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Policy and Institutional Change for Agriculture in China: Production, Consumption and Trade Implications

INTRODUCTION

China's agricultural policy changes have attracted worldwide attention in recent years. During the first half of the 1980s, fundamental reforms were introduced which turned a rigid, inefficient, collective-based production system into one based on farmers' households and brought unprecedented production growth. In just a few years, the face of China's agriculture changed completely and much was accomplished. One of the greatest symbolic achievements of the reform policy was that for the first time in New China's history a surplus supply of agricultural products was achieved by the mid-1980s. At the same time, farming income and living conditions improved remarkably. As the world witnessed this agricultural transformation, many were interested in observing and analysing changes in China's agriculture, mainly in search of success stories and experiences for other planned economies and developing countries, but not because these changes had any significant direct implications for the world agricultural market. The focus of the interest was China's domestic production and policy, but not external trade policy.

More recently, China has attracted attention and concern for a different reason. The issue relates to the actual and potential future impact of China's agricultural development on the world food market. As a direct result of the reform and opening-up policy, along with the strengthening of overall economic development, China's agriculture has increasingly been integrated into the world market. The fact that China has grown to a position, physically and financially, to export or import large quantities of agricultural products has been explicitly shown in the grain trade in recent years. China registered a net grain export of 8 million tonnes in 1993 and then imported a net amount of more than 18 million tonnes in 1995. Though there is still much controversy over the question of who will feed China, there is no longer much doubt that the country has become a very influential player in world agricultural markets.

Putting China into the context of an increasingly integrated world, this paper first provides an overview of the recent institutional and policy changes affecting agriculture. The reasons behind these changes and their impacts on the domestic market and implications in the world market are discussed. Finally,

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the possible future trends of agricultural development and policy reform are considered.

DOMESTIC POLICY: DECENTRALIZATION AND REGIONALIZATION

Market liberalization and regionalization characterized the agricultural policy changes in China during the past decade. The liberalization process had begun much earlier with non-grain products, including vegetables, fruits, aquatic and livestock products, rather than with grain. Markets for almost all of these products had been liberalized by the early 1990s. Even oilseeds, one of the three mostly regulated product groups (with grain and cotton), had been virtually released from the system of quota procurement owing to the sluggish market price. However, the marketing reform process for grain and cotton did not proceed at the same pace, though a departure from the old regulations had already occurred in the mid-1980s when a two-tier system was introduced. These two products, especially grain, are given particular attention in China's agricultural development and policy reform.

The marketing reform process accelerated during the early 1990s, especially from 1992, when China explicitly declared that a socialist market economy system was to be the ultimate goal of the economic reform. More market-oriented reform steps, which will be discussed in turn, have been taken since then.

The grain ration system

Grain ration prices were raised twice, in 1991 and 1992, each time by an average of 50 per cent. This was a very bold and significant step for further reforms in the following years. Its most important effect was that it broke up a fixed price system, under which the grain rationing price had been frozen for 25 years (Ke, 1995). It dispelled an emotional taboo that grain ration prices should not be lifted and removed the fear that any changes would cause social instability. The calm acceptance of the change by consumers encouraged policy makers to take the step of abolishing the whole grain-rationing coupon system, which was finally eliminated nationwide in early 1994 (Chen, 1995). As a result of the later price increases, some kinds of coupons were reintroduced in some big cities, but the system no longer has its previous significance and is used mostly to assist the lower-income group. Even the author did not expect such a painless advance when he gave his contributed paper presentation six years ago at the XXI Conference of the IAAE (Ke, 1992).

Extension of land tenure

The Household Responsibility System is the most important reform element and has a symbolic meaning. Initiated at the end of the 1970s, and continuing

to the early 1980s, it involved the abolition of the commune system and the contracting of publicly owned land to individual farmers. This greatly strengthened their incentives to increase production and allowed more efficient use of the land resource. Agricultural output, across all products, grew rapidly. However, owing to the short contract term, which was originally set at 15 years, and distrust about the stability of the reform policy, farmers tended to pursue short-term production gains at the potential cost of long-term productiveness. Since the original land tenure arrangement was approaching expiry in the mid-1990s, the Chinese government decided in 1994 to address the problem by extending the contract system for another 30 years. This applies to crop and pasture land, and also includes 'wasteland', especially barren hills (MOA, 1996). A tenure term of 50 years, or even longer, is allowed. In some regions, where similar practices were initiated several years ago, significant results have been achieved and young trees are growing on once barren slopes. The contract system for wasteland is of special significance in the ecologically weak regions, such as the Loess Plateau and the southwestern mountainous provinces. The policy is welcomed by farmers and their confidence in the long-term stability of the Household Responsibility System and reform policy is strengthened.

Marketing reform

Though the surprising price increase which occurred in late 1993 and 1994 disturbed and impeded the marketing reform plan for the remaining state-controlled products, including grain and cotton, other changes were made. In the first place, the state procurement prices increased substantially in line with the market price changes. For grain and cotton, this is illustrated in Table 1. As a result, the gap between the state set quota procurement price and the market price for grain has narrowed substantially. By early 1997, there was actually no significant gap between the two prices for wheat and corn, with the quota price for the latter being marginally higher. In major producing areas, such as in the northeastern province of Jilin, the market price for corn has fallen substantially below the quota price.

Generally speaking, the adjustment of the quota price is passive, usually following the trend in the free market. Nevertheless, the increase has been important, for two reasons. First, it has helped ease the difficulties of the procurement system and reduce the complaints of farmers about the effects of the quota system, thus contributing to the stability of rural society (Du, 1996). Second, though the subject provokes heated debate between academics, higher quota prices do appear to provide additional incentives for grain production.

Since the mid-1980s, open market trading of grain has been allowed after fulfilment of the state procurement quota measured on a county basis. However, the state grain marketing agencies have continued to maintain a dominant market share of 90 million tonnes in the total purchase, or about 35 per cent of production (MIT, 1995). Half of it is quota procurement and the remainder consists of 'negotiated purchasing', in effect purchase at the local prevailing market price. The amount entering the market through other channels is around 30–40 million tonnes, mostly for local feed and food-processing sectors, the

TABLE 1 *Grain and cotton prices in China (Yuan/tonne)*

	Wheat		Corn		Cotton
	Quota	Market	Quota	Market	
1985	430	466	310	370	3 400
1986	440	517	320	450	3 600
1987	440	576	330	500	3 800
1988	470	705	340	570	4 800
1989	510	979	370	780	6 100
1990	510	896	380	690	6 300
1991	510	795	380	600	6 200
1992	590	776	420	630	6 000
1993	660	810	460	730	6 600
1994	890	1 140	690	1 010	10 600
1995	1 080	1 690	860	1 580	14 000
1996	1 460	1 740	1 220	1 490	14 000
1997*	1 470	1 630	1 230	1 170	14 000

Note: * First quarter.

Sources: Ministry of Agriculture, China Agricultural Development report 1996; Information Centre of the Ministry of Agriculture, unpublished report.

stress being on the predominantly local nature of trade. Owing to various constraints, most traders and institutions are not in a position to undertake interregional, especially interprovincial, grain marketing. The problems lie in storage capacities, transport for interprovincial movement in particular, and a marked lack of finance. As a consequence, the subsidized state grain marketing agencies take advantage of their monopoly position to make large profits in interprovincial grain trade, which causes an unreasonable price disparity between surplus and deficit provinces. For example, in July 1996, the market price for corn in the northeast and north was about 1200yuan per tonne, while in the south and the southwest it was 1800yuan. The regional disparity is more than the necessary transport cost, which is about 150yuan per tonne by rail from the northeast to the southwest provinces, and about 200yuan per tonne by sea from the northeast to the southern areas of Guangdong and Fujian. This lack of market integration within China has significant implications for the internationalization of agricultural markets, since the domestic price spread is markedly larger than the price gap between the domestic market and the world market.

As a result of these problems, a new policy measure has very recently been suggested and accepted by the administration. Five sectors are allowed to enter the interprovincial grain marketing and are eligible for preferential treatment in transport arrangements and subsidized loans. These five are the feed, food processing, brewery and pharmaceutical industries and the state land reclama-

tion sector. There are still many issues relating to policy implementation which have to be settled, but the most important implication of the change is that it signals the disintegration of the virtual monopoly of state grain marketing agencies in interregional trade. Thus it paves the way for further marketing reforms.

The Governor Responsibility System

The 'Governor Responsibility System', introduced in 1995, gives the provincial leadership final responsibility for securing food, especially grain, in their area. This policy is intended to exert more pressure on the provincial leaders to pay greater attention to the development of agriculture and food production. The policy has already had some positive results, as investment in agriculture has been strengthened and the decline in areas sown to grain, especially in coastal locations, has been reversed. But it has also caused some adverse effects, since regional protectionism also tends to rise (Tang, 1995). Overemphasis on self-sufficiency in grain within each province impedes efficient resource allocation. It also worsens the problem of overreporting of production. For example, reported meat production figures show an annual growth rate of 13 per cent for the first half of the 1990s. The annual growth rate of beef for the same period is even more extraordinary, as high as 27 per cent, with a simultaneous inventory growth rate of 5 per cent (SSB, 1996), which is technically impossible. The overreporting of cattle numbers is as high as 15 million head (Ke, 1997). Furthermore, the system worsens the problem of market segmentation. Every province strives for internal market stabilization, often at the expense of other provinces. During a time of short supply, major production provinces often prohibit outflow of grain. An example is the case of corn in 1995, when Jilin Province, the most important producer in China, banned exports to other provinces and offered rewards to anyone prepared to report illegal trade.

Evaluation of the policy changes

The reform measures in the first half of 1990s are characterized by decentralization of policy making. More and more power was granted to local governments at the provincial and municipal levels. Provincial governments were granted the authority to decide when to eliminate the grain rationing system, how much price premium could be added to the centrally set quota price or support price, how much buffer stock of grain should be kept and how to time its release. The most important reason for decentralization is that the central government is not able to bear sole financial responsibility for desired policy actions. Owing to uneven economic development between the south and the north, and between the east and the west, there are noticeable regional differences in local governmental revenue and hence in actual policy practice. For example, while the state quota procurement is still practised in all the other provinces, it is virtually eliminated in Guangdong. A further example is that the quota procurement

price for corn in Jiangsu was 40 per cent higher than that in Liaoning in 1995, owing to the difference in the local price premium.

The decentralization in policy making inevitably leads to regional market fragmentation, as in the case of corn, which was mentioned earlier. The unfamiliarity of policy makers with the functioning of the market, the conservative attitude towards the market mechanism in some cases, and inevitable complications and constraints in the transitional process are the three major reasons for the deficiencies in the domestic policy changes. The government did make a major effort to redefine its functions to conform to the market by shifting from direct control to indirect market support and stabilization, but the well-intended policy reforms were not properly designed and did not function well.

An example is the so-called 'Special Stock' system, established in 1990 to stabilize the grain market by functioning as a buffer stock mechanism. However, owing to underfunding of the programme, the government just sets the stock level and provides the necessary subsidies to the state marketing agencies to cover loan and storage costs, now standing at around 0.12yuan/kg (Wang, 1996). The local state marketing agencies have to buy the required amount of grain and put it into storage as 'Special Stock', while the government decides when and at what price to release the stocks. Such a system does not provide adequate incentives for enterprises to maintain 'Special Stocks'. In practice, it is rather difficult to distinguish physically between the grain in the 'Special Stock' and other grain held by a local enterprise, for both types belong to the enterprise, making it very difficult to operate effective control (Tang, 1996). Local state grain marketing agencies may just 'report' but not 'keep' the stocks, and there is no way to know what the exact position is, since commercial stocks can easily be taken to be 'Special Stocks'.

To make matters worse, the system is practised at two administrative levels, by central and by provincial governments. Each sets separate stock targets for the same local state grain marketing agencies. Hence it is possible for the local agency to report the same commercial stock twice, separately, to central and provincial governments as the amount of 'Special Stock', leading to the aggregated national total being greatly overreported. In fact, no-one knows for certain what the real level is. During the grain price increase of 1994, local state grain marketing agencies were ordered to release grain, though it was hard to know how much was actually marketed. The failure of the system was believed to be one of the major reasons why the price increase of 1994 was not brought under control in an effective and timely way (MOA, 1995).

An inconsistency between policy making and implementation is another problem, which is well illustrated with another recent example. In principle, the government-determined support price for grain is meant to protect producers (it is the same as the quota price) but the policy is seldom implemented. Since the end of 1996, farmers in the northeastern provinces have not been able to market corn from the bumper harvest and have been forced to stockpile on their own small premises, while many state marketing agencies have had empty storehouses. Local state grain marketing agencies in producing areas have been instructed to buy corn at the quota price, which is 1.00yuan/kg, while the market price has fallen to 0.80yuan/kg. Though the government provides subsidized loans to the marketing agencies, these are not sufficient

to cover the market risk, and the agencies have chosen to wait rather than to buy. As a result, the free market corn price dropped by half within a few months.

The failure to prevent grain market instability in recent years has had significant impacts on overall agricultural and general economic development. It is believed that the grain price increase caused the soaring food prices and general inflation of 1994 and 1995. Consequently, in recognition of the deficiencies and constraints of a closed economy, policy makers in China have increasingly recognized the importance of using the world market to balance the domestic market.

TRADE POLICY: DESUBSIDIZATION AND LIBERALIZATION

Agricultural trade in China used to be perceived as an important means to earn hard currency to support industrial development. This policy goal has changed gradually because overall trade is growing very rapidly, resulting in a continued decline in the share of food and agriculture within the total. As shown in Table 2, food exports increased from US$ 3 billion in 1980 to US$ 10 billion in 1995, while food imports fluctuated at around US$ 2–4 billion, but with a peak of over US$ 6 billion in 1995. The food share in total exports declined substantially from 16.5 per cent to 7 per cent during the 15 years. The import share fell more dramatically. Given these features, plus the fact that stockpiling of foreign exchange reserves had taken them to over US$ 100 billion by the end of 1996, the major goals of agricultural trade policy are shifting more towards profit making and domestic market stabilization.

It can also be seen from Table 2 that China has enjoyed a food trade surplus since the mid-1980s, even in 1995, when there were greatly increased grain imports and little export. It seems that China is not only feeding China itself, but also some others in the world! Major export items other than grains include live pigs and poultry, pork and chicken, vegetables, fruits and aquatic products. Major import commodities include grain, and particularly wheat, chicken wings, sugar, edible oil and cotton.

Policy changes in agricultural trade have taken place against a background of general trade policy reforms. The elimination of export subsidies and the merging of the two-tier foreign exchange system are among the most important measures in recent years. These changes have provided the preliminary conditions paving the way towards a more market-oriented trade policy. In addition, import tariffs have been reduced for major agriculture-related products. For cotton and fertilizer, the range is no higher than 3 per cent to 8 per cent, while grains (wheat, corn and rice) and breeding animals are exempted from import charges. For animal products the tariffs have been reduced from over 50 per cent to around 15 per cent since 1996. As in the domestic market, trade of agricultural products, other than grain, is largely released from central control. But grain importing and exporting is still under strict central government control owing to the high significance attached to it. Though reform has been undertaken, the current situation is still being widely criticized in China. Recognizable shortcomings of the system include the very complicated and

TABLE 2 *Food trade development in China*

	Export			Import		
	Total (US$ billion)	Food (US$ billion)	Food share (%)	Total (US$ billion)	Food (US$ billion)	Food share (%)
1980	18.12	2.99	16.5	20.02	2.93	14.6
1981	22.01	2.92	13.3	20.02	3.62	16.4
1982	22.32	2.91	13.0	19.29	4.20	21.8
1983	22.23	2.85	12.8	21.39	3.12	14.6
1984	26.14	3.23	12.4	27.41	2.33	8.5
1985	27.35	3.80	13.9	42.25	1.55	3.7
1986	30.94	4.45	14.4	42.91	1.63	3.8
1987	39.44	4.78	12.1	43.21	2.44	5.7
1988	47.52	5.89	12.4	55.27	3.48	6.3
1989	52.54	6.15	11.7	59.14	4.19	7.1
1990	62.09	6.61	10.6	53.35	3.34	6.3
1991	71.84	7.23	10.1	63.79	2.80	4.4
1992	84.94	8.31	9.8	80.59	3.15	3.9
1993	91.74	8.40	9.2	103.96	2.21	2.1
1994	121.01	10.02	8.3	115.61	3.14	2.7
1995	148.77	9.95	6.7	132.08	6.13	4.6
1996	151.07	10.23	6.8	138.84	5.67	4.1

Source: SSB, *Statistical Yearbook of China*, various years.

slow decision-making process, low efficiency of institutional arrangements and irrational marketing links (Tang, 1996).

A national grain trade plan is usually made at the beginning of the year, based on estimation and judgment of the domestic and world market situation and the demand of individual provinces. Several ministries are involved in the decision-making process, including the Ministry of Internal Trade, the Ministry of Foreign Trade and Economic Cooperation, the State Planning Commission and, to a much lesser extent, the Ministry of Agriculture. The final decision has to be approved by the top government leaders. The set plan, with its import and export quotas, is then disaggregated to individual provinces. This rigid system runs counter to the flexibility required in an ever-changing domestic and world market. A recent example can be drawn from the events of the early summer of 1996, when there was a price surge in the world corn market but some decline in the domestic market. Price relationships became favourable for Northeast China to export corn. It then took two months before all involved ministries and agencies reached a consensus to change the export plan, by which time the world market price had already fallen again to far below the domestic market price. Another problem is the separation of the domestic marketing agencies from the trade agencies. International trade in grain is arranged by specialized state trade agencies, which do not undertake domestic trade. They obtain grain from domestic state marketing agencies for export, and deliver any imported grain to the domestic marketing agencies for internal sale. The business rela-

tionship is centrally regulated. This arrangement places a wedge between the domestic and world market, removing any possibility of beneficial interactions.

To make the situation worse, a substantial portion of the grain provided to the state trade companies was 'quota grain', purchased from farmers at the low quota price. As a result, the trading companies continued exporting even when the domestic price was already well above the world price. There was a similar episode with corn in 1994, when China exported nearly 9 million tonnes despite the world price being less than the average domestic market price. In the second half of 1994, corn was priced at around US$85/tonne in the world market, US$120/tonne in China's domestic market and US$65/tonne for quota procurement.

Owing to this inconsistency between domestic and foreign trade policy, there has been considerable instability in the trade of some major agricultural commodities. As indicated in Table 3, clear trends in the trade situation for grain, edible oil and sugar are hard to find over the past decade. Some fluctuations in trade were caused by variability in domestic production, but there were years in which the imperfections in the domestic and foreign trade system were responsible for swings in trade, especially for grain and edible oils. For example, it could be argued that the direction of trade was such as to exacerbate supply variability due to fluctuations in production, rather than to reduce it. This appears to have occurred in 1994, when grain exports remained high despite the decline in production, and in 1995, when imports surged despite the production recovery. Many suggestions have been made for overcoming such difficulties, including merging the state trade agencies and domestic marketing agencies. However, this seems unlikely to happen without the related ministries being merged.

FOOD SECURITY OUTLOOK AND FUTURE POLICY PERSPECTIVES

Food security is a long-standing concern for Chinese policy makers. Through various adjustments, including reforms in the production management system, the phasing out of state marketing controls and other measures, farmers have more incentive to increase output. Great advances have, in fact, been made in the past two decades. The Chinese people have never before faced such an abundant and diversified food market, spread nationwide.

For the future, however, there are still great challenges for the further development of the food and agricultural sector. Factors which pose pressing challenges include continued population growth, rising income and aspirations, plus resource depletion and degradation. The price increase for agricultural products, with the associated high inflation since the end of 1993, has dispelled the overoptimistic atmosphere characteristic of the easier times of only a few years earlier. Great concern about future domestic food supply potential has re-emerged among agricultural administrators and the general public, and there has been much heated discussion about a number of gloomy predictions for the first quarter of the next century.

TABLE 3 *Instability of trade in China (million tonnes)*

	Grain			Edible oil			Sugar		
	Export	Import	Production	Export	Import	Production	Export	Import	Production
1985	9.32	6.00	379.1	0.16	0.03	4.01	0.18	1.91	4.51
1986	9.42	7.73	391.5	0.17	0.20	4.41	0.27	1.18	5.25
1987	7.37	16.28	403.0	0.06	0.51	4.78	0.45	1.83	5.06
1988	7.17	15.33	394.1	0.03	0.21	4.80	0.25	3.71	4.61
1989	6.56	16.58	407.6	0.06	1.06	4.96	0.43	1.58	5.01
1990	5.83	13.72	446.2	0.14	1.12	5.44	0.57	1.13	5.82
1991	10.86	13.45	435.3	0.10	0.61	6.44	0.34	1.01	6.40
1992	13.64	11.75	442.7	0.07	0.42	6.61	1.67	1.10	8.29
1993	15.35	7.52	456.5	0.14	0.24	9.65	1.85	0.45	7.71
1994	13.46	9.20	445.1	0.27	1.63	7.23	0.95	1.55	5.92
1995	2.14	20.81	466.6	0.50	2.13	11.45	0.48	2.95	5.59
1996	1.24	10.83	490.0	0.47	2.64		0.66	1.25	

Source: SSB, *State Statistical Yearbook of China*, various years.

Most of these have concentrated on the grain sector, since it is of such decisive concern in China. Projections of demand, production potential and import needs in the coming decades do, however, vary considerably because of differences in assumptions, data and estimation methods (Fan *et al.*, 1996). For example, the projected grain import demand for 2030 ranges from the pessimistic view of over 200 million tonnes to the far more optimistic figure of around 40 million tonnes. Nevertheless, consensus does exist on the following: (1) demand will increase continuously over the next three decades; (2) supply cannot keep pace with demand, and thus (3) there will be an ever-rising import demand.

In response to such worries, the government issued a white paper on 'Grain Issues in China' in October 1996, just before the World Food Summit. The seven-part document provided an overview of the progress in food supply during the past four decades and then estimated future demand and production growth potential for the coming three decades. Strategies for achieving the goal of self-sufficiency included increasing investment levels in agriculture, enhancing application of advanced technology, promoting more efficient and sustainable utilization of natural resources and furthering reforms to provide a better institutional and policy environment. Generally speaking, the authoritative views expressed in the document are optimistic. It foresees a moderate growth in grain demand, estimating that 400kg of grain per capita (in the Chinese definition including paddy rice, tubers and beans) will be sufficient to support food demand by 2030. This is based on the assumptions that the Chinese diet, with its dependence on plant products for major energy and nourishment, will not change significantly and that feed/livestock conversion ratios will increase and hence reduce feedgrain needs. The white paper also assumes that the elimination of subsidies in housing and medical care will have an income effect which will reduce food demand. On the supply side, potential is seen first in further yield improvement. The demand of 400kg/per capita can be met if yields increase annually at 1 per cent from 1996 to 2010 and at 0.7 per cent in the period 2011–30. Both of the assumed rates are substantially lower than the average rate of over 3 per cent for the past four decades. Farmland protection, raising the cropping index and reclaiming 0.3 million hectares of land (from a total of reclaimable area which is as large as 14.7 million hectares) will be able to stop the decline in farmed area and stabilize the area sown to grain. Further potential exists to increase productivity in grassland, fishery cultivation and forestry. Reduction by half in post-harvest grain loss, estimated at over 10 per cent at present, will also save 20 million tonnes.

The white paper also recognizes the great challenges ahead. The first is the general resource constraint, caused by a low per capita availability of land and water resources which requires alleviation through increasing agricultural inputs and investment. Infrastructure remains underdeveloped, while agriculture is almost defenceless against unfavourable changes in natural conditions. Small farmers (around half a hectare per farm is the national average) often make blind production and marketing decisions because of the lack of an efficient information system in the transition process from a planned economy to a market-oriented one, thus tending to exaggerate supply fluctuations. Finally,

the growth of industry will inevitably place the agricultural sector at a disadvantage in competing for all types of resources with other sectors of the economy.

A set of policies has been mapped out to combat the constraints to increasing production. The first is to increase agricultural investment to improve the condition of the land. Irrigation systems will be further expanded to raise the irrigated area from the current 49.3 million hectares to 53.3 million by 2000, 56.7 million by 2010 and 66.7 million by 2030. These are increases on the 52 per cent of the currently irrigated cropland area, to raise it to 56, 60 and 70 per cent, respectively. Efficiency in the use of water will also be improved as the irrigated land with water-saving technology will increase from the current 13 million hectares to over 40 million. The rate of effective utilization of rainwater will also improve, to reach 30 per cent. These will be some of the factors which will help to upgrade an existing 60 million hectares of land with low and medium levels of yield.

Ambitious plans are also being made to promote the supply of fertilizers, pesticides, agricultural plastics, farm machinery and rural electricity. By the year 2000, the share of agricultural investment in the total infrastructure investment of the central government will be raised from the current 17 per cent to 20 per cent. The growth of agriculture expenditure should be higher than that of the government revenue, and the growth of agricultural loans should be more than the average growth rate of other loans. Extension of existing and new technologies is seen as another key agricultural policy. Efforts will be made to improve the breeding, extension and marketing of new and high-yield varieties. Seed coating will be spread to cover 50 per cent of the total marketed seeds by the year 2000. Major new technologies will include dry-breeding and cast-planting of paddy rice, plastic coverage, precise seeding, integrated pesticide management, appropriate utilization of fertilizer, water-saving irrigation and dryland farming. Professional training of farmers will be pursued through reform in the agricultural education system, and the research system will be enhanced to enable better technical support to be provided. The strategies to address the food problem will extend beyond the grain sector to include animal husbandry, horticulture and aquaculture. The government plans to improve the productivity of grassland, to increase industrial feed production, which only processes one-fourth of the feedgrain in China, and to tap the potential of non-conventional feed, such as straw treated with ammonia. Aquaculture, using sea water close to the coast and fresh water in inland areas, is seen as the major way to increase fishery production. Reforestation programmes will be further implemented to curb the problem of soil and water erosion, to improve biological and environmental protection and to enlarge fruit and nut harvests.

Further institutional changes and marketing reforms have been announced. First, the Household Responsibility System will remain as a long-term institutional arrangement. For existing farmers, as indicated above, the right to use contracted land will be extended for an additional 30 years after the original 15-year contract term expires. Furthermore, rights of use can be inherited or transferred to others against payment, provided that the land remains in farming. Second, further grain marketing reform measures will be taken. The regulated pricing system will give way to pricing determined by market forces.

Elimination of the two-tier pricing system is currently under discussion. Inter-provincial grain trading, which is currently heavily regulated, will be replaced by free trade between surplus and deficit regions according to their need. The government will use indirect means to achieve a market stabilization goal, while the state grain marketing agencies will be further reformed to separate the functions of government and business. Development of intermediate marketing organizations, to improve the links between small farmers and the market, will be encouraged. Third, waste in food consumption will be reduced. Alcohol production, which at present consumes over 20 million tonnes of grain a year, will be reduced and replaced by more soft drinks and fruit wines. Fourth, the current market stabilization system will be improved to increase food security against natural calamities.

China is determined to make every effort to rely on domestic resources in order to ensure basic long-term food security for the growing population. However, international cooperation and trade will not be ignored. Agricultural policy makers recognize the need to open up the domestic market to meet the requirements for entering the World Trade Organization, to become more integrated into the global market and to benefit from international cooperation (Wan, 1996). Even for its most important product, grain, China does not pursue a policy of complete self-sufficiency. For the first time, a target has been declared and set at 95 per cent (State Council, 1996). In normal years, holding net imports of grain to less than 5 per cent of domestic consumption will translate to a net import of 25 million tonnes currently and 32 million tonnes by 2030, when total domestic consumption is estimated at 640 million tonnes.

It is, however, possible that grain imports larger than the 5 per cent target in any individual year in the coming three decades will be allowed. Indeed, the most important implication of the self-sufficiency statement is perhaps not the figure itself, but the message that China is willing to keep its grain market open and might possibly adjust the policy goal. In a global environment of increasing international cooperation, with the improvement in mutual understanding and build-up of trust between China and other countries, there is increasing awareness of the benefits of trade for optimizing domestic resource use. The deepening of domestic market reform and further liberalization of agriculture are also important. Against such a background, the acceptable self-sufficiency rate for grain may be further lowered, perhaps to 90 per cent. Under a more reasonable trade policy, China will export labour-intensive products, such as vegetables and other horticultural items, and import additional land-intensive products such as grain. This is a point much stressed by Chinese and oversees scholars.

Nevertheless, there are two constraints which make it unlikely that China's grain imports will become very large. First, real income improvement will slow down as the trend of recent years continues. The reduction of subsidies for housing, transport, medical care, education and other social welfare provisions for the urban population will substantially offset the income growth effects on food consumption, slowing the consumption growth of livestock products in particular. The large rural population, on the other hand, faces increasing difficulty in raising income through expanding farm production. Long-standing

underemployment and unemployment in both urban and rural areas have become more and more critical and cast a shadow over the prospects for future improvement in incomes. In general, China, as a country, will have no financial problem in buying a large volume of grain from the world market, but the individual Chinese, especially the rural dwellers who make up the majority of the population, will not be able to afford a high level of expensive food consumption.

Transport capacity is a second constraint. This relates not only to harbour unloading capacity, but also to inland movement. For the vast inland and mountainous areas, limited capacity and very high transport costs currently hamper large-scale trade in food. In the next two to three decades, this situation cannot be completely changed. Hence it seems unlikely that China will import more than 10 per cent of her food or grain needs in the near and distant future.

CONCLUSIONS

To sum up, the agricultural policy changes in China during the past decade were characterized by market liberalization and regionalization. Markets for almost all non-grain products had been liberalized by the early 1990s. Even for grain, the most strictly regulated farm product, significant market reforms have been accomplished, though the reform process has not been very smooth.

Agricultural policy decision making and implementation has been substantially decentralized. This reduces the budget burden of the central government, but also leads to undesirable consequences such as regionalism and market fragmentation. The most difficult challenge ahead is to reform the state grain and cotton marketing sectors. The mixture of functions of government and business in those enterprises makes every step in the reform process complicated. Many state grain marketing enterprises will not be able to survive under free market competition, and the resulting losses from bankruptcy have to be borne by the government. This poses a dilemma for the government in making reform decisions.

The many inconsistencies arising from the transition process, coupled with market fluctuations, may weaken the determination of the policy makers towards further reforms. Bold market-liberating measures are usually taken in times of market surpluses. Policy makers are much more cautious and conservative during periods of supply shortages.

Food and agricultural sectors have become increasingly linked with the world market and China has become an influential force in world agricultural markets, as both an exporter and an importer. As a result, domestic market policy will have an increasingly significant impact on the world market. A more liberalized and integrated domestic market will provide a good foundation for promoting the internationalization process.

The goals of food and agricultural trade have shifted from earning hard currency to matters concerning food security and economic efficiency. Technically, China might be able to feed her increasing population. However, with improved international cooperation and greater emphasis on the principle of

comparative advantage, China can be fed better and more efficiently. More and more people involved in agricultural policy formulation have recognized this and it is the basic reason for being optimistic about the future of marketing policy reform through the coming years.

It is vital, therefore, to strengthen the understanding and confidence of policy makers in market mechanisms and to build up more reliance on major food partners for long-term and stable cooperation. China will have a sounder agricultural policy given better comprehension and trust of policy makers in market forces. She will open her door for food and agricultural trade much more widely so long as she feels that food security and national sovereignty are not threatened by world food powers. Both Chinese and overseas agricultural economists can make great contributions towards this goal.

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