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# Taiwan's Small Farm Economy Under Rapid Economic Growth

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**Abstract:** Through a series of economic development plans launched since 1953, Taiwan's economy has been transformed from being predominantly agricultural to having industry as the leading sector. Throughout that process, farmers faced more and more uncertainties. Instead of an increase in farm size due to the limited land resource, part-time farming mushroomed and is now a major means of raising farm family income. It has enabled Taiwan to solve the most difficult problem of income disparity between farmers and nonfarmers. A dual structure of agriculture will probably develop in Taiwan, with a small number of internationally competitive full-time farmers and a large number of part-time farmers. Taiwan's future agricultural policies should place more emphasis on the improvement of productivity of part-time farmers rather than the enlargement of farm size and should provide the necessary measures to help the part-time farmers obtain the services needed to maintain their efficiency in farming. Agriculture under the small farm system needs firmer and stronger policies to support further development.

## Introduction

Taiwan is an island with a land area of about 36,000 km<sup>2</sup>, presently inhabited by more than 18.5 million people. Taiwan's economy has continued to grow vigorously during the past three decades. During 1951-83, its GNP increased 13.6 times in real terms, averaging 8.5 percent per year. Per capita income increased 4.5 times during the same period, reaching the equivalent of \$2,444 in 1983. The high growth rates have been achieved despite rapid population growth and limited natural resources.

Through a series of economic plans launched since 1953, Taiwan's economy has been transformed from predominantly agricultural (with exports relying heavily on sugar and rice) to fairly diversified industrial. In 1963, the share of industry (including mining, manufacturing, electricity, and construction) in net domestic product (29 percent) exceeded for the first time that of agriculture (28 percent). In 1983, the percentage of agriculture in net domestic product declined to only 7 percent.

Taiwan's agriculture is largely made up of about 890,000 farm families with an average farm size of 1 ha. The agricultural household population as a percentage of total population declined to 28 percent in 1983. Agricultural labour accounted for 18.7 percent of the total labour force in the same year. Land resources are limited in Taiwan; only a quarter of the total land area (900,000 ha) is arable under the existing production technology. Valuable farmland is continuously being lost in the fertile lowlands to growing urbanization. Because of acute scarcity of land that can economically be brought under cultivation, cultivated land area increased by less than 6 percent over the past 3 decades and remained almost unchanged in the past 10 years. Of the total cultivated land area, about 60 percent are irrigated paddy fields and the remaining 40 percent dryland. Although the physical dimension of land area is practically limited, land is still a contributing factor to the growth of agricultural output in Taiwan. In the early stage of development, the expansion of crop production had been the result largely of more intensive farming, by introducing new and improved techniques, increasing capital inputs (like chemical fertilizers, pesticides, and improved seeds), and substantial expansion of multicropping, intercropping, and crop rotation. In the past 15 years, however, crop production has levelled off, and fisheries and livestock achieved more remarkable production increases than crops. In addition, due to the decrease of agricultural labour, farm mechanization has been carried out smoothly in rural areas.

## Changes in Agricultural Conditions and Problems

The following basic changes in Taiwan's agricultural sector have occurred during the course of rapid economic growth:

- Demand for agricultural products has changed significantly because of the rapid changes in consumption patterns due to increased per capita income. Farmers are facing the difficulties of adjusting their production mixes and reallocating their productive resources.
- With job opportunities in the nonagricultural sectors increasing, expanding agricultural production is no longer the only way to raise farm family income. Farmers may choose nonagricultural jobs at the expense of farm production.
- The number of part-time farmers and the percentage of farm family income derived from part-time jobs have increased, creating an immediate need for farm mechanization and adjustments in farm operations.

- Production costs have increased as a result of rising wage rates, but the prices of major farm products have not risen at the same pace because of excess supply. As a result, agricultural production has a much lower profit rate.

- Because of large foreign exchange reserves, some farm products can be imported from foreign markets at lower cost. Therefore, domestic production has to face a certain extent of foreign competition.

The basic changes mentioned above indicate that farm families have to consider many different factors in their decision-making process, which can be summarized as follows:

- To increase farm family income, farmers must try to improve labour (rather than land) productivity because, in the sense of production, land is becoming relatively abundant while labour is becoming relatively scarce. Under these conditions, farmland will be cultivated more extensively. And without a strong price support policy, labour-intensive farming will be abandoned.

- As part-time farming continues to expand, the percentage of income from nonfarm sources is increasing. Once farm families' incomes come mainly from nonagricultural sources, they will be less and less responsive to national agricultural production policies. On the contrary, they will be more and more interested in the industrial and business development policies. Taiwan will therefore face difficulties in carrying out its agricultural policies.

- Unless the government adopts proper price policies or subsidy programmes, farm production may decrease, and the food self-sufficiency rate may decline, endangering Taiwan's food security. But a decrease in farm production may not have much impact on farm families' incomes, as they can always supplement their earnings from nonagricultural sources. Hence, the conflict between the government and individuals will become more and more significant.

During the early phase of economic development when resources have not yet been fully used, the development of agriculture naturally complements that of other sectors, and vice versa. The goals of increasing farm production and raising farm families' incomes can go hand in hand. In other words, at the early stage of development, agriculture can pave the way for the growth of other sectors, while development of the latter sectors can in turn help agriculture shift excess resources to nonagricultural sectors without any disadvantage to the production efficiency of agriculture. In the meantime, because the capacity of the market is large, the increase in farm output will not lead to higher production costs or to lower prices. Therefore, increased production naturally results in higher incomes for farm families. At the latter stage of development, however, economic resources are being fully exploited and intensively used, and keen competition exists for such resources between the agricultural and nonagricultural sectors. Those sectors are now competitive rather than complementary, and the development of one must be at the expense of the other.

An increase in agricultural production at the present stage in Taiwan does not necessarily mean an increase in farm family income, for, to increase farm production, farm families have to make greater investments in productive resources, and the opportunity costs of those investment resources have gone up. If the opportunity costs are larger than the returns realized from farm investment, labour and management resources devoted to agricultural production would not be sufficiently remunerated. In that case, farmers' incomes are not likely to be improved. For instance, increasing farm production requires the use of more labour, which, in view of the favourable opportunity of nonfarm employment, can be done only by sacrificing income from nonfarm sources. If income from increased farm production is less than that which could be obtained from alternative nonfarm employment, the goals of increased production and higher income would not be consistent. Thus, as the conditions of economic development change, traditional agricultural policies should be reconsidered and revised.

## **Major Agricultural Policy Issues**

### **Needed Basic Agricultural Policy-Making Considerations**

Economically speaking, the efficiency of agricultural production is normally lower than that of nonagricultural production. And it is generally agreed that to transfer productive resources from agricultural to nonagricultural production would make the resources more productive and beneficial to the general economy. But this results in a declining agricultural sector with more foreign imports and eventual dependence on other countries for food. In view of that, any assessment of agricultural policy should take into consideration many factors instead of concentrating solely on simple

economic efficiency. In other words, agricultural policy involves economic, military, political, and social considerations. In short, even if agricultural production is not economically efficient, in view of its importance to national security, political stability, and social equality, its development should not be neglected.

First of all, as the agricultural sector changes from its predominant position to a minor one, the fundamental role that agriculture is to play in the general economy should be clearly defined in government policy. Then, an agricultural production goal must be set. Based on the production goal, a resource utilization and conservation plan should be agreed to. If the basic role of agriculture cannot be identified, no overall sense of direction will exist, and agricultural policies and programmes are likely to be designed haphazardly and unsystematically and to encounter numerous unnecessary obstacles in implementation, such as those Taiwan is experiencing.

During the early period of economic development, because no contradiction or conflict exists between agricultural and other economic policies, the process of government decision making is rather simple. As the economy begins to develop, competition emerges for resources among various economic sectors. New complexities are introduced to the decision-making process. At such time, lower-level decision-making agencies should follow the policies made by their superiors, which in turn must be consistent with the highest-level government policies.

Without clearly designated areas of authority and responsibility, effective policy coordination and implementation will be virtually impossible. Various agencies will work at cross purposes, and interagency rivalry, waste, and inefficiency will be the order of the day.

### **Farmland Preservation, Utilization, and Development**

The degree and scope of farmland protection policies should be determined in accordance with the agricultural production goal. With this long-term goal as a guide, the acreage of farmland required and land preservation methods can be properly worked out. After regional agricultural planning has been worked out and farmland has been classified according to its recommended uses, landowners should not take any action to engage in land speculation. For lands that have been classified as permanent farmland, the land tax should be waived in order to compensate owners for the loss of land value. Marginal land (coastal land, riverbed land, and slopeland) should be first considered for nonagricultural uses in order to lighten the demand on farmland.

If marginal land is to be reclaimed for agricultural purposes, the government should estimate its potential rates of return and delay the development of land that shows signs of providing low returns. Delaying development of land of marginal agricultural productivity is by no means a waste of resources. On the contrary, indiscriminate investment in land reclamation is so much money down the drain.

In sum, to achieve an optimal effect, any land use policy should be carried out in line with the following objectives: achievement of the long-range agricultural production goal, preservation of the agricultural production environment, and prevention of land speculation.

### **Improving the Production Potential of Part-Time Farmers**

Improving farmers' incomes by enlarging farm size is very difficult because the number of farm households cannot decrease rapidly. Given the small size of farms, farm labourers cannot be fully employed, and surplus farm labour has to seek employment in nonagricultural sectors in order to increase farm families' incomes. Thus, part-time farming has become a *sine qua non* for the small owner-farmers. And farm income cannot be increased by expanding the size of farms in Taiwan. More policy emphasis should therefore be placed on the improvement of production potential of part-time farmers rather than on the expansion of farm size.

Although the size of farms in Taiwan is small, on almost every farm at least one family member is engaged full time in farm work. One reason why farm families' incomes are still low is that labour productivity in the agricultural sector is much lower than in nonagricultural sectors. Another reason is the difference in the educational level between farm and nonfarm youth. The low educational level of farm workers may lead to low productivity, and ultimately to low incomes. In order to solve this problem, the following measures should be considered:

- Strengthen agricultural training to make farmers more productive and provide greater opportunities for formal education so that farm youth will be better qualified for nonfarm jobs.

- Set up a flexible land system to facilitate joint and custom farming. Such a system would allow an increase in the scale of farm operations without changing landownership. Under the present system, in which each family independently cultivates its own limited holdings, the scale of farm operations can hardly be enlarged despite the continued outflow of farm labour, and agriculture is bound to become a part-time business.
- Develop farm service businesses to meet the demand of part-time farmers and to maintain agricultural growth.

### **Helping Over-Small Owner-Farmers**

In Taiwan, 200,000 family farms have less than 0.3 ha each and together cultivate about 40,000 ha of farmland. The families who run those farms, owing to the small size of the holdings and low incomes derived therefrom, live mainly on income from the outside. In the past, they had few opportunities for employment outside their own farms, and their living conditions were harsh. In recent years, however, the situation of those farmers has been very much improved. Income from other sources than their own farms has been increasing and their living standards have risen noticeably. Their part-time work is primarily agricultural. In other words, in addition to cultivating their own plots, they serve as seasonal farm labourers, in which capacity they have made tremendous contributions to agricultural production. The money that those small owner-farmers earn from cultivating their own plots, though small in absolute terms, constitutes an indispensable part of their incomes. Hence, any attempt to get them to give up cultivation of their own plots would, at present, appear ill-advised.

The following are a number of measures that could be taken to further improve the lot of Taiwan's small owner-farmers:

- Help them to become fully employed and, in cases where warranted, to buy agricultural machinery and avail themselves of the opportunity to engage in custom farming in the rural areas.
- Help their children go to school and prepare themselves for nonagricultural professions, so as to bring about a reduction in the number of over-small farms.
- Set up a programme under which landownership and land use rights of farmers who are retiring or withdrawing completely from agriculture will be transferred voluntarily to other full-time farmers.

### **Conclusions**

Part-time farming has mushroomed during the course of rapid economic development in Taiwan and is today a major means of increasing farm family income. It has enabled Taiwan to solve the most difficult problem of equalizing agricultural and nonagricultural income levels while maintaining stability in rural villages. When the amount of time that part-time farmers spend working off the farm reaches a certain level, those farmers become, in essence, nonfarmers. Their incomes may be even higher than that of nonfarmers who spend no time at all in farming because, in addition to their agricultural incomes, they are also earning a full amount of income from their nonagricultural jobs. By that time, discussions of the relative incomes of farmers and nonfarmers become meaningless. In view of this, creating a dual structure in Taiwan—with a small number of internationally competitive full-time farmers but the majority being part-time farmers who continue to hold titles to their land and live in the villages while earning the bulk of their incomes from nonfarm occupations—would be a truly unprecedented achievement. Hence, future farm income policies should focus mainly on full-time farmers, pay more attention to their income levels and welfare problems, and help them improve their farm production and management. In the meantime, future agricultural policies should also provide the necessary measures to help part-time farmers obtain the services they need to maintain their farming efficiency.

In summary, the major emphasis of agricultural policies should be shifted from the problems of individual farmers to macro-level considerations, especially structural adjustments and the coordination of agricultural development with development of other economic sectors. Agriculture under the small farm system needs firmer and stronger policies to support further development.

### **Note**

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