

## RURAL REFORM AND AGRICULTURAL PRODUCTION IN CHINA

NAOYA WAKASHIRO

### I. THE GRAIN PROBLEM AFTER TEN YEARS OF REFORM

At the national rural working conference held in November 1988, exactly ten years after China's rural economic reforms had been launched at the Third Plenary Session of the 11th Central Committee of the Communist Party of China, Tian Jiyun stated that the nation's agricultural problem was fundamentally a grain problem and that it was also bound up in political problems and in economic strategy [15, December 17, 1988]. He was speaking about the stagnation in grain production, while at the same time grain consumption has continued to increase due to the nation's changing food structure.

Until the mid-1980s China's grain problem seemed to have receded into the background as rural reforms brought about a smooth growth in grain production. During that period even over-production of grain was discussed. But the decline in grain production experienced in 1985 and later stagnation in grain output created a situation where Chinese leaders again began to advocate that agriculture should be the basis for economic development.

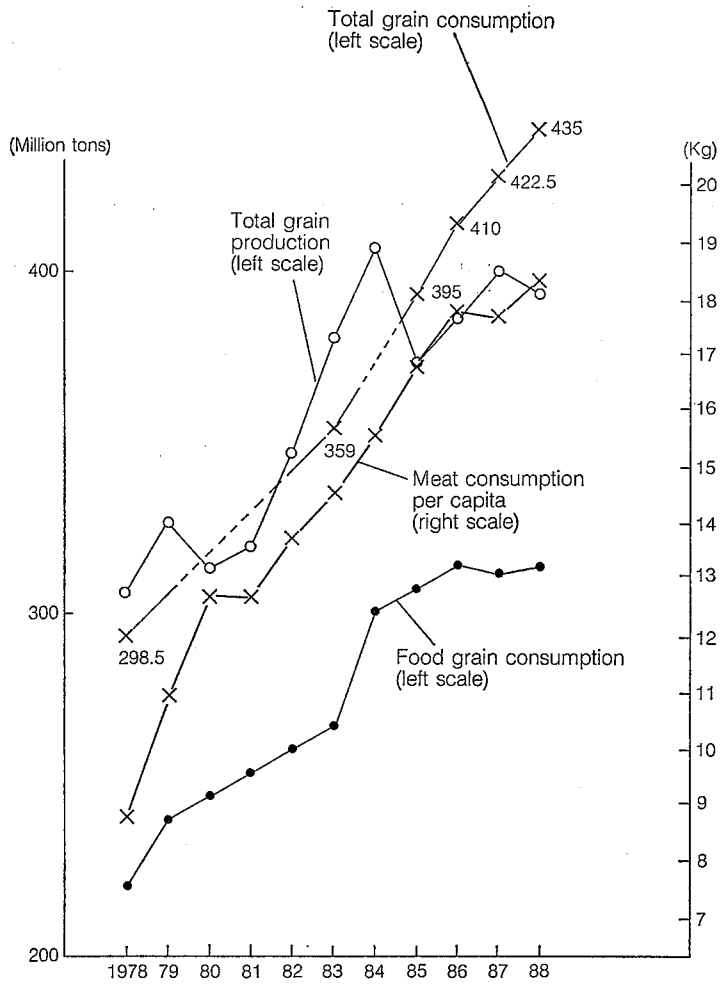
Figure 1 outlines grain production and consumption since 1978. The total grain consumption figures in the chart are from a paper published by the research group of the Center for Economic Policies belonging to the Ministry of Agriculture, Animal Husbandry and Fishery [9, p. 3].

China's grain consumption increment in 1978-83 amounted to 60.5 million tons, an annual increase of 12.1 million tons. In the subsequent five years (1983-88), the total grain consumption increased at an accelerated pace, the annual increment going up to 15.2 million tons. According to the research group, China's grain production after the reforms were launched exceeded consumption until 1984, generating an accumulated surplus of 74.25 million tons during the six years. But since 1985 consumption has exceeded production, the total shortfall in 1985-87 totaling 55.3 million tons.

It can be seen from Figure 1 that food-grain consumption has remained stagnant since 1985. The difference between total grain consumption and food-grain consumption represents seed, industrial raw materials,<sup>1</sup> feed, and wasted grain. Of these the major one is feed. The increase in total grain consumption thus is explained by the rapid increase in feed consumption. This reflected a change in the food structure in favor of meat which accompanied the rise in income level.

<sup>1</sup> According to [18, p. 724], grain for breweries and confectioneries is counted as food grain.

Fig. 1. Grain Production and Consumption



- Notes:
1. The food grain consumption figure was arrived at by multiplying per capita food grain consumption by population; this figure as well as total grain production is from [18, 1989 edition].
  2. Total grain consumption is from [9, p. 3]; figures for 1987 and 1988 are estimates; no data for the broken line.
  3. Meat consumption per capita is from [18, 1989 edition].

TABLE I  
GRAIN SUPPLY-DEMAND ESTIMATE BY THE RESEARCH GROUP OF  
THE CENTER FOR ECONOMIC POLICIES

		(Million tons)						
		1982	1983	1984	1985	1986	1987	1988
Cumulative demand increment		14.40	31.02	45.74	61.63	78.83	97.54	117.94
Cumulative production increment	A	28.41	62.48	72.48	82.48	92.48	102.48	112.48
	B	28.41	62.48	74.48	86.48	98.48	110.48	122.48
Supply-demand gap	A	14.01	31.46	26.74	20.85	13.65	4.94	-5.46
	B	14.01	31.46	28.74	24.85	19.65	12.94	4.54

Source: [4, p. 18].

Note: A—Annual increment, 10 million tons; annual increase rate, 2.46%.

B—Annual increment, 12 million tons; annual increase rate, 2.92%.

The economic reforms since the third plenary session have caused a rapid rise in the people's standard of living. Once the standard of living has been raised, it is difficult to lower it without causing social unrest. Thus Tian Jiyun was not exaggerating when he characterized recent grain production stagnation as a strategic and political problem. He was striking at the crux of the issue.

The decade of reform can be clearly subdivided into the first and second halves in terms of grain production. The first half was a period of optimism about the future of grain production, and this optimism was supported by the impressive increases in grain output. The research group on the problems of Chinese rural development (referred to hereafter as "research group," and which later developed into the Rural Development Research Center of the State Council), in a series of studies, projected China's post-1981 grain supply-demand balance as shown in Table I [4].

The demand estimation formula used in the table has some problems which will not be discussed here, but it is clear from the table that at the time Chinese experts were predicting a very high grain demand increase rate during the projected period. According to Figure 1 total grain consumption in 1981 was estimated at 333.45 million tons. Adding to this figure the demand increments shown in Table I, the total demand estimated was 395.08 million tons in 1985 and 412.28 million tons in 1986. Up to 1986 the estimates coincided to a large extent with the actual figures, but since 1987 the estimates have proven larger than the actual consumption.

The figures for output until 1983 are the actual results; thereafter an annual increment of 10 million tons was projected for case A and 12 million tons for case B. In terms of output growth rate, this represented a 2.46 per cent and 2.92 per cent annual increase respectively. According to this estimation, China's surplus grain production would have amounted to 100 million tons during 1983-86. In reference to this, Gao Xiaomeng observed that were the state to purchase that

much surplus grain, it would have to spend 40 billion yuan from its construction fund, and that would have meant 14 billion yuan in additional expenditures by the central government [4, p. 18].

Following the excellent harvest in 1984 the compulsory state farm procurement system was changed to a contract purchase system. Under the new system the optimism of the previous five years continued beyond 1985. In its projections until the year 2000, the study group observed: "If total grain output increases at an annual rate of 2.5 per cent from the 1984 level, China's grain output in the year 2000 will reach 604.35 million tons. If the population then is 1,250 million, the per capita grain production will be 488 kilograms. Subtracting from the total output 54.35 million tons for seed, brewing, and other industrial uses, we shall still have 550 million tons, or 440 kilograms per capita. Thus we shall be able to meet demand for 250 kilograms of food grain and 50 kilograms of meat per capita per year. This will be the same as the food consumption standard existing in the United States and the Soviet Union when their GNP per capita was about U.S.\$1,000" [6, p. 5].

Gao Xiaomeng gave the following three reasons why the projected annual 2.5–3.0 per cent output increase was considered feasible [4, pp. 14–15].

First, taking into account the grain-production growth rate in China since liberation as well as the pace of development of grain production in the world in the past thirty years, the projected rate does not seem too high.

Second, the implementation of the household responsibility system, which gave the farming household management autonomy as part of the effort to guarantee stable and steady production expansion, heightened farmer enthusiasm for production.

Third, China has vast potential for more production. It lags far behind the standards of the advanced agricultural countries in crop yield per area, and still has a large portion of low- or middle-yield agricultural land where output can be further increased. Moreover, the use of scientific and technological methods in agriculture is still not sufficiently wide-spread, and there is a great possibility that agricultural output could be increased by expanding use of scientific methods.

Post-liberation Chinese grain production increased at an annual rate of 2.81 per cent between 1952 and 1983. That period included the disastrous four years of 1959–62 when agricultural output plummeted due to policy mistakes and natural disasters. Agricultural output had recovered by 1965 and was able to grow at an annual rate of 3.5 per cent during the thirteen years up to the third plenary session (1965–78). Gao's estimate of 2.5–3.0 per cent in annual output growth was rather modest, though his choice of 1983, the year of an exceptionally good harvest, as the standard year can be questioned.

It is true that the shift to the household responsibility system called forth farmer enthusiasm for production. But keeping up the momentum requires certain conditions, one being to make adjustments in the infrastructure which are beyond the capability of individual farming families. These include such things as irrigation works and other agricultural land improvements as well as introduction of proper facilities in the forward- and backward-linkage sectors. Another is the provision

of a socioeconomic environment and a guarantee of agricultural profitability which would make it possible for the farming household to accumulate its own capital for production expansion.

The need for adjustments in agricultural infrastructure should be pointed out in relation to Gao's third item mentioned above. China's distant lag behind the advanced countries and the clear underutilization of agricultural productivity does not suggest in itself, as Gao indicated, that it is within China's ability to make rapid progress. It is well known that after liberation a vast amount of human resources was applied to and accumulated on the land to regenerate and expand agricultural productivity. Without this the agricultural development of the past thirty years would not have occurred. The research group does not seem to pay much attention to this aspect. The group refers to the "spread of scientific and technological knowledge" meaning the use of hybrid seeds and other advanced breeding, more input of chemical fertilizer, the spread of multiple cropping, and improvement of crop management. These however can only be effective when a proper agricultural infrastructure has been built and made available.

Generally the research group's line of thinking seems to follow Premier Zhao Ziyang's notion that "in agriculture we should depend on policy and science." The research group seems to have attached too much importance to the household responsibility system as an isolated factor. Theoreticians were justifying this obviously exaggerated notion of the household responsibility system with their general theory that the household unit was congenial to agriculture, partly because of the nature of agriculture and partly because Chinese agriculture was still backward.

But agricultural production has not developed as predicted. Let us analyze the reasons why.

Two problems emerge from what we have seen above. One is the economic behavior of farming households and the other is investment in agricultural infrastructure. Let me examine both of these problems in turn.

## II. ECONOMIC BEHAVIOR OF FARMING HOUSEHOLDS

### A. *The Projected Economic Behavior of Farmers*

There is no denying that the introduction of the household responsibility system under the post-third plenary session reforms, coupled with the government purchase price hikes, caused farmers to take a positive attitude toward production. A survey conducted in Chuxian Prefecture, Anhui Province, at an early stage in the reforms, provides data (shown in Table II) indicating that not only did grain production increase, but that farmers also began to increase their productive investment even at the cost of their own consumption [1, p. 143].

Even at the national level, the grain production increase in the early 1980s went hand in hand with the spread of the household responsibility system. According to *Zhongguo nongcun tongji nianjian* [Statistical yearbook of Chinese rural areas], the productive fixed-asset input for farming households changed as shown by the

TABLE II  
SALES BY PURCHASE AND SALES COOPERATIONS IN  
CHUXIAN PREFECTURE, ANHUI PROVINCE

	1978	1979	1980
Sales (million yuan)	216	247	284
of which			
Daily commodities (%)	69.5	66.8	61.2
Production materials (%)	24.1	25.5	28.6
Others (%)	6.4	7.7	10.2

Source: [1, p. 144].

TABLE III  
PRODUCTIVE FIXED ASSETS AND NET INCOME OF  
FARM HOUSEHOLD (PER CAPITA)

	(Yuan)						
	1981	1982	1983	1984	1985	1986	1987
Productive fixed asset investment	6.8	11.7	18.4	16.9	18.7	16.7	20.5
Net income	223.4	270.1	309.8	355.3	397.6	423.8	426.6

Sources: [17, 1985-86 editions and 1988 edition].

figures in Table III. Characteristically the productive fixed-asset investment by farming households increased at a pace faster than their net income from 1981 through 1983.

Cao Yang, a researcher at East China Teachers University, analyzed farmer investment behavior in the first half of the 1980s saying that, "Traditionally living in rural areas was synonymous with doing agriculture, and doing agriculture was synonymous with growing crops, and as long as this pattern persisted, the farmer's options were extremely limited. . . . Under these circumstances the increase in the prices of agricultural products obviously came as an incentive to farmers and caused a rise in their income" [2, p. 6].

Before the third plenary session, agricultural policy centered on the promotion of grain production. Secondary and tertiary industries in rural areas, just starting around that time, remained at a primitive level. After the third plenary session, multilateral development was encouraged including promotion of secondary and tertiary industries. But these new sectors were still unstable as a source of income, and offered only limited employment opportunities. That was why farmers, at the early stage of the reforms, devoted their economic activities to crop growing, and to grain production in particular. This is why Cao described "living in rural areas as synonymous with doing agriculture and doing agriculture as synonymous with growing crops." Grain prices were raised after the third plenary session. Moreover, a new system of purchasing and pricing was introduced under which the amount of grain the government purchased at official prices was fixed at the 1971-75 level, and deliveries beyond this were bought at a 50 per cent higher

premium price. Under this system the average sales price per unit of delivery rises as the total amount of delivery is increased. Given these favorable conditions the farming household increased its investment in grain production.

Following the introduction of the household responsibility system, land was distributed about equally to every household. Each farming household acquired small plots of land dispersed over a large area. A national specific sample survey conducted from the winter of 1984 through the spring of 1985 in ninety-three townships in twenty-eight provinces, municipalities, and autonomous regions (excluding Tibet), showed that Chinese farming households during that period came to have an average of 8.35 *mu* of land (0.56 ha) which was divided into 9.7 plots, each with an average area of 0.86 *mu* (5.7 a) [22, p. 308]. This land distribution pattern was flawed from the point of view of agricultural modernization, but it is said that at the beginning most farming families, eager to have farm land under their own control, demanded equal distribution of farming plots. The farmers were reaching the stage where they could barely meet their own food and clothing needs, and at that stage farmland was the only basic means of production that allowed them to maintain even a subsistence standard of living.

With the development of the rural economy, the situation of the rural economy being synonymous with crop growing began to change. Secondary and tertiary industries, mainly rural-area manufacturing, began to develop. Within agriculture itself, livestock farming and cash crops other than grain developed. This provided new employment opportunities other than grain production. The labor force began to move to nonagricultural sectors, and the phenomenon of leasing land emerged.

Against this background, theorists projected that with the development of the rural economy, specialization in certain crops and enlargement of management units would proceed, thus removing the irrationality of farming on tiny plots. In fact they thought such transformation should be encouraged. The party central committee in two directives issued early in 1984 and 1985 recognized the right of the farming household to sell its contract rights to others, suggesting that this would be an effective method for concentrating land with farmers who specialized in grain production, for commodifying agricultural products, and for modernizing agricultural production. But the situation did not develop in the intended direction.

#### B. *Farmers' Actual Behavior*

Given the tiny plots of land of less than 0.6 ha per household, farmers quickly came to the absolute limits of their ability to make profits out of their agricultural investment. They found there was no way to further develop their farms within the existing tiny limits. They were thus forced to seek a way out through the newly developing cash crops or in other industrial occupations, but these new areas were all highly unstable and precarious. Even if grain production on small plots had no promising future, abandoning it would be too risky. Chinese farmers thus ventured into other business areas only insofar as their basic means of subsistence was guaranteed through grain production on their contracted plots. In this sense they had to adhere to their tiny land management. They began to go into other

precarious income-increasing pursuits only using their surplus funds and labor—surplus beyond what they needed for the upkeep of their small plots. This was the only way to avoid the difficulties involved in maintaining small farm plots. The consequence has been the formation of multilateral business activities around a core of the tiny land holdings.

Lu Mai and Dai Xiaojing, researchers at the Rural Development Research Center, argued on the basis of their survey in 1987 that “For the farming household, employment in nonagricultural sectors is only peripheral to its stable axis. It is merely a side business. In other words it is a division of labor among the members of the same farming household. All farming families have become similar in this intra-household division of labor pattern. Under these circumstance, employment in nonagricultural sectors even serves to restrict commercialization of farm production” [10, pp. 71–72].

A report on a national socioeconomic sample survey conducted in 1984 indicates that there were marked wage disparities among different business categories in rural areas. The daily wage was 4.9 yuan for work growing crops, 4.4 yuan for livestock farming, 8.4 yuan for processing agricultural products, 8.6 yuan for commercial services and restaurants, and 15.0 yuan for transportation and industrial processing [22, p. 308]. As the rural economy has developed, agricultural work has even become a burden on farmers who are anxious to raise their income. Under these circumstances, they have begun to cut their investment in agriculture. But farmers have participated in the development of the rural economy through the intra-household division of labor, and they will not abandon their plots of land unless stability can be ensured in their new employment.

The Rural Policy Research Section of the Secretariat of the Central Committee of the Communist Party of China, in its report on the survey of a rural area in 1987, explained the trends in farming investment in grain production saying that “Although in some villages farmers slightly increased their investment in grain production because secondary and tertiary industries were not developed and because farmers had few lines of business other than grain production, in the majority of villages farmers tended to cut their investment in grain production” [12, January 16, 1988].

Another report on financing in rural areas, made on the basis of the same survey, reported on the consciousness of farmers toward investment: “Since the household responsibility system was introduced, the individual farming household has changed from a unit of consumption to a dual function unit of consumption and production. Nevertheless, with regard to the production unit aspect, rather many farming households have not yet recognized their importance as the managers of production. Nor do they have a strong awareness about the need for investment” [12, January 20, 1988].

This report is worth noting because it comments that the farming household had not yet clearly recognized itself as the manager of production and therefore had little interest in investment. In the early 1980s, the contrary was pointed out. The prevailing argument then was that the household responsibility system made the farmers active in production and that their acquisition of the right to manage



motivated them to contribute to the sustained development of agricultural production. In the second half of the same decade however, it was recognized that with changing external circumstances farmers had lost their interest in increasing production and had cut back their investment in agriculture.

The said report pointed out that where secondary and tertiary industries remained undeveloped farmers increased their investment in farmland, even if only slightly. This is an important statement indicating that farming families become increasingly involved in sideline businesses as the rural economy develops and in this process reduces investment in grain-growing land. Generally the strong and capable in the labor force tend to flow out of agriculture into sideline businesses while the less capable tend to remain in agriculture. It is said that there is a surplus of labor in rural areas, but this is often misleading because even the cultivation of small plots is very heavy work for the weaker members of the labor force. Labor surplus does not necessarily exist in rural areas. All this often results in what is known as coarse cultivation or even the abandonment of cultivation. Thus the household responsibility system that initially induced a positive response in farmers toward agriculture has today reached its limits.

### III. CONSTRUCTION OF THE AGRICULTURAL INFRASTRUCTURE

#### A. *Water Conservation before the Reform*

Lu Wen of the Rural Development Research Center pointed out that China's agricultural achievements before 1984 owed much to water conservation projects conducted during the Mao Zedong period. The stagnation of agriculture in later years came about, according to Lu, as a consequence of the failure to maintain these conservation projects. "In the past few years we have basically been consuming our previous investments into water conservation in agriculture." He went on to say that, "Since the household responsibility system was implemented, most regions have simply stopped water conservation projects. At the same time a number of irrigation systems have broken down, and many left unrepaired" [11, p. 2].

What the typical pre-reform water conservation projects were like can be seen in a look at the Hai He (Haiho River) basin project. Mao Zedong in 1963 called upon the people to harness the flow of the Hai He, and this set off a large-scale water conservation movement in the Hai He area. The following report describes how this project was implemented. "In Hebei Province during the winter and spring of every year since 1964, 300,000–500,000 *mingong* (laborers working on a public project) were engaged in the major construction projects on the Hai He. Also ten millions of peasants undertook the construction of medium and small water conservation facilities which were auxiliary to the major projects. The major projects were financed by the central government while the auxiliary projects were funded through investments by the regions which were to benefit from the program" [16, p. 40]. The major projects were financed by the central government using funds earmarked for capital construction of water conservation works.

Until the end of the 1970s water conservation investment was by far the state's major investment in agriculture. Investments by the benefiting regions meant investments by local people's communes and other lower echelon groups as well as by the local governments involved. The people's communes and other people's groups invested mainly in the form of labor input. Although a fraction of local investment may have come in the form of group savings, the vast amount of local investment seems to have been in the form of unpaid labor. "Unpaid labor" meant that the production teams compensated peasants for their labor on the irrigation projects. Individual production teams could not afford to pay peasants directly in cash for their labor. Instead the peasants who offered their labor services for the irrigation projects received work points (*laodong gongfen*) corresponding to the labor offered. Each production team member thus received remuneration corresponding to the work points they earned for their daily work and for their labor on the irrigation projects. The remuneration being paid out of the production team's earnings, the peasants' participation in water conservation projects had the effect of reducing the value of one work point.

The construction of the nation's agricultural infrastructure centering on water conservation continued basically in this manner until the end of the 1970s. The central government's basic agricultural construction fund was the major source of financing, but this was complemented by investments from local governments and people's groups (people's communes and production teams) both in cash and labor. During the thirty years since China's liberation, a total of 130 billion yuan is estimated to have been invested in water conservation [5, November 8, 1980], but it is not clearly indicated what portion of this total was provided in labor. The *Zhongguo tongji nianjian* [Statistical yearbook of China] puts the central government's total investment in water conservation at 50.3 billion yuan. If this figure is accepted as valid, the central government accounted for some 40 per cent of the total investment in water conservation.

The water conservation program in Xuhuai Prefecture, Jiangsu Province, provides data (shown in Table IV) on how relatively large area projects were conducted.

There are no explanations about each of the items in the table, but the table probably could be read in the following manner: "state investment" (*guojia touzi*) means investment from the central government budget for "capital construction for farmland"; "mass labor service" (*dazhong laowu*) means accumulation by labor through free labor service; "state subsidies" (*guojia butie*) means the water conservation outlay coming from the "people's commune support expenditures" provided by the central government budget; "local funds" (*difang ziji zijin*) means investments coming from local government budgets and from "collective accumulation" (*jituan jilei*) by people's groups. The share of accumulation provided by labor in the total investment was 55 per cent in Xuhuai Prefecture over the thirty-plus years covered by the table. But Table IV fails to explain how the wage portion was calculated.

The table indicates that mass labor service sharply increased in the 1970s. It is well known that Mao Zedong's call, "Let's learn from Dazhai," issued in 1964, was followed by a "Learning from Dazhai" movement, which culminated

TABLE IV  
WATER CONSERVANCY CONSTRUCTION INVESTMENT IN XUHUAI PREFECTURE,  
JIANGSU PROVINCE

(Million yuan)

	1949-52	1953-57	1958-62	1963-65	1966-70	1971-75	1976-80	Total
<b>Main works:</b>								
State investment	62	134	309	71	185	259	301	1,321
Mass labor service	42	109	176	37	105	174	164	807
Subtotal	104	243	485	108	290	433	465	2,128
<b>Auxiliary works:</b>								
State subsidies		13	20	24	35	54	132	268
Local funds		8	57	72	126	198	446	907
Mass labor service	51	139 <sup>a</sup>	330	279	242	509	746	2,296
Subtotal	51	150	407	375	403	761	1,324	3,471
<b>Total</b>	<b>155</b>	<b>393</b>	<b>892</b>	<b>483</b>	<b>693</b>	<b>1,194</b>	<b>1,789</b>	<b>5,599</b>

Source: *Nongye jishu jingji*, 1983, No. 2, p. 22.

<sup>a</sup> The total of state subsidies, local funds, and mass labor service in 1953-57 does not correspond to the subtotal, but in the absence of any means to adjust the difference, the original figure is reproduced here.

throughout the country during the Cultural Revolution. Capital construction for farmland was the focal program of the Learning from Dazhai movement. An agricultural conference for the northern region held in 1970 resolved that whole counties should be "Dazhai-ized," and following this conference water conservation construction movements gathered momentum. The figures in Table IV certainly reflect this national situation. Investment in capital construction for water conservation in 1971-75 increased by 72 per cent over that in 1966-70, but mass labor service jumped by 110 per cent in the same period. Peasants were mass-mobilized for water conservation projects.

It is said that the quantity of accumulation through labor service from the start of the Cultural Revolution through 1975 amounted to the equivalent of moving 5-6 billion cubic meters of earth annually [15, December 31, 1975]. During the First Five-Year Plan, 8.08 billion cubic meters of earth are estimated to have been moved by the input of 7.35 billion man-days [7, p. 17]. This means that each worker moved 1.1 cubic meters of earth a day. Extrapolating from this figure, the water conservation program in the 1971-75 period is estimated to have required an annual average input of 4.55 billion-5.45 billion man-days. According to the *Zhongguo tongji nianjian* [Statistical yearbook of China], the rural working population averaged 290 million people during the 1971-75 period. Thus a rural laborer is estimated to have spent 15.5-18.6 days a year on water conservation projects.

State agricultural investment policy remained unchanged during the second half of the 1970s, and labor used for water conservation during that time is not considered to have declined from the first half of the decade. The national conference on Dazhai held in 1975 resolved that county-level "Dazhai-ization" should be integrated with the Fifth Five-Year Plan. In his report on political

activities to the First Session of the Fifth National People's Congress of the People's Republic of China, Hua Guofeng emphasized that "we will get the masses to fully stand up and carry out basic farmland infrastructure construction on a large scale centering on land improvement and water conservation." He added that the state "will devote itself to large-scale water conservation projects" [15, March 3, 1978]. In September 1979 the Fourth Plenary Session of the 11th Central Committee of the Communist Party of China adopted "the decision on certain problems concerning acceleration of agricultural development" which slightly revised the decision of the third plenary session taken toward the end of the previous year. The fourth plenary session decision on agricultural investment stated: "In the next three to five years, the share of state investment in agriculture shall be gradually raised to around 18 per cent of total investment in capital construction. The share of total government expenditures going to agricultural projects and to support for people's communes shall also be increased to 8 per cent" [15, October 6, 1979].

Chinese agricultural policy drastically changed through the third and fourth plenary sessions, but as far as the investment policy toward farming infrastructure was concerned, the decisions at the two plenary sessions maintained the previous policies.

## B. *Receding Investment in Agriculture*

### 1. *Government investment*

Zhao Ziyang, who replaced Hua Guofeng as prime minister in September 1980, was critical of the emphasis that the basic agricultural development program had been putting on water conservation. In an article he wrote for the *Hongqi* early in 1980, Zhao proposed that "in the next few years expansion of agricultural production should be made relying mainly on policy and science" [21, p. 15]. "Relying on policy" meant stimulating the peasant's desire to produce through introduction of the household responsibility system. "Relying on science" meant a strategy of expanding agricultural production through scientific plant growing and livestock breeding, such as the introduction of high quality seeds, improvement in irrigation systems, and a more rational mix of feeds.

Referring to the traditional water conservation program, Zhao said, "We must promote our capital agricultural construction in stages and in correspondence with our existing capacity. In this I mean capital agricultural construction and not capital construction for farmland. . . . I say this because capital construction for farmland is too narrow. It is only concerned with water conservation, land improvement, and soil improvement, and that is all. That is too narrow. Capital agricultural construction is a broader concept. It of course comprises water conservation and soil improvement, but it also includes construction of cross-fertilization facilities, seeds centers, drying facilities, and warehouses." He went on to say that, "from now on we should cut water conservation outlays and find money instead to spend on more urgent projects. We are particularly behind in the area of capital construction in agricultural science and technology" [21, p. 16].

Premier Zhao presented his "ten major policies concerning economic construction" to the Fourth Session of the Fifth National People's Congress in November 1981. Zhao reiterated his proposal for agricultural development "relying on policy

and science" [15, December 1, 1981]. As in his earlier article, Zhao here too meant by "policy" the spread of the household responsibility system to stimulate peasant enthusiasm for production, and by "science" he meant improved breeding, reforms in cultivation systems, rectification of irrational fertilization and the like. Concerning the state's fiscal expenditures, Zhao made it clear that the scope of central government investment would be gradually reduced with emphasis shifted to energy, transportation, and pioneer industries. Zhao's plan marked a clear change in the state's investment policy.

Predicted then was a major cut in the state's water conservation investment. When the emphasis of central government investment programs was on agriculture, local governments also funneled the major portion of their investment into agriculture. For instance, from the mid-1960s through the first half of the 1970s, when the Hai He project was one of the central government's major projects, the Hebei provincial government set aside more than 70 per cent of its budget for investment in agriculture [16, p. 40].

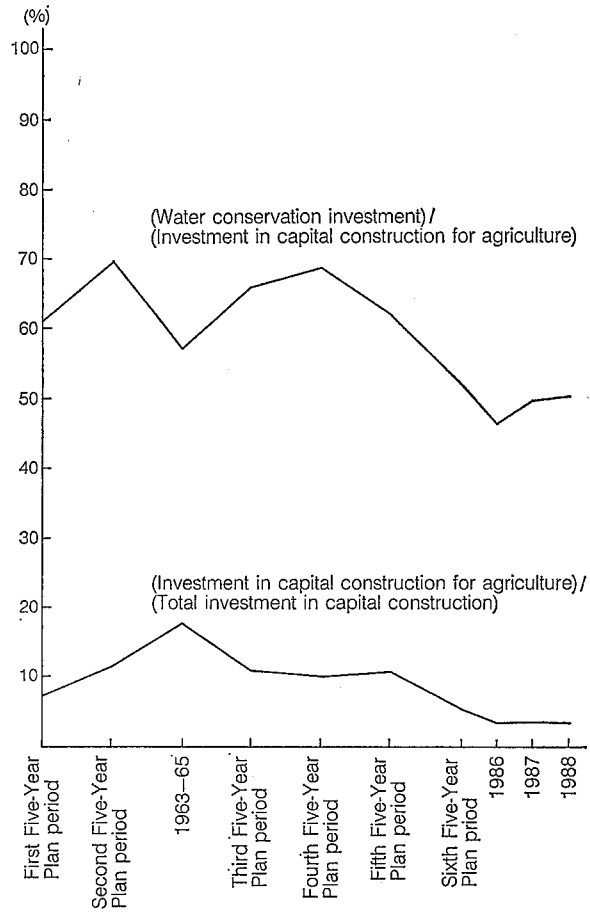
The change of state investment policy, coupled with reforms in the state finance system started in the early 1980s, seems to have led local governments to cut their investment in agriculture very rapidly. The following comment reflects this development. "Since the local fiscal responsibility system was introduced, local governments at different levels have rushed to invest in industry and commerce in order to expand their income sources and increase their fiscal revenues. The economic development programs of most local governments provided for measures to promote those businesses which would entail small investment but bring quick returns. Agriculture involves a long cycle of production, is vulnerable to natural disasters, and promises only slim profits. Worse still, the greater the grain output, the larger the fiscal subsidies. Naturally nobody has shown interest in it" [8, p. 9].

State investment in capital construction for agriculture has been promoted since the First Five-Year Plan period as Figure 2 illustrates.

State investment in agriculture since the Sixth Five-Year Plan in the 1980s has been characterized by absolute cuts in investment in capital construction for agriculture and in water conservation. This has occurred despite a 45 per cent increase in total government investment in capital construction over the previous five-year period. Capital construction investment in agriculture plummeted by about 30 per cent and water conservation investment by 40 per cent.

As was said earlier, 1980 was a watershed marking a drastic change in fiscal investment policy. The sharp decline in capital construction investment in agriculture was part of this general policy change. A further look at the annual change in investment pattern will clarify the nature of the change in 1980. Probably reflecting the third plenary session decision, capital construction investment in agriculture in 1979 grew 8.6 per cent over the previous year, its share in the total of capital construction investment also rising from 10.7 per cent to 11.1 per cent. But in 1980 capital construction investment in agriculture dropped 10.2 per cent from the previous year, its share also falling to 9.3 per cent. In 1981 the aggregate capital construction investment declined 20.8 per cent due to a general investment cutback carried out that year, but agricultural investment

Fig. 2. Capital Construction for Agriculture and Water Conservation Investment



Source: Calculated from [18, 1981-89 editions].

suffered a major setback, its share in total capital construction investment dropping precipitously to 6.6 per cent. The share of agricultural investment has since continued to decline. The share of agricultural investment used for investing in water conservation also fell from 65.1 per cent during the first four years of the Fifth Five-Year Plan (1976-79) to 51.0 per cent in 1980.

While the third plenary session resolved that the share of total fiscal expenditures to be used for agricultural support and other project expenditures should be raised to 8 per cent, the actual share dropped from 7.0 per cent in 1979 to 6.8 per cent in 1980. It rose slightly in 1982 to 6.9 per cent, then slipped downward

during the next few years reaching 5.4 per cent in 1985. It went up slightly thereafter to 5.8 per cent to in 1988.

As Zhao proposed in his article in the *Hongqi* (1980, No. 1) water conservation investment dropped sharply during the Sixth Five-Year Plan. During the Seventh Five-Year Plan, it again began to grow in absolute terms, but its share in total investment declined further. Despite the slight apparent increase in absolute amount, water conservation investment in real terms has actually decreased in view of price rises. Zhao's promise notwithstanding, state investment in capital construction for agriculture (not for farmland) has decreased rather than increased during this period. Investment in capital construction for agriculture other than that in water conservation totaled 8,327 million yuan for the Fifth Five-Year Plan, then dipped to 8,303 million yuan during the sixth plan.<sup>2</sup>

There are fragmentary reports that local governments and people's groups cut agricultural capital construction investment more drastically than the central government. Here are cited a couple of such reports.

Datong County, Shanxi Province: The county's investment in capital construction for agriculture under the Sixth Five-Year Plan declined 32.5 per cent from the previous plan period compared with the corresponding cut of 21.3 per cent by the central government [20, p. 20].

Liyang County, Jiangsu Province: "In 1984 and 1985 the provincial and municipal governments provided our county with an average of 535,500 yuan in subsidies for water conservation, a 200,000 yuan drop from 1980 and before. . . . Our county's production teams and brigades maintained in 1978-80 an annual average of 8,230,300 yuan in publicly accumulated funds (*gongjijin*), but the amount declined to an annual average of 3,050,300 yuan in 1984-86. . . . Formerly most of the accumulated public funds went into water conservation; but in recent years the total amount of funds has decreased, and the portion used for water conservation has dropped even more rapidly" [23, p. 37].

## 2. Labor accumulation

What happened to "labor accumulation," the other pillar supporting capital construction for farmland? After the third plenary session the government declared that farmers should be given some rest. This meant that use of unpaid peasant labor should be stopped. The spread of the household responsibility system under the "reliance on policy and science" slogan generally weakened the controlling power of the collectives, and this led to the collapse of the labor mobilization mechanism.

A report from a village in Shanxi Province said, "Since the household responsibility system was enforced in 1981, production by this brigade has developed rapidly, but capital construction for farmland has become totally stagnant. . . . Some cadres think it is no longer worthwhile trying to control the newly independent farming households, and that it is no longer worthwhile to mobilize labor or organize capital construction for farmlands" [19, p. 58].

<sup>2</sup> State investment figures by [18, 1981-89 editions].

After the poor harvest in 1985, the government again began to call for mobilization of rural labor to undertake capital construction for farmland. In response to this call, "labor accumulation" equivalent to moving 1,450 million cubic meters of earth was carried out during the winter of 1985. This amount is said to have been about half of the total labor accumulation achieved during the four previous years of the Sixth Five-Year Plan [12, February 6, 1986]. Then in 1981–84 the equivalent of about three billion cubic meters of earth in labor accumulation, or 750 million cubic meters on an annual average, was achieved. It needs to be recalled that in the 1970s annual labor accumulation was between five billion and six billion cubic meters of earth. Labor accumulation in the 1980s dropped to 13–15 per cent of that in the previous decade.

In October 1985, when the decline in grain production surfaced, the Rural Policy Research Center along with the Ministry of Water Resources and Electric Power jointly issued a directive that water conservation work should be promoted during the winters. The directive called for the wintertime mobilization of labor for the repair of water conservation facilities.

In response to the calls from the central government, local governments seem to have again started to mobilize peasant work forces. As a result of "strengthened leadership," two billion man-days of labor was put into water conservation construction from the winter of 1986 through the spring of 1987. Despite this mobilization however, there was a net decrease of 930,000 *mu* (62,000 ha) in irrigated land in 1987 [15, September 20, 1987].

The Ministry of Water Resources and Electric Power in 1987 published a report entitled, "A report on the development of rural water conservation and the strengthening of agricultural infrastructure." According to the report, the amount of irrigated land throughout the country was supposed to increase by 20 million *mu* (1,330,000 ha) during the Seventh Five-Year Plan, and by another 40 million *mu* during the subsequent five-year period. It was proposed in the report that to achieve this goal every working person in rural districts devote ten–twenty working days a year to water conservation work [12, November 1987]. In 1985 China's total rural working population was about 360 million people. The proposed mobilization thus would amount to 3,600 million–7,200 million work days. The ministry was proposing an even larger mobilization for water conservation than was done in the 1970s.

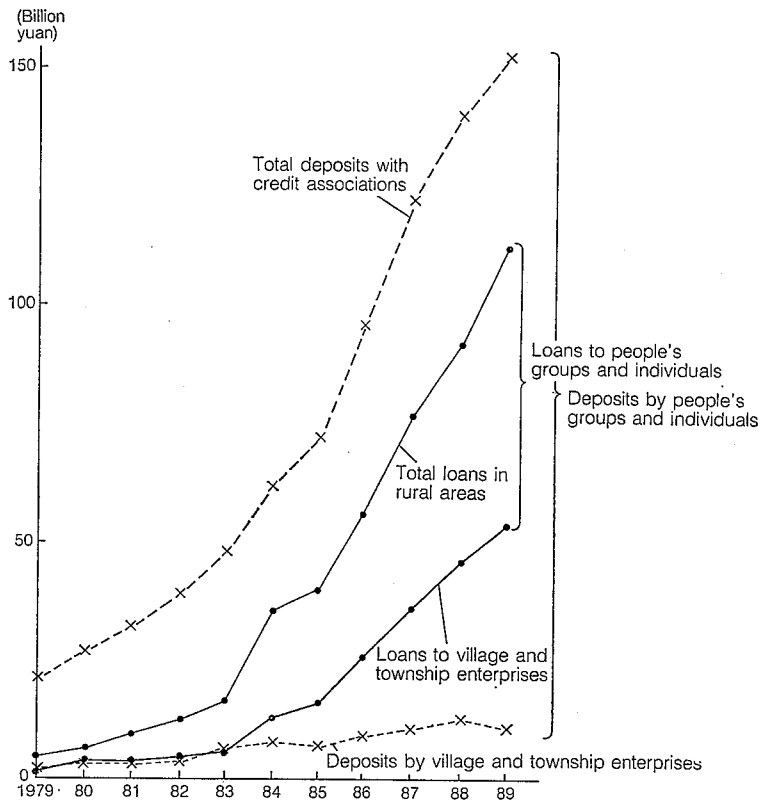
But the traditional labor mobilization mechanisms had already totally collapsed after the people's communes were dissolved. When the "let farmers rest" policy was adopted, criticism was made of the use of administrative power to force the peasantry to offer unpaid labor. The Chinese rural communities are now faced with the extremely difficult task of mobilizing peasants without the use of administrative coercion and with the need to pay for their labor.

### 3. *Investment by financial institutions*

Since the third plenary session peasant income has expanded explosively, and their savings have likewise increased. The establishment of rural financial institutions (credit associations and the Agricultural Bank of China [ABC]) was



Fig. 3. Deposits with and Loans from Credit Associations



Sources: For 1978–84, [18, 1985 edition]; for 1985–88, *Zhongguo jinrong*, 1986–89, No. 4 issues; for 1989, *ibid.*, 1990, No. 1.

Note: Year-end balance for 1979–88; balance at the end of September for 1989.

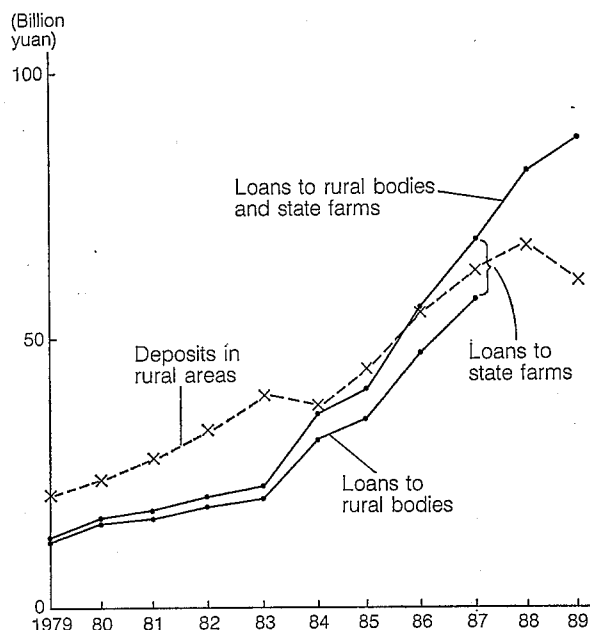
undertaken to mobilize peasant savings for rural economic development so that these might largely replace traditional state investment.

Figures 3 and 4 illustrate the trends of deposits with, and loans from, credit associations and state banks (the ABC, the Industrial and Commercial Bank of China, and other credit organizations) operating in rural areas.

The differential between total deposits and total loans in Figure 3 primarily represents the amount that credit associations deposited with the ABC as their reserve funds. This portion of funds increased from 16.8 billion yuan to 41 billion yuan in ten years, but its share in the total deposits declined from 78 per cent to 27 per cent. In 1985–87 the deposits by credit associations accounted for about 40 per cent of the ABC's total deposits [14, p. 60], constituting the latter's most important fund source.

Loans extended in rural areas represented only about 30 per cent of total deposits until the end of 1983. But these began to increase in 1984 to exceed

Fig. 4. Rural Deposits and Loans at State Banks



Sources: Same as for Figure 3; loans to rural bodies for 1986–88 are estimates made from a table in [14, p. 62].

Note: Year-end balance for 1979–88; balance at the end of September for 1989.

70 per cent by 1989. The differential between total loans and loans to village and township enterprises represents loans extended to groups and individuals. Investment in agriculture is included in this category. Until the end of 1981, loans to groups were larger in amount than those to individuals, but this relationship reversed during and after 1982. In 1988–89 loans taken out by individuals accounted for over 80 per cent of the total loans in this category. The same can also be said of deposits. In 1988–89 deposits by individuals represented over 90 per cent of total deposits. Savings by groups and individuals overwhelmingly exceed loans extended to them. Though loans began to increase in 1984, they still account for only 35–40 per cent of the deposits. Village and township enterprises during and after 1984 borrowed more than they deposited. Loans to them accounted for about half of the total loans extended.

There are no reliable data showing the share of loans to groups and individuals that were used for agricultural investment. But reports from various regions seem to indicate that loans to individuals, which make up the largest portion of group-individual borrowing, are used to finance housing and tractor purchases, and very little goes into agricultural production. In Wugong County, Shanxi Province, for

instance, only 10 per cent of loans extended by the local credit association is for agricultural purposes. Moreover most agricultural loans are used as short-term funds and not for investment in land and other fixed assets [24, p. 51].

Figure 4 shows the balance in the operations for state banks in rural areas. The majority of deposits are by credit associations, and the rest consist of deposits by village and township enterprises, people's groups, and individuals. Deposits by state farms are not covered in this figure. According to the ABC business reports, state farms had deposits of about 400 million yuan in excess of loans they owed to the bank in 1985, but their debts grew to 600 million yuan and 1,600 million yuan in excess of their deposits in 1986 and 1987 respectively [14, p. 62].

By the end of 1983 35–50 per cent of the deposits made in rural areas were appropriated in cities, and the percentage had been gradually rising until then. But from 1984 rural deposits were increasingly recycled back into rural areas which came to absorb 80–90 per cent of the rural savings. But even loans extended in rural areas “go preferentially into profitable ventures as the ABC nowadays is run on a commercial basis. Large funds are used for nonagricultural purposes and very little is appropriated for agriculture” [3, p. 52].

The rural financial institutions today function as a channel through which funds are raised in the countryside and loaned to nonagricultural sectors. Zhu Ling at the Institute of Economics of the Chinese Academy of Social Sciences, made the following critical comment about the current rural financial institution: “the existing reserve fund and redeposit system (under which credit associations should deposit a certain portion of their clients' deposits with higher echelon banks) enables the state banks to procure rural funds at lower interest rates than the rates the credit associations pay their depositors. Under these circumstances, the credit associations must provide loans to clients paying high interests rates, thus making funds less and less available for agricultural work” [24, pp. 49–50].

#### IV. SUMMARY AND CONCLUSION

Due to the changes in the food structure following the rise in living standard, China in the mid-1980s entered a stage where grain consumption rapidly increased. Grain production also rapidly increased until the end of 1984, even generating a grain surplus, but it dropped in 1985 and has since been stagnant. This has generated a serious grain shortage and has been a consequence of mistakes committed in agricultural policy since the Third Plenary Session of the 11th Central Committee of the Communist Party of China.

The serious food problem resulted from a mistaken conclusion which the leadership had reached following the rapid increase in grain production during the first half of the 1980s. This conclusion was that the institutional shift from the collective management to the household management of agricultural production would automatically guarantee production increases. The problem also stemmed from the underestimation of the role played by government investment in land as well as the role of “labor accumulation,” both of which were factors contributing to grain production increases in earlier years.

When the rural economy was not well developed, the introduction of the household responsibility system, together with a rise in the prices of agricultural products, certainly served to stimulate the interest of farmers in production. But as the rural economy developed making a conspicuous disparity in incomes between agriculture and other industries, peasants lost their enthusiasm for agricultural production. The introduction of the contract purchase system in 1985 resulted in the lowering of grain prices which until then had been consistently on the rise. This caused all contradictions to come to the surface.

Construction of land infrastructure had been done mainly by the government with funding coming from the state budget. But in the 1980s state investment began to be concentrated in the energy and transportation sectors to promote industrial development with the result that land infrastructure was grossly neglected. Local government investment in agriculture and "labor accumulation" also decreased and at a faster rate than state investment. This led to the deterioration of existing water conservation systems. The basic factor behind the stagnation of grain production since 1985 is this land infrastructure deterioration, and this casts a shadow over the prospects for increased grain production.

Rural financial institutions were set up with the intention of mobilizing funds from the rural side and using them for the development of the rural economy, but they have failed to function properly in recycling funds into agriculture. Instead these institutions worked as a channel to pump rural funds into cities. During the second half of the 1980s the share of funds recycled into rural areas did increase, but these recycled funds went overwhelmingly into nonagricultural rural businesses centering on village and township enterprises. The possibility is in fact slim that finances for agriculture will increase as long as the existing system is adhered to.

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