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Limitations and Potential of Family Farms: Can Japanese Family Farms Survive?

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Abstract: Japanese agriculture is a family-farm-dominated industry. Farms have been transferred from generation to generation by inheritance. Recently, Japanese farms have faced difficulty in transfer of management to succeeding generations, resulting in an increase in the number of ageing farmers and in idle farm resources. The problem is mainly characterized by such factors as underdevelopment of farmland markets, a shift of the sense of commitment to and identification with groups from families to corporations, and a predominance of large organizations in the technical innovation field in highly industrialized societies.

Even if family farms face the difficulties caused by highly industrialized societies and have consequently declined gradually, they still have potential for gentler treatment of the environment by family farming activities, relatively large employment capacity, and assisting in reorientation of modern societies towards family values. This potential is important worldwide in an era faced with the crisis of the collapse of modern societies.

The study of the family farm will thus contribute to the development of sustainable farming and the construction of postmodern societies based on interdisciplinary and international cooperation among researchers worldwide.

Introduction

Family farms are the predominant type of farming in Japan. Farms have been transferred from generation to generation in inheritance of all kinds of property, including farm resources. However, the number of farmers who are faced with difficulty in transferring the management of the farm to succeeding generations is increasing rapidly, resulting in ageing of the farm operator and an increase in underutilization of farm resources, including the expansion of the amount of degraded farmland. The difficulty of transferring farm management and the expansion of idle farm resources will become more serious in the future.

This paper discusses the limitations of family farms: that full-time family farms with a reasonable income from farming are not transferred to the next generation. The limitations of family farms also include the difficulty in transferring farm resources from farm to farm. Family farms are here defined as farms in which most of the labour required is supplied by family members, and which derive a reasonable income from farming.

The main objective of this paper is to analyse the background of the limitations of family farms and to discuss the future of family farms in Japan. Family farms elsewhere in Eastern Asia may be faced with problems similar to those in Japan. In the USA and Western Europe, attention may be focused on family farms from the viewpoint of environmental problems or revitalization of rural areas. Agricultural reforms in China, Eastern Europe, and the Soviet Union will be influenced by the development of family farms. I hope that this study will contribute to the promotion of structural reforms in agriculture worldwide through international and interdisciplinary research cooperation.

Background of the Problem

The limitations of family farms in Japan are mainly caused by recent industrialization.

Liberation of Family Members from Compulsory Succession to Farming Activities

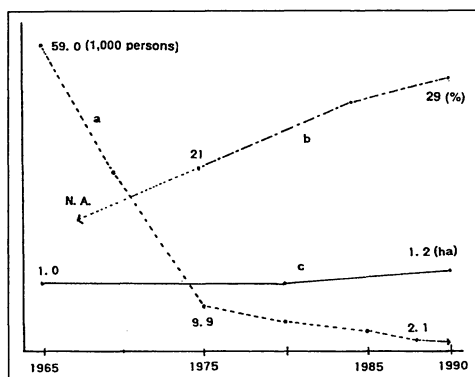
Until the end of the 1950s, farms were transferred from generation to generation without free choice. However, since the 1960s, farm family members have changed their behaviour and have become reluctant to accept compulsory succession. Members of the next generation, even the eldest son, are able to choose jobs according to their desires and abilities. As a result, they

may abandon farming to take up other jobs, even those involving commuting. That leads to the underutilization of farm resources.

As fewer members of the succeeding generation become engaged in farming, the farm population is gradually becoming older (Figure 1).

Figure 1—Number of Members of the Next Generation Becoming Engaged in Farming (a), Ratio of Farmers Over 65 Years Old (b), and Average Farm Size (c)

Source: *Pocketbook of Agricultural Statistics*, Ministry of Agriculture, Forestry and Fisheries.



Underdevelopment of Farmland Markets

The main farm resources in Japan include human capital, farmland, irrigation water, and machinery. Among these resources, farmland and irrigation water have little mobility due to underdevelopment of their markets. Lack of suitable markets is a constraint on farmer introduction of free organizations of labour, machinery, and technology.

If the members of the next generation want to become engaged in farming, they can exploit most of the farm resources in spite of the lack of markets, because they inherit them. However, if they plan to enlarge their farms after succession, it is very difficult for them to buy or rent additional land due to underdevelopment of farmland markets. As a result, the next generation is likely to abandon farming for an easier job.

Traditional, Small-Scale, and Dispersed Field Pattern

In Japan, the average size of farmland per farm is about 1.2 ha. Each small farm is divided into 13.4 parcels, on average, which are not aggregated but dispersed (Table 1). This farmland system is well known as the small dispersed field pattern in Japan. Although Japan has no suitable farmland markets, occasionally farmers must sell or lease their farmland. However, due to the small dispersed field pattern, farmers who want to buy or rent land to enlarge their farm size cannot obtain additional land in suitable areas for farming.

Table 1—Status of the Small Dispersed Field Pattern of Farms in Japan, 1981

	Paddy Field	Upland Field	Whole Farm
Size of parcel (100)	6.8	5.6	6.5
Number of parcels per farm	8.4	4.9	13.4

Notes: Hokkaido is not included in the table. These parcels of paddy fields are aggregated into three units on average.

Source: *New Structural Policy in Agriculture*, Ministry of Agriculture, Forestry and Fisheries, 1985.

When members of farm families select jobs other than farming, the amount of surplus farmland gradually increases. But active farmers cannot use such land efficiently due to the difficulty of enlarging the farm size. These factors are disincentives for the successors of farm families to continue the farm operation or for newcomers to become engaged in farming.

New Problems of the Family Farm

Since the 1960s, the factors described above have influenced farm structure, and many Japanese agricultural economists and researchers have focused their attention on these problems. The Government has promoted the development of the farmland market and the aggregation of small dispersed fields through various policies. It is anticipated that in the near future these two problems will be solved, due to the surplus and the development of farmland.

However, two new factors have appeared recently, to which the Government and researchers have so far paid little attention.

Changes in the Sense of Commitment to and Identification with Groups from Families or Communities to Organizations

The farmer's strong sense of commitment to and identification with the family and the community has shifted to organizations such as corporations. This trend is obvious among the younger generation.

In this paper, the sense of commitment to and identification with groups is defined as identity with the target, norm, and value of groups, willingness to work for the sake of groups, and strong desire to remain a member of a group. Corporations are defined as groups that have a specific purpose in common with members.

One of the main factors determining the shift of the sense of commitment to and identification with families and communities to corporations is the change in the character of society from property dominated to corporation dominated. In highly industrialized societies, including Japan, the main factor that determines the social status, social function, and income of individuals is the corporation to which the younger generation especially wants to belong.

The younger generation develops an inferiority complex when employed in family-based businesses such as family farms and family retailing. This feeling is growing gradually in Japan due to the welfare policy and system in which family workers are treated disadvantageously compared with corporation workers. This is also one of the reasons why the next generation of farm families and others do not select farming as a main full-time occupation.

Predominance of Organizations Promoting Technical Innovation in a Highly Industrialized Society

A modern, highly industrialized society is characterized by rapid development of technological innovations by corporations that can afford the time and capital for research and development technology. The control of time is realized by internal specialization and integration of work in an organization.

In an era of rapid technological innovation, the family-based business cannot contribute to innovations due to its small research and development capacity. Technological innovations include the development of skills and devices in management, new products, marketing, and organizing resources for production.

Until the 1960s, family farms played an important role in technological innovations in specific fields; e.g., plant breeding in Japan. However, they have little opportunity to play this role in a highly industrialized society.

The above factors (i.e., the shift of the sense of commitment to and identification with groups and the predominant role of corporations in technological innovations) are discouraging

future generations of farm families from carrying on and nonfarm families from becoming engaged in farming business.

Arguments Against the Concept of Limitations of Family Farms

There are some arguments against the concept of limitations of family farms.

The Organization of Farming Units or Group Farming May Enable the Limitations of the Family Farm to be Overcome

Many researchers in Japan emphasize that the organization of farming units or group farming based on individual operations may alleviate the limitations of the family farm. Group farming may overcome to some extent the inefficiency of farming operations caused by small-scale farming.

For the promotion of group farming, farmers must accurately understand the situation and characteristics of family farms in a highly industrialized society. To combine individual operators or managers of family farms into a group is difficult, due to their independence. The formation and the survival of groups of these individual farm operators need more skilful and sensitive principles than those for corporation workers.

These principles can be defined by analysing carefully the limitations of the family farm. However, since many researchers pay little attention to the situation of family farms in highly industrialized societies, they do not understand and cannot solve the problems of the limitations on family farms.

Family Farms Will Survive with the Support of Business Activities Undertaken by Agricultural Cooperatives

As agricultural cooperatives are organized to supplement the activities of individual farms, the business activities of the cooperatives are expected to solve the problems of family farms. This is also an accepted concept.

However, this concept is inconsistent with the characteristics of farming in Japan. Many members of cooperatives are farmers who are not active enough due to their age. If they transfer farms to younger generations, the members of cooperatives become younger. While they want to transfer farms, they cannot do so due to the problems mentioned above.

It is often thought that the present agricultural cooperatives cannot alleviate the problems of individual farms due to their structural defects. Agricultural cooperatives in Japan control full-time farmers as well as smallholders and part-time farmers who derive little income from farming, pay little attention to the development of farming, and account for the majority of the members of agricultural cooperatives in Japan. It is, therefore, difficult to implement effective measures to develop and support full-time farmers who are in a minority.

The reorganization of the agricultural cooperatives requires that the cooperative managers and members themselves accurately understand the problems of family farms and the shortcomings of agricultural cooperatives. However, most of them have a limited understanding of and little interest in these matters, making it difficult to reorganize agricultural cooperatives. Meanwhile, many family farmers may go out of farming before the cooperatives become reorganized.

Hypotheses on the Potential of the Family Farm

Even if family farms are facing difficulties in highly industrialized societies and the number of family farms is decreasing, family farms may survive because they have some important favourable characteristics.

The activities of family farms are compatible with the preservation of the natural environment. Human activities that do not depend on high technology and large organizations are generally compatible with the preservation of the natural environment. Family-based farming meets such requirements due to the relatively low level of technology applied and small-scale organization.

Family farms show a relatively large labour absorptive capacity. In the 21st century, employment will become a serious problem worldwide due to population increase. In the Third World, Eastern Europe, and the Soviet Union, this problem is already critical. In these regions, the governments are promoting agricultural reform. If agricultural reform leads to an additional flow of unemployed people from rural areas, the social and economic development programmes will be further delayed.

Highly industrialized societies are aware of the need to recover human values lost as a result of estrangement from their traditional organizations and activities. In the highly industrialized societies, the sense of commitment to and identification with groups is shifting from families or communities to organizations such as corporations. However, these corporations, which are characterized by a strong bureaucratic and hierarchical structure, may alienate people from human values and may make people reconsider the advantages of family-based groups and activities.

At the beginning of industrialization, it was thought that family-based economic activities would decline anyway. However, even in highly industrialized societies, there is a change of values, and some family-based activities may persist, not only in Japan but in countries such as those of Western Europe and in the USA, in which industrial development started earlier. Family farms may provide a new approach to the postmodern society.

Human activities not restricted to commitment to and identification with groups will become important. Philosophers predicted that before the 21st century, human beings may reject the concept of the sense of commitment to and identification with groups, one of the main concepts underlying the analysis of the limitations of family farms in this paper.

Family activities appear to have the effect of creating social stability. In the 21st century, the concept of stability of societies may become as important a concept as liberty and democracy. The family as a fundamental unit may secure social stability. Family-based activities may play similar important roles, and their large labour-absorptive capacity may preserve and promote the stability of society.

Conclusions

Problems like those of the limitations of family farms appear in other sectors in Japan, such as retailing, fisheries, and forestry. Furthermore, similar problems may appear in the farming sector in other East Asian countries, and in other sectors too.

Family farms in Japan face the limitations mentioned above. Although there are fewer family farms, they may offer some potential for the future. Trends in family farming in Japan should, therefore, be carefully followed. To achieve this objective, new methods of studying the problems of family farms and other family-based activities will be developed.

Economic vitality is necessary, but not enough for the survival of family farms. Other factors, such as the social ones mentioned above, are keys to survival. As the problems of limitations and potential of family farms involve various fields of science, interdisciplinary research is essential. Furthermore, as the problems may appear worldwide, international research cooperation is also needed.

Note

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Discussion Opening—*Geetha Nagarajan* (Ohio State University)

With rapid industrialization and agricultural structural adjustments, family farms in the 1990s are faced with problems of technological development, capital, parity, replacement labour, and succession. The paper by Nobuhiro Tsuboi examines the limitations and potential of family farms in Japan. The author is concerned about the declining number of potential successors and their preparedness to operate family farms, leading to ageing of farmers and increasing the number of idle farms. While the family farms are limited by farmland market imperfection, disintegration of traditional community relationships and dominance of organizations in technical innovations, the ability of family farms to reduce the problems of environmental stress and unemployment in addition to preserving the traditional family values are pointed out as features indicating the potential of family farms.

The problem addressed in the paper is a very interesting one, and stimulates further discussion on the future of family farms. Indeed, family farms are valuable assets, and farming is a way of life to the farm families. However, the inefficiency of family farms due to lack of size economies cannot be denied. Evidence suggests that farm size structure is a major constraint for efficient use of capital, and that increased farm size would lower the production costs and improve accessibility to credit. One needs to analyse whether small and fragmented family farms can earn economic profits from full-time farming without heavy subsidization. Furthermore, with the ageing of farm operators, one needs to be concerned with the possibility of productivity loss due to reduced adoption of new technology and inefficient use of land, capital, and labour resources. One needs to ask whether consolidation of family farms or group farming that allows secured individual land ownership and flexible land use will help in increasing the returns to farming and thereby provide economic incentives for successors.

The high opportunity cost of farming due to the high income gradient and flexible and short work time in nonfarm occupations is also a reason for lack of successors to family farms. Since the majority of farmers provide their children with a nonfarm education and thus eliminate a succeeding generation trained in farming, the successors lose their comparative advantage in farming. The question is whether the emigration of successors can be reduced by creating rural-based nonfarm employment opportunities leading to part-time farming. However, an increase in the number of part-time farms will reduce the chances of consolidation.

Evidence from the USA shows that environmental concerns are better served by larger farms than smaller family farms. Is it possible to find significant differences in the use of environmentally degrading practices among the family and nonfamily farms in Japan, especially when less than 2 percent of family farms are under organic farming? With the increasing urban environmental pollution and increase in capital gains due to rising land prices, it is economically efficient and profitable for small and fragmented family farms to sell or convert their farmland to real estate.

Social values attached to land ownership tend to dominate the economic gains from consolidation and sale of family farms. However, the loss in economic efficiency due to small, fragmented and part-time family farms far exceeds the gain in equity from protecting the family farms. It will be interesting to examine the efficiency gains and equity and welfare losses from consolidation of family farms without subsidization against preservation of family farms by more government incentives.

[Other discussion of this paper and the author's reply appear on page 21.]