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SUSTAINABLE AGRICULTURAL DEVELOPMENT: THE ROLE OF INTERNATIONAL COOPERATION

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*'Small farmers' in China and their Development*¹

INTRODUCTION

The population in mainland China almost doubled between 1952 and 1989, but total grain production rose about 2.5 times. The period 1979–89, in particular, was one of the most successful decades, since total grain production increased by 2.7 per cent per year (Niu, Guo *et al.*, 1991). As a result, per capita food supplies improved considerably and availability of most farm produce increased by a wide margin.

The biggest contribution of the Chinese agricultural sector has been to solve the food and clothing problem for over one billion people, despite limited land resources. At the same time, the agricultural sector has also provided a huge amount of funds to the state so that industrialization of the country could be initiated and developed despite starting from a very low level of economic development (for example, per capita national income was around US\$ 60–70 in the early 1950s). As a result of these massive transfers of capital, economic development in China has been biased against agriculture. The cumulative growth rate of industry was 16 times greater than agriculture between 1952 and 1989. Therefore, although there has been considerable overall beneficial progress in the agricultural sector, it is still characterized by wide fluctuations in output from year to year; by a relatively weak resource base; by having insufficient reserves to withstand adverse conditions; and by a long-standing shortage of many farm inputs. This situation is unlikely to change in the near future.

Several radical transformations of the agricultural management system have occurred in China since 1949. These changes have been from independent management of privately owned land by individual farmers after the agrarian reforms, to mutual aid groups and then cooperatives, from cooperatives to communes, and finally the abandonment of the peoples' communes, with unified collective management and the introduction of the family contract responsibility system. Each of these drastic changes was basically achieved within a relatively short period of time. Each change was designed to liberate the productive forces of farmers and to promote agricultural productivity.

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Unfortunately, the rush for quick results and the forced application of a single pattern of management everywhere, without regard to local circumstances, often had detrimental results, not only on the productive capacity of agriculture but on the level of uncertainty faced by farmers.

THE CHINESE FARM HOUSEHOLD AND ITS CHANGING POSITION IN RETROSPECT

Generally speaking, a small farmer is a worker who is engaged in independent agricultural production based on the family household as the management unit. The distinguishing features of small farmers in China are their enormous numbers, wide dispersion over the country, and strong survival ability over a dozen centuries despite numerous wars and social chaos.

The small farm as traditional management form in China

The Warring States (475–221 BC) marked the transition of the slave society to the feudal society when the necessary material conditions for the development of individual labour units became available owing to the popularization of the use of iron farm tools and draft cattle. Surplus goods increased. Slave owners were replaced by landlords, and slaves became peasants. Slavish corvée was abolished and replaced by land rent. Historians agree that the small farmer emerged in about 216 BC, during the Qin Dynasty, when the feudal social system and feudal landlord ownership were established. Small-scale private land ownership accompanied this change (Li, 1990; Liu Xiaoduo, 1990).

The landlord economy, based on feudal land ownership, occupied the predominant position for about two thousand years, both during the feudal era and during the century of semi-feudal, semi-colonial society which followed. During this long period, the small farm economy was always subordinate to the landlord economy. The small peasants included people who owned small private plots and tenant peasants dependent on land rented from landlords. Both types of small farmer engaged in agricultural production in their own right. Hence the emergence and existence of small peasants in Old China was connected with feudal land ownership as well as small private land ownership. This was an outstanding characteristic of small peasants in the past.

The distribution of land was very inequitable in Old China up to the last year before the founding of the People's Republic. Landlords and rich peasants accounted for less than 10 per cent of total rural population, but they owned 70–80 per cent of the land and the lion's share of farm animals and tools. On the other hand, over 90 per cent of rural labourers (including poor peasants, farmhands and middle peasants) possessed only 20–30 per cent of the land. In addition to farmhands and tenant peasants, a great number of small peasants were exploited by the landlords because they had to rent land or take usurious loans from the latter. Small farmers paid about 35 million tons of grain as rent in kind and paid enormous interest debts to the landlords each year (Niu, Guo *et al.*, 1991). Millions of peasants lived in hunger and cold, and were distressed

by famine in years of disasters. Therefore, for generations, the great mass of Chinese peasants had long cherished the wish that the available land should be redistributed.

'Land to the tiller' and agrarian reform

Hong Xiuquan (1814–64) and Sun Yat-sen (1866–1925) were two well known advocates of the abolition of the feudal agrarian system and stood for the principle of 'land to the tiller'. It also became the basic policy of the Communist Party of China (CPC) during the period of the people's democratic revolution (1919–49). Agrarian reforms were carried out first in the old liberated areas according to 'Outline Land Law of China' in the 1940s, and then, in the newly liberated areas, according to the 'Agrarian Reform Law of the People's Republic of China'. The land reform was completed in mainland China between 1950 and 1952. This reform abolished the feudal land system, confiscated the redundant land of landlords, and distributed it among landless peasants, or to those peasants with insufficient land, in a gratuitous way. The redistributed land acquired new owners and thus the control over this resource shifted to the tillers. As a result, about 300 million peasants in mainland China obtained 750 million mu (1 ha = 15 mu) and other means of production. In addition, the new owners were freed from all debts in terms of rent and usurious borrowings.

Small private farms, therefore, became almost the only management form after the agrarian reform. Land was distributed in an egalitarian manner. Per capita and per farm household land availability for the country was 2.5 mu and 12.4 mu, respectively. A middle peasant household owned on average 15 to 30 mu. Some of the new small peasants rapidly became middle peasants. These, along with peasants who previously owned their land, took a dominant position in terms of number of households and land size. However, the commercial sales of these small-scale farmers remained very limited. According to surveys conducted by the State Statistical Bureau in 1955, of 16 000 farm households in 25 provinces, the ratio of commercial sales to total output averaged only 25.7 per cent in 1954 – among poor peasants the ratio was 22.1 per cent, middle peasants 25.2 per cent, and rich peasants 43.1 per cent (Niu, Guo *et al.*, 1991).

The state allowed farm produce to be freely purchased and sold and prices to fluctuate on the market until the state monopoly purchasing and marketing system was introduced in November 1953. Farm households, being fully independent decision makers in production management, were also independent marketers of farm products in the first years of the People's Republic.

Agriculture, which had been destroyed during the protracted warfare prior to 1949, recovered and was quickly revitalized. Total output rose by 14 per cent annually in the early 1950s.

From individual farm household to mutual aid groups and elementary agricultural producers' cooperatives

The government encouraged small farmers to create mutual aid groups (MAGs) and elementary agricultural producers' cooperatives (EAPCs) to overcome some of the difficulties faced by individual farmholders, such as lack of farm implements and draught animals, and lack of capacity to resist natural disasters.

MAGs were based on private land ownership. Farm households helped each other with manpower, farm tools and draught cattle in fieldwork, but they could decide what to produce on their own land, as they remained independent management units. There were both seasonal and permanent MAGs in various regions in the early 1950s, the average size being six to seven households.

A small number of EAPCs appeared in some areas in the early 1950s. The land, draught animals and other basic means of production were put into collective use and controlled by unified management, but they were still owned by the EAPC participants. The revenue was distributed according to both the land shares and man-days of labour contributed. The average size of EAPCs was about 20 to 30 households to cultivate 200–300 mu of land. Farm households in EAPCs became semi-independent management units. Apart from the land placed under the control of the EAPCs, farmers often retained sizable land plots for family-run undertakings. They also engaged in diversified sideline occupations. Thus farm households were free to undertake a considerable portion of individually managed activities. This was a distinctive feature of EAPCs. Farmers welcomed both MAGs and EAPCs and agricultural production developed at a relatively high rate.

From elementary to advanced cooperatives

In September 1953, the CPC Central Committee made public its general policy for a step-by-step socialist transformation of agriculture, handicrafts and capitalist industry and commerce. After considering all the relevant factors, including the direction of agricultural development, the need to accumulate funds to finance the nation's industrialization, and the availability of material supplies relative to demand, the CPC made an historical choice to carry out the cooperative transformation of agriculture to establish a collective ownership system in the agriculture sector. By means of this system the government could, on the one hand, put the rural economy under the control of centralized plans and, on the other hand, extract huge funds from agriculture for industrial development by introducing the monopolized purchasing and marketing system which enforced a great price difference between industrial and agricultural goods.

Urged on by the above general line of argument and the desire to meet industrialization targets, the government began to impose the state monopoly for purchasing and marketing of major farm products. Free marketing was replaced by state-planned purchasing and marketing. At the same time, the

socialist transformation of agriculture was conducted and, by the end of 1956, the cooperative transformation of agriculture had on the whole, been realized. A total of 740 000 advanced agricultural producers' cooperatives (AAPCs) were set up nation-wide, covering over 90 per cent of all farm households. The average size of AAPCs was 150 to 200 households, with 2 000 to 2 500 mu of land.

AAPCs were characterized by a fully collective management system and two-level accounting (at the cooperative and team levels). The land, draught animals and large farm implements were collectively owned. The private ownership of the cooperative members over these means of production was abandoned. They also lost production and marketing decision-making power. Their income came only from the collectives according to their man-days of labour, and rights to income based on their share of the assets assigned to the cooperative were abolished. Despite this, the farmers were permitted to use small plots of land for personal needs, to own small farm tools, and to engage in some sideline occupations. However, these private activities played a very limited role in the total agricultural production of the country.

The reorganization of EAPCs into AAPCs reached a high tide in the summer of 1955 and the growth rate of agricultural production began to slow down, although the total output continued to increase.

From advanced cooperatives to people's communes

The people's communes were created country-wide in the summer and autumn of 1958. This change was part of a newly-set strategy of 'leap forward to catch up with and surpass the industrial powers'. It took place before the agricultural producers' cooperatives had time to consolidate and to develop the productive forces available. The AAPCs were merged into 26 000 people's communes. A commune had on average 4615 farm households and 55–60 thousand mu of arable land. Under this system, all means of production were owned by the collective, and the unified collective management of these large productive units was integrated with government administration.

People's communes, being larger in size and higher in degree of public ownership, were unable to generate new productive forces because they, like the AAPCs before them, were merely combinations of human and animal power with the chief means of production being collective labour. Later, a number of communes were readjusted in size, but in general they remained unchanged for more than 20 years. The communes functioned under a system of 'three-level ownership by the commune, the production brigade and the production team, with the production team as the basic accounting unit'.

Under the commune system, sometimes the family plots and livestock kept for personal needs became owned by the production team. At other times, the farmers could not sell privately produced commodities because the free markets had been completely closed down. Occasionally, even piecemeal trade was forbidden, on the grounds that it was necessary to 'cut the tails of capitalism'. Farm family households, being regarded only as blood-tied living units, played almost no role as production or marketing management units. Farmers became

solely labourers in collectives, as they were totally divorced from the means of production and basic management activities.

People's communes exercised a high degree of unified management, which led to an overly concentrated labour management system and an egalitarian distribution of collective income. The production teams did not really have any important decision-making power, although they were the basic accounting units. For example, the teams were required to arrange their production activities in accordance with the plans and orders issued by the government authorities and sell their products to the state at prices set by the government. Almost any farm activities other than grain production were regarded as not being honest jobs. There were no economic incentives to stimulate the enthusiasm of farmers. In general, agricultural production grew slowly during the 20 years of communes, resulting in stagnation of the rural economy, per capita output and consumption levels. However, agricultural production dropped sharply during the first three years of the commune era, at the end of the 1950s and beginning of the 1960s. Farmers suffered most severely in these years. Despite some recovery in the 1962–5 period, the Cultural Revolution (1966–77) was also a very harsh time for farm families in China. There were over 100 million people in rural areas who were under-fed and who did not have the necessary clothing when the rural reforms began at the end of 1978.

From the people's commune to the family contract responsibility system

The first step in reforming the commune system was carried out after the Third Plenary Session of the CPC Eleventh Central Committee held in December 1978. A new dual-level management system, combining both unified and individual management with the family contract responsibility system as its main characteristic, replaced the unitary collective/commune management system in most regions of China.

Land and other collectively owned means of production were assigned to every household through contracts under which the farmers were required to pay for the resources used. The farm household, therefore, regained its previous status of being a productive management unit. Farmers, being themselves managers as well as workers, could integrate directly the land and other means of production. They also became, to some extent, independent commodity marketers because they obtained decision-making power over the marketing of a significant part of their output. The small farmer has taken a dominant place in Chinese agriculture since the responsibility system (also known as 'dabaogan') was introduced. The reform has eliminated major disadvantages of the people's communes. In particular, the troublesome problems associated with the effective supervision of farm labour and the distribution of income according to work done (which created major disincentives under the commune system) have both been resolved.

The state monopoly and obligatory purchasing and marketing of major agricultural products were abolished step by step, beginning in 1985, to encourage the development of the commodity economy. Free markets have arisen as the times require, both in urban and rural areas, to break the govern-

ment monopoly. Farmers now have more choices in regard to selling their products.

China's agriculture reached its highest average annual growth rate of 8.4 per cent in the period 1979–84, thanks to the reform of the management system and a series of other beneficial factors. Total grain output grew by one-third between 1979 and 1984, reaching 407.31 million tonnes in 1984. The output of most other commodities also increased considerably. For example, cotton production increased 280 per cent, exceeding 6.25 million tonnes in 1984. The per capita availability of major farm products rose significantly, creating a greatly improved situation with respect to foods, the supply of which had been precarious for a long time. 'Dabaogan' as a form of small farm management, was widely accepted, mainly because it was able to promote agricultural development and hence increase the effective food supply and thus provide a new chance for the industrialization of the nation. However, the new system was not deliberately designed by the government. Rather, it evolved from necessity (and is still evolving).

RECONSTRUCTION OF FARM HOUSEHOLD MANAGEMENT AND DUAL-LEVEL MANAGEMENT

Step by step reforms since 1978

The re-emergence of the farm households as small family farms based on the family contract system after 1978 occurred in several steps and has not been introduced as a unified pattern over the whole country. In particular, there have been major differences in the way the system has evolved in agricultural and pastoral areas.

In agricultural areas, the step-by-step reconstruction of farm households generally occurred as follows: from 'fixing output quotas on a team basis and with remuneration to each household linked with output' to 'fixing output quotas for each household', to the system of 'contracting land to each household for productive management'. It is the last stage which has the Chinese name 'dabaogan'.

In September 1979, the Central Committee of the CPC adopted the 'Resolution on Some Problems Concerning Accelerated Development of Agriculture', calling for reforms within the framework of the collective economy based on the people's communes. The first reform was to give more decision-making power to the production teams: 'Especially, it is necessary to strengthen the responsibility system and realize the income distribution according to work' by means of 'fixing output quotas on a team basis and linking remunerations with output'. That is, a kind of team production responsibility system was introduced. At the same time, the party encouraged farmers to develop family-run side occupations to increase individual income and enliven the rural economy.

A year later, in September 1980, another Central Committee document was issued on further consolidating and perfecting the production responsibility

system. The document emphasized: 'Our general direction is to develop the collective economy', but affirmed officially that 'the practice of fixing output quotas for each household, or contracting land to each household for production management is allowed... in the remote mountain and poverty-stricken regions' because it 'is a necessary measure to solve the food and clothing problem... There is no need in other regions to fix output quotas for each household.' Instead, the main efforts should aim to 'carry out the specialized contract responsibility system on the basis of the production brigade' to further develop and consolidate the collective economy.

The system of 'fixing output quotas for each household' was not entirely new. It was a kind of responsibility system which had been used previously in some areas in the 1962-5 period. The main points were that fixed output quotas and fixed amounts of farm work were established for each household. The household was required to deliver all major products to the collective. The collective economic organization calculated the remunerations (work points) of the households according to their output; that is, the collective still controlled the distribution of income, but households which exceeded their quotas were rewarded accordingly.

The famous No. 1 Document of the Central Committee of the CPC, in 1982, announced that the practice of 'contracting land to each household for productive management is also a kind of responsibility system'. This new responsibility system soon spread rapidly over the whole country. By the end of 1982, 99 per cent of the production teams had assigned 95.7 per cent of collective-owned land to households. The majority of rural collective economic organizations which controlled the communes were spontaneously disbanded. A great quantity of collective property was distributed to the farm households. The rural township administrative authorities were re-established as the lowest level of formal state administration (replacing the communes). Little attention was paid to the creation of new cooperatives to take charge of the community assets such as irrigation infrastructure and so on, and consequently some areas now face undesirable consequences of the rush to abandon communes.

'Contracting land to households for productive management' clearly differs significantly from the responsibility system as originally understood in China. After the land was distributed and assigned to each household, the farmers, operating their farms independently according to the contracts, could satisfy their commitments to the new collective organizations by paying in cash once their delivery quota had been met. They own their proceeds as well as their products. There is no longer any linkage between output quotas and remunerations. The collective economic organizations do not interfere in the production and management of their members.

In the pastoral areas, the basic experiences of the agricultural areas were repeated, but with a one- to two-year time-lag. However, the livestock farmers usually also practise a double-contract system. Both the previously collectively owned animals and grassland have been assigned to the farm households. The process of implementing this double-contract system usually occurred in three steps, spread over about two years:

- (1) The previously collective-owned animals were assigned to each house-

hold. Livestock were usually assigned according to the existing size of families and the number of available animals, but the method of assignment varied considerably from place to place. The ratio of family members to animals ranged from 1:3 to 1:2, or simply reflected the division of the number of available animals by the total population of the village. The households were then responsible for the livestock to the collective. The households were required to pay the collective for any losses, but had the right to share any gains according to a ratio agreed in the contract (4:6 or 3:7, for example). The livestock remained the property of the collective.

- (2) The livestock were valued and assigned to the households under a contract system. The household became responsible for losses or profits which had to be shared with the collective. In addition, the households had to pay levies/taxes in the form of cash payments to the collective once a year.
- (3) The livestock were valued and then sold to the herdsman households on a discounted basis. The ownership of the animals shifted to the herdsman for individual production. The households were free to keep all profits (and losses) but had to pay agreed fees/levies/taxes each year.

In most pastoral areas, once the ownership of livestock changed, the pasture land was also assigned (under contract) to the households. In some places, households were required to make a payment for the grassland assigned to the households, with the users being required to hand over RMB¥ 0.2–0.3 per mu to the collective. But the sum involved was negligible and differs little from free usage.

There is now almost no collectively owned livestock in the pastoral area. Public ownership of livestock exists only on state farms, and with a small number of breeding stock at artificial insemination stations set up by some villages. However, not all the pasture land has been contracted to the households and, even when it has been assigned, it is often still grazed 'in common'.

Characteristics of the reconstructed farm households as 'small farmers'

As indicated earlier, a large number of farmers faced major food and clothing problems when the first stage of the reform of the agricultural management system was started in 1978. Land was the essential resource upon which the farmers' livelihood depended. Therefore land assignment on a per capita basis was the most feasible and simple way of distributing the land which was acceptable to the majority of farmers.² The farm household was reconstructed as the basic production and management unit after the reforms. These 'small farmer' households exhibit some important distinctive features:

- (1) Apart from the economically developed areas and suburbs of large and medium cities, most farmer (herdsmen) households throughout China still mainly use human and animal power in agricultural production, supplemented by machinery. These traditional factors of production play

an essential role. This is especially true in the less developed western part and pastoral areas of China, where traditional farming dominates. Nomadic animal husbandry is quite common in Inner Mongolia, Tibet and Qinghai.

- (2) In general, the farms are too small in scale and their land parcels are too scattered geographically. A survey was made by the Research Centre for Rural Development under the State Council in 1987. The survey covered 27 576 households in 208 villages. On average, there were 4.8 persons per household, with 2.7 full- and part-time workers and 8.35 mu of contracted land per farm. This later statistic can be compared to 12.4 mu per farm household after the land reform in the early 1950s. At that time, every male worker cultivated 5 mu. On average, the present management scale of a farm household is one-third smaller than was the case 40 years ago. Besides this, the land contracted to each household is commonly divided into 8 or 9 pieces, which are too small and scattered. Table 1 presents data for 1986.

TABLE 1 *Distribution of land per household in China, 1986*

Area of contract land per household (mu)	As percentage of total number of households (%)
Less than 10	70.6
10 – 20	19.6
20 – 30	5.6
30 – 50	2.9
50 – 100	1.3
More than 100	0.2

Source: CAAS (1989)

The per capita land availability varies from region to region; so does the scale of land management of farm households. In general, the size is small in the southern paddy rice regions, it is bigger in the dry farming zone of North China, and even larger in the north-east. It is even more extensive in the pastoral areas, where both livestock and grassland are under contract. For example, according to the survey in Inner Mongolia by the Institute of Agricultural Economics of the Chinese Academy of Agricultural Sciences, the average herdsman household in Gangacha Township of Ongniud Qi (that is county) had 300 mu of grassland, or 68 mu per capita, keeping 10 sheep units in 1989.

- (3) Most products are for own consumption, indicating a low percentage of commercial sales. By and large, over two-thirds of grain produced by the present farm households are for their own consumption, and only about 30 per cent marketed. As demonstrated by the data in Table 2, this

percentage has remained remarkably constant since 1978. However, the commodity sale ratio is very high in cash crop production. As a result, the overall sales to total production ratio for the agricultural sector amounts to just over 50 per cent, which is much higher than in 1978 (Table 2).

TABLE 2 *Dynamics of commodity ratios, selected years (percentage)*

	1978	1984	1985	1987	1988	1989
Grain	30.48	30.80	28.39	30.08	30.44	29.78
Agricultural Sector	39.94	44.80	46.42	50.67	53.36	51.81

- (4) The savings capacity is low, and farm households are financially weak, with little in reserve in case of natural calamities. Surveys show that about 80 per cent of farmers' net income is used for consumption, indicating a savings ratio near to 20 per cent, but, since the net income is low, the absolute amount saved is very small. It is well known that small farmers are also vulnerable to market risks.

Dual-level management versus individual small farmers

Following the rural reforms of the early 1980s, China's agricultural economy is based on collectively-owned land which is managed by the small farmers under contract to the collectives. The resources available are therefore subject to two levels of management: the unified and basic levels.

There are many functions to be performed at the unified or community management level by a collective or cooperative economic organization. For instance:

- management of the collectively owned land, issuing land contracts and developing contract norms, supervising the implementation of the contracts, and solving the issues associated with renewing the land contracts or the re-adjustment of land contracts;
- initiating and managing investment to improve and expand the collectively owned infrastructure by such activities as land reclamation, the building and maintenance of irrigation and drainage facilities, and arbitration in case of economic disputes about the use of these facilities;
- organizing the purchase and supply of major means of production and marketing of farm products;
- management and use of collectively owned large-size farm machinery and the provision of services for major farm operations, such as tractor ploughing and sowing, and mechanized harvesting;

- the provision of improved seeds and artificial insemination (AI) facilities (or stud stock) for livestock breeding, technical training, extension and consultation among farmers;
- initiation of measures to fight droughts or floods, to protect crops and animals from pests and diseases;
- coordinating the interests among households of the village, between the village and other economic entities, and between the latter and administrative institutions;
- assisting the government to achieve its purchase plans of agricultural products and providing relevant consultations to the farmers;
- undertaking village affairs concurrently if the village authorities fail to function well; and
- having discussions on behalf of the farmers with the government and other economic, social and administrative institutions.

These functions were all previously performed by the commune administration. Nowadays, village cooperatives have been set up to undertake these tasks. However, as stated earlier, these agricultural cooperatives do not interfere in the farmers' production and management decisions beyond the administration of the contracts.

The reconstructed farm households established by the 1980s reforms are, therefore, members of agricultural cooperative organizations based on the collective-owned land. They are not individual small farmers in the same sense as was the case in the early 1950s. They do not own their land. In this respect, the system of 'dabaogan' can be said to have created an agricultural system in which the basic management units are modified 'small farmers'.

Small farmers in China must now operate under two sets of economic rules. That is, they must respond to (comply with) their contracts and, at the same time, they can operate in their own best interests in free markets. The two sets of rules differ in their nature, although in practical operation the farmers manage all the resources available to them as a single entity. The contract land belongs to the collective. The relationship between the farmers and the agricultural cooperatives managing the contracts for the collective is that of contractor and service institutions. The contractor must comply with regulations set out in the contracts, including payments of land use fees and other deductions to the collective/cooperative. When the farmers operate on their own behalf in the free market, they need not have any regard to the collective/cooperative, except for the services they wish voluntarily to obtain from these organizations, including coordination and management of the social infrastructure. The farmers may use the contract land, but they do not own it. The land is not to be sold, leased, mortgaged, left uncultivated, or destroyed. In addition, under the contract, farmers accept the state guiding plans and sell the contracted amounts of their products to the government at fixed prices according to quotas. The decision-making power of the farmers in regard to crop production and management, therefore, is far from being completely free. The existence of the dual-level management system implies that the farmers are not fully independent. The planned economy still requires obligatory tasks to be undertaken by the farmers.

It should be recognized that this 'dual-level' system of management is not a perfect organizational arrangement. It has given the best results in the eastern coastal regions and suburbs of large and middle-size cities. In these regions, the collective economic organizations were relatively strong and their industrial and other non-agricultural enterprises not only remained but also have grown considerably following the implementation of the 'dabaogan' system. In the central zone, however, the 'dual-level' system has succeeded only in about 30 per cent of the villages which have had good organization and strong local cadres. About 40 per cent of villages in the central zone of China remain weak at the unified level, practicing scattered individual operations. The remaining villages in the central zone (30 per cent of the total), being in a difficult situation, have had to distribute all collective property for consumption and there is now no effective unified level management. The collective economy in the western zone was poor even under the commune system. However, it has been eroded further by the improper distribution of resources among farmers. The majority of villages have no collectively run undertakings, while the farm households are faced with a series of difficulties at the basic level. Naturally, exceptions can be found. For example, the 'dual-level' management system works well in Gansu Province, maybe better even than in some economically strong regions.

The lack of a unified management structure to provide and to maintain critically important social infrastructure and to create non-agricultural employment in many parts of the country has been the basis for major criticism of the current organizational structure of Chinese agriculture. This problem must be addressed by future reforms.

Better results from new options

While the introduction of the dual-level management system in the early 1980s has attracted criticism, it has also had many beneficial effects. In particular, it has provided Chinese small farmers with many new options and, hence, opportunities to improve the living standard of their families.

As part of the management structure reforms, the government removed the restriction that a farmer should only cultivate the land. A new economic policy has now emerged which stresses all-round development and comprehensive management in rural areas to stimulate the socialist commodity economy. The farmers now have more options. Apart from crop cultivation, they may raise animals for sale if they want to. They can also seek employment in secondary or tertiary industries.

The net per capita income of the farmers in China increased by 450 per cent in the decade from 1979 to 1989, and the composition of their income has changed significantly (Table 3). In the past, the major source of their income was agricultural production for the collective economy, whereas at present it is the family management. Non-farm income on average in 1989 constituted 38.2 per cent for the whole country (it differs greatly from region to region), indicating a remarkable decline of the agricultural share.

The dramatic changes in the farmers' net income level (along with its composition) in the decade of reform could not have occurred without the economic reforms which have created the dual-level management system and given more choices to the farmers.

TABLE 3 *Dynamics of the net income of farm households in rural China, selected years*

	1978	1980	1985	1988	1989
Net per capita income of farmers (¥)	133.57	191.33	397.6	544.94	601.51
Source of income (%)					
From collective economy	66.3	56.6	8.4	9.1	9.4
From economic combinations	—	—	0.9	0.7	0.6
From family management	26.8	32.7	81.1	83.2	82.2
Other non-borrowed income	6.9	10.7	6.9	7.0	7.8
Share of sources (%)					
Agricultural	85.0	72.8	66.34	63.4	61.79
Non-agricultural	7.0	8.8	21.7	27.3	28.03
Non-productive	8.0	13.0	11.96	9.3	10.18

Source: *Chinese Statistical Yearbook*, 1985, 1990.

CHANGING ROLE OF 'SMALL FARMERS' AND THEIR NON-FARMING TENDENCY

Differentiation of farmers and specialization

Under the previous system of people's communes, farmers all over the country were commune members, who were engaged in collective production at almost the same level. The initial economic status of most reconstructed small farmers (or herdsman households) was similar following the restructuring. However, with the passage of time, the gap between farmers is widening, owing to their different responses to the development of the commodity economy and the new opportunities the changes in policy have made available.

Considering the data on farm household annual per capita net income, farmers can now be divided into three levels: rich, well-to-do and poor. There is a most encouraging trend for the number of rich households to grow while the number of poor households is declining. The farm households with per capita net income over ¥1 000 accounted for 9.4 per cent of the total in 1989, and those over ¥500 made up more than a half of the total farm households in 1989. The households with less than ¥200 were reduced from 82.6 per cent in 1978 to 4.7 per cent of the total in 1989 (Niu, Guo *et al.* 1991). The absolute

number of farm households below the ¥200 level was 57 885 in 1989, or 6.6 per cent, of the rural population. These households are mainly located in the economically undeveloped regions of the south-west and north-west of China, regions which are disadvantaged by severe natural and ecological conditions. Only a small number of these households live in counties of the central and eastern zones.

As far as the employment structure and economic classification of the farmers are concerned, they have now been split up into farm managers, rural workers, farmworkers, individual workers, industrialists or businessmen, enterprise owners, entrepreneurs and various administrators. They belong to different interest groups and social strata with varied demands and wishes. Nevertheless, the farm managers, as a working stratum, still represent the majority of the rural population. As explained earlier, they are self-employers engaged in crop or livestock production on the collective-owned farmland or pasture land which they farm under contracts. The only or main source of their livelihood depends on agricultural income. The most viable among them are big contractors or specialized households, although some larger farmers have failed.

The Research Centre for Rural Development under the State Council made a survey of 26 666 grain-producing farmers in various regions of the country in 1987. The results show quite good performance by 235 big producers. Their commodity ratio was nearly six times that of common households, and other indicators such as per mu yields, net income from one mu and one work-day were higher by 37.48 per cent, 35.96 per cent and 50.59 per cent, respectively (see CAAS, 1989).³

There are also a number of big households specializing in production of pigs, poultry and fish. They are often very specialized and highly effective.

Enlarging the management scale and the associated surplus labour problem

From the late 1980s, there have been frequent appeals for an enlargement of the management scale. It is argued that the present structure suffers from major scale diseconomies, made worse because the area available to each worker is split up into a large number of small scattered plots. This situation leads to low labour productivity.

Given the current combinations of manual and draught labour as the chief production factors, supplemented by machinery, it has been estimated that the desirable size of a farm could be enlarged by one-third to one-half. A worker could cultivate 7–8 mu of paddy field in the south, 12–15 mu of land in the northern dry farming region, 10 mu in cash crop producing areas, and 50–100 mu in the north-east. In general terms, this would mean that the average size of contract farms should be increased by a half, from 8 mu to 12 mu per household, or from 5 mu to 7.5 mu per worker. If such a change occurred, then each worker would be able to provide 625 kg of commodity grain, which is enough to satisfy 1.5 non-agricultural persons. The result would be that about one-third of all farm households (or 100 million workers) would need to be transferred out of grain production. It will probably take at least 15 to 20

years to create other jobs for such a large contingent of farmworkers. Such a change needs to be an evolutionary process in economic development and it will not be easy to achieve.

It should be noted that 100 million surplus rural labourers have been left in the countryside, despite the outflow of huge funds from the agricultural sector to fund the national industrialization programme since 1949. The problem of providing more worthwhile employment for these people has become a serious challenge in the overall economic development of the nation. In order to enlarge the management scale in agriculture, there is need to promote the secondary and tertiary industries in rural areas. Only in such a way can the enormous surplus labour in agricultural production be transferred to other sectors. This depends mainly on a proper development of rural industrial enterprises, rather than a continued concentration on urban industrialization based on state-run enterprises, because the capacity of these urban enterprises to absorb the surplus rural labour is virtually nil.

Chinese farmers are reluctant to leave their land, even when seeking employment in non-agricultural industries. Scarce land is the last guarantee for their livelihood when it is difficult for them, in their tens of millions, to get jobs in the town. The comparative advantages of crop farming are clearly low; nevertheless, most farmers do not want to give up their contract plots.

The Ministry of Agriculture carried out a case study on 3200 farm households in 28 provinces, autonomous regions and central municipalities in 1988. The data obtained show that 72.4 per cent of farmers were in favour of keeping the current situation unchanged, 26.6 per cent considered the size of contract land appropriate, 50 per cent expressed their wishes that their contract land plots should not be re-adjusted for 15 years, and 15.6 per cent hoped the land would be re-adjusted and allocated principally to the skilled farmers. Some 21.3 per cent wanted to take on more contract land, while only 6.2 per cent were ready to re-contract out their land plots to others. Many farmers supported re-adjustment of land plots and/or their concentration only for the sake of removing the inconveniences caused by the scattered location of their fields.

Some 60 per cent of agricultural labour in the suburbs of Shanghai Municipality has already been shifted to the secondary and tertiary industries, yet most farm households do not want to alter the present situation of land contract conditions. According to a survey of 4015 households, 52.6 per cent of them refused to re-contract their food fields and responsibility fields, 38.4 per cent agreed to re-contract with others their responsibility fields, on condition that the food fields were to be retained, 7.3 per cent were ready to give up all contract land plots, and only 1.7 per cent would like to enlarge their farmland size and to become bigger specialized households.

Similar to the outskirts of Shanghai, southern Jiangsu is also characterized by a developed economy and two crops (wheat and rice) a year. Over 55 per cent of agricultural labour has been shifted to the secondary and tertiary industries. The majority of farm households are engaged in agriculture in a part-time way, but remain reluctant to give up their contract land plots. For example, there are 60 big grain-producing households in Rongnan village in Wuxi County, with on average only one farm worker to cultivate 1.5 mu of food field and 7.5 mu of responsibility field. Rongnan village 'compensates'

(subsidizes) agriculture from its industrial enterprises. On average the subsidy is ¥125 per mu. As a result, these big grain producers receive around ¥1000 as 'compensation'. Their own income from crop production comes to approximately ¥1000. Thus the total income for a farm worker is about ¥2000, which exceeds that of industrial workers of the village by 70 per cent (see CAAS, 1989). Besides, the main field operations are done by the mechanical services of the collective. The farmworkers really only perform some auxiliary work. These facts explain why they do not want to give up their contract land.⁴

It is expected that the general picture of the predominance of 'small farmers' in China will not change greatly over a long period of time. The practical choice is the coexistence of the various management forms discussed in Appendix C (See also CAAS, 1989).

Farmers' behaviour and non-farming tendency

Near-sightedness in farmers' production behaviour has been a widespread phenomenon in rural China since the reforms. The farm households are reluctant to invest in cropland and do not seem to care about increasing land fertility. For example, they want to harvest the highest possible yields only for some years by the application of large amounts of chemical fertilizers, instead of following the time-honoured sustainable methods based on farm manure. The herdsmen, for example, have unduly expanded their livestock numbers, which has resulted in the degradation of pasture. These undesirable changes in farmer and herdsmen attitudes are another major basis for criticism by those who oppose the reforms which have occurred since 1978.

The basic conservative and sustainable production methods of the past are being abandoned both by the collective/cooperatives and by the small farmers in the course of pursuit of higher income. The non-farming tendency is getting the upper hand. One obvious indicator of this problem is the willingness of village collectives and individual farmers to invest in non-agricultural activities, rather than in agriculture, even if these investments are in the cities. The total investment in collective-run non-agricultural enterprises grows year after year, whereas the amount invested by collectives in agriculture declines proportionally, from 30.1 per cent in 1983 to 9.4 per cent in 1988 (Zhao, 1990). The funds used in agriculture as fixed assets by the collective economic organizations totalled ¥4.25 billion in 1987, but those in industry, construction and so on were ¥25.09 billion. The 'compensation' (or subsidy) to agriculture from the industrial enterprises accounted for around 30 per cent of their net profit in 1978, and dropped to 5 per cent in 1984 and 4.5 per cent in 1988. In 1988, 53.3 per cent, of the net profit from non-agricultural enterprises was re-invested in these enterprises (Niu, Guo *et al.* 1991). Likewise, the share of farm households' savings re-invested in agriculture decreased from 60 per cent to 40 per cent. The amount invested in agricultural assets constituted only 12.2 per cent of the fixed assets of the farm households, while the sum invested in house construction was as high as 70 per cent (Zhao, 1990).

The development of part-time farming has encouraged the development of the farmers' non-farming tendency. This is especially the case in economically

developed eastern and southern coastal areas and suburbs of large and middle cities, where two-thirds of the farmers are part-time farmers. These farmers refer to agriculture as 'morning–noon–evening business' or 'Sunday agriculture'. Most of the full-time agricultural workers in these districts are aged or female.

The basic causes of the above phenomena seem to be rising production costs and the unfavourable terms of trade faced by agriculture, which have led to agricultural incomes falling behind incomes in other industries. During the period 1979–85, the prices farmers had to pay for industrial products used as inputs in agriculture increased 50 per cent faster than the state purchasing prices of agricultural products. Remarkable rises in production costs were widely reported. For example, according to a survey in Shaanxi Province, the production costs of six grain crops in 1985–8 were ¥60.3 per mu, compared to ¥45.3 in 1979–83, an increase of one-third; the production cost of 100 kg of wheat rose by ¥12.68 from 1984 to 1988, but the purchase price was up by only ¥2.98 (Liu Yang, 1990).

Income differentials shifted sharply against agriculture. For example, the survey in Shaanxi Province just referred to showed that, in 1985, the average agricultural product value of a farmer was ¥1176 per year. If this is given an index value of 100, then the corresponding indices for secondary and tertiary output values were 433 and 533, respectively, with industry being 533, commerce 449 and transportation 353. Another sample survey of 67 households in Jiangling County, Hubei Province, showed that yearly per worker income for a grain producer was ¥1661, while the income in construction was ¥2307, in transport ¥3202, and in trade ¥3840. This Hubei Province survey also showed that, within the agricultural sector, grain producers' incomes were one-third to one-half lower than the incomes of growers of cash crop (Niu, 1989). A much larger, national survey undertaken by the State Council in 1986 covered 30 000 households. The results of this survey also demonstrated a significant distinction among sectors in terms of daily income per workday. It ranged from ¥4 in the case of crop producers, to ¥8.4 for produce processors, ¥8.6 for workers in commerce and catering trade, and up to ¥15 for employees in transport and processing enterprises (see CAAS, 1989). Another important finding of the State Council survey was that the three broad groups of workers engaged in agricultural production, rural enterprises, and state-run industry enjoyed very different average incomes. The ratios of average income for these three groups of workers were 1:6:12, which is a remarkable range of income levels.

It is clear that most farm households which have become rich have done so through non-farming activities. In particular, the owners of the relatively large private enterprises have become people of wealth in rural areas. Thus non-farming activities have become very attractive to many farmers and have given them a false impression that farming has no prospects. Many people claim that this is the major reason for grain production stagnating after 1984 and the rate of increase in the output of many other agricultural products slowing down. This 'loss of enthusiasm for farming' has been attributed to the reforms of the early 1980s. The critics of the reforms claim that this move away from farming is a serious threat to the nation's food supply.

PROSPECTS FOR 'SMALL FARMERS' IN CHINA

Considering the major constraints on the scarce agricultural resources of China and the extraordinary demand pressures generated by a steadily growing population with rising incomes, we may conclude that the small farmers of China have some reasons to be more optimistic than pessimistic. To be sure, the weaknesses of the small farmer (such as small management scale and the inherent diseconomy, his relative lack of resistance to natural calamities and market risks, limitations in using modern machinery and advanced science and technologies) will become more apparent as the economy develops further. Nevertheless, as we noted earlier, China will not be able to change the pre-dominance of the small farmer for a very long period of time. In view of the overall needs of socio-economic progress we must let the small farms survive and develop to a certain extent. In fact, they are viable and indomitable. They will survive and continue to develop because of the geographical features and dispersion inherent in agriculture. The production of living plants and animals requires the attention and care of the producers. This kind of production requires the decentralization of micro-decision making to the grass-root level (to the farm households as at present in China). We should recognize that small farmers operating under the 'dabaogan' system are well suited to the development of productive forces, and there is no reason to change the present system.

Naturally, the existence and development of the small farmers in the future should be assisted by ensuring favourable inside and outside conditions such as a stable policy in regard to the family responsibility system; the consolidation and perfection of the 'dual-level' management system integrating 'unified and individual management'; the intensification of socialized services provided by the state, local organizations and cooperatives; a relatively beneficial market environment and reasonable price system; and a proper ratio of the government (both national and local) budget for capital investment in agriculture. In short, the future of small farmers in China depends upon the implementation of the policy for a coordinated development of industry and agriculture. Evidence shows that the Chinese Government is making efforts to adopt such an approach. Whatever the case, we have some reasons to be optimistic about agricultural development in China.

NOTES

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²For some details on how the land was allocated see Appendix A.

³For further discussion of the success of larger-scale farms, see Appendix B.

⁴Actually, under the prevailing conditions in the southern Jiangsu, a farm worker could cultivate 22.5 mu of paddy rice. If a farm household consists of 4 workers, 90 mu would be more effective economically. The size of the current farm households is 12-14 mu of paddy

field, or 6–7 mu per worker. This has resulted in irrational use of both labour and machinery. The utilization ratios are 60 per cent and 20 per cent, respectively.

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APPENDIX A

Some notes on land allocation procedures

The basic principle of land allocation was 'an equal plot to everybody'; that is, distribution of land on a per capita basis. In recent years, over 20 provinces have introduced the 'two-field system', namely a food field and a responsibility field. We shall illustrate this system with a case study in Pingdu County, Shandong Province.

The collective economic organizations were not disbanded in this county in the first stage of reform, and the reform of the economic system went quite smoothly. When the 'dabaogan' system was implemented in 1982–3, the contract farmland was divided into 'two big plots' and 'two small plots'. 'Two big plots' referred to a food field for own consumption and a responsibility plot contracted with households, according to the number of family members, for several years; 'two small plots' included a 'free plot' and a 'mobile plot'. The former accounted for 5 per cent of the total arable land in the village and every family had it on a per capita basis; this plot could be used for any crop production, and no payment was required. The latter made up 10 per cent of the total; the plot was contracted to the bid winners on a yearly basis. At the same time, they had six 'unified activities' as follows: (1) crop planting plans; (2) management of large-size farm machinery; (3) planning, construction and management of water conservancy projects; (4) mechanized field operations,

such as ploughing, sowing, irrigation and harvesting; (5) breeding improved crop seeds and technical services; and (6) industrial and sideline production.

The above system was a form of 'an equal plot to everybody'. It was replaced by the 'two-field system' in 1986–7 in this county in an experimental way. The new system spread quickly and stood firm in 90 per cent of villages in 1988, leaving 3 per cent of land as 'mobile plot'. The 'food field' was 0.7–0.8 mu per capita, which was given for free use and accounted for 31.8–36.4 per cent of village farmland. The 'responsibility field' amounted to 63.6–68.2 per cent and was put out to contractors for five years, at 1.4–1.5 mu per capita. The contracts can be prolonged when they expire. The collective organizations should deal with all issues in the case of transfer of the responsibility plots. Every responsibility field was classified in all villages according to fertility (9 grades in 3 levels) and the land plots were registered in files to record the changes of land fertility. The fertility grades were given on the spot, in a democratic way. The farmers were free to bid for the land plots. The land contract payments ranged from ¥30–70 per mu, or 30–40 per cent of the total income per mu. Except for these payments, the farmers do not observe any other commitments, even deductions (see CAAS, 1989).

Many villages in Pingdu County issue their land bids on a large rectangle basis to volunteers, who should create a coordinated group of several farmers in crop cultivation. Such measures have also been taken in other places because of the advantages in production planning, irrigation and mechanized operations.

The basic conditions for the introduction of this 'two-field' system' are relatively strong collective economic power (for example, with developed industrial enterprises or sideline occupations) and the existence of a group of big specialized cropping farm households demanding the shift of land in the village.

Occasionally, the land lease contract system has been introduced in some places.

APPENDIX B

Examples of the Success of Larger-scale farmers

Some big crop producers in the land-scarce yet economically developed regions have begun to run a number of small-sized family farms as a single enterprise, using the available family labour and purchased machinery. Some of these ventures have been extremely successful. For example, in Qianfeng Township (Jinhu County, Jiangsu Province) there were six such ventures in 1985, but this increased to 38 in 1987. At that time, these 38 big producers had by contract about 1573 mu of farmland and waste beachland. They employed 191 persons in total (of which 94 were full-time workers) or 41.4 mu per participating household and 16.7 mu per worker. They had 230 pieces of various machinery and auxiliary tools (including tractors) and other fixed assets valued at ¥346 thousand, or ¥3680.85 per worker. This figure is not

small in China. These 38 large farms produced 811.8 tons of grain, and commodity sales were 684.5 tons. This ratio surpassed remarkably the average level of the township (Ye and Min, 1990).

	38 family farms	Percentage of the township average level
Grain commodity ratio (%)	83.8	127.3
Per mu yields (kg)	516*	110.1
Net income from one mu of grain (¥)	259.7	123.5
Net income per worker (¥)	2 523	260
Input-output ratio in grain production	1:2.63	142.2

Note: *Including the newly reclaimed waste beachland; the yield of original existing farmland was 719 kg per mu.

Source: Ye and Min (1990).

In Jinhu County, the per household farmland availability is 50 mu, and where land is more plentiful 60 mu, which is more in line with adequate scale in current conditions. The scale of the above family farms seems to enable full use of labour and machinery.

The average scale of the contract farmers is larger in the less developed agricultural areas with more land resources. The big specialized grain producers have taken more than 50 mu of farmland. The 409 000 farm households in the counties under the jurisdiction of Jiamusi City (Heilongjiang Province) are an example. The farm households with 51–150 mu of contract farmland accounted for nearly 25 per cent in 1988; big households with 151–300 mu made up 1.03 per cent. There are several big specialized grain producers with more than 450 mu of land. An analysis was made of 59 households (from 212 households in the four counties of Fujin, Baoqing, Suibin and Huachuan in Jiamusi City). The results suggest that the most effective are 18 big specialized households with over 50 mu of land per worker.

APPENDIX C

Possible Management Forms which can Co-exist with 'Small Farmers'

- (1) *Big specialized households:* with more contract land, combining the traditional planting techniques and mechanized operations. Their land plots may be contracted in from other villages.

- (2) *Family farms*: engaged in production of one or several crops, mainly mechanized, and managed in a manner as if they are industrial enterprises.
- (3) *Cooperative farms*: organized by farmers on a voluntary basis. Farmland is managed in a unified way; field operations are assigned to households or workers.
- (4) *Collective specialized teams, groups or farms*: may be sub-divided into three types:
 - specialized teams or groups make contracts and cultivate the collective-owned land, assign field operations to households or workers (mainly according to the number of workers) and distribute the income on the basis of the contract targets;
 - mechanized farms: mechanized teams or groups make contracts and fulfil all field operations with farm machinery, which is more progressive technically; and
 - collective farms: the collective management system of the original communes or production brigades has been retained. There are unified plans, resource allocation, accounting and income distribution within the teams. Some sign contracts with individual households in doing field operations, some record work points in production, which was typical under the commune system, and some have introduced wage systems similar to industrial enterprises.
- (5) *Agricultural workshops (specialized teams attached to industrial enterprises) on condition of agro-industrial integration*: usually composed of skilled farmers under the auspices of rural industrial enterprises. The farmers are responsible for planting the contract land of the employees of these enterprises. The specialized teams are thus attached to them and the farmers share all the advantages, as do the employees.

DISCUSSION OPENING – AKIMI FUJIMOTO*

Niu and Chen discuss the process of small farm development in China, with the focus on various changes and problems which emerged under the economic reforms after 1979. There were two major changes in the last decade: the establishment of the family contract responsibility system, and the introduction of free markets for farm commodities. Farmers quickly responded to new opportunities and increased agricultural production and incomes. The Chinese experience in policy and institutional changes, as well as farmers' responses to them, present a most interesting case for the study of small farm development, which is a vital issue for many countries in Asia.

One of the most serious problems in small farm development is the difficulty of achieving a balance between promotion of growth and equity. The Chinese case demonstrates that the heavy emphasis given to equity under the commune system was responsible for the stagnation of production and continuing poverty among farmers, whereas new options provided under the

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economic reforms resulted in an overall improvement. However, there has also been increased differentiation among farmers, who used to have almost equal resources available to them. Farmers appear now to be operating under two economic rules and their decision making in crop production and management is not free. It would be useful if the actual operation of small farms could be clarified, especially with reference to the choice of product and entry into free markets. How can farmers function in free markets if the use of land is controlled by the contract?

Whatever the actual operation may be, the important implications of the Chinese experience are that the relationship between equity and growth depends upon the nature of farmers' responses. As long as growth is determined by individual performance, it can be expected that it will be accompanied by some degree of inequity. The question is how to tolerate the differences in production capabilities among individual farmers in order to achieve growth, while maintaining equity. This is a continuing problem in the history of economic development, demonstrated once again by the Chinese experience.

Actually, agricultural production rose rapidly in the early years of economic reforms, but stagnated after 1985. More detailed analysis of this phenomenon would be useful in identifying the mechanism of agricultural development in China's golden decade. Some economists argue that production incentives provided under the responsibility system and free markets did not last long, and there emerged a need for the introduction of a price determination system, in the market, for the promotion of further growth.

Niu and Chen's main arguments concerning small farm development in China involve the need for creation of off-farm employment opportunities and the enlargement of the scale of farm operation. These are typical arguments in the theory of small farm development. Not only in China, but also in many countries of Asia, farms are generally of small size and their level of income is low, presenting a most urgent agenda for political action. The major policy approach has been the promotion of rural industrialization and the creation of off-farm employment opportunities. In short, an increase in total farm household income is sought through the increase in off-farm earnings. Because farmers do not easily give up their land, this can result in there being increasing numbers of part-time farmers. In fact, this has been the main feature of development in Japan and seems to be taking place in other parts of Southeast Asia. It is also happening in China, and the authors seem to support such a trend, which may be termed the 'part-time farming approach'.

While the necessity to identify the kind of farmers who have been active in obtaining off-farm employment, and the particular factors that made them so successful is recognized, the fundamental question in agriculture is how farm size can be enlarged if farmers do not give up their land. Certainly, part-time farming may be one way of maintaining rural society and agricultural production in the Asian setting, but it is not necessarily the ideal form of farm management. Since increased production costs and decline of output were also noted by the authors, it is clear that the merits of part-time farming need further exploration.

It is my experience that most farmers in Southeast Asia and Japan are losing their enthusiasm for farming, or at least they do not want to see their

children become farmers. This causes serious questions to be raised about the sustainability of the sector and of stability in the supply of food and other agricultural products. We can hardly expect incentives to be generated in agriculture when there is so much emphasis on the need to secure external sources of income. I would therefore like to emphasize the need to consider the possibility of adopting a 'full-time farming approach' in agricultural development. It is most important to establish viable farmers who obtain sufficient income from farming alone, and regard it as their main professional activity.

It is certain that all the problems of small farm size, low output prices, high input costs and low farmer capability could be limiting factors in the 'full-time farming approach'. There will probably be a need to expand the physical size of farms to some extent, and that can be attained only by reduction in numbers. In this sense, the availability of off-farm employment opportunities has its importance. However, we need to conceive of the scale of farming as the size of the farming business, and it is this which should be expanded, rather than the physical sizes of farms. We must seek ways in which physically small farms can also be very productive and obtain a high level of direct income. More intensive systems with appropriate technology, for instance, should be worked out in order to secure the sustainability of small but viable enterprises, capable of maintaining the supply of agricultural products. I strongly feel that agricultural economists should devote greater efforts to a study of the endogenous development process of the small farm sector itself, rather than arguing for an increase in off-farm income.

For the 'full-time farming approach' to be successful, some reduction in the number of farmers is probably inevitable. The selection of farmers who would remain would be a problem, but this should be determined by the preferences and capabilities of farmers themselves. In the creation of off-farm employment, emphasis should be placed upon industries which are related to agriculture, in order to establish a sound regional economy. Is the Chinese attempt to create more off-farm jobs regarded as an evolutionary step for the creation of full-time farmers, or is it a goal in itself? It seems to me that, under the controlled system, it should be much easier to implement the full-time farming approach, which will present significant lessons for other countries in Asia.