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THE HISTORICAL DEVELOPMENT OF CHINESE AGRICULTURE:
A POLICY REVIEW

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THE DEPARTMENT OF AGRICULTURAL ECONOMICS AND BUSINESS

The Historical Development of Chinese Agriculture: A Policy Review

1. Introduction

Two outstanding characteristics are observable in China's socialist agriculture prior to the reforms starting in the late 1970s: collectivization and central planning. The picture changed in 1978, when China began a series of fundamental reforms in the rural sector. The purpose of this paper is to identify the key policy elements relating to China's agricultural production, in particular the objectives and instruments used in implementation of the policies in different periods. The presumption is that China's agricultural policy has been the consequence of deliberate choice based on the government's objectives rather than the aberrant influence of small group leaders. However, the influence of these leaders will explain why China began its agricultural reforms in the late 1970s, how the leaders modified their objectives, and how the methods changed in implementation of the policy. The paper will also detail the reform policies, and in particular, the marketing reform initiatives recently implemented.

After the Chinese Communist Party had consolidated its power, agricultural policy was carried along two lines. The primary line has been institutional change, and the secondary line has been the adoption of agricultural planning. Based on these characteristics, this paper is organized as follows. Section 2 is devoted to an examination of the institutional change before the recent reforms, which is often called socialist transformation. The focus is on how the various institutional changes were designed and the impacts of these changes on incentives. The use of markets and central planning before the recent reforms is discussed in section 3. It is concentrated on the explanation of reasons for using or rejecting markets in different periods. Section 4 is devoted to a detailed examination of the recent reform policies, showing how the leaders modified their objectives, and pointing out the problems occurred which may endanger the future of the market oriented reforms. A summary is provided in the concluding section.

2. The Institutional Changes in the 1950s

2.1. Introduction. Under the Chinese socialist system, the rural institutional framework is itself a product of policy (Griffin and Saith, 1981). Prior to 1949, China was predominantly agrarian. As in many other countries, industrialization was visualized as the most effective way to convert a backward agricultural country into a modern, industrialized nation. The goal set by China's leaders and also contained in the Constitution of 1952 was "the gradual socialist industrialization of the county". They pursued a growth strategy that placed a priority on industrial growth (Perkins 1966; Lardy, 1983).

Agricultural policy had to be consistent with the industrial objectives. The major objectives of China's agriculture was to raise grain output and to ensure a low-cost food supply, especially for urban residents. From the Chinese Communist Party rising to power in 1949 to the end of the 1950s, Chinese agricultural institutions went through the following transitional steps: seasonal mutual aid teams, year-round mutual aid teams, lower (elementary) agricultural cooperatives, higher (advanced) agricultural cooperatives, and the commune system. The frequent institutional changes reflected the desire of China's leaders to stimulate grain production through collectivization. Collectivization was expected to help to increase grain supply by permitting larger scale, more efficient production, and more rapid diffusion of new farming techniques. Moreover, collectivization would minimize the possible resistance of the peasants to the agricultural objectives of the government and facilitate production planning design and implementation. The major steps in the collectivization process, the mutual aid teams, lower and higher cooperatives, and the commune, will be discussed below.

2.2. Mutual Aid Teams. The strategy used to extend collectivization in agriculture began with mutual aid teams (MATs). The establishment of producer MATs was based on the traditional peasant custom of aiding each other in their labours. It also drew from the experience of the revolutionary base during the wartime. In the beginning, the teams were

seasonal and then became year-round. The arrangements of mutual aid teams were relatively simple, though not uniform in details everywhere (Chao, 1970). The seasonal mutual aid team, usually consisting of less than 10 households, was to exchange labour, agricultural implements and draft animals during busy seasons. It was an informal organization which would be dissolved after the peak season. Compensation for labour, implements and draft animals borrowed from other member households would be settled either on the spot or at the end of the busy season. There was no change whatever in ownership, and each household controlled the disposal of its own produce.

When a seasonal MAT was transformed in to a year round MAT, the cooperation among member households extended beyond the busy season. They could pool their labour for certain sideline activities during the idle season. They might wish to acquire some capital goods to be collectively owned, but farmer households still controlled the use of their own land, and had the rights on the distribution of their output. By the end of 1954, about 10 million MATs were established, accounting for 58 percent of the peasant households (Kraus, 1982).

Generally, organizing mutual aid teams could remove some minor difficulties stemming from the small size of farm units. Particularly after a long time of war (Anti-Japanese and civil war), the MATs relaxed some constraints facing farm units stemming from a lack of farm implements and draft animals. The sharing of resources by constrained households helped to stop the land reconcentration to the rich peasants after the land reform¹.

The equity effects were appreciated by the Communist regime, and consequently the mutual aid teams have been encouraged by the Chinese Communist Party ever since their emergence. Given the encouragement of the government and the simplicity of

¹Land reform was the redistribution land in rural areas by the Chinese Communist party. It was began before 1949 when the Chinese Communist party allocated the landlord's land to the poor farmers. Land reform was completed by 1952, and over 300 million peasants benefited from the land redistribution.

managing mutual aid teams, there appeared to be considerable enthusiasm among peasants for organizing such teams (Chao, 1970).

2.3. Lower and Higher Cooperatives. Lower cooperatives were initiated in 1952. In the beginning, organizational details of lower cooperatives were far from uniform. The publication of the "Model Regulation for the Agricultural Producers' Cooperatives" in 1955, represented an effort of the government to set standard norms for the operation of the cooperatives (Chao, 1970).

On average, the lower cooperative consisted of thirty to forty households and was several times as large as the mutual aid team. One important change from MATs was the pooling of land under the unified management of cooperative cadres. The peasant, however, still retained the ownership of his land which was regarded as his share of capital contribution to the cooperative. A certain amount of land was left for his own use. It is important to point out that under the system of lower cooperatives, the peasant was to join voluntarily, and once he had joined a cooperative, he still was free to withdraw if he chose (Chao, 1970). The income of the members came from payment for labour services, and payment for property (land and other capital assets) contributed to the cooperative. At the end of 1955, 14.2 percent of the peasant households worked under the lower cooperatives (Kraus, 1982).

The potential advantages of larger economic and social units over small ones include better utilization of labour, greater saving and investment potential, more rational use of physical resources, and better social welfare provision. The potential disadvantages are equally well known: increased complexity of management, and the possible loss of incentives to work for and with the larger group, rather than independently and for one's self (Wheelwright and McFarlane, 1970). Under the lower cooperatives, fragmentary plots were consolidated under a single management, and many boundary lines dividing private holdings were removed, resulting in extra acreage for cultivation. There was also the advantage that instead of each farm household striving for self-sufficiency, the centralized

management could allocate each crop to the field best suited to it. Other capital goods could also be used more fully.

The potential management problems associated with larger units appeared to be acute in China because the majority of the cooperative managers were illiterate. Poor management also led to bad evaluations of the members' work performances which had a subsequent negative effect on future performance. The incentive to work also depends on how close the relation is between rewards and the work one has performed. Undoubtedly, this relationship tends to be much looser when the farm institution has shifted from a system of self-responsibility to one of shared responsibility. The average size of the lower cooperative was in the manageable range, and mismanagement had not developed to the degree that invited complaints and grievances, which in turn further weakened workers' incentives. Perhaps more important, the peasant still was free to withdraw from the cooperative if he chose. The incentive problem did not develop to an alarming degree under the lower cooperatives. Collectivization was employed in mid-1955 to stimulate grain production which was a major objective of Chinese agricultural policy. From late 1955 to early 1956, more than 80 percent of the farm households which were outside cooperatives were engulfed by new cooperatives. In another few months, virtually the whole agricultural sector was converted from lower to higher cooperatives enabling the Chinese Communist Party to reach the goal of agricultural collectivization. Undoubtedly, collectivization at such a high speed could be accomplished only by using force or other coercive means (Chao, 1970). The institution of higher cooperatives in China was more a transfer of land to the state control than it was a matter of setting up cooperatives for their own sake (Perkins, 1966).

Higher cooperatives, containing from 100 to 300 households, were formed from the merger of a number of lower cooperatives. By the end of 1956, 88 percent of peasant households were members of higher cooperatives which became the basic economic units in the countryside (Wheelwright and McFarlane, 1970).

In the higher cooperative, the chief means of production previously owned by individual members were now transferred to the collective. This applied to land, draft animals, and large farm implements. As a result of the changed ownership system, dividends to land shares were abolished. The income of the members was determined solely on the basis of work performance. In addition, members were not able to leave the higher cooperative.

2.4. The Commune System. The emergence of communes in China was rather accidental. The idea originated at the local level, but it is unclear why the party made the policy decision to adopt it as a new rural organization for the whole nation. Some researchers believe the party made the decision on the basis of its fascination with the communistic features of the commune, and its insistence on the principle that any spontaneous enthusiasm of the masses toward socialism should be encouraged (Chao, 1970). However, others point out there were still economic reasons supporting the decision to develop communes (Perkins, 1966). A higher cooperative was still a production unit. Though the land, labour, and major producers' goods were pooled, an important objective of the cooperative was still to maximize farmer income. As a result, it was not clear that the higher cooperative would be primarily responsive to the agricultural objective of the government. A commune was not only a production unit but also a government unit. The commune system made the local cadres interested in achieving "success" in the eyes of higher party organs. Now, the government could totally control the production decisions of the production units.

In the beginning, the commune was an agglomeration of collectives, with the average size about 5000 households. The commune was a basic economic, social and political entity in the rural areas. All production activities were organized, and all activities of all members were regulated by a centralized arrangement.

In terms of ownership, the commune was the sole owner of all properties. Private plots were confiscated. Thus, members were deprived of all means of personal earnings except by participating in the production activities under the commune authorities.

The system of income distribution was also drastically altered from the cooperative system. All members were required to eat in public mess halls free of charge. In addition, the commune was obliged to assume certain types of expenses such as clothes which previously were met by individual households. The free supply system was a means to distribute income completely independent of work performed.

The extra large economic unit, the free supply system and the militaristic style of labour allocation of the commune had a disastrous effect on farmers' work incentives and caused the poor harvests in 1958-60. Severe natural calamities further exacerbated the problem during 1959-61. As a result, famine spread over the country. The situation forced the Chinese government to retreat (Yu and Buckwell, 1991). Some exceedingly large communes began to be broken up into small ones. In late 1958, the government suggested that the administrative functions of the commune be divided into three levels, the commune, the brigade (village), and the production team (Chao, 1970). In 1961, the government issued another directive which firmly established the production team as the independent accounting unit. The brigade served as an organizational link between the commune and the production teams while the commune controlled relations with state organizations (Wheelwright and McFarlane, 1970). This institutional structure lasted till the recent reforms.

3. Markets and Central Planning

3.1. Introduction. Before the Communist Party came to power in 1949, China's farmers were under the market system and they made production decisions on the basis of prices paid for their produce. Prior to late 1955, China's agricultural sector was based on the individual peasant's tilling his own small plot of land. From 1949 to 1955, farmers

seem to have changed little from the pre-communist period when they operated in a relatively complete market economy (Rawski, 1977).

In order to rehabilitate agricultural output after several years of war, the state raised all farm product purchase prices, and allowed agricultural prices to rise in the market. The government also began to manipulate the relative prices of individual crops to achieve the desired composition of the farm outputs (Perkins, 1966).

With the implementation of the First Five-Year Plan in 1953, the Chinese government began to carry out an industry-oriented development strategy. The goal of this strategy was to build the country's capacity to produce capital goods and military materials as rapidly as possible (Lin, 1993). Capital was scarce at that time, and the government pursued a high rate of industrial growth through a high level of state investment. Price incentives in agriculture were unacceptable, because the subsidies would force the government to transfer a large portion of its investment resources from industry to agriculture (Perkins, 1966). In addition, to facilitate rapid capital expansion, a policy of low wages for industrial workers evolved as part of the industry-oriented development strategy. The assumption was that through low wages, the state-owned enterprises would be able to create large industrial profits which would be reinvested into infrastructure and capital construction (Lin, 1993). To implement the policy of low wages, the government needed to lower expenses for the industrial workers. Since food was a major expense for these workers, this meant reducing food prices. However, grain supply could only be maintained in the midst of lower grain prices through forced production levels.

3.2. Grain Quotas and Other Planned Purchase Programs. There had been national agricultural plans since the beginning of the communist regime. In 1950, the plan only included a desired percentage increase for cotton and grain, but by 1951 most major agricultural products were "planned" (Perkins, 1966). However, the adoption of agricultural planning began with the introduction of compulsory grain procurement quotas in November 1953.

The aim of compulsory quotas was to ensure adequate supplies of grain to urban areas without a substantial increase in purchase prices, as low agricultural prices would make possible the high level of saving and industrial investment anticipated under the First Five-Year Plan. Planned purchase programs of slightly different design followed for cotton in 1954, hogs in 1955, and a wide variety of other farm products in 1956 and 1957 (Sicular, 1988a).

The central government set grain procurement quotas that filtered down through the multiple levels of the government until they reached the farm level. The quotas specified quantities of grain but were not differentiated by type of grain (Sicular, 1988a). In theory, once the individual peasant had met his quota, he was free to keep the remainder, sell it to state grain purchasing department or sell it on the market (Lin, 1993). In practice, since state procurement organs purchased as much grain as they could extract, farmers were left with little surplus (Perkins, 1966).

There is little consensus among economists on the effects of these quotas on agricultural production in China. Some argue that unless the Chinese government sets prices for the amount produced under quota above the market prices, the government will not be able to directly affect farmers' resource allocation and induce a supply response (Sicular, 1988b). Some economists, based on empirical observation, find that the imposition of a compulsory procurement system had an adverse effect on China's grain production (Perkins, 1966; Lardy, 1983). Lin (1993) pointed out that the annual compulsory grain procurement in China depended on the actual output in each year and the procurement in the previous year. Therefore, even though the state procurement prices were lower than the market prices, increases in the state procurement prices had a positive supply response.

3.3. Market and Production Planning. With implementation of compulsory quotas, state procurement of grain rose from 23% of output in 1952 to 35% in 1954. In part reflecting the farm response to excessively high quotas and low state prices, growth in

grain production slowed from over 9% a year to less than 2% (Sicular, 1988a). Instead of increasing the grain prices to stimulate grain output, the government instituted agricultural production planning to ensure that the farmers would produce enough grain for mandatory procurement quotas.

Production planning was characterized by the imposition of detailed sown area and output targets and specific cropping patterns by higher-level authorities on production units (Lardy, 1983). For ease of monitoring and enforcement, sown area was chosen as the main target for planning. The central government first set the annual provincial area targets. The provincial government then set targets for prefectures, prefectures for counties, counties for communes, and communes for production teams. Generally, low-level government had little voice in determining the targets (Perkins, 1966; Lardy, 1988; Sicular, 1988b; Lin; 1993). Production planning was first attempted in 1956, again during the Great Leap Forward (1958-1960), and prevailed during the Cultural Revolution (1966-77).

There was little use of price incentives to encourage output growth under production planning since output targets were presumed to be attainable through direct commands to producing units. Planners gave priority to grain over other crops and gave insufficient consideration to profitability and regional comparative advantage. Targets were set with the objective of increasing output rather than net farm income (Lardy, 1983; Lin, 1992). Meanwhile, during the periods of production planning, private plots and rural markets were generally suppressed or eliminated (Lardy, 1983).

Before 1956, the government pursued its goals in agriculture through the market. State procurement prices were the major policy instrument used to influence the growth and composition of farm output. Farmers could make decisions on allocation of land, labour, and other inputs among alternative crops based on regional and local comparative advantage, and could engage in relatively unconstrained maximization of net revenues (Lardy, 1983). The state allowed prices to fluctuate with changes in conditions of the

market. Official prices were set, but they moved more and less with market prices (Perkins, 1966). The use of prices to influence output was repeated for a time in 1956-1957, and was readopted in 1960-61 and pursued through 1965. In the second and third periods, production units were separately agricultural producers' cooperatives and production teams.

Empirical observation shows that Chinese agriculture has grown most rapidly and total factor productivity generally has risen during the periods when the government relied on the market. Overall growth was more rapid and occurred across a broad range of products, including grain, cash crops, and aquatic, animal husbandry, and forestry products during those periods (Lardy, 1983). One interesting question is why the government eschewed the use of markets in agriculture in some periods and readopted the use of markets in other periods.

3.4. Reasons for Using and Rejecting Markets. The reliance by the Chinese government on the free market from 1949 to 1955 was due primarily to the lack of a feasible alternative (Perkins, 1966). Prior to late 1955, China's agriculture was mainly based on the individual peasant tilling his own small plot of land. Creation of co-operatives meant pooling labour and factors and sharing output accordingly. This was based initially on private ownership by peasants. The final decision on what was to be produced and marketed rested with the head of each farm household. Under such circumstances, the state had no direct means of controlling the production decision (Perkins, 1966; Lardy, 1983). The frequent institutional changes in China's agriculture in 1950s partly reflected the desire of the government to tighten control over agricultural production decisions.

As mentioned previously, the major objectives of China's agriculture was to raise grain output and ensure low-cost food supply for urban residents. The implementation of compulsory quotas increased state procurement, but had a negative impact on grain production (Perkins, 1966; Sicular, 1988a). Increasing the grain price to simulate grain output was rejected because of the desire to channel available funds to industry. To the

government, the only solution to the dilemma of how to increase grain output without abandoning the more fundamental goals of industrial growth appeared to require the removal of the individual peasant's power over many key aspects of farm production and centralization of that power in hands more responsive to the wishes of the state (Perkins, 1966).

Collectivization was employed to stimulate grain production in mid-1955. The government believed that the existence of free markets and the producing units' pursuit of income maximization would cause a resource allocation away from grain production. In mid-1955, the free market was closed to ensure the fulfillment of quotas (Perkins, 1966; Lardy, 1983). The pace and level of collectivization was stepped up (Sicular, 1988a). As soon as the higher cooperatives were formed in the winter of 1955-56, the state attempted to introduce production planning.

Production planning assumed that grain output targets could be achieved through direct control over producing units. The key issue was to make producing units responsive to the planners' objectives. The central authorities set targets with the objective of increasing output rather than net farm income. Collectivization, which assigned the control of rural resources to local cadres, made it easier to ensure the government's control over agricultural production decisions. Though local cadres have several objectives, ensuring position and getting promotion are two of the most important goals (Rozelle, 1991). To reach these goals, it was important for them to achieve "success" in the eyes of higher government.

Production planning was quickly abandoned in late 1956, partly because of the difficulties in its implementation. Many of the collectives in 1956 were no more than paper organizations, hurriedly created by local cadres in response to higher-level pressure to demonstrate success of the "socialist high tide" movement (Lardy, 1983). Moreover, radical institutional changes and adoption of production planning did not solve the grain problem without costs. The collective production planning system curtailed subsidiary and

household occupations like vegetable cultivation, hog and poultry raising, and handicrafts (Sicular, 1988a). Such activities were important sources of farm income. The decline of farm income and the undermining of production incentives became apparent to the government, leading to pressure for modification (Lardy, 1983).

In the summer of 1956, rural markets were reopened for subsidiary products, and at the end of 1956, the state began to move away from production planning toward purchase planning. The switch to procurement planning, which really represented a formal return to pre-1956 methods of price planning, was to have been carried out in 1957. The replacement of production planning with purchase planning was based on the assumption that by allowing the producing units to arrange their production according to their own needs after having fulfilled the state purchase quotas, agricultural productivity would increase with the increase in production incentives.

Rural markets remained open in 1957, and the volume and scope of transactions broadened, and it simultaneously undermined the ability of the state to purchase grain. Originally, the "free markets" established were intended for native and subsidiary products not subject to planned purchase by the state. The scope of these markets quickly expanded, however, to include grain, cotton, oil-seed crops and other commodities subject to the state purchase (Lardy, 1983). This was unacceptable for the state. Regulations were soon issued to prohibit the market sale of grains, oil-bearing crops, and cotton (Lardy, 1983).

It was not really until the Great Leap Forward (1958-60) that the government abandoned the use of prices and markets as instruments of resource allocation in agriculture. The Great Leap Forward policy was built on the belief that the economy could skip over historic stages (Wheelwright and McFarelane, 1970), and industry could increase at even a higher rate. However, agriculture remained a bottleneck to further rapid industrial growth (Sicular, 1988a). As before, agricultural policies were expected to induce a rapid increase in agricultural output while minimizing the diversion of resources from the industrial sector.

The commune system was accepted and pushed as a movement by the leadership in 1958. Under the Communist party leadership, with the proper indoctrination and mass mobilization of the rural populace, and in the context of the new commune system, farm production and state procurement were expected to rise. A commune was not only a production unit but also a government unit. Control of resource allocation within communes was in the hands of lower-level state cadres. Labour flow outside of the commune was totally prohibited. Peasants' rights to determine their patterns of cropping and the allocation of the output (after meeting state procurement targets) were all but eliminated. Production planning, overlaid with an element of political frenzy, reached its zenith in 1958 (Lardy, 1983).

However, poor harvests occurred in 1959. Natural calamity combined with excessive state procurement, followed by an even more depressed 1960 cereal crop, initiated the devastating famine of the early 1960s (Lardy, 1983).

In response to the crisis in food consumption and agricultural productivity, the government moved to restore production incentives and curtail production planning. The commune was divided into three levels, and the production team was ascertained as the independent producing and accounting unit.

Policy adjustments were not limited to institutions, but included increased resources to agriculture. The state announced a shift in development strategy from the industrial sector to agriculture (Sicular, 1988a). Rural markets were reintroduced, grain quotas were reduced and fixed for three years. The government turned to various price and quasi-price measures to encourage agricultural production and marketing. The state not only raised grain procurement prices but also used price bonuses and various material incentive programs to encourage additional deliveries to the state (Sicular, 1988a). These policies provided more opportunities for peasants to respond to the changes in relative prices.

Production of grain and other crops grew rapidly in the early sixties, reaching or surpassing earlier peak output levels by 1965 (Sicular, 1988a). However, grain deliveries

to the state declined in 1961 and 1962 after the state quotas were reduced. Thereafter deliveries began to rise but more slowly than production, and simultaneously the state's expenditure on grain purchasing increased quickly. Grain imports, which had begun at the end of the Great Leap, continued throughout the period.

In 1966, the Cultural Revolution (1966-1976) created the political chaos, and represented a shift in China's politics sharply to the left. In agriculture, the shift was reflected by the drastic reduction in private plots and curtailment of rural markets (Lardy, 1983). After 1966, China's agricultural policy fundamentally shifted in the direction of production or quantity planning. In the beginning, the government argued that direct state control of agriculture was necessary to prevent a "spontaneous tendency toward capitalism" (Lardy, 1983). Finally, the strategy of "taking the grain as the link" designed to achieve grain self-sufficiency during the Great Leap Forward was resurrected by the government. During the Cultural Revolution, increased grain production was promoted by enforcing mandatory sown area targets for grain, and self-sufficiency by purchasing but not selling grain and oil in rural areas. Such measures were supplemented by ideological work (Sicular, 1988a). The national self-sufficiency policy degenerated into a policy of local sufficiency. The enforced production reduced specialization and the role of marketing.

The Chinese government recognized the positive influence of markets on agricultural productivity. However, greater reliance on markets would undermine the ability of the central government to sustain an investment structure and emphasize producer goods. It should be noted that the switches between using and rejecting markets were consistent with the changes in production organizations and rural institutions. The reason for this is that a transition in production organization is a precondition for a change in a system of control. Both of these elements are seen as necessary to serve the goals and strategy of development.

4. Agricultural Reforms

4.1. Introduction. During the Cultural Revolution, China's agricultural performance was sluggish. Despite the stress on self-sufficiency, grain production and agricultural output barely kept pace with population growth (Lin, 1992). Per capita grain consumption in rural areas reached 187 kilograms in 1966, but thereafter did not surpass 190 kilograms until 1978 (Sicular, 1988a). Several reasons caused China's agricultural stagnation in this period.

The first was the curtailed use of price incentives either to stimulate production or to influence the composition of output. Procurement prices for most grain was raised in 1966 and then were unchanged for 12 years (Lardy, 1983). Beginning in 1965 procurement prices of most economic crops changed little for more than a decade. Private grain trade was forbidden during this period.

The second was the problem of work incentives. In this period, agricultural operations were organized in a production-team system. Each team consisted of about 20-30 neighbouring households. Because of difficulties in monitoring agricultural work in a team, rewards to individual farmers were not tied directly to their effects, and incentives to work were thus very low (Lin, 1988).

The third was production planning and self-sufficiency. The prevalence of planning in agriculture in this period was a result of the state desire to be self-sufficient in grain. Because grain procurement prices were depressed to levels lower than prevailing market prices, the more grain an area sold to the state, in effect, the more tax it paid. Areas with a comparative advantage in grain production were thus reluctant to raise their grain output level. Consequently, grain-deficient areas had to increase grain production themselves if local grain demand increased due to growth in population or income. The goal of national self-sufficiency thus degenerated into a policy of local self-sufficiency. To guarantee that each region would produce enough grain for its needs, planning in agricultural production was extensive. Mandatory targets often specified not only acreage

for each crop, but also yields, levels of inputs and so on. As planners gave priority to the level of grain output, insufficient consideration was given to profitability and regional comparative advantage. To increase grain output in an effort to meet state procurement quota or local demand, local government often expanded grain acreage at the expense of cash crops or raised cropping intensity to a level that brought net losses to farmers (Lin, 1992).

The consequence of attempted self-sufficiency was declining allocation efficiency within agriculture and declining per capita consumption of many noncereal foods (Lardy, 1983). Increased inefficiency is most evident in regions of northwest China that had a significant comparative advantage in the production of meat and other animal products. By the late 1960s, these regions were forced to devote increased resources to grain production. Pasture lands were brought under the plow despite the lack of water resources adequate for growing field crops and despite the high probability of increased erosion. In many cases the grain yields achieved on these lands were less than a tenth of the national average and were obtained only at the expense of reduced production of high-valued animal products. Pursuit of increased grain production was not confined to predominantly pastoral regions but extended to areas previously specializing in nongrain crops, such as peanuts, oil-bearing seeds, cotton, and tobacco. In most rural areas, living standards declined substantially (Lardy, 1983; Sicular, 1988a). The level of rural poverty in the nation increased the level of political instability and led to pressures on the leadership of the post-Mao era to modify their economic objectives. Thus, began the agricultural reforms in the late 1970s.

Broad changes in agricultural policy began at the end of 1978. The government's original intention was to improve agricultural production by raising the long-depressed state procurement prices for major crops, modifying management methods within the collective system, and increasing budgetary expenditure on agricultural investments. The change from the collective system to the household-based farming system was explicitly prohibited in 1978 (Lin, 1992).

4.2. Decollectivization and Production Planning. Decollectivization and production planning are closely related, in that both affect who makes the economic decision in agriculture. Decollectivization has shifted the basic decision-making unit from the collective farm to the household (Sicular, 1991).

It was acknowledged in 1978 that the key to improving incentives was to solve the managerial problems in the team system. However, the government at that time considered subdivision of collectively owned land into individual household tracts to be in conflict with socialist principles, and thus it explicitly prohibited this practice. Nevertheless, toward the end of 1978, a small number of production teams, first secretly, and later with the blessing of local authorities began to try out the system of contracting land, other resources, and output quotas to individual households. A year later, these teams brought in higher yields than those of other teams. The central authorities later conceded the existence of this new form of farming but required that it be restricted to poor regions. However, most teams ignored this restriction. Full official acceptance of the Household-Responsibility-System (HRS) was given in late 1981, when 45 percent of the production teams in China had already been dismantled. By the end of 1983, 98 percent of production teams had adopted HRS (Lin, 1987).

Under HRS, collectively owned land was assigned to individual households with contracts of up to 15 years. Individual households could then make their own input decisions and dispose of their output as they wished after meeting their tax and quota sales obligation to the state. By linking rewards directly to effect, HRS enhanced incentives and promoted efficient production based on economic consideration.

Reforms in production planning accompanied decollectivization. Prior to 1980 collective farms faced mandatory targets governing sown areas, yields, levels of inputs applications, planting techniques, and so. The number of production planning targets in agriculture was reduced substantially in the early 1980s (Sicular, 1991). As surpluses of grain and other crops emerged in 1983 and 1984, mandatory planning of production no

longer seemed necessary, and in 1985 the government announced that mandatory production planning in agriculture was no longer permitted. Thereafter planning targets were to serve only for guidance or reference. Local implementation of the production planning reforms varied, but the overall effect was to reduce the degree of intervention in agricultural economic decisions. These reforms permitted the diversification of agricultural production, greater regional specification, and a decline in the previously over-intensive cultivation of grain(Sicular, 1991).

4.3. Procurement Policies: Price, Quotas, and Marketing. In the 1980s China's policy makers relied heavily on pricing, procurement, and related measures to influence agriculture. Such policies can raise farm profits and enhance agriculture's ability to attract resources, and consequently spur production.

Major adjustments in procurement policy began in 1978. Initially, the basic structure of the procurement system remained unchanged: farm products were subject to mandatory delivery quotas at planned prices, in some cases with a price bonus or other incentive award for beyond-quota deliveries. Adjustments were made, however, in prices and incentives. The government implemented substantial, across-the-board increase in quota procurement prices in 1979 (Sicular, 1988a). In the early 1980s further adjustments in quota prices took place, and seasonal and quality price differentials were widened. By 1983, quota prices for grain exceeded their 1977 levels by 15 to 20 percent, oil and oilcrops by 27 percent, sugar crops by 26 percent, cotton by over 30 percent, and hogs by 27 percent. These price adjustments followed more than a decade of constant quota prices.

The government also expanded bonuses for above-quota deliveries. Prior to 1979 grain and oilcrops had received a price bonus of 30 percent for deliveries beyond the quota level. In 1979 this bonus was increased to 50 percent. Cotton, which had earlier received no above-quota bonus, now began to receive a nationwide 30 percent price bonus for sales to the state exceeding the average quantity delivered over the three year period 1976-78.

Between 1977 and 1983 above-quota prices rose 36 percent for grain, 47 percent for oils and oilcrops, and over 80 percent for cotton (Sicular, 1991).

The price reforms were accompanied by a gradual reduction in quota levels and in overall scope of procurement planning. At the beginning of the reforms, the government recognized the losses in allocation efficiency caused by self-sufficiency policies. Quota levels for some products, most importantly grain, were lowered. Between 1978-1982 the national grain quota and tax were reduced by 20 percent (Sicular, 1991). Efforts were also made to adjust the geographical distribution of quotas to permit greater regional specialization. Finally, the number of farm products subject to centrally planned procurement and distribution was reduced, while the number of products traded on free markets was increased. As early as 1978 the government began to encourage the revival of rural markets. By 1980 all products except cotton were allowed on the markets after state delivery quotas were fulfilled. By 1982 restrictions on private long-distance trade had been lifted for all farm products allowed on markets except grain, and private individuals were permitted to specialize in transport and trade (Sicular, 1991; Lin, 1992). The expansion of free markets provided an alternative channel for the sale of farm products, often at prices exceeding those offered by the state.

The government participated in market trade through "negotiated price" procurement. The state commercial system bought and sold beyond-quota farm products at the negotiated prices, which, according to central directives, were to be agreed upon jointly by both sides, to be applied to voluntary above-quota deliveries, and to be decided on the basis of regional, yearly, seasonal, varietal, and quality consideration. These prices were to follow the trends in demand and supply, but were in general not to exceed local market prices. The rival of negotiated price trade gave the state commercial system more flexibility in responding to market conditions and provided a level for influencing the markets.

The commercial reforms in the late 1970s and early 1980s successfully promoted agricultural growth, but also led to a budgetary expansion on trade in farm products.

Corresponding to the increase in procurement prices, retail prices for pork, fish, and eggs were raised one-third, but no changes were made in grain and edible-oil prices. To compensate for this, each urban resident received a 5-8 yuan subsidy per month (Lin, 1992). As a result, the level of the government's price subsidies increased substantially. The financial burden became especially unbearable when an unexpected growth in output began to emerge in 1982. The price subsidies increased from 8.4 percent of the state budget in 1979 to 24.6 percent in 1984 (Lin, 1992).

Growing budgetary costs prompted an overhaul of the procurement policy. First the government abandoned the two-tiered quota\above quota pricing system and instituted a single, "proportionate" procurement price for each crop. The new proportionate prices were a weighted average of the old quota and above-quota prices, with the weights varying somewhat by region and crop. Proportionate pricing was implemented for oilcrops in 1983, for cotton in 1984, and for grain in 1985. The new grain price was set equal to 30 percent of the quota price plus 70 percent of the above-quota price. Proportionate pricing stopped the upward drift in the costs of procurement as above-quota deliveries expanded. It also eliminated the incentive to evade quotas in order to receive higher above-quota prices (Sicular, 1991).

Second, on January 1, 1985, the Chinese government announced that, except for a few products, it would do away with the old procurement system and no longer send down mandatory delivery quotas to farmer. For grain and cotton, mandatory quotas were to be eliminated and replaced by a combination of voluntary contract and market purchases. State commercial departments were to negotiate purchase contracts with farmers before the crops were planted. The contract prices would be set at the new proportionate prices and farmers could choose freely whether or not they wished to sign contracts with the state or dispose of their products on the market.

If fully implemented, the 1985 reforms would have eliminated mandatory state quotas, drastically reduced the scope of commercial planning, and expanded the role of

markets in allocation and price determination. However, declines in production and deliveries led the government to back away from some of its 1985 initiatives. Voluntary contracts for grain soon became mandatory. Problems with grain procurement also prompted greater administrative intervention in free markets. To ensure contract fulfilment, local governments closed markets during the procurement seasons and blocked trade of farm products across administrative boundaries. In 1987 and 1988 the central government imposed further restrictions on markets as part of the effort to slow inflation. Meanwhile, the government also began to improve incentives for crop production. In 1987 the central government reinstated material incentives for contract deliveries of grain and cotton. For grain, the "three link" policy awarded cash advances and tied sales of high-grade chemical fertilizer and diesel oil at low state list prices for contract deliveries. Similar "link" awards were instituted for cotton and certain other crops. The amount of these material awards was increased further in 1988 and 1989.

4.4. Agricultural Growth and the Problems of the Reforms. In the early 1980s decollectivization and reform in production planning enhanced incentives and reduced administrative controls over farming. Growth rates in all major sectors of agriculture were accelerated to levels several times higher than the long-term average over the preceding period (Lin, 1992). Economists have focused much of their attention on understanding the implications of the bold moves to decollectivize agricultural production and liberalize rural markets (Lardy, 1983; Sicular, 1988b; 1991). The earliest empirical investigations by McMillan et al.(1989) and Lin (1992) showed that the implementation of the HRS created most of the rise in productivity in the early reform years.

But from 1985 the story changes. It is true that in some areas, such as animal husbandry, sidelines and aquatic production the pattern of expansion continued unchanged. In the crop sector, however, earlier growth gave away to stagnation (Ash, 1992). Several explanations have been proposed for this showdown: the exhaustion of one-time gains

from decollectivization; the limited amount and uneconomic distribution of arable land under small-scale household farming, and insufficient agricultural investment.

Due to increasing discontent with the stagnation of grain production, increasing attention was given to potential drawbacks of the reform measures. One drawback is that decollectivization may have reduced agricultural investment. Another alleged drawback was that small, fragmented farms were less productive than large, consolidated farms. Although the government has not reversed decollectivization or rehabilitated mandatory production planning, it has encouraged increased collective leadership by local governments through the formation of cooperative organizations. In many places, household land contracts now specify the land area that households are required to plant in grain. In some localities, village cadres directly manage certain aspects of agricultural production (Sicular, 1991).

The market-oriented reforms have aroused anxiety in some sectors of the government from their very beginning. Concerns over "loss of control" were widely reported in the early 1980s (Sicular, 1988). When growth rates slowed down and grain output declined in 1985, the government retreated from its position. The voluntary procurement contracts were made mandatory again. Throughout the period 1985-1991 the level of administrative intervention in the market and production was increasing (Lin, 1992).

Increased use of administrative interventions has arisen because of difficulties guiding production using indirect policies. Agricultural reforms changed the relationship between farmers and the government. Fiscal reforms changed the relationship between local government and central government (Oi, 1992). These policies have made localities more independent. During the reform period, the government's objectives for agriculture have been increasing output and encouraging deliveries to the state although much attention has been paid to productivity and farms' welfare. Efforts to influence farm household decisions using prices and incentives did not have the desired effects. Economic incentives

continue to conflict with, rather than complement, the government's objectives for agriculture (Sicular, 1991).

Another reason is that fiscal reform assigned regional income to local government which has created strong incentives for local officials to pursue rapid rural industrial growth (Oi, 1992). Local officials meddled with the "three link" incentive program to encourage rural industry, for example, to support the products used as raw materials for local industry. Local governments also did not pay farmers the prescribed prices in a timely way. After 1987, local governments issued IOUs to farmers instead of paying them cash. Such practices seriously erode farmer confidence in government policies.

5. Summary

Since 1949, China's agricultural institutions and policies have undergone a number of radical changes. This policy review has shown that China's agricultural production was significantly influenced by three major policy ingredients: i) rural institutions; ii) the decision making structure and production management system; and iii) the agricultural pricing and marketing system. The focus and integration of these institutions and systems varied with the direction of Chinese agricultural policy as determined by the agricultural objectives of the nation which were in turn determined by the strategy of national economic development (Chen and Buckwell, 1991).

The history of China's agricultural policy reveals constant conflict between the objectives of the government and farmers. Initial collectivization and production planning ensured the government's control over agricultural production decisions. Agricultural productivity suffered as the government shifted its focus to development of the industrial sector. The reason for this shift was that cheap and sufficient grain supplies were needed to help maintain a low-wage labour force required by heavy industry (Chen and Buckwell, 1991; Lin, 1993). The strategy for the development of agriculture was a general squeeze but within this strategy, priority was given to grain production. To put these strategies into

practice, first the agricultural institutions had to be designed to be suitable for and responsible to the centralized command system-collectivization. This, in turn, permitted a direct control system to be followed in which producers were required to focus their limited resources on producing what was most needed as decided by the government-production planning units. Meanwhile, a low procurement price set by the government and the monopolized marketing system led to cheap and sufficient grain to serve the aim of industrialization.

When agricultural productivity decreased to a degree that endangered the government's overall economic objectives, policy makers relinquished direct control over agriculture in an effort to increase agricultural output. This gave a greater degree of decision-making freedom to farmers, and allowed for more locally responsive production management. Coincidentally, an increase in procurement price and relaxation of the monopoly marketing system made agricultural production profitable and attractive.

During the reform period China's leaders called repeatedly for a reduction in administrative interventions in the economy, for greater reliance on economic "levers", for decentralization of economic decision-making, and for an increase in the role of markets. However, when agricultural growth slowed in 1985, after an initial increase following the reforms, both the central and local governments increased controls over cultivation and restricted market trade in major farm products. This conflict between government and producer objectives still exists. China's agricultural policy in 1990s will almost certainly aim at bolstering agriculture, and especially crop production. It faces fundamental institutional and economic dilemmas as to how this may be done most efficiently.

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