Agricultural Development: The Key Link in China’s Four Modernizations Program

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Mao Tse-tung, the source of legitimacy for the radical leaders of the left-wing of the Chinese Communist Party, died in September of 1976. The radical left-wing leaders were arrested and removed from their positions of power within the month following Mao’s death and a new, post-Mao leadership coalition under the control of the right wing slowly emerged during the course of 1977. Thus, in early 1978, Chairman Hua Kuo-feng’s “Report on the Work of The Government,” delivered to the National People’s Congress, announced that the solution of China’s economic problems would now take precedence over the ideological objectives of Mao’s social and political revolution (Hua, 1978). To solve those problems, the National People’s Congress adopted the Ten-Year Plan (1976–1985) for the Development of the National Economy, which Hua had summarized in his report. Utilizing themes originally put forth by Chou En-lai in the early 1970s, this Ten-Year Plan was to be the first stage in achieving the modernization of China’s agriculture, industry, defense, and science and technology—the four modernizations—by the end of the twentieth century.

Ever since Hua’s speech which announced the plan for achieving the Four Modernizations, Chinese leaders and press reports have emphasized continuously that “agriculture is the foundation of the national economy,” and that “the development of agriculture at a high speed is the most important guarantee of success in modernization” (FBIS, 25 Oct. 1979). Furthermore, in the post-Mao spirit of respect for the facts, it is admitted that “China has difficulties in feeding the urban population and in ensuring a rational development of industries using farm products as raw materials” (FBIS, 6 Mar. 1979). According to a Renmin Ribao (6 Mar. 1979) editorial, “modernization will quite simply be out of the question if this state of affairs continues.” Few Western specialists on China’s economy, and I am sure none at this panel, would disagree with the argument that the modernization of China’s agriculture, while not a sufficient, is a necessary condition for the modernization of China’s economy.

The magnitude of China’s agricultural development problem, the extent to which the Chinese have solved the agricultural problem over the past three decades, and the probability of their solving the agricultural problem in the near future, however, are topics of major disagreement among Western specialists. I have presented my position in this debate on more than one occasion (Dernberger). Inasmuch as Tang is presenting a paper on the trends in Chinese agricultural production in 1952–78 at this panel, while Lardy is a discussant, I gratefully yield to these two knowledgeable and capable specialists for their evaluations of the empirical record of China’s agricultural development experience in the past. In this paper, I will devote my attention to what I consider an even more crucial determinant of China’s success in achieving the modernization of China’s agriculture in the future: the package of policies the new, post-Mao leadership has adopted to achieve the modernization of China’s agriculture.

These policies, of course, were adopted by the new, post-Mao leadership on the basis of their own understanding of the empirical record of agricultural development over the past three decades, especially that of the more recent past. Western specialists who estimate and interpret this past record more favorably can claim the new, post-Mao leadership is motivated by the need to present the policies of their predecessors as failures; those whose estimates and interpretations provide us with a more pessimistic picture can argue the Chinese mean what they say when they claim

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to be seeking "truth from facts." Whatever their motives, the Chinese evaluation of their past record of agricultural development that has been made available to Western specialists over the past two years depicts the emergence, especially over the past decade, of an ever worsening situation.

For example, a study of grain production between 1965 and 1976 in 2,196 production teams in "various" provinces was reported at a conference sponsored by the Institute of Agricultural Economics of the Chinese Academy of Social Sciences at the end of 1978 (Guangming Ribao, 7 Dec. 1978). According to that report, yields had increased at an average annual rate of 2.8%, while costs had increased at an average annual rate of 4.0%. Furthermore, the value of a day’s labor had declined from 0.70 yuan to 0.56 yuan over the same period. A major source of the increase in costs, as the estimates presented by Tang should indicate, is the rapid increase in the use of purchased inputs in the decade after 1965. Thus, inasmuch as output prices were not increased over the period between 1965 and the mid-1970s, it is not surprising to learn that the survey of grain production in 2,196 production teams in 1976 revealed that production costs (probably inclusive of labor costs), plus taxes, exceeded the state's purchase price by 10.6%. Or that a survey of cotton production in 302 production brigades in 1977 revealed production costs which exceeded the state’s purchase price by 2% (FBIS, 26 Oct. 1979).

Although the reports of the State Statistical Bureau show that the total gross value of agricultural production (in current values) increased at an average annual rate of 6.2% between 1952 and 1978, grain output increased at an average annual rate of only 2.6% and the average per capita grain distribution was no greater in 1978 than two decades earlier in 1957. 1 Of more immediate importance, grain output did not grow between 1975 and 1978 and, therefore, grain availability per capita from domestic production was declining. Thus, when the new, post-Mao leadership came into power, these inherited developments in agricultural production not only were a serious threat to their ability to maintain the standard of living, they also threatened their ability to use agriculture products, a major source of export earnings in the past, for the purpose of increasing export earnings to pay for producer goods imports. It is not surprising, therefore, that a major concern of the new, post-Mao leadership over the past two years has been the introduction of new policies for achieving the modernization of China’s agriculture.

China's New Agricultural Program

Our purpose in this brief paper is not to analyze the details of each of these new agricultural policies, nor to analyze the dynamics of their evolution as an integrated and complete program for the modernization of China’s agriculture. In the course of 1978, the Chinese increasingly became aware that the mere arrest of the radical leaders and their followers would not eliminate China’s fundamental economic problems and that, in light of these problems, the plan for 1985 was unrealistic. Thus, in Hua Kuo-feng's "Report on the Work of the Government" to the second session of the Fifth National People's Congress in the summer of 1979, he reported that a new five-year economic plan for 1981-85 would be drafted and ready for adoption at the next National People's Congress, and further, that the next three years, 1980-82, would be devoted to putting the Chinese economy back onto the path of sustained economic growth (Hua 1979).

Throughout 1979, a great many arguments have appeared in Chinese publications and many experiments are being tried out in a search for the proper set of institutional and policy changes that will put the Chinese economy back onto the path of sustained economic growth. According to Vice-Premier Ku Mu in October of 1979, "We have become convinced of the need to completely reform our economic institutions and economic policies from the top down to the lowest level, but how to reform them is a difficult problem and will take some time." 2 Any attempt to spell out China’s new agricultural policy program at the present time, therefore, would be premature. On the other hand, the various agricultural policies that have been advocated and the institutional changes in agriculture that have been tried over the past two years do provide us with

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1 Average annual rates of growth were calculated by the author on basis of total values for 1978 and 1952. The 1978 totals are from FBIS, 3 July 1979; the 1952 totals are from State Statistical Bureau, 1960.

2 Quote is from the author's notes from a briefing and interview given by Ku Mu for the delegation of American economists in Oct. 1979.
ample evidence of several basic themes of the new agricultural program currently evolving in China. The purpose of this paper is to present a summary of these basic themes and to assess their implications for the modernization of China's agriculture.

Perhaps the most surprising development has been the retention and open advocacy by the new leadership of many elements of the major program advocated and implemented by their predecessors: the Tachai or Advanced County Campaign. That campaign, especially its method of implementation during the first half of the 1970s, is now openly criticized. This is not true, however, for those components of the Advanced County Campaign which were designed to achieve a significant technological transformation of China's agricultural production. These included the innovation of new varieties and cropping patterns; the increase in irrigated area and use of chemical fertilizers; the mechanization of agriculture; extensive farmland reconstruction; the electrification of rural China; and the development of rural, small-scale industries for the production of cement, chemical fertilizer, iron and steel, agricultural machinery, and electric power. These policies were a major feature of Chinese agricultural development efforts in the first half of the 1970s.

On 5 October 1979, the Central Committee of the Chinese Communist Party issued a lengthy policy document on "Some Questions Concerning the Acceleration of Agricultural Development" that was adopted by the fourth plenary session of the Eleventh Central Committee of the Chinese Communist Party.³ Of the twenty-five policies and measures for developing agriculture this document advocates, five repeat policies were being pursued in the early 1970s for the technological transformation of China's agriculture. Despite these similarities in policies per se, however, the new program for the modernization of China's agriculture represents a thorough and necessary "rationalization" of the technical ingredients of the Advanced County Campaign as it was carried out in the past.

As for the policy of developing new seeds and cropping patterns, the practice of every unit having an experimental plot is questioned as a waste of land; experimental plots can be more efficiently managed in communes which specialize in the production of new seeds. It is now admitted that inter-cropping and more multiple cropping have not raised annual yields everywhere, but have been done so only under certain conditions. The practice of each unit producing a variety of crops to increase the degree of self-sufficiency or diversification is also found to be a source of inefficiency; specialization in those crops best suited to the climate and soils of the local unit are now argued as a better means for providing higher yields. For the purpose of facilitating the more scientific breeding of seeds and adoption of proper cropping practices and patterns, the Chinese have recently begun to survey and catalog soils.

In farmland reconstruction, the practice in the past of mobilizing farm labor for these projects is criticized for the extent to which it ignored the opportunity costs of labor, and examples are cited where yields in crop production and the income of peasants declined as a result. Some of the projects in the past also have been criticized for the poor design, poor results, or ineffectiveness in increasing yields, or their high costs in terms of scarce construction materials.

In irrigation, the rapid expansion of the irrigated area in the past is criticized on the basis of the low level of efficiency of the various irrigation projects, the extent to which they wasted resources, the extent to which their design capacity is not realized, and the extent to which mechanization is concentrated on a limited amount of irrigated land. In other words, a considerable increase in yields due to increased irrigation can be obtained by significantly increasing the efficiency of the existing irrigation system. As for new irrigation facilities, a major problem continues to be the North China Plain, and involves two major irrigation projects. Although somewhat dormant in the 1960s, considerable work has been done on the Yellow River project since 1949. The Chinese now admit, however, that the two most serious problems faced by the project have not yet been solved: silting and excessive alkalinity. Specialists are now being organized and a conference was held to propose solutions to these problems, solutions which are necessary if the potential of the Yellow River is to be harnessed for irrigation. The second major irrigation project is yet to be

³ The full text of this document, as adopted by the fourth plenary session of the eleventh Chinese Communist Party Central Committee is reproduced in FBIS, 25 Oct. 1979. A preliminary draft of this document had been adopted by the third plenary session, Dec. 1978 and had been circulated, discussed, and modified in the intervening nine months.
tackled; tapping the better quality and more voluminous flow of water in the river system of Central China, especially the Yangtze River, and bringing that water to North China. Concern has been expressed, however, over the costs of such a project and the possible consequences of diverting water from the Yangtze to the North. The Chinese are now reconsidering the alternative routes and the costs and benefits of the project.

The problems uncovered in the attempts to electrify the rural areas are related to China’s present economy-wide energy shortage. Agriculture undoubtedly will be given a high priority as a result of the realignment of priorities in the current reevaluation of the national economic plan; and the electrification of the rural areas will remain as an objective of China’s agricultural modernization program. Nonetheless, the inefficiency in the generation of electricity by the rural power stations and the efficiency of its present allocation and use have been questioned, especially in regard to the generation of electricity at much lower costs by means of large-scale, hydro-electric power stations and the use of electric power at much higher levels per unit of output in the rural, small-scale industries.

The mechanization of agricultural production gained great prominence in 1978, but the Chinese have had second thoughts about not only the feasibility, but the wisdom of mechanization. Articles in the Chinese press have argued that the objective of increasing yields calls for land-saving, or augmenting, technical change, while mechanization is a labor-saving, or augmenting, innovation. Thus, given the recognized inability to supply the machines required to meet the original targets for the mechanization of China’s agriculture, mechanization should be emphasized in the less labor-abundant areas, i.e., on state farms in the Northeast. As for the production of agricultural machines, they should be produced in complete sets, and should be produced in factories which specialize in the production of their various components. To have agricultural machinery produced in short runs in factories spread throughout the countryside is simply too inefficient and costly.

Discussions in the Chinese press over the past year which concern the “rationalization” of industrial policy emphasize the extent to which many industrial plants are suffering financial losses, have a low productivity of labor, use excessively high levels of scarce resources per unit of output, and produce poor quality output. These criticisms are held to be especially true for many rural, small-scale, industrial plants. To correct for this problem, it is argued that unless they improve their profitability and reduce the input costs of their production, these inefficient plants should be closed down.

The expanded use of chemical fertilizer is the one element of the Advanced County Campaign’s program for the technical transformation of China’s agriculture that has not been criticized. Perhaps the reason for this is that much of the increase in yields achieved before 1975 can be attributed to the significant and rapid increase in the availability and use of chemical fertilizer. The rapid expansion of production and use of chemical fertilizer, therefore, continues to be a major objective of the new leadership.

As a whole, of course, the “rationalization” of the program for the technical transformation of China’s agriculture in the Advanced County Campaign adds up to a significant change in policy introduced by the new leadership. Moreover, these changes, to the extent they are made effective in being implemented, should improve the probability of China’s success in achieving agricultural modernization; not only by eliminating much that is wasteful or of limited use in increasing yields, but also by concentrating on those innovations which, in the historical experience of other countries, do achieve that objective.

An interest in the historical experiences of other countries relates to another major change in the new leadership’s search for a solution to China’s agricultural problems. In the past, the source of technical innovations and institutional and policy changes in agriculture was sought within the context of China’s own experience. In order to pursue the objectives of self-reliance and participation by the masses, most communes throughout rural China experimented with low-level technical, institutional, and policy innovations. Those innovations the leadership selected as successful on the basis of their results alone, without a careful statistical analysis of cause and effect or costs and benefits. They were adopted as models to be copied in nationwide campaigns. The new, post-Mao leadership not only recognizes that innovations and policies that work in one region of China may not be appropriate to dissimilar environments found
throughout the rest of the country, but they also stress the need to learn the truth from facts by means of statistical analyses which ascertain if the results of an innovation are indeed what they are claimed to be and if they are worth the costs. Moreover, the experiences of those countries that have achieved successful agricultural modernization and high yields are being studied as a source of possible institutional and policy changes in China.

This search abroad for new knowledge as a basis for policy making and the greater emphasis placed on empirical testing for policies that are implemented should increase favorable prospects for China's future agricultural development. The new leadership's modification of the priority given agriculture in the state's allocation of investment funds should be of more direct benefit. Following the agricultural crisis at the end of the 1950s, the Central Committee of the Communist Party adopted a fundamental change in development priorities in August, 1962, recognizing that China's agricultural problems would not be overcome quickly or by means of institutional reorganization and greater labor inputs alone. Instead of agriculture receiving a relatively low priority compared to heavy and light industry as in the 1950s, henceforth agriculture was to be treated as the "foundation" of China's economy and economic development strategy. As a result of that decision, investments in agriculture and in industries producing inputs for agriculture were increased. Faced with those same agricultural problems almost two decades later, the Chinese now claim that the earlier shift in priorities was not enough. Thus, investment in agriculture was increased from 10.7% to 14% of the state's capital construction investment in the 1979 state budget, and it is claimed that the government will increase the agricultural share even more in the future (FBIS, 3 July 1979). In addition, in the process of the current readjustment of the production and investment plans for the industrial sector, those industries producing goods for use in the agricultural sector undoubtedly are to be given an even higher priority than in the past.

Economic, Social, and Political Problems

Compared with China's "rationalization" of changes in emphasis and priorities in its program for the technical transformation of its agriculture, the change in the incentive mechanism to achieve the desired results represents a rather sharp break with the past. In many campaigns, the cadres at the county and commune level were exhorted to mobilize the peasants to undertake the innovations described above. The whole thrust of the new agricultural policies, however, is an explicit rejection of this approach. Quite simply, the institutional and incentive structure being created in agriculture by the new, post-Mao leadership is for the purpose of motivating the individual peasant—or the low-level unit of production of which he is a member—to achieve high and stable yields because of the direct material benefits to himself. County and commune level cadres are to provide the necessary guidance and control, while the leaders of the Party will provide policy guidelines; but those leaders are relying heavily on the peasants themselves to get the job done.

In decision-making, production, and income distribution, the post-Mao leadership has put great emphasis on making real the promise of the new Constitution that the basic unit in agriculture will be the team. The commune and brigade level administrations remain important for administrative and large-scale investment and health, education, and welfare purposes, but the team has gained considerably greater freedom to determine how it will utilize the resources at its disposal for achieving the modernization of China's agriculture. To correct for problems that are said to have been common in the past, the ability of the team to elect its own team leader is to be restored and the resources of the team are not to be requisitioned by higher level authorities without "fair" compensation.

As for the distribution of income, the new, post-Mao leadership has devoted considerable attention to reinterpreting Marx to show that individual material incentives directly related to the quantity and quality of work done by the individual and income differences based on skill and effort differentials are consistent with the laws of economics in a socialist system. As in the past, the peasant's income from work done in the collective sector is based on the work points earned for that work, the value of the work point determined on the basis of the production of the collective unit as a whole. Nonetheless, work points are to be task specific and not awarded on the basis of time periods or on the political merits of the individual.
Although approximately 80% of the commune's farm land is still included within the state plan, production teams and individual households are free to determine their income earning activities in subsidiary activities. To encourage their use of these opportunities to increase production of commodities that meet the needs of both the state sector and consumers, the leadership also has reinterpreted Marx to show that maximizing incomes is a desirable objective in a socialist economy and does not represent a restoration of capitalism. Furthermore, considerable encouragement is being given to specialization in these group and individual sideline activities. The new leadership also has tried to remove the ideological stigma attached to market activities, and rural and urban markets for these subsidiary products have grown rapidly over the past year. After its initial attempt to control transactions and prices in these markets, the government removed controls on most of the commodities traded on these markets because the administrative burden proved to be too great.

The most important agricultural products, of course, remain within the state plan and are sold to the state at fixed prices. Nonetheless, to provide greater material incentives for securing increased production and state procurements of these products, a significant price increase for state procurements of agricultural products was introduced in the summer of 1979. In addition, a much greater increase in price is paid for above-quota deliveries. The national average price increase for procurements of grain was 20%, 25% for oils and fats, 15% for cotton, and 26% for pigs. The average price increase for above-quota deliveries was 50% for grain and oils and fats and 30% for cotton (FBIS, 25 Oct. 1979). Finally, provincial and lower level authorities have been given the authority to reduce taxes to lighten any existing “excessive” or counter-productive tax burdens in the areas under their jurisdiction.

This summary statement of the producer-incentive policy changes introduced by the new, post-Mao leadership should be sufficient to indicate the extent to which the emphasis has been shifted from the county- and commune-level cadres to the peasants themselves as the instruments for achieving the modernization of China's agriculture. Equally important, these new policies also indicate the extent to which the new leadership believes that these price and income-earning incentives will achieve the desired results.

Future Problems and Prospects

To a Western trained economist, many of the above institutional and policy changes in China's agricultural program would appear to improve greatly the chances of achieving higher yields. Yet, it is not too difficult to think of problems the Chinese will encounter as changes in policy are implemented. Despite these new policies and even though the technical aspects of the advanced county campaign have been rationalized, the attempts to develop new seeds, increase irrigated area, increase the use of chemical fertilizer, and continue the electrification and mechanization of agricultural production will not be easy tasks to accomplish. These problems in the technical aspects of the modernization of China's agriculture, however, have been analyzed extensively in the published literature. Even given the serious nature of the inherited characteristics of China's fundamental agricultural problem, however, I believe that it is the nontechnical of economic, social, and political aspects of the new agricultural policies that will be the most important determinant of the long-run success of the current program to modernize China's agriculture.

For example, the new leadership claims the encouragement of low-level decision making and initiative, material incentives, and markets is consistent with the economic laws of socialism and do not necessarily represent a capitalist restoration. Nonetheless, Chinese press reports already have attacked those who have taken advantage of the new policies to decentralize the basic unit of production below the level of the production team; who have taken advantage of the encouragement to engage in subsidiary and income-earning activities, which threaten growth in the collective sector activities within the plan; and who have taken advantage of the encouragement to participate in market activities in order to engage in exploitation and speculation. Thus, in its search for greater efficiency and higher

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4 During their visit to China in Oct. 1979, the delegation of American economists was told by provincial and commune officials that 80% of the land in the commune was included in the state plan that was sent down to the communes. The targets in this plan included acreage to be planted in various crops, yields, and state procurements.
yields, the new leadership must continually be on guard that new policies do not erode the basic principles of socialism and eventually lead to a capitalist restoration in the countryside. In other words, the new leadership easily can find itself throwing the "clean baby out with the dirty bathwater."

Even assuming that the peasants' behavior and motives remain within the bounds of socialist values, however, the new policies will have consequences which will put severe strains on the objectives of China's version of socialism. After three decades of advocating greater equality in the regional or sectoral distribution of income, the existing inequalities in the standard of living within rural China and between the rural and urban areas are both obvious and considerable. What is important is that the major thrust of the new agricultural policies—decentralization of decision making, productivity related material incentives, specialization, and a greater role for income-earning activities in the market—will tend to produce an even greater inequality of income. Lardy's study of the Chinese fiscal system shows how the central government's control of the budget process has been used in the past to redistribute some revenues from the richer to the poorer provinces so as to achieve a modest closing of the gap between relative levels of regional incomes. On the other hand, current experiments in the fiscal system, again for the purpose of creating material incentives to encourage local initiative, call for an increase in the share of locally collected revenue to be retained and spent at the local level.

As for the attempt to reallocate resources by means of physical allocations within the plan, current readjustment of the plan undoubtedly will give greater priority to agriculture (rural areas) and less to industry (urban areas). Yet, the material incentive mechanisms being implemented in both the rural and urban sectors and the increase in the role of markets for the provision of commodities to convert these money incomes into real consumption presents a challenge to the planners by reducing, to some extent at least, their control over the sectoral and regional allocation of resources. Thus, a more equitable distribution of income could well be one of the victims of "putting economics in command" for solving China's agricultural problem.

Even when the new incentive system led to a significant adjustment in the urban-rural inequalities by means of a significant increase in the prices paid for agricultural products delivered to the state, urban industrial workers were promised this price increase would not be passed on to consumers. However, because of losses suffered from buying agricultural products at prices above the retail price, the state raised retail prices. Yet, the decline in real income for the urban industrial worker would not only create considerable urban discontent, but also would threaten the hoped-for increases in productivity from the wage increases that had been granted to industrial workers. In the end, the industrial worker will receive both his wage increases and a 60 yuan subsidy a year to offset the increase in retail prices for agricultural products. However, the average peasant, who earns an annual income of less than 100 yuan in many provinces of China, will receive an annual increase in income of approximately 8 yuan because of the increase in the price paid by the state for agricultural products. This explains why, during my recent visit to China, an agricultural official in Shensi answered my question as to what single change in agricultural policy was needed most for securing an increase in agricultural production by immediately replying, "another increase in purchase prices."

Although the widening of the gap between the rural and urban standards of living represents a direct rejection of a principal theme of Maoism, I believe the growing regional inequalities within the rural sector itself as a result of the new agricultural policies may present the Chinese leadership with an even greater problem. In some areas of rural China the peasants' standard of living is relatively high, even higher than that of an average industrial worker, while in many areas the peasants are poor. Mao, of course, was not the champion of all the Chinese peasants. Rather, his appeal was to China's poor and the agricultural policies he advocated were designed to improve their relative standard of living. This,
I believe, was the crux of the "two-line struggle" of the past three decades; to benefit the poor or to benefit the most productive. In short, I believe the policies of the new, post-Mao leadership for the modernization of China's agriculture, which obviously benefit the most productive, are seriously challenging the objectives of Mao's socialist revolution. That challenge, I believe, is the greatest problem faced by the current campaign for the modernization of China's agriculture.

References


