Rural Development in Japan

3

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Abstract

In this chapter, I will give an overview of the development of rural areas in Japan and then refer to the problems that they currently face, such as the weakening of the community, deterioration of the management function of the local environment, deterioration of the function of agricultural producers, damage caused by wildlife birds and beasts, and response to climate change and disasters. Thereafter, I shall discuss the rebuilding of communities through exchanges with cities, establishing next-generation agriculture by utilizing information and communication technology (ICT), developing renewable energy by utilizing local resources, and establishing new connections that complement each other's roles within the region, as necessary, for sustainable rural development in the future. Hence, this chapter is related to all 17 goals because it describes the sustainable development of rural areas and, in particular, contributes to the "Sustainable Cities and Communities" of SDG 11.

Keywords

Rural development · Community · Settlement · Local resources · Agriculture

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3.1 Introduction

This chapter contributes to the "Sustainable Cities and Communities" of SDG 11.

In this chapter, I will first give an overview of the development of rural areas in Japan and then touch on the problems these areas are currently facing, such as weakening of the community, deterioration of the management function of the local environment, deterioration of the function of agricultural producers, damage caused by birds and beasts, and response to climate change and disasters. Finally, I discuss the rebuilding of communities through exchanges with cities, establishing next-generation agriculture by utilizing ICT, developing renewable energy by utilizing local resources, and establishing new connections that complement each other's roles within the region as necessary for sustainable rural development in the future.

3.2 Development of Rural Areas in Japan till Date

3.2.1 Rural Areas up to the 1940s

Rice farming, which was introduced in Japan during the Yayoi period, has been the center of Japanese agriculture to date and has had a great influence on the formation of settlements where people live. It requires farmland and water and

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requires the cooperation of groups, not individuals, to develop and maintain farmland and waterways. In addition, because cooperation is required for harvesting work, groups were formed in that cooperative relationship, which later formed settlements. Although various governance mechanisms have emerged over time and various systems related to agriculture and rural areas have been applied accordingly, these settlements are still the smallest regional units in Japan.

3.2.2 Rural Areas Since the 1950s

At the end of World War II, there was an urgent need for postwar reconstruction throughout Japan, including major changes in rural areas. The land reform dismantled the former parasitic landlord system (form of farming management, in which a landowner, who owned many farmlands, rented his farmland to a farmer called a tenant farmer and obtained a tenant fee as rent), and many small landed farmers emerged. The Cropland Act was enacted in 1952 to stabilize the status of these farmers. As a result, although the Agricultural Commission established in the municipalities permitted the sale and rent of agricultural land, this was to be suppressed, and self-produced farming was to be protected.

As a consequence of postwar reconstruction, the Japanese economy, centered on heavy industry, has developed tremendously, mainly in urban areas. During that time, rural areas supplied labor, land, and water to rapidly developing urban areas. As a result, the disparities between urban and rural areas and between industry and agriculture have widened, and the problems of depopulation, aging, overdevelopment, land use confusion, and pollution have arisen in rural areas. The Agricultural Basic Act, enacted in 1961 with the aim of reducing these disparities, stipulates the basic direction of agricultural policy and realizes an increase in agricultural income through improvements in agricultural productivity.

One of the major events in Japanese agriculture centered on rice farming is the "rice surplus" and the accompanying "rice acreage-reduction policy." Rice production increased as a result of various agricultural reforms, such as postwar reconstruction and policies such as the Agricultural Basic Act, and by the end of the 1960s, production exceeded consumption. The Ministry of Agriculture, Forestry, and Fisheries requested that farmers reduce their production areas to curb production and maintain rice prices. Despite the completion of this rice acreage-reduction policy in FY 2018, about one-third of the paddy field area is not used for producing rice, but to produce wheat and soybeans instead.

Furthermore, owing to a period of high economic growth, a large demographic, especially the younger age group, moved from rural areas to cities. As a result of this trend continuing until now in rural areas, the birthrate is declining, the population is decreasing and aging, and the term "marginal settlement" has become synonymous, especially in the hilly and mountainous areas that have a high aging rate of population. With such a population decline, declining birthrate, and an aging population, issues have arisen, such as the weakening of rural communities, lack of supply of living services, deterioration of the functions of agricultural producers, lack of management of rural resources, damage caused by wildlife, and response to disasters (details of these issues are outlined in Chapt. 3).

3.2.3 Settlement as a Japanese Community

Administratively, the entire country is divided into regional units, which are further divided into prefectures and municipalities. Conversely, the smallest and most basic self-government unit in a rural area is the settlement, which has the smallest and strongest relationships between residents and can be termed a local community. Each settlement has a more autonomous function than before, which is still important, and discussions

are held on a settlement basis when deciding on something in the area. As a "connection" (Yui in Japanese), a settlement is still very closely related to the lives and livelihoods of local residents, such as helping each other in agricultural work, cooperating in the development of agricultural land and waterways for agriculture, and holding festivals and ceremonial occasions. In rural areas, various activities continue to be carried out, considering the settlement as a unit.

These photographs, Figs. 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, and 3.8, are typical rural landscapes of Japan.

3.3 Problems in Current Rural Areas

The problems currently faced by rural areas are intricately intertwined. The depopulation trend in the rural areas of Japan began in the 1950s and has not changed even now. One cause is the increase in employment due to economic development in urban areas during periods of high economic growth. Most of the population decline is due to the outflow of young people to cities, which causes problems such as the weakening of communities, deterioration of the functions of agricultural producers, and poor management of the local environment. Furthermore, owing to these factors, the damage caused by wildlife, as well as disasters, is expanding. In addition, the supply of services necessary for various lifestyles has stagnated. This has led to a vicious circle of further population decline. The following sections describe each of these issues.

3.3.1 Weakening of the Community

When many young people living in rural settlements graduate from high school, they leave the settlement by going to university or getting a job in the city. As the number of people living in settlements decreases, the power of the community weakens in many settlements. If the population decreases sharply, it will not be possible to hold ceremonial occasions such as festivals, which were previously held in the settlement through mutual assistance. Roads will become unmanageable for driving, and the number of people who can take up official positions in the settlements will be limited. The settlement will eventually cease to function as a rural community. There are many autonomous settlements in rural areas in which functioning as a community can no longer be fulfilled.

Fig. 3.1 Maintained paddy fields (Yamagata Prefecture)

Fig. 3.2 Spacious fields (Hokkaido)

Fig. 3.3 Rice terraces in mountainous areas (Yamagata Prefecture)

In Japan, settlements are called "marginal settlements if the percentage of elderly people (aged 65 and over) accounts for more than 50% of the population. The term is used to signify that there is a limit to how settlements function as a community and enable people to live there. This term symbolizes the weakening of rural communities.

3.3.2 Lack of Various Living Services

In rural areas, the critical mass refers to the minimum population required to maintain a service. If the population declines and interrupts this critical mass, then with regard to public services, such as government offices, schools, post offices, hospitals, and services, such as gas stations,

Fig. 3.4 Tea plantations (Shizuoka Prefecture)

Fig. 3.5 Reservoir for sending water to rice fields (Oita Prefecture)

shops, and public transportation in the region, residents' access to services becomes more difficult year by year due to integration and reduction of the supply side. In fact, in many rural areas, the number of public transportation systems, such as railroads and fixed-route buses, has decreased owing to a decrease in the number of passengers caused by the declining population. There have been cases in which they were compelled to withdraw from the area. Similarly, a decline in the number of users forced gas stations and shops to close or withdraw from the area.

Fig. 3.6 Settlement in a mountainous area (Fukuoka Prefecture)

Fig. 3.7 Thatched roof houses (Toyama Prefecture)

3.3.3 Deterioration of the Function of Agricultural Producers

The shortage of farmers' successors has become a major problem due to the outflow of young people from rural areas. Previously, farmers who were aging and unable to farm asked other farmers in the settlement to cultivate when they had no successors. Because it is easy to cultivate on flat land, many farmers are willing to receive such farmland. However, in hilly and mountainous areas, where the tendency of population decline is even more severe, there are few recipients, particularly since farmland is small and irregular, and it is difficult to handle agricultural machinery. Furthermore, there is no one

Fig. 3.8 Waterways and turbines (Fukuoka Prefecture)

who can take over and cultivate the farmland of other farmers because the recipients themselves, who are also aging, are exhausted from cultivating their own farmlands. As a countermeasure to these problems, the number of areas where community farming is being implemented is increasing.

3.3.4 Deterioration of the Function for Managing the Local Environment

Until 50 years ago, there were many places in rural Japan where electricity and gas could not be used, and firewood was used to prepare meals and boiling water for bathing. To secure this firewood, rural areas managed the mountains near their settlements, called "satoyama," a Japanese term applied to the border zone or area between mountain foothills and arable flat land. However, with the availability of electricity and gas, firewood should not be secured and mountains should be managed. In addition, the number of people entering the mountains has decreased due to the slump in the forestry industry. Hence, mountains are no longer managed. Further, owing to the declining and aging population within the settlements, the number of abandoned cultivated lands as well as vacant houses, whose inhabitants have disappeared, is increasing. In addition, there are cases in which farm roads and waterways cannot be managed sufficiently.

Thus, the management function of the local environment is declining in many mountains, farmlands, and living environments in rural areas.

3.3.5 Damage Caused by Wildlife

In recent years, especially in the agricultural lands of hilly and mountainous areas, damage caused by wild boars, deer, and monkeys has become a major problem. One reason why the damage is more widespread than before is that the relationship between people, mountains, and farmlands has changed. As mentioned in the previous section, examples of this include the fact that owing to fewer opportunities for people to enter the mountains, animals have come closer to settlements where people live, and abandoned farmlands have become a place for wildlife to hide. Another factor is that wildlife habitats of wildlife have changed due to climate change, such as global warming. Wild boars have

become common in the Tohoku region in recent years and have been previously unseen. Rural residents are taking measures against these damages, such as enclosing the entire settlement with a 2-m-high fence (to prevent deer from jumping over), enclosing the farmland with an electric fence, traps for animals, etc.

In addition, the physical damage—eating the produced agricultural products and digging up the surface of the farmland—that is, of course, extensive, mental damage to the farmer is also great. In particular, elderly farmers give up farming because they think, "the animals are just going to eat them, so why bother." According to national statistics, in recent years, the amount of damage caused by wildlife has decreased. This is partly owing to the fact that measures to protect farmlands with fences have been effective, but conversely, farmers who have given up farming may not have presented the amount of damage.

3.3.6 Damage Caused by Climate Change and Disasters

Global warming has gradually affected agriculture in Japan. For example, the production area may change in the case of agricultural products. In addition, the frequency of torrential rains is higher than before, and damage occurs almost every year somewhere in Japan, most of which damages rural settlements and agricultural lands. Furthermore, great damage has also been caused by large earthquakes, such as the Great East Japan and Kumamoto earthquakes. Damage to rural areas, which is already in a difficult situation due to population decline and aging, will cause great damage to the areas and residents.

3.4 What is Necessary for the Sustainable Development of Rural Areas in the Future?

The declining population has led to the occurrence of the deterioration of local environmental management, expansion of damage by wildlife and disasters, and reduction of the supply of living services, and it can be said that the vicious cycle of further population decline caused by these factors is a major issue facing rural areas. Conversely, to sustainably develop rural areas, it is important to make the best use of their strengths, break this vicious circle, and move toward a virtuous cycle.

3.4.1 Rebuilding the Community by Interacting with People Outside the Region, Such as Cities

To rebuild a weakened community, it is necessary to stop population decline and move toward maintaining or increasing the population. It is conceivable that people will not leave the settlement to maintain or increase the population. Instead, they return to the settlement, and new people may even come to the settlement.

However, regarding the fact that "people do not leave the settlement," the tendency of young people to move out continues, and dealing with it is difficult. It is conceivable to build attractive destinations such as universities or workplaces in rural areas, but rural areas cannot compete with cities in this regard. Therefore, the advantages of rural areas that are not found in cities must be considered.

"People returning to settlements" is the so-called U-turn, which means that persons, who have left the settlement, will return again. Having lived there before, they are acquainted with the local residents and know the local circumstances; thus, the hurdles are fewer than when they move to a new place. Nevertheless, it is necessary to prepare an environment in which people who have left once can return again. Moreover, in recent years, the term "grandchild turn" has been used to describe a phenomenon in which the children of people who left the settlement and went to cities migrate to a rural area where their grandparents are. What should be considered first is that people who were originally related to the area will return.

It is conceivable that new people will move to the settlement as the next step for U-turns. This is called "I = turn." When urban residents move to a rural area, there is an attraction toward a place to live in that area and work that can be done there. Hence, the issues are as follows: a house to live in and farmland to farm. In rural areas, vacant houses have become a problem owing to the declining population, and although the government operates "vacant house banks" to introduce vacant houses to those who wish to move, in reality, it is not easy to rent vacant houses. Many homeowners, who have left the area and now live in the city, are reluctant to let go because "there is a Buddhist altar" or "they return and stay once a year." It is not possible to rent farmland unless there is a relationship between trust and the owner. It is important to have a good relationship between newcomers and the community, including teaching agriculture after borrowing. In addition, owing to the COVID-19 pandemic, many companies in Japan allow remote work, and a younger generation that seeks a new life of living in rural areas and working remotely in urban companies is emerging. They were expected to be members of a new community.

However, although policies regarding U-turns and migration have been implemented in rural areas throughout Japan to maintain and increase population, it is difficult to achieve results. In recent years, the concept of the "related population" has been presented, saying that it is important to have a continuous relationship, even if it is not "living" in a rural area. There are ways to connect with various rural areas, for example, a person has left the area but lives at a distance of about an hour by car and on weekends goes home to help with farming; or urban residents continue to have relationships with rural areas as a result of urban–rural exchanges, such as farming experiences and lodging at farmer guesthouses. To rebuild the community, in addition to complete U-turns and migration, measures to include people who are not living in rural areas but are continuously involved in the community as its sub-members are needed.

3.4.2 Establishment of Next-Generation Agriculture Utilizing ICT

Although the issue was the decline in the functions of agricultural producers, "smart agriculture" utilizing ICT has been proposed as a method to address this issue. There are unmanned rice transplanters and combine harvesters equipped with GPS, drones that automatically fertilize, and automatic mowers that move even on slopes. For large-scale agriculture in plains, it is possible to develop farming in a large area with a smaller number of people. Meanwhile, in hilly and mountainous areas, ICT is expected to play an active role in dangerous and labor-intensive work, such as mowing ridges that have become large due to slopes. In addition to reducing labor related to agricultural work through mechanization, ICT is expected to be utilized to make agricultural management smarter, such as cultivation management, work process management, and the inheritance of elderly people's agricultural experiences.

In Japan, machines were introduced into farm work in earnest in the 1960s, and it became possible to carry out farm work with a smaller number of people. In addition to being a necessary technology introduction in rural areas, where the population is declining and aging, it also means that a smaller number of people would be sufficient for farming. As technology progresses and fewer people are involved in farm work, one possible extreme in the future is that rural areas will be empty and cities will be able to remotely control agricultural facilities and machinery. With an eye on the future image of an ideal rural area, ICT should be used to support the future image of rural society.

3.4.3 Development of Renewable Energy Utilizing Local Resources

"Decarbonization" has become the mainstream worldwide. Likewise, in Japan, the shift from petroleum-derived energy to renewable energy

will progress given that renewable energy has a high affinity for rural areas. For example, energy supply utilizing woody biomass comprises energy derived from wood, which is abundant in rural areas and is considered a method that can reduce carbon dioxide emissions while properly managing forests. The use of small hydropower, wind power, and solar power has a high affinity in rural areas. In Japan, where rice farming is flourishing, long waterways are laid out in rural areas, and power generation by small hydropowers using this water flow can be expected. Until now, rural areas have had to pay external agencies to obtain energy derived from petroleum, but if it is renewable energy, it can be produced within the area. Furthermore, if it is possible to sell it to the outside world, it will be economically effective and sustainable.

Alternatively, we must focus on methods to develop the installation location of such facilities because there are large-scale facilities for generating wind and solar power. In particular, logging in mountainous areas to install solar panels may cause disasters due to debris flows and landslides caused by heavy rain. Therefore, there are many cases in which conflicts occur between developers, neighboring residents, and local governments. This is because previous laws on land use in forest areas did not envisage the development of solar panels and were not sufficiently regulated. It is necessary to enact a law to respond to such new situations.

3.4.4 Establishing New Connections that Complement Each other's Roles Within the Region

As a social aspect of rural areas, there is a neighborhood association with settlement residents as a unit, and it is still a large presence within a settlement. Each inhabitant participates in the residents' association in units of the "family" and cooperates in situations, such as ceremonial occasions, cleaning of waterways in the area, and maintenance of common land. The traditional role of these neighborhood associations has focused on maintaining and protecting settlements. In addition, discussions and decisions on residents' associations operate in units of the family. Therefore, older men participated as family representatives, and the opinions of women and young people were rarely considered.

However, the situation in rural areas has changed drastically, and it is becoming difficult to maintain and protect the area through conventional methods, owing to the declining and aging population. It is also necessary not only to maintain and protect the area, but also to take on new challenges, and the idea of a limited number of older men is no longer sufficient. In other words, a different activity entity was required.

In addition to the involvement of residents' associations, it is necessary to create a new organization in which various local residents are members, sometimes beyond the unit of settlement, or by involving urban residents. Depending on the purpose of the activity, there can be various forms, such as forming a group that produces processed agricultural products with women in the settlement as members, a group that operates farmer restaurants and direct sales offices, creating a new group of people involved in rural tourism, forming an agricultural production corporation with multiple settlement leaders as members, or settlement residents and urban residents forming a group to conserve rice terraces.

The advantage of these individual group activities was that, in the case of residents' associations, since they comprised activities for the entire region, the burden of activities and profit equality were taken into consideration. However, in the case of individual groups, since decision-making can be made by the members of the group, the range of activities can be expanded and the speed of decision-making and activity development can be increased. In addition, even if there are problems, such as lack of human resources or equipment with only one settlement, it is possible to compensate for it by collaborating with multiple settlements or with the help of city residents.

Alternatively, it is important to understand and support the entire region when working with these individual groups in rural areas. For example, in the case of female group activities, some rural areas still have an atmosphere of male domination, and male residents who do not welcome female group activities may resist such initiatives. In such cases, support from men in women's families is essential. Additionally, the fact that only some groups are economically profitable arouses the jealousy of other residents. In such cases, it is better to return part of the profit from group activities to the community. It is indispensable to gain an understanding of the entire region and continuously obtain support by utilizing part of the profits made at the direct sales offices and restaurants for the welfare of the region.

National and local Japanese governments have also started to support the activities of these individual groups. The Ministry of Agriculture, Forestry, and Fisheries will provide support to regional management organizations.

Issues in rural areas are becoming more complicated, and to deal with them, it is necessary to seek a more flexible form of activity, not just the conventional residents' association, but also public support.

3.5 Concluding Remarks

The title of this chapter, "Rural Development in Japan," can be rephrased as "Sustainable Development of Rural Japan." In other words, it can be said that it is deeply related to all 17 of the SDGs. In particular, not only the public sector, such as the government, but also the private sector, such as residents, will play a leading role in rural areas in the future, and collaboration between the public and private sectors, as well as with urban residents who have relationships with rural areas, will be important factors. The various people inside and outside the rural area complementing each other with their strengths will also be an important factor. Therefore, the 17th goal, "Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development," is especially necessary for rural development. In addition, the development of renewable energy, that can be supplied by rural areas in connection with the 15th goal, "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss," is greatly related.

References

If you need more information about rural development policies of Japan, please refer to the following link.

Ministry of Agriculture, Forestry and Fisheries (MAFF) https://www.maff.go.jp/e/index.html

Ministry of Internal Affairs and Communications (MIC) https://www.soumu.go.jp/main_sosiki/joho_tsusin/eng/

Ministry of Land, Infrastructure, Transport and Tourism (MLIT) https://www.mlit.go.jp/en/index.html

If you need more academic information about rural development of Japan, please refer to the following link.

National Agriculture and Food Research Organization (NARO) https://www.naro.go.jp/english/index.html

Association of Rural Planning (ARP) http://rural-planning.jp/en/

If you can read Japanese and need more academic information about rural development of Japan, please refer to the following book.

Tsugihiro Watanabe et al *Nouson Chiiki Keikaku Gaku (Rural Planning)*, Tokyo: Asakura Shoten