COLLECTIVISM AND PRODUCTIVITY IN RURAL DEVELOPMENT: THE CHINESE EXPERIENCE

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Abstract

This paper investigates the Chinese experience in collective farming during Mao's period. The relationship between collectivism and productivity, efficiency, and labor incentives are examined in a comparative framework between the collectivization and the privatization years. The author argues that there is insufficient evidence to support the conventional view that rural collectivism directly generates the problems of lack of work incentives or the inefficient use of resources. In other words, the problems in the collective period are not necessarily generated by the collective practice itself.

Introduction

The evaluation of the collectivization policies in rural China from the mid-1950s to the late 1970s has been a controversial issue in the development literature. Although most of the commentators agree that China has had a more elaborate and successful experience with collective agriculture than most of the other socialist countries -- the majority of the rural population was fed, clothed, and housed through the cooperative effort -- many of them still argue that the growth of agricultural productivity in China during the collectivization years could have been much faster had the government tried a different scheme of development policies, such as more market-oriented policies that provide work incentives for peasants, and so on.

The agricultural reform in rural China from 1978 onward has ostensibly provided support for this line of argument. By decollectivizing the ownership of productive resources -- that is, by "smashing the communal pot" -- the reformers claimed that the old problems of low labor motivations, inefficient allocation of resources, and low agricultural productivity in the collectivization period could be generally solved. However, the complex relationship between collectivism and labor incentives, efficiency, and productivity has rarely been analyzed at sufficient depth before such a conclusion has been made. The proposition that agricultural collectivism is economically irrational has mostly been taken as a given in the reformers' arguments. This raises the main questions to be addressed in this paper: is collectivism an economically irrational device by nature? In the case of rural China in the collectivization years, were the lack of labor incentives and inefficiency truly the

primary reasons for the "not-fast-enough" agricultural growth, and, were they necessarily caused by collectivization practices? Further, would decollectivization policies solve the problems of lack of work incentives and inefficient allocation of resources?

While questioning the presumption that the major failure of the rural development era was peasants' lack of work incentives or generated by agricultural collectivism itself, this paper discusses the relationship between rural collectivism and labor incentives, efficiency, and productivity. The characteristics of the collectivization and decollectivization periods will be compared. My major argument is: the Chinese experience in collective agriculture has suggested that there is insufficient evidence to support the conventional view that rural collectivism directly generates the problems of lack of work incentives or the inefficient use of resources. Even if there are certain linkages between collectivism and such phenomena, the linkages are not always negative. On the other hand, decollectivization policies do not necessarily guarantee a more efficient allocation of resources nor higher agricultural productivity. In addition, the achievement in social welfare during the collective period should be given credit in the overall assessment of Chinese rural development policies. A more careful analysis of these complex relationships is needed before we can confidently legitimatize current decollectivization policies by dismissing the performance of rural collectivism in China.

Rural Collectivism -- its Rationale

The Chinese communist party came to power in 1949 after decades of civil war against the nationalists. One of the essential policies the communist government adopted in the rural areas was revolutionary land reform, which broke up the traditional landlord-peasant land-holding structure, but did not automatically raise agricultural productivity. This is because Chinese agriculture had long suffered from two major problems apart from the traditional land-holding structure. One was the relative scarcity of arable land; only 15 to 20 percent of China's land surface is arable, and by 1949 only 10 percent was being cultivated. The total arable land for each person living in rural China was 0.6 acres, one of the lowest amounts in the world (Murphey 1980).

The other problem for China's agricultural production has always been its vulnerability to natural calamities and the extreme variation in growing conditions. Recurrent floods and droughts over large areas of China have continually brought rural people to the brink of destitution. For instance, a large famine occurred during 1928-9 in which three to six million people died of starvation in northern China alone (Aziz 1978: 4-5). On the eve of the communist revolution, the rural situa-

tion had reached a low point because of decades of civil war and the Sino-Japanese war.

With the completion of the land reform in 1952, surplus land was redistributed from landlords to their tenants, but the problems of land scarcity and natural calamities remained. The average amount of land each farmer owned was still very small. The threat of floods and droughts persisted, and most of the farming land remained barren and poorly irrigated. In addition, a large number of small farmers were still too poor to afford basic farming tools or draught animals. Therefore, agricultural productivity remained low. Very often small farmers had to sell the land they had recently obtained in order to pay back debts and became tenants again. A survey shows that soon after the land reform, there was a tendency toward the re-concentration of land ownership in rural areas. Thus, polarization within the rural population continued (Chang 1987).

Rural collectivism was put into practice in the 1950s, under a rationale largely based on its capacity to solve the problems of low agricultural productivity and high social tensions in the rural areas. One of the main features of this collectivism was the collective ownership of the land and other major productive resources. Collective ownership meant that the collectives had the formal declaration of the land, the capacity to alienate the land, and claims on the income derived from using it (Blecher 1986: 159). The main argument for agricultural collectivism was that the pooling of land and resources would allow for the achievement of certain economies of scale. Resources would be utilized more rationally and efficiently, and producers would accumulate capital for reinvestment at a faster rate. For instance, collective farming would increase the land under cultivation (it did so, by more than 5 percent on average in the case of China) by eliminating boundary mounds, redundant animal pens, and so on, while at the same time allowing the introduction of more efficient cropping patterns. The collectives could allot their fields so that particular crops were grown only where the natural conditions were most favorable to them. Collectives would also be able to mobilize peasants for new construction work and turn the idle hours of the slack seasons into time spent on large-scale projects to improve collective productivity that were impractical under a system of individual farming. In particular, large reservoirs, dams, embankments, smaller irrigation ditches, and wells could all be tackled by cooperative labor teams. Large areas of arid land were transformed into irrigated fields, and barren and waste land into fertile soil (Shue 1980: 281-2; Hinton 1983: 20). The important point is that in addition to collective ownership of the land, associated collective organization also constituted a crucial component of the policy.

The collective farming system was organized at three levels: the production team, the brigade, and the commune.[1] The commune was regarded as both an economic unit and the basic level of government administration in the rural areas. Usually each commune included a bank branch, a tax collection office, and a grain management office. The commune established hospitals, clinics, and schools. Large-scale water conservancy construction, irrigation projects, and small industries were also organized at the commune level (Murphey 1980: 59). The production teams served as the basic accounting unit. They usually contained between 20 to 40 households and were small enough to permit face-to-face interaction. The team owned the land and most of the basic productive resources, and was also the unit of income-sharing (Blecher 1986: 177).

Based on the collective farming organization, rural industries which were designed to serve the needs of agriculture were established. Such agriculture-oriented industrialization in the rural area was essential for increasing agricultural productivity, since pooling land and labor and practicing labor-intensive farming is only one way to increase productivity. When the land/population ratio remains low and the labor-intensive farming system has bumped against a ceiling, an infusion of new technology, farming machinery and chemical fertilizer for instance, is needed. Other major industries promoted under this policy included cement (for agricultural infrastructure construction), iron and steel (for agricultural machinery and tools production), and power. They formed the basis of local industrial systems and had tight backward and forward linkages with each other and collectively with the agricultural sector. Small rural industries grew rapidly between the mid-1960s to the early 1970s. For instance, the share of rural factories in national fertilizer output rose from 12 percent in 1965 to 60 percent in 1971. By early 1972, small hydroelectric installations contributed 16 percent of the total national hydroelectric generating capacity. The rapid extension of electricity to areas previously without power was of great importance in stimulating the development of local industry (Riskin 1979: 56-57). By 1975, small-scale cement plants accounted for close to 60 percent of national production. Nearly all communes by the early 1970s had the capacity to manufacture and repair some agricultural machinery, although for more sophisticated equipment they were still dependent on large plants in cities (Murphey 1980: 62).

Agricultural mechanization was one of the major accomplishments of collective organization and local industrialization in rural China. The communes were the principal agents of the change. They bought machines with their own funds, built repair and manufacturing shops, trained operators, and undertook maintenance (Stavis 1978: 110-112).

Rural Collectivism -- Its Performance

The results of China's rural collective practices are impressive. In economic terms, the average annual agricultural growth rate was 3.2 percent from 1952 to 1974. Although these are not dramatic figures, the improvement was impressive from a historical perspective. Before 1949, the annual growth rate of China's agricultural output had stagnated between 0.5 percent and 1.1 percent for decades. Through increased agricultural productivity, China had succeeded in feeding its 800 million people and in satisfying the basic needs of the rural population, which constituted 80 percent of the total population (Murphey 1980: 122). While total population grew 50 percent from 1949 to 1975, total grain production more than doubled over this period. The availability of cereals per capita increased from 200 kg per annum to 300 kg per annum (Aziz 1978: 62-63).

During the collectivization period, rural Chinese also experienced a substantial improvement in income distribution, public health, and education. Income distribution in the collective system was based upon the work-point system. Within each production team, each member earned a certain number of work-points each day. The work-points could be decided by either piece rate or task rate, depending on the nature of the work. At the end of the year, after the team had paid its taxes and set aside funds for investment for next year's production, and for welfare, the total number of work points earned was divided into the team's net distributable income. This calculation decided the value of each work point (Blecher 1986: 177; Shue 1980: 300-308). This income distribution system had a positive effect on economic equality within teams, especially between industrial workers and farmers in the same team. Workers in commune- or brigade-run factories also received work-points. Their wages were paid directly from the factories to their production teams as a source of collective income. Thus, income disparities between industrial workers and farmers were reduced (Wu 1981: 174). The overall results of such an income distribution device were encouraging. About 90 to 95 percent of the rural population received an income within a narrow range in which the highest income was twice the average income. The remaining 5 percent of the population was below the lower limit of this range (Aziz 1978: 58).

In the case of public health, the most important preventive health measures involved raising the nutrition level of the rural poor, improving sanitation, and organizing a variety of nation-wide campaigns to inoculate children against diseases. Nutrition improved because income was redistributed during land reform and because communes, through their welfare funds, guaranteed minimum levels of supplies

where possible. To achieve extensive coverage for people in the villages, the program of "barefoot doctors" was established.[2] These barefoot doctors were also an essential part of China's family planning effort, which apparently succeeded in lowering the crude birth rate from almost 40 per 1,000 in 1965 to less than 20 per 1,000 in 1979. In addition, communes also provided much of the funding required to support rural health insurance schemes. The changes in public health conditions in rural China were dramatic. Between the early 1960s and the late 1970s, life expectancy increased from less than 40 years to more than 68 years nationwide. Infant mortality decreased from more than 200 per 1,000 to less than 60 per 1,000 in the countryside (Perkins and Yusuf 1984: 196).

Rural education also benefitted from the collective organization. Teachers were hired and schools built with communal funds. By 1979 more than 150 million youngsters were studying in some 924,000 primary schools. They comprised about 93 percent of the relevant age group for the entire country. Secondary school education was provided in rural areas by an expanding number of junior and senior middle schools. In 1960, secondary school enrollment was about 20 percent of the relevant age group, and it increased to 40 percent in 1980 (Johnson 1988: 231). Meanwhile, mass campaigns were carried out to reduce adult illiteracy. In 1983, China's literacy rate was 69 percent, compared with 20 percent in the late 1940s. Compared with India and other low-income and middle-income countries, China's improvement in public health and education was even more impressive (see Table 1).

Rural Decollectivization And Its Relationship To Labor Incentives, Efficiency, And Productivity

Collectivism in rural China seems to have been successful. However, the criticism has never ceased, especially by those stressing the issue of growth. These critics have argued that although agricultural productivity grew to some extent during the collectivist period, the increase in both the agricultural growth rate and rural income levels was not significant in comparative terms. China's agricultural growth has not been faster than India's, which put less effort into the farming arena (Albert 1988: 105; Chevrier 1988; Deane 1989; Johnson 1988: 229; Lardy 1983: 3; Perkins and Yusuf 1984: 345). This view of growth was shared by the Chinese communist leaders in the late 1970s. In 1978, based on the perception that the relatively low rate of agricultural growth was due to the peasants' lack of work incentives, the government announced a new set of agricultural policies. To use the reformers' phrase, the goal of the new policies was to "overcome the leftist mistakes long existing within the collective economy and stimu-

late the peasants' enthusiasm for production" (Luo 1985). The primary method to achieve this goal was to "smash the communal pot" which

Table 1

Demographic and Social Indicators of China and Other Low-Income and Middle-Income Countries

	China	India	Other Low-Income Countries	Middle-Income Countries
Pop. growth rate 1970-81 (%)	1.5	2.1	2.6	2.4
Crude birth rate 1981 (per 1,000)	21	35	44	35
Crude death rate 1981 (per 1,000)	8	13	17	11
Infant mortality rate 1981 (per 1,000)	71	121	124	81
Life expectancy (years)	67	52	50	60
Adult literacy (%)	69	36	40	65
Secondary school enrollment 1980 (% of age group)	34	28	19	39

Source: IBRD World Bank Report 1983, World Development Indicators, Oxford University Press, cited in Griffin, 1984: 4

has allowed the idlers to obtain their shares without any contribution (Wang *et al.* 1985: 7). In other words, decollectivization was considered the key solution to the problem of work incentives.

The major features of the agricultural decollectivization policies included replacing collectives with the autonomous peasant household as the dominant unit of production. Land was leased to farming households in fifteen- to twenty-year terms. Each household was made responsible for its own profits and losses, and for its own plans for planting and providing inputs. It could also sell its products at newly-opened rural markets after meeting the quota for the state procurement. The work-point system was eliminated. Although in formal terms the collective retained ownership, there were still certain restrictions on the use of land, farmers were permitted to sub-let their long-term contract land, to hire labor, and to own agricultural capital goods such as trucks and tractors.

Another major change was that the policy of local sufficiency in grain (the "grain-first" policy) gave way to one of encouraging diversification and specialization of production and household sidelines. Farming households were permitted to own or to invest in small manufacturing

and service businesses. Still another shift was the substantial increases in prices for farm products.

These measures seemed to work well in creating work incentives. According to Hinton's field report of a village in Fengyang County, Anhui Province, during each crop season after 1979 the peasants got up earlier, worked harder, stayed longer in the fields than before, and they accomplished each day much more than they ever had since pooling their land in 1956. In an interview, a farmer said, "We used to work all day, every day, year-in and year-out, but we got almost nothing done -- work a little, take a break, work a little more, take another break. We felt harassed and we produced very little. Now we make every minute count. Our labor produces results. We earn a good living and we have time on our hands, lots of time" (Hinton 1983: 7). This case does suggest an increase in the individual work incentive after the 1978 reform.

Hinton's findings are confirmed by the dramatic improvement in production performance and rural incomes. The value of agricultural gross output grew by 9 percent per year between 1978 and 1984. Rural incomes more than doubled over the same period. The ownership of simple consumer goods like wristwatches and radios has also at least doubled from 1978 to 1983 (Blecher 1986: 191; Riskin 1987: 292).

Nevertheless, these dramatic changes and their results have provoked as much debate as the collectivization policies had done before. The current debates are mainly about the contradictions between growing market forces and the continued existence of state planning; the potential and limits of household-based farming for further agricultural expansion based on mechanization; the sharp increase of sideline production and the associated problem of foodgrain shortage; and the nature of this new development in rural China -- is it a headlong shift to capitalism, a return to the first stage of socialism, or a new kind of hybrid with its own characteristics?

This paper does not intend to deal directly with these controversies of rural reform in China. Rather, it steps back to re-examine the basic argument that the reformers have held -- that is, that rural collectivism gave rise to the major problems of low labor incentives, inefficiency, and therefore low agricultural productivity, and that to decollectivize the rural economy is the only economically rational measure to correct these past mistakes. The remainder of this discussion will focus on the relationship between rural collectivism and labor incentives, efficiency, and agricultural productivity, respectively. Each relationship will be discussed through a comparison of performance in the periods of collectivization and decollectivization. Based on these comparisons, this paper will argue that there is some danger to linking agricultural collectivism directly to a paucity of labor incentives, efficiency, and low pro-

ductivity. Even if there are some linkages between them, it is still difficult to assert with certainty that the linkage is always negative.

The Relationship between Collectivism and Labor Incentives

One typical view of Chinese collectivism is that it hurts labor incentives. Within the collective work organization, it is usually argued that because of the ambiguous linkage between individual work performance and collective output, and because of the "egalitarian" work-point system of distribution, individual work incentives are often low, and overall productivity is thus impaired (Chevrier 1988).

The work-point system did present some basic problems during the years of collectivization.[3] Nevertheless, agricultural collectivism in China was more complex than simple egalitarianism. In fact, the work-point system was designed to balance the goals of individual work incentives and equal income distribution (Putterman 1988). As discussed in the previous section, each team member's income was decided by both the number of work-points earned and the value of the work-point. The former depended on the individual's work performance, whereas the latter reflected the overall productivity of the team. The more one's team earned, the more each one would earn. Personal income was thus a dual function of both individual and collective work, rather than the result of a simple egalitarian distributive system which operates without regard to individual input. There is, in fact, little solid evidence to support the claim that collectivism hurt labor incentives (Blecher 1986: 178-180). On the contrary, collectivism may sometimes provide labor incentives. According to Putterman, the economic model of rational behavior under uncertainty suggests that since peasants did not know in advance the value of the work-points, they worked harder and longer than a sensible degree of labor efficiency (Putterman 1983).

Indeed, the implementation of the collective policy varied in different regions, and this contributed to differences in labor incentives. While the farmer interviewed by Hinton in Fengyang County in 1983 expressed his discontent with the collective system and his strong work incentive mobilized by the privatization policy (Hinton 1983: 39), Hinton explained that it is because the collective system was not implemented successfully in Fengyang. In fact, Hinton quoted a party cadre's estimation that, in China as a whole, 30 percent of the cooperative brigades had been doing well, 30 percent had been doing badly, while, in the middle, 40 percent had been holding their own, neither enjoying great success nor floundering.

One of the reasons for the failure of the collective system in Fengyang, according to the second secretary of the County Party committee interviewed by Hinton, is that the party leaders of the region violated two fundamental principles of rural organization: the principle of voluntary participation, based on the economic success of local models, and the principle that income must be distributed on the basis of work performed. Party leaders rushed the peasants into advanced levels of cooperation before they saw any convincing evidence of advantages to be gained, and set up forms of income distribution that divided earnings more or less equally per capita, without regard for individual effort expended. Fengyang peasants were thus frustrated by what they came to look on as their cooperative straitjacket. On the other hand, other, successful cooperatives that Hinton visited showed an unwillingness to disorganize their cooperatives.

Therefore, whether there is necessarily a link between collectivism and labor incentives, and whether this link is negative, is still debatable.

The Relationship between Collectivism and Efficiency

As argued above, collectivism does not necessarily hurt labor incentives. Even if it does in certain situations, lower work incentives do not necessarily mean a decrease in efficiency. On the other hand, the growth of individual incentives could sometimes conflict with an efficient allocation of resources. In fact, a reduction of efficiency in some respects has been observed since decollectivization began. A common explanation is that the decollectivization practices split large fields into narrow strips, often no more than a few yards or feet wide. In many cases, peasants could not get carts into the fields to unload manure or load crops, not to mention to plow, plant, or harvest with tractors. Because the land was to be divided equally in quantity as well as quality, farmers usually had several small fields scattered in different districts. In many cases the farmers had to spend a considerable amount of time walking back and forth between fields every day. A survey in Jiangxi province indicates that the fragmented fields have caused a 5 to 10 percent loss in total agricultural income because of the waste of labor and land (Chang 1988). The proportion of area ploughed by machine declined from 42 percent to 36 percent in 1981.

The destruction of collective property is another example of the potential inefficiency of the decollectivization practices. In the confusion that accompanied the initial division of collective land among households, collective assets were often destroyed or damaged. Individual households had neither the capacity nor a clear responsibility to maintain and repair large farming machinery and take care of draught animals, which usually belonged to several households. Moreover, there was a halt in significant construction of water control works, and exist-

ing ones were poorly maintained. Individual farming households with less than two acres of cropland could not accept the responsibility for maintaining canal irrigation (Johnson 1988: 237). The area of irrigated land shrank considerably between 1978 and 1983. As communal control over public property was loosened, trees were felled and forests cleared for building materials and fuel, compounding a long-term problem of deforestation and erosion (Chang 1988: 4-5). There has been an increase in the frequency of large floods and major losses of crops and properties since the early 1980s (*World Daily* 1988).

These consequences of decollectivization are pertinent for the discussion of the economic rationale for collectivization in the previous section. Contrary to the conventional view of a negative linkage between collectivism and efficiency, collectivism may not only have had a positive contribution to agricultural production, it is also possible that the competitive individuals driven by their "incentives" for private gain after collectivism have brought forth socially inefficient use of resources.

The Relationship between Collectivism and Agricultural Productivity

The changes since 1978 have had major impacts on agricultural productivity and rural incomes. As presented in the first section, between 1978 and 1983 agricultural gross output value increased 9 percent and rural incomes have doubled. However, it is difficult to say for certain whether the growth is due to decollectivization or to other factors such as price increases for farm products or the replacement of the "grain-first" policy with one of encouraging diversification and specialization.

According to Riskin's calculation, the growth of crop production after 1978 has been lower than the growth in all other sectors included in the agricultural gross output value (GVAO). Between 1978 and 1984, side-line production grew at an average annual rate of 18.6 percent. Within the category of "side-lines," rural industries grew the fastest, namely by 21.1 percent per year on average. Both rates are twice as fast as that for agricultural production overall. The change in the structure of rural production is such that the share of side-lines (including rural industries) had grown to almost one-fifth of GVAO in 1984, while the share of crops had fallen to about 60 percent (from 83 percent in 1952). Furthermore, within the category of crops, there had been a shift of resources from relatively low-priced grain to relatively high-priced economic crops, such as cotton and edible oil (Riskin 1987: 290-292).

Therefore, non-grain production has actually played the primary role in the growth of agricultural output after 1978. Along this line of argu-

ment, it would be dangerous to make too strong a linkage between decollectivization of land ownership and agricultural growth, even if decollectivization practices had augmented the peasant's "enthusiasm" for production to a certain degree.

On the other hand, the policies of diversification of agricultural production and flexible commerce, which have stimulated non-grain production, should be considered more relevant to the growth of agricultural productivity.

One might still argue that grain production has also grown since the agricultural reform of 1978 and that this growth is not related to the policies of diversification of production. But neither is this growth directly a result of the decollectivization of land ownership. Some observers have pointed out that the growth in grain productivity has been mainly influenced by the substantial increase in the official purchasing price for grains and in the amount of guaranteed purchasing. This argument is supported by the fact that grain production has fallen greatly since the policy of purchase guarantee was eliminated in 1985, which has deepened the crisis of foreign debt for China (Chang 1988: 10).

A Non-Economic Assessment of Chinese Rural Development Policies

The achievements of the collectivization practices in rural China should not be evaluated solely on economic grounds. The satisfaction of the basic needs of the majority, the dramatic decrease in infant mortality and illiteracy rates, and the increase in social security should be seen as resounding successes of Chinese collectivism. To recognize such accomplishments is important, especially when one compares these results with results of rural reform after 1978. Many observers have reported that the new reform has caused growing inequality in the countryside. Arguing that egalitarianism was one of the major causes of slow growth in agricultural productivity and that inequality is inevitable in the economic development process, the reformers have deliberately encouraged income differentiation through a policy of "help some peasants to prosper first." Those who had special skills were provided with funds and technical assistance. Their income was expected to rise much faster than average, which it did (Chang 1988: 12; Hinton 1989; Johnson 1988). The quality of social services, such as public clinics, declined greatly and infant mortality has increased since the early 1980s (Hillier 1988). The increasing inequality has also been accompanied by a substantial increase in rural-urban migration, urban unemployment, begging, prostitution, and crimes in large cities (*World Daily* 6/11/88; 2/7/90)

It is neither convincing nor responsible for policymakers to propose that these new problems of economic polarization can be made acceptable as simple tradeoffs between economic growth and social objectives. In the process of resource distribution there are always winners and losers, but the term "tradeoff" does not tell us through which framework we should decide who wins and who loses. In addition, the assumption about connections between individual incentives, competition, and economic growth should be challenged. Evidence presented in this paper suggests that the emphasis on individual work incentives during the decollectivization period has held back the development of rural China below its potential. In further exploration of the issue of Chinese rural-agricultural development, we will therefore ask whether it is possible to maintain rural reform within the collective scheme while focusing on the need for a more flexible and diversified economic and political system.

Conclusion

This paper has presented the major debates about collectivization and decollectivization practices in rural China. The main point is that there is insufficient evidence to support the view that collectivism is primarily responsible for the lack of labor incentives in the collectivization period. And decollectivization policies do not necessarily guarantee a more efficient allocation of resources nor higher agricultural productivity. Further, the achievements of the collective system in social terms deserve more recognition than they receive in pure economic discussions of Chinese rural policies. However, this is not to say that the policies of collectivization should not be criticized, or that there is little or no need for change in rural China. Rather, what is suggested in this paper is simply that a more cautious assessment of the problems of collectivization is required. Then and only then will it be possible to generate adequate solutions to these problems. In the absence of more careful analysis, it is dangerous to dismiss the innovations achieved by Chinese rural collectivism.

NOTES

[1]See Shue (1980) for details of the organization of the commune system.

[2]The "barefoot doctors" were essentially trained peasants or educated youths who were sent out for health training, which was a combination of traditional and modern medicine, returning as paramedics a few months later. Their income during training and on their return was provided by the people collectively through the commune.

[3]See Riskin (1987: 93-95) for the details of the problems of the work point system.

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