.00%	High
(3) Types of multifunctional activity undertaken in the hamlet agreement				
Types of multifunctional activity			% of hamlet agreement	Necessary cost bearing capability for activity
Land preservation			58.60%	Low
Landscape forming			38.30%	Middle
Recreational			3.20%	High

Source The Result of Direct Payment Program in the Hilly and Mountainous Areas 2001, Rural Development Bureau, MAFF, 2002

Note The sum of composition of farming consistency conditions does not equal to 100% because unit of farmland could be multiple in the hamlet agreement

of two conditions: coverage of more than one hectare of single or unit farmland or coverage of more than one hectare of total area of separated farmlands that have been farmed consistently as one unit.

The latter condition for separated farmlands is related to how consistent farming is conducted as a single unit and thus needs collective action for preserving these farmlands, that is, “the condition of farming consistency”. This is “red-tape” terminology, so it needs a little explanation. Simply put, this condition indicates the degree of farming cooperation⁷ in the hamlet. Farming cooperation has been traditionally practiced among hamlet members to provide mutual help such as exchange of labour during busy seasons and, in more recent times, contract-based cooperation in use of machinery. This program is based on these communal practices in this country. Under these circumstances, consistent or cooperative farming operations are considered to be crucial for preservation of farmland in the hamlet because they indicate

⁷For an overview of group farming in Japan see Ito (1991). Ohe (2001) clarified the role-sharing relationship between group farming in the hamlet and individual farm diversification activity.

how the level of hamlet conditions influences signing of a hamlet agreement for multifunctional activity. Strictly speaking, the status of farming cooperation is a result or outcome of hamlet conditions rather than a reflection of hamlet conditions. However, I consider that the status of farming cooperation will affect multifunctional activity because multifunctionality is a joint production of farming activity in the hamlet; thus, we should take into account the institutional connection between farming and multifunctional activities in the hamlet.

Hamlet agreements that applied to consistent farming operations made up 60.3% of all agreements. The following three types of hamlet behaviours are conducted in consistent farming operations in order of prevalence: (1) maintenance of irrigation lines and farm roads by hamlet members accounts for 73.8% of the total, (2) exchange of farming operation services and joint farming operations are conducted in the hamlet, mutually benefiting hamlet members and accounting for 23.7% of the total, and (3) performance of farming activities by the same farming groups or farming corporate bodies (4%) (Table 6.1). The necessary cost level of these activities rises with the decreased prevalence of the three activities, with the lowest level of cost required for the maintenance of waterways and farm roads and the highest for group or corporate farming (Table 6.1).

Concerning the second aim, which is to promote multifunctional activities, in reality numerous activities are widely interpreted as “multifunctional hamlet activities”, even though they do not always correspond directly to the generally accepted concept of multifunctionality. Thus, I classified these activities into the following three major multifunctional activities: preservation of land (land-preservation function), which includes clearing away undergrowth of woods surrounding farmland; the formation of landscape (landscape-formation function), which includes cultivating crops and plant materials that preserve the beauty of the countryside; and recreation (recreational function), examples of which are leasing for one year a terrace paddy or renting farm plots for those who seek an agricultural experience as recreation and also providing farmhouse accommodations for tourists.

Among the hamlet agreements, preservation of land is the most common practice (58.6%), followed by formation of landscape (38.3%). Recreation accounts for only 3.2% of activity (Table 6.1). These differences in share suggest that there are different cost levels necessary for each multifunctional hamlet activity. The lowest cost is related to preserving land and the highest cost is related to recreation, with forming landscape in the middle. Therefore, it can be concluded that different multifunctional activities are undertaken depending on the cost-bearing capability of the hamlets; the higher the cost for multifunctional activity, the fewer hamlets that can conduct that activity.

We have characterized multifunctional hamlet activities into two types depending on the orientation of internalization of externality: the non-diversifying type and the diversifying type. The former, the non-diversifying type, is a hamlet activity that is based on traditional hamlet actions such as maintenance of the farm road and irrigation system and preserving farmland. These activities are conventionally

institutionalized as collective work, called “village work” (Kawano 1991), to maintain the community’s farm production base. These are considered as land preserving activities, which may not be oriented toward diversification.

The latter, the internalizing type, is a hamlet activity that is undertaken as a new activity such as rural tourism that has not been conventionally institutionalized although this activity could occur on the basis of conventional hamlet activity. Especially, recreational activity such as rural tourism will be in this category. Rural tourism is an activity that enables farmers to internalize the externality that has not been rewarded and then create a new income source.

The landscape-forming function will be intermediate between the two types of activities, that is, involving non-diversifying and diversifying activities because this function is considered to be comprised of two features.

6.4 Conceptual Model

I have endeavored to clarify what and how hamlet conditions influence institutional cost structure and jointness. Figure 6.1 summarizes the view presented in this study, wherein I assume that hamlet conditions determine multifunctional activities through the institutional cost structure in the hamlet. This whole process represents the institutional jointness that generates multifunctional hamlet activities. In this model,

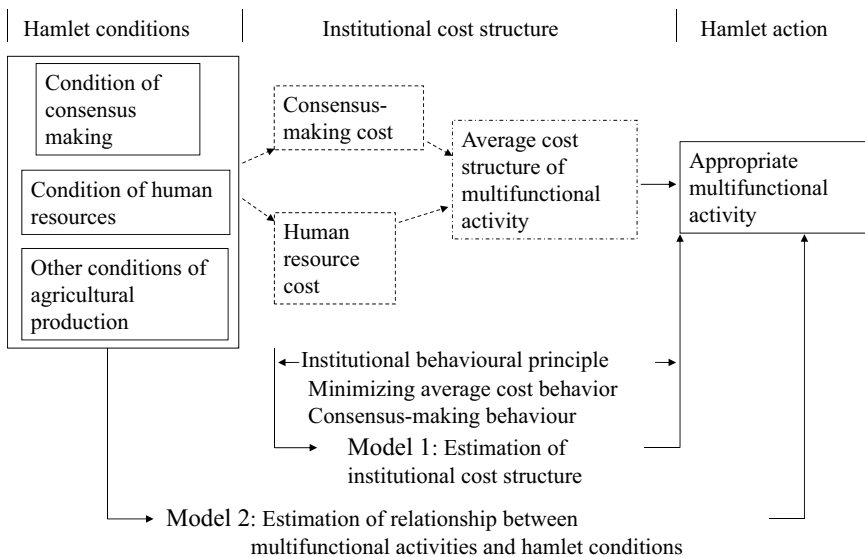


Fig. 6.1 Process of institutional jointness (hamlet function) of multifunctional activity. *Note* Data of real lines are observable while those of dotted lines are not and those of semi-dotted line are partially observable

conditions for community activity in the hamlet are determined by two main factors: human resources and consensus-making under other given conditions of agricultural production. These conditions determine institutional costs and the optimal multifunctional activities undertaken as a hamlet function. Empirically I consider two models: model 1, which estimates the institutional cost structure, and model 2, which estimates how hamlet conditions create actual differences in the undertaken multifunctional activities.

The author presents a conceptual model that enables us to explore the institutional factors and relationships⁸ between hamlet multifunctional activity and hamlet size for a hamlet agreement under this program. This model of the institutional process will be applicable not only to hamlet agreements but also to multifunctional activities in hamlets in general.

First, I assume that farmers in the hamlet act on the principle of minimizing the average cost of the multifunctional hamlet activity rather than on the principle of minimizing marginal cost. This is because hamlet activities have been traditionally maintained by non-profit behaviour such as collective action to provide mutual help in the local community. Second, I assume that decision-making about hamlet activity is determined by a consensus among hamlet members, which also has been the traditional decision-making method. This program allows farmers to take cost minimizing behaviour in the range of a municipality that generally consists of multiple hamlets. Therefore, multifunctional activity would be undertaken not only on a single-hamlet basis, but also on a multiple-hamlet basis.

With the above two assumptions, suppose other conditions are constant and based on the reality of the hilly and mountainous areas, I assume two institutional factors that determine the cost of multifunctional hamlet activities; human resources and consensus-making among hamlet members.⁹ Thus, I consider two cost factors: the cost of utilizing human resources and the cost of consensus-making. The vertical sum of the two cost curves becomes the total average cost (AC). Therefore, Eq. (6.1) is assumed concerning multifunctional hamlet activity i .

$$AC_i(x) = HC_i(x) + NC_i(x) \tag{6.1}$$

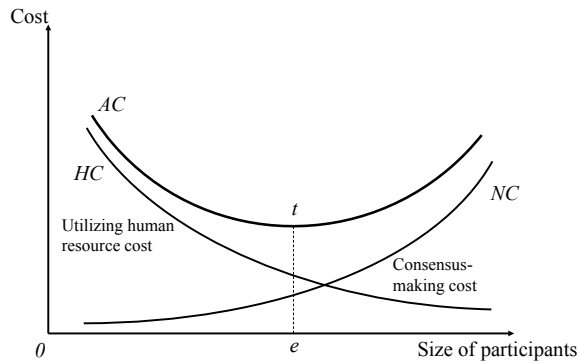
where,

- $AC_i(x)$ average cost curve of multifunctional hamlet activity i in the hamlet agreement
- $HC_i(x)$ average cost for utilizing human resources for multifunctional hamlet activity i
- $NC_i(x)$ average cost for consensus-making for multifunctional hamlet activity i

⁸I incorporate the idea of the public choice theory, one of the fields of neo-institutional economics, into the conceptual framework. See Buchanan and Tullock (1962), Muller (1980), and Olson (1965) for the public choice theory.

⁹If the first derivative of the consensus-making cost or cost of utilizing human resources is zero, then shape-wise the average cost curve would be linearly right upward or right downward. In this case marginal and average costs become identical.

Fig. 6.2 Institutional cost curves for multifunctional hamlet activity



x size of hamlet agreement

Farmers in the hamlet are supposed to minimize the average cost AC consisting of the two factors and then the optimal size of the hamlet agreement is determined for each activity. This is depicted in Fig. 6.2 showing measurement of the cost level vertically and size of participants in the hamlet agreement horizontally. This figure has been modified from Fig. 1.9 in Chap. 1 specifically for this chapter because consensus is the traditional decision-making way. These two factors have opposite relationships with the size of the hamlet agreement for reasons that I will explain below.

First, the average cost of utilizing human resources has a negative relationship with the size of the hamlet agreement, which is illustrated by the curve HC . Utilizing human resources is crucial to conducting hamlet activity but is difficult, especially in hilly and mountainous areas.¹⁰ In the case of little availability of human resources, the cost of utilizing human resources is prohibitive. Therefore, the more you expand the size of the hamlet agreement, the greater the possibility of finding appropriate human resources will be, and then these participants can share the cost of the multifunctional activity. In other words, per capita average cost of utilizing human resources is supposed to be non-positively correlated, that is, negative or no correlation, with the size of participants, which means that we can expect a rightward-declining curve.

Second, the average consensus-making cost has a positive relationship with size, which is illustrated as curve NC . The larger the number of participants, the greater is the increase in transaction cost for reaching consensus. This is because an increase in people involved shifts the pattern of consensus-making from that among acquaintances to that among those not acquainted. Consequently, the average cost for making a consensus is non-negatively correlated, that is, positive or no correlation, with the size of hamlet agreements, which means that we can expect a rightward-increasing curve.

¹⁰To utilize the appropriate human resources, there will be the cost of searching for appropriate human resources. However, this cost will be negligible because the search action will be undertaken within the range of the hamlet or in the neighbouring inter-hamlet areas.

Third, the vertical sum of the two cost curves results in the total average cost curve (AC). Thus, the total average cost of multifunctional activity i for the optimal size hamlet agreement is determined and AC reaches the minimum at point t in Fig. 6.2. As already mentioned, the optimal size hamlet agreement would consist of a single hamlet or multiple hamlets, depending on the institutional cost factors.

This is the basic conceptual framework of the relationship between multifunctionality and hamlet behaviour, which shows how the total average cost is determined.

For simplification it is assumed that direct payment causes a downward shift of the AC curve in the long run. This study is conducted for AC evaluation under the initial conditions. In other words, this study does not evaluate the effects of the direct payment, but evaluates the initial hamlet conditions for multifunctional activities.

Thus the optimal size of each multifunctional activity is determined although the optimal point differs from one area to another depending on the cost structure attributed to local conditions of the institutional factors. Consequently, cost curves are obtained for each multifunctional activity. The above conceptual model is a general framework; therefore, I need a more concrete model applicable for empirical study.

6.5 Analytical Model

Here I explore how to apply the above conceptual model to an empirical study by considering the possible institutional cost structure. In fact, we cannot observe actual AC curves, but only aggregated envelop curves at the national level. Thus, I focus on the VC_i curve that envelops the AC_i curves of each area at the national level concerning multifunctional activity i . Naturally, VC curves have more flexibility regarding the size of participants than AC curves. With these decision-making processes, hamlets determine optimal multifunctional activity based on their cost-bearing capabilities. If the same characteristics as shown in Fig. 6.2 are correctly reflected in the VC curves, the information presented in Table 6.2 can show how the combination of shapes of the VC envelop cost curves influences the two institutional factors. There are four different cases of cost structure to be considered.

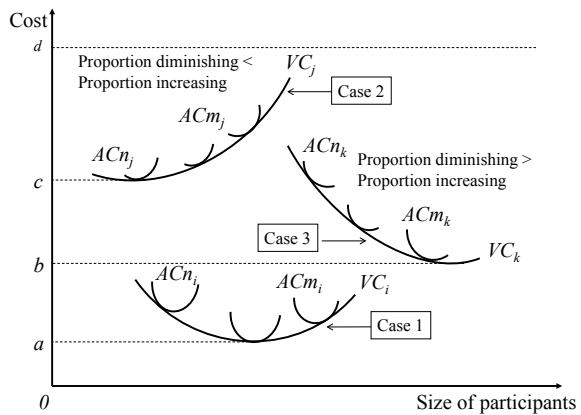
The first case (Case 1) involves those hamlets that have a high level of hamlet function under favourable conditions. Thus, in Case 1 as depicted in Fig. 6.3, those hamlets can conduct multifunctional activity sufficiently at a low institutional cost in terms of utilizing both human resources and consensus-making. In this sense, those hamlets have higher cost-bearing capability for conducting multifunctional activity than ordinary hamlets and therefore the institutional jointness is supposedly more stable than in the other cases. For instance, in Fig. 6.3 those hamlets that can conduct this multifunctional activity at the cost oa have cost-bearing capacity ad if od is the maximum cost level for implementing multifunctional activity. Nevertheless, this case hardly represents the majority of actual situations in hilly and mountainous areas because this case is too favourable for ordinary hamlets in these areas.

The above consideration is illustrated in Fig. 6.3. Each case corresponds to the shape of VC curve. Actually the most common cases are Case 2 and Case 3. On the opposite extreme of Case 1, those rural areas with hamlet conditions at a low

Table 6.2 Institutional factors of hamlet agreement and shape of cost curves

Status of hamlet agreement	Types	Utilizing human resource cost	Consensus-making cost	Total average cost for hamlet agreement
		A	B	$C(= A+B)$
Yes	Case 1	Low	Low	Diminishing and then increasing
Yes	Case 2	Low	High	Portion of diminishing <
				Portion of increasing
Yes	Case 3	High	Low	Portion of diminishing >
				Portion of increasing
No	Case 4	High	High	Diminishing and then increasing

Fig. 6.3 Envelope cost curve for multifunctional activities



level inevitably have high costs both for consensus-making and utilizing human resources (Case 4). In this case, the level of hamlet function is too low to start a hamlet agreement, meaning that the cost-bearing capability is too low. In other words, institutional costs are still too high to bear for those hamlets. We do not expect institutional jointness in this case. This case is not illustrated because this case falls above *od* in Fig. 6.3.

There exist intermediate cases in which hamlet function can be maintained at a level between those extreme cases described above. Those intermediate cases are not uncommon, and, in fact, in such hamlets one cost is usually higher than the other. For example, in one case (Case 2) the cost of utilizing human resources is low while consensus-making costs are high. In the other case (Case 3), there is a high cost for utilizing human resources and a low consensus-making cost.

In Case 2, the shape of the VC curve indicates that the cost-increasing portion is greater than the cost-decreasing portion, so the right upward portion becomes larger. Conversely, in Case 3, the cost-decreasing portion is greater than the cost-increasing portion, so the right downward portion becomes larger.

These different shapes provide not only information on institutional cost structure but also on different prospects for multifunctional hamlet activities. In Case 2, it could be more effective to undertake hamlet activities within the traditional community range because it is rational for hamlets in Case 2 to save consensus-making cost. Conversely, in Case 3, it could be more appropriate to undertake hamlet activities in the inter-community range, which suggests that it will be rational to utilize the extended human network beyond the boundary of a single hamlet.

What I deal with here are Case 1, Case 2, and Case 3 as depicted in Fig. 6.3, because Case 4 is not considered to be feasible for a hamlet agreement due to the lowest hamlet conditions. How these three cases are connected with multifunctional activities is the empirical question.

6.6 Structural and Estimation Models

I focus on three multifunctional activities: land-preserving activity, landscape-forming activity, and recreational activity. In fact, data for the cost function VC in the conceptual model above are not available, so that it is not possible to estimate the cost function directly. What is observable is the portion of undertaken multifunctional activity in the hamlet agreement at the prefectural level, called variable Y . Therefore, under the conceptual framework of cost minimizing behaviour I use variable NY (= 1-variable Y) as a proxy variable for the cost for each multifunctional activity.¹¹ We expect that the larger the variable NY is, the higher the cost for this multifunctional activity is. Put differently, I can assume a proportional relationship between the cost level of multifunctional activity and the variable NY . This is why I use the variable NY for the estimation. If the parameter is negative, the variable works favourably for the multifunctional activity and if the parameter is positive, the variable works unfavourably.

6.6.1 Model 1: Institutional Cost Structure

The next question is into which case each multifunctional activity actually falls. To clarify this point, I consider a VC curve determinant model concerning multifunctional activity k as below.

¹¹Even if I use the variable Y instead of NY , the statistical results do not change except for the constant and reversed signs of the parameters.

$$VC_k = f(x_k) \quad (6.2)$$

where,

VC_k envelop cost for multifunctional activity k
 x_k size of participants for multifunctional activity k

Regarding explanatory variables, first I use participant size per hamlet agreement as the explanatory variable of the size of the hamlet agreement. There are two reasons for this. (1) The participant size is not available for a specific multifunctional activity per se but for each hamlet agreement that contains multifunctional activities. (2) We can assume that the participant size in a hamlet agreement roughly equals the size of each multifunctional activity because hamlet behaviour is originally a unit of activity in this program.

Furthermore, to consider the difference in farm size in Hokkaido, a northern island, from other parts of Japan, I use a regional dummy variable: Hokkaido = 1, other prefectures = 0. The estimation model is a quadratic function. The estimation method is OLS. Strictly speaking, this estimated curve is different from the envelop cost curve. This is because OLS estimated curves will be inward curves rather than actual envelop curves, which means that the estimated cost level would be overestimated. However, the shape of the envelop curve will be clarified by this estimation. Bearing this in mind, I should be careful in the interpretation of the parameters.

$$NY_i^k = \alpha_0^k + \alpha_1^k(x_i^k)^2 + \alpha_2^k x_i^k + \alpha_3^k HD_i^k + \varepsilon_i^k \quad (6.3)$$

where,

NY_i^k 1-(portion of undertaken multifunctional activity k in prefecture i)
 x_i^k participant size of multifunctional activity k in prefecture i
 HD_i^k regional dummy variable (Hokkaido = 1, others = 0)
 ε_i^k stochastic error
 α_j^k parameter to be estimated, $\alpha_0^k = \text{constant}$

6.6.2 Model 2: Factors Determining Multifunctional Activities

Here, I evaluate what and how the factors of hamlet conditions listed in Fig. 6.1 are connected with multifunctional activities. First is how the difference in human resources works, second is how the degree of consensus-making works, and third is how differences in agricultural production work.

$$VC = f(hc, nc, ag) \quad (6.4)$$

where,

hc vector of human resources factors

nc vector of consensus-making factors

ag vector of agricultural production factors

The dependent variable is the same as above. Because of limited availability of data, the explanatory variables are as follows:

In the data for the first variable of human resources, I take the proportion of the elderly because the problems related to an ageing population are much more serious in the mountainous and hilly areas. However, such data are not available at every agreement level. As an alternative, in this direct payment program, the local government is able to designate farmland with a ratio of elderly of 40% and a high land abandonment ratio at its own discretion.¹² Thus, I used the above criteria as the proportion of elderly since the data are available on the prefectural level. Generally, progression of ageing results in depopulation, making it more difficult to secure human resources. This could be a major obstacle for starting a new multifunctional activity. Nevertheless, it could be a factor in promoting non-diversifying hamlet activity. Therefore, I do not give any sign condition beforehand.

For the second variable of consensus-making, I take “the condition of farming consistency”, or the condition of farming cooperation, which is a necessary condition for a hamlet agreement as mentioned. I consider two cases in accordance with the level of farming cooperation. I use a dummy variable either for the ordinary level or the high level in estimation. The ordinary level of cooperation is the case whereby one of the three farming consistency conditions mentioned above was met (yes = 1, no = 0). The highest level is the case wherein group farming or corporate farming is practiced (yes = 1, no = 0). Generally speaking, the higher the level of farming cooperation, the lesser could be the consensus-making cost for multifunctional activities. However, whether this is correct for every multifunctional activity is not a predetermined fact but an empirical question to be examined. Therefore, I do not give a sign condition.

In the third vector of agricultural production, firstly I consider how the difference in farming productivity among areas affects a diversified activity such as rural tourism. To deal with this point, I use two opposing hypotheses. With the first hypothesis, it can be assumed that the larger the negative productivity gap, the greater the eagerness to promote farm diversification, such as rural tourism or the diversifying type of multifunctional activity, to gain additional income, i.e., the productivity gap hypothesis. Thus, this point aims at evaluating the possibility of farm activities taking advantage of multifunctionality in farming in less competitive areas. The second hypothesis, contrary to the first, assumes that areas with high productivity could be easily converted to diversified activity by taking advantage of the favourable farming conditions, i.e., the reverse productivity gap hypothesis. In short, if the first productivity gap hypothesis is true, the less competitive the area is, the greater the eagerness to undertake multifunctional activity of the diversifying type. On the other hand, the more competitive the area, the more diversified will be the activity to support the reverse productivity gap hypothesis.

¹²The portion of acreage covered by this criterion is 19.1% of all the designated areas on average.

Thus, if the productivity gap hypothesis is accepted, diversified activity will contribute to reducing the geographical productivity gap. Otherwise, if the reverse productivity gap will be adopted, the gap will widen. Therefore, findings on the issue of a productivity gap can disclose how productivity is connected with diversification behaviour. Results of the estimation below will reveal which hypothesis can be accepted.

The productivity gap variable was obtained from the gross agricultural product per hectare as surveyed by MAFF. The data are calculated in the formula: the national average minus the prefectural data in 2000.¹³ If the parameter is negative, the productivity gap hypothesis is accepted. This is because the lower the productivity, the more seriously needed are other income sources, which reduces the cost for this type of hamlet activity. In contrast, if the parameter is positive, the higher the productivity the more activity is undertaken, which is the case of the reverse productivity gap hypothesis.

Secondly, as another variable of agricultural production, I consider the difference in land use reflecting essential factors of farming. I consider variables of land use focussing on rice paddy and livestock farming, which are major land uses in the program. For paddy I classify paddy as less steep (yes = 1, no = 0) and steep (yes = 1, no = 0) because all areas concerned are disadvantaged areas in terms of geographical and farming conditions. For livestock farming, I take steep grassland (yes = 1, no = 0). One of these dummy variables is used for estimation. Here again none of the sign conditions are predetermined.

The estimation model is below.

$$NY_i^k = \beta_0^k + \beta_1^k hc_i^k + \beta_2^k nc_i^k + \beta_3^k ag_{1i}^k + \beta_4^k ag_{2i}^k + \varphi_i^k \quad (6.5)$$

where,

- hc_i^k elderly ratio of multifunctional activity k in prefecture i
- nc_i^k farming constituency dummy variable (either farming consistency in general or group farming)
- ag_{1i}^k productivity gap variable
- ag_{2i}^k land use dummy variable (either less steep paddy or steep paddy or steep grass land)
- φ_i^k stochastic error
- β_j^k parameter to be estimated, β_0^k , constant

I do not use the regional dummy used in model 1 because it correlates with other explanatory variables. Estimation was conducted by OLS to compare the three multifunctional activities and to obtain indicators of multicollinearity.

¹³I used the variable of income per hectare instead of the variable of land productivity for the estimation. The goodness of fit was worse than in the latter case although I obtained similar parameters with the latter case.

6.7 Estimation Results

6.7.1 Model 1

The estimation result is shown in Table 6.3. Heteroscedasticity was not found by the White test. However, I cannot say that I had satisfactory results. The VIF and CN indicators were so high that multicollinearity was serious.¹⁴ This is because of a strong correlation between the quadratic and linear terms of size variables. Therefore, the parameters are not stable and are hard to interpret in detail. Still, I can obtain information for shapes of the cost curves.

This strong correlation between quadratic and linear terms means that the cost curve is a monotonously increasing or decreasing function for size. In other words, either the right downward portion or the right upward portion of the curve is quite large. This suggests that one of the two institutional factors works much more strongly than the other, which does not occur in Case 1 whereby the two factors work evenly. This is one of the main reasons for the serious multicollinearity. Thus, I estimated models using only one size variable in quadratic or linear terms. For this reason, I only interpret the signs of the parameters.

The results of these cases of single-size variables are also shown in Table 6.3. Adjusted R^2 is the highest for recreational activity, followed by land-preserving activity and is lowest for landscape-forming activity. This is because land-preserving activity and landscape-forming activity are activities commonly undertaken across the nation, which makes the characteristic less apparent. The regional dummy is positive in the land-preserving function (5%).

Next, let us look into size parameters. What is obvious is that linear and quadratic terms have the same sign and the sign is different from one multifunctional activity to another. The sign of land-preserving activity is positive, while the signs of landscape-forming and recreational activity are negative.¹⁵ The interesting point here is that the sign reverses between the former and the latter two. What makes sense here is that in the first quadrant both variables have positive values. In that quadrant the land-preserving activity is monotonously increasing, which means that the right upward portion of the cost curve is large, while the landscape-forming activity and the recreational activity are monotonously decreasing, which means that the right downward portion is large.

¹⁴Multicollinearity is serious when VIF is over ten or CN is over 15 by Chatterjee et al. (2000), while Greene (2003) says that a CN over 20 is the case. Kmenta (1997) says that when CN is over 30, multicollinearity is harmful.

¹⁵The negative parameter of the quadratic size variable means that the implicit assumption of the second order condition for cost minimization is not satisfied. Strictly speaking, in this case I should only examine the result of the linear size variable case, where marginal and average costs are identical. This is a constraint of this analysis that should be taken into consideration when I interpret the estimation results although in both cases results were similar, showing a negative sign for the size parameters.

Table 6.3 Size of participants and multifunctional activities (Model 1)

Model type	Quadratic and linear				Quadratic				Linear					
	Land preserving	Landscape forming	Recreational	Land preserving	Land preserving	Landscape forming	Recreational	Land preserving	Land preserving	Landscape forming	Recreational	Land preserving	Landscape forming	Recreational
Multifunctional activities														
Constant	0.2056 ⁺ (1.58)	0.8093*** (6.19)	0.9490*** (45.09)	0.3525*** (13.14)	0.6827*** (25.33)	0.9896** (221.08)	0.1958*** (3.66)	0.8415*** (15.58)	1.0393*** (97.14)					
(No. of participants) ²	0.0000 (0.08)	0.0000 (-0.27)	-0.0001*** (-4.72)	0.0001*** (4.34)	-0.0001*** (-4.60)	-0.0001*** (-9.98)	-	-	-					
No. of participants	0.0103 (1.16)	-0.0089 (-0.99)	0.0028* (1.97)	-	-	-	0.0110*** (4.56)	-0.0112*** (-4.60)	-0.0037*** (-7.69)					
Regional dummy	0.3428** (2.15)	0.0646 (0.40)	-0.0312 (-1.21)	0.3989** (2.62)	0.0162 (0.11)	-0.0157 (-0.62)	0.3394** (2.23)	0.0759 (0.50)	0.0006 (0.02)					
ajstR ²	0.3748	0.2815	0.7066	0.3700	0.2819	0.6874	0.3889	0.2967	0.5647					
VIF		13.8748			1.0156			1.0435						
CN		19.0863			1.9994			4.8960						
White test	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.					

Source Same as Table 6.1

Note The *t* ratios are given in parentheses. Significance levels are shown by the results of the *t* test, such that *** = 1%, ** = 5%, * = 10%, + = 20% (as reference), n.s. = not significant

Table 6.4 Hamlet size and cost structure of multifunctional activities

Multifunctional activities	Size parameter	Area on the cost curve	Types of cost behaviour
Land preserving	Plus	Area of right upward:	Consensus-making cost saving
		Case 2	
Landscape forming	Minus	Area of right downward:	Utilizing human resource cost saving
		Case 3	
Recreational	Minus	Area of right downward:	Utilizing human resource cost saving
		Case 3	

In summary, I can characterize the relation between the *VC* cost curve and multifunctional activities in Table 6.4. First, land-preserving multifunctional activity, as a non-diversifying activity, has the positive parameter of size. This result suggests that the right upward portion of the *VC* curve is large, corresponding to Case 2. Concerning cost factors, I can surmise that the decreasing effect of costs of utilizing human resources is smaller than the increasing effect of consensus-making cost. This is because this type of hamlet activity is not a new activity, so that the cost of utilizing human resources would be low. However, on the other hand, the cost of consensus-making would increase as size grows. In this case it is rational to take the behaviour of saving the consensus-making cost. Thus, it is safe to say that this characterizes non-diversifying hamlet behaviour well. Put differently, a relatively small size based on the conventional hamlet would be rational. In short, this is a result of rational hamlet behaviour and this multifunctional activity is undertaken in accordance with such a behavioural principle.

On the contrary, landscape-forming activity and recreational activity, classified as diversifying or diversifying-related hamlet activities, have negative parameters of size. This case is considered to be that in which the right downward portion of the *VC* curve is large, corresponding to Case 3. This indicates that the decreasing effect of utilizing human resources is greater than the increasing effect of consensus-making cost. Therefore, it is rational to consider cost-saving behaviour in utilizing human resources. This means that a group of several hamlets or a wider hamlet network will be effective for these types of activity.

To summarize, the results of model 1 estimation suggest that there is an apparent difference derived from the cost structure between diversifying hamlet activity and non-diversifying activity. For non-diversifying hamlet activity, factors of consensus-making exert influence on the cost structure, so behaviour in saving this cost is taken. Conversely, for the diversifying-related hamlet activity the cost of utilizing human resources is influential and this cost-saving behaviour is performed. The implication of these results is that we should take into account the different characteristics of institutional cost structures and therefore different jointnesses of multifunctional activity. We explore factors related to these differences below.

6.7.2 Model 2

Results of estimation are shown in Tables 6.5, 6.6, and 6.7. The F test for goodness of fit was significant in all estimations in Tables 6.5 and 6.6 but not in parts of Table 6.7 because there were differences in the adjusted R^2 just like those in model 1. Multicollinearity was not a serious problem in any estimation due to $VIF < 10$ and heteroscedasticity was not observed. Let us examine estimation results.

First, land-preserving activity has the lowest adjusted R^2 among the three activities (Table 6.5). This is because this activity is too common to be distinguished from one region to another as mentioned earlier. The parameters affirm this fact. Regarding the parameters, neither the elderly portion nor the productivity gap was significant. The opposite is farming consistency; farming consistency in general is a negative parameter while group farming has a positive value with significance (1% level of significance for each).

These results mean that the level of farming cooperation up to a certain point works positively for land-preserving activity but works negatively for land-preserving activity above such a point. Therefore, land-preserving activity does not need a high level of farming cooperation, although this cooperation must reach a certain level.

The parameters for the land use condition reaffirm that this hamlet behaviour is commonly practiced because they were negative in paddy: less steep and steep paddy (5%). The parameter of steep grassland is slightly negative, but not so apparent. To summarize, it is safe to say that this activity is undertaken in hamlets where paddy is common, which is a typical rural land use in this country.

Second, the results of landscape-forming activity demonstrate a unique feature in the proportion of elderly with minus values (Table 6.6). The reason is that the activity of taking care of landscape plants, such as planting flowers, requires relatively lighter labour for participation of the elderly than an ordinary farming operation. This type of activity requires a relatively high level of farming cooperation unlike land-preserving activity. Farming consistency was a positive parameter (1%) whereas group farming was negative (1%). This is probably because this activity needs coherent collective action, especially for the elderly. The productivity gap is not significant, meaning no connection with this type of activity. Regarding land use, livestock farming and landscape-forming activity are not friendly; for example, steep grassland was positive. This is probably due to natural constraints on diversified land use. In short, the areas that have a relatively high level of farming cooperation and high proportion of elderly prefer landscape-forming activity.

Finally, recreational activity has no connection with the proportion of the elderly since its parameter has no statistical difference at zero (Table 6.7). However, this type of activity needs a high level of hamlet function, as does landscape-forming activity, since farming consistency is positive (1%) while group farming is negative. An interesting point here is that the productivity gap hypothesis is barely accepted due its negative parameter, with 10% significance. This means that the productivity gap is accepted somewhat, so that those in areas with low productivity will be eager

Table 6.5 Result of multifunctional activity determinant function 1 (Model 2)

Multifunctional activity	Land preserving									
Constant	0.7179*** (8.26)	0.7275*** (7.83)	0.6655*** (7.98)	0.4392*** (10.37)	0.4418*** (7.99)	0.4018*** (12.85)				
Portion of elderly	0.8893 (0.55)	0.5279 (0.32)	1.1957 (0.71)	1.9337 (1.23)	1.7125 (1.06)	2.0929 (1.30)				
Productivity gap	0.0028 (0.90)	0.0030 (0.94)	0.0029 (0.90)	0.0034 (1.11)	0.0034 (1.07)	0.0033 (1.03)				
Farming consistency	-0.3852*** (-3.10)	-0.3716*** (-2.97)	-0.3797*** (-2.96)	-	-	-				
Group farming	-	-	-	0.5366*** (3.21)	0.5279*** (3.07)	0.5548*** (3.26)				
Ratio of less steep paddy	-0.2814*** (-2.18)	-	-	-0.1912+ (-1.49)	-	-				
Ratio of steep paddy	-	-0.1867* (-1.91)	-	-	-0.1056 (-1.06)	-				
Ratio of steep grassland	-	-	-0.0840+ (-1.39)	-	-	-0.0441 (-0.74)				
ajstR ²	0.2061	0.1870	0.1552	0.2161	0.1966	0.1857				
VIF	1.0773	1.0720	1.0914	1.0357	1.0985	1.0845				
CN	7.6653	7.9994	6.9829	3.3019	4.4087	2.1568				

(continued)

Table 6.5 (continued)

Multifunctional activity	Land preserving					
	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>
White test	***	**	**	***	***	**
Goodness of fit						

Source Same as Table 6.1

Notes The *t* ratios are given in parentheses. Significance levels are shown by the results of the *t* test, such that *** = 1%, ** = 5%, * = 10%, + = 20% (as reference), *n.s.* = not significant

Table 6.6 Result of multifunctional activity determinant function 2 (Model 2)

Multifunctional activity	Landscape forming									
Constant	0.4278*** (5.22)	0.3753*** (4.39)	0.3758*** (5.21)	0.6913*** (19.02)	0.6623*** (13.95)	0.6427*** (24.80)				
Ratio of the elderly	-2.6040* (-1.71)	-2.3672+ (-1.55)	-2.8802* (-1.99)	-3.5552** (-2.63)	-3.5417** (-2.56)	-3.7746*** (-2.82)				
Productivity gap	-0.0011 (-0.39)	-0.0017 (-0.59)	-0.0026 (-0.91)	-0.0015 (-0.57)	-0.0019 (-0.71)	-0.0029 (-1.09)				
Farming consistency	0.3473*** (2.97)	0.3558*** (3.09)	0.3796*** (3.42)	-	-	-				
Group farming	-	-	-	-0.6454*** (-4.50)	-0.6275*** (-4.25)	-0.6070*** (-4.31)				
Ratio of less steep paddy	-0.0183 (-0.15)	-	-	-0.1146 (-1.04)	-	-				
Ratio of steep paddy	-	0.0922 (1.02)	-	-	-0.0003 (-0.00)	-				
Ratio of steep grassland	-	-	0.1177** (2.25)	-	-	0.0761+ (1.55)				
ajstR ²	0.2011	0.2201	0.2868	0.3478	0.3310	0.3673				
VIF	1.0773	1.0720	1.0914	1.0357	1.0985	1.0845				
CN	7.6653	7.9994	6.9829	3.3019	4.4087	2.1568				

(continued)

Table 6.6 (continued)

Multifunctional activity	Landscape forming					
White test	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>	<i>n.s.</i>
Goodness of fit	***	***	***	***	***	***

Source Same as Table 6.1

Notes The *t* ratios are given in parentheses. Significance levels are shown by the results of the *t* test, such that *** = 1%, ** = 5%, * = 10%, + = 20% (as reference), *n.s.* = not significant

Table 6.7 Result of multifunctional activity determinant function 3 (Model 2)

Multifunctional activity	Recreational										
Constant	0.9086*** (41.66)	0.9287*** (38.30)	0.9229*** (43.80)	0.9653*** (146.06)	0.9910*** (116.51)	0.9743*** (195.12)					
Portion of elderly	0.1686 (0.42)	0.1468 (0.34)	0.1032 (0.24)	-0.012 (-0.05)	-0.0904 (-0.36)	-0.0335 (-0.13)					
Productivity gap	-0.0010 (-1.30)	-0.0008 (-0.98)	-0.0010 (-1.21)	-0.0009* (-1.98)	-0.0006 (-1.27)	-0.0009* (-1.71)					
Farming consistency	0.0635*** (2.04)	0.0569* (1.74)	0.0611* (1.88)	-	-	-					
Group farming	-	-	-	-0.2320*** (-8.89)	-0.2499*** (-9.45)	-0.2369*** (-8.72)					
Ratio of less steep paddy	0.0688*** (2.12)	-	-	0.0406** (2.02)	-	-					
Ratio of steep paddy	-	0.0015 (0.06)	-	-	-0.0316** (-2.07)	-					
Ratio of steep grassland	-	-	0.0166 (1.09)	-	-	0.0053 (0.57)					
ajstR ²	0.108	0.0124	0.0393	0.6598	0.6612	0.6294					
VIF	1.0773	1.072	1.0914	1.0357	1.0985	1.0845					
CN	7.6653	7.9994	6.9829	3.3019	4.4087	2.1568					

(continued)

Table 6.7 (continued)

Multifunctional activity	Recreational					
	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
White test	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Goodness of fit	*	n.s.	n.s.	***	***	***

Source Same as Table 6.1

Note The *t* ratios are given in parentheses. Significance levels are shown by the results of the *t* test, such that *** = 1%, ** = 5%, * = 10%, + = 20% (as reference), n.s. = not significant

to diversify their activity through rural tourism. However, it should be noted that the degree of farming cooperation exerts a stronger influence than the productivity gap.

Thus, the results of the model 2 estimation revealed that choices of multifunctional activity would differ from one level of hamlet conditions to another. This also means that institutional jointness varies with hamlet conditions. We give further consideration to the implication of these results.

6.8 Discussion

Table 6.8 summarizes the characteristics of the three multifunctional activities based on the estimation results. Land-preserving activity is a commonly undertaken hamlet activity because the cost-bearing capability of performing this hamlet activity is rather low, which means that extra cost reduction efforts are not required for these hamlets. Thus, this is an example of widely applied institutional jointness. From the perspective of cost structure, because of familiarity with this activity, the consensus-making cost is low and will mildly increase when the number of participants grows. Cost of utilizing human resources will not decrease with size since there is neither the possibility nor the necessity for new human resources in starting this activity. For this reason there is neither orientation for internalizing the external effect into farm activity nor an increase in the size of the hamlet agreement.

Landscape-forming activity tends to be undertaken by hamlets in accordance with an ageing population and with a relatively high level of hamlet function, characteristics that are not similar to land-preserving activity in this aspect. Because of the use of elderly human resources, consensus-making cost is low and will not rise with size while the cost of utilizing human resources is not too high and will decrease with size because of the advantage taken of the human network among the elderly. In this sense, it is empirically confirmed that this activity has intermediate features between land-preserving and recreational activities. So does the jointness.

Recreational activity needs the same high level of hamlet function as needed for group farming. This means that there is potential to tackle a new activity based on this high level of hamlet function. In other words, the cost-bearing capability for this activity is so high that only those hamlets that can perform at such a low cost can conduct this activity. Thus, this type of institutional jointness is the most

Table 6.8 Internalization of multifunctionality and necessary level of hamlet function

Types of multifunctional activities	Possibility of internalizing externality	Necessary level for utilizing human resources	Necessary level for hamlet function
Land preserving	Low	Low	Low
Landscape forming	Middle	Middle	Middle
Recreational	High	High	High

stable although it is not widely observed. From the cost perspective, this means that consensus-making cost is sufficiently low because of highly motivated participants and no prospect for increasing this cost with size, suggesting a nearly constant size. On the other hand, there is some prospect of utilizing human resources, which means that a decreasing effect of the cost of utilizing human resources would be expected with size.¹⁶ This is because often the main participants in this activity are middle-aged farming women who are proactive in extending the human network among themselves.

Thus, the differences in these activities are derived from the conditions of the hamlet and explain rural reality with no inconsistency.

6.9 Conclusion

Multifunctional activities differ from one rural area to another and these are often generated as a part of hamlet activities in Japan. Therefore, this chapter evaluated multifunctional activities as rural hamlet activities by incorporating an institutional conceptual model under the direct payment program in Japan and conceptually and empirically explored institutional factors working for these activities. The following are the main conclusions, although I should be careful in generalizing the results to a great extent due to constraints on data and estimation results.

First, it was revealed that multifunctional activities differ in cost structure and subsequently institutional jointness varies. Thus, multifunctionality should be promoted taking into account these differences of institutional jointness derived from local conditions.

Second, a community-based approach especially based on an open and extended human network rather than on the traditional closed one in rural communities will be effective for developing rural and farm diversification such as rural tourism.

Further, I observed a tendency that rural tourism activity was undertaken in areas with lower productivity. This means that diversification will reduce the productivity gap between areas. Therefore, I should emphasize diversification, taking advantage of multifunctionality, especially in the less competitive areas. In this sense, farm policy should be implemented complementarily together with rural policy.

¹⁶I calculated the average number of participants in the hamlet agreement for the three multifunctional activities: land preserving was 19.5 persons, landscape forming was 20.6, and recreational was 21.0. There were no statistically significant differences among the three; hence, I could not confirm the economy of scale in terms of the size of each cost factor. This is probably because I had to use not the size of each multifunctional activity, but the average sizes of the hamlet agreement at the prefectural level due to data constraints, which would make the variance of the data smaller.

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Part III
Challenges of Community-Based
Rural Tourism

Chapter 7

Barrier to Change in Rural Tourism: Dependence Effect on Local Tourism Resources



7.1 Introduction

Rural tourism is becoming an important pillar of a diversified rural economy (Haines and Davies 1987; Slee 1989). Already there have been intensive analyses of farm and rural tourism from various disciplines (Bryden et al. 1993 for the British, French and German cases; Maude and van Rest 1985 and Evans and Ilbery 1989, 1992a, b for British; Pevetz 1992 for Austrian; Oppermann 1997 for German; Vanslebrouck et al. 2005 for Dutch; Ohe and Ciani 1995 for Italian; and Ohe 2007 for Japanese cases).

Although how to mobilize local resources for rural tourism is an essential issue, extensive conceptual and empirical studies from the point of view of economics have not been done. It often occurs that too much dependence on local tourism resources makes operators conservative for the future despite good business performance. The author terms this “the dependence effect on local tourism resources as a barrier to change” Clarifying how this effect is formed and what influence it exerts on operators’ attitude is important so that farmers can effectively mobilize local and farm resources and for policy makers to design support measures for that purpose. Studies on operators’ motivation in rural tourism have been done (Nickerson et al. 2001; McGhee and Kim 2004; Ollenberg and Buckley 2007). However, to our knowledge, investigation of the aspect of utilizing local tourism resources has been scant. This is particularly true with regard to the traditional type of rural tourism, which is typically exemplified by the farm-based accommodations for skiers that have been traditionally provided by farmers as a side-business during their slack winter season around ski areas, as in the Alpine areas in Europe. As pointed out in Chap. 1 there are major differences between traditional and modern rural tourism. With the traditional type of tourism, tourists merely use the farm accommodations for eating and sleeping during a ski trip while the farm itself is the attraction with modern rural tourism. In

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the context of the former, this type of demand for farm-based accommodation is not original but is a derivative of skiing. Second, the difference appears in whether the operator's own initiative in terms of utilization of resource management exists. The issue of transformation to the modern type of rural tourism from this traditional form of tourism accommodation has been of interest (Busby and Rendle 2000).

The study area is Hiroshima, western Japan, which is one of the most disadvantaged areas in this country due to a hilly and mountainous topography and small farm size, making off-farm job holding common among farmers. In the first half of this chapter I give a conceptual consideration that enables us to evaluate farmers' attitudes for direction of the activity by taking into account the dependence on local resources and two performance indicators of the activity: profitability and the proportion of repeat visitors. Then, in the latter half I empirically evaluate farmers' attitudes by estimating the attitudes' determinant functions for development and examine what actual factors work for conservative or positive attitudes for the mid-term future. We consider mid-term as the time range wherein farmers can change their facilities and resource allocation while basic resource availability in the farm household does not change, unlike the long term during which every condition might be changeable. Then, I discuss results of a follow-up evaluation of the present situation in the study area and examine the consequences of findings from our initial survey from the long-term perspective of 14 years after that initial survey. Finally, implications for policy measures to promote rural tourism in the future are suggested. Therefore, conditions of demand factors for rural tourism are assumed to be a given here.

7.2 Conceptual Considerations

7.2.1 Basic Framework

Current good profitability in farm-based accommodations does not guarantee new development of the activity in the future. The aim here is to conceptually explore this paradoxical situation within the framework of a mid-term time range.

The first point is that too much dependence on outside resources, i.e., the dependent effect, promotes a conservative attitude toward the future among operators. This dependent effect is considered to work detrimentally to diversification of tourism activity. The better the profitability, the larger the dependent effect will be. The present value of expected revenue for a new diversified activity is expressed by taking into account the dependent effect under the assumption that other conditions are constant. I call $i(1 + d)$ the total discount rate here. The present value of expected surplus is obtained according to the Eq. (7.1).

$$\sum_{k=1}^{\infty} R/(1+i(1+d))^k - \sum_{k=1}^{\infty} C/(1+i)^k = R/i(1+d) - C/i \quad (7.1)$$

where,

- R expected revenue of a new activity
- C cost of a new activity
- i discount rate
- d dependent effect, $0 \leq d < 1$

I assume here a multiplicative relationship between d and i to consider the dependent effect and discount rate together whereas a linear relationship would be possible. If the dependent effect exists, then the expected revenue will be more greatly discounted according to the amount of id . The larger the dependent effect d , the larger the expected revenue will be discounted. Conversely, if d is trivial, then id will be negligible.

The second point that we should take into account is comparison of the characteristics of service production with agricultural production in general. I examined how two factors, profitability and the proportion of repeat visitors, are involved in future development. In addition to profitability, it is often pointed out that repeat visitors are an important factor in successful tourism management (Bull 1991; Oppermann 1997). The economic significance of this factor, however, has not yet been fully explored. I postulate that the two factors play different roles in influencing future development because the two factors work the expected revenue differently. The advantages of retaining repeat visitors are those of saving the cost of advertising and of gaining revenue from a relatively small number of acquainted visitors rather than from a large number of non-acquainted visitors. Put simply, the proportion of repeat visitors is a reflection of the quality of service. These effects are short-term ones. Furthermore, Ohe (2007) mentioned that the interchange with visitors stimulates rural tourism activity and eventually visitors' needs are transformed into new activities. In this context, the proportion of repeat visitors has significance as follows. If a farmer has a high proportion of repeat visitors, there would be ample opportunity for an interchange of information and opinions between farmers and tourists. Consequently, a farmer can learn of the needs of tourists, which will create a positive attitude toward new development. This process results in progress in diversification of tourism activity. Therefore, the proportion of repeat visitors is considered to influence the occurrence of new development. In short, it is assumed that such interchange is crucial for effective endogenous local resource use for rural tourism. Hence, I can postulate that these two factors are assumed to be mutually independent and the proportion of repeat visitors does not influence the present labour return and surplus but does influence the expected return and surplus because of present managerial efforts to make visitors come back.

7.2.2 Analytical Framework

The above consideration does not explain how the expected surplus is determined by the two factors, profitability and proportion of repeat visitors. Here the above consideration is translated into the structural model given below to explore the influence of these two factors. Figure 7.1 depicts the structural model. As mentioned earlier, profitability and the proportion of repeat visitors work independently with regard to the future level of activity. The sign conditions are as follows: $\partial EPS/\partial RV > 0$ because the higher the proportion of repeat visitors, the higher the expected surplus of labour in the future. $\partial EPS/\partial RP < 0$ because $\partial EPS/\partial d < 0$ and $\partial d/\partial RP > 0$. We cannot uniformly assume the sign condition for q . If EPS is greater than the present surplus determined by the present profitability, then a new diversification measure will be undertaken. Thus, I consider how diversification will be made hereafter.

$$EPS = f(RV, d; i) \tag{7.2}$$

$$d = g(RP, q) \tag{7.3}$$

$$EPS = f(RP, RV, q) \tag{7.4}$$

As the dependent effect is not observable in reality, by substituting the expression (7.3) for (7.2), then (7.4) is obtained. Figure 7.2 depicts how the dependent effect works for diversification of tourism activity by measuring the level of diversification horizontally and the monetary term vertically. For simplification, I assume, first, that shifts of marginal cost are correctly recognized and, second, that the discount rate is identical to market interests. The marginal revenue MR lines are depicted as right downward lines because of the existence of repeat visitors from consumer loyalty

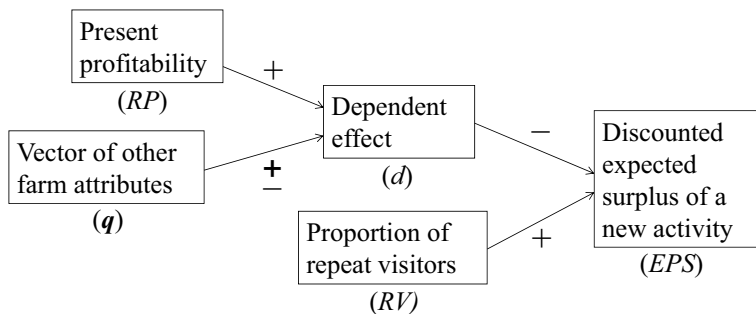
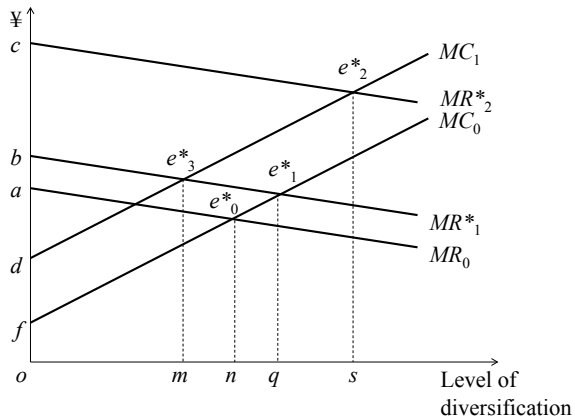


Fig. 7.1 Structural model that determines discounted expected surplus of a new activity

Fig. 7.2 Subjective equilibriums for diversification of rural tourism activity



while the marginal cost lines are rightly upward lines due to the characteristic of rural tourism being labour intensive service production.

Suppose a farmer considers a new development, then the present marginal revenue line MR_0 will shift upward to the discounted expected marginal revenue line MR_1^* from the initial revenue level MR_0 . This shift normally results in progress in the level of diversification. If investment in a facility is necessary, then MC will shift upward as I assume full information on MC for simplification. The initial equilibrium point is e_0^* where MR_0 meets MC_0 . Three cases of new equilibrium are depicted. The first case, Case 1, is that of no investment shifting only MR_0 to MR_1^* and results in a new equilibrium at e_1^* . * indicates an expected subjective equilibrium. Consequently, diversification progresses from n to q generating $abe_1^*e_0^*$ larger surplus than the initial surplus afe_0^* , which works as the reserved surplus for a new activity.

The second (Case 2) and third (Case 3) cases are those of investment made, shifting MC_0 to MC_1 . The difference between these two cases is the degree of upward shift of MR , i.e., MR_1^* or MR_2^* . In the example of Case 2, which is the case of a larger shift from MR_0 to MR_2^* crossing with MC_1 at e_2^* , it results in a large progression in diversification to s . The proportion of repeat visitors will contribute to this shift. Apparently, the new surplus is far larger than the initial one because $cde_2^* > afe_0^*$.

In contrast, Case 3 is that of a minor shift from MR_0 to MR_1^* crossing with MC_1 at e_3^* , which results in a lesser surplus than the initial one because $bde_3^* < afe_0^*$. In this case, a farmer will be worse off, so that an actual investment will not be made. It is better for a farmer to stay at the initial diversification level n . Case 3 explains how present high profitability benefiting from exogenous resources for the farm disturbs new development by lowering the expected revenue if a large dependent effect exists. This is because a farmer will have a more largely discounted expected revenue due to the dependent effect whereas originally the expected revenue will shift to MR_2^* . Then the shift of the expected revenue will end up with MR_1^* instead of MR_2^* . Subsequently if this largely discounted expected surplus would not surpass the reserved surplus, a new activity will not be undertaken.

Case 1 and Case 2 will be those for which the proportion of repeat visitors works positively. The high ratio of repeat visitors raises the expected revenue through not raising the total discount rate and eventually the expected surplus exceeds the reserved surplus; thereafter a new activity will be considered. The proportion of repeat visitors functions as an endogenous factor causing something similar to innovation in the service production by the farms because this factor shifts MR upward. Put differently, unless the shift of MR is large enough, progress toward diversification will not occur.

Consequently, this framework can explain why high-profitability farm operators tend to be conservative with regard to new on-farm activity because of dependent effects on local resources.

7.3 Data

The study area, Geihoku, which has been a part of Kita Hiroshima since 1995 due to the merger of municipalities, is well known as the southern-most ski area of the main island of Japan, Honshu. The number of farm-based accommodation units in Geihoku is among the highest in western Japan, making this one of the most suitable areas for the evaluation of farm-based accommodation activity in this country. The first set of data was obtained by a survey of farm-based accommodation activity that was conducted through a surface-mailed questionnaire from 1993 November to 1994 February. A follow-up survey of the responders to the first survey was conducted by telephone interview of current farm-tourism operators in the Geihoku area in 2007 December. The gross rate of response to the first survey was 102 houses out of 118 houses (86.4%), including households that had already given up or suspended their business and households that had submitted incomplete answers. After subtracting those aforementioned respondents, the effective response rate was 64.4% (76/118 households).

The second set of data used was the Agricultural Census farm data from 1990 for farming aspects and composition of farm households in general. This was used with permission from what is now the Ministry of Internal Affairs and Communications (formerly Japanese Management and Coordination Agency.) The third set of data was obtained from the list of lodging businesses compiled by the prefectural health center that administers lodging businesses for accommodation activity. The fourth data set included information on the size of ski slopes and their distances from each farm, which was obtained from the municipality office.

7.4 Attitudes on Future Development

7.4.1 Empirical Model

Given the conceptual model, let us explore the empirical model for estimation of the function that determines attitudes for development over the mid-term. Suppose the expected surplus S_{Ei} in regard to direction i is greater than the present surplus S_P , then a farm household can increase its surplus, which means that farmers are motivated for direction i . In contrast, suppose $S_{Ei} - S_P \leq 0$, then the household is not motivated for direction i . Thus, S_P works as a reservation surplus on attitudes for future development. The purpose is not for estimation of either reservation surplus or expected surplus, but for exploring working factors and policy implications for the future development of rural tourism. Subsequently the estimation model is obtained by linear approximation of (7.4) as below for a farm household with regard to direction i to new development. The model assumes that family, managerial, and farming conditions define operators' attitudes.

$$\text{If } S_{Ei} > S_P, \lambda_i = 1 \tag{7.5}$$

$$\text{If } S_{Ei} \leq S_P, \lambda_i = 0 \tag{7.6}$$

The farm household has an incentive for the development of direction i when $\lambda_i = 1$ and does not when $\lambda_i = 0$.

Where,

S_{Ei} the expected surplus in regard to direction i ,

S_P present surplus,

$$\lambda_i = \ln(\theta_i / (1 - \theta_i)) \tag{7.7}$$

$$\lambda_i = \beta_0 + \beta_1 G + \beta_2 R + \sum_{j=3} \beta_j Q_j + \varepsilon \tag{7.8}$$

where,

- θ_i probability of taking direction i
- λ_i log of odds, ($i = 1, 2, \dots, m$)
- $\beta_0, \beta_1, \beta_2, \beta_j$ parameters to be estimated, ($j = 3, \dots, n$)
- \ln natural logarithm
- ε stochastic error
- λ_i is determined by G, R and Q_j variables

7.4.2 Explained Variables

As to the explained variables that are used as options for future direction, the following five options obtained from the questionnaire data are used: (1) installation of a self-catering facility, (2) conversion into a western style pension or lodge, (3) rating system according to the quality of the accommodation provided, (4) development of a local specialty, and (5) setting up a vegetable garden for guest use. These are expressed intentions concerning future development. In this respect, these are ex-ante evaluations of business directions.

Another point to be considered with regard to these data is that not all answers about these options are mutually exclusive. Initially, estimation of each of the five options was conducted separately, but the sample size was too small to generalize the results. Thus, five options are clustered to generalize the comparative features by oblique component analysis that minimizes the correlation among clusters, since ordinary clustering of data is not suitable for those options that are not exclusive (Harman 1976).

The results in Table 7.1 show that the five variables were clustered into two groups and that there was no correlation between the clusters. Cluster 1 includes western-style lodging and a self-catering facility whereas Cluster 2 includes a vegetable garden, rating system for the facility, and development of a local specialty. Cluster 1 is characterized by the need for investment in facilities but is attainable by individual farms, which means that those indicating a preference for this direction have a positive attitude toward future development in general. Cluster 1 requires a greater personal

Table 7.1 Cluster for variables of future directions: oblique principal component analysis

Cluster	Variables	Cluster 1	Cluster 2
1	Self-catering facility	0.6230 (0.8026)	0.0000 (0.0295)
1	Western-style lodging	0.6230 (0.8026)	0.0000 (-0.0462)
1	Inter-cluster correlation	1	-0.0104
2	Vegetable garden	0.0000 (0.0684)	0.4937 (0.6761)
2	Rating	0.0000 (-0.1892)	0.5400 (0.7395)
2	Local specialty	0.0000 (0.1314)	0.4415 (0.6046)
2	Inter-cluster correlation	-0.0104	1

Notes Figures are Standardized Scoring Coefficients for predicting cluster components from variables. Figures in parenthesis are correlation coefficients between each variable and each cluster component

investment than Cluster 2. In contrast, Cluster 2 is characterized by the need for collective effort by local residents or areas as a whole rather than individual effort except for setting up a vegetable garden, which can be done easily by farmers. Farmers selecting Cluster 2 options tend not to be confident regarding the enlargement of the business and do not want to assume risk on an individual basis but prefer maintaining the present situation.

In short, Cluster 1 is positive with regard to an increase in business size while Cluster 2 is rather passive in that direction and favours maintaining the current size of the business with minimal changes at most in the future. We hypothesize that Cluster 1 and Cluster 2 correspond to Case 2 and Case 1, respectively, so that these two variables are used as explained variables to empirically test this hypothesis.

7.5 Results

The estimation results of the binary logit model are shown in Table 7.2. Since the model-adaptation test is significant for the estimation, the model fit is right and parameters with up to 20% significance are listed only as a reference in this table. The results are not inconsistent with what the conceptual and analytical models expect since expected sign conditions are satisfied. These parameters are standardized for easy comparison.

Table 7.2 Future directions of farm-based accommodation and factors: Binary logit model

Variables	Cluster 1	Cluster 2
	Standardized estimates	Standardized estimates
Profitability of accommodation	-0.6260** (5.1397)	0.6686* (3.6294)
Portion of repeat visitors	0.4646** (4.1986)	-0.8059** (6.1216)
Family size (over 15 years old)	0.5228** (5.6559)	0.2488 (0.6716)
Total land holdings	0.1208 (0.3042)	1.0863** (4.0035)
Ratio of rice paddy to total holding	-0.3768*(2.7978)	0.2315 (0.4350)
Necessary male co-operation: Understanding	0.1206 (0.3005)	0.2353 (0.8132)
Sample size	54(yes = 17, no = 37)	47(yes = 37, no = 10)
-2log(LR)	22.235***	20.228***

Note Figures in the parenthesis are Wald chi-square Values and ***, **, * correspond to 1%, 5%, 10% significance, respectively

7.5.1 Cluster 1

The two variables related to accommodation activity had 5% significance; the more repeat visitors, the greater the preference for Cluster 1. The importance of repeat visitors was confirmed. Conversely, the greater the profitability of the accommodation business, the less the preference for Cluster 1. This is an interesting contrast to Cluster 2, which will be considered later. Among other variables related to the accommodation business, again, the request for male cooperation was not significant. This is probably because husbands are too busy doing both the off-farm job and farming. If so, women feel unable to expect cooperation rather than feel that it is unnecessary.

Family size was another significant variable (5%) with a positive sign. The ratio of rice paddy to the total holding had a negative value indicating intensive farming, but with insufficient significance (10%). Consequently, those in Cluster 1 understood the need to develop something new to improve their accommodation business and could do so in terms of family labour. Their performance in retaining repeat visitors supported this attitude. Thus, these factors led them to be positive toward extensive development of accommodation activity, toward transforming their business with new features, and toward individual-based development.

7.5.2 Cluster 2

The value was positive for profitability of the accommodation but negative for the proportion of repeat visitors with 5% significance, which indicates that farm households that have good profitability in the accommodation business tend to prefer the direction of Cluster 2. In other words, the higher the number of repeat visitors households have, the less they prefer this direction. These results indicate that those who selected this direction were satisfied with the present situation regarding their accommodation business while they tended to consider the matter of repeat visits as being less important. These factors indicate a cautious attitude toward a large investment. Another variable, the request for male cooperation, was slightly positive for this option but not quite significant.

There was no significant relationship with the variable of farming intensiveness with this option. The total holding was the only significant estimate among farming factors, being positive with 5% significance. This means that those who prefer this option tend to have larger farms, suggesting that available family labour was already involved in farming, which would therefore impose severe labour constraints for new development of accommodation activity. For these reasons, they did not favour conditions for new development of the accommodation business.

7.6 Follow-Up Evaluation from The Long-Term Perspective

We conducted a simplified ex-post evaluation of the situation regarding the operation of farm-based accommodations in this area 14 years after our original survey. Socio-economic conditions have changed, prohibiting a full-scale evaluation in the same manner as previously. This is an evaluation from a long-term perspective rather than from a mid-term perspective.

First, the external conditions faced by those operators of farm-based accommodations in this area have become harsher. The available statistics on tourism in Hiroshima prefecture, which are from *Tourism Trends in Hiroshima 2004* issued in 2005, showed that this area had 644,000 visitors in 2004 (594,000 in 1992); among these were 350,000 skiers (480,000 in 1992) and only 11,000 overnight visitors (38,000 in 1992) (Table 7.3). The reason for this sharp decrease in the number of skiers is attributed to the decreased number of skiers in this country. The decrease in overnight visitors is thought to be due to the improvement of accessibility such as the inauguration of highways.

In 2007, farm-based accommodations were operated in only 32 households according to information from the website on tourism information in the Geihoku area and the author's telephone survey. This sharp decrease in the number of farm households providing farm-based accommodations is due to the above-mentioned harsh economic environment and the ageing of the operators. Nearly two thirds (64.3%) of operating farm households provide only winter accommodations while 35% provide accommodations in summer. Thus, a large proportion of farm-based accommodations depends on skiers in winter. In this context, the basic pattern of rural tourism activity has not changed and the traditional type remains.

We conducted a statistical test on which type, Cluster 1 or Cluster 2, these farms belonged to between 1993 and 2007. Although the proportion of farm households now in operation tends to become higher in Cluster 1 and lower in Cluster 2, the results were not highly statistically significant (Table 7.4). Specifically, the proportion of those operators who selected the Cluster 2 option dropped to 60% from 79% of these farms (10% significance). These results are not inconsistent with the results of the ex-ante evaluation described above.

There was no statistical connection between data on performance from farms now in operation and data obtained in 1993 from these same farms, which was measured according to profitability and the proportion of repeat visitors. This result indicates that these two indicators are not so robust over the long term. Thus, the two

Table 7.3 Inbound tourists in Geihoku area Unit: 1000 people

Year	1992	2004
No. tourists	594	644
No. skiers	480	350
No. overnight tourists	38	11

Source Tourism Trends in Hiroshima, annually edited by the Government of Hiroshima Prefecture

Table 7.4 Portion of farm based-accommodations belonging to each cluster

Year	1993	2007	Chi-squared test result
Cluster 1 (%)	31.5(17)	40.6(13)	<i>n.s.</i>
Cluster 2 (%)	78.7(37)	60.4(19)	*

Notes Figures in the parenthesis are sample size in each cluster. *, 10% significance; *n.s.*, not significant

indicators should be considered to be applicable at most to the mid-term. This is not only because of the influence of ageing of operators or lack of a family successor to the operator but also because of ageing of repeat visitors over the years. This also indicates a limitation of the advantage of acquiring repeat visitors over the long term unless operators continuously acquire new visitors while retaining repeat visitors throughout the same time period.

To sum up, as of now, the dependence effect is still considered high as long as operators do not have sufficient management skills to take advantage of local resources on their own initiative even if they have an exogenous local resource, such as snowfall in the case of this region, for running accommodations. Therefore, it has become increasingly necessary to develop rural tourism not based on derivative demand but on original demand for rural tourism in an endogenous way. Put differently, it should be noted that enhancement of management skills for rural tourism will not be realized until farmers make an effort through their own initiative to endogenously utilize local resources. Hence, measures enhancing farmers' skills for stimulating endogenous utilization of local resources are crucial for promotion of rural tourism. This will be a solution for reducing the dependent effect in the long term.

7.7 Conclusion

This chapter evaluated the connection between the performance of farm-based accommodations and the attitudes for the mid-term future direction in the mountainous area in Hiroshima by taking into account farmers' dependence on local resource use and aspects of service production. Findings were as follows:

First, good performance highly dependent on ski slopes does not always guarantee a positive attitude toward future development. To clarify the mechanism of this low-key attitude or barriers to change, I gave conceptual consideration to how two factors, profitability and proportion of repeat visitors, determine the mid-term evolution of farm-based accommodation activity by presenting the dependent effect, meaning that too much dependence on the exogenous resources available to the present farm activity hampers new development. Also, I gave significance to the proportion of repeat visitors as an indispensable factor for diversification of rural tourism activity in addition to profitability.

Second, for the future directions of farm-based accommodation, functions that determine attitudes for future development were estimated and two main attitudes

were found. One is for extensive development to improve profitability while retaining repeat visitors and is preferred by farm households that have a larger family size. The other is for maintaining business size or making minimal changes while retaining good profitability from the accommodation activity and is preferred by farm households of larger-sized farms. Consequently, the two variables determine not only the outcome of the accommodation business but also different attitudes for the future.

Third, although the relationship between the two factors should be more widely tested empirically, these findings suggest that looking only at profitability will not be sufficient from the mid-term perspective. We should also consider the significance of repeat visitors to evaluate rural tourism activity because obtaining repeat visitors is a positive factor for future evolution by lowering the dependence effect. In the long term, however, good performance in relation to either profitability or repeat visitors should be connected to capacity building by operators that will enable them to endogenously utilize local resources for diversification through their own initiative. This aspect should be explored further since it is beyond the scope of this study.

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Chapter 8

Challenges of Community-Based Rural Tourism in a Super-Ageing Society



8.1 Introduction

Issues involving ageing societies have become common worldwide. Among countries, Japan is the most aged society. A society in which the proportion of residents who are 65 years of age or older i.e., population ageing ratio, is 21% or greater is termed a super ageing society. Japan became the first such society in the world in 2005 (Muramatsu and Akiyama 2011) and was followed by Italy and Germany in 2010. Especially, in rural Japan the population has aged far faster than the national average due to depopulation by the younger generations and the subsequent ageing of the remaining local residents. Thus, it is safe to say that what rural Japan is experiencing is a little ahead of the experiences in many societies with an ageing population.

Thus, this chapter sheds light on how rural tourism can evolve in a super ageing rural community by focussing on a community-based rural tourism (CBRT) activity in Chiba, Japan. The rural community has been a basic social structure that plays a role in providing mutual help in daily life in Japan (Fukutake 1980). The group-oriented mentality among Japanese people has been often attributed to this collective community work. This chapter examines a CBRT activity, which is not very common even in rural Japan with its communal tradition. Individual activity is common in terms of accommodation services in rural areas. Although policy makers like to promote community-based tourism activity, actually it is not easy to organize and operate such activities sustainably in local communities. The study case presented here is one that has overcome challenges one after another, including recovery from the unprecedented set of disasters associated with the Great East Japan Earthquake that hit in March, 2011, to operate a community-based tourism activity. Thus, this case is suitable to investigate this chapter's aims.

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Although studies on the relationship between farm activity and the ageing of farmers have been conducted, there has been little investigation of rural tourism from the perspective of an ageing population except for that by Ohe (2008), which clarified the significance of the role of retiree farmers in rural tourism. Nevertheless, as far as the author knows, CBRT has not been addressed from the perspective of ageing. In all rural tourism areas there is a universal agenda to determine how rural tourism based on the traditional communal function can cope with the inevitable difficult challenges and in which direction it will evolve.

Therefore, this chapter aims to clarify how CBRT has been performed and how local operators cope with the difficulties they face under super-ageing circumstances. These points will provide useful perspectives for CBRT in other parts of world as well because every community-based activity will face the same problem sooner or later.

To approach these aims, firstly, based on a literature review the author defined CBRT as a tourism activity based on traditional bonding social capital formed in the local community. Secondly, trends of leisure preferences among people in Japan are reviewed briefly and, thirdly, distinctive features of and constraints on rural tourism in Japan are summarized. Fourthly, the author investigates a case study of a facility, designated as the Nature Lodge Kusunoki in Japanese, which conducts CBRT in Minaniboso, Chiba. This chapter investigates characteristics of how the people concerned conduct the tourism activity in the ageing rural community and the advantages and limitations of bonding social capital when facing challenges caused by both expected and unexpected social and natural phenomena. Finally, policy recommendations are suggested.

8.2 Literature Review

In tourism research issues of ageing were mainly discussed with regard to retirees as a segmented market for tourism (Poudyal et al. 2008). The supply side perspective was limited to Ohe (2008), whose work focussed on the significance of rural tourism activity conducted by retirees. From both the demand and supply sides, issues related to ageing are to be explored more in the future.

Rural tourism is an activity that mobilizes tangible and intangible rural resources. Garrod et al. (2006) re-conceptualizes fundamental rural resources for rural tourism as “countryside capital” and urges a holistic approach to rural resource management. As a holistic manager of countryside capital, the rural community is one of the most appropriate bodies.

With respect to community-based tourism development, social capital is the most commonly taken perspective. Although social capital is variously defined by multiple disciplines and there exist critical views on social capital (Fin 2001), the perspective of social capital is useful to characterize CBRT. Social capital is defined here as a network based on mutual trust among the people concerned. Social capital includes both bonding and bridging types (Gittell and Vidal 1998; Woolcock and Narayan 2000;

Inaba 2007; Newton 2008). Further, Szreter and Woolcock (2004) added another type of social capital, that is, “linking social capital”, which is characterized by a vertical network such as relationships between the government and local community. Among these types, a traditional rural community that is based on a closed human network within that community is considered to be a bonding type that aims to strengthen and utilize this network, which is a Coleman’s closed type of network, while an open network is considered to be a bridging type (Inaba 2007; Burt 2008). Studies on various topics related to community-based tourism and on rural tourism in Japan are summarized in Table 8.1.

Studies on community-based tourism activity in the Korean rural community were conducted by Park et al. (2012, 2015). Interestingly, social capital does not always foster a pro-tourism attitude in the community (Park et al. 2015). Leadership and entrepreneurship are often focussed upon in connection with social capital (Zhao et al. 2011; Mascardo 2014). Grybovyh and Hafermann (2010) investigated a participatory dialogical approach to community tourism development on a rural island in Canada.

Studies on community-based tourism development have a relatively long history beginning with the initial research (Murphy 1985) and moving on to recent studies on developing countries due to the growing attention to community-based tourism development as an effective means of promoting tourism in developing countries and regions. These studies are by Ellis and Sheridan (2014) for Cambodia, Phommavong and Sörensson (2014) for Laos, Kontogeorgopoulos et al. (2014, 2015) for Thailand, Walter (2013) for three Southeast Asian cases, Han et al. (2014) for China, Wu and Pearce (2014) for Tibet, Tolkach and King (2015) for Timor-Leste, Holladay and Powell (2013) for the Dominican Republic, Iorio and Corsale (2014) for Romania, and López-Guzmán et al. (2013) for Cape Verde.

Literature on rural tourism in Japan is not scarce but is mostly in Japanese. This means that these studies were not targeted at international readers; therefore, little is shared internationally. This chapter tries to narrow this longstanding information gap.

Here literature published in English is reviewed because this book is internationally oriented. Although Murphy and Williams (1999) discussed the potential of inbound Japanese tourists to rural Canada from a planning perspective, that paper did not focus on rural tourism conducted in Japan. Knight (1996) conducted some of the initial research on rural tourism in Japan, which addresses the variability of rural tourism in Japan. Thompson (2003) focussed on the “antenna shop”, a shop for tourism promotion and the selling of local products, run by a remote rural community in the center of the Metropolitan Tokyo area.

Ohe (2014) pointed out that there are tighter constraints on the development of rural tourism in Japan than on their counterparts in Western Europe where the long vacation system is fully implemented, which creates demand for lodging for longer periods in rural tourism. Beside these institutional factors, Ohe (2010) empirically verified that too much dependence on external tourism resources creates a conservative attitude among operators toward new developments in rural tourism. Ohe (2011b)

Table 8.1 Literature on tourism related to community-based activity and Japanese cases

Category	Topic	Literature
Community-based tourism activity	The initial study	Murphy (1985)
	Social capital and entrepreneurship	Zao et al. (2011), Mascardo (2014)
	Canada, planning	Grybovych and Hafermann (2010)
	Korea, social capital	Park et al. (2012, 2015)
	Cambodia, resident perceptions	Ellis and Sheridan (2014)
	Lao, gender	Phommavong and Sörensson (2014)
	Thailand, success factors, home stays	Kontogeorgopoulos et al. (2014, 2015)
	South Asian countries, ecotourism	Walter (2013)
	China, disempowerment of residents	Han et al. (2014)
	Tibet, asset-based community development	Wu and Pearce (2014)
	Timor-Leste, remote island	Tolkach and King (2015)
	Dominica, resident perceptions	Holladay and Powell (2013)
	Hawaii, tourist/resident perceptions	Vaughan and Ardoin (2014)
	Romania, networking	Iorio and Corsale (2014)
Cape Verde, quality of service	López-Guzmán et al. (2013)	
Japanese rural tourism	Retiree farmer's activity	Ohe (2008)
	Variability of rural tourism	Knight (1996)
	Antenna shop	Thompson (2003)
	Characteristics of rural tourism	Ohe (2014)
	Educational tourism	Ohe (2011a, 2012)
	Productivity measurement	Ohe (2011b)
	Connection between tourism and brand farm products	Ohe and Kurihara (2013)
	Dependent on tourism resources	Ohe (2010)
	Stepwise process of tourism development	Ohe et al. (2011)
Public fiscal support	Ishikawa and Fukushige (2009)	

Source Reviewed by author

measured productivity of rural tourism in Japan and evaluated marginal productivity. Ohe and Kurihara (2013) verified quantitatively the positive connection between local brand farm products and tourism in rural areas by a simultaneous equation model. Ohe et al. (2011) presented a stepwise development process for rural tourism among local people concerned using a two-stage equation model and found that the first step is to raise satisfaction among those who are involved. Ohe (2011a, 2012) focussed on educational tourism in agriculture from the perspective of how to nurture operators' attitudes toward this new activity. From an empirical analysis conducted in rural Japan, Ishikawa and Fukushima (2009) noted that rural areas need public fiscal support in addition to tourism development.

To summarize, no study was conducted from the perspective of ageing and community-based tourism activity despite its importance. This study approaches this issue from the perspective of bonding social capital. It is assumed that social capital becomes old as the ageing of the local community progresses. Under this condition I investigate how the people involved in CBRT behave and cope with their various challenges.

8.3 Trends of Leisure Preferences in Japan

First, let us take a look at the background of rural tourism in Japan. Table 8.2 shows results of a government opinion poll on how the preferences among people have changed from tangible physical aspects to intangible mental aspects of life. Those who seek richness of the mind have increased steadily to reach more than 60% of

Table 8.2 What people seek in life

Year	Richness in mind	Richness in tangible goods	Desired activity	
			Leisure	Enjoyment of food
1973	35.3	40.3	20.2	14.4
1975	38.8	40.9	16.0	21.9
1980	42.2	39.8	19.9	17.3
1985	49.6	32.9	27.6	14.5
1990	53.0	30.8	37.2	12.6
1995	56.8	28.1	35.3	15.4
2002	60.7	27.4	36.2	22.9
2005	57.8	28.4	33.2	25.2
2010	60.0	31.1	33.3	25.4
2011	61.4	31.0	35.8	26.5

Source Opinion Poll on People's Life, Cabinet Office

Note Until 1999, the survey question allowed only a single answer. while since 2001 it allowed multiple answers

Table 8.3 Desired leisure activities

Rank	Activity	Year		
		2012	2011	2010
1	Domestic travel	75.2	75.8	79.5
2	Car driving	49.4	51.9	59.2
3	Travel abroad	47.9	48.5	53.1
4	Visit zoo, botanical garden, aquarium, museum	44.8	45.2	53.0
5	Eating out	42.8	45.6	47.3
6	Movie going	40.0	40.6	46.9
7	Listening to music	34.7	35.7	38.4
8	Picnicking, hiking, outdoor walking	34.0	35.1	41.4
9	Going to music concert	33.8	36.6	39.6
10	Buying lottery ticket	31.9	34.9	38.8

Source White Paper on Leisure 2013, Japan Productivity Center

Note Since 2009 data were surveyed through the Internet

respondents of a survey by the Cabinet Office for the year 2011 while the preference for richness in tangible goods has decreased to 31%. Table 8.1 shows the percentages of individuals who wished to engage in various leisure activities and those who selected enjoyment of food during their time away from work. The proportion of those who seek leisure activities has increased to 35.8% in 2011 from 20.3% in 1973, and is followed by enjoyment of eating at 25.5% in 2011. Increasing concerns over health and food safety and interest in various aspects of food such as culinary heritage and exotic new foods are considered as the background of this trend. Among leisure activities, domestic tourism was the most popular (Table 8.3). Although domestic tourism is not limited to rural tourism, it is important to recognize this choice as the background for the potential demand for rural tourism.

The history of rural tourism in Japan is not long. Rural tourism is termed as green tourism, which has been promoted since the early 1990s by the Ministry of Agriculture, Forestry and Fisheries (MAFF). The legal framework for promotion of green tourism was inaugurated in 1994 and was placed in the rural policy arena under the Food, Agriculture and Rural Basic Law that stipulates pillars of policy measures by the Ministry in 1999.

What characterizes rural tourism in Japan is the smaller market size and slower pace of development than for example agritourism, the Italian counterpart, which was also a latecomer to agritourism in Western European countries. The number of stays in green tourism in Japan from 2005 to 2009 increased 1.09 times (7.77 million to 8.48 million) while that in agritourism in Italy increased 1.37 times (6.56 million to 8.96 million), surpassing the number of stays in Japan. We need to be careful when looking at data on the number of stays in Japan because people often stay in public accommodations in rural areas. Therefore, not all people stay in farmhouse accommodations, which is not the case with agritourism data. In Italy, demand for

agritourism has increased in accordance with the increase in the number of agritourism farms, which means that the demand has moved in parallel with the supply (Ohe and Ciani 2011, 2012). In contrast, in the case of Japan the number of green tourism farms remains small, which is one tenth that of the Italian case: 2006 farms in Japan and 19,019 farms in Italy in 2009.

The reasons for this slow pace of the rural tourism market in Japan are two fold: demand and supply, respectively. As to the supply side, Japanese farmers already have off-farm jobs due to the small size of their farms, which means that farmers have little incentive to find a source of extra income. On the demand side is an institutional constraint on taking longer holidays because Japan has not implemented the long vacation system that exists in Western European countries. The Japanese government was recommended by the UN International Labour Organization (ILO) to implement this system. Nevertheless, unlike Western Europe it has not been implemented, yet. This means that the institutional condition that stimulates accommodation demand for long stays has not been established. Therefore, rural tourism in Japan must rely more on short stays and day-trip markets, which mean less spending per capita than with longer stays. The recent increase in the number of farm restaurants can be partly explained by this factor in addition to the surging preference for local food and interest in heritage among urban residents because restaurant visitors are mostly day trippers.

To summarize, rural tourism in Japan has distinctive characteristics in the sense that it must be developed under severe institutional constraints on its market. However, other Asian countries experience similar constraints on rural tourism. It is, thus, possible to establish a model for Asian rural tourism if rural tourism in Japan can grow sustainably.

Under these circumstances, what is the size of the rural tourism market in this country? Although there are no public statistics specifically on rural tourism, there are ad hoc survey results on related activities that are not far from rural tourism.

Table 8.4 shows amounts of sales of agricultural-related activities such as from food processing, direct selling of farm products, and tourism not only conducted by individual farmers but also by agricultural cooperatives. Thus, we cannot consider that all such sales originate from rural tourism. Keeping this point in mind, 1.7 trillion yen was the total amount of annual sales from agricultural-related activity (=14,727 million US dollars when 1 US dollar = 118.5 yen) in 2012 while the value of agricultural production was 8.5 trillion yen (=7,1942 million US dollars) (MAFF 2012). Even considering if processed farm products were counted in both cases, it is important to recognize that growth potential is higher for agricultural-related activities than conventional farm production activity.

Now turning to ageing issues. Table 8.5 shows the ratios of the ageing population in Japan and in other countries for three years: 2000, 2005, and 2010. Japan entered the super-ageing society in 2007 and remained such a society in 2010. During this period, the ratio increased from 20.1 to 23.0%, which means that nearly one out of four people are over 65 years of age in Japan. The ratio is increasing year by year and was projected to reach 40% in 2050 (Cabinet Office 2013). Although that ratio in Chiba prefecture, the eastern neighbor of Tokyo, is slightly lower than the

Table 8.4 Annual sales from agricultural-related activities in 2012

Type of activity	Annual sales (million yen, %)	
Conducted by farms	476,719	27.3
Food processing	293,622	(16.8)
Farm Shop	117,572	(6.7)
Tourism farm	37,932	(2.2)
Farm Restaurant	27,593	(1.6)
Conducted by agricultural cooperatives	1,268,406	72.7
Farm shop	727,247	(41.7)
Food processing	530,107	(30.4)
Farm restaurant	11,052	(0.6)
Total	1,745,125	100.0

Source Survey on the 6th industrialization of farm and rural activity (MAFF 2012)

Note () Indicates percentage share of total annual sales in each category

Table 8.5 Ratio of ageing population worldwide

Country	Year		
	2000	2005	2010
Japan	17.2	20.1	23.0
Italy	18.3	19.6	20.3
Sweden	17.3	17.3	18.2
Spain	16.9	16.8	17.1
Germany	16.3	18.9	20.8
France	16.0	16.4	16.8
UK	15.8	16.0	16.6
USA	12.4	12.3	13.1
Korea	7.3	9.3	11.1
China	6.9	7.7	8.4
Thailand	6.6	7.7	8.9
India	4.4	4.7	5.1
More developed regions	14.3	15.3	16.1
Less developed regions	5.1	5.5	5.8

Source United Nations World Population Prospects: The 2012 revision with the exception of data for Japan, which is based on the National Census in Japan

Note Developed regions are North America, Japan, Europe, Australia, and New Zealand while developing regions are Africa, Asia excluding Japan, Central and South America, Melanesia, Micronesia, and Polynesia

Table 8.6 Ratio of ageing population in Kami hamlet, Minamiboso

Year	No. total households	No. farm households	Population ageing rate (%)	
			Farm population	Agricultural workforce
1990	110	72	24.9	33.3
1995	–	64	29.6	45.2
2000	105	51	37.7	70.3
2005	–	35	41.5	77.4
2010	108	28	41.8	86.8

Source Agricultural Hamlet Card, MAFF

Note Only those who sell farm products are counted as farm households

national average during the same period when it increased from 16.7 to 20.5% due to the progress of urbanization of the eastern part of Chiba, the large increase in the ratio narrowed the gap between the national average. The study area is located in the municipality of Minamiboso in the rural south of the Boso peninsula, Chiba, and the ratio of aged people in the population in this municipality is the third highest in Chiba, which was 35.9% in 2010. Furthermore, when only looking at farm households in the study area, the Hamlet Card, which is the Agriculture and Forestry Census specially focussed on the situation of rural communities, showed that in 2010 the ratio of aged people in Kamiku was 41.8% and was extremely high at 86.8% among those who farm as a job (Table 8.6). The main farm products there are rice, milk, and vegetables. Thus, it is safe to say that close to nine out of ten farmers are over 65 years old, so that this area is super advanced in terms of ageing. Fifteen out of 28 farm households include part-time farmers to sustain household expenses because of the small farm size. Among those farm households, only three farmers less than 65 years of age are involved in full-time farm activity. Now let us examine how people in this super ageing rural community operate rural tourism on a community basis.

8.4 Study Case: History of Lodge Kusunoki Operated by the Local Community

The first distinctive feature of the Lodge Kusunoki is that the facility was renovated from a once abolished municipal elementary school due to progressive depopulation. The second is that its operation is conducted by residents of the local community, Kamiku, a traditional rural hamlet. The name “Kusunoki” comes from an enormous old wild camphor tree that is over 750 years old and stands in a small shrine at the corner of the school. This tree is designated as a natural treasure by the Chiba prefectural government. The tourism activity was begun when local residents started discussing how to utilize the school facility that was to be abolished. The school was established in 1873, in the early Meiji era when Japan embarked on modernization that included

a compulsory education system after the samurai feudalism era. Because of the long history of the school and the existence of the divine tree, people in this community have a strong attachment to the school as a symbol of community. Therefore, it was quite natural for local residents to form a committee to explore how to utilize the school facility after abolition based on consensus among residents in the community. Consequently, it was decided to use that facility as a local community center that could also be used for rural tourism activity. It was renovated for that purpose by a subsidy from the Ministry of Education that promotes renovation of these abolished school facilities for educational purposes in the local community. Now the Kusunoki has been selected as one of the 50 model examples of renovated school facilities by the Ministry. Operation of the facility was conducted by a community-based organization newly set up for this purpose since the inauguration in 1997. The president of this organization is automatically identical with the head of the autonomous community association who is annually rotated among the residents. The tradition of strong ties among local residents created this style of community-based activity, which shows evidence of bonding social capital.

8.4.1 Structure

Among the hundred households in this hamlet, 29 residents are employed, including seven married couples, by this organization on a part-time basis, which means that one fourth of the residents are involved in this community-based activity (as of 2015 February). The youngest employee is a 39-year-old female who provides food services and the oldest is a 79-year-old female who cleans the facility. The organization does not have any legal status. After the residents discussed which type of organization would be the most suitable, they decided not to be a non-profit organization (NPO) because they thought that the principle of a community consensus-based activity would not be compatible with NPO status. Also, the flexible use of part-time jobs is possible with the current system due to seasonality of tourism activity.

The facility has a kitchen, laboratory for food processing, dining and exhibition room, meeting room, Japanese bathrooms with large bathtubs, and six Japanese style rooms with tatami-covered floors and futon sleeping mats for lodging. A maximum of 48 people can stay in the six rooms. The former gymnasium is used as a multi-purpose hall.

The school facility was renovated by the owner, that is, the local municipality, and the renovated facility is operated by the community organization. The municipality and the Kusunoki organization sign a contract for the operation of this facility and the municipality provides a lump sum for operational expenses. Every five years the contract is renewed after reviewing the performance during the past five years. In this respect, the Kusunoki is a traditional rural hamlet-based rural tourism business body, which attracts nationwide attention. The organizational structure of the Kusunoki is depicted in Fig. 8.1. Daily activities of the 29 residents, i.e., 11 males and 27 females, hired on a part-time basis are divided among four units: administration, food service,

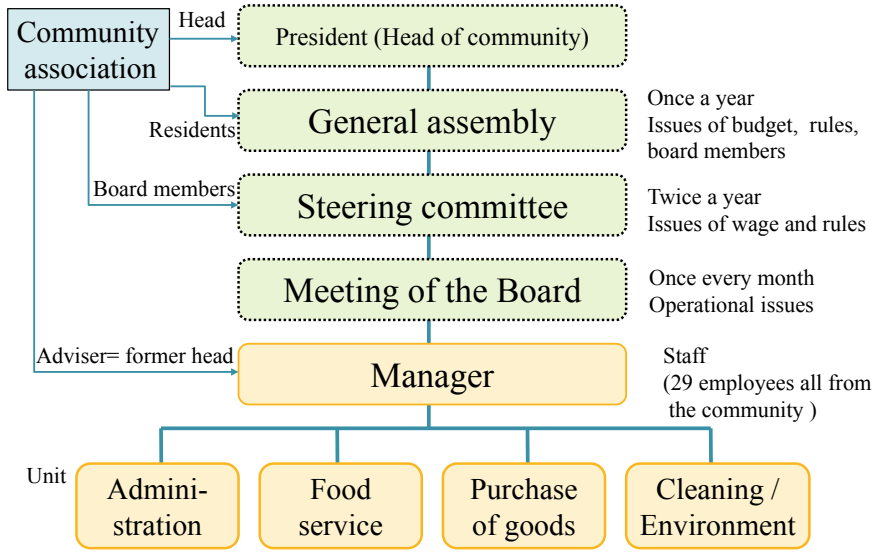


Fig. 8.1 Structure of the Kusunoki. *Source* Kusunoki

purchase of goods, and cleaning/environment. Among the 29 part-time employees is a manager who oversees all four units. A retired municipality officer who is a native of this community has taken the post of manager since the inauguration of the Kusunoki. A meeting of the Board of Directors is held once every other month to decide operational issues. The Board is composed of 19 of the 29 Kusunoki employees. The Steering Committee deals with alterations in wages and rules of that organization. Role of the Steering Committee is to connect with an autonomous community association in this area because members of this committee consist of the president of the Kusunoki, who is also head of the association, and board members of the community association and the Kusunoki. The Steering Committee meeting is held twice a year. A General Assembly chaired by the President of the Kusunoki is held once a year together with that of the community association to approve the budget, board members, and setting or changing rules. Thus, a decision-making system comprised of various entities is adopted to harmonize activity of the Kusunoki with consensus in the hamlet. This system enables community residents to learn about the hamlet’s tourism activity and also to reflect their opinion regarding that activity although it takes a longer time to make decisions than in a private company.

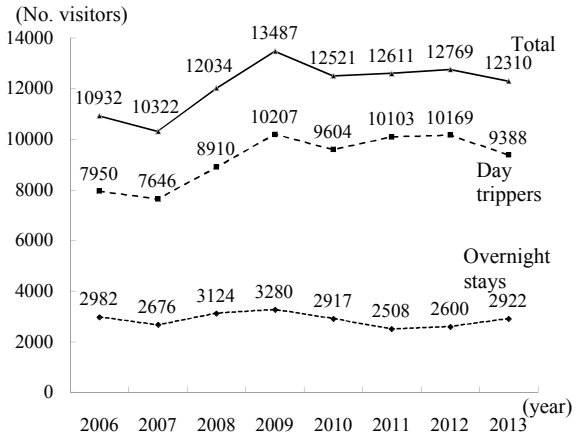
8.4.2 *Activities*

The services that the Kusunoki provides are accommodations, meals, and farm experience services. Accommodation fee is 5500 yen per night including breakfast, dinner, and taxes regardless of the season. Experience services are provided when more than 10 people come with reservations. Fifteen experience services are offered in total, which include agricultural experiences, local food heritage experiences, craft making, outdoor experiences, and star watching. The farm experience program is provided with cooperation of neighbouring farmers to provide farmland because the Kusunoki does not have farmland. Each service has a different price, ranging from 200 to 7000 yen, except for star watching, which is free of charge. These activities are performed throughout the year except for certain agricultural and food experiences that are constrained by seasonal availability. To counter the seasonality of tourism activity and secure stable job-holding, a food delivery service was started beginning in 2002. This delivery service is offered every other day, that is, three weekdays, to neighbouring residents and the municipality office. Actually, profitability of the youth-group oriented accommodation service is better than the meal delivery service because of the existence of delivery costs.

Total sales revenue in 2013 was 28 million yen (=236.3 thousand US dollars, 118.5 yen/dollar) of which 45% was from accommodations and 55% from food service and experience programs. The contracted subsidy from the municipality was 4.7 million yen (=39.7 thousand US dollars). Regarding the cost structure, labour costs accounted for the largest share at 13.6 million yen with 7.8 million for foodstuffs, 3.3 million for utilities, 7 million for administration costs, 0.5 million for purchased goods, and 0.3 million for materials used in the experience program, all of which totalled 32.5 million yen (=274.3 thousand US dollars). From these figures, it can be understood that the subsidy plays an important role in providing equilibrium between revenue and costs.

Figure 8.2 shows the number of visitors for the past eight years. In looking at the figures, we need to be careful because the fiscal years as shown in the figure begin in April and end in March of the following year. The peak season is July and August when group visitors, mainly youth clubs such as baseball clubs and Boy Scouts, are the most numerous. In other seasons, family visitors and groups of visitors come on weekends, the year-end, and New Year holidays. Visitors are almost all domestic tourists, and tourists from abroad are rare. Repeat visitors account for around 60%. The breakdown where visitors came from is as follows: 54% from Chiba prefecture, 24% from the neighbouring Kanto area, and 22% from other areas, including 600 children from Fukushima in 2013. As mentioned later in detail, the total number of visitors is over 10 thousand, including those who stay overnight and day trippers, that is, those who engage in experience services, take baths, and have meetings. Figure 8.2 indicates that the number of incoming visitors stagnated after the earthquake hit at the end of the fiscal 2010 year. The Kusunoki does not engage in public relations (PR) activity except for their own website and having a linkage with the website of the local municipality; therefore, word of mouth by visitors is the most frequent

Fig. 8.2 Annual trend of Number of visitors to the Kusunoki (2006–2013).
Source Kusunoki



means of PR. Consequently, through these activities, those people who are involved in operating the Kusunoki gain not only jobs and income but also self-confidence and local pride. Thus far they are satisfied with what they are doing, which results in strengthening the bonding social capital in the community while maintaining the linking social capital with the municipality.

8.4.3 Challenge 1: Earthquake and Tsunami in 2011

Attendance by children from Fukushima is a part of a government program to cheer up children in the radioactivity-disaster area, a program that continues to be supported as of 2015. The disaster occurred in March 2011, which was named the Great East Japan Earthquake and had a magnitude of 9.0. The earthquake and the subsequent tsunami hit and devastated the Pacific coastline with a 500 km range mainly in three northern prefectures, Iwate, Miyagi, and Fukushima. Total casualties reached 15,889 lives taken by the tsunami with nearly 2600 people still missing (National Police Agency, January 2015). Tsunami also hit the northern tip of Chiba prefecture and took 21 lives with two people missing (the same source). Comparatively speaking, the damage was relatively light in Chiba. Nevertheless, despite no physical damage in many tourist sites in Chiba, radioactivity emitted from the crippled nuclear power plant in Fukushima spread to the Kanto area where Tokyo and Chiba are located. Many people living in the area surrounding the power plant in Fukushima were displaced due to high contamination by radioactivity even if no physical damage was done to their property. Radioactivity spread over their hometown and destroyed the local community in the heavily contaminated areas. Although the level of radioactivity was not serious in the Kanto area where Tokyo and Chiba are located, tourists on their own avoided tourism after the death of so many people and also worried

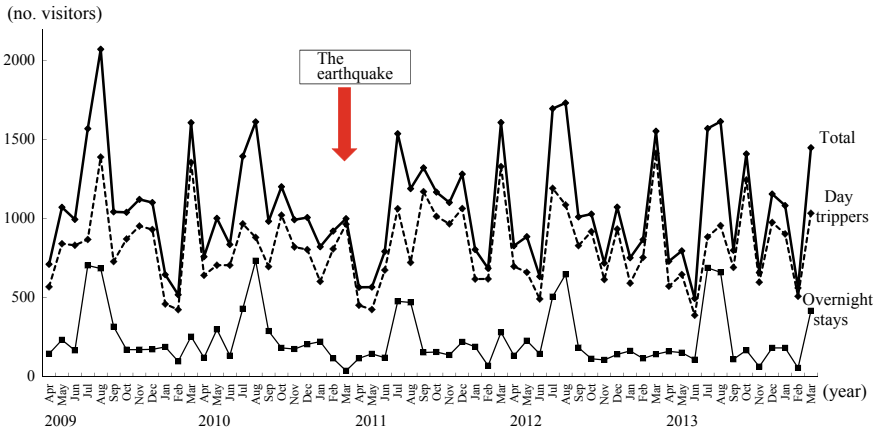


Fig. 8.3 Monthly trend of number of visitors to the Kusunoki. *Source* Kusunoki

about radioactivity. Although this self-restraint ended a few months later, the fear of radioactivity spread throughout this country, which was actually a harmful rumour with no scientific evidence to support it. In this respect, harmful rumours generated the most negative impact on tourism in rural Chiba.

Bearing in mind this aspect, now let us take a look at how the disaster influenced the rural tourism activity of the Kusunoki despite no physical damage there. Apparently, the number of visitors had plummeted that March. Many reservations were canceled. This is because people were worried groundlessly about radioactivity.

The number of visitors in total plummeted in March 2011 when the earthquake occurred as depicted in Fig. 8.3. The figure illustrates monthly fluctuations in the number of visitors in three categories from April 2009 to March 2013. Figure 8.3 indicates that clear seasonality exists; the highest peak season is August, the second peak comes in April, and the third in December. The earthquake caused the large irregular drop that is recorded in Fig. 8.3 due to a series of cancellations just after the earthquake in March 2011. Although the seasonal pattern of demand came back in 2013, the level of demand has not returned to the 2009 level, which marked the highest record (Fig. 8.3). To examine the trend for recovery in demand the author compared data from 2011 to 2013 with the 2009 level. Figure 8.4 illustrates indices of the three categories, which are ratios of the number of visitors a month based on data for the same month in 2009. Among the three indices, the overnight index dropped far more sharply than that of day trippers in March 2011. Since then, the recovery process of the overnight index has been slower than that of day trippers as shown in Fig. 8.4. In March 2013, total demand came back to 90% of the 2009 level. The manager of the Kusunoki said that although data for 2014 are not yet fully aggregated, indexes were better than in the previous year. Roughly speaking, it took three years to fully get back to the previous level. Consequently, I can say that people involved in the Kusunoki overcame the challenge by bonding social capital. This

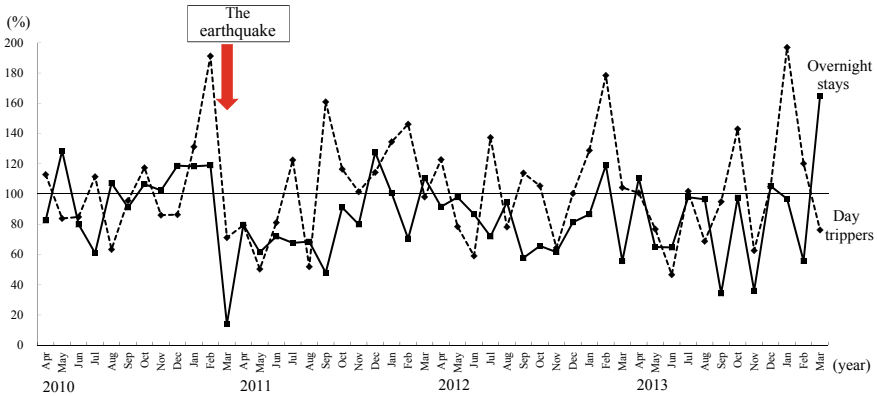


Fig. 8.4 Monthly trend of number of visitors to the Kusunoki (Index Based on 100 = Each Month in 2009). *Source* Kusunoki

strong tie among the people concerned is the advantage of traditional bonding social capital in a rural community.

8.4.4 Challenge 2: Succession, Cohesive Decision-Making, and PR Through Social Media

As I have seen above, the Kusunoki generates jobs and revenue in an ageing rural community by also playing a role as a community center that symbolizes communal bonding. Nevertheless, the Kusunoki has several issues for future evolution although those employees who work there are satisfied with what they do. The first challenge is to secure successors. The same staff has been involved since the inauguration of the Kusunoki, so they are getting old. It is necessary to have a smooth transition to the younger generation. Those who are in their 30s living in the hamlet, however, have stable jobs already and work outside of the hamlet. Even if they return to work for the Kusunoki, the present price level for accommodations is not high enough to earn revenue sufficient to pay for fulltime employment of a young staff. If the accommodation price goes up, the number of visitors will decrease unless attractive new services are offered. There could be an option to form an NPO or a community-based private company. People in the Kusunoki, however, are not sufficiently self-confident about their own entrepreneurship to start a new business evolution. Another reason for this reserved attitude toward a business evolution is that they respect the principle of community consensus-making. They are still skeptical about the decision-making ways of NPOs or private companies because these decision-making ways will not be compatible with the consensus-oriented community principle. If an NPO or private company is set up, then quick decisions are necessary, which is different from what they are now doing in the community. Another point is that

these entities are not always compatible with the community-based subsidy principle urged by the municipality as well. This is a dilemma that the Kusuniki people face between the community-based principle and further development of tourism activity. Although two families with children immigrated into this community before the earthquake, one family left because of the fear of radioactivity immediately after the earthquake and was followed by the other. After that, by March 2015, two families and one couple had newly settled into the community. How to promote the entry of newcomers into the community is an emerging common topic for every rural community.

The second challenge is the renovation of the facility; for example, to renovate a much-aged wooden floor of the hall although that floor promotes warm nostalgic feelings. The issue of renovation is inevitable for users of the aged school facility.

The third challenge is the issue of PR activity, which does not need immediate action but would become crucial in the long run. The Kusunoki does not practice PR activity except for their own website and linkage with the website of the local municipality, so that word of mouth by visitors is the most frequent means of PR. A PR activity that is oriented toward a social networking system (SNS) will be necessary in the future; therefore, the younger generation, which is good at dealing with SNSs, should be recruited for any form of involvement.

Consequently, it should be noted that community-based tourism activity of the Kusunoki will reach a turning point with the progression of ageing among the people concerned. In any case, capability building, especially targeting the younger generation in the area of SNS marketing and language skills in English, to cope with potential inbound demand is necessary. Raising rural entrepreneurship compatible with the community-based mind is the challenge ahead for this community. This challenge is common to all rural areas. It should be noted that ageing of bonding social capital places limitations on its capability to cope with these aspects of entrepreneurship and networking with external human resources.

To summarize, these facts mean that the ageing bonding social capital is not sufficiently effective in coping with newly evolving circumstances under conditions of an ageing population but is effective in overcoming the effects of a natural disaster through a community consensus. Thus, since bonding social capital becomes old along with the ageing of the community, it is time for those people involved in the Kusunoki who have developed social capital solely based on a network within the local community to expand the network to outside of the community, i.e., bridging social capital. This would enable them to mobilize external resources while keeping the advantages of bonding social capital. It is also true, however, that it is often difficult for local people to expand the network beyond the local community. In this respect support measures are necessary to create opportunities to build a new network.

8.5 Conclusion

Ageing is an unavoidable common issue not only for individuals but also for society in general. This chapter shed light on community-based tourism activity as an entity of bonding social capital in super ageing rural Japan, which has faced ageing issues earlier and more seriously than any other counterpart in the world. This chapter investigated the evolution of a study case in rural Chiba and how people there coped with challenges by focussing on an unexpected challenge, i.e., the negative impact of the huge earthquake and subsequent radioactivity disaster that occurred in March, 2011, and an expected challenge, i.e., transition to the younger generation. Main findings are as follows:

First, rural tourism in Japan has distinctive characteristics different from their Western counterparts, which are more institutionally constrained on the demand side and with a low incentive for farmers to launch tourism activity due to the large portion of their income from off-farm jobs. Because of these constraints, rural tourism operators have to depend on day trippers.

Second, the study case, the Lodge Kusunoki, investigated in this study was based on a tight communal bandage and conducted rural tourism activity by utilizing a closed school that was renovated. Youth groups are a main target and meal services are also provided to local residents. Rural tourism activity generates not only an income source and jobs but also self-confidence among residents in the ageing rural community, which strengthens community ties.

Third, with this bonding social capital, despite facing a drop in the number of visitors and the slow recovery after the Great East Japan Earthquake, this unexpected challenge was overcome by community unity, which is the advantage of bonding social capital.

Fourth, on the other hand, the rural community cannot cope well with issues of transition between generations and transformation of business forms, which is the limitation of bonding social capital.

Consequently, it should be noted that when a population becomes older, bonding social capital becomes older as well. While keeping the community-based spirit, the need to explore how to build a new extensive network of information and human resources based on the traditional form of local community is inevitable. Therefore, it is necessary to provide support measures to facilitate the development of an open network especially focussing on capacity building in terms of rural entrepreneurship targeting younger generations in collaboration with external technical experts.

In this respect, how to effectively expand the network from bonding social capital to including those outside of the community and how to make a smooth transition from the present participants to the younger generation should be scrutinized in the next study.

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Chapter 9

Measuring Labour Productivity and Market Viability of Community-Based Rural Tourism



9.1 Introduction

Activities in rural tourism have been diversifying, and a firm market for some of these activities has developed. Whether development of rural tourism can be sustained is dependent on whether rural operators can appropriately respond to emerging new social demands for recreational and educational functions of agriculture and the rural environment. Rural tourism's endogenous utilization of rural resources increases in importance in this context. Through exploration of rural tourism activities and their relationship with rural resources, new roles for agriculture and the countryside can be revealed, which will eventually lead to further diversification of rural tourism activities.

The relationship between endogenous utilization of rural resources, including agriculture, and actual rural tourism activities has been given little attention conceptually and empirically from an economic perspective. This is despite the fact that farm and rural tourism has been intensively analyzed from various disciplines (Bryden et al. (1993) for the British, French and German cases, Maude and van Rest (1985), Hoyland (1982), Evans and Ilbery (1989, 1992a, b) for British, Pevetz (1992) and Pichler (1991) for Austrian, Oppermann (1997) for German, Vanslebrouck et al. (2005) for Flemish, Ohe and Ciani (1998) for Italian, and Ohe (2008a, 2010) for Japanese cases) and anecdotal reports (Nakamichi 2003)).

A characteristic of rural tourism is that it is a labour intensive service activity, which differs from production of traditional farm products. Thus, in examination of rural tourism, it is necessary to examine the factor input relationship of human resources and utilization of rural resources and to clarify conditions for viable development of new markets for these services. For this purpose, we should evaluate each

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activity involved in rural tourism, not rural tourism in general. No previous study has fully addressed the issue of rural tourism from these aspects. For example, Hall et al. (2005) dealt with rural tourism from the aspect of sustainable business and Hall and Richards (2000) approached it from community development aspects. Fleischer and Tchetchik (2002) took the approach of the production function and Vanslebrouck et al. (2005) and Ohe (2007, 2008b) examined the relationship between multifunctional aspects of farming and rural tourism. Robinson et al. (2000) and Pender and Sharpley (2005) studied management issues.

In this chapter, I will firstly conceptually characterize rural tourism activity in comparison with past production of farm products and tourism activities resulting from rural resource use and provide a basic framework to conduct an empirical evaluation of the state of market formation of rural tourism activity in Japan. Secondly, I examine the relationship between utilization of rural resources and rural tourism. Thirdly, I estimate marginal labour productivity of rural tourism activities and examine the formation of the market for rural tourism in connection with utilization of rural resources. Finally, I consider policy implications for the development of rural tourism.

9.2 Conceptual Consideration

9.2.1 *Declining Process of Rural Resource Use and Emerging New Social Needs*

I give conceptual consideration to rural resource use, which sets the foundation for a conceptual framework for the following empirical studies. To this end, I contrast two processes of utilization of rural resources to characterize the present trend of such utilization compared with that of the past.

Firstly, I look at the process of decline in rural resource use during the phase of rapid economic growth, such as the high economic growth period in Japan after the Second World War. Suppose one typical model farmer or a group of farmers, and this farmer or group acts along with the principle of subjective equilibrium when the farmer or the group uses farm resources. Suppose there exists a labour market that enables farmers to hold off-farm jobs and to set an opportunity cost of labour. Figure 9.1 illustrates the level of activity in utilization of rural resources or products made from such rural resources, including agricultural activity. Specifically, products include processed food made from farm products such as seasonings like soy sauce and miso, or soybean paste, in the Japanese case, rope made by rice straw, and traditional rural crafts and cuisines. During this period, rural resources were fully utilized. *MR* symbolizes the farmer's marginal revenue line and *MC* the marginal cost line measuring the quantity of farm products from farm and rural resources horizontally and the value vertically. To simplify the discussion here, *ceteris paribus*,

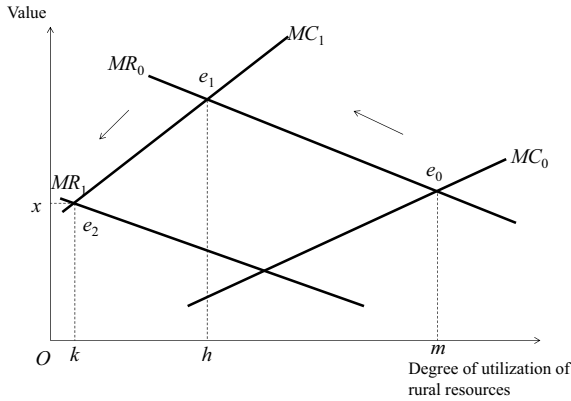


Fig. 9.1 Declining process of utilization of traditional rural resources

only labour input is considered because these products require intensive labour input. The initial equilibrium point is e_0 where MR_0 meets MC_0 .

As economic development progresses, MC , the marginal cost line, will shift left upwardly from MC_0 to MC_1 due to the rising opportunity cost of utilization of these resources. The reason for this rising opportunity cost is the increase in wages in the fast growing industrial sector. This rise in industrial wages affected farm wages, causing wage increases in the farm sector and eventually resulting in an increase in farmer’s opportunity cost of these traditional on-farm activities. This process is based on the historical events that Japanese society experienced during the era of high economic growth. This rise in opportunity cost influences the whole range of farm and rural activities. Consequently, a new equilibrium will move leftward from the initial point e_0 to e_1 where the activity level or quantity of products is lowered from the initial level Om to Oh .

On the other hand, the increase in industrial mass production of traditionally processed food, e.g., soy sauce and miso, replaces the demand for these domestically produced products provided by farmers themselves. This demand shift causes a shift in marginal revenue from MR_0 to MR_1 , then the equilibrium point moves more leftward to e_2 . So if the demand will drop further, the operation will be halted since the final equilibrium point e_2 is the lowest operational limit (Ox).

Thus, it is safe to say that this process of rise in opportunity cost and shrinkage in demand describes the pathway by which traditional farm products and full utilization of rural resources became history. The abandonment of the woodland and grassland adjacent to agricultural settlements, called ‘Satoyama’ in Japanese, was a typical example of the desolation of rural resources despite Satoyama’s significance in maintaining biodiversity and its richness in useful rural resources that support traditional farm life (Takeuchi et al. 2003).

9.2.2 Emerging New Market

Secondly, let us explore the recent trend of rising demand for rural tourism, rural amenities, and the educational function of the rural heritage and the environment, which is generalized as multifunctionality of agriculture (for multifunctionality see OECD (2001, 2003, 2005), Brouwer (2004), van Huylenbroeck and Durand (2003) and Ohe (2007)). The rural indigenous environment and heritage are reflected in this new demand. In this context, there is commonality with the traditional products in terms that both originate from rural resources. Nevertheless, the demand is not for traditional farm products per se but is a different demand emerging as a new market resulting from social development.

The following points explain how new market goods and services differ from past products. First, these new social demands for recreational and educational purposes have characteristics of service goods in addition to farm processed products. Secondly, these new services have the positive externality typically observed as multifunctionality due to the initial stage of the market formation and partly to its trait of public goods such as maintenance of the cultural heritage and bio/cultural diversity and educational effects with regard to these aspects and the rural environment. ‘Satoyama’ and the terrace paddy are the most typical traditional rural resources that are now attracting increasing attention for this purpose in Japan (Takeuchi et al. 2003). Therefore, I need to position services related to these resources as a new market.

In Fig. 9.2, D symbolizes the demand line for a rural tourism service and MC the marginal cost line measuring the quantity of farm products by farm and rural resources horizontally and the value vertically. To simplify the discussion here, ceteris paribus, only labour input is considered because these products require intensive labour input. Figure 9.2 has two kinds of marginal cost lines due to the existence of positive externality; MC represents the farmer’s marginal private cost line and SC represents the marginal social cost line.

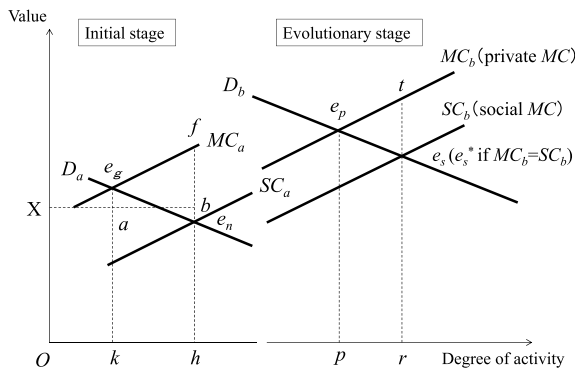


Fig. 9.2 Diversified markets for rural tourism and market equilibrium

In taking into account the newness of markets, I take up two cases; one is at the initial stage of market formation (initial stage), and in the other case the markets are already formed (evolutionary stage). First, suppose an activity having a market at the initial stage and the market equilibrium is attained at point e_g (activity level Ok). The price e_g is low and only slightly higher than the break-even level $Ox (=ka)$ and the market size is small. If this activity has positive externality to society, then the social optimal point is achieved at e_n . The price at e_n , however, is lower than the break-even price ka . This point, therefore, is not a private optimal point for farmers. A typical example of this case is when farmers provide these services free of charge or only recover the cost of materials. The cause of this phenomenon is considered to result from asymmetric information in that people know little about these services provided by farmers and thus, in general, do not recognize these services as an object of payment but as a kind of free externality. Another reason is that farmers themselves often think of these services as a kind of volunteer activity, and the traditional rural mentality tends to avoid talking about the issue of money. In this respect, it is considered to be a market wherein the rational factor input relationship to be reflected upon has not yet been established. In this context, the activity is not viable and therefore not sustainable. In that case, it is rational for farmers not to be involved on a full-time basis but on a part-time basis at most.

The evolutionary case is that a market has been formed. Point e_p is a private optimal point if externality does not exist. If positive externality exists, then the social optimal point is e_s . When farmers are not compensated by society for the externality they produce, e_s is not an optimal point for farmers but e_p is. Unless farmers are paid for te_s , that is, the vertical difference between MC_b and SC_b , the unit of externality they produce, e_s , is not optimal for them. Thus, in terms of the factor input relationship, farmers' rational choice is to stay at e_p . However, this is not socially an optimal point although the gap between MC_b and SC_b narrows more than that between MC_a and SC_a ($fe_n > te_s$) because some of the externality has already been internalized in the development of the market.

To attain socially optimal resource allocation, a subsidy such as the direct payment program will be effective for the moment, as implemented in EU countries and Japan. In this respect, it is true that the direct payment program gives incentive for farmers to maintain the activity level at Or and to internalize the externality to some extent into the farm business. Nevertheless, because direct payment is a product of the political process and there is difficulty in accurately measuring externality, this program does not always guarantee the achievement of internalization. Unless the new activity becomes economically viable, essentially externality is not internalized. In short, this is a limitation of the multifunctionality perspective. Put differently, the multifunctionality perspective can underpin direct payment but cannot always sustain the success of a rural tourism activity. This is why it is necessary for farm policy to promote rural tourism by way of internalization of the externality into the farm business.

If farmers try to internalize the externality by their managerial efforts, the MC_b line will shift down to the SC_b line. Eventually when MC_b will overlap SC_b , both social optimal and private optimal resource allocations are attained all at once (e_s^*). What

is important here is that this process inevitably activates how to utilize rural resources effectively and uniquely. It is safe to say that this is an endogenous innovation in utilization of rural resources. It is an empirical issue to evaluate how these managerial efforts are reflected in the outcome of rural tourism activities.

As already mentioned, the positive connection between rural resources and rural tourism cannot be established without necessary conditions being met. It is not enough to evaluate the formation of a market by simply evaluating the relationship between rural resources and the activities of rural tourism. I shed light on, therefore, the supply side of rural tourism by paying attention to the following two points under the assumption that the demand conditions are constant.

The first point is the factor input relationship to judge whether a market is formed and viable. This is because rural tourism is not a service with an already established market. Thus, if we observe the state of a factor input relationship in the market, we then can recognize whether the market is formed and viable. I focus on labour as an input factor because endowment of rural resources and rural culture embodies labour and rural tourism involves labour intensive services. Also, although capital is an important input, data are not available. However, I cannot recognize the managerial effort of internalization, narrowing the gap between SC and MC , from results of estimation of production elasticity because production elasticity only shows that private optimal behaviour is taken. Thus, I need to consider the second point.

In the second point, I estimate supply shift effects to evaluate the relationship between endogenous utilization of rural resources and rural tourism. There are two kinds of causes of supply shift: internal factors that farmers can control and external factors that farmers cannot control, such as external technological innovation. What I mainly focus on are internal factors such as labour conditions for agricultural production, richness of the heritage related to local food, activities for utilization of rural resources, etc. For instance, the value of the terrace paddy, despite having been considered as a low productivity area and often being abandoned, now has been rediscovered and maintained in an innovative way in cooperation with urban habitants who want to enjoy farming and the rural heritage. Newly developed products processed on the farm, rural cuisine, and a farming experience menu are also included in this category. If I detect any shift effect from these factors, I can say that these factors represent managerial efforts by farmers and local residents to narrow the gap between MC and SC . All of these aspects are empirical questions to be tested below.

9.3 Analytical Model

Keeping in mind the above aspects, I set up a simple analytical model that has two parameters of labour input: W_f and W_t . These parameters basically give information on full-time and part-time labour and the factor input relationship from the level of significance. Hence, it can be determined whether a market for each activity is formed and if the local employment effect can be clarified. Another parameter is to determine the supply shift effect: X .

$$Y = F(X, W_f, W_t) \tag{9.1}$$

where,

- Y sales from rural tourism activity
- X endogenous innovation of rural resource use
- W_f full-time labour input
- W_t part-time labour input.

We interpret the formation of a market from the two parameters of labour input as summarized in Table 9.1. If neither multicollinearity nor heteroscedasticity exists, the parameters of labour are classified into four types, sequentially indicating the degree of market formation.

In Case 1 none of the two labour parameters is statistically significant, which indicates that the factor input relationship does not exist. This means that the activity is not viable, which corresponds to point e_n in Fig. 9.2. In Case 2 and Case 3 only one of the two parameters is significant, meaning that the market is partially formed and viable. In Case 2 only the parameter of part-time labour is significant, so it can be said that this market is at the part-time stage. Case 3 is the stage at which I observe a factor input relationship only in full-time labour while the market size is not large enough to hire part-time labour in addition. These two cases are considered to have partially established and/or small markets, which correspond to point e_g .

In contrast, Case 4 has two significant parameters, which indicates that a factor input relationship is formed and viable involving both types of labour and consequently indicates that the local employment effect is the highest among the four cases. Case 4 corresponds to point e_p in Fig. 9.2.

In addition to the two parameters with significance, if I observe a significant parameter of the supply shift effect endogenously caused by innovative utilization of rural resources, then externality is internalized resulting in the shift of MC_b to SC_b and the optimal internalization is attained at e_s^* .

Table 9.1 Relationship between viability of market and statistical significance

Case	Parameter of full-time labour	Parameter of part-time labour	Viability of market
1	NS	NS	None
2	NS	S	Partially yes
3	S	NS	Partially yes
4	S	S	Yes

Note S, statistical significance; NS, not significant

9.4 Data

In terms of data on rural tourism, since there are no regular official data and availability of data in general is limited, data pooling and linkage with several sources of data are effective and necessary. I combined data as follows.

I obtained the main data on rural tourism activity from a survey by the Organization for Urban-Rural Interchange Revitalization in 2003, 'Data on Survey Results on Socio-economic Activity of Public Green Tourism Facilities' reported by the Committee for Understanding the Structure and Function of the Green Tourism Market published in 2004. This survey focussed on public facilities and published data are aggregated at the prefectural level, which is a limitation of these data. This does not mean that private activities are omitted in this survey because the actual activities are operated by local residents, including farmers, in public facilities. In this respect, these accommodation facilities are all community-based ones. Surveyed were the amount of sales for each activity, wages paid to full-time and part-time labour, and the number of employees as of 2002. Regarding factor input, no data other than those on labour are available. Although the data constraints are not small, there are no other nationwide data on rural tourism. For my purpose, I also used data from various other sources. Data on agricultural conditions were obtained from the Pocket Statistics of Agriculture, Forestry and Fisheries, MAFF in 2004. Data on local food cultural heritage comes from 'Results of Survey on Activities Regarding Succession of Food Culture Including Traditional Food and Utilization of Local Farm Products', MAFF in 2002. Unemployment rates in the prefectures were from the Labour Survey by the Ministry of Internal Affairs and Communications, MIAC in 2002. Average per capita income in each prefecture was from 'Economic Statistics in the Prefectures' by the Cabinet Office in 2002.

The eight activities that I analyzed were accommodations, direct selling, restaurant operation, recreation (sports, hot springs, aroma therapy, etc.), experience services comprised of farming, food processing, craft making, and appreciation or viewing (visiting rural heritage sites, museums, walking in the country-side, etc.). Experience services and appreciation or viewing have an educational function while the others have a recreational function. Regarding market size, direct selling accounted for nearly half of the total sales from the eight activities and is the largest activity, followed by accommodations (23%) and restaurant operation (16%). These three major activities accounted for nearly 90% of total sales. The market size of remaining 5 activities was small, with 8% of sales from recreation, less than 5% from the three experience services, and 1% from appreciation/viewing.

9.5 Correlation Coefficients Between Rural Tourism and Utilization of Rural Resources

I examine the relationship between the eight activities and utilization of rural resources. As indicators of the utilization of rural resources, I take into consideration agricultural conditions, local food heritage, facilities, and conditions of the local economy. Agricultural conditions and the local economy are not directly connected with the *MC* to *SC* shift in Fig. 9.2 but the local food heritage is because it typically represents the richness of the rural heritage and cultural diversity of the country; thus it has multifunctional traits and externality. Table 9.2 shows partial correlation coefficients between rural tourism and utilization of rural resources. Only significant coefficients are listed. Variables of activities took the logarithm form to compare the results with those of the model estimation below. Most of the coefficients are around 0.3, which is not high. We mainly look at variables with higher than 5% significance.

Three major activities have are associated with agricultural conditions and factors related to local food heritage to a certain extent. There is a correlation between women's role in agricultural conditions and direct selling and restaurant operation due to the significant role of women in rural tourism. Accommodations have a positive correlation with village agreements with regard to direct payment and the proportion of farm households in the village. These facts indicate that the cohesiveness of the rural community is important for accommodation activity because accommodation activity is often practiced as a community business in rural Japan.

With respect to local food heritage, as a software aspect, research on how to utilize local farm products has a correlation with the three major activities. Another interesting software aspect that has a connection with restaurant activity is the proportion of municipalities where people have a daily habit of eating traditional food. This proves the connection between the local food heritage and restaurant activity.

As a hardware aspect, having a traditional Japanese style facility is related to sales by direct selling. Thus, the local food heritage has, to a certain extent, a relationship with rural tourism from both software and hardware aspects. Among conditions of the local economy, average per capita income has a negative correlation with accommodation activity. The reason is considered to be that remote areas tend to have a lower average income and give more importance to accommodation activity than central areas.

To summarize, I could confirm a positive relationship between farm women and rural tourism and between local food heritage and restaurant activity. These factors could lead to endogenous innovation. Thus, when I control the factor input relationship of labour, how these endogenous factors work needs to be examined as shown below.

Table 9.2 Partial correlation coefficients between rural tourism activities and variables of rural resources

Variables	Accommodation	Direct selling	Restaurant operation	Recreation	Food processing experience	Farming experience	Craft making experience	Appreciation/ viewing
% share of agricultural sales	0.2824*	0.3455**	0.3654**					
Rice share in agricultural sales							0.2751*	
% women in farm population		0.3882***	0.4950***	-0.2872*				-0.2859*
% women in farm work force			0.3349**			0.2943**	0.3206**	
No. village agreements for direct payment	0.3853***							
% farm households in village	0.4443***		0.2431*				0.2567*	
No. local farm products utilized	0.2941**	0.3773***	0.2707*	0.2850*				

(continued)

Table 9.2 (continued)

Variables	Accommodation	Direct selling	Restaurant operation	Recreation	Food processing experience	Farming experience	Craft making experience	Appreciation/ viewing
No. financial support and PR activity for local farm products		0.3179**	0.2624*					
No. studies on utilization of local farm products	0.3318**	0.2976**	0.3326**					
No. facility building for processing and selling		0.3735***	0.3566**	0.3569**				
No. activities utilizing local farm products		0.3219**	0.3202**	0.3057*				
% municipalities where residents have daily habit of eating local traditional food		0.2737*	0.3392**				0.2763*	

(continued)

Table 9.2 (continued)

Variables	Accommodation	Direct selling	Restaurant operation	Recreation	Food processing experience	Farming experience	Craft making experience	Appreciation/ viewing
Traditional Japanese style facility		0.3111**						
Unemployment rate			-0.2487*					
Average per capita income	-0.3891***							

Source: In addition to data on Table 9.2, variables of agricultural conditions, local farm products, and traditional local food are from MAFF, Unemployment rate is from MIAC, and average per capita income from Cabinet Office in 2002.

Notes: ***, **, * correspond to 1%, 5%, 10% significance, respectively. Variables of activity took the logarithm form

9.6 Estimation Model of Marginal Labour Productivity

Estimation model in activity i ($i = 1, \dots, 8$) is as follows.

$$Y = e^{c+aX} W_f^\alpha W_t^\beta \tag{9.2}$$

Taking double logarithm of Eq. (9.2), then

$$\ln Y = c + aX + \alpha \ln W_f + \beta \ln W_t + \nu \tag{9.3}$$

where,

- Y annual sales of activity (10,000 yen)
- X_i variable i representing the degree of utilization of rural resources
- W_f wage payment of full-time labour (10,000 yen)
- W_t wage payment of part-time labour (10,000 yen)
- c constant
- a_i shift effect by endogenous utilization of rural resources
- α production elasticity of full-time labour
- β production elasticity of part-time labour
- ν stochastic error.

I look at the eight activities. The explained variable is the annual sales for each activity. The two explanatory variables of labour input are W_f , wage payment for full-time labour, and W_t , wage payment for part-time labour. Parameters α and β represent production elasticity of full-time labour and part-time labour, respectively. We must take care to measure the shift effect of revenue instead of the supply shift because it is hard to measure the actual supply shift accurately. If the supply curve, however, is elastic, I can assume a similar shift effect of revenue. We take this assumption since rural tourism goods are considered to be more elastic than ordinary farm products. Another explanatory variable X demonstrates the status of utilization of rural resources. Data are obtained from one of the variables in the above correlation analysis because these variables are correlated with each other.

Full sample size was 47 prefectures and the estimation method was ordinary least squares (OLS) except when heteroscedasticity was observed. When it was observed, then the bootstrap method was used.

9.7 Estimation Results

9.7.1 Evaluation of Factor Input Relationship

Table 9.3 shows the results of the estimation. Judging from the smallness of VIF, there was no multicollinearity problem. Since heteroscedasticity was observed in

Table 9.3 Estimation results of marginal labour productivity of rural tourism

Variables	In (sales)									
	Accommodations	Direct selling	Restaurant operation	Recreation	Food processing experience	Farming experience	Craft making experience	Appreciation/viewing		
In (Wage payment of full-time labour)	0.4644*** (5.95)	0.6267*** (5.95)	0.3552*** (4.36)	0.4367*** (3.85)	0.3638+ (1.47)	0.4493* (1.86)	0.5959*** (3.55)	1.2810*** (2.22)		
In (Wage payment of part-time labour)	0.3079*** (3.44)	0.1815*** (2.75)	0.3770*** (3.49)	0.3131*** (2.26)	0.3214* (1.82)	0.3784+ (1.68)	0.1674+ (1.32)	0.1487 (0.26)		
No. activities utilizing local farm products	-	-	-	0.0048* (1.75)	-	-	-	-		
Unemployment rate	-	-	-0.1618*** (-2.19)	-	-	-	-	-		
Japanese traditional style facility (yes = 1, no = 0)	-	1.7389**	-	-	-	-	-	-		

(continued)

Table 9.3 (continued)

Variables	In (sales)									
	Accommodations	Direct selling	Restaurant operation	Recreation	Food processing experience	Farming experience	Craft making experience	Appreciation/ viewing		
Constant	-	(2.10)	-	-	-	-	-	-	-	-
	3.8967*** (8.08)	4.2575*** (5.99)	5.1656*** (5.85)	3.4610*** (3.33)	3.4848** (2.74)	2.3770+ (1.52)	2.3814* (1.99)	-3.0878 (-0.69)		
Ajst R ²	0.8412	0.7348	0.6909	0.5650	0.3829	0.2699	0.3353	0.3536		
VIF	2.68	1.45	1.44	1.26	1.97	1.43	1.05			
Breush-Pagan test	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.			
Wald chi-square										7.17**
Method of estimation	ols	ols	ols	ols	ols	ols	ols	ols	ols	bootstrap
Sample size	41	43	42	32	27	33	31	22		

Source Same as Table 9.2

Notes Parenthesis is t statistic while it is z-value when bootstrap estimation is applied. ***, **, *, + (as reference) correspond to 1%, 5%, 10%, and 20%, respectively

appreciation/viewing activity, bootstrap estimation was performed. Parameters of rural resources with statistical significance are only listed. Since there were no previous studies for comparison, these results were accepted. First, let us look at the overall results and production elasticity of labour. The results of the three major activities (accommodations, direct selling and restaurant operation) and recreation showed relatively large goodness of fit and the two parameters of labour were both positive and statistically significant, which were the supposed results of a factor input relationship and corresponds to Case 4, which means that these markets are sufficiently economically viable. Activity-wise, direct selling and accommodations have the larger full-time parameters while restaurant activity has the larger part-time parameter. In service activities such as restaurant operation, sales will be determined by how to cope with fluctuations in daily or weekly demand. For this purpose, waiters or waitresses will play an important role. This is why of the activities analyzed restaurant activity has the highest part-time parameter with a high degree of significance.

To summarize, among the three major activities, direct selling has the highest production elasticity for full-time labour while restaurant activity has the highest production elasticity for part-time labour. In any case, these three major activities as well as recreation have a firm factor input relationship. Hence, results of our examination prove that markets for these activities have been established and have a larger employment effect than the other activities. These four activities commonly have a recreational characteristic.

I cannot, however, observe any apparent shift effect caused by software aspects with regard to utilization of rural resources with up to 5% significance. Only recreation activity has a positive shift effect caused by the number of activities utilizing local farm products with local food (with 10% significance). There is no shift effect in accommodations while there is a negative shift effect between the jobless rate and restaurant activity. This suggests that the restaurant business depends on local purchasing power, which is provided by income. Direct selling has a shift effect by the hardware aspect, indicating that a traditional Japanese style facility is effective in raising sales at direct selling stations. Strictly speaking, however, this is not exactly a revitalized or innovative utilization of rural resources.

Thus, while I observed a positive correlation between sales and rural resources, the relationship did not have a high degree of significance. A likely explanation is that even if a region has rich and diverse local resources as well as a food heritage, the effects of an endogenously innovative way of rural resource use will not be sufficient to create a shift effect that generates internalization of externality. This is the case even if the cultural background has been reflected upon in labour itself to some extent.

The results for the other four activities, that is, the three experience-related activities and appreciation/viewing, which are related to the educational function, show lower goodness of fit and only one of the two labour parameters has significance;

only full-time labour parameters have significance in craft-making and appreciation/viewing, indicating relatively higher production elasticity. This means that the market is not large enough to require both full-time and part-time labour even if it is not small enough to be managed only by part-time labour. Craft-making exactly fits this example due to its requirement for specialized techniques.

Food processing and farming experiences have neither full-time nor part-time parameters with significance up to the 5% level, but only a 10% level of significance in the part-time parameter of food processing. This means that the factor input relationship and the markets for these services have not been established yet or at most are only partially established requiring part-time labour, as with food processing. These two experience services are not considered to be provided as economically viable services but rather as collateral free services.

The full-time parameter in appreciation/viewing is larger than unity, which suggests economy of scale in this activity. In the case of ordinary tangible goods, labour is the operating input that has no economy of scale. On the contrary, in the case of appreciation/viewing, providing an explanation of what is viewed by participants can be elastic in terms of acceptance of numbers of visitors so that economy of scale can work easily. In short, the educational function corresponds to Case 2 or Case 3, which indicates a factor input relationship and that markets are partially but not yet fully established.

9.8 Estimated Labour Productivity

Calculated marginal labour productivity from the estimation results is shown in Table 9.4. For instance, in the case of full-time labour, I can obtain marginal labour productivity from the formula below.

$$\begin{aligned}
 \alpha &= \ln Y / \ln W_f \\
 &= (W_f / Y) \cdot (dY / dW_f) \\
 &= (\text{employment coefficient}) \cdot (\text{marginal labour productivity}) \quad (9.4)
 \end{aligned}$$

Marginal labour productivity was obtained by the estimated parameters, i.e., production elasticity, and the employment coefficient by the average of full-time or part-time wage payment in each activity/sales in each activity. Marginal labour productivity is greater than unity if dY (marginal revenue) $>$ dW_f (marginal cost) due to the value term evaluation here. If the estimated parameter did not reach the 10% significance level, then I consider that marginal labour productivity is zero.

The difference between the two types of activities, i.e., recreational and educational, is obvious. The three major activities show nearly unity or greater than unity, and direct selling has the highest marginal productivity for both types of labour input. Roughly speaking, labour productivity in every activity of the recreational function is nearly equal to unity or is greater than unity. This means that marginal revenue

Table 9.4 Estimated labour productivity of rural tourism activity

Activity	Full-time labour			Part-time labour		
	Marginal labour productivity	Production elasticity	Employment coefficient	Marginal labour productivity	Production elasticity	Employment coefficient
Accommodation	1.441	0.464	0.322	2.197	0.308	0.140
Direct selling	9.734	0.627	0.064	5.706	0.182	0.032
Restaurant operation	0.989	0.355	0.359	3.159	0.377	0.119
Recreation	1.771	0.437	0.247	0.759	0.313	0.412
Food processing	0	0	0.773	0.979	0.321	0.328
Craft making	0.448	0.596	1.330	0	0	0.313
Farming	0.264	0.450	1.704	0	0	0.296
Appreciation/viewing	0.147	1.281	8.699	0	0	10.836

Notes: Marginal labour productivity = production elasticity/ employment coefficient. Production coefficient is obtained by the estimated parameters with up to 10% significance and employment coefficient by (wage payment/sales). If MR (marginal revenue) > MC (marginal cost) then labour productivity > 1

nearly equals or surpasses marginal cost and that marginal labour productivity in direct selling is the greatest among the eight activities examined.

In contrast, marginal productivity is less than unity in activities with an educational function except for food processing. This means that the marginal revenue of these activities is lower than the marginal cost, and, therefore, I can say that these activities are not conducted as rational economic behaviour.

9.9 Discussion

Now I summarize characteristics of each activity from the estimation results in Table 9.5 Direct selling, restaurants, and accommodations have a relatively large market and viable factor input relationships and therefore are at least at a private equilibrium point e_p . These major activities have a local employment effect. It is considered that there is still, however, a gap between the marginal private cost, MC , and the marginal social cost, SC ; thus, I cannot say that the social equilibrium point has been attained.

In contrast, recreation has a small market size and is considered to be at a private equilibrium point e_g . The three experience services and appreciation/viewing have only a partial factor input relationship, and from the estimated marginal productivities even private equilibrium has not been attained and only externality is provided without receiving its full cost. Thus, it is considered that the equilibrium remains at point e_n , the social optimal but not private optimal point. This market is not viable and thus the situation is not sustainable over the long term.

In short, the findings can be summarized by two points. The first is that while sizes of certain markets already have been established and are viable for those activities with a recreational function, markets of activities with an educational function remain to be fully established and are not yet viable. The second is that endogenous innovation in utilizing rural resources remains to be detected.

The most probable reasons that this research was not able to confirm this endogenous innovation are the indigenous nature of the utilization of rural resources and the severe constraints on human resources. Specifically, I can point out the following four specific factors. First, since this innovation is in the form of software, it is often hard to widely grasp the effect, unlike that with the widespread hardware innovation in farming technology. Second, this effect is partly embodied in labour and realized as income for farmers. Third, it has an aspect of demand creation. Fourth, there is difficulty in creating endogenous innovations. Consequently, from the results it is considered that there is still a gap between private cost and social cost, meaning that externality is not yet internalized. Thus, I can say that rural tourism activity in general is undersupplied at an optimal social level. Put differently, the richness of rural resources that originally exists is not yet reflected in an economic outcome that ensures rural viability.

Table 9.5 Relationship between existence of market and statistical significance

Case	Function	Activity	Parameter of full-time labour	Parameter of part-time labour	Viability of market	Local employment effect	Internalization of externalities	Utilization of rural resources
2	Educational	Food processing experience	NS	S	Partially yes	Partially yes	Undetectable	Not high enough
3	Educational	Farming experience, craft making experience, appreciation/viewing	S	NS	Partially yes	Partially yes	Undetectable	Not high enough
4	Recreational	Accommodation, direct selling, restaurant operation	S	S	Yes	Yes	Undetectable	Not high enough

Note S, statistical significance; NS, not significant

Finally, measures that enable farmers to cover opportunity costs should be undertaken for activities that have a mounting demand. This point is crucial for improvement of service quality, proper social recognition of roles of these services, and eventually the sustainable development of the market for these services. It is effective to have policy measures that aim at reducing the information gap between the supply and demand sides and an institutional design for market formation. In the long run, an integrated program that induces endogenous innovation for sustainable utilization of rural resources should receive greater emphasis.

9.10 Conclusion

Although rural tourism has reached the stage of diversification, there has been little investigation of the viability of these markets for rural tourism. This chapter describes an empirical evaluation of the market viability of rural tourism activities by measuring labour productivity in Japan. These are the main points that have been revealed.

Rural tourism is different from traditional farm products in that it is a service-oriented good with positive externality and includes activities with different market sizes. Direct selling, restaurant operation, and accommodations are the three major activities that account for a large share of sales in rural tourism.

From an empirical evaluation of market formation of each activity and endogenous innovation of rural resource use, the activities of the recreational function have full-time and part-time marginal labour productivity with statistical significance while the activities of the educational function have only partial marginal labour productivity with statistical significance. The markets for these services have not been fully established or have not yet become viable activities.

We could not confirm the supply shift effect of endogenous innovative use of rural resources. Overall, the evaluation indicated that rural tourism in this county has not reached the level of complete internalization of externalities that are generated by farm activity and is undersupplied at a social optimal level.

Therefore, since rural experience services that have an educational function are attracting growing social attention, measures that increase the viability of newly formed markets should be undertaken. These measures should be more intensely developed as a part of rural tourism policy to ease the information gap on rural tourism between the rural supply and urban demand sides and to create institutional conditions for capacity building of farmers to promote endogenous innovation in the utilization of rural resources. Finally, the operational efficiency of individual rural tourism units was not evaluated, which is a limitation of this study. Further study is necessary in this respect.

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Part IV
Overcoming Challenges
and Entrepreneurship

Chapter 10

Evaluating Integrated On-Farm Tourism Activity After Rural Road Inauguration



10.1 Introduction

Transportation is a crucial issue in tourism (Page 2005). In relation to the economics of tourism, Sinclair and Stabler (1997) cited the importance of demand aspects and the market structure of transportation. Bull (1991) noted that government investment in infrastructure, including roads, is necessary for the development of tourism. [For other citations on the economics of tourism see Lundberg et al. (1995), Tribe (1995), Cullen (2002), Mak (2003), Vanhove (2005)].

Roads are especially indispensable to the development of rural tourism because of the low availability of other means of transportation in rural areas. Rural tourism has attracted growing attention as a measure to counter the harsh environment of intensifying global competition in the farm trade to ensure the survival of farm households (Sharpley and Vass 2006), especially those in less favoured areas or countries. Despite research on rural tourism as an independent field of research from a wide range of aspects (Butler et al. 1998; Tribe et al. 2000; Roberts and Hall 2001; Hall et al. 2003, 2005) and regional perspectives (see Bryden et al. 1993) for the Western European perspective, WTO (2004) for countries in economic transition in Eastern Europe and APO (2006), and Ohe (2008) for the Asian perspective), how the impact of road building should be integrated into farm business has not been fully studied except from the viewpoint of the environmental impact (Tribe et al. 2000). As this chapter demonstrates, the impact of road building on rural tourism activity is that the demand-shift effect exceeds the supply-shift effect. The full significance of this point has not been addressed in the literature on farm diversification and rural tourism; even policy-making authorities have not fully recognized its significance. In order for farmers to take full advantage of the demand-shift effect they need to integrate on-farm tourism activity with farming activity into a single entity.

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Studies on rural tourism have often approached integration issues from two sides: tourism and farm activity. Haines and Davies (1987) and Slee (1989) shed light on tourism activity from the perspective of diversification of farm activity. Bowen et al. (1991) dealt with the connection between the agricultural and tourism aspects. Nickerson et al. (2001) and McGehee and Kim (2004) studied the motivation of operators for diversification that would include rural tourism. Busby and Rendle (2000) focussed on the tourism aspect, especially on the formation of rural tourism as a sector in its own right. Ohe and Ciani (1995) empirically studied agritourism in central Italy and clarified the types of agritourism in relation to farm size. Yoshida (2005) econometrically studied attitudes of operators of rural tourism. Vanslebrouck et al. (2005) evaluated positive and negative synergy effects between agriculture and tourism activity. Ohe (2007) focussed on a case study of a farm engaged in rural tourism from gender and multifunctional aspects. These studies contributed to the development of the field of research on rural tourism. Studies that shed more light on the integration of farm and tourism activities should be continued because as the development of rural tourism increases more fully integrated farm-resource management is necessary.

To further the understanding of the integration of farm and tourism activities, we should appropriately evaluate on-farm tourism activity by taking into account unique features of tourism activity and how tourism and farming activities can be integrated. For example, in their work, Sharpley (1996) and Sharpley and Sharpley (1997) dealt descriptively with marketing and pricing aspects, which are important aspects of that integration. Integration of tourism and farm activity, however, has not been fully examined.

Regarding studies of rural tourism focussing on Asian pick-your-own (PYO) farming, although Lee (2005) examined PYO in Taiwan, the issues of transportation and integrated activity were not examined. Ohe (2005) evaluated the effect of rural roads on on-farm tourism activity in Japan. That study, however, only focussed on the spatial difference between beneficiary and non-beneficiary areas without giving attention to farmers' own managerial efforts. Hence, we need to evaluate the effects of rural road building from two aspects: external and internal conditions of the farm. It is important to clarify what sort of internal management efforts and factors are needed for the better integration of farm activities with tourism management, which are software aspects, in addition to the improvement of roads as a hardware condition.

Thus, this chapter evaluates performance of farmers by focussing on PYO fruit farming activity as one type of on-farm tourism activity after rural road building in Gunma prefecture, Japan. First, I conceptually characterize the impact of rural roads on tourism farms and the integration of farm activities. Although on-farm tourism activity is not confined to PYO, the conceptual framework presented in this chapter captures the features of that on-farm tourism activity, including rural tourism in general, in comparison with production of traditional farm products. Second, I statistically evaluate how spatial distance from the new roads affects the performance of farmers' tourism activity by using geographical information systems (GIS) data. Third, I estimate the determinant function of integrated tourism activity of PYO farms by using ordered logit regression to clarify what on-farm factors practically

determine the outcome of their farm business in considering distinctive characteristics of tourism activity. Finally, I discuss policy implications with regard to integrated farm diversification through tourism activity.

10.2 Framework: Pattern of Impact of Road Building

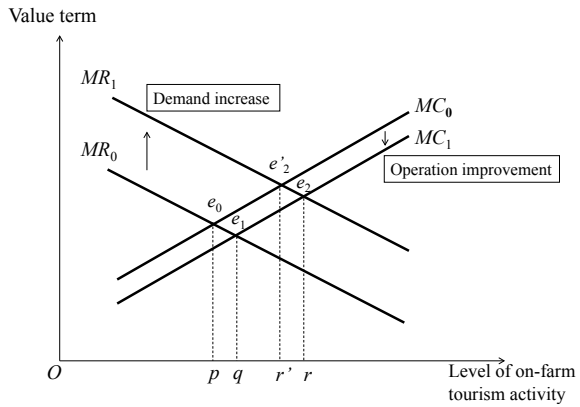
The author explores a conceptual framework that enables us to clarify how the external impact of road building transmits to farm business performance. Table 10.1 contrasts the benefits of road building between the ordinary farming case and the tourism farming case. In the ordinary farming case, roads only make the supply curve shift downward due to the reduction of transportation costs for shipment to the urban market. In contrast, in the case of tourism farming not only the supply curve but also the demand curve will shift. Demand upward shift occurs due to easier access to the farmyard for tourists. Supply downward shift also occurs, but it is much milder than that of the ordinary farming case. This is because tourism farms in general do not have to ship their products to the urban market, so that benefits to the supply side are only limited to facilitation of the farming operation. In short, with tourism farming, the benefit of road building will have effects on demand creation different from those in the case of ordinary farming.

This consideration is depicted in Fig. 10.1. Figure 10.1 illustrates the effects of rural road building in the case of on-farm tourism activity by measuring on-farm tourism activity horizontally and the value term vertically. Suppose a farm conducting on-farm tourism activity. Generally, the cost of rural road construction is paid by the public sector so farmers do not have to assume that cost. In this model the road construction cost is not considered because Fig. 10.1 is illustrated from a farmer's perspective. MR_0 meets the marginal cost line MC_0 at e_0 . This is the initial equilibrium point for this farm. Marginal revenue lines are depicted as right downward lines because farms conducting tourism activity often have repeat visitors, which means that some consumers are loyal to a particular farm's products. This is

Table 10.1 Effects of rural road building on farm activities

Activity	Farming	Farming + tourism
Sales channel	Market shipment	Direct selling
Demand curve shift	No	Yes
	–	External condition: improvement in access for tourists Internal condition: progress in integration of farm activities
Supply curve shift	Yes	Yes
	Cost reduction in transportation	–
	Improvement in farming operation	Improvement in farming operation

Fig. 10.1 Impact of rural road building on on-farm tourism activity



based on the fact that every PYO farm in this area has a certain level of repeat visitors. Then, after road building, the *MR* line will shift upward because a farmer will be able to have more visitors due to the improvement of accessibility to PYO sites and farm shops. These effects will result in an increase in farm revenue. Of interest is that the shift of *MR* will be, for the following reasons, larger than that of *MC*.

In the case of on-farm tourism activity, farmers do not have to ship farm products to markets in urban areas. For those farm households not conducting tourism activity but engaged in ordinary farm production and market shipment, however, road building reduces transportation costs for shipment to the urban market. This reduction of transportation costs is considered larger than the cost reduction of facilitating the farm operation. This means that benefits that emanate from the downward shift of *MC* for on-farm tourism farms will be smaller than for farms engaged in ordinary market shipment. Overall, the shift of *MR* will be larger than that of *MC* for tourism farms. What matters next is to clarify what mechanism in terms of tourism-integrated farm management works these possible shifts.

10.3 Conceptual Framework: Process of Integrating the Impact

Although road building directly and primarily benefits farm operators, the effects are actually determined not only by physical road building as an external factor for farms but also by internal initiatives that enable farmers to successfully integrate on-farm tourism activity with farm management by taking full advantage of such roads. Therefore, the higher the management skills for integration a farmer has, the better business outcome a farmer will have. This relationship is considered as more important and complicated than that of ordinary agricultural activity that does not include tourism activity. This is because unless on-farm tourism activity is well integrated with farming, the entire performance of the farm business will not go well.

Put differently, the better the integration is done, the larger will be the upward shift of demand. Thus, this aspect should be considered properly; otherwise the external reason for road building will be overestimated as the cause of the demand upward shift from MR_0 to MR_1 and, conversely, farmers' own efforts will be underestimated.

This results from the service production characteristic of tourism activity. Service goods, unlike tangible goods, have the unique characteristic of production simultaneous with consumption because consumers directly take part in the production of the service [for details on this simultaneity, see Hicks (1971), Hill (1999), and Ohe (2003)]. Because of this simultaneity a farmer needs to conduct service management carefully to deal with visitors or potential visitors [for a perspective of rural tourism as a business, see Page and Getz (1997)]. This is why tourism that produces service goods and farming activities that produce tangible goods should be integrated.

Keeping these characteristics in mind, the author explores the process of integration between farming and tourism activities after road building. Figure 10.2 depicts how road building as an external factor affects business outcomes of farms. Evaluation 1 indicates a conventional direct evaluation of the effects of road building as an external condition. This is a simple model of a cause and effect evaluation. Evaluation 2 takes into account the process of integration of tourism activity. I consider four categories for integration that encompass a broader perspective of farm management than ordinary farm production when taking into account service marketing management: sales channels, customer service, and farming, with the fourth category being common factors for the three activities.

The integration process does not start until farmers proactively embark on integration and exert their own initiative in mobilizing on-farm resources to realize better

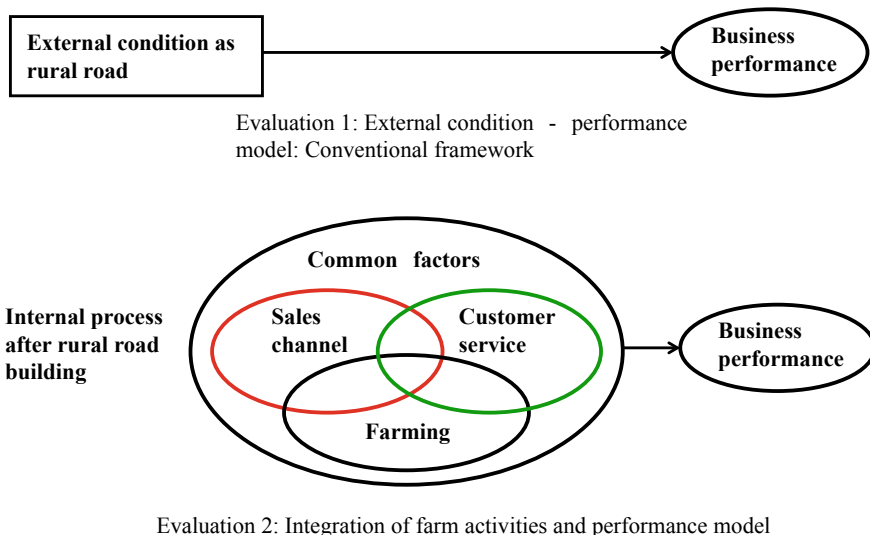


Fig. 10.2 Process of the effect of road building on business performance of farm tourism

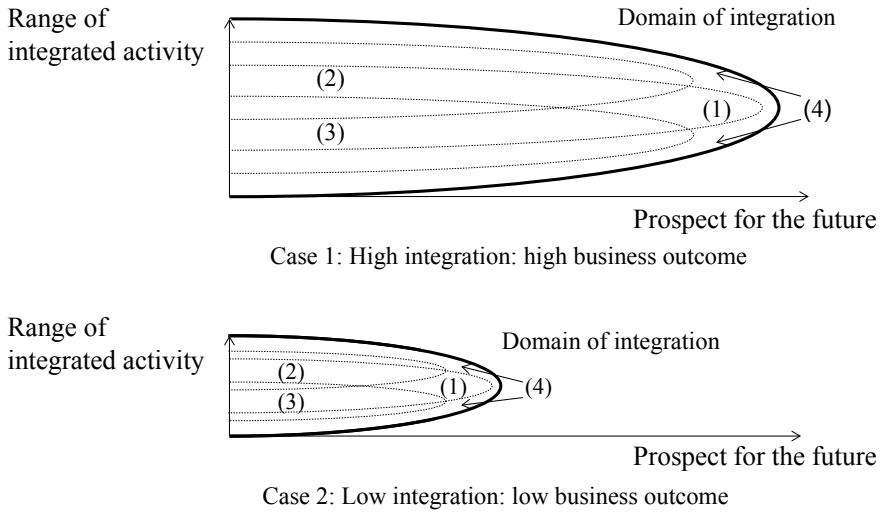


Fig. 10.3 Conceptual image of degree of integration: two contrasting cases. *Note* (1), (2) and (3) represent activities to be integrated and (4) indicates common factors

integration of farm activities. In reality, the degree of integration is not observable; therefore, I attempt to make it visible in the following way. We consider the business outcome as a proxy variable for the degree of integration because what is observable is the business outcome. This hypothesis is depicted in Fig. 10.3, whereby the total area of the bullet-like shape indicates the degree of integration and business outcome. As already mentioned, this hypothesis is based on the assumption that the better the integration, the better the business outcome under identical conditions. Two typical cases are illustrated: one shows good business performance with good integration (Case 1) and the other shows low performance with low integration (Case 2). The differences between the two cases are apparent at two points; the integration is conducted not only between present activities measured vertically but also between the present and future vista for integration measured horizontally.

Figure 10.3 demonstrates four integrated activities indicated by (1), (2), (3), and (4) which are not specified a priori but empirically. In Case 1, good integration is attained not only in quantity indicated by the total area but also in quality in terms of consistency.

Regarding the future prospects for integration, one indicator of successful integration is whether a farmer has a clear vision for the future in addition to integration of activities at present. This means that a farmer will behave by taking into account the future evolution of his or her farm activity. Thus, the longer and clearer is a farmer's vision for the future farm activity based on his or her own initiative, the better will be integration and therefore the better will be the business outcome. Here I call these factors representing a longer perspective "vision variables".

The next question is to clarify what factors actually influence integration. I consider the above-mentioned four categories of activities and factors corresponding to Fig. 10.2 in evaluating the level of integration. These variables are supposed to represent the degree of a farmer's own initiative. First, how to deal with the issue of sales channels is crucial to integrated farm activity. Setting up farm shops is the most apparent effect of the inauguration of the rural road in this respect. Second, how to deal with visitors is another important aspect of integration. Customer service and promotion of activities for consumers are included in this category. Third, we should look at how agriculture is integrated with tourism activity. For instance, to attract visitors it is quite effective for farmers to extend the period of picking as much as possible. For this purpose, the combination of fruit varieties is often altered to extend the harvest periods for visitors. Fourth, I consider common factors working on integrated on-farm resource mobilization and on business outcome.

Bearing in mind the above considerations, the analytical model is as follows. The model is determined by the vector of present-performance variables, the vector of vision variables, which represents prospects for the near future, and the vector of common variables. The vectors of present-performance variables and of vision variables are composed of three categories of variables: sales channels, customer service activities, and agricultural factors.

$$P = f(\mathbf{r}, \mathbf{v}, \mathbf{n}) \quad (10.1)$$

where,

P performance of entire farm business

\mathbf{r} vector of present-performance variables: sales channels, customer service activities, and agricultural factors

\mathbf{v} vector of vision variables: sales channels, customer service activities, and agricultural factors

\mathbf{n} vector of common factors.

10.4 Outline of the Study Area

The study area is Numata in Gunma, in the northwest part of the Kanto plain, about a two-hour highway drive from Tokyo. The Numata city government has taken the initiative of promoting fruit production by transforming rice paddies or mulberry fields due to overproduction of rice and declining sericulture, which had been the main industry in Gunma until the 1970s, to the production of fruit. Fruit production in this area developed by way of PYO rather than market shipment because farmers in this area were latecomers to fruit production and urban markets were saturated with fruit products from other large production areas that were already famous. The basic structure of PYO fruit farming in the study area has not changed since our survey was made.

What I focus on here with regard to road building is not large scale road construction such as highways, which often have an inter-regional impact, but rural roads that only locally exert effects on farming and life, which are often called rural or farm roads. The reason that roads were built in this area was to improve the transportation infrastructure between villages for both farm activity and life because villages had been separated by valleys and mountains, with no direct connection.

The prefectural rural road-building project was started in 1994 under the administration of the agricultural section of the prefecture. The initially planned 3.7 km had been completed in 2002. The total width of the road is 9.5 m, including pedestrian sidewalks, and the effective width is 5.5 m. Further, the Japan Farmland Development Corporation (transformed into the Japan Green Resources Corporation since 2000) under the administration of the Ministry of Agriculture, Forestry and Fisheries (MAFF) has been constructing another farm road which was begun in 1992; 11 km were completed at the time of our survey in 2000 while 30.5 km were initially planned (total width, 7 m; effective width, 5.5 m). The prefectural road is termed the *Furusato* (Hometown) rural road and the road built by the Corporation is termed the “nostalgic coming home (Bokyo) route.” These routes are now expected to play a role in promoting tourism development in this area. The building cost of these roads was all borne by national and local governments because roads are public goods. Initially, the main focus of these road-building projects was to improve farming conditions as industrial policy under the initiative of agricultural-related administrations. Of course, without doubt, these roads also had a beneficial effect on the daily lives of the rural residents. We need to pay attention to this aspect as well in the empirical evaluation below.

10.5 Data

Data were collected by a questionnaire survey of farmers in the study area conducted by the author from August to September in 2000 with cooperation of the local villages in the study area. Before developing a questionnaire for a survey to understand the agricultural situation and road building progress, I interviewed city officials, extension services, agricultural cooperatives, and farmers. Based on these interviews, I devised a questionnaire and implemented a preliminary survey of executive members of the apple farmers’ cooperative, which had the largest membership among PYO farmers in Numata. Then I revised the questionnaire and surveyed 160 farmers. The surveys were distributed to all targeted farmers on fruit growing farms through the village administrative network and were recovered through this network. The response rate was 88.1%, and the sample size was 141 farms. I asked farmers about farming activity, tourism activity, impact on their farm business and life by newly built roads, problems with their business and support measures they needed, location of the farm shop and farmhouse, etc. The surveyed locations of newly built roads, farmhouses, and farm shops were translated into GIS concentric polygon data.

Weather conditions in the surveyed year, 2000, and the prior year, 1999, were not bad because the rice production indexes in this prefecture were the same, at 102, for those two years, which was slightly better than in the average year. This index reflects weather conditions in the production area and is the most widely used agricultural production index in this country because rice is the most common crop in Japan.

Therefore, I can assume that weather conditions in 2000 caused no specific bias on the outcome in the surveyed farms.

10.6 Evaluating Effects of Distance from Roads

I conducted two empirical evaluations designated as evaluation 1 and evaluation 2: the investigation of the effects of the distance from roads as direct effects of road building and the estimation of the function determining integrated tourism activity, respectively. Table 10.2 shows results of the evaluation using the chi-squared test of how distances from roads, i.e., concentric polygon GIS data, affected farm business and life; only significant results are shown. One interesting finding is that the proportion of farm households that experienced an increase in the number of visitors and sales was higher in farms within the 1000 m range (5% significance) than in those over 1000 m.

While benefits to daily life were perceived for those farm families up to 1000 m from the roads for commuting, benefits through access to neighbouring hamlets were noted in distances beyond 1000 m. Regarding negative externalities of opening roads, concern over traffic accidents was expressed within a wider area than that of the traffic. I tested the impact of distances of roads from both the farm shop and farmhouse and found no major difference between the two distances. In short, the impact of road building on farm business was recognized up to 1000 m, but its impact on life, either positive or negative, could reach further than a 1000 m area. In any case, it is safe to say that 1000 m is a benchmark of the neighbouring effects, either positive or negative, of rural road inauguration. Nevertheless, apart from benefits on life, when I tested self-evaluation of the overall outcome of farm business, there was no connection with any range of distance. This was in sharp contrast with results regarding benefits on specific aspects as described above. These contrasting results strongly suggest that while roads certainly contribute to an increase in visitors and sales in the neighbouring area, there are other important internal management factors that determine overall performance of farm business. To clarify this point, looking at only distance from the roads is not sufficient. This is why I should look into the integration of tourism and farm activity.

Table 10.2 Relationship between benefits and distance from road to farm shop or farm house

Items	Magnitude of the portion	Distance from road to farm shop: concentric polygon data											
		10 m	20 m	50 m	100 m	200 m	300 m	500 m	1000 m	2000 m	3000 m	4000 m	5000 m
<i>Benefits to tourism activity</i>													
Increase in no. visitors and sales	Y > N	**	***	***	***	***	***	***	***	*	+	+	
Increase only in no. visitors	Y > N				+			+	***	***	+		
Decrease in no. visitors and sales	Y < N				*	+		+	**	**			
<i>Benefits to farm business</i>													
Set-up direct selling shop	Y > N	**	***	***	***	*		+			**	**	*
Easing of farming operation	Y > N				+	***	**	**	+				
Nothing in particular	Y < N		**	**	**	***	***	***	***	*	***	+	
Others	Y < N		+	*	*	**	**	**					
<i>Benefits on life</i>													
Commuting	Y > N	**	**	***	***	**	***	***	*				
Access to neighbouring hamlets	Y > N								***	***	**	**	**
Nothing changed	Y < N		*	**	*	**	**	**	***	*	*	*	*

(continued)

Table 10.2 (continued)

Items	Magnitude of the portion	Distance from road to farm shop: concentric polygon data												
		10 m	20 m	50 m	100 m	200 m	300 m	500 m	1000 m	2000 m	3000 m	4000 m	5000 m	
<i>Demerits to life</i>														
Traffic accidents	Y > N	***	***	***	***	***	***	***	***	***	***	***	***	*
Increased traffic	Y > N	**	+	*	+	**	**	***	**	*	+			+
Nothing in particular	Y < N	+		*	**	***	**	**	***					

Notes ***, **, *, + correspond to 1%, 5%, 10%, 20% (as reference) significance by chi-squared test or Fisher's exact test when the sample size of a cell is small. Y > N means that the percentage of respondents who chose the relevant answer is higher with the indicated statistical significance in the distance range while Y < N shows a lower percentage

10.7 Estimation Model

Now I explore factors positively or negatively working for integration. As the explained variable I used the farmer's self-evaluation on the overall outcome of the farm business from the questionnaire survey. The original answer was selected based on a 7-point scale: excellent, fair, good, neither good nor bad, bad, very bad, and extremely bad. To make the data more operational I summarized the original answers as follows: excellent or fair or good = 3, neither good nor bad = 2, bad, very bad or extremely bad = 1. This three-scale multinomial variable was used for the explained variable. For this reason, I employed the ordered logit regression model.

Explanatory variables are as follows. We must note that although the aim here is to evaluate internal farm factors rather than distance data per se, I preliminarily used distance data. The results indicated no connection with the explained variable and distance data as mentioned.

As for the present-performance variables, for the first variable representing sales channels, I used a dummy variable that states whether a farmer has a farm shop (yes = 1 and no = 0). The sign for this parameter is, of course, expected to be positive because owning a farm shop is the only confirmed effect of road building in evaluation 1. In this context, this variable is a proxy variable of the external condition, i.e., road building.

The second variable of sales channels is to convey whether a farmer has a contract with a travel agency (yes = 1, no = 0). Some farmers contract with a travel agency to bring visitors. Nevertheless, at the same time, this strategy might lower the farmer's incentive to put forth efforts to make the operation attractive to visitors. Thus, the sign will be determined empirically.

The second category of variables represents customer services: promotional activity (sending greeting cards, yes = 1, no = 0) and composition of visitors (mainly family visitors, yes = 1, no = 0). These clarify the targeted consumer of the service. These two variables supposedly work for better business results so that the signs will be positive.

The third category of variables is comprised of agricultural factors that are associated with tourism farming: a passive reason for launching PYO fruit farming (following leading farmers' behaviour, yes = 1, no = 0). If a farmer is not positively or is less motivated for tourism activity from the beginning, it is plausible that the farm business will not have a good outcome because integration will not be good so the sign will be negative.

As for the vector of vision variables, the first variable represents attitudes for the future regarding diversification of sales channels. Attitude is judged by whether a courier service is the first priority for the future business (yes = 1, no = 0), and the sign will be positive.

The second variable used to represent future customer services was provision of a farming experience service (yes = 1, no = 0). I used this variable here because the results of the author's questionnaire survey indicated that farmers think that this new

activity is not a new kind of business but a part of customer service. The sign of this parameter is not predetermined but is revealed by the estimation results.

The third variable among the vector of vision variables is agricultural factors that are associated with tourism farming and represents an issue to be tackled in the future (renovating orchards and introducing new varieties, yes = 1, no = 0). The parameter will be positive due to the eagerness to adjust to tourism farming by growing different varieties to attract more visitors and to lengthen the season for tourism.

The last category of variables is related to common factors and all of those factors are related to on-farm human resources. These are the age of the householder, size of supplementary family labour, and utilization of the Internet for business purposes (having homepage for farm, yes = 1, no = 0). The average age of farmers was 55.6 years, and the oldest was 78 while the youngest was 28. The signs of these three parameters will all be positive for reasons of the existence of experienced farmers, larger family labour availability, and individual efforts to participate in the Internet society.

In addition, I estimate the cross effects between the above main variables. The estimation model is below. Ordered logit model normally has no constant.

$$P = \alpha_1 X_{s1}^r + \alpha_2 X_{s2}^r + \alpha_3 X_{c1}^r + \alpha_4 X_{c2}^r + \alpha_5 X_{a1}^r + \alpha_6 X_{s1}^v + \alpha_7 X_{c1}^v + \alpha_8 X_{a1}^v + \alpha_9 X_1^n + \alpha_{10} X_2^n + \alpha_{11} X_3^n + \mu \quad (10.2)$$

where,

- P business performance (good = 3, neither good nor bad = 2, bad = 1)
- X_{s1}^r own farm shop (yes = 1, no = 0)
- X_{s2}^r contract with travel agency (yes = 1, no = 0)
- X_{c1}^r promotional activity (sending greeting card, yes = 1, no = 0)
- X_{c2}^r composition of visitors (mainly family visitors, yes = 1, no = 0)
- X_{a1}^r reason for launching PYO fruit farming (followed other farmers' behaviour, yes = 1, no = 0)
- X_{s1}^v first priority for the future business (courier service, yes = 1, no = 0)
- X_{c1}^v intended new service for visitors (providing experience service, yes = 1, no = 0)
- X_{a1}^v problem of farming to be resolved (renovating orchards and introducing new varieties, yes = 1, no = 0)
- X_1^n age of householder
- X_2^n size of supplementary family labour
- X_3^n having homepage for farm (yes = 1, no = 0)
- α_k parameter to be estimated, $\alpha_0 = \text{constant}$, ($k = 1, \dots, m$)
- μ stochastic error.

10.8 Results of Estimation

Results of the estimation are presented in Table 10.3. Information on the diagnosis of multicollinearity such as VIF is not available in this estimation, so I used the ordinary least squares method (OLS) to obtain VIF for the reference. The mean VIF was 1.1 in either case, suggesting no serious multicollinearity between explanatory variables. The only cross effects indicating statistical significance were those related to customer services: promotional activity (sending greeting cards) versus composition of visitors (mainly family visitors). All expected sign conditions of the main effects are satisfied.

Among the parameters of sales channels of present-performance variables, not surprisingly, owning a farm shop works positively but without a high degree of significance (10% significance) while a contract with a travel agency statistically has no connection with business performance. Just owning a farm shop and contracting with a travel agency are not sufficient for a good business outcome because these factors make no contribution to integration.

With respect to aspects of customer service, overall statistical significance tends to be low. Sending greeting cards and placing importance on family visitors work positively but not with high significance. It should be noted, however, that the cross effect indicates that sending greeting cards is particularly effective for family visitors. This means that promotional methods to target customers are important. Among agricultural aspects, as expected, low motivation for starting a PYO farming business negatively affects business outcome (5% significance).

Now looking at the results of vision variables, first, interestingly, those farmers who consider that courier service is important for a future sales channel recorded a better business outcome than those who do not (5% significance). The odds ratio of this parameter has the largest value, and this signifies that this is the most influential factor in determining business outcome and also that those farmers who enjoyed good performance have clear intentions of diversifying sales channels. The reason is that visitors will often become customers of the courier service if they find it enjoyable being on the farm.

The intention of providing experience service in the future, regarding customer service, works neutrally in terms of statistical significance. Among agricultural aspects, planning to grow a variety of fruit has a positive effect (5% significance).

Finally, as for the common variables, the age of the householder and size of the supplementary family labour force work positively (1% significance). This suggests the importance of human resources in terms of experienced farmers and affordability of intensive labour for integrated tourism activity. These human-resource factors make it more affordable for farmers to take care of visitors who participate in fruit picking and visit farm shops. The positive parameter of the Internet variable, but with only 10% significance, means that farmers must manage to some extent the Internet as a business tool.

Thus, it is apparent that exerting one's own efforts to make the farmyard more attractive is better than simply being dependent on infrastructure building and using

Table 10.3 Results of tourism performance determinant function (Ordered logit model)

Explanatory variables			#1		#2	
			Coefficient	Odds ratio	Coefficient	Odds ratio
Main effects	(1) X^r_{s1}	Owning farm shop (yes = 1, no = 0)	1.3446*	3.84	1.2312 ⁺	3.43
			(1.71)		(1.56)	
	(2) X^r_{s2}	Contract with travel agency (yes = 1, no = 0)	-0.6670	0.51	-0.7894	0.45
			(-0.67)		(-0.77)	
	(3) X^r_{c1}	Promotional activity (sending greeting card, yes = 1, no = 0)	0.7112 ⁺	2.04	-	-
			(1.58)		-	-
	(4) X^r_{c2}	Composition of visitors (mainly family visitors, yes = 1, no = 0)	1.0223*	2.78	-	-
			(1.95)		-	-
	(5) X^r_{a1}	Reason for launching pick-your-own fruit farming (followed other farmers' behaviour, yes = 1, no = 0)	-1.5682**	0.21	-1.5859**	0.2
			(-2.15)		(-2.16)	
	(6) X^v_{s1}	First priority for future business (courier service, yes = 1, no = 0)	2.5372**	12.64	2.3583**	10.57
			(2.22)		(2.10)	

(continued)

Table 10.3 (continued)

Explanatory variables			#1		#2	
			Coefficient	Odds ratio	Coefficient	Odds ratio
(7) X^v_{c1}	Plan for future of customer service (providing experience service, yes = 1, no = 0)	-0.2434	0.78	-0.1616	0.85	
		(-0.32)		(-0.22)		
(8) X^v_{a1}	Problem of farming to be resolved (expanding varieties of fruit, yes = 1, no = 0)	1.0790**	2.94	1.0061*	2.74	
		(2.03)		(1.94)		
(9) X^n_1	Age of householder	0.0815***	1.08	0.0765***	1.08	
		(3.79)		(3.63)		
(10) X^n_2	Size of supplementary family labour	1.2885***	3.63	1.2123***	3.36	
		(2.75)		(2.70)		
(11) X^n_3	Having homepage for farm (yes = 1, no = 0)	1.6497*	5.21	1.8150*	6.14	
		(1.73)		(1.90)		
Cross effects	(3) × (4)	Promotional activity × mainly family visitors	-	-	1.2501**	3.49
			-	-	(2.19)	
Log likelihood			-89.4192		-90.6100	
Chi-squared test			***		***	
Sample size			114		114	

Notes Numbers in parentheses are z-values. ***, **, *, + (as reference) correspond to 1%, 5%, 10% significance, respectively

non-local organizations such as travel agencies. Consequently, it was revealed that those farmers who integrated not only present activities but also had a vision for future activity enjoyed a good business outcome. These factors are indicators of not only good performance of the farm business but also a good farmer's own initiative for the integration of farm activities, including a successful evolution toward undertaking future activities. First, estimation results show that the issue of the sales channel works most favourably for integration and business performance, so it is considered that these factors correspond to (1), which is the most influential in Fig. 10.3. Second, customer service activities and agricultural activity should be integrated by the farmer's own initiative in targeting promotional efforts and extending the tourism period corresponding to (2) or (3), respectively. Third, the common factors that play a role in better integration are related to human resources within the farm household in terms of quantity and quality, including the elderly.

In short, it is safe to say that those farmers who implement superior integration have broader perspectives not only for the long-term horizon but also in terms of consciousness of every aspect of management of service marketing. Thus, these results indicate areas where we should place priority for better integration of farm management in rural tourism policy, particularly focussing on service marketing management, which has been underdeveloped compared with the tourism sector in general.

10.9 Conclusion

This chapter evaluated the impact of road building on PYO fruit farming conceptually and empirically by focussing on the internal integration of tourism activity. These are the main points discussed in this chapter.

Firstly, the impact of new rural roads on on-farm tourism activity accrues two fold. The new rural roads not only affected the supply side but also created a demand shift, while in the case of ordinary farm production the impact only accrued to the supply side. Therefore, we should look at consumer-related aspects more carefully for evaluation of the impact of rural roads on on-farm tourism businesses.

Secondly, I examined with statistical tests the effects of distances from the new road because of the existence of the neighbouring effect on benefits. Results revealed that benefits on tourism activity were apparent in the 1000 m range. Although more empirical studies should be accumulated to fully generalize the results, the results presented here can be a referential benchmark.

Thirdly, from the estimation results of the function determining integrated tourism activity, I clarified those factors representing the farmer's own initiatives with broader perspectives including future evolution, i.e., diversification of sales channels and better targeted customer service, that enable him or her to mobilize farm resources to better integrate activities and eventually to realize a better outcome from the farm business as a whole. All of these aspects require awareness of service marketing management. Thus, capacity building of these skills should be strengthened by technical

assistance to farmers embarking on tourism activity. Authorities in policy-making positions should properly recognize the importance of the demand shift-effect and therefore of these software aspects.

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Chapter 11

Factors on the Linkage Between Local Brand Farm Products and Tourism in an Agrarian Community



11.1 Introduction

Many countries have policy measures in an attempt to strengthen the connection between agriculture and tourism. Since it is expected that diversification of the rural economy will enhance rural revitalization, how to strengthen the connection between the two products, that is, tourism and local brand products, is an issue that needs to be explored. The relationship between the two is not predetermined. Only if they both become local joint products will the combination between local brand products and tourism activity become most effective. Thus, this chapter investigates the relationship between the direct economic effects generated by local brand farm products such as increases in revenue and employment and the indirect economic effects resulting from the development of tourism activity. This chapter investigates the relationship between direct economic effects generated by local brand farm products such as increases in revenue and employment and indirect economic effects caused by the development of tourism activity.

To our knowledge, there has been no economic analytical framework that enables us to evaluate the relationship between local brand products and tourism in rural areas as joint products. The concept of economies of scope is a traditional economic framework that deals with the issue of joint production. The case in this study, however, differs from conventional cases for the reasons described below and requires another framework capable of dealing with the complementary relationship. Therefore, exploring an analytical framework for the evaluation of that complementary relationship for local joint products both conceptually and empirically will enable the addition of an economic framework on rural tourism. This is despite the ongoing diffusion of rural tourism in many countries, either developed or developing, which still lacks a consistent economic framework compared with tourism in general.

This chapter was revised and restructured from the papers initially published as follows. Ohe and Kurihara (2013b); Ohe and Kurihara (2016). The author acknowledges the permission given by the initial publishers.

The first reason for the need of another framework is that it is hardly possible to obtain cost data on tourism activity in comparison with agricultural production for which cost data are relatively easily available through official statistics. Secondly, what differs from conventional joint production is that the case in this study is one that is not technically predetermined but is intentionally created by local collective effort. In this respect, we can call these intentional joint products. Thirdly, local brand products generate positive externalities as intangible local resources in the production area. Keeping these features in mind, this chapter presents an analytical framework by incorporating the externality of local brands and economies of scope and empirically evaluating as intentional joint products the complementary relationship between local brands and tourism and clarifying factors that work to strengthen that relationship.

Thus, first, based on a literature review, the researchers present an analytical framework that describes the complementary relationship between the two economic effects. Second, under that framework the researchers conduct an empirical investigation through statistical tests and an econometric model estimation based on data collected by a questionnaire survey of agricultural cooperatives in Japan. Finally, we present policy recommendations for local resource management to enhance the complementary relationship in rural areas. The researchers broadly define local brand farm products as those having regional collective trademarks, a trademark and/or designation at the prefectural level, or a reputation as a local product despite no official designation.

The reason why we focus on local brand farm products rather than local food in general is to control for issues of authenticity of local products. The term local food is too ambiguous for investigation. The researchers define local brand farm products from a wide perspective in that they are considered as locally connected farm products, which includes those having regional collective trademarks (for the system of the regional collective trademark, see Ohe and Kurihara 2013b), a trademark and/or designation at the prefectural level, or a reputation as a local product despite no official designation.

11.2 Literature Review

Results of the literature review on the relationship between local food and tourism are shown in Table 11.1. Local food has drawn growing attention as having a high potential to leverage sustainability of rural development (Vaz et al. 2009). In addition, local food is often discussed in connection with tourism in rural areas where resources for tourism are relatively limited (Renko et al. 2010; Sims 2009, 2010). In this context, local food can play an important role in sustainable diversification of farm and rural economies. Policymakers also aim at reinforcement of this complementary relationship between local food and tourism (for instance, for European policy context, see Sims 2010). Such a complementary relationship is expected to generate a wide range of effects on the local community (Sims 2010); these include economic effects and social effects such as identity issues (Everett and Aitchison 2008; Brandth and

Table 11.1 Results of literature review on the complementary relationship between local food and tourism

Topic	Sub topic	Publication
Local food and tourism	Rural development/rural tourism	Vaz et al. (2009), Renko et al. (2010), Sims (2009, 2010)
	Authenticity	Sims (2009)
	Social effects	Everett and Aitchison (2008), Brandth and Haugen (2011)
	Rural cultural heritage	Szlanyinka (2009), Ohe and Ciani (2011)
	Food tourism	Hall et al. (2003)
	Wine tourism	Hall et al. (2000), Kim et al. (2009b)
	Culinary tourism	Montanari and Staniscia (2009), Horng and Tsai (2010)
	Organic agriculture and agri-ecotourism	Kuo et al. (2006)
Rural tourism		Bélisle (1983), Telfer and Wall (1996), Ohe (2008)
Economic effects of local food and tourism	Differentiation of tourism destinations	Haven-Tang and Jones (2006)
	Food consumption by tourists	Skuras et al. (2006), Kim et al. (2009a)
	Backward economic linkage	Telfer and Wall (2000)
	Hedonic pricing approach	Ohe and Ciani (2011)
Economies of scope	Theoretical development	Panzar and Willig (1981), Baumol et al. (1988), Chavas and Kim (2007)
	Agricultural and rural field	Fernandez-Cornejo et al. (1992), Azzam (1998), Chavas (2008), Chavas et al. (2010), Melhim and Shumway (2011), Hartarska et al. (2011)
	Agricultural cooperatives	Schroeder (1992), Kondo (1997)
	Non-agricultural field	Prior (1996), Chavas et al. (2012)

Haugen 2011). Of these effects, this study focusses on the economic effects that accrue to the local community and classifies these as direct and indirect economic effects. The direct economic effects are sales and employment accrued from local food due to the development of production, processing, and distribution systems. The indirect economic effects are generated as a result of diversification of the rural economy through taking advantage of brand names of local food. Indirect economic effects are the sales and employment generated from visitor spending on accommodations and dining in local rural tourism facilities and restaurants. If the indirect effects increase, then sales of local products will also increase because visitors will buy local food on site or through the Internet. Thus, if these two effects are simultaneously generated, a large economic benefit will be generated for the local economy.

In this respect, the complementary relationship between local food and the tourism-related sector must work well. The rural cultural heritage has been recognized as being closely connected with this complementarity (Szlanyinka 2009; Ohe and Ciani 2011). Types of tourism that are named after a crop, beverage, or food-related activity are examples of complementarity between food and tourism; examples are food tourism (Hall et al. 2003), wine tourism (Hall et al. 2000; Kim et al. 2009b), culinary tourism (Montanari and Staniscia 2009; Horng and Tsai 2010), organic agriculture and agri-ecotourism (Kuo et al. 2006), etc. Authenticity is a crucial issue in both local food production and food-related tourism activity (Sims 2009). As a preceding study using the same data set with this study, Ohe and Kurihara (2013a) statistically clarified that there was stronger complementarity between local brand farm products and tourism in the producing areas of fruit or beef than with other types of farm products. Nevertheless, no econometric evaluation on the complementary between local farm products and tourism has been conducted so far.

Previous studies of the economic effects on local food and tourism are differentiation of tourism destinations (Haven-Tang and Jones 2006), effects of food consumption by tourists (Skuras et al. 2006; Kim et al. 2009a), backward economic linkage (Telfer and Wall 2000), and hedonic pricing evaluation (Ohe and Ciani 2011).

A relationship between local foods and tourism, however, is not always guaranteed from the beginning but must be established through much effort (Telfer and Wall 1996). However, it cannot be denied that such a relationship is worth exploring to evaluate the potential for development of tourism in rural areas either in developed or developing countries (Bélisle 1983). In particular, we need to clarify under what conditions this connection works most effectively, which would allow suggestions to be made to rural communities on developing tourism by taking advantage of local food and heritage.

Turning to tourism in rural areas, a program for rural tourism, which is called 'green tourism' in Japan, was inaugurated in 1992. The number of farmers who provide rural tourism activities has grown gradually, but many issues remain problematic such as lack of management skills and ageing of the rural population (Ohe 2008). These obstacles involve issues that are commonly observed not only in rural Japan but also in rural communities in other parts of the world.

Chavas (2008), Chavas et al. (2010) reviewed studies on economies of scope in agriculture, including their own papers. Further, Chavas and Kim (2007) conducted a

theoretical exploration, and Chavas et al. (2012) evaluated the R&D of universities, which is beyond the agricultural field. Azzam (1998) conducted a test of vertical economies of scope in US pig production. Melhim and Shumway (2011) investigated economies of scale and of scope in the diversification of US dairy farming. Hartarska et al. (2011) evaluated the economies of scope of microfinance institutions, and Fernandez-Cornejo et al. (1992) extended the static concepts of economies of scale and scope into a dynamic setting and applied them to German agriculture. In studies of agricultural cooperatives, Schroeder (1992) estimated scale and scope economies regarding agricultural supply and marketing cooperatives in the USA, and Kondo (1997) performed similar estimations on the Japanese counterparts. However, no study has evaluated economies of scope of agricultural cooperatives in connection with tourism-related issues. In the non-farming arena, Prior (1996) examined the technical efficiency and economies of scope of hospitals.

To summarize, results of the above literature review indicate that research on the complementarity between local food production and tourism as joint products that have economies of scope has hitherto not been conducted in tourism economics or agricultural economics. Thus, we explore this point below.

11.3 Analytical Framework

The complementarity of joint products is widely known in economics as economies of scope. Economy of scope has a feature termed subadditivity, which is expressed as (11.1) (Panzar and Willig 1981; Baumol et al. 1988). This expression indicates that the production cost for joint production is lower than the sum of production costs when two products are produced separately and provides the theoretical background for diversification of activity (Saloner et al. 2001; Besanko et al. 2000).

$$C(0, q_1) + C(q_2, 0) > C(q_1, q_2) \quad (11.1)$$

The most common example is the joint production of sheep meat and wool, which is stipulated technically, and thus it is impossible to produce them separately. As mentioned earlier, for an empirical evaluation it is required to obtain data on production costs of the targeted products. This is probably one of the reasons why studies so far have focussed on an individual unit of an economic entity rather than the unit as a producing area.

The relationship between local brand farm products and tourism in rural areas is not predetermined but rather is created through efforts to utilize common local resources for two products. In this regard, the framework of the economy of scope is also applicable where products are jointly produced based on the utilization of common local resources. Nevertheless, this case imposes severe data constraints on empirical evaluations, which are hardly possible to eliminate. Thus, we need to undertake an approach different from conventional approaches.

First, it is necessary to consider the initiative taken by a local management body because this study focusses on intentional joint products rather than technical ones. Second, it is supposed that there is endogeneity; firstly, the direct economic effects are determined, and then those direct economic effects determine the indirect economic effects.

Third, the success of local brand products generates a brand umbrella that has externalities that cover the entire producing area, but only when the brand name has been established. In this regard, the externality here is different from externalities generated from the widely observed multifunctionality in agriculture. This brand externality can reduce risk in developing a new market and assuming the production cost of a new product. This externality is not utilized until a new product is developed in the producing area. In this context, we can say that tourism activity is an activity that internalizes the externalities generated by local brand products and that the degree of internalization depends on the capability of a local management body. Consequently, the generation of indirect economic effects is a result of economies of scope that accompany the process of internalization of externalities by the utilization of common local resources. Put differently, the existence of both economic effects means that local brand externalities are internalized and economies of scope exist. To simplify the discussion we assume that the brand externality to be internalized is the same as the amount of cost reduction by economics of scope, i.e., down shift of the marginal cost curve from $MC_f + MC_t$, sum of marginal costs for separate production of local farm brand products and tourism, to MC_{f+t} , that for joint production of the two (Fig. 11.1). Fourth, partnership among concerned local bodies is crucial for successful internalization in the producing area.

From the above consideration, when the two economic effects appear, we understand that the marginal cost of joint production of the two products is shifted downward. This consideration is illustrated in Fig. 11.1 under a microeconomic framework.

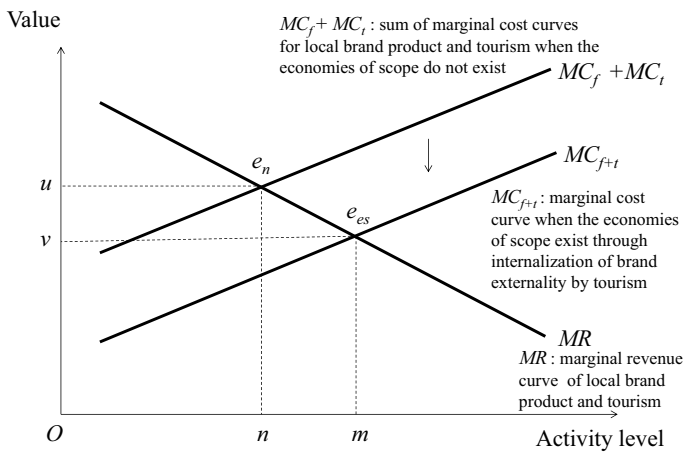


Fig. 11.1 Downward shift caused by economy of scope

Figure 11.1 depicts a subjective equilibrium model of a local management body that produces a local brand product and tourism services in the rural area measuring the activity level horizontally and values vertically. Right downward MR curve represents the marginal revenue of the local management body and the two right upward curves represent marginal cost of the two products; MC_{f+t} when the two products are produced jointly while $MC_f + MC_t$ when products are produced separately and the two marginal costs are added. The right downward marginal revenue demonstrates that consumers' brand loyalty exists. If economies of scope exist, the joint-product marginal cost MC_{f+t} becomes lower than the cost of production separately, $MC_f + MC_t$ as is illustrated in Fig. 11.1. Thus, the vertical distance between the two marginal cost curves indicates economies of scope and also the brand externality to be internalized. At the subjective equilibrium point e_n on the upper marginal cost curve $MC_f + MC_t$, externality is not internalized yet while at point e_{ns} on the lower curve MC_{f+t} externality is internalized, which means that economies of scope are attained. The process of internalization is not automatic but is achieved by local managerial efforts. In particular through the process of local brand formation of farm products, local identity that can be shared by the people concerned is established in the producing area and enables realization of more efficient local resource management including territorial marketing. Thus, whether this process exists or not is considered to be a condition for attainment of economic effects in tourism, which is depicted as the downward shift of the marginal cost curve that results in the realization of economies of scope in the figure.

As a result of the internalization, although a demand upward shift might happen as MR upwardly shifts, we assume a constant MR to simplify the discussion here. This assumption might cause the underestimation of the two economic effects. Since it is, however, quite difficult to specifically measure the MR shift, we adopt this assumption.

The next question to be clarified is to empirically explore factors working on the appearance of economies of scope. For empirical evaluation, Table 11.2 indicates four cases regarding the appearance of economies of scope based on the above framework. Case 1 is the case in which both direct and indirect economic effects are

Table 11.2 Cases of equilibrium points and economies of scope

Case	Equilibrium point	Direct effect	Indirect effect	Economies of scope	Sample size
1	e_{es}	Yes	Yes	Yes	49 (21.8%)
2	e_n	Yes	No	No	66 (29.3%)
3	e_n	No	Yes	No	7 (3.1%)
4	neither e_n nor e_{es}	No	No	No	103 (45.8%)

Source Data were obtained by a questionnaire survey of all agricultural cooperatives in Japan conducted from January to February in 2009. Survey was conducted jointly by the Organization for Urban-Rural Interchange Revitalization and the authors. Response rate was 225 out of 757 cooperatives (29.7%)

observed. In this case the economies of scope apparently appear by the downward shift of marginal cost caused by the realized efficient local resource management by the partnership among the people concerned based on established local identity. In Cases 2 and 3, only one of the two economic effects appears and thus no economy of scope is observed. In Case 4 neither economic effect is observed. The left column indicates the composition of respondents from results of the questionnaire survey of agricultural cooperatives. Percentage-wise, Case 4 accounts for 45.8% of the sample, which is the most common among the four cases. On the other hand, the sample size in Case 1, the case in which economy of scope is observed, is only 21.8%. In the remaining two cases, only one of the two effects is observed. Thus, only one fifth of the total producing areas responded that they achieved both economic effects. This means that producing areas that realized local joint production of local brand farm products and tourism are not very common at present. Empirically, therefore, we investigate conditions to attain the downward shift of the marginal cost curve under the analytical framework.

11.4 Data and Statistical Tests

The researchers consider agricultural cooperatives as a local management body. Data were obtained from a questionnaire survey of all agricultural cooperatives in Japan conducted from January to February in 2009 by surface mail. The survey was conducted jointly by the Organization for Urban-Rural Interchange Revitalization and the authors in consultation with the Ministry of Agriculture, Forestry and Fisheries (MAFF), which funded this survey project. The response rate was 29.7% (225/757 cooperatives), which is about normal for this kind of survey in Japan. The questions asked concerned various aspects of local brand products and the effects of local brand products such as direct and indirect economic effects and non-economic effects and issues including tourism development. The sample size was largest for producers of vegetables and field crops (Table 11.3).

Table 11.3 Profiles of local brand products

Composition of local brand products	Sample size	%
Vegetables and other field products	103	45.8
Fruits	43	19.1
Rice	35	15.6
Beef	19	8.4
Others: tea, mushrooms, flowers and fish	11	4.9
No answer	14	6.2
Total	225	100.0

Source Data are the same as for Table 11.2

Now, the authors examine the effects of local brand products. Evaluation of the effects was done according to four stages: more than expected, as expected, less than expected, and do not know. We integrated these four stages into two categories to conduct statistical tests: more than expected and as expected (yes = 1) and other answers (no = 0). Variables related to activities and attributes were also transformed to binary data (yes = 1, no = 0) from the original five-stage evaluation of the questionnaire data: upper two stages = 1 as yes and others = 0 as no. This is because preliminary statistical tests conducted with the original data did not show statistically acceptable results.

We examined the relationship between direct and indirect economic effects and confirmed a statistically significant connection between the two (Table 11.4). These results verify that an indirect economic effect needs to be preceded by achievement of a direct economic effect. Table 11.4 reveals a statistically significant relationship between economic effects and non-economic effects and also demonstrates that the attributes of the producing areas and activities undertaken there had statistically significant connections with both economic effects. These attributes and activities are classified into two types: perspective on brand product management and local resource management.

It is most likely that the effect of accumulation of brand-forming experiences, i.e., the experience effect, exists. To verify this point, the researchers statistically tested the relationship between the two economic effects and these two experience variables, with the results indicating that brand formation of local farm products has an experience effect (Table 11.5).

11.5 Model Estimation and Results

Based on the above considerations and findings, the estimation model is a simultaneous determinant model that the indirect economic effect is determined endogenously after the direct economic effect is determined: the indirect economic effect as an endogenous variable and the direct economic effect as a predetermined endogenous variable.

$$\text{Direct} = f(\text{vector of determinant factors of the direct economic effect}) \quad (11.2)$$

$$\text{Indirect} = f(\text{Direct}, \text{vector of determinant factors of the indirect economic effect}) \quad (11.3)$$

where, Direct = direct economic effect, Indirect = indirect economic effect

We considered variables for brand product management and a wide range of perspectives on local resource management for the direct effect while the indirect effect is considered only from the aspect of local resource management.

Table 11.4 Relationship between direct/indirect economic effects and activities undertaken (chi-squared/Fisher's Exact tests)

Items	Direct economic effect			Indirect economic effect		
	Yes	No	Test result	Yes	No	Test result
<i>Economic effects</i>						
Direct economic effect (yes = 1, no = 0)	–	–	–	87.5	39.1	***
Indirect economic effect (yes = 1, no = 0)	42.6	6.4	***	–	–	–
<i>Non-economic effects</i>						
Improvement in name recognition of local community (yes = 1, no = 0)	72.2	37.3	***	94.6	42.0	***
Increased understanding of local food heritage (yes = 1, no = 0)	74.8	35.5	***	85.7	45.6	***
Revitalization of local community (yes = 1, no = 0)	72.2	26.4	***	87.5	37.3	***
<i>Activities/attributes</i>						
Degree of brand name recognition (nationwide or abroad = 1, others = 0)	48.7	26.4	***	42.9	36.1	ns
Existence of quality/certification standards (yes = 1, no = 0)	76.5	47.3	***	83.9	55.0	***
Defining product value such as taste, nutrition (yes = 1, no = 0)	48.7	28.2	***	48.2	35.5	*
Maintenance and improvement of quality (yes = 1, no = 0)	62.6	32.6	***	30.9	15.1	***
Partnership with tourism and restaurant sectors (yes = 1, no = 0)	31.3	18.2	**	48.2	17.2	***
Expectation of unity of local community (yes = 1, no = 0)	79.1	63.6	**	92.9	64.5	***

Source Same as for Table 11.2

Notes ***, **, * means 1%, 5%, 10% and *n.s.* = not significant. Evaluation of the effects was done according to four stages: more than expected, as expected, less than expected, and do not know. We integrated these four stages into two categories to conduct statistical tests: more than expected and as expected (yes = 1), other answers (no = 0). Variables related to activities and attributes were also transformed to binary data (yes = 1, no = 0) from the original five-stage evaluation of the questionnaire data: upper two stages = 1 as yes, others = 0 as no because preliminary statistical tests conducted with the original data did not show statistically acceptable results

Table 11.5 Relationship between production/branding experiences and economic/non-economic effects (chi-squared/ Fisher’s Exact tests)

Economic effects	30 years or more of production			15 years or more of branding		
	Yes	No	Test result	Yes	No	Test result
<i>Economic effects (more than expected or as expected = 1, others = 0)</i>						
Direct economic effect (yes = 1, no = 0)	53.9	48.2	<i>n.s.</i>	60.6	44.3	**
Indirect economic effect (yes = 1, no = 0)	29.1	20.4	+	35.1	17.6	***
<i>Non-economic effects (more than expected or as expected = 1, others = 0)</i>						
Increased understanding of local food heritage (yes = 1, no = 0)	58.1	52.8	<i>n.s.</i>	68.1	46.6	***
Revitalization of local community (yes = 1, no = 0)	53.0	46.3	<i>n.s.</i>	59.6	42.8	**
<i>Attributes</i>						
Degree of brand name recognition (nationwide or abroad = 1, others = 0)	46.2	28.7	***	51.1	28.2	***
Existence of quality/certification standards (yes = 1, no = 0)	65.8	58.3	<i>n.s.</i>	71.3	55.7	**

Source Same as for Table 11.2

Note ***, **, + means 1%, 5%, 20% (as reference) and *n.s.* = not significant

Specifically, among variables that determine the direct economic effect, as product-related variables, the degree of brand name recognition was used (recognized nationwide: yes = 1, no = 0), as were two variables related to quality control (quality/certification standard: yes = 1, no = 0; maintenance and improvement of quality: yes = 1, no = 0). As local-community variables, rising understanding of the local cultural heritage (yes = 1, no = 0) and revitalization of the local community (yes = 1, no = 0) were considered. It is also plausible that these variables determine the economic effects simultaneously or that an opposite cause and effect relationship exists in that a direct economic effect influences these variables. Nevertheless, since this study takes the perspective that the economic effects are realized through local resource utilization based on our analytical framework, we take the above cause and effect relationship.

As variables that determine the indirect economic effect, we used the direct economic effect (yes = 1, no = 0) as a predetermined endogenous variable as already mentioned. As variables related to the local community, improvement in name recognition of the local community (yes = 1, no = 0), partnership between tourism and the restaurant sector (yes = 1, no = 0), and expectation of unity in the local community (yes = 1, no = 0) were used. As mentioned, these variables were taken up from the perspective of local resource management. The signs of all parameters are expected to be positive. All of these variables were qualitative dummy variables.

Other variables that were observed as having statistical significance are not used here since test estimations using these variables did not yield statistically acceptable results. The variable of the experience effect of brand products was not used to avoid multicollinearity because that variable has a correlation with other variables used here. In this respect, this model implicitly assumes the experience effect.

Method of estimation was an instrumental variable probit estimation due to the simultaneous estimation of two equations using the normal standard error and robust standard error. Results showed that all parameters were positive as expected with statistical significance (Table 11.6). Since the Wald test of exogeneity was rejected, we

Table 11.6 Estimation results of determinant model of direct and indirect economic effects

Type of variable	Explanatory variables	Direct economic effect		Indirect economic effect	
		Ordinary standard error	Robust standard error	Ordinary standard error	Robust standard error
Product management	Existence of quality/certification standards (yes = 1, no = 0)	0.5788*** (2.84)	0.5788*** (2.86)	–	–
	Maintenance and improvement of quality (yes = 1, no = 0)	0.3843* (1.87)	0.3843* (1.88)	–	–
	Degree of brand name recognition (nationwide or abroad = 1, others = 0)	0.5329*** (2.65)	0.5329*** (2.66)	–	–
Local resource management	Increased understanding of local food heritage (yes = 1, no = 0)	0.5531*** (2.64)	0.5531*** (2.64)	–	–
	Revitalization of local community (yes = 1, no = 0)	0.9569*** (4.56)	0.9569*** (4.59)	–	–
–	Constant	–1.5642*** (–6.77)	–1.5642*** (–6.58)	–	–
–	Direct economic effect (yes = 1, no = 0)	–	–	2.1673*** (6.97)	2.1673*** (6.35)
Local resource management	Improvement in name recognition of local community (yes = 1, no = 0)	–	–	1.0133***	1.0133**

(continued)

Table 11.6 (continued)

Type of variable	Explanatory variables	Direct economic effect		Indirect economic effect	
		Ordinary standard error	Robust standard error	Ordinary standard error	Robust standard error
		–	–	(2.70)	(2.41)
	Expectation of unity of local community (yes = 1, no = 0)	–	–	0.5718*	0.5718*
		–	–	(1.81)	(1.69)
	Partnership with tourism and restaurant sectors (yes = 1, no = 0)	–	–	0.6100**	0.6100**
		–	–	(2.52)	(2.39)
–	Constant	–	–	–3.3675***	–3.675***
		–	–	(–6.83)	(–6.30)
	Sample size	225	225	225	225
	Estimation method	Probit	Probit	iv Probit	iv Probit
	Log likelihood	–112.9866	–112.9866	–190.1066	–190.1066
	Wald chi-square (LR chi-square)	85.83***	64.17***	88.52***	91.56***
	Wald test of exogeneity	–	–	7.87***	6.84***

Source Same as for Table 11.2

Notes ***, **, * means 1%, 5%, 10% significance. The z-values are given in parenthesis

could confirm the endogenous model structure. Cases of normal and robust standard errors did not show major differences in terms of statistical significance between the two cases.

With respect to the direct economic effect, we can say that quality control of products, effects of understanding the local food heritage, and revitalization of the local community can contribute to generating a direct economic effect. Also, we could confirm that the direct economic effect allowed the indirect economic effect to take place, which means that there is a complementary relationship between the two economic effects. Regarding the indirect economic effect, parameters of the community-related variables were all positive with statistical significance. Thus, the importance of local resource management should be recognized in realizing an indirect economic effect.

Overall, quality management is crucial to allow for a direct economic effect. A common factor for both direct and indirect economic effects is from the perspective of local resource management. In particular, a partnership with non-agricultural sectors is effective in achieving an indirect economic effect. These local factors help those concerned form a local identity based on local brand products and share that identity

to mobilize local resources for a common goal. Thus, these can be said to be effective factors that can internalize the externality of local brands and eventually realize economies of scope. At the same time, however, the existence of the experience effect in brand formation means that the producing areas must have brand externality as a prerequisite for economy of scope. In short, producing areas need to have brand externality that can be internalized.

11.6 Conclusion

This chapter examined the complementarity between direct economic effects such as increases in income and employment of producers and indirect economic effects such as tourism development through local brand farm products and factors that define this relationship based on results of a questionnaire survey of agricultural cooperatives in Japan. The main points clarified in this chapter are as follows.

First, we presented an analytical framework in which economies of scope are generated by the internalization of brand externality to create an indirect economic effect in addition to a direct economic effect, which is interpreted as the downward shift of the marginal cost curve.

Second, we estimated an empirical model showing that the economic effects are endogenously determined and confirmed the complementarity of the two economic effects. The result of the model estimation also revealed the importance of not only traditional production aspects such as quality control of brand products but also a perspective on local resource management, such as the nurturing of the local food heritage and a partnership between tourism and culinary sectors. These wider perspectives contribute to internalizing brand externality and to generating economies of scope.

Consequently, it will become increasingly important to have a wider perspective on not only traditional agricultural resource management but also on local resource management that covers non-agricultural resources. Nevertheless, it takes time to develop brand externality as has been termed the “experience effect” in this study. Therefore, the producing areas of local brands with low recognition must raise or create brand recognition that generates brand externality, which is available for internalization. That is a constraint on tourism development in rural areas through local brand farm products. Actually, producing areas that realized both economic effects constituted only one fifth of the total respondents. In considering these points, support measures on how to organize effective local resource management should be scrutinized for diversification of farm and rural economies.

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Chapter 12

Linkage Between Operators' Satisfaction and Potential of Local Resources for Rural Tourism



12.1 Introduction

As activities of rural tourism have become diverse, the demand for rural tourism is becoming more and more experience-oriented (Ohe 2007). One of these trends typically observed in diversified rural tourism is educational programs combined with rural tourism in Western European countries and Japan. These diversified activities with an educational function open a new possibility for farm activity in response to diversifying the social needs of agriculture and rural areas in this century (Shichinohe et al. 1990). The educational function of rural tourism gives mainly urbanites a chance to experience farm and rural life and the significance of its cultural heritage. Specifically, this chapter focusses on rural tourism combined with an educational program featuring a farm-stay with farm and rural experience services implemented as a part of school trips.

To take advantage of these new trends, it is increasingly important for operators to have a wider perspective that not only includes their own individual management skills but also local resource management. It is often pointed out that operators gain satisfaction through providing services by receiving immediate feedback from consumers (Wilson 2007) due to the nature of rural tourism, which is a service good that is directly interchanged between producers and consumers. This is the major difference from the provision of traditional farm products that are simply trucked to urban markets. This direct interchange between operators and visitors gives operators an opportunity to rediscover local resources and eventually to come up with an idea for a new activity (Ohe 2007). We can expect that rural tourism that includes an educational program provides a more substantial interchange effect among the people involved than other modes of rural tourism.

To tackle the issue, we employ a methodological individualistic approach since we investigate whether operators' individual satisfaction enhances the utilization of

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local resources and, if so, what mechanism works for it. The preceding studies, as mentioned in detail in the literature review, can be classified into the ones that utilized a methodological individualistic approach and the others that utilized community-based or aggregated performance approaches. In contrast, our approach tries to bridge the gap between the two approaches.

First, this chapter conducts conceptual considerations whereby operators' individual satisfaction with the educational program can enhance locally exerted effects that stimulate operators to recognize opportunities within their community and that raise the potential for local resource use. Second, we conduct empirical analyses on rural tourism with an educational function, i.e., farm-stay school trip programs implemented in Japan, using an econometric model to verify the relationship between individual satisfaction and effects on local resource utilization. Finally, we suggest policy implications on the evolution of diversification of rural tourism.

12.2 Literature Review

The initiative for studies on rural tourism have been undertaken strenuously by rural sociology and multidisciplinary social science, which are the neighbouring disciplines to economics (Evans and Ilbery 1989, 1992a, b; Butler et al. 1998; Sharpley 1996; Sharpley and Sharpley 1997; Robinson et al. 2000; Roberts and Hall 2001; Hall et al. 2003). Hall and Richards (2000) focussed on the relationship between tourism, including rural tourism, and community development. This multidisciplinary research clarified the significance and problems of rural tourism and substantially contributed to the enhancement of social recognition of rural tourism. In contrast, approaches from the perspectives of economics and management have been few, although studies from the economic approach and management viewpoint are gradually increasing (Page and Getz 1997; Hall et al. 2005; Tchetchik et al. 2008; Ohe 2006; Skuras et al. 2006; Vanslebrouck et al. 2005; Partalidou and Lakovidou 2008).

In examining studies related to the topic of this chapter, earlier studies on the diversification of rural tourism, which was classified as an alternative activity, are those of Haines and Davies (1987) and Slee (1989), and studies in the mid-2000s are by Sharpley and Vass (2006) and Meert et al. (2005). Whereas all of these studies appraised the significance and problems of rural tourism, there has been no detailed analysis on the connection between the educational function of agriculture and rural tourism.

Multifunctionality in agriculture, in which the educational function is included, was studied not only from an international perspective (Brouwer 2004; OECD 2001, 2003, 2005) but also from a regional perspective (van Huylenbroeck et al. 2003; Ohe 2007). Regarding multifunctionality in connection with rural tourism, Vanslebrouck et al. (2005) considered the value of the landscape for rural tourism and Ohe (2007) dealt with rural tourism from the aspect of its recreational function. In connection with research on the educational function, the focus has been on city farms (Garett 1986),

but this function of agriculture was not fully addressed until the 1990s (Shichinohe et al. 1990). Currently, activity that aims at the educational function in farming has been supported as an official program in many industrial countries (Graham 2004 for UK; Regione Emilia-Romagna 2005 for Italy; Oshima 1999 for France; Ohe 2006 for Japan). The relationship between rural tourism and its educational function has not yet been examined except for a case study (Ohe 2008).

With respect to operators' individual attitudes on rural tourism activity, the motivation of rural tourism operators has been studied (Nickerson et al. 2001; McGehee and Kim 2004; Ollenburg and Buckley 2007). Skuras et al. (2005) conducted a comparative study on the effects generated from the differences in human capital among European countries. Telfer (2000) interviewed farmers in rural Indonesia on the adoption of agritourism and indicated that tourism can act as a generator of community development. Maestro et al. (2007) studied consumer's attitude toward rural tourism on perceived quality and the moderating role of familiarity. There has been, however, no study on how the individual satisfaction of operators is connected with the utilization of local resources.

In the field of studies on the utilization of local resources, the cultural aspects of local resources have attracted attention (Barbič 1998; Hammer 2008). As a software aspect of local resources, Yokoyama and Sakurai (2006) focussed on the relationship between social capital and community development in Asian countries, including the case of rural tourism in Japan. Garrod et al. (2006) conceptually presented the idea of countryside capital to consider the connection between rural resource use and rural tourism.

Local effects brought about by rural tourism have been approached from various aspects: socio-economic effects (Maude and van Rest 1985), impact assessment by local residents (Rátz 2000; Petrzelka et al. 2005), and economic effects (Slee et al. 1997). These studies clarified the social and economic effects of rural tourism on the local community and their significance and thus contributed to progress in impact evaluation on rural tourism. Nevertheless, these studies on local economic effects tended to implicitly assume that study areas were already sufficiently developed to grasp clearly visible economic effects. These cases represent a few of the best areas where full-scale economic effects have emerged. Ordinary rural areas have not reached the stage whereby economic effects are readily visible but are at the preliminary stage before the emergence of visible economic effects. Likewise, in the case of these new services such as the farm and rural experience services studied here, neither a viable market has been established nor are local economic effects apparent as clarified in Chap. 9. It is, therefore, natural to assume that the degree of local resource utilization is enhanced not directly but gradually until the next stage of full-scale local economic effects has emerged. In summary, how individual effects or operators' individual satisfaction connect with the effects on local resource utilization at the preliminary stage of the emergence of economic effects, which we term the local effects, has not been investigated empirically. To evaluate this connection, the

results of these preceding studies suggest that it is necessary to consider operators' perception in terms of economic and non-economic aspects, features of rural tourism with an educational program, and stages of local resource utilization in the local community.

12.3 Analytical Framework—Effect of the Potential for Local Resource Utilization: Stepwise Enhancement Hypothesis

It is considered that in the case of rural tourism that includes experience services, the feedback that operators receive from consumers will be greater than that for traditional farm products. This feedback, which is characterized as a non-economic benefit, can complement economic benefits. Given this point, a working hypothesis is presented here. We assume that the enhancement of the potential for local resource utilization is a necessary step as a preparatory stage for full-scale realization of local economic effects.

Generally, the case of rural tourism with an educational program will enhance the potential for local resource utilization to a greater degree than the case of farming. This is because operators' encounters and exchange with visitors from outside the area enable operators themselves to become newly aware of local resources that they did not recognize prior to the extension of a human network outside of the local community. This recognition subsequently leads to the enhancement of the potential for local resource utilization by arrow *R*. This effect on local resources can be higher than with ordinary rural tourism.

Conversely, in the case of ordinary farm activity without rural tourism this effect will remain at a low level even if it exists (arrow *A*). The difference between the two activities depends on the existence of interchange and feedback. Through rural tourism with educational services local people can obtain new and objective perspectives brought by people from outside the community and find previously unnoticed valuable resources and eventually a way to utilize them. We call this a feedback effect on raising the potential of local resource utilization through interchange with people inside and outside of the local community. This effect is caused by participatory activity that creates an opportunity to receive direct feedback from consumers. Because of this feedback, farmers' satisfaction will be higher than that from ordinary farm activity.

Feedback will easily occur with provision of all service goods mainly due to the trait of service goods in that both production and consumption happen simultaneously (Hicks 1971; Hill 1999). Why, however, does this feedback extend to work as an enhancer of the potential for local resource initialization? There are several reasons that can be uniquely found in rural tourism. First, rural tourism is tourism that originally utilizes local resources. Second, the farm-stay program just started a few years previously in the area examined in this chapter, which means that there is still

much room for utilization of local resources. Third, there are externalities generated along with rural tourism activity such as the educational function of the rural heritage and local food culture. The fact of exerting externalities means that provided services are not fully compensated and often experience services are offered free of charge. This behaviour comes from the traditional rural mentality that gives gratis hospitality to visitors. In other words, this informality or incompleteness of rural tourism with experience services as an economic good becomes one of the factors that impresses visitors and eventually leads to a new possibility of local resource utilization.

12.4 Outline of Study Area

The school trip in Japan has been customarily conducted as a part of the school curriculum. Among schools, 92.5% of elementary schools have such trips of a duration of a couple of days, 96.7% of junior high schools have three- or four-day stays, and 96.2% of senior high schools have four- to five-day trips (The Japan School Tour Bureau 2008). These days, school trips are becoming more and more experience-oriented. Especially, junior high schools adopt this type of trip (62.1%), with 7.9% involving experiences related to agriculture, fishery, and forestry (*ibid.*). In this context, this trend is considered as a new business opportunity, which intensifies the competition for attracting school trips among local municipalities concerned. In Matsuura, the farm-stay school trip was launched in 2003, and Matsuura is one of the leading areas in terms of hosting trips of this category in this country.

The study area, Matsuura, is located in the Kita Matsuura Peninsula in Nagasaki on the island of Kyushu in western Japan. Initially, deregulation in accommodation facilities by the prefecture stimulated the start of farm-stay programs for school children in this area. There are 13 hamlet-based bodies in Matsuura that are capable of accommodation and these bodies are organized into one local association that is accountable for coordination, external marketing, development of new experience services, and provision of a training program for operators.

This association is supported by municipal and prefectural governments with regard to funding and staffing. The total capacity of accommodation in this area is 2000 people a night. Although 500 farm and fishing households are registered, there are actually only 4 proactive bodies among the 13 bodies. In 2006, 10101 students and teachers from 58 schools, mainly from the Tokyo Metropolitan area and the Kansai area, the second most densely populated area in Japan, stayed in Matsuura. Among the 58 schools, junior high schools accounted for 77.6% of such trips and high schools 19.0%, meaning that junior high schools are the primary customers. With regard to the duration of the farm-stay among a total of 63 stays by the 58 schools that conducted farm stays and excluding schools that only used hotel and inns, one-night stays accounted for 75.9%, two or three nights for 13.8%, and day trips for 8.6%. These short stays are partly due to a gentlemen's agreement with local hotels and inns to share the benefit of local lodging demand by school trips. In the case of a two-night stay, the stay is supposed to be divided into one night for a farm-stay and another night

for lodging at a hotel or inn. There are seasonal concentrations of farm-stay demand, led by May and June (62.1%) and followed by October (13.7%). The average farm size in the study area is 1.2 ha, which is identical to the national average (Agriculture and Forestry Census in 2005). Unified lodging fee/night/head is 6,300 yen including a 5% consumption tax (equivalent 48.7 euro rated at 1 Euro = 130 yen) and dinner and breakfast. The experience fees are set ranging from 2000 to 3000 yen/head. Since 20% of each fee is deducted for operation of the association, including damage insurance fees, implementation of services for operators, and marketing activities, the remaining 80% goes to the operators. Roughly, 80–85 million yen are yielded as a direct local economic effect and operators receive about 300–350 thousand yen from around 50 visitors on average. In this regard, this activity has not become a principal income source yet, but has remained at an amount that can be considered a sort of side income. Most operators are self-sufficient with regard to most of the foodstuffs such as vegetables and rice served to visitors, and operators often barter among themselves for foodstuffs. Thus, it is safe to say that the local economic effect is still very limited at this stage.

12.5 Survey Method and Data

Before completing the questionnaire survey for the collection of data, we conducted a preliminary interview survey of the people concerned, i.e., leaders of the hamlet group, officers of the municipality, and officers of the local association, in Matsuura in August 2007. Based on this information, we made the final questionnaire-survey after consultation with the funding bodies for this research, i.e., the Ministry of Agriculture, Forestry and Fisheries (MAFF), and the contracted national organization as the coordinator, i.e., the Organization for Urban-Rural Interchange Revitalization (OURIR). We asked 23 questions, soliciting information on profiles of respondents, such as age, sex, years of experience as a provider of the services, kinds of services offered, how providers felt about providing the service, and whether they gained satisfaction from what they offer. The survey forms were distributed through the association for rural-experience tourism in Matsuura to 100 farm or fishing operators who provided farm-stay accommodations and rural experience services in the four most active hamlets in this study area. The association selected proactive farm operators and asked those actually conducting tourism activities to complete the surveys through the leader of the hamlet group, who then returned them to OURIR by surface mail. There were 65 respondents.

12.6 Profiles of Respondents

More than half of the respondents were female. Among the various age groups, those in their 50s accounted for more than 40% and represented the largest group

while those in their 60s were the second largest group, comprising one third of the respondents. The youngest respondent was 43 years old and the eldest was 80. The average age was 59 years, indicating that middle-aged and senior wives were the main bearers of responsibility for farm-stay rural experience activities. Local food experience, farming experience, and fishing experience were the three major services with respect to the menu of rural experiences in this area. Nearly half of the respondents offered only one service and 40% offered two services, indicating that the provision of more than three services was not common. Among those who offered two services, the combination of farming and local food services tended to be most offered. Half of the respondents accommodated fewer than 50 visitors a year, and 40% accommodated 50–100 visitors; only a few respondents hosted over 100 visitors annually.

12.7 Operators' Satisfaction and Index of Potential for Utilization of Local Resource

From the results of our questionnaire survey, as an indicator of an operator's individual satisfaction evaluated with a five-point likert scale, over 90% of respondents felt a sense of reward for provision of experience services (yes: 83.1%, somewhat yes: 10.8%), showing that the activity was highly valued by the operators. As to local effects, over half of the respondents answered that they were embracing "a sense of local pride", which was the most common answer (Fig. 12.1). This rising self-confidence among local people enabled them to abandon their groundless mental barriers or feelings of inferiority to urbanites, which led to changes in the attitude of local people toward urbanites.

These positive feelings can be a precondition to build an equal urban-rural forwarding-looking relationship in the future. The rediscovery of unrecognized local resources, the activation of communication among locals, and the building of a network with urbanites occurred in this order. Stated differently, we can say that a widening perspective of operators in terms of not only inward looking, but also outward looking is occurring. Few respondents indicated effects related toward the actualization of a new activity, such as coming up with an idea for a new activity and putting into practice a new activity. To sum up, it should be noted that rather than directly formulating a new idea and initiating an activity, these local effects took a stepwise form from low to higher stages in the order of rising self-awareness and self-confidence, rediscovery of local resources, building of open human network, coming up with a new idea, and eventually putting into practice a new activity.

We estimated partial correlation coefficients among these six actual local effects for further examination (Table 12.1). We found statistically significant positive corre-

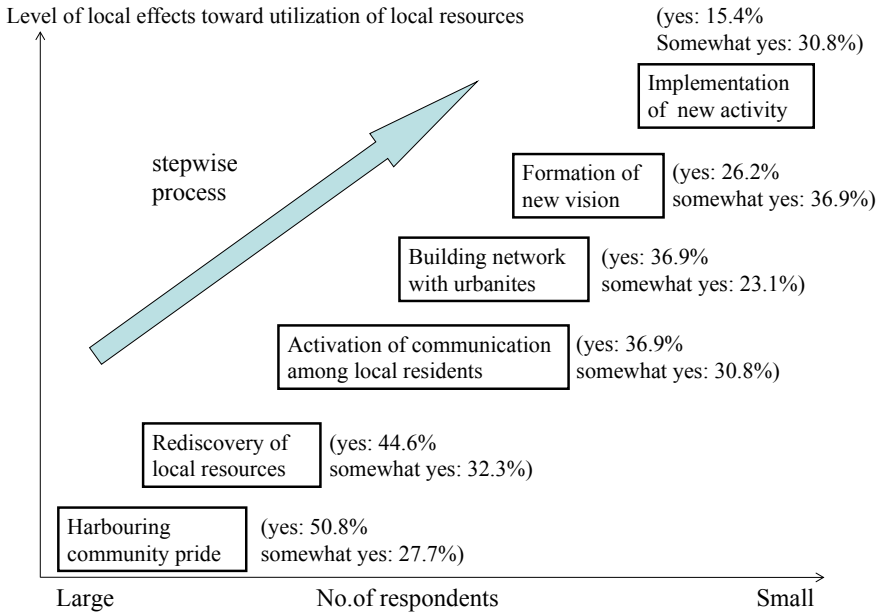


Fig. 12.1 Stages of local effects from the operators' responses

lations among these effects. An interesting result is that the higher local effects have smaller positive coefficients with lower local effects having higher positive coefficients among the neighbouring effects. This suggests that the order among these six effects from the lower to higher effects is not inconsistent. If every local effect gets the highest score, which is five, the sum of these six effects will be the maximum value of 30 per contra. If the lowest score is obtained for each local effect, the sum will be a minimum value of six.

We summed up the score of a five-point Likert scale for the six effects, and the average value was 24.6, with a maximum value of 30 and a minimum value of 17. Consequently, it is safe to say that the higher the sum, the higher the potential for local resource utilization and that we can use the sum of these six effects as a comprehensive indicator of the potentiality of local resource utilization. If the lowest score is obtained for each local effect, the sum will be a minimum value of six. We conducted the normality test of distribution (Shapiro-Wilk's W test) and found that the null hypothesis of normality was not rejected. Consequently, it is safe to say that the higher the sum, the higher the potential for local resource utilization and that we are able to use the sum of these six effects as a comprehensive indicator of the potentiality of local resource utilization. The advantage of this score is that it is easily calculable and quantitatively manageable for the evaluation of local effects, so we term this score the "index of potential for local resource utilization".

To sum up, it was revealed that operators felt satisfaction in terms of non-economic effects rather than economic effects and that not only individual effects but also

Table 12.1 Partial correlation coefficients among local effects

Items	Sense of local pride	Rediscovery of local resources	Activation of communication among local residents	Building network with urbanites	Coming up with an idea for new activity	Putting into practice new activity
Sense of local pride	1					
Rediscovery of local resources	0.5773***	1				
Activation of communication among local	0.5682***	0.5917***	1			
Building network with urbanites	0.4735***	0.5404***	0.6699***	1		
Coming up with an idea for new activity	0.3663***	0.5439***	0.5765***	0.5518***	1	
Putting into practice new activity	0.2995**	0.5084***	0.5152***	0.3447**	0.7294***	1

Source Questionnaire survey conducted by authors in Matsuura in 2007

Note ***, **, * show 1, 5 and 10% significance, respectively

local effects were expressed. It was also revealed that local effects evolved in order starting from harboring community pride, rediscovery of local resources, widening the scope of their network, and eventually to the formation of a new vision and the implementation of a new activity. In this respect, evolving and widening perspectives through the enhancement of the sense of community pride will be an important first step leading to the stage of subsequent full-scale local economic effects.

These local effects have not been considered in the case of ordinary farm production and were not generated fully until experience-oriented rural tourism activity started. These effects work on basic conditions that are present to prepare for the next stage of full-scale economic effects. Thus, we can say that the index of potential for local resource utilization will be an effective indicator of local effects in the preliminary stage. We examine how this index connects with the individual satisfaction of operators below.

12.8 Statistical Tests on Individual Satisfaction and Local Resource Potential

Table 12.2 summarizes the results of statistical tests on the relationship between individual and local effects. We touch upon only those relationships with statistical significance. First, those who felt a sense of reward were those who were female operators, hosted over 50 visitors, were satisfied with the fee level, and provided food experience services. Second, with respect to the reason for the provision of experience services, female operators indicated the rediscovery of locality and the expectation of new income. Those who felt a sense of reward cited as reasons for provision of services the opportunity to teach rural culture and to teach old farm techniques, to have fun teaching and engaging in interchange with others, and the rediscovery of the locality. However, we found no statistical connection with income expectation. In short, operators can learn themselves through teaching rural culture and antiquated farm techniques to students from outside of the local community, and interchanges through service activities generate individual satisfaction among operators.

Third, looking at the individual effects, we can easily notice that there were many statistically significant items. For instance, female operators cited joy in their daily lives. Also, those who were satisfied with the fee level found joy in daily life. Regarding the type of experience, it is interesting to know that those who conducted food experience services expressed high individual effects while those who offered fishing services only expressed lower individual effects. This difference between farming and fishing communities is considered to come from the cultural difference between the two communities (for Japanese rural community, see Fukutake 1980).

Fourth, in the case of local effects, there were many statistically significant items as well. Female operators responded highly on the formation of both an inward and outward human network such as active communication within the community and the extension of their network to include urbanites. Those over the age of 60 pointed out a sense of pride in his/her place, which indicates that the elderly tend to feel the local effect at the initial stage. On the other hand, those who felt a sense of reward and satisfaction with the fee level expressed higher local effects, which indicates that the higher the individual effects operators have, the higher are the local effects. Regarding the type of experience services, we can observe an interesting contrast; those providing the combined experience services of food and farming had higher local effects while those who provided simple food services or fishing services did not. To summarize, local effects have a positive correlation with individual effects. They are higher among female providers and providers of the combined experience services of food and farming while lower among the fishing services providers. Among elderly providers, the local effects remain at the initial stage despite their higher individual effects.

Table 12.2 Individual and local effects versus operators' profiles

Items	Female	Over age 60s	Sense of reward	Over 50 visitors	Satisfaction on service fee	Farming exp.	Fishing exp.	Food exp.	Food and farming exp.	Test method
Sense of reward	H*		-	H**	H*			H**		Chi
<i>Reason for provision of experience services</i>										
Teaching rural culture			H**	H+			L+	L+		Chi
Revival of antiquated techniques			H***		H+				H+	Chi
Fun in teaching			H***							Chi
Fun in interchange with visitors			H***							Chi
Rediscovery of local resources	H***		H***		H+					Chi
Expectation of increase in income	H**				H+					Chi

(continued)

Table 12.2 (continued)

Items	Female	Over age 60s	Sense of reward	Over 50 visitors	Satisfaction on service fee	Farming exp.	Fishing exp.	Food exp.	Food and farming exp.	Test method
Chance for sale of farm/fishing products	H**									Chi
<i>Individual effects after starting activity</i>										
Being in better shape	H*				H***	H*			H***	Chi
More enjoyable life	H**	H ⁺	H***		H**				H**	Chi
Increase in variety of vegetables produced	H*				H*	H*	L ⁺		H**	Chi
Increase in family conversation	H ⁺	H ⁺	H**		H*		L*			Chi
Decrease in abandoned farmland					H ⁺					Chi
Rising motivation for farm activity	H*				H*				H ⁺	Chi

(continued)

Table 12.2 (continued)

Items	Female	Over age 60s	Sense of reward	Over 50 visitors	Satisfaction on service fee	Farming exp.	Fishing exp.	Food exp.	Food and farming exp.	Test method
Increase in income	H ⁺		H ⁺	H ^{**}	H [*]					Chi
<i>Local effects after starting activity</i>										
Sense of local pride		H ^{***}	H ^{***}		H ^{***}	H ^{**}	L ^{**}		H ^{**}	Chi
Rediscovery of local resources			H ^{**}		H [*]	H ⁺	L ^{**}			Chi
Activation of communication among local residents	H [*]		H ^{***}		H ^{***}		L ⁺	H ⁺	H ⁺	Chi
Building network with urbanites	H ^{**}	H ⁺	H ^{***}	H [*]	H ⁺	H ⁺	L ^{**}	H [*]	H ^{**}	Chi
Coming up with an idea for new activity			H ⁺		H ^{**}	H ^{***}			H ^{**}	Chi

(continued)

Table 12.2 (continued)

Items	Female	Over age 60s	Sense of reward	Over 50 visitors	Satisfaction on service fee	Farming exp.	Fishing exp.	Food exp.	Food and farming exp.	Test method
Putting into practice a new activity				H ⁺	H ^{**}	H ^{**}			H ^{***}	Chi
Index of potential for local resource utilization	H ^{* e}		H ^{*** e}		H ^{*** e}	H ^{+ e}	L ^{* e}		H ^{*** e}	t

Source Same as Table 12.1

Note chi = chi-squared test, t = t test. ***, **, *, + indicate 1, 5, 10, 20% (as reference) significance. L lower ratio than the total ratio while H higher ratio than the total ratio of that category and e equal variance, u un-equal variance

12.9 Regression Analysis of Factors that Determine the Potential for Local Resource Utilization

Given the statistical analysis above, the following structural model is presented to empirically clarify how individual satisfaction actually results in enhancement of local resource potential (Fig. 12.2).

We assume that the process that connects individual effects and local effects has two sub-processes: one connected with individual effects (individual process) and the other connected with local effects (local process). The former individual process stipulates that the economic reasons that those operators provide experience services and the non-economic reasons and operator’s attributes determine operators’ individual satisfaction. The latter local process stipulates that individual satisfaction and types of experience services (community attributes) determine the degree of the potential for local resource utilization. Given this working hypothesis, we can expect positive sign conditions for these three working factors to raise the potential for local resource utilization. The signs of operator and community attributes will be determined empirically.

Given the two-stage structure of raising the potential for local resource utilization above, we can describe a determinant function of the potential for local resource utilization below.

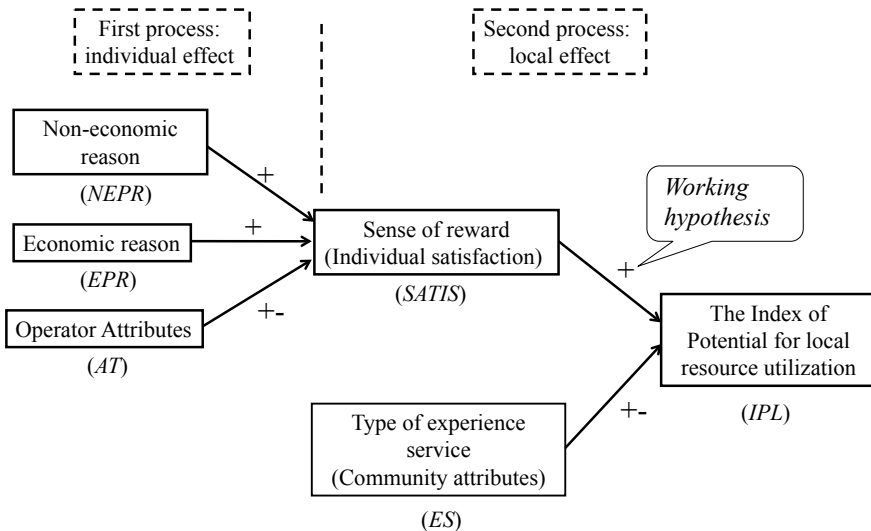


Fig. 12.2 Relationship between the individual satisfaction and the local effects

$$SATIS = g(NEPR, EPR, AT) \quad (12.1)$$

$$IPL = f(SATIS, ES) \quad (12.2)$$

where,

SATIS psychological satisfaction (individual satisfaction)

NEPR non-economic reasons

EPR economic reasons

AT attributes

IPL index of potential for local resource utilization

ES provided experience services (attributes of village)

We use the index mentioned earlier as an actual variable for the potential for local resource utilization (*IPL*). Other variables in Eq. (12.1) are as follows based on the preliminary findings: a variable for an economic reason (*EPR*), expectation of income gain (five-point Likert scale), and a variable for a non-economic reason (*NEPR*), the enjoyment of teaching rural culture (five-point Likert scale). We used a common indicator, the operator's age for the attribute (*AT*).

Although in the preliminary estimation we tested the operator's years of experience in providing this service and the number of visitors hosted by an operator for the variable for an operator attribute, neither case showed a good result. With respect to the variables in Eq. (12.2), we used the estimate of individual satisfaction (*SATIS*) from Eq. (12.1) and the types of experience services (*ES*) as follows: food and farming experiences = 1, other experiences = 0.

As the variable for individual satisfaction, we used sense of reward (yes = 1, no = 0). At the preliminary trial estimation, although we used each of the individual effects for the *SATIS* variable, there was no other variable that generated a far better result than that of a sense of reward. The types of experience services provided were also able to distinguish between fishing and farming villages. This is a clear indicator that tells the difference between the two communities because food and agriculture experiences are only offered by operators in farming villages. In this respect it can be implicitly assumed that the social capital is reflected in these village characteristics. In taking into account of endogeneity of the operators' individual satisfaction, this model was a simultaneous estimation model. Actually we estimated a logit model for Eq. (12.1) and then with the estimate of the individual satisfaction gained from Eq. (12.1) we estimated Eq. (12.2) (two stage least squares method: TSLS). The sample size was 44. This is because we needed to use all data on local effects to obtain the unbiased potential estimate for local resource utilization; thus, we excluded samples with missing observations on local effects.

12.10 Results

The results are tabulated in Table 12.3. Adjusted R^2 was not high, probably because all of the variables were qualitative variables and there is no other similar study for comparison. Nevertheless, since every parameter was statistically significant (up to 10% significance) and the sign conditions were satisfied, we can interpret and accept these results.

We found neither serious multicollinearity from the value of VIF nor heteroscedasticity (Breusch-Pagan test). Now let us examine results in detail. In Eq. (12.1) although both economic and non-economic reasons positively worked on individual satisfaction, the non-economic reason worked stronger than the economic. The

Table 12.3 Estimation results of determinant function of the potential for local resource utilization

Equation	#1	#2
Effects	Individual effects	Social effects
Variables	Individual satisfaction	Potential for local resource utilization
Economic reason (expectation of income, 5-point scale)	1.4666* (1.77)	– –
Non-economic reason (fun in teaching, 5-point scale)	2.1115** (2.01)	– –
Operator's age	0.2190** (2.12)	– –
Individual satisfaction (estimate)	–	5.7564** (2.41)
Type of experience service (food and farming experience, yes = 1, no = 0)	–	4.0981*** (3.31)
Constant	–22.8075 (–2.32)	18.3472*** (8.55)
Estimation method	Logit model	TSLS
LR chi-squared	15.51***	–
ajstR ²	–	0.2539
RMSE	–	3.4455
Sample size	44	44
VIF	–	1.0
Heteroscedasticity (Breush-Pagan Test)	–	n.s.

Source Same as Table 12.1

Notes ***, **, * indicate 1, 5, 10% significance and not significance, respectively. Figures in the parenthesis are z-values for #1 and t static for #2

parameter of the operator's age was positive, which means that the elderly operators gain higher satisfaction than younger operators. In Eq. (12.2) the parameter of estimated individual satisfaction was positive, which means that our hypothesis that operator's individual satisfaction works on the local resource potential was supported. Parameter of food and farming experience services was positive, which indicates that the combination of food and farming experience services enhanced the potential of local resource utilization and the local resource potential in farming villages was higher than that in fishing villages partly because of the different mentality in people between the two types of villages.

To summarize, the results demonstrate that what matters most to raise the local resource potential is that operators enjoy themselves while performing the service. This fact means that a small start can be meaningful. Although enjoyment in performing the service is often stated by rural tourism operators, it has not been confirmed empirically and quantitatively. The results clarified the working factors for this mechanism. In this respect, food and agriculture experience programs should be extended and improved in quality as well.

12.11 Conclusion

This chapter investigated conceptually and empirically how operator's individual satisfaction enhances the local resource potential based on a questionnaire survey of operators of farm-stay programs for students on school trips in Matsuura, Japan. Although further research is needed to more widely generalize the results, the following main points were disclosed.

First, farming experience services are characterized as newly emerging services that utilize local traditional food culture and farming techniques that are often forgotten in modern life. The one unique feature is that close interchange and direct feedback can happen between operators and visitors and that this interchange generates not only individual effects but also local effects.

Second, we defined an 'index of potential for local resource utilization', which is calibrated from survey data. This index expressed local effects from the initial psychological confidence of the operators themselves, rediscovery of local resources through the extension of human networking, and higher stages of a new idea and its realization in terms of rising potentials for local resource utilization.

Third, from an econometric estimation, we confirmed that individual satisfaction works as an enhancer of local resource potential. Among individual effects, the non-economic effect rather than the economic effect is more closely connected with higher local effects. This means that non-economic-based satisfaction is effective as a small start for evoking local resource potentials in stages.

Finally, as policy implications, we should recognize the positive connection between individual satisfaction and local resource potential and therefore strengthen

this connection to realize a new viable activity eventually. In this respect, the coordinator's role as a go-between will be increasingly important to successfully connect between operators and consumers as briefly mentioned in this study. This topic should be examined in further research.

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Chapter 13

Roles of Networking NPOs Connecting Local Stakeholders in Rural Tourism



13.1 Introduction

Nonprofit organizations (NPOs) have been gaining recognition in many parts of society. As civil society progresses, areas where this kind of body run by a group of self-motivated citizens will expand to become involved in various local issues. NPOs are expected to play a role in tourism development in rural areas as well to address many challenges that specifically exist in rural areas. Traditionally, rural tourism has been supposed to be performed by farmers or groups of farmers. Nevertheless, farmers often face various constraints in the management of rural tourism amid the rapidly ageing and depopulated agrarian communities due to the shortage of capital, skills, marketing knowledge, etc. (Ohe 2010a, 2014a). Because of these constraints, development of rural tourism often remains slow in quite a few cases. Rural tourism in Japan, the study area of this research, is not an exception.

To address this issue, which has not been examined fully from an economic point of view, this chapter takes a two-step approach, first conceptually and then empirically. Firstly, this chapter explores conceptually from an institutional economic framework why these constraints often stifle the expansion of rural tourism activity and gives a clue as to addressing this problem by taking into account how support measures can be effectively undertaken. Secondly, the author empirically investigates through a case study how NPOs can contribute to narrowing gaps generated in the field that other local stakeholders such as local governments and travel agencies are not able to fill. To the author's knowledge, research on the relationship between NPOs and rural tourism has not been conducted extensively, yet. In this context, this chapter explores the roles of NPOs in the area of rural tourism by especially focussing on a type of NPO that generates a network that horizontally connects various local stakeholders in Chiba, Japan. Finally, policy implications for the development of rural tourism are presented by taking into account an emerging rural-urban partnership composed of self-motivated citizens.

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13.2 Literature Review

As noted earlier, despite the growing expectations of NPOs addressing local issues, NPOs have not been extensively studied in the tourism research area. As far as the author knows, studies on NPOs have only been conducted in limited areas such as performance of sports organizations examined through a literature review (Winand et al. 2014) and relationship building through a website by content analysis (Uzunoglu and Kip 2014).

This fact is in contrast to the case of non-government organizations (NGOs) that have been studied mainly in the context of poverty alleviation through tourism in developing countries (Barnett 2008; Kennedy and Dornan 2009) or of the relationship between environmental concerns and tourism (Barkin and Bouchez 2002; Lovelock 2005) in both developed and developing countries. Meanwhile, destination management organizations (DMOs) for tourism have been studied extensively from various perspectives. Especially, issues of success in governance of DMOs have been examined by qualitative approaches from stakeholders' perspectives (Bornhorst et al. 2010), from the perspective of corporate governance (Beritelli et al. 2007; Pechlaner et al. 2012), and from a statistical approach with a new mediation analysis (Volgger and Pechlaner 2014). Beritelli and Laesser (2014) focussed on the governance issue by examination of the composition of the board of directors of DMOs. d'Angella and Go (2009) focussed on collaborative tourism marketing practices, mainly the relationship between the DMO and tourism firms. In connection with DMOs and rural tourism, Kompplu (2014) investigated the role of entrepreneurs in enhancing the competitiveness of rural tourism destinations and pointed out the importance of collaboration between small rural tourism entrepreneurs. Beritelli and Bieger (2014) presented a concept of destination leadership as a wider context of destination management. The issues of leadership are closely connected with the NPO activities that this study addresses.

In research on DMOs, Pike et al. (2011) quantitatively investigated the visitor relationship orientation of DMOs by structural equation modeling and Pike and Page (2014) conducted a narrative analysis of a large quantity of destination marketing literature. Lemmetyinen (2010) conducted comparative case studies on three DMOs in Finland by focussing on the role of destination networks. Nevertheless, none of these studies shed light on the roles of NPOs.

From an economic point of view, NPOs have not been explored in relationship to tourism and hospitality economics (Tribe 1995; Cullen 1997; Matias et al. 2009, 2011; Stabler et al. 2010; Vanhove 2011) with the exception of Candela and Figini (2012). Although Candela and Figini (2012) mentioned that non-profit and voluntary organizations could fill in informational asymmetries, what are discussed are labour unions. Crouch and Ritchie (2006) only slightly touched upon DMOs in the context of destination competitiveness. Thus, it is safe to say that NPOs have not been examined either conceptually or empirically in tourism economics. To summarize, an economic approach in examining NPOs that are involved in rural tourism has not been undertaken, which justifies the study described in this chapter.

13.3 Conceptual Framework: An Approach by Institutional Economics

Any rural tourism stakeholder no matter the type, i.e., farmers or groups of farmers, faces various resource constraints for development of the activity. Even if stakeholders have abundant local resources on the farm and nearby, it is often difficult for these operators to find a way to successfully mobilize and manage those resources for rural tourism due to constraints such as a shortage of capital and/or lack of skills for hospitality, marketing, and attractive program development under circumstances of ageing and the decreasing population in rural communities. Since these common constraints that exist in rural areas are hard to eliminate, stakeholders often need support from outside.

Keeping these practical questions in mind and supposing that other conditions are constant, this chapter focusses on capacity building for local resource management among rural tourism operators. This is because the largest issue for those farmers or groups of farmers is the lack of skills for engaging in activities related to rural tourism. We simply call these skills “local resource management skills”. It is costly for operators to acquire these skills. The cost includes not only actual monetary payment but also opportunity costs and psychological costs.

Figure 13.1 depicts two competing cost factors by incorporating the perspective of institutional economics. The right upward curve, NK , demonstrates that those operators who conduct rural tourism face an increasing cost when they try to acquire the necessary skills for the development of a tourism activity within their home community. When the activity becomes larger and larger, it becomes more and more difficult to acquire these skills even if operators could manage to cope with constraints

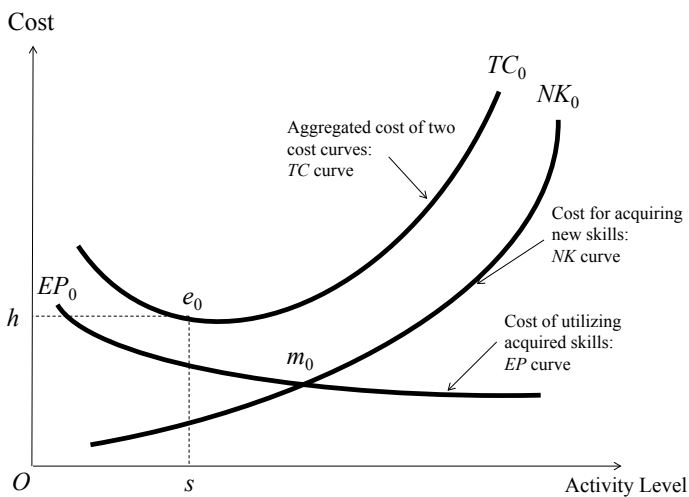


Fig. 13.1 Cost curves of local resource management for rural tourism (1)

imposed by management skills when the activity was conducted on a small scale. This is because the larger the activity becomes, the more difficult it is for operators to acquire skills that require more sophistication in providing the quality and quantity of service and products; such skills are also needed to provide services and products that would become better integrated with other parts of on-farm activity than those necessary at a small activity level (Ohe 2010b). This is because intangible rural tourism is a new activity for farmers unlike traditional tangible farm production. This newness raises cost of the operation for operators, which hampers the development of rural tourism and keeps the rural tourism activities at a small level.

At the same time, however, operators of rural tourism can accumulate business experience as the activity grows, which will lead to reduced costs, which is called here the “experience effect” and is depicted as the right downward curve, EP , in Fig. 13.1. This cost curve means that there is a cost for utilizing the acquired skills that have been accumulated through business experiences in rural tourism. As the activity becomes larger, the more experienced are the operators. Thus, it is apparent that the experience effect reduces this cost so that this cost curve has a right downward slope.

Thus, it is considered that there are two vectors that work opposite each other: the one for an increase in cost and the other for a decrease in cost. In total, the vertical sum of the two costs presents a U shape, TC curve, which has the minimum point at e_0 . The operator will conduct rural tourism at the level of this minimum point e_0 under the assumption that operators behave rationally.

From the fact that actual rural tourism has remained at a low level in Japan, it is supposed that the minimum point of the TC curve is located more leftward than the point m_0 where the two cost curves meet. Now, let me explore the conditions as to how the minimum point is determined and how to improve the situation toward a more rightward minimum point to increase the activity level. The total cost TC is the sum of the two costs, which is expressed in the Eq. (13.1).

$$TC(y) = NK(y) + EP(y) \quad (13.1)$$

where y = activity level of rural tourism.

The minimum point of TC is given as the first derivative of Eq. (13.1) equal to zero as indicated as Eq. (13.2).

$$dTC/dy = dNK/dy + dEP/dy = 0 \quad (13.2)$$

Thus,

$$dNK/dy = - dEP/dy \quad (13.3)$$

dNK/dy means the tangential slope of the NK curve, which represents the marginal cost of the NK curve, newly acquiring skills. Likewise, dEP/dy means the tangential slope of the EP curve and the marginal cost of the EP curve, utilizing acquired skills. Equation (13.3) indicates that both of the marginal costs are identical where TC is

the minimum. dEP/dy has a negative sign because that marginal cost is negative due to its right downward slope, which is illustrated by the fact that the two slopes of the tangential lines are identical when the minus sign is considered in Eq. (13.3).

Thus, the minimum point of TC is determined by the magnitude of which the marginal cost is larger than the other.

$$NK(y) = EP(y) \quad (13.4)$$

At point m_0 where the two curves meet as expressed in Eq. (13.4), suppose the marginal cost of $NK(y)$ is more rapidly increasing than the decreasing marginal cost of $EP(y)$, which is expressed as (13.5). Practically, this is true because it is more difficult to obtain new skills than to utilize already acquired skills when the activity level becomes greater.

$$d^2NK/dy^2 > -d^2EP/dy^2 \quad (13.5)$$

In this case, the minimum point e_0 will be at the left side of point m_0 as illustrated in Fig. 13.1 because there is no prospect that there will be identical slopes between NK and EP curves in the right side of the meeting point m_0 due to widening of the gap in the slopes between the two curves. That means that the optimal activity level remains small. By more rapidly increasing the NK cost, the optimal activity level will be smaller. This case is exactly as happens in rural Japan. At this point, an operator mostly utilizes already acquired skills rather than trying to acquire new skills, which is exactly in equilibrium at a low activity level that does not need higher management skills.

In contrast, suppose

$$d^2NK/dy^2 < -d^2EP/dy^2 \quad (13.6)$$

Then, the minimum point will be at the right side of the meeting point of the two curves. This fact implies that the optimal activity level will be larger than the first case in (13.5). The more rapidly the EP cost decreases, the larger will be the optimal activity, which is favourable for the development of rural tourism. Nevertheless, this does not happen very often unless there is support from outside because the marginal cost of NK rapidly increases.

In short, the above framework explains how the optimal activity level is determined and what the detrimental factors are, which clarifies what factors should be improved to increase the activity level. The reduction in or at least slowing of increases in the NK cost is such an issue. At the same time, it is also important to accelerate the decreasing rate of the marginal cost of utilizing acquired skills, which means enhancement of the experience effect. The author considers that the following type of NPO can play a crucial role in these purposes and therefore an empirical study is conducted below.

13.4 The Chiba Nature School as a Network-Integrating NPO: A Case Study

This study focusses on the Chiba Nature School, CNS hereafter, which is an NPO established voluntarily in 2003 with local government officials, scholars, and company employees to create opportunities to provide a sense of wonder through nature experiences for those children and adults who these days rarely have that kind of experience by mobilizing underutilized local resources including the rural heritage and the elderly in rural areas who are well experienced in farm skills that are outdated now but have a high educational value (Ohe 2008). As of March 2014, CNS has grown from its initial 38 members to a 51-member NPO comprised of farmers, groups of farmers, a local bus company, a third sector enterprise, association of inns, etc. CNS connects these groups and individuals into a horizontal network of like-minded individuals and various types of organizations implementing tourism activity in rural Chiba. A member of CNS is called a “member school” no matter what job the member does as long as it involves activities related to rural and nature experience. The annual membership fee is 10,000 Yen (nearly equal to 100 US dollars as of April in 2014). These members conduct rural tourism, provide nature experience services and environmental educational services, and work to preserve rural resources and heritage. Half of the 20 CNS board members are from member schools to ensure a horizontal relationship with member schools.

The CNS conducts support activities for member schools and also directly provides nature experience services to participants, mainly youngsters. In this respect, a distinctive feature of CNS that differentiates it from ordinary NPOs is that CNS plays the role of integrating its members through networking. Otherwise, these member schools would act in isolation without any support or any network that works together. Thus, CNS builds and horizontally integrates a network of stakeholders of rural tourism in Chiba.

Now let me characterize the role of this network-integrating NPO in comparison with other stakeholders of rural tourism (Table 13.1). Stakeholders shown here are travel agencies, farmers, NPOs, local associations for tourism promotion, local public sector, and a network-integrating NPO. The author evaluated the six areas of activity and examined which areas were the strong and weak points of each stakeholder. In Table 13.1, III indicates an area in which a stakeholder is proficient while I indicates an area in which a stakeholder is not proficient. II means neither proficiency nor lack of proficiency. Evaluation was done from a comparative point of view among stakeholders. Travel agencies have relatively strong financial capability and the ability to attract guests among stakeholders while they lack the capability that raises leaders of rural tourism and designs support measures. In contrast, farmers and ordinary NPOs are inferior in areas of financial capability and the ability to attract guests. The public sector, i.e., local governments, have financial capability to some extent and are capable of designing support measures. Local governments are, however, not good at how to actually attract tourists and to devise tourism service programs, at least in Chiba. Thus, although it is safe to say that local stakeholders should be involved in the areas

Table 13.1 Stakeholders of rural tourism and complementary role of a network-integrating NPO

Stakeholder	Travel agency	Farmer	Local tourism association	Ordinary NPO	Chiba Nature School	Prefecture
Type of stakeholder	Firm	Individual	Association	NPO	Network-integrating NPO	Policy maker
Financial capability	III	I	II	I	I	III
Guest-attracting capability	III	I	II	II	II	I
Development of program	II	II	II	II	III	I
Capability of networking	II	II	II	II	III	II
Capability to raise leader	I	II	II	II	III	II
Policy design	I	I	I	I	II	III
Sector	Private	Private	Semi-public	Semi-public	Semi-public	Public

Notes III means being proficient in that area while I means not being proficient. II means neither 'proficient' nor 'not proficient'

in which each has proficiency, not every stakeholder is proficient in areas of program development, network building, and raising leaders except for network-integrating NPOs despite the significance of these aspects for the development of rural tourism. These factors are common constraints for rural tourism operators in every part of the world. Under these constraints, what CNS is doing is network building among members, leadership training, program development, and marketing activity as a representative of member operators of rural tourism. It also provides price negotiations with travel agencies that are proficient at attracting tourists. Thanks to the existence of CNS, those operators who do not have sufficient bargaining capability can avoid unfavourable price negotiations with travel agencies that are well experienced in price bargaining but are able to provide tourists to these operators. In this sense the CNS has a multi-faceted role: a mediator, integrator and trainer, program developer, and provider of nature and rural experience services. At the same time, CNS does not have a license to conduct a tourism business like a travel agency to avoid competition with tourism business firms because CNS needs a partnership with the tourism sector horizontally.

With respect to its aspect as a trainer, since 2003 CNS has been conducting a training program for operators of rural tourism or those who want to be operators, which is termed 'the training school for rural-tourism operators'. Although this program is financed by the prefecture of Chiba, CNS organizes the whole program. The

author also has been involved in this program as the head of this training school. The number of participants reached 184 people since 2006. The group of lecturers is composed of nature experience trainers in CNS, member bodies of CNS, ex-trainees in this program, officers of the prefecture, and scholars. Thus, this program is a collaboration among people in various fields who have knowledge and experience in rural tourism and can contribute to building a human network for rural tourism, which is difficult to build when conducting rural tourism alone. We can say that CNS integrates, not vertically but horizontally, these various people to work together for the same purpose. No other stakeholders can do this job better than CNS.

Another feature of CNS is that it was not organized by people in rural areas but by people in an urban area to connect the two areas. It has been supposed that rural tourism is conducted by people in rural areas for the benefit of the rural areas and that urban residents are only expected to be visitors to rural areas. The CNS was born in an urban area and works for a rural area. Thus, the activities of CNS indicate that the urban side can play a distinctive role in the development of rural tourism. Self-motivated semi-public bodies will have an important role in rural tourism especially in the expansion of a network that generates an opportunity to work together for people concerned who are outside of the traditional local community. This network-based activity enables operators to ease their own constraints by taking advantage of knowledge and experiences that are available through the network.

Based on the above examination of CNS, now going back to the conceptual framework, in order for the optimal cost minimum point to move rightward, it is necessary to not only shift downward the cost curves but also to reduce the marginal cost of capability building for local resource management, which means reducing the slopes of the cost curves. To achieve this, CNS makes it easy for operators to acquire new skills and form networks that enable them to take advantage of knowledge and experiences of others. In this context, building resource management capability has two aspects, which are the acquisition of new skills and enhancement of the experience effect for the development of rural tourism. It is safe to say that CNS works as a rightward shifter of the cost minimum point, which is the role of a type of NPO that integrates a network horizontally. Figure 13.2 depicts this case, where the activity level increases from O_s in Fig. 13.1 to O_r and the cost becomes lower from Oh to Oj due to the shift down of the aggregated cost curve from TC_0 to TC_1 . In this case the marginal costs of EP_1 and NK_1 are reduced from those of EP_0 and NK_0 in Fig. 13.1.

Like other NPOs, however, CNS is not immune to the common issues observed in NPOs. It is often difficult to achieve a balance between being economically viable and continuing to provide high quality service to member schools amid limited capital and human resources. Needs of member schools vary from one area to another and building an effective network among a broad range of member schools is always time-consuming work. The CNS continuously faces new challenges. At the same time, the roles that this kind of NPO can play and must play are expanding. What CNS is looking at now is an ageing society because Japan is becoming an aged society with the greatest speed in the world, especially in rural areas. The CNS has now launched the 'Senior Nature College' targeted at senior citizens in urban areas. This college provides an opportunity for those senior citizens who are willing to

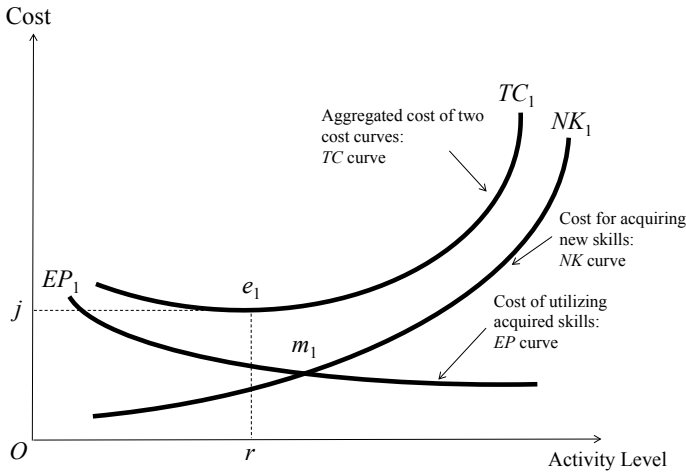


Fig. 13.2 Cost curves of local resource management for rural tourism (2)

take part in rural revitalization projects such as a nature experience, preservation of the rural heritage, and rural tourism activities. Consequently, I can say that the contribution by CNS has now become indispensable in the rural Chiba area and that this approach is applicable to other parts of the world that have basically the identical issues in their rural areas.

13.5 Conclusion

Since operators of rural tourism face various constraints that are difficult to solve by themselves, it is quite often that these constraints hamper the development of rural tourism despite government support measures. This is exactly what has been happening in rural Japan. To address this issue, this chapter conceptually and empirically explored the roles of an NPO that creates and horizontally integrates a network of stakeholders who are involved in rural tourism although that kind of NPO is a body that has not originally existed in the local community. The main points clarified in this chapter are as follows.

The author presents a conceptual framework that explains the slow development of rural tourism often observed from the perspective of institutional economics. The framework considers an increasing cost for newly acquiring the capability for local resource management and a decreasing cost for utilizing accumulated experiences in rural tourism. Under the assumption of minimizing the sum of the two costs, this framework clarifies that the increasing marginal cost of acquiring capability in local resource management hampers the enlargement of rural tourism so that reducing this marginal cost is crucial for the expansion of rural tourism.

Then, this chapter presented a case study of an NPO that locally acts in Chiba, Japan, as a network builder, skills trainer, and program developer and fills needs in areas in which other stakeholders of rural tourism are not proficient by connecting those people who are involved in or interested in rural tourism and related activities between the rural and urban sides. These activities can reduce the marginal cost of local resource management, which eventually leads to the expansion of rural tourism. The roles that this type of NPO established in urban areas can play are increasing in rural areas where ageing and depopulation have deeply progressed. In this context, local policy makers can take more effective policy measures in collaboration with this type of NPO for the development of rural tourism. This point should be kept in mind for design of rural tourism policy.

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Chapter 14

Community-Based Rural Tourism by Networking NPO



14.1 Introduction

Community-based tourism (CBT) development has been attracting growing attention in various parts of the world not only in developing countries but also in developed countries (Hatton 1999). Hatton (1999) collected case studies from 12 different countries and areas in the Asian and Pacific regions. Manhas et al. (2014) focussed on CBT case studies in India that included rural areas. Along with the rising interest in CBT, approaches to the study of CBT have also been diversified. Dittmann (2009) addressed a township-tourism case by focussing on Cape Town in South Africa from a perspective of destination management. Burgos and Mertens (2017) addressed management of CBT in Brazil from the point of view of a social network. Masud et al. (2017) explored factors that influenced community participation in the sustainable development of community-based ecotourism in marine protected areas in Malaysia. Masud et al. (2017) concluded that raising environmental knowledge is an important factor in community participation. Ernowati et al. (2017) investigated the perceptions of host communities and tourists involved in CBT in Bali, Indonesia, and found that the host communities lacked the confidence to share the intrinsic values of tourist attractions with tourists. Another study in Bali examined the role of the governing village body in CBT in Bali (Harmini and Sadguna 2017). Đurkin and Peric (2017) studied the organizational aspects of sustainable CBT development in Croatia and stated that it is important to design an efficient organizational structure in line with the interests and needs of local community stakeholders. Giampiccoli and Mtapuri (2017) proposed a classification of CBT by incorporating five aspects: equity, education, empowerment, endogeny, and the environment. Ohe and Kurihara (2013) statistically verified a positive connection between local brand farm products and tourism in rural Japan. Ohe et al. (2017) clarified the advantages and challenges of an emerging type of community-based forest therapy tourism in Japan. Cai et al.

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(2009) dealt with issues of tourism branding in communities, which is an essential factor for the sustainable development of CBT. As a study on the demand side, Kim and Park (2017) examined the relationships among perceived value, satisfaction, and destination loyalty of tourists to community-based ecotourism villages in Korea by a structural equation model. In short, it can be said that these preceding studies did not pay enough attention to the roles of NPOs despite the fact that NPOs could be expected to play essential roles. This lack provides the rationale for this study.

Tourism in rural areas faces more severe resource constraints than its urban counterpart especially on human, financial, and information resources due to the faster progression of an ageing population and depopulation than in urban areas. Ohe (2016) shed light on the issues of an ageing rural community and CBT in Japan, which is the most advanced ageing society in the world. Nevertheless, that study did not focus on the roles of NPOs.

To counter these disadvantages, network-making NPOs are playing a vital role (Ohe 2014b). Nevertheless, the roles of NPOs in the development of rural tourism have been scarcely studied except by Ohe (2014b). Ohe (2014b) pointed out the distinctive roles that NPOs have played but that other stakeholders in rural tourism destinations could not perform proficiently such as program development, horizontally connecting people, and training operators. Ohe (2014b), however, did not address how actual tourism programs are developed and implemented by NPOs. This aspect needs to be clarified to gain a more clear vision of the roles of NPOs.

14.2 Methodology

Thus, this chapter investigates what roles NPOs play in the development of rural tourism by focussing on one NPO designated as “the Kurihara Tourism Network” (KTN), which conducts rural tourism by creating a network among people in the local communities in Kurihara, northern Japan. The activity of this NPO has been highly evaluated and this NPO has received many awards in this country. The author believes that KTN provides us with important insights on what roles NPOs should play and the issues they face. One of the key concepts of CBT is social capital, which defines how CBT can be developed. Thus, first this study presents conceptual types of CBT. Second, as a case study the characteristics of the KTN are investigated. Lastly, policy implications for CBT development in rural areas are presented.

14.3 Conceptual Model

Firstly, this chapter conceptually considers the types of CBT in rural areas. Figure 14.1 illustrates three cases of CBT. Case 1 is the hamlet-based case that conducts CBT based on a traditional local community. The hamlet is the basic unit

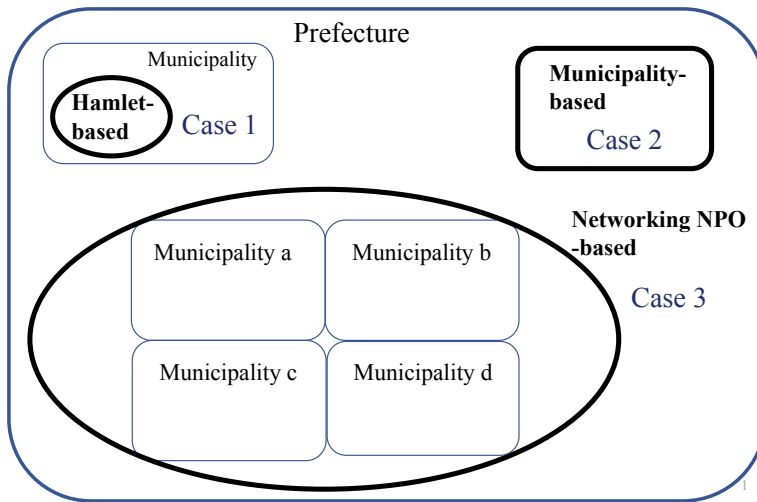


Fig. 14.1 Types of CBT: conceptual understanding: various types of social capital

of life in rural Japan. The merit of this unit is that all members are well known to each other and that a strong bond among members exists. So, it is relatively easy to reach a consensus among people concerned because they have known each other well from childhood. Put differently, they have firm social capital. This social capital is a closed one often called the Coleman type of social capital (Coleman 1988; Burt 2001). Nevertheless, this closeness has a downside as well because it entails a less flexible and narrower resource availability than the wider range of social capital. Case 2 is CBT that is conducted within one municipality. In this case, the government of the municipality quite often takes the initiative. In other words, a strong initiative undertaken by a municipality is a precondition for this type of CBT. Although other bodies such as local community groups could take this role, it is most common that a municipality takes the initiative. Case 3 is that of CBT performed across municipalities. In this case, network-making bodies such as NPOs are expected to play an important role because the single unit of a hamlet or municipality cannot easily address this range of activity.

This is why NPOs are expected to play a role in cases that cover a wider range beyond the boundary of a single municipality or hamlet. In this context, Case 3 corresponds to Fig. 13.2 while Cases 1 and 2 correspond to Fig. 13.1. The purpose of this study is to explore the development of inter-municipality CBT, i.e., Case 3, so that it is rational to focus on the role of network-making NPOs.

14.4 Case Study

14.4.1 Study Area: Background of Kurihara

The studied case, KNT, is located in the rural municipality, Kurihara, in the north of Miyagi Prefecture, northern Japan [for the characteristics of rural tourism in Japan, see (Ohe 2014a)]. A survey was conducted by the author and members of the Tohoku Regional Advancement Center and directed toward the Secretary General of this NPO at the organization's office in Kurihara in August 2017. This survey was in the form of an interview during which I asked the Secretary General to explain the activities of the NPO. Miyagi prefecture is the most seriously damaged prefecture by the Great East Japan Earthquake in March 2011 in terms of the number of lives lost and devastated houses in the coastline areas. Nevertheless, Kurihara is located not near the coast but inland so that it suffered no serious physical damage. Kurihara is a relatively newly formed municipality as the result of the merger of 10 municipalities in April 2005. Mergers of municipalities have been promoted by the national government to promote more efficient administration of municipalities. The case of a merger of 10 municipalities, however, is not common because it is not easy to reach consensus among the many municipalities concerned. The population of Kurihara has been continuously decreasing, from 82,298 in 2005 to 70,792 in 2016, and ageing. The percentage of those who are 65 years and older rose from 30.1 to 36.3% during the same period. Like other rural areas in this country, ageing in this rural area has progressed far faster than the national average, which is already the highest percentage in the world, with 27.3% of the population 65 years or older in 2016 (Cabinet Office 2018). In accordance with the population decrease, economic activity of agriculture and other industries has also been shrinking. Rice is a major crop in this area. That is the background of Kurihara where this NPO is located.

14.4.2 Study Case: The Kurihara Tourism Network

Now let me examine the aims, structure, and activities of the KNT. The KTN was established in March 2010 and subsequently became an NPO in April 2016. It now has four fulltime staff members and a membership of 105 comprised of 78 individuals and 27 groups. These individuals have a wide range of occupations: farmers; operators of farm accommodations, farm restaurants, farm shops, hotels, and restaurants; a carpenter; a guide; a tatami mat maker; a ceramicist; a Noh, i.e., traditional mask artist; another NPO, etc. Thus, it is safe to say that the KTN connects these people horizontally within the rural community. The main activities of the KTN are as follows: tourism, selling of goods, study of local resources, design services for flyers and brochures for local shops, training services for those in the local community, and public relations. Tourism is the main activity of the KTN and it implements and manages rural experiences programs that were developed by the KTN. The KTN

Table 14.1 KTN activity and outcome

Activity	No. participants	No. times
Tourism	2064	135
Good selling	1964	19
Total	4024	154

Source KTN as of the 2015 fiscal year

also hosts school educational trips, plans tourism programs, and hosts study tours about KTN's activities to share what KTN has experienced. The selling of goods is conducted by what has been named the "Jumonji store", which sells traditional hand-crafted goods. The study of local resources is to discover forgotten local resources that might be useful for the development of CBT because the Tohoku region in which Kurihara is located has an abundant cultural heritage in the rural communities. The KTN provides contracted design services for flyers and brochures for local shop owners. Training program offers opportunities to local members to visit model practices in other parts of Japan and to organize courses to study together and exchange information. Public relations involve web-based activity through the KTN's own website and social media and also taking care of media coverage and publicity. All of these activities are performed by the four full-time staff members including the Secretary General, which keeps them busy.

The outcome of the activity of the KTN is summarized as follows: annual budget in 2016 was 20 million Yen (nearly = 148 thousand Euro as 1 Euro = 135 Yen) and revenue was 17 million Yen from program-related activities and 3 million Yen from a subsidy by the municipality. Cost-wise, personnel costs accounted for the largest share, 60% or 12 million Yen, followed by program-related costs of 7.5 million Yen and management costs of 1.7 million Yen. The number of participants in 2015 in tourism and selling of goods are shown in Table 14.1. Although those two major activities attracted about the same number of participants, the number of times that the activities took place differed between the two. This is because KTN tries to raise efficiency through the improvement in revenue per participant in tourism programs.

The KTN attaches importance to two things. First, local culinary and living heritage are respected because ordinary local people themselves are living examples of their heritage, and their daily jobs and hobbies can be easily utilized in authentic experience programs.

Second, the KTN is not oriented toward mass tourism but toward small groups in tours with a short duration. This is to raise revenue through improvement in revenue per participant as stated above and to guarantee the authenticity of the experience program. The secretary of the KTN considers that authenticity is a crucial factor for tourism programs.

Since the KTN provides many programs, the author focussed on only distinctive programs as mentioned below.

14.4.3 Activity in Practice: Food-Heritage Experience Programs

The most popular programs are ones that are related to food heritage because the Kurihara region embraces an abundant food heritage. Let me describe what programs are practiced specifically. First, in line with food heritage-related programs, a traditional food with the local name of “ganzuki,” which is a steamed cake made from wheat flour and was customarily prepared as a treat for farmers during the break in farm work between meals, is prepared by the tourists. This custom of refreshments for farmers was almost forgotten during the modernization process of farm operations. Commonly the cakes were served in a bamboo basket, called “mekago”, also crafted by local residents. The bamboo basket was also forgotten with the progress in modern living. Therefore, the KTN started a program that allows participants to experience both making the traditional treat and the bamboo basket as one set.

The second food experience program was tofu making using a local soybean variety and using a traditional square wooden box called “masu” to contain it and a cotton cloth made by farmers to cover it. This involves collaboration between a local carpenter who makes the masu and farmers who grow the soybeans and make the cotton cloth. Thus, what KTN looks at is not only food per se but also the holistic food heritage. In line with this policy, the KTN implemented food experience programs based on the collaboration with local stakeholders, which connects people to people through this activity and eventually leads to making new social capital.

The third interesting program is a collaboration between two generations of cooks in a local Japanese restaurant, a father and daughter, who have a strong attachment to local foodstuffs and the local farmers who provide local farm produce. The cooks offer a cooking class on Japanese cuisine based on local foodstuffs. The fourth program evokes the richness of the local food heritage from a longer historical perspective. That is a restoration of cuisine from the Edo period, which is the longest and last samurai period before the modernization began. This program was originally based on a recipe book found in an old warehouse of an old feudal family published 150 years ago. This program is in collaboration with the local Chamber of Commerce, farmers, and another NPO.

To summarize, KTN emphasizes presenting holistic experience programs on the local food heritage, which connects local people and enables them to preserve the food heritage.

14.4.4 Agrarian Heritage Experience Programs

The first farm operation experience is a lotus roots operation program. Lotus roots are a traditional local farm product grown in this area, and the KTN created a program that enables participants to experience the process of an entire growing season for this produce: planting, weeding, harvesting, and studying the local food heritage.

Such a program covering an entire growing season is not common because harvesting and/or planting are the most common experiences offered as they are symbolic operations. The KTN thinks that it is important to let participants know the authentic complete process of a farm operation rather than presenting a fragmentary program only presenting the popular parts of a farm operation.

The second farm operation is conic piling of rice straw, called “wara nio”, in an organic paddy. This farm operation has been conducted after the rice harvest to dry the harvested rice by natural ventilation. Rice dried in this manner has a better taste than artificially dried rice. After the mechanization, however, this old rice drying method has been dying out due to its labour-intensive nature, as it must be done manually. So, this program aims to preserve the drying skills used in traditional farm operations by creating a chance for visitors to learn these skills. This program also provides a chance for local persons who have such skills to teach, which also enables drying skills to be kept alive.

Such policy is also reflected in the program of rice-straw craft, making “sime-nawa”, which is a woven rice-straw rope. Making “sime-nawa” has been an agrarian custom for farmers in the slack winter season in preparation for the New Year celebration and worship of deities and ancestors. The rice-straw craft has been used to make sacred ornaments for these ceremonial events to keep away bad luck. With this program, the KTN tries to recover and hand over this tradition to the next generation. For this purpose, the KTN used a small paddy that had been abandoned for more than a decade. Participants grew rice in this paddy starting from planting to harvest. The final product here is not rice, but green rice straw. Thus, rice is harvested earlier than usual so that the straw remains green. These organized programs are implemented with a small unit of people and in short periods of around two hours to have a compact and efficient program.

To summarize, the KTN presents a holistic process of traditional farm production keeping in mind effective and efficient program management.

14.5 Discussion

Now let me discuss the role of this NPO and the effect generated to the local community as shown in Fig. 14.2. The roles of KTN are shown in the left column and the effects in the right side. The four main roles are listed as connecting people-to-people within the community, helping each other, looking back to one’s heritage, and finding roles that suit one’s self. On the right, the four main effects are listed: creating small income opportunities, raising self-confidence of local participants, sharing and forming clear local identity, and maximizing satisfaction of local people.

Finally, KTN faces challenges from three aspects. The first is program management, the second is financial issues, and the third is exploration of new markets such as the attraction of inbound tourists from abroad. As to program management, the KTN has created many programs and now thinks that the number of programs that it handles has exceeded what would be appropriate considering the limited number of

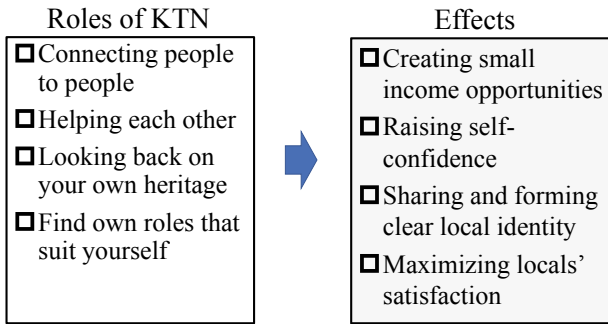


Fig. 14.2 Effects on local community through the programs

staff members. It is necessary to streamline the number of programs for more efficient program management. On the financial issue, financial stability is crucial for the sustainability of this organization, which is a common issue for every NPO. To increase financial stability, the KTN will start to provide an accommodation service by acquiring an old farmhouse, which is now rented by its owner to be used as the KTN office. This point is related to the third point.

To explore new markets for the tourism business, growing attention is now paid to tourists from abroad in every part of this country. This is because Japan has been experiencing a sharp and straight increase in the number of inbound tourists from abroad since 2012; 8.61 million in 2012 to 28.69 million in 2017 due to the government inbound tourism promotion policy. Of course, although tourists from Asia account for the majority, the number of tourists from the rest of the world has also increased, such as from North and South America, Europe, and Oceania. Nevertheless, the Tohoku region, including Miyagi, is not well recognized yet despite its huge potential as a tourist destination for foreigners. Therefore, how to attract tourists from abroad is a common issue for rural areas in this country, including the aspect of language skills. To explore the inbound market, it is necessary to establish a promotion strategy from mid- and long-term perspectives.

14.6 Conclusion

This chapter investigated the role played by NPOs on CBT development through a case study by focussing on the KTN in Miyagi, northern Japan. Main findings are as follows:

First, the author classified CBT into three types depending on the range of the local community: the single hamlet level, single municipality level, and level of multiple municipalities. The KTN focus was a type that connects people over multiple municipalities although these municipalities have been merged into a single one.

Second, the studied NPO, i.e., the KTN, connects local residents through rural experience programs by taking advantage of the rural and food heritage from previous generations in the agrarian community. The KTN shows respect by offering programs in living heritage practiced by local people in ordinary life, which is essential for authentic program-making, the establishment of self-confidence, and rediscovery of the local identity, but is often forgotten in busy modern life.

Third, based on this principle, KTN built a system to provide opportunities for local people to earn small incomes without imposing a heavy burden. Those individuals are involved as instructors and other role players such as providers of local foodstuffs and related craft makers.

Fourth, the unique way of program implementation is that the KTN is not oriented toward mass tourism but provides programs with a small number of participants within a short duration to guarantee authenticity. Another feature is a holistic approach to give participants an opportunity to experience the whole process of farm production and craft making.

Finally, to counter the current issues of program management, financial viability, and the exploration of new markets, this NPO needs to make a balance between efficient operation of programs and maintaining its authentic/holistic nature. Partnership with experts such as those who have skills in English and ICT from outside of the local community will increase its importance.

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Chapter 15

Stepwise Internalization Process of Multifunctionality by Farm Diversification



15.1 Introduction

The importance of farm diversification through an open door policy by farmers, such as through rural tourism and educational services in the farmyard, is attracting increasing attention under conditions of intensive global competition and volatility surrounding agricultural production. This chapter evaluates the relationship between farm diversification and multifunctionality focussing on the educational function of agriculture and addresses the question of how and to what degree farmers internalize externalities. Other than the current examination of this topic, this aspect has not been the subject of a full-scale study.

The significance of the educational function of agriculture has been pointed out (Shichinohe et al. 1990) and is considered to be one of the functions in multifunctionality such as providing urbanites and children with a first-hand experience with agriculture and an introduction to their agrarian heritage (MAFF 2004). This service can become a new role of agriculture (Regione Emilia-Romagna 2005; Ohe 2007a). Conventionally, it has been “city farms” that typically provide educational services to youngsters through farming and rural experiences (Garett 1986). In the 2000s, studies on public programs that strengthen the connection between the educational aspects of farming and the countryside have emerged. Examples are the FACE (farming and countryside education) program in UK (Graham 2004), Ferme Pédagogique in France, Fattorie Didattiche in Emilia-Romagna (Regione Emilia-Romagna 2005) in Italy, and Educational Dairy Farms in Japan (Ohe 2007a).

To our knowledge, however, there has been little exploration from the perspective of farm diversification with regard to this educational function despite extensive research on multifunctionality issues (OECD 2001, 2003, 2005; van Huylenbroeck and Durand 2003; Brouwer 2004; van der Ploeg et al. 2009), with the exception of rural tourism (Slee 1989; Vanslebrouck et al. 2005; Skuras et al. 2006b; Ohe 2007b)

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and ecosystem services (Heal and Small 2002; Wolcott 2006) or agri-environmental externalities (Lankoski and Ollikainen 2003; Mann 2005). Although farm diversification issues have been extensively studied by mainly focussing on topics of risk aversion in farm production and on those of allocation of time between on-farm and off-farm work (Hallberg et al. 1991; Serra et al. 2005) and farm family pluriactivity (Gasson 1988; Brun and Fuller 1991), it is now necessary to explore the increase in diversification by taking advantage of these newly emerging roles for agriculture.

In taking into account several distinctions of the educational function as mentioned below that differ from other areas of multifunctionality, it is necessary to explore how to internalize externalities as well as to design effective policy measures to promote farm diversification in connection with multifunctionality.

To approach this aim, firstly, I give conceptual consideration to characteristics of the educational function and the relationship between diversification and internalization of this educational externality, i.e., externality that has an educational function. Secondly, I estimate the fee-determining model of farming experience services to evaluate the degree of internalization of externalities focussing on Japanese dairy farms with an open farm policy for visitors, which are Educational Dairy Farms and Open Dairy Farms (For activities of the Educational Dairy Farms, see Ohe 2007a). Thirdly, I discuss policy implications for promoting the educational function of farms and farm diversification.

15.2 Conceptual Considerations

15.2.1 *Characteristics of the Educational Function*

We can point out two main differences in the nature of the educational function as multifunctionality in comparison with other functions such as land preservation, landscape forming, bio-diversity, etc. The first difference is the object of its effects. Land-preservation and landscape-forming functions directly affect rural resources and the environment and indirectly affect human resources as economic units. In contrast, the effects of the educational function directly work on human resources. Because of this trait, education itself has externality (Arai 1995). Typical examples of this externality are literacy and the ability to apply basic arithmetic, which form fundamental social conditions for economic development and efficiency of the whole society. Likewise, it is expected that the educational function allows people to recognize the significance of rural resources, such as rural heritage, farm life, and knowledge of where food comes from, and eventually leads to a well-balanced resource allocation nationwide between urban and rural areas. Educational issues in agriculture have been discussed within the scope of industrial education mainly targeted at those who want to be farmers while issues in consumer education, on which I focus in this study, have been scarcely discussed.

The second difference is that I should examine not only technical but also institutional jointness (For institutional jointness, see Hagedorn 2003), which has been little explored because the educational function is more connected with institutional aspects that define farmers' behaviour, unlike other technically defined aspects of multifunctionality in the environment. Technical jointness is normally observed in the educational function as in other multifunctional activities because it is jointly produced with farm products and is technically inseparable from the agricultural production process, which is determined by biological, technical, and geographical aspects. Conversely, institutional jointness is rooted in socio-cultural and institutional factors. In this chapter, food and rural culture are focussed on as institutional jointness. For instance, the educational function in farming is generated and enhanced when a farmer accepts people into the farmyard and lets them not only have technical farm experiences but also farm life and gastronomical experiences that are deeply rooted in the agrarian heritage. This means that the institutional background will work for enhancement of the educational externality, indicating that a potential social role that enables farmers to respond to people's needs exists. In this context, while technical jointness has a limited scope for diversification, institutional jointness is more closely connected with farm diversification with a wider scope in terms of rural resource management, which is a precondition for sustainable rural development. This is the rationale for examining institutional jointness.

Thus, I can say that externality generated from jointness is not constant but can be variable. Durand and van Huylenbroeck (2003) pointed out that jointness between multifunctionality and agricultural production is considered not as fixed but as variable. This is because jointness is determined by technical and institutional aspects of the farm structure, and it is not uncommon for the farm structure to be heterogeneous. The heterogeneity issue in agricultural externalities has been considered in the evaluation of environmental externality in agriculture (Lichtenberg 2002) but not in the educational function of agriculture.

The educational function of farmers will increase in significance since the educational capability of households and local communities in society at large has tended to decline. Nevertheless, it is often difficult for farmers to completely internalize the educational function into the farm business at this stage. The reason for incomplete internalization is that the market for educational services is not yet fully established (Ohe 2007a).

Lack of complete internalization of the educational function and the variable educational externality generated from jointness means that diversification and internalization of the educational externality are not identical. Next I should examine how both technical and institutional jointness determine this variable relationship between diversification and internalization.

15.2.2 Relationship Between Diversification and the Educational Function

Conceptually, it is considered that these two jointnesses determine the educational externality. Figure 15.1 depicts a curve for educational externality by measuring the degree of diversification, e.g., the number of goods and services, horizontally. Vertically, the educational function is obtained from the vertical sum of externalities generated by technical jointness and institutional jointness. As diversification activity increases, the contribution by technical jointness will decline. This is because at the early stage of diversification, ordinary production, milk production in the case of dairy farming, still constitutes a large part of farm activity. At this stage, technical jointness connected with simple milk production is much tighter and less substitutable than at a higher stage of diversification in which farmers can integrate products at their discretion. Thus, the curve of externality of the educational function by technical jointness will be right-downward (*TJ* curve).

On the other hand, externality originating from institutional jointness will increase as diversification progresses, such as through production of processed products. This is because the progress of diversification will enhance the educational externality because of an increase in the variety of activities derived from food and agrarian cultural aspects that do not exist in the initial stage. Thus, as diversification progresses, new opportunities for interchanges between farmers and the non-farming public in

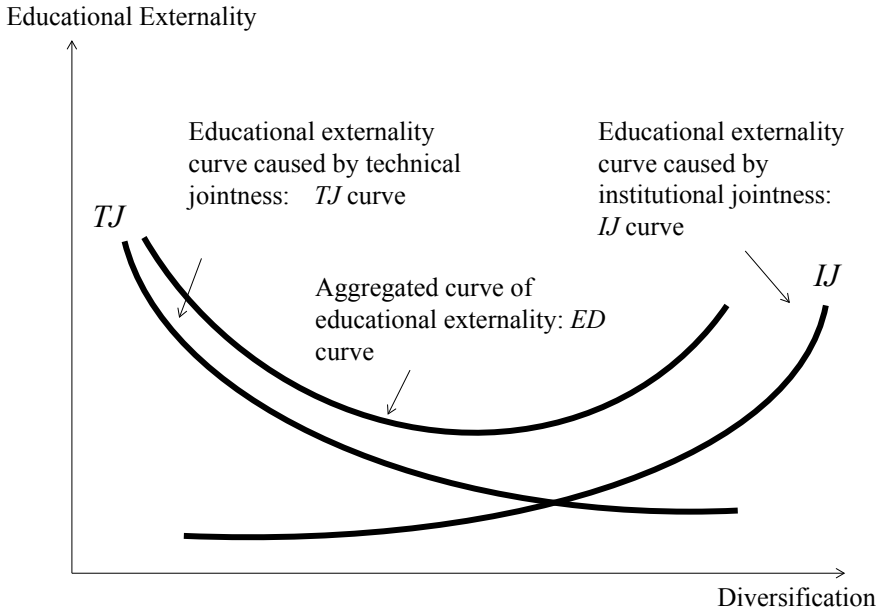


Fig. 15.1 Educational externality and technical and institutional jointness

the farmyard increase, which increase the possibilities of educational externality and vice versa. Therefore, the curve of externality of the educational function by institutional jointness will be right-upward (*IJ* curve). Consequently, in total, the curve for the educational function will have a U-shape (*ED* curve), which means that the externality of the educational function has U-shaped jointness.

Factors should be considered that cause a shift in the *ED* curve. In this respect, there is a national policy framework that enables farmers to raise educational externality. This framework will shift the entire educational externality upward. Specifically, the Educational Dairy Farm program is one policy instituted for the promotion of educational services. The attitude of farmers toward this program determines the management policy they use to provide educational services. For instance, consider a farmer with a good understanding of the program and a motive for providing educational services to visitors. The jointness between this multifunctionality and farm production will be stronger than when a farmer does not have such an understanding and motivation. This program provides an opportunity for highly motivated farmers to raise this multifunctionality.

Another factor that will cause a shift in the educational externality that I should take into account is the type of farm in terms of type of management. For instance, it is very likely that corporate farms act differently from family farms in terms of their educational function and different management policies. Although the type of farm will influence shifts of the *ED* curve, the direction of the shift remains to be empirically determined.

In short, I can summarize that institutional jointness plays important roles in generating educational externality in addition to technical jointness and that institutional jointness will increase in importance as diversification goes further. Nevertheless, this importance of institutional jointness does not guarantee that internalization of the externality or the social optimal is automatically attained. Hence, I need to address how internalization is made and will do this next.

15.2.3 Relationship Between Diversification and Internalization

As an indicator of the relationship between diversification and internalization, I look at the fees for experience services to examine how the process of internalization will occur. To this end, I consider two factors working on the fee level: the supply shift representing the internalization process and the demand shift.

Figure 15.2 illustrates how the subjective equilibrium points of a dairy farmer move in accordance with the progress of diversification. If there is positive externality that is not internalized, then theoretically the marginal social cost (*MSC*) curve moves below the marginal private cost curve (*MPC*). The *MSC* curve is depicted as an inverse U-shaped curve given the conceptual considerations described above. The vertical

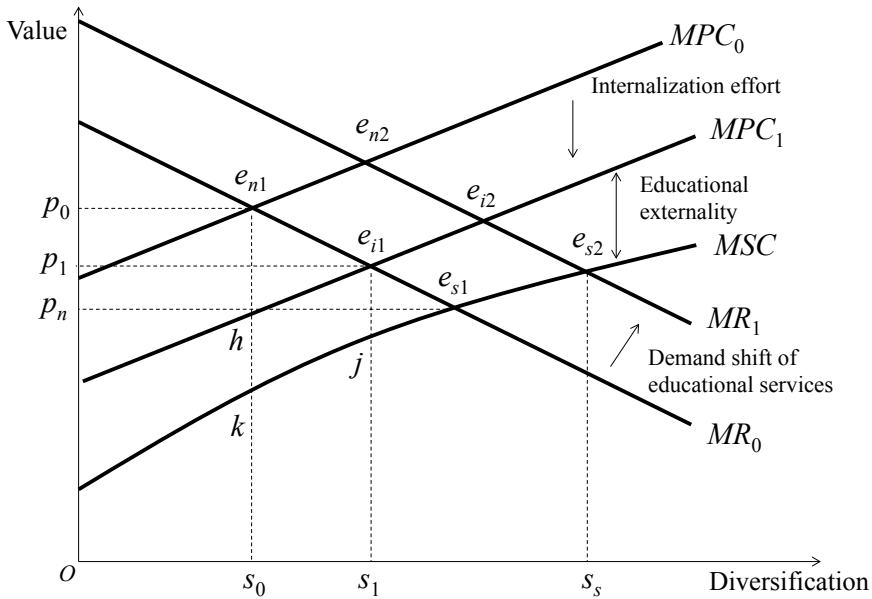


Fig. 15.2 Diversification and internalization of externality

difference between the two curves indicates positive educational externality. Unless this externality is internalized, the social optimal level of activity is not realized.

First, regarding the supply factor, the initial private optimal point is e_{n1} for a dairy farmer at the state of no internalization at all or complete externality. If the internalization effort is made through diversification, then the integration of products will deepen. As a result, the MPC curve will come down closer to the MSC curve and therefore the externality will shrink from $e_{n1}k$ to $e_{i1}j$. This downward shift of the MPC curve results in the reduction of the equilibrium fee from the initial p_0 to eventually p_n through p_1 due to the progress of internalization of the positive externality. This process is caused by the progress of integration among farm products through diversification. This is because at this stage a farmer sells not only simple raw farm products but combines the sale of raw and processed farm products with services such as farming and food processing experiences. Ultimately, the farmer offers integrated farm products. We term this process an internalization hypothesis. The social optimal point is attained at e_{s2} when eventually MPC meets MSC after the complete internalization through diversification efforts.

The second is the demand factor that will raise the fee. This factor causes the upward shift of the marginal revenue curve (MR), which is determined by the degree of demand increase. If people better understand the issues related to the educational dairy farm program, an underestimation of educational services will be rectified. This effect is translated into a demand upward shift from MR_0 to MR_1 .

Table 15.1 Shape of fee curve and magnitude of internalization and demand shifts

Case	Parameter of diversification variable		Shape of fee curve	Fee level	Magnitude of internalization and demand shifts		
	Quadratic term	Linear term					
1	Minus	Plus	Right downward	Down	Effect of internalization shift	>	Effect of demand shift
2	Plus	Plus	Right upward	Up		<	
3	Minus	Minus	Reverse U-shape	Up, down		>, <	
4	Plus	Minus	U-shape	Down, up		<, >	

Consequently, the fee level will be determined by the two, the supply and demand, factors above, and I can consider four cases of the path of the fee movement, depending on both signs of parameters of a possible quadratic relationship between the fee level and the magnitude of the effect of the internalization or the demand shifts as shown for the four cases in Table 15.1. If the internalization effect is larger than the demand shift effect, then the path of the curve for the fee, or the fee-diversification curve, will be right downward (Case 1), but if the effect of the demand shift is greater than the internalization effect, the fee-diversification curve will be right upward (Case 2). The internalization hypothesis applies to Case 1. However, in Case 3, the effect of the internalization shift is initially greater followed by an increase in the effect of the demand shift, resulting in a curve with a reverse U-shape. This sequence is reversed in Case 4, with a U-shaped curve. Empirical results will clarify which case has happened in reality.

This conceptual model, however, cannot tell how integrated diversification was achieved and in which direction: that is, whether a new market for farming experience services was created or whether it was a measure of differentiation of processed products. We need to empirically examine factors that determine service fees in detail.

15.3 Data and Methods

For an empirical examination, supply side data are necessary for this purpose. Nevertheless, this evaluation is different from what has been conducted for activity evaluation of tangible goods as food production, for which official data are readily available. This means that data constraint for this study is much stricter because of newly emerging educational services. What I try to do here is to conduct an empirical investigation with published data because this is the first trial of such an investigation.

Data were obtained from the membership list of Open Dairy Farms (as of March 2004, 129 membership farms, Japan Dairy Council). Open Dairy Farms is a national

group of dairy farmers who conduct an open-farm policy for visitors from the outside, which started 1999 in Japan. Most of these farmers are also certified as operators of Educational Dairy Farms, which started in 1998 with the aim of providing farming experience services to visitors, in particular to school children and other youngsters. Generally speaking, among the Open Dairy Farms, Educational Dairy Farms are considered more inclined to offer educational services to visitors (Hereafter, Educational Dairy Farms = E-farms, other Open Dairy Farms = NE-farms).

Data obtained include the size of the dairy herd, activities offered as a farming experience, and rural tourism activity. However, data on factor input relationships, such as land holdings and kinds of facilities, land use, family labour, and information related to production costs, are not available; neither are data on demand aspects available. For this reason, direct estimations of the production function and other cost functions for economies of scope and scale are not possible. Despite this constraint, no other data are available for detailed examination of the relationships among farm diversification, educational function, and farm structure from a nationwide perspective. The aim here is neither the application of these conventional methods nor to directly measure these indicators but to clarify how internalization takes place.

Educational Dairy Farms mainly provide the nine farm experience services described below. These services are divided into two types, Type 1 and Type 2, depending on the kind of jointness to which they are related. All Type 1 activities consist of only services that are provided in line with ordinary dairy operation, i.e., dairy operation experience, farming experience, tour of the farmyard, contact with livestock, and milking. These services have tighter technical jointness. Type 2 indicates diversification-related services, i.e., horseback riding, butter-making, cheese-making, and ice cream-making; these are all related to agrarian and food culture and require material costs for dairy products or fixed costs for keeping horses, unlike Type 1 services. From this feature, it is considered that Type 2 activities are connected with institutional jointness. If I find a difference in the degree of internalization from the empirical estimation below, I can form some opinions on which type will be more effective for diversification.

15.4 Evaluation of Charging for Farming Experience Services

Now I examine to what extent and how farmers charge for their farming experience services for internalization of educational externality. First, I look at the difference between E-farms and NE-farms in the proportion of farms that adopted a reservation system and the proportion of farms that used a charge system (Table 15.2).

As a whole, E-farms have higher ratios of implementing a reservation system and charging for services. In particular, milking and butter-making experience services have higher ratios (1% significance). The reason is thought to be that farmers must recover a part of opportunity costs of milking and butter-making, which originally

Table 15.2 Comparison of reservation and charging systems between educational and non-educational farms

Measure	Farming experience service	Entire data of open dairy farms				Test result
		Dairy educational farm		Non-educational farm		
		% farms	Sample size	% farms	Sample size	
Having reservation system	Dairy operation experience	62.8	59	22.9	8	***
	Farming experience	34.0	32	20.0	7	+
	Tour of farmyard	38.3	36	22.9	8	+
	Contact with livestock	29.8	28	11.4	4	**
	Milking	62.8	59	22.9	8	***
	Horseback riding	10.6	10	2.9	1	<i>n.s.</i>
	Butter-making	53.2	50	17.1	6	***
	Cheese-making	17.0	16	5.7	2	+
Having charge system	Ice cream-making	29.8	28	11.4	4	**
	Dairy operation experience	26.6	25	2.9	1	***
	Farming experience	17.0	35	0	0	***
	Tour of farm yard	11.7	11	2.9	1	+
	Contact with livestock	9.6	9	2.9	1	<i>n.s.</i>
	Milking	43.6	41	11.4	4	***
	Horseback riding	16.0	15	5.7	2	+
	Butter-making	43.6	41	14.3	5	***
Having charge system	Cheese-making	13.8	13	8.6	3	<i>n.s.</i>
	Ice cream-making	23.4	23	8.6	3	*

Source Membership list of the open dairy farms, as of March 2004, Japan Dairy Council

Notes ***, **, *, + show significance levels, 1%, 5%, 10%, 20% (as reference), *n.s.* shows no significance. Chi-squared or Fisher's Exact test was used

generate income through sales of these products. To this end, farmers usually have to coordinate their main job of dairy farming with offering educational services because they must make preparations to offer these services. This is why a reservation system is needed. The number of farms that adopt a charging system, however, is less than half of the total sample. This means that over half of the farms do not charge for educational services, so that these services are offered free of charge.

In summary, those educational farms that are eager to give educational services tend to practice reservation and charging systems to allocate their time and to partially compensate for the opportunity cost of providing educational services.

Here, I estimate the fee-determining model of farming experience services to evaluate the degree of the internalization. An analytical model based on the above considerations is presented below. The vector of farm diversification, s , is to examine how the degree of diversification works on the educational function. The vector of educational activities, ed , is to examine the difference in educational activities. The vectors of farm attributes, fm , are to examine the influence of farm attributes.

$$F = f(s, ed, fm) \quad (15.1)$$

where,

- F charge level of adult fee (yen per capita)
- s vector of variables representing diversification
- ed vector of variables representing educational activities
- fm vector of farm attribute.

The estimation model is as below.

$$F = \gamma_0 + \gamma_1 SL^2 + \gamma_2 SL + \gamma_3 TYPEDM + \gamma_4 HR + \gamma_5 FFDM + \gamma_6 EDDM + \varepsilon \quad (15.2)$$

where,

- SL number of directly marketed dairy products
- $TYPEDM$ dummy variable of type of services (Type 1 = 0, Type 2 = 1)
- HR duration of educational service (minutes)
- $FFDM$ dummy variable of family farm (family farm = 1, others = 0)
- $EDDM$ dummy variable of E-farms (Educational Dairy Farms) (yes = 1, no = 0)
- γ_i parameters to be estimated, $\gamma_0 = \text{constant}$ ($i = 0, \dots, 6$)
- ε stochastic error.

The explained variable is the adult fees for farming experience services. Given the constraints on data availability, the explanatory variables are set up.

We assume a quadratic form for the fee-diversification curve as considered in Table 15.1. The first explanatory variable SL is the number of direct-marketed products for the diversification variable. There, I can suppose four cases, so the sign

conditions of γ_1 and γ_2 are determined by the empirical result. We can see whether the shift effect of diversification is large enough to bring down the fee level.

As the first variable of educational activities, the dummy variable *TYPEDM* (Type 1 = 0, Type 2 = 1) is used to test the difference in types of experience services. There can be possible contrasting effects on fee levels. First, since Type 2 services need to be compensated by at least a material fee and fixed cost, the fees in Type 2 are supposed to be higher than those of Type 1. Second, Type 2 can be easily integrated as selling of foodstuffs, which will promote internalization while food and rural cultural factors for this type will create more educational externality. So, whether this variable makes the fee go higher or lower is simply an empirical question.

As the second variable, the duration of the services, *HR*, is to explore the hourly marginal fee for the educational service. The parameter γ_4 is the marginal fee that must be positive. The marginal fee gives us criteria to judge whether a factor input relationship is formed and thus internalization is conducted economically. Although the duration of time is not exactly labour input, I can use it as a proxy variable for labour input because of the tight data constraints. If this parameter is positive with significance, then I can guess whether or not the market for the service is viable. Thus, the sign conditions are $\gamma_3, \gamma_4 > 0$.

As farm attribute variables, the dummy variable *FFDM* (family farm = 1, others = 0) is used to test the family farm premium γ_5 , which is supposed to be positive, meaning the existence of a family farm premium. This is because family farms tend to be less diversified, which means that their equilibrium fee is supposed to be higher than that of non-family farms as shown in Fig. 15.2. The dummy variable *EDDM* (yes = 1, no = 0) is used to test the difference in whether or not a farm is an E-farm and γ_6 is supposed to be positive. This is to test the social learning effect of an open network due to being a member of E-farms. Although I tested herd size, which is considered to represent farm size, I did not get any results that had statistical significance and thus I dropped it.

The explained variable is left-censored cases, in which the services are provided free of charge, so I used the Tobit model with OLS estimation as a reference. However, from the result of OLS estimation heteroscedasticity was observed due to large differences in variance among fees, so I conducted a bootstrap standard error estimation. As a reference, from the OLS estimation the result showed that the largest VIF was 12.62 between *SL* and *SL*² although VIF between the dummy variables was 1.21 at most, which indicates that there was no multicollinearity between the dummy variables; therefore, there was no dummy variable trap. Nevertheless, I have to suspect the possibility of a multicollinear relationship between linear *SL* and quadratic *SL*² because the VIF was a little greater than 10, a benchmark of multicollinearity. Although linear and quadratic variables often tend to have a collinear relationship, both of these two variables are indispensable for an empirical evaluation in accordance with the conceptual model. The result of the Tobit estimation in Table 15.3 shows that the parameters of these two variables have statistical significance (1 and 5%). This statistical significance indicates that the inflation of variances in these parameters from multicollinearity was not destructive enough to eliminate significance. Thus, I carefully used these parameters.

Table 15.3 Educational service fee determinant factors (Tobit model)

Explained variable	Adult fee for service
SL^2 : (Number of direct marketed milk products) ²	-29.2737** (-2.00)
SL : Number of direct marketed milk products	246.8020*** (2.68)
$TYPEDM$: Dummy of type of service (Type 2 = 1, Type 1 = 0)	516.8974*** (3.41)
HR : Duration of farming experience services (minutes)	0.8500 (0.86)
$FFDM$: Dummy of family farm (family farm = 1, others = 0)	348.6527*** (2.63)
$EDDM$: Dummy of dairy educational farm (yes = 1, no = 0)	421.7372** (2.30)
Constant	-883.3714*** (-3.64)
Log likelihood	-1602.5624
Wald Chi-square test	39.10***
Sample size	301

Source Same as Table 15.2

Notes Signs of significance level are same as in Table 15.2. Standard errors were estimated by the bootstrap method due to heteroscedasticity. Numbers in parentheses are z-values

Although I estimated the case of a child’s fee as well, the parameters did not show statistically significant results. These results suggest that service fees are determined based on fees for adults but not for children.

Results of the estimation are shown in Table 15.3. The parameter of the linear term was positive while the parameter of the quadratic term was negative for diversification and both parameters showed statistical significance. This result means that the fee level comes down when diversification progresses, corresponding to Case 1 in Table 15.1, meaning that the downward shift effect of MPC toward MSC by internalization is larger than the upward shift by demand. This result supports the internalization hypothesis, meaning that internalization efforts are made to a certain level. Nevertheless, the result does not tell how the diversification is made. So I look into the rest of the parameters.

A positive parameter of Type 2 services connotes that a higher fee is charged because material costs are higher than in Type 1 services and educational externality was generated due to the institutional jointness derived from food and agrarian culture. The parameter of the duration, a proxy of the marginal fee, however, was not different statistically from zero, which implies that the factor input relationship has not been formed and therefore that the market for farming experience services is

not yet viable as a single market itself. The constant with significance suggests that lump-sum fee fixing is practiced.

The positive parameter of the family farm indicates that there is a premium for the family farm. This is because they need this premium to compensate for difficulty in diversification due to their tighter jointness. The positive parameter of the educational farm implies the effect of an upward shift in demand as a result of the social learning effect of the E-farm network.

To summarize, it is safe to say that externality of the educational function is incompletely and partially internalized. Rather, farmers act to collect at least material cost and internalize part of the externality through diversification; therefore it cannot be denied that farmers act rationally at this stage. Especially, the family farm tends to have difficulty in internalization of educational externality through diversification. Even if farming experience services are integrated, they are provided as auxiliary services combined with dairy products rather than as independent services.

15.5 Conclusion

The relationship between the multifunctionality and farm diversification achieved by the farmers' open-door policy to urbanites has not been fully investigated despite growing interest in this area as a new income source. Thus, this chapter explored this issue conceptually and empirically by focussing on the internalization of the educational function of agriculture by focussing on Educational Dairy Farms in Japan.

The educational function has the following unique features: its effects directly influence human resources and it has not only technical but also institutional jointness, especially featuring the food and agrarian heritage, which can generate externality along with diversification and provide room for internalization by farmers. Thus, institutional jointness plays a role in forming the complementary relationship between farm diversification and multifunctionality. Consideration of the institutional jointness enables us to have a wider scope of internalization of multifunctionality especially when combined with the open-door policy of farms.

The internalization was not sufficiently accomplished. Although I should take into account their limitations, our empirical results imply that farmers do not completely but only partially internalize their production externalities through diversification. However, the internalization of the educational externality is made through integration as supplementary services combined with processed products and not yet as viable services. Consequently, the integration of these newly emerging services should be addressed, and policy measures should be taken, especially for family farms that enable farmers to provide educational services as a viable market in the future.

Finally, given the initial stage of empirical and conceptual studies on the relationship between farm diversification by the open-door policy and internalization of multifunctionality, it is necessary to conduct further research especially on the

aspects of the social learning effects of the open network. This will promote exploration of the new social role of agriculture, the internalization of multifunctionality, and demand creation eventually. We address this issue in Chap. 16.

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Chapter 16

Roles of Social Learning Network in Educational Tourism in Dairy Farms



16.1 Introduction

It is now widely recognized that agriculture has multifunctionality (OECD 2001, 2003, 2005; van Huylenbroeck and Durand 2003; Japan Science Council 2001) or positive externalities to society, in addition to food production. One of the sub-functions of the multifunctionality that has been little investigated is the educational function that enables people to learn about farm life and how food production is conducted, which are often forgotten in modern urban life (Ohe 2011a). In this respect, educational tourism in agriculture has been attracting growing attention as a newly emerging activity along with the burgeoning demand for experience-oriented tourism. Examples of such activities that have already been implemented are the FACE (farming and countryside education) program in the UK (Graham 2004; Gatward 2007), Ferme Pédagogique in France, Fattorie Didattiche in Emilia-Romagna in Italy (Canavari et al. 2009), children's gardening in the USA (Moore 1995), and educational dairy farms (hereafter EDFs) in Japan (Ohe 2007).

One problem with these educational services is that their activities have yet to become economically viable (Ohe 2011b). For this reason, rural and farm experience services have often been studied together with rural and agritourism (for Japanese, Sato 2010; Ohe 2010; and for Italian, Ohe and Ciani 2011). Nevertheless, with the increasing demand for these educational services and, on the other hand, with the mounting competitive pressure in the market for farm products as well as constant price volatility, it is time to focus on clarifying the conditions under which viable educational services can be established as a new income generating farm activity rather than remaining as a simple generator of externality to society without any compensation. This issue has not been fully addressed through an economic approach, although case studies were sporadically conducted (e.g., Sato 2008; Yamada 2008).

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In response to this need, this chapter approaches this issue with a perspective on farm diversification by internalizing the externality of these educational services. First, I present a conceptual model under the framework that the internalization process of educational externality is attained through stepwise innovation. I consider on-farm and off-farm factors that stipulate that stepwise process, especially looking at the role of social learning network organizations. Second, by an empirical approach, I focus on Educational Dairy Farms in Japan, which is a network organization that provides a pioneering framework for the provision of educational services in agriculture in this country and I quantitatively examine the relationship between the operators' orientation toward viable educational service activity and factors related to farm activity by statistical tests. Subsequently, I estimate an orientation determinant model of viable educational services and explore factors to determine that orientation. Finally, policy recommendations are presented for more effective support measures to attain the viability of educational tourism services.

16.2 Literature Review

In the arena of agriculture, since the classic work by T. W. Schultz (e.g., Schultz 1971) on education as an investment in human capital, the education of farmers has been considered as essential for the diffusion and adaptation of new technology in agriculture in developing countries (Foster and Rosenzweig 1995). This is basically the same in the tourism industry except for one thing, that is, the addition of the importance of service management due to the characteristic of service goods that tourism has. The importance of raising human capital that serves its own industry has not changed in any industry, as producer education that aims at those who serve the industry (Airey and Tribe 2005; Fidgeon 2010). Nevertheless, what this chapter addresses is in the area of consumer education rather than producer education. As far as the author knows, Shichinohe et al. (1990) was the earliest to point out the existence of the educational function in agriculture as consumer education; this was then followed by sporadic case studies as already mentioned.

Issues on the diffusion of agricultural technology were taken up as a good example of social learning (Goyal 2007). Leeuwis and Pyburn (2002) conducted comprehensive studies on the social learning network in agriculture. Sociological approaches were mainly used in social learning in agriculture as follows: technological innovation in genetically-modified crops (Oreszczyn et al. 2010), farmers' markets (Hinrichs et al. 2004), organic farmers' network (Kroma 2006), and sustainable or environmentally friendly agriculture (Nerbonne and Lentz 2003; Andrew 2003; Naiper and Tucker 2001; Ingram 2010). With social learning in environmental research, issues on environmental education and raising awareness of the environment have been studied (Measham 2006; Raymond et al. 2010). In agricultural and development economics, social learning studies are concentrated on technology transfer in developing countries (Conley and Udry 2001; Munshi 2004; Yamauchi

2007). On the contrary, in tourism research, Fisher (2004) explored the demonstration effect from the perspective of imitation and social learning and Koutsouris (2009) dealt with social learning related to sustainable tourism; however, these two studies were descriptive. Studies on social learning issues are very limited in tourism research compared with agricultural research where quantitative analyses with economic frameworks have been conducted actively.

On topics of farm diversification, van der Ploeg et al. (2009) conducted a sociological investigation and Sharpley and Vass (2006) examined the connection of rural tourism with farm diversification. As to rural tourism studies under an economic framework, OECD (2005) explored the issues of internalization of externality generated by multifunctionality in agriculture, including rural tourism. In comparison with a wide range of econometric tourism research in general (e.g., Barros (2005) and Barros and Machado (2010)), although econometric analyses of rural tourism are increasing (Tchetchik et al. (2008) on rural tourism market evaluation and simulation, Vanslenbrouck et al. (2005) and Ohe and Ciani (2011) on hedonic pricing, Ohe (2011b) on measuring labour productivity of rural tourism), sufficient numbers of econometric research papers on rural tourism have not been accumulated and such papers that are available did not focus on farm educational services per se.

Finally, regarding my aim of empirical economic studies on educational services and travel in agriculture, Ohe (2007, 2011a) took a stance on the internalization of the educational externality by presenting an economic framework and conducted empirical evaluations of EDFs. Although it is crucial to clarify the conditions for viable educational services, from what is described above, no study has thus far answered the questions of social learning and stepwise innovation of educational services and tourism in agriculture. Therefore, this chapter throws light on the topics that remain to be explored and tries to further the establishment of viable educational services.

16.3 Conceptual Framework: Stepwise Internalization Process of Educational Externality in EDF Service

Here, I present a conceptual framework of a stepwise internalization process to establish a basis for the empirical examination in the latter half of this study. Figure 16.1 depicts an operator's subjective equilibrium in the provision of educational experience services by vertically measuring values and the level of farm activity horizontally. Out of three right upward lines, there are two marginal cost curves depicted because farm activity including the operation of EDF activity generates positive externality as a multifunctionality of agriculture. The marginal private cost curve *MPC* is indicated by the upper right upward line and the marginal social cost curve *MSC* is indicated by the lower line. The vertical distance between the two curves indicates the educational externality generated by EDF activity. The reason why the two marginal cost curves have different forms is that the educational externality

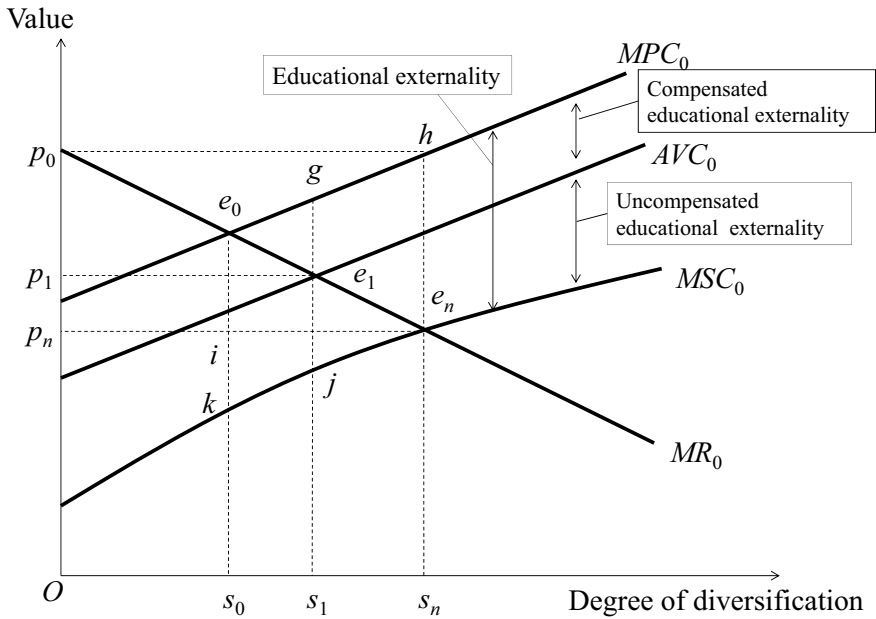


Fig. 16.1 Internalization process of educational externality

depends on the level of diversification, which determines the shape of the MSC curve (Ohe 2011a). The middle right upward line is the average variable cost curve AVC because the AVC curve always comes under the MPC curve in the diminishing return area that we consider here.

The right downward curve illustrates the operator’s marginal revenue curve of educational experience services, MR_0 . If there is no externality at all, then the ordinary subjective equilibrium, or the private optimal point, is attained at point e_0 where the MPC curve meets MR_0 . Nevertheless, the subjective equilibrium points vary from one operator to another, actually depending on the attitudes and managerial efforts as to where the operator positions the educational experience services in the farm activity. In this respect, I consider three main cases that represent the stepwise process toward the internalization of the externality as described below to simplify the discussion, although I asked more than three questions on attitudes in the questionnaire survey as mentioned later.

The first phase is the case wherein the operator provides educational experience services on the MPC curve. In this case, the operator does not fully recognize the existence of the educational positive externality that he/she generates or provides these services as a volunteer, even if the operator recognizes that externality. This means that internalization of the educational externality is not conducted at all. Thus, this subjective equilibrium point is attained as the private optimal at e_0 and educational experience services are offered to Os_0 , shorter than the social optimal supply level Os_n .

The second phase is the case whereby the operator does not act to recover the marginal social cost that equals the amount of externality the operator generates but only to recover at least the material cost although the operator recognizes the externality. In that case, the operator provides the services as a semi-volunteer and pays the average cost. Thus, the operator's subjective equilibrium is attained as the average cost optimal at e_1 where the average variable cost AVC_0 meets MR_0 with providing service Os_1 . The operator can partially recover the externality, i.e., ge_1 out of gj and e_1j is left uncompensated because the operator has to pay for that as a part of the average variable cost. This means that the social optimal resource allocation is not achieved as an economic activity and thus the orientation toward a viable economic activity is not established yet.

In the last phase, the operator charges for every educational experience service as a result of managerial efforts, meaning that the externality is completely internalized. The social optimal is attained on the MSC curve at e_n where I can say that the complete internalization of the externality is achieved because the operator takes into account the social cost that should be compensated. Also, the two marginal cost lines, MPC and MSC curves, are overlapped at least at the point of e_n due to the downward shift of the MPC curve. I assume that this downward shift of the MPC is caused by stepwise innovation starting from e_0 to e_n through e_1 . This is the stepwise process of the educational internalization. At the last phase, the orientation toward a viable economic activity is firmly established.

The next empirical questions are to clarify what and how factors inside and outside of farms stipulate the operators' behaviour that enables them to cause stepwise innovation or the downward shift of the MPC curve to the MSC curve.

16.4 Hypothesis: Significance of Network Organizations

As one of the factors that generate the stepwise innovation, I focus on the social learning effect among operators in the network organizations in addition to on-farm factors. To explore the significance of network organizations, I characterize the two contrasting types of network organizations that undertake new activities in rural areas (Table 16.1). The second column shows various factors related to traditional network organizations in rural areas. A typical example is the hamlet organization, which originates from the banding together of members of the local community and acts as a body to organize and perform the collective work in the hamlet. Further, these network organizations are now expected to act as a body to undertake new village businesses such as rural tourism. Rural community-based activity is the root of this type of organization, so that these organizations are basically constituted of community members. In this context, entry and exit of members from outside of the community are not easy. Thus, that type of organization is closed rather than open to those outside of the local community and I term this type a 'closed network organization'. Because of this characteristic, it is easy to suppose that the optimal size would not be large. This optimal size will remain relatively small and therefore

Table 16.1 Features and roles of network organizations in rural areas

Type	Closed network organization	Open network organization
Origin	Club of local community	Club of like-minded individuals
Characteristic	Territorial	Personal
Entry/exit	Difficult	Easy
Territorial limitation	Yes	No
Optimal size	Small	Large
Effective areas	Traditional collective work in the hamlet, rural business activity	Social learning of new activity, new market formation
Examples	Conventional hamlet bodies	Educational Dairy Farms, Open Dairy Farms

an organization limited to local residents will be a suitable size for this type of organization.

Now I look at the open network organization (third column). This type of organization has the following features in contrast to the closed network type. This open network type is based on like-minded relationships or personal relationships or connections. Therefore, the membership is not limited territorially, so that entry and exit are easier than in the former type. This type has an advantage in sharing and acquiring information and developing ideas based on such shared information; thus, it is suitable for activities by independent individuals rather than those acting as a body for conducting business that needs strict decision-making. The Educational Dairy Farms and Open Dairy Farms that are mentioned below are typical examples of these types of network organizations.

Innovation in the way of utilization of local tangible and intangible resources will cause a reduction in management costs by a downward shift in the cost of resource utilization. Such innovations in utilization of local resources are not always hardware related but are more often software related, which are also difficult to generate (Ohe 2011b). Thus, as the conceptual framework, it is realistic to assume empirically that this downward shift will occur in a stepwise manner rather than occurring all at once.

Although the conventional agricultural organization has been mostly a closed network organization, which is closer to the Coleman type of network, the open network, which is closer to the Burt type network, has not been well investigated (Coleman 1988; Burt 2001). Social learning among people concerned is expected to work on the stepwise downward shift in the cost of resource unitization. Since the social learning effects have not been tested in the case of new rural services, such as educational experience services, in agriculture and rural tourism, this study will try to fill this gap in research.

16.5 Two Social Learning Organizations for Operation of an Educational Dairy Farm

To be an associate of Educational Dairy Farms, a farmer must attend a course on principles, safety, hygiene, and communication skills as well as presentation of a case study provided by Japan Dairy Council, which is a national dairy farmers' organization. The Council administers the certification for recognition as an Educational Dairy Farm and presents various capacity building courses for those with certification as an Educational Dairy Farm as well as dairy farmers at large in Japan.

In addition to the Educational Dairy Farms organization, I need to look at another organization, which is called Open Dairy Farms. It was established in 1999 and is a nationwide organization of dairy farmers who conduct an open-door policy to visitors from outside of community. Although also supported by the Japan Dairy Council as a secretariat, membership is voluntary with no requirement of a technical course. Open Dairy Farms is autonomous, having its own board and consisting of six regional branches comprised of member farmers. This organization has played an important role for its member farmers by providing a forum for sharing experiences, information, and ideas and also in shaping a long-term vision and philosophy for open-door farm activity, e.g., by often conducting dairy events at local and national festivals. Although its main purpose is not to provide an educational service, Open Dairy Farms has supported the evolution of educational dairy farms as a banner of the open-door policy of dairy farms. In this regard, Educational Dairy Farms has developed together with Open Dairy Farms. Interestingly, Educational Dairy Farms and Open Dairy Farms have the common feature of a typical open network organization. In reality, these two networks have overlapping memberships as shown in Table 16.2.

It is considered that the two networks, through which member farmers exchange information and strengthen networking among members formally and informally, have worked complementarily as social learning places, which generate a network externality that leads to a downward shift of the *MPC* curve. This complementary relationship then generates the stepwise innovation of internalizing externalities by enabling members to firstly recognize a new role for agriculture and then to come up with an orientation for internalizing educational externalities. This is my working hypothesis, which I tested empirically below.

Table 16.2 Connection between Educational Dairy Farms and Open Dairy Farms

Item	No. farms (%)
No. Open Dairy Farms	282
No. Educational Dairy Farms among Open Dairy Farms	231
Ratio of double membership (%)	89.9
Ratio of double membership among family farms (%)	95.6

Source Data were from questionnaire survey of Educational Dairy Farms implemented by the author from October to December in 2009. 204/257 farms responded (79.4%). No. of Open Dairy Farms was as of October 2009 provided by the Japan Dairy Council

16.6 Data and Methods

Data are based on a survey on the attitudes of members of the organization, Educational Dairy Farms. The author conducted this survey to gain an understanding of the operation, problems related to educational activities and the operators' attitudes. The survey was sent to all 257 Educational Dairy Farm members by surface mail from October 1st to December 31st 2009. The response rate was 79.4% (204 farms). Other farm data related to EDF activities were also used. These data were provided by the Japan Dairy Council, which is an administrative body of the Educational Dairy Farm program. Information was obtained on milk production (as of 2009), acreage of forage and pasture (as of 2009), number of milk cows (as of 2009), the year the operators received certification as an Educational Dairy Farm, and the number of visitors (as of 2008).

16.7 Results of Statistical Tests

First, the experience services offered by the EDFs are summarized in Table 16.3. A short lecture by the farmer, milking cows, and feeding cattle are the three major services. The experiences related to operation of dairy farms are more popular than food cultural experiences such as butter making and ice cream making. Why experience services related to farm operation are more common is that the main activity of these farms is not tourism but milk production.

Table 16.3 Offered educational dairy farm services

Experience services	No. farms
Lecture by farmer	185
Milking	156
Feeding	154
Giving bottle to calves	143
Cleaning barn	112
Brushing animals	95
Field work	68
Tour of farmyard	183
Horseback riding	33
Butter making	133
Cheese making	37
Ice cream making	54
Ham/sausage making	14
Cutting sheep wool	15

Source Data source as for Table 16.2

Table 16.4 Attitudes toward educational experience services (present and future)

Items	Present		Future	
	Percentage	Sample size	Percentage	Sample size
Volunteer	28.4	58	17.2	35
Cost covering	31.9	65	24.0	49
Measure of marketing	7.4	15	23.0	47
Aiming at viable activity	16.7	34	24.0	49
Nothing in particular	7.8	16	–	
Decrease/quit	–	–	1.0	2
Don't know	–	–	2.5	5
Others	5.4	11	5.4	11
No answer	2.5	5	2.9	6
Total	100.0	204	100.0	204

Source Data source as for Table 16.2

Table 16.4 contrasts the present attitudes toward EDF activity and future intentions. Among the present attitudes, ‘cost covering’ and ‘volunteer’ account for 60% of responses, which would indicate a non-profit activity or that respondents have no orientation toward viability of the educational experience services indicating that those operators provided educational services at the private optimal or the average cost optimal. On the other hand, those who expressed ‘marketing’ and ‘aiming at viable activity’ only accounted for one fourth of the total responses, and these respondents are supposed to have an orientation toward viable services indicating that those operators aimed at the social optimal. Now turning to future intentions, those with no orientation toward viability dropped to about 40% while nearly 50% of operators expressed their intention to seek viability. Thus, it is safe to say that many operators intend to establish viability of educational services in the long run.

From the results shown in Table 16.4, I classified the attitudes toward the EDF activity into the two groups: ‘a means of marketing dairy products’ and ‘aiming for viable activity’ went into a group with orientation toward viability while ‘volunteer’, ‘cost covering’, and others went into a group with no orientation toward viability. With this criterion, I conducted statistical tests on the conditions and activity of dairy farming, the behaviour as a member of Educational Dairy Farms, and attitude toward viability.

Table 16.5 shows results related to conditions and activity of the dairy farm; there was no statistical connection between the two groups with regard to farm size indicated by such factors as labour size, acreage for forage and pasture, number of milk cows, and milk production, which are the input and output factors of ordinary dairy production activity. Additional tests were also conducted to see if there was a relationship between these dairy production indicators and indicators of EDF activity. I found no statistical connection between the number of visitors and times visitors were accommodated with dairy production indicators, indicating no connection

Table 16.5 Connection between orientation to viable activity of educational diary farm (EDF) and farm attributes (%)

Items	Orientation of viable EDF activity		Test results
	No	Yes	
Labour size for dairy activity (real term)	3.7	3.3	<i>n.s.</i> E
Milk production (year/ton)	471.5	553.5	<i>n.s.</i> N
No. milk cows	130.7	307.9	<i>n.s.</i> N
Acreage of feed production (ha)	34.0	31.2	<i>n.s.</i> N
No. activities	2.1	2.9	*** N
No. visitors on farm in 2008	1150.7	2993.8	** E
No. times EDF activity in 2008	47.2	171.3	* N
More than 11 times (%)	51.9	69.8	***
More than 100 visitors (%)	58.3	78.1	***
More than 300 visitors (%)	33.3	63.5	***
Main person of EDF activity: Female (%)	30.6	39.6	+
Kanto area (%)	13.0	26.0	**
Member of Open Dairy Farms (%)	88.9	96.9	**

Source Data as for Table 16.2

Notes In area above the broken line, *t* test was used while chi-squared test was used below the line. Fisher's Exact test was employed when sample size of a cell was less than 5. E = equal variance, N = unequal variance, ***, **, *, + show 1%, 5%, 10%, 20% (as reference) significance level and no significance shown by *n.s.* Labour size in real terms was calibrated in each activity by the following criteria: full-time labour and mainly responsible for the operation = 1, full time and supplementarily responsible = 0.5, part-time and mainly responsible = 0.5, part-time and supplementarily responsible = 0.25

between ordinary dairy production activity and EDF activity. In contrast, there were statistically significant differences between the two groups in the number of on-farm activities, which is an indicator of farm diversification, and the number of visitors (especially over 100 and 300 visitors) and times of visits (especially over 11 times) in terms of EDF activity. Thus, those with an orientation toward viable educational activity expressed a higher ratio for these variables than those who did not (from 10 to 1% significance). Those operators located in the Kanto area have an orientation toward viability due to closeness to the most densely populated area in this country. I could also confirm our working hypothesis statistically because the result shows the complementary relationship between Open Dairy Farm members and a positive orientation toward viability (5% significance). Although other network-related variables such as the number of members of each branch of the Open Dairy Farms organization and the year of the membership were also tested, no statistically significant connection was found. This means that belonging to a nationwide network is more effective for a connection with an orientation toward viability than a regional network.

Table 16.6 Connection between orientation to viable activity of educational dairy farm and farm attributes (2) (%)

Items	Orientation of viable EDF activity		Test results
	No	Yes	
<i>Type of ownership</i>			
Family	64.8	55.2	+
Family (corporate)	11.1	24.0	**
Joint ownership	1.9	3.1	<i>n.s.</i>
Agricultural cooperatives	0.9	5.2	+
Private sector	2.8	4.2	<i>n.s.</i>
Public sector	3.7	2.1	<i>n.s.</i>
Third sector	1.9	2.1	<i>n.s.</i>
Others	7.4	4.2	<i>n.s.</i>
Total	100.0	100.0	–
<i>Activity (multiple answers)</i>			
Milk production	90.7	91.7	<i>n.s.</i>
Processing milk products	15.7	50.5	***
Raising beef cows	2.8	11.6	**
Lodging facility	7.4	12.6	<i>n.s.</i>
Restaurant	9.3	20.0	**
Direct selling	12.0	34.7	***

Source Data as for Table 16.2

Notes Chi-squared test was used and Fisher's exact test was employed when sample size of a cell was less than 5. ***, **, *, + show 1%, 5%, 10%, 20% (as reference) significance level and no significance shown by *n.s.*

As to the type of farm ownership (Table 16.6), family farms are the most common type followed by family corporate farms. Taken together, family corporate farms and family farms had a higher ratio of orientation toward viability (5% significance). Activity-wise, a significantly higher percentage of operators with an orientation toward viability conducted activities in addition to milk production than those with no such orientation (50.5%, processed milk products; 34.7%, direct selling; 20%, restaurant), which shows that those operators oriented toward viable EDF activity engage in more diversified farm activity than those not so oriented.

As to the type of menu of educational experience services (Table 16.7), operators with a viability orientation provided these services less in the form of individual service than those with no such an orientation (5% significance). As to the area targeted in offering educational experience services, also shown in Table 16.7, a lower percentage of operators with a viability orientation targeted visitors only from their municipality than those without such orientation (5% significance), suggesting that they targeted a wider area for their services. With respect to the changes in operators' consciousness after starting EDF activity, those with a viability orientation had more

Table 16.7 Connection between orientation toward viable activity of educational dairy farm (EDF) and farm attributes (3) (%)

Items	Orientation of viable EDF activity		Test results
	No	Yes	
<i>Type of menu of experience services</i>			
Individual	42.6	28.1	**
Set menu	16.7	22.9	<i>n.s.</i>
Both	27.8	31.3	<i>n.s.</i>
Total	100.0	100.0	–
<i>Targeted area</i>			
Neighbouring municipalities	62.0	44.8	**
Neighbouring prefecture	9.3	14.6	<i>n.s.</i>
No limitation	19.4	29.2	+
Case by case	6.5	5.2	<i>n.s.</i>
Others	2.8	4.2	<i>n.s.</i>
Total	100.0	100.0	–
<i>Changes in consciousness after starting EDF (multiple answers)</i>			
Teaching	80.6	84.4	<i>n.s.</i>
Exchange with people	89.8	88.5	<i>n.s.</i>
Value of local resources	80.6	83.3	<i>n.s.</i>
Self-confidence/local pride	76.9	83.3	<i>n.s.</i>
A new role	82.4	90.6	*
Connection to local community	77.8	83.3	<i>n.s.</i>
Discovery of material for EDF services	61.1	77.1	**
Extension of network beyond local boundary	65.7	76.0	+
Revenue source	13.9	53.1	***
Direct selling of dairy products	21.3	57.3	***
New viable activity	21.3	51.0	***

Source Data as for Table 16.2

Notes Chi-squared test was used and Fisher's exact test was employed when sample size of a cell was less than 5. ***, **, *, + show 1%, 5%, 10%, 20% (as reference) significance level and no significance shown by *n.s.*

positive attitudes toward the utilization of local resources and profit-seeking activity, such as selling dairy products, than those without that orientation (Table 16.7).

Table 16.8 shows to what extent charges were made for educational experience services. More operators with the viability orientation charged for every service than those without the viability orientation; also, fewer of the former operators provided services at no charge (1% significance). Finally, in connection with the future direction, those with a viability orientation expressed their willingness to conduct many activities in order to provide viable services (Table 16.8).

Table 16.8 Connection between orientation toward viable activity of educational dairy farm (EDF) and farm attributes (4) (%)

Items	Orientation of viable EDF activity		Test results
	No	Yes	
<i>Charging for experience services</i>			
Every service	10.2	38.5	***
A part of service	24.1	29.2	<i>n.s.</i>
No charge	46.3	15.6	***
Depending on where visitors come from	7.4	11.5	<i>n.s.</i>
Others	8.3	4.2	<i>n.s.</i>
Total	100.0	100.0	–
<i>Future direction (multiple answers)</i>			
Using travel agency	15.7	42.7	***
Extension of types of visitors	25.9	51.0	***
Food combined services	27.8	61.5	***
Healing/welfare	51.9	61.5	+
Collaboration with other local farmers	38.9	64.6	***
Lodging facility	18.5	36.5	***
Restaurant	8.3	38.5	***
Direct selling facility	24.1	62.5	***
Collaboration with local community	55.6	74.0	***
Nothing in particular	6.5	2.1	+

Source Data as for Table 16.2

Notes Chi-squared test was used and Fisher’s exact test was employed when sample size of a cell was less than 5. ***, **, *, + show 1%, 5%, 10%, 20% (as reference) significance level and no significance shown by *n.s.*

To summarize, first, the members of Open Dairy Farms had a positive connection with the viability orientation of educational experience services. Second, the more visitors EDF operators accommodate, the more positive is their attitude toward the viability orientation. Third, there were no correlations between the number of visitors or the viability orientation and indicators of farm size such as forage and pasture acreage, number of milk cows, and milk production. To put it another way, there is no economy of scale in terms of EDF activity in relation to dairy production.

16.8 Estimation of Viability Orientation Determinant Model

Bearing in mind the findings above, here I estimate a viability orientation determinant model to clarify the factors that determine the viability orientation of the educational

experience services and the degree of influence of these factors by taking into account on-farm present and future factors and off-farm factors. Thus, the analytical model is described as Eq. (16.1) and an estimation model with actual variables is given as Eq. (16.2).

$$H = F(\text{on-farm present}, \text{on-farm future}, \text{off-farm}) \quad (16.1)$$

where,

on-farm present vector of on-farm present factors
on-farm future vector of on-farm planned factors
off-farm vector of off-farm factors.

$$H = F(\text{NUM}, \text{FMALE}, \text{CHANGE}, \text{AREA}, \text{KANTO}, \text{TAGENT}, \text{DIRECT}, \text{FOOD}, \text{SL}, \varepsilon) \quad (16.2)$$

where,

H Level of viability orientation (5-point scale)
NUM More than 101 visitors (model 1), or more than 301 visitors (model 2)
FMALE Main person performing EDF activity (female: yes = 1, no = 0)
CHANGE Attitude change after starting EDF: (discovery of material: yes = 1, no = 0)
AREA Targeted area (neighbouring municipalities: yes = 1, no = 0)
KANTO Location of farm (Kanto area: yes = 1, no = 0)
TAGENT Future direction 1 (using travel agency: yes = 1, no = 0)
DIRECT Future direction 2 (direct selling: yes = 1, no = 0)
FOOD Future direction 3 (food combined service: yes = 1, no = 0)
SL Social learning effect (member of Open Dairy Farms: yes = 1, no = 0)
ε Stochastic error.

As the explained variables, based on the hypothesis of the stepwise process, the variable *H* represents orientation on a scale of 0 to 4 for viable educational activity: unanswered, shrinking or quitting, and undecided = 0, volunteer = 1, recovering cost = 2, a measure of marketing of farm products = 3, and aiming at viable activity = 4. Among the explanatory variables, as on-farm variables the current practices and future contemplated activities were taken up. First, as on-farm present factors the variable *NUM* represents the activity level of educational services by considering two cases: more than 101 visitors (yes = 1, no = 0) in model 1 or more than 301 visitors (yes = 1, no = 0) in model 2. The variable *FMALE* expressed who was responsible for the activity, as that person is not only important for the service activity but is supposed to be influential in the viability orientation; especially, females are better adopted for this activity (female mainly responsible of EDF activity: yes = 1, no = 0).

The variable *CHANGE* represents changes in consciousness of operators after starting the EDF activity. Specifically, I tested whether an operator discovered material for EDF services from the local resources surrounding the farmyard and obtained a wider perspective not only for management of his/her own farm but also for local resource management. If so, I can expect further extension of EDF activity (discovery of material for EDF services: yes = 1, no = 0). The variable *AREA* expresses how large a target area as a demand potential operators assume, which indicates the market area. I use this variable to test the differences in the sizes of targeted areas on the viability orientation (neighbouring municipalities: yes = 1, no = 0). The variable *KANTO* expressed the location of the farm, and it is assumed that the Kanto area, which includes a densely populated metropolitan area, indicates a favourable spatial condition in terms of easy access for people to visit farms (located in Kanto area: yes = 1, no = 0).

With respect to future contemplated directions, three market related variables that would affect the viability orientation were considered. First, the variable *TAGENT* represents how to ensure stable demand, which is a crucial factor for the establishment of viable EDF activity. For this purpose, the intention to use a travel agency is tested (using travel agency: yes = 1, no = 0). A second aspect deals with the sales channel, which is also important for viability, so doing or extending direct selling is taken up as the variable *DIRECT* (direct selling: yes = 1, no = 0). A third variable is the content of the EDF service; hence, the variable *FOOD* denotes the intention of providing services in combination with food (yes = 1, no = 0). These three factors are supposed to work positively on the viability orientation.

As an off-farm variable, the variable *SL* connotes the social learning effect that an open network organization can generate (member of Open Dairy Farms: yes = 1, no = 0). Further, this variable is interpreted as a proxy variable for family farms as well because the member farms are mainly family farms whether corporate or not. Ordered logit model was employed due to the ordered explained variable.

The results of the estimation are tabulated in Table 16.9. The ordered logit model does not give any information on multicollinearity and heteroscedasticity, so I referred to an estimation result by OLS. The OLS result indicated that no heteroscedasticity was observed and the maximum VIF was 1.31, indicating no multicollinearity. As a reference, I showed the robust estimate of variance in addition to the standard estimate of variance. There was no distinctive difference between the standard and robust estimates in terms of parameters and significance levels. From these results I accept the results of the logit estimation to interpret parameters.

Every estimated parameter had statistical significance, which shows no contradiction with the results of the preceding statistical tests. Results were similar to models 1 and 2. Now let us consider the estimation results in Table 16.9.

The parameters of the number of visitors in the two models have positive signs implying that operators with at least over 100 visitors have an orientation toward a viable EDF activity. The parameter of the female being mainly responsible was

Table 16.9 Estimation results of an orientation determinant model of viable educational services (ordered logit model)

Model	# 1		# 2	
	Standard	Robust	Standard	Robust
Estimate of variance				
Explanatory variables	Parameter			
More than 101 visitors (yes = 1, no = 0)	0.6561** (2.22)	0.6561** (2.00)	-	-
More than 301 visitors (yes = 1, no = 0)	-	-	0.6493** (2.31)	0.6493** (2.21)
Main person for EDF activity: Female (yes = 1, no = 0)	0.5411* (1.90)	0.5411* (1.90)	0.6152** (2.13)	0.6152** (2.11)
Attitude change after starting EDF: Discovery of material (yes = 1, no = 0)	0.6451** (2.23)	0.6451** (2.38)	0.7055** (2.44)	0.7055*** (2.60)
Targeting area: Neighbouring municipalities (yes = 1, no = 0)	-0.6486** (-2.36)	-0.6496** (-2.36)	-0.6324** (-2.30)	-0.6324** (-2.27)
Location of farm: Kanto area (yes = 1, no = 0)	0.6609* (1.85)	0.6619* (1.65)	0.7111** (1.99)	0.7111* (1.78)
Future direction 1: Using travel agency (yes = 1, no = 0)	1.1393*** (3.43)	1.1393*** (3.46)	1.0245*** (3.04)	1.0245*** (2.99)
Future direction 2: Doing direct selling (yes = 1, no = 0)	1.1175*** (3.83)	1.1185*** (3.66)	1.0662*** (3.65)	1.0662*** (3.53)
Future direction 3: Food combined service (yes = 1, no = 0)	0.6074** (2.07)	0.6074** (2.02)	0.6239** (2.14)	0.6239** (2.12)
Member of open dairy farms (yes = 1, no = 0)	1.0711** (2.11)	1.0711** (2.16)	0.9593* (1.88)	0.9593* (1.85)

(continued)

Table 16.9 (continued)

Model	# 1		# 2	
	Standard	Robust	Standard	Robust
Estimate of variance				
Explanatory variables	Parameter			
Sample size	204	204	204	204
Log likelihood ratio	-267.1786	-267.1786	-266.9749	-266.9749
LR chi-square	91.8***	-	92.21***	-
Wald chi-square	-	79.17***	-	79.98***

Source Data are same as Table 16.2

Notes: ***, **, * show 1%, 5%, 10% significance level. LR = likelihood ratio. Numbers in parentheses are z-values

positive, indicating that this factor raises the viability orientation. Since the discovery of materials from surrounding local resources was positive, I can say that this widening perspective on local resources beyond the individual farmyard will raise the possibility of realizing the viability of EDF services. On the other hand, the parameter of a small targeted area or market area was negative, indicating that the market area should be widened for viability. The location parameter of the Kanto area was positive, indicating that easy access to farms works positively in raising the viability orientation.

Now, turning to the parameters on the future contemplated direction, the parameters of using a travel agency and direct selling were both positive with 1% significance, which means a strong connection with an orientation toward viability. Another parameter of the contemplated directions on the services being combined with food was positive, suggesting that the combination of food and farm experiences will play a role in the realization of viable EDF services. Thus, it is safe to say that market conscious attitudes and skills are crucial for viable educational services.

Finally, regarding the parameters of off-farm factors, the social learning effect of the open network organization was confirmed and, interestingly, the parameter of model 1 with 5% significance is larger than that of model 2 with 10% significance. This indicates that the social learning effect is more effective at the level up to 300 visitors or when there are not a large number of visitors.

To summarize the estimation results, it is safe to say that not only on-farm but also off-farm perspectives on resource management are important for operators raising the viability of EDF services. Specific to this point, I compared the degree of influence of variables affecting the degree of the orientation. Table 16.10 summarizes simulated expected probabilities for each variable from the parameters with standard variance in models 1 and 2 (more than 300 visitors). Expected probabilities over 30% are shown in bold in the table. Among these probabilities that are highlighted, the highest influential variables were in the following order: using a travel agency (50.5%), direct selling (40.1%), food combined service (37.5%), Kanto area (36.1%), over 300 visitors (35.2%), the reverse effect of a narrow range of the targeted area or wider target areas (32.9%), and female initiative (31.9%). These expected probabilities show that factors related to marketing conditions become more important in a higher orientation toward a viable EDF activity. I also cannot ignore the other factors because raising the orientation is a stepwise process and, especially, the estimation results revealed the significance of the social learning effect among the operator's network, which generates the network externality to initiate the downward shift of the *MPC* curve. In this context, the social learning effect initiates the stepwise innovation for internalizing the educational externality that they produce.

Table 16.10 Predicted probability of the five attitudes based on the estimation result (%)

Variables	Yes/no	Don't know	Volunteer	Cost covering	Marketing	Viable activity
More than 101 visitors	Yes	4.1	17.4	22.9	26.0	29.6
	No	10.9	31.0	24.6	19.1	14.4
More than 301 visitors	Yes	3.0	14.1	20.7	26.9	35.2
	No	9.3	28.7	25.8	21.1	15.1
Main person of EDF activity: Female	Yes	4.1	16.8	21.5	25.7	31.9
	No	7.5	24.5	24.5	22.7	20.8
Targeting area: Neighbouring municipality	Yes	8.7	26.9	24.9	21.8	17.7
	No	3.5	15.9	21.8	26.0	32.9
Location of farm: Kanto area	Yes	2.7	13.3	20.7	27.2	36.1
	No	7.2	23.8	24.1	22.9	22.0
Attitude change after starting EDF: Discovery of material	Yes	4.6	18.1	22.8	25.9	28.7
	No	10.1	30.1	24.9	19.2	15.7
Future direction 1: Using travel agency	Yes	0.9	6.1	14.3	28.2	50.5
	No	8.5	28.1	27.1	22.0	14.4
Future direction 2: Doing direct selling	Yes	20.2	10.7	18.9	28.3	40.1
	No	8.9	28.6	26.2	21.0	15.3
Future direction 3: Food combined service	Yes	2.3	11.9	19.9	28.3	37.5
	No	9.4	29.5	26.2	20.2	14.7
Member of Open Dairy Farms	Yes	5.6	20.7	23.4	24.4	26.0
	No	15.3	36.0	24.6	15.8	8.3
Total	–	6.3	21.8	23.4	23.8	24.7

Source Data were as for Table 16.2

Notes Expected probabilities were simulated from parameters with standard variance of model 1 and model 2 (more than 301 visitors). Bold numbers are over 30% of expected probability

16.9 Conclusion

Although education services in agriculture are attracting growing attention, one problem of these open-door farm policy services is that a viable market has not yet been established. Therefore, it is necessary to clarify on- and off-farm conditions. This chapter examined the operators' attitudes on the orientation toward the establishment of viable educational services based on a questionnaire survey to Educational Dairy Farms in Japan. The main findings and conclusions are as follows.

First, the higher the number of visitors, the greater was the operator's orientation toward a viable service while there was no statistical connection between the input-output factors of ordinary dairy production and the educational activity. Second, the operators that had a human network with a social learning effect beyond the traditional closed communal organizations were more positive toward a viable market orientation than those without such a network. This suggests the significance of social learning effects for operators who participated in the open network organization at the initial process of establishment of viable educational services.

Third, the involvement of women rather than men and services combined with food experiences rather than simple farming experience services per se were factors that raised the viability of educational services.

Fourth, the importance of marketing activities was revealed, such as direct selling of dairy products in the farmyard and the use of a travel agency, which had positive connections with a higher orientation toward the viability of educational services.

In conclusion, to make educational services viable does not simply mean that those farms should become tourism ranches. Rather, the balance between the educational function and the economic viability of services should be attained for the exploration of a new social role of agriculture and the creation of a new market. In this respect, public support will be effective in building the capacity of those operators, especially in taking into account the stepwise process of a new market establishing innovation. Finally, further research is needed on the relationship between rural entrepreneurship and this stepwise innovation process.

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Chapter 17

Concluding Remarks



This book conceptually and empirically addressed the relationship between community-based rural tourism (CBRT) and entrepreneurship by focussing on rural Japan within the framework of microeconomics aiming at the development of viable rural tourism. In this book, CBRT is defined as rural tourism activity based on community capital to attain internalization. Entrepreneurship is realized in product or process innovation when internalization is undertaken. Main points that have been clarified in this book thus far were as follows:

Firstly, rural tourism was conceptually defined as activity that internalizes externalities generated by the multifunctionality of agriculture. Further, it is necessary to generate an upward shift in demand to establish a market. The internalization process and demand shifts are stepwise innovative processes. It is necessary to establish entrepreneurship for this purpose. The author pointed out that rural tourism enhanced multifunctionality and created chances to internalize the externalities through rural tourism. Rural tourism can enhance multifunctionality by women and even by retirees from other non-farm sectors who have paid sufficient attention to farm production-oriented perspectives.

With respect to community function as institutional jointness, rural tourism needs a certain level of community function compared with other multifunctional activities. Thus, not all rural communities can embark on activities related to CBRT nor is it necessary for all rural communities to engage in such activity.

Actually, there are many obstacles working against the realization of this process. The first obstacle is the dependent effect, which means that operators rely too much on local tourism resources. This is quite contradictory because if an operator is too greatly dependent on existing tourism resources, this will make him or her conservative toward a new rural tourism development or opportunity. The dependent effect becomes more serious when exogenous tourism development is undertaken.

Another constraint is that the traditional communal way of decision-making does not automatically favour entrepreneurship. This issue is particularly serious when ageing of the rural community progresses, which makes it difficult to replace retired participants in CBRT and to change the path of the tourism activity.

Not every CRBT activity is always economically viable. From the results of labour productivity measurements of CBRT, although direct selling and restaurant and accommodation activities are viable, other activities such as farm experience services are not economically viable under usual circumstances.

To overcome these obstacles, external and internal factors for operators were evaluated. With respect to the external factors, first, as a hardware aspect, rural road infrastructure was focussed on and the significance of new road building effects on fruit pick-your own farming was evaluated. Especially, road building is more important for tourism than a simple farm production case because new roads can improve access for tourists, who are a crucial income source for tourism activity.

Branded farm products can be a trigger for CBRT development. The relationship between branded farm products and rural tourism was empirically confirmed, which is considered as the economy of scope at the community level. Thus, tourism is an activity that internalizes the externality generated by branded products.

The internalization is attained not all at once, but stepwise. For the initial step, operator's satisfaction that is fostered by feedback from guests is a crucial motivator that leads to the enhancement of resource management capability through raising self-confidence, discovery of local resources, and extension of networking both inside and outside of the community. In short, satisfaction of local people concerned comes first and is the first step toward stepwise innovation. There are several factors that can promote this innovation.

As a promoter of this process, firstly, NPOs play distinctive roles that other stakeholders cannot by connecting people to rediscover their own heritage, to build local identity, and to devise authentic tourism programs. In this process, institutional jointness should be more recognized as a potential rural tourism resource because it is deeply rooted in the rural and food heritage and social capital in the rural community, which guarantees the authenticity of rural tourism products and services.

Secondly, it is true that traditional community assets are necessary conditions. In addition, we should also look at the open network organizations that exist beyond the traditional community and create opportunities to share experiences and learn from each other. This network could exist at multiple stages, regionally and/or nationally, and even internationally. Thus, the creation of an open network at multiple stages, which was termed multitiered CBRT, that provides social learning opportunities for operators in different areas and levels will be an important policy measure.

Finally, the author has outlined future research directions on CBRT. One direction will be to establish evidence-based rural tourism, which is a type of rural tourism that is based on scientific evidence of effects that are generated to tourists from not only from the perspective of social science but also from the perspective of physical and mental health for tourists and operators. For this purpose, multidisciplinary studies with researchers in natural science. The second direction will be to further perform evaluations of efficiency of CBRT, which is necessary to establish the economic viability of CBRT. In this respect, the relationship between multiple open networks and

CBRT should be fully addressed from the perspective of how to nurture entrepreneurship. To summarize, current CBRT studies have not been sufficient, so that CBRT studies need to be both diversified and deepened at the same time to explore the future of CBRT. We do not need to be pessimistic or optimistic but simply to be scientific.

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