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*Chapter 10:*  
**Quantitative Evaluation of Agricultural Policy  
Reforms in China: 1993-2005**

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**Chapter 10:****Quantitative Evaluation of Agricultural Policy  
Reforms in China: 1993-2005\******Introduction***

This chapter discusses agricultural policy developments in China in qualitative terms and provides a quantitative evaluation of policy reforms using the indicators of agricultural support developed by the Organization for Economic Cooperation and Development (OECD), including the Producer Support Estimate (PSE), Consumer Support Estimate (CSE), General Services Support Estimate (GSSE) and Total Support Estimate (TSE). The method employed is fully consistent with that applied to OECD members and other non-member countries, and hence provides a sound basis for international comparison. Appendices provide an overview of the OECD indicators of support and discuss specific methodological issues related to constructing measures of support for the Chinese agricultural sector.

***Background: Developments in the Agricultural Policy Framework***

A wide range of government reports, statements, and planning documents underline that the agricultural sector is viewed as very important for the Chinese economy in general and has a high profile in policy making. The agricultural policy framework has been evolving in line with China's gradual transition from a centrally planned economy towards a socialist market economy since 1978. While the principal economic objective of creating a market-based economy appears to have consistently underpinned agricultural policy trends, it is clear that the reform process has not been completely smooth – occasionally, reforms appear to have been set aside in order to allow measures dealing with unforeseen events to be implemented. Like all national governments, the Chinese leadership has a multi-faceted set of objectives and is faced with the task of developing policies to be applied in an uncertain future. China's policy-implementation process has been relatively flexible, in the sense that broadly-defined central government policies have been implemented in a variety of ways, according to the capacity and

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\* This paper has been prepared with statistical and research support from Ms. Florence Maclert from the same Directorate and draws heavily on OECD (2005; 2007). Background data and policy information were provided by Mr. Guoqiang Cheng, Deputy Director General in the Development Research Center of the State Council, Beijing, China, and by Mr. Xiande Li, professor in the Institute of Agricultural Economics, CAAS, Beijing, China.

needs of the sub-national government bodies responsible for policy implementation. The following three sections focus on the evolution of agricultural policy objectives in China during the period 1990-2005, on specific agricultural policy measures applied to achieve these objectives, and on major policy initiatives for the future.

### *Agricultural Policy Objectives and their Evolution*

In general, the reforms of agricultural policies and institutions were directed towards increasing the role of markets. These reforms were further stimulated by WTO accession negotiations started before 1990 and concluded at the end of 2001. However, changes in domestic circumstances and in world market conditions led to reprioritizing of measures in order to achieve the broad reform objectives. Moreover, further reforms to improve market institutions, such as enforceable contracts, transparent information, and open bargaining among several buyers and sellers, are still needed. Generally, the period 1990-2005 can be divided into two sub-stages in terms of major priorities and types of measures implemented.

**1990 to 1997:** In this period, the principal agricultural policy objective was to increase agricultural production, especially that of food grains, and to ensure food security. While the central government was responsible for food security, important responsibility was devolved to provincial governments, in particular within the Governor's Grain-Bag Responsibility System (GGBRS) introduced in 1995. Under the GGBRS, provincial governments were to ensure the availability of adequate supplies of food grains within provincial boundaries.

In line with the general economic policy initiative towards a market-oriented economy, this period was also characterized by substantial deregulation of agricultural marketing and a significant lessening of controls on the prices of agricultural products and on marketing channels. However, while affordable food and stable prices were a policy objective throughout this period, the objective became even more important in times of rising prices. For example, following the liberalization of price controls in the early-1990s, inflation and rising food prices in 1994 and 1995 resulted in a strengthening of government controls on prices and marketing channels, followed again by a more gradual easing of regulation as prices stabilized.

**1998 to 2005:** This period was characterized by the adoption of policies supporting rural income, representing a fundamental shift in the government's agricultural policy agenda. The new policy direction was clearly spelled out in the document issued in 1998 by the Central Committee of the Communist Party of China (CCCPC): "The decision of the CPC Central

Committee on several major issues in agriculture and rural work.” The decision firmly made the reduction of taxation of farmers and the improvement of their incomes as the guiding principles of governmental policy until 2010. Agriculture began to be supported with the aim of maintaining and improving the incomes of those dependent on farming. Food security remained an important policy objective, while policies addressing food safety achieved a higher profile in this period. As a result of growing urban affluence and relatively stable food prices, food marketing and price controls became less important. The competitiveness of China’s agricultural production became a higher priority, in particular since China’s WTO accession in December 2001.

Major floods in the southern parts of China in 1998 gave renewed impetus to agro-environmental policies. The floods highlighted land clearing and land usage practices which contributed to the severity of the floods, prompting the “grain for green” policy response (see below). At the same time, continuing pressure on the main northern river systems increased concerns over falling water tables and increasing desertification. These concerns underpin the continuation of the Comprehensive Agricultural Development Program which provides funding for soil and water conservation projects throughout China. Currently, improving farmers’ incomes and narrowing the urban–rural income gap are top priorities for the Chinese government, while food security, or food-grain self sufficiency, still remains a principal policy focus. High level policy documents, including the “No. 1 Documents” between 2004 and 2007, clearly outline these policy objectives, while proposing policy measures that include reduced taxation of farmers, direct subsidies to grain farmers, measures to maintain farm land in agricultural production, and measures to improve the adoption of technology in the agricultural sector.

### *Key Agricultural Policy Measures and their Evolution*

In accordance with the OECD approach, agricultural policy measures employed by the Chinese government between 1995 and 2005 can be divided into producer support measures, general services, and consumer support measures. In turn, producer support measures cover both domestic and trade policy measures. This section provides a short overview of these measures with a focus on those applied in the most recent years.

**Domestic Policy Measures:**

(i) State pricing: before 2004, state pricing accompanied by a state procurement system was in place for major agricultural commodities. Since 2004, centrally set state pricing only applies to tobacco, which remains under a state monopoly.

(ii) Minimum prices for grains: in May 2004, China allowed qualified non-state firms to buy and sell grains on the open market. Private firms which meet certain criteria were also permitted to engage in grain processing and storage activities. The government regulates the grain market through national grain stocks, state trading enterprises (STEs) for foreign trade transactions in grains, and minimum purchase prices. The minimum prices were first announced in 2004 for early indica rice and japonica rice. In 2005 the coverage was extended to include middle and late indica rice and again in 2006 to include wheat. Within the system, domestic prices for grains are allowed to fluctuate relatively freely and the government purchases for national stocks intensify when market prices fall below the minimum levels, as happened in the summer of 2006.

(iii) Input subsidies: charges for water, electricity, and transport tend to be lower for farmers, but the level of subsidy is difficult to assess, as the cost of provision is different across various users. To lower prices of fertilizers, fertilizer producers have been given access to lower priced inputs, such as electricity. In addition, export taxes, temporary exemptions from value added tax (VAT), and caps on sales prices are occasionally used to curb rises in fertilizer prices. Since 2002, farmers have been subsidized for the cost of purchasing improved quality soy seed. In 2004 and 2005, this scheme was extended to include subsidies for purchasing improved seed for production of wheat, corn, rice, and soybeans. The government also provides a small subsidy for the purchase of farm machinery.

(iv) Credit subsidies: until the end of the 1990s, preferential loans were provided mostly to state marketing organizations to fund the purchase and storage of key agricultural products. In the 2000s, most of these programs were discontinued with the exception of grains. However, in February 2006, the Agricultural Development Bank of China (ADBC), the so called “policy bank” implementing government programs, announced that commercial rates would also be applied to the grain marketing enterprises. Preferential rates are now applied for loans targeting rural population and poverty alleviation. In 2006, the rates were just above half the commercial rates.

(v) Direct payments: initiated as a trial in 2002, and implemented nationally since 2004. Farmers engaged in growing grains receive a direct budgetary financed subsidy based on the current area of land they sow to rice, wheat, or corn. The rates may vary across provinces, but on average they were at CNY 10 (USD 1.2) per *mu* (1/15 ha) in 2004 and since then increased to CNY 12-14 per *mu* in 2007. While politically popular, the role of these subsidies in supporting farm incomes is minor (Gale et al., 2005).

(vi) Payments for returning farmland to forests: also known as the “grain for green” program, commenced in 1999. Farmers cultivating ecologically vulnerable land received a cash subsidy and a grain allocation in kind for each *mu* they retired from agricultural production. Subsidized seedlings were also available for afforestation. In 2004, payments in kind were converted to cash equivalents. The period for which “retired” land is subsidized is set at 2 years for land returned to pasture, 5 years for land converted to “economic” forests, and 8 years for land converted to “ecological” forests.

(vii) Agricultural taxes: until 2004, farmers were required to pay agricultural taxes either in cash or in kind. In addition, they also paid various fees to local governments and collectives and provided “labor accumulation” for the construction of communal facilities. Agricultural tax reform was initiated as a trial in 2000 and was phased in across rural China beginning in 2004. In 2005, 28 provinces exempted farmers from agricultural taxes, and at the beginning of 2006 the government announced that the tax was totally eliminated.

#### **Trade Policy Measures:**

(i) Tariffs: the simple average import tariff for agro-food products fell from 45% in 1992 to 15% in 2005, remaining at that level under the agreed terms of China’s accession to the WTO.

(ii) VAT on imports: the rate for imports of agricultural goods is 13%, 4 percentage points below the rate generally applied to other products. Depending on the market situation, VAT exemptions have been applied sporadically to a wide range of agriculture-related imports, such as grains, seeds, breeding animals, fertilizers and pesticides, some feed components, and cotton. However, if there is a domestic oversupply of a given commodity, the VAT exemption on imports is removed (WTO, 2006).

(iii) Tariff rate quotas (TRQs): first introduced for major grain and oilseed commodities in 1996. Under the terms of China’s WTO accession, China can apply TRQs to wheat, maize, rice, soybean oil, palm oil, rape oil, sugar, wool, wool tops, cotton, and chemical fertilizers. At the

beginning of 2006 the government announced the elimination of the TRQ on vegetable oils, implementing tariff-only arrangements instead. China's TRQ system includes criteria for allocating the import quotas to STEs and non-STE.

(iv) State trading: dominating until the mid-1990s. Its role has been diminishing since then, but it is still important for exports and imports of key commodities, in particular those covered by TRQs. The continued use of state trading to import and export selected commodities allows the government to influence their domestic prices.

(v) Export subsidies: prior to becoming a member of the WTO, China provided export subsidies for maize and rice. In line with its WTO accession commitments, China is not allowed to apply export subsidies.

(vi) Export taxes: under its WTO accession agreements, China maintains the right to apply export taxes, but such taxes are not applied, with the exception of such commodities as raw hides and skins of goats and, occasionally, fertilizers.

(vii) VAT rebates on exports: all exporters are entitled to a VAT rebate at the time of exportation. Rebates vary across commodities and thus appear to have been used to manage exports of certain products, including agricultural products. With few exceptions, the rebate rates are lower than the VAT rates actually paid, mainly for budgetary reasons (WTO, 2006).

(viii) Export quotas: China imposes quotas that are both global (i.e., irrespective of destination) and destination-specific. In 2004, global export quotas applied to exports were subject to state and "designated" trading such as cotton, grains, silk, and tea. At the beginning of 2005, export quotas and licensing for silk and silk products were eliminated.

#### **General Services - Provided to the Agricultural Sector as a Whole:**

(i) Agricultural infrastructure: investment in agriculture-related projects is a major tool for the government to achieve development targets and is by far the largest component in the government's budgetary support for agriculture. The government has continued to accept primary responsibility for pollution control, land rehabilitation, transport and irrigation infrastructure maintenance, and development.

(ii) Research and development: government funding for this element of agricultural support is relatively small and tending to decrease.

(iii) Agricultural schools: government funding for agricultural schools is also a small expenditure item, but unlike research funding, agricultural school funding has been increasing.



(iv) Inspection services: while China has funded food inspection services throughout the period 1990–2005, in the latter part of that period, food safety became a higher priority concern of policymakers. Not only has expenditure on inspection services increased, China has also undertaken significant work to upgrade food safety standards.

(v) Public stockholding: China mainly engages in public stockholding of food grains. In line with China's food security policies, the government at national and sub-national levels is active in maintaining buffer stocks of food grains.

#### **Consumer Support Measures:**

(i) Food price subsidies: since 1992, China has paid subsidies to urban consumers to offset price increases of staple food products. Although some of the subsidies are still paid, there has been a significant decline in the level of budgetary expenditure on them.

#### ***Major Policy Initiatives for the Future***

**Rural Development Policies:** The strong growth of the Chinese economy has been accompanied by a divergence between rural and urban incomes. Real rural incomes rose more than threefold between 1980 and 2000, representing an annual rate of about 6%. This led to a remarkable fall in the number of people living below the absolute poverty line (World Bank definition of USD 1 per day per person at the purchasing power rate) from about 490 million at the end of the 1970s, to 88 million in 2002. However, of those defined as poor, some 99% live in rural areas (OECD, 2005). At the end of the 1990s and at the beginning of the 2000s, the rate of growth slowed to below 5% and as urban incomes continued to grow at higher rates, the rural-urban income gap increased. In 2004 and 2005, the rates of rural income growth accelerated to 6.8% and 6.2%, respectively, which was just sufficient to stabilize the level of the gap. The rural-urban income divide is further emphasized by strong differences in access to education, health and social security systems, finance institutions, and even drinking water and basic sanitary facilities.

Chinese policymakers have devoted significant attention to rural development issues and developed a policy framework that gives agriculture a clear role in rural development. For the four consecutive years of 2004-07, "No. 1 Documents" the top priority documents adopted jointly at the beginning of each year by the CCCPC and the government, concentrated on agriculture and countryside. In particular, Document No. 1 for 2006 outlined a new rural development strategy. As the publication of this document coincided with the first year of the

11th Five Year Plan, the priorities set there were further developed in the plan and their implementation will be extended until 2010. The plan sets three important objectives: ensure adequate supply of grains and other agricultural products; steady increase of farmers' incomes; and the harmonious development of rural society. The following measures are envisaged to achieve these objectives:

- speeding up the development of rural infrastructure such as roads, electricity and water supply, water conservation, communication, rural schools and clinics, and sanitation systems. In particular, it is planned that the problem of unsafe drinking water for 100 million rural habitants will be resolved and that 1.2 million km of roads will be constructed or renovated by 2010.

- improving access to basic public services in rural areas through the gradual extension of 9-year compulsory education and the development of a cooperative healthcare system. In addition, a social security system for farmers would be established to include poverty relief and assistance and a rural pension system for elderly people. Since 2006, 9-year compulsory education in western rural areas has been exempted from tuition, and free compulsory education in all rural areas is to be achieved by 2010. In 2006, both central and local governments substantially increased subsidies for medical care in rural areas. Currently, a rural cooperative healthcare system covers 40% of the rural population, and it is planned that by 2010 the system will cover the whole rural population.

- making efforts to raise farmers' incomes. This will include enhancements for the development of agricultural production capacity, encouraging the development of village and township enterprises, and speeding up the migration of rural labor to urban areas. The plan assumes a 5% yearly growth rate of real farmer income and a transfer of 25 million rural workers to urban areas.

- improving capacity for increased grain production. Hard goals to be achieved by 2010 include grain output of 500 million metric tons (mmt) (including soybeans) and not less than 103.3 million hectares sown to grains. For this purpose, the government will enhance the direct subsidy policies for grain producers and reinforce the construction of farmland water conservancy, drainage, and irrigation systems.

- deepening institutional reforms in rural areas. These will include setting up rural self-governance mechanisms and developing farmers' autonomous organizations, such as cooperative economic organizations and professional associations.

These policy initiatives will have to seek a balance between the grain self-sufficiency objective and rural development at large, which includes off-farm activities. For example, easing rural-urban migration might reduce under-employment in some parts, but it can also lead to a fall in grain production as it affects the labor allocation decisions of farm households.<sup>1</sup>

**Biofuel Policies:** China's growing dependence on energy imports has led policymakers to seek opportunities to diversify sources of energy. Biofuel production, including ethanol and biodiesel, is planned to increase from around 1 mmt in 2005 to 12 mmt in 2020, which should then satisfy up to 15% of China's transportation energy needs. China's stated objectives of biofuel development are: to improve the welfare of rural citizens, to strengthen energy security and reduce oil dependence, and to mitigate emissions harmful to the environment.

Biofuel development is subject to strict central government regulation and control. The National Development and Reform Commission (NDRC), regulates both the supply of and demand for biofuels. To ensure adequate control, only state-owned enterprises are involved in biofuel production. Fuel ethanol producers, benefit from a number of financial incentives: refund of VAT; exemption from a 5% consumption tax; a profit guarantee of CNY 100 (USD 12.5) per metric ton; preferential supplies of grain stocks; and compensations of losses due to adjustment, transportation, or sales. In 2006, the subsidy per metric ton of fuel ethanol amounted to CNY 1 373 (USD 172) at a total budgetary cost of CNY 1.5 billion (USD 188 million) (Latner et al., 2006).

Until May 2006, all financial incentives were limited to fuel ethanol, at which time the Ministry of Finance outlined the creation of a special fund to encourage the development of renewable energy resources, including biomass energy, which has been extended beyond fuel ethanol to also include biodiesel.

However, food security concerns may become a limiting factor for the development of biofuels. Currently, fuel ethanol is produced mostly from maize (80% of fuel ethanol production in 2005), but in the future, inputs (feedstock sources) will also include sugar, oilseeds, sweet

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<sup>1</sup> For example, Kuiper and van Tongeren (2006) found in a case study of one village in Jiangxi province that off-farm employment and migration of some family members leads to less intensive rice production and a drop in village marketed surplus of grains.

sorghum, wheat, and cassava. While the NDRC asserts that the targeted biofuel production will not threaten China's grain security, it will affect production mix and, most likely, will contribute to increased imports of the above-mentioned inputs (Latner et al., 2006).

### *Measurement of Support to Agriculture*

**Methodology:** This section provides a quantitative assessment of the evolution of agricultural support in China for the period 1993-2005. The evaluation is based on indicators of agricultural support developed by the OECD, including the PSE, CSE, GSSE and TSE. While Appendix 1 provides basic definitions of indicators discussed in this chapter, a detailed description of the PSE methodology applied by OECD as well as detailed PSE databases for OECD members and for a number of non-members, including for China, is available from [www.oecd.org/agr/support](http://www.oecd.org/agr/support).<sup>2</sup>

The methodology applied in this chapter is fully consistent with that applied for OECD and other non-member countries. Appendix 2 provides basic information on how this has been done. It also discusses some data limitations which should be seen in the context of more general problems with China's agricultural statistics (OECD, 2005).

As for other transition or developing economies, the results have to be interpreted carefully bearing in mind recognized limitations with respect to policy and commodity coverage, as well as data availability. In addition, the macroeconomic and institutional framework within which agricultural policy measures have been applied may have an impact on the results. Thus, the market price support (MPS) element may capture the effects not only of agricultural policies as such, but also macroeconomic policies (in particular through the exchange rate) and of imperfect price transmission from the border to the farm gate level. In the case of China, with very stable exchange rates, the impact of macroeconomic factors on the variability of the MPS is weak. However, other factors such as inefficiencies of the downstream sector, a large share of agricultural production consumed on farms (Tian et al., 2002), weak price transmission compared to mature market economies, and data collection systems lagging behind the changes in the economy, may distort the measured level of support.

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<sup>2</sup> Click on "Statistics"; click on "Producer and Consumer Support Estimates, OECD Database 1986-2005; select "China".

**Results:**

(i) Producer Support Estimate: The share of transfers from policies in gross farm revenues in China, as measured by the %PSE, fluctuated within a range of minus 13% to plus 6% between 1993 and 1998. After falling to minus 2% in 1999, indicating net taxation of agriculture, it increased to an average of 8% between 2003 and 2005. A comparison of producer support for China and selected OECD and non-OECD countries, including principal world players, indicates that China has a relatively low level of producer support.

**Table 1: Evolution of Producer Support (% PSE) and Consumer Support (% CSE) in China and Selected countries: 1993-2005**

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Producer support estimates (% PSE)</b>													
Australia	11	11	7	7	7	7	6	5	4	6	5	5	5
Brazil	n.c.	n.c.	-8	-3	-4	4	-1	4	3	4	5	4	6
<b>China</b>	<b>-13</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>-2</b>	<b>4</b>	<b>6</b>	<b>7</b>	<b>10</b>	<b>7</b>	<b>8</b>
Japan	58	63	62	58	54	58	60	60	56	58	59	58	56
Korea	73	73	72	64	63	56	65	67	62	65	61	63	63
Mexico	30	23	-5	5	15	18	18	24	19	26	19	12	14
New Zealand	2	2	3	2	2	2	2	1	1	2	2	2	3
Russia	-29	-4	14	18	27	19	1	5	14	18	16	19	15
South Africa	n.c.	12	17	9	12	9	8	6	2	8	7	8	9
Turkey	23	14	13	16	25	26	22	21	3	20	28	25	25
United States	18	15	10	14	14	22	26	24	22	18	15	16	16
EU(1)	38	37	36	33	34	37	39	34	32	35	36	33	32
OECD	35	34	31	29	29	33	35	33	29	31	30	29	29
<b>Consumer support estimates (% CSE)</b>													
Australia	-10	-7	-3	-4	-4	-4	-3	-2	-2	-2	-2	-2	-2
Brazil	n.c.	n.c.	6	6	7	0	4	-2	0	-1	-1	-1	-3
<b>China</b>	<b>15</b>	<b>0</b>	<b>-6</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>-1</b>	<b>-3</b>	<b>-5</b>	<b>-7</b>	<b>-2</b>	<b>-4</b>
Japan	-52	-54	-54	-50	-48	-53	-55	-52	-48	-52	-53	-51	-48
Korea	-71	-69	-71	-63	-61	-53	-62	-63	-58	-64	-58	-58	-61
Mexico	-25	-11	18	6	-8	-12	-14	-20	-14	-22	-13	-7	-8
New Zealand	-5	-6	-7	-6	-5	-4	-4	-2	0	-5	-8	-8	-9
Russia	62	44	7	-5	-15	-7	6	1	-7	-10	-7	-11	-8
South Africa	n.c.	-13	-18	-10	-13	-8	-8	-6	-1	-5	-5	-6	-8
Turkey	-23	-8	-8	-11	-22	-27	-22	-21	-1	-17	-26	-21	-21
United States	2	4	7	4	4	-2	-1	1	1	5	8	7	11
EU(1)	-27	-26	-23	-20	-20	-24	-28	-20	-18	-22	-21	-19	-17
OECD	-28	-27	-24	-21	-20	-24	-27	-23	-19	-22	-21	-19	-17

Source: OECD PSE/CSE databases, 2006

Notes: 1. 1990-1994: EU12; 1995-2003: EU15; 2004 on: EU25; n.c.: not calculated; 2. %PSE denotes transfers as percentage of gross farm receipts, measured at farm gate prices, %CSE denotes the tax (if negative) or subsidy (if positive) on consumers as percentage of consumption expenditures measured at farm gate prices

The average of 8% is above that in countries with the lowest support (New Zealand, Brazil, Australia), but much lower than the OECD average (29%) and far below that in Japan and Korea (58% and 62%, respectively), who are the closest OECD neighbors and main export

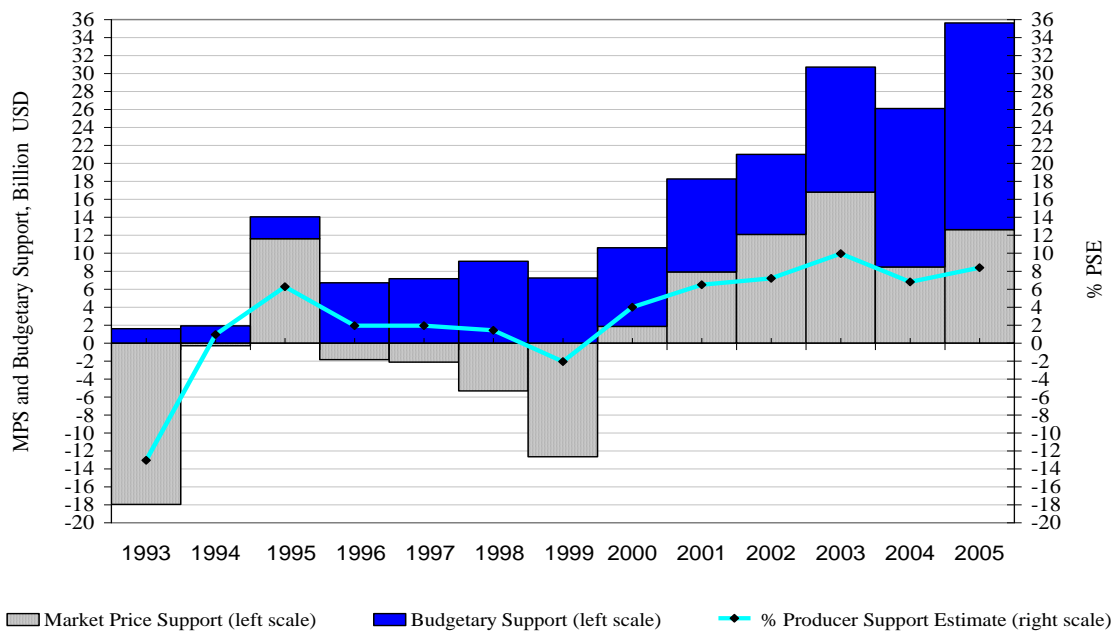
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markets for agro-food products. The cost to consumers, as measured by the %CSE, increased slightly from an average of 2% in 1995-97 to 4% in 2003-05 (Table 1).

(ii) Composition of the PSE: The PSE can be decomposed into its main components: first, MPS, which is created through all kinds of measures that bring domestic prices above/below their opportunity cost, and second, support provided through budgetary expenses.

As is seen in Figure 1, changes in the level of producer support in China are determined predominantly by the evolution of MPS, reflecting fluctuations in the levels of domestic prices relative to world prices. Budgetary support has almost constantly been growing in absolute terms. However, within budgetary support, a large part is provided through input subsidies (OECD, 2007). Both MPS and input subsidies are known to be the most trade distorting and least efficient channels of providing agricultural assistance. In particular, low transfer efficiency means that only a small part of support is effectively received by producers. The stimulus to output, and hence input demand, created through market price support means that much of this increase is paid to input suppliers. In the case of input subsidies, an even larger portion of the support leaks away to input suppliers and hence does not reach the farmer.

**Figure 1: Composition of Producer Support Estimate, USD billion, 1993-2005**



Source: OECD PSE/CSE databases, 2006

As outlined above, the Chinese government pays special attention to grain policies and the adequate supply of grains is a major driver of agricultural policies in general (OECD, 2005). Therefore, the volatility in the level of support, in particular in the 1990s, was to a large extent created by relative changes in the domestic and international prices for grains. For example, China's government raised state procurement prices sharply between 1994 and 1996, but the increase in world market prices, represented by prices at the Chinese border, was even stronger. This resulted in a fall in the support for the Chinese producers to 2% in 1996. In turn, a fall in world market prices for grains in 1997 and 1998 was fully transmitted to China's domestic markets. As a result, the level of support stabilized as measured by the PSE. Partial grain market reforms in mid-1998 combined with the pressure of huge grain stocks accumulated in the previous years, contributed to the fall in grain prices on China's domestic markets in 1999, particularly for wheat and rice. As a result, the level of support fell again to minus 2%. Since then, the level of support has increased, which may seem paradoxical taking into account China's accession to WTO in 2001 and a continued fall in the level of import tariffs.

It should be noted, however, that up to the end of the 1990s, prices for basic crops (cereals, soybeans and cotton) were fixed by the government at relatively low (close to the world market) levels, that state trading played a key role in foreign trade transactions, and that domestic grain supplies were secured by the grain quota system. Therefore, the level of tariffs, even if much higher than in the post-WTO accession period, had very limited impact on trade flows and on the level of domestic prices in China. Tariffs were at most a source of budgetary revenues, but their impact on trade flows and prices was outweighed by the other more direct domestic market intervention instruments. The situation started to change at the end of the 1990s, when grain surplus encouraged the government to discontinue grain quotas and to engage in the process of continued liberalization of domestic grain markets. China's WTO commitments allowed private enterprises to participate to a growing extent in foreign trade transactions (even if for the most sensitive grains the share of private traders remains small), and registration procedures for enterprises active in foreign trade transactions have been substantially simplified.

Within such a framework, tariffs, even if falling, started to play a more active role in the determination of domestic prices, in particular for imports. This could be one reason that, within the context of falling grain production in China between 1999 and 2003, as well as the

growing expectation that China would become a net importer of grains, the level of measured support for China's producers tended to increase between 1999 and 2003. Coincidentally, this happened at the same time as the declared switch in policy objectives from the maximization of agricultural production to policies supporting rural incomes (OECD, 2005).

(iii) **Total Support Estimate:** The TSE is the broadest indicator of support, representing the sum of transfers to agricultural producers (the PSE), expenditure for general services (the GSSE), and direct budgetary transfers to consumers.

The aggregate TSE in China reached USD 47 billion per year in 2003-2005. The TSE expressed as a percentage of GDP, indicates the cost that the support to the agricultural sector places on the overall economy. Between 1993 and 1998, the Chinese percentage TSE fluctuated between -2.3% and 2.9% and then, after falling to 0.6% in 1999, it increased to an average of 2.45% between 2003 and 2005 (Table 2). This suggests a relatively high burden of the agricultural support on the Chinese economy. In fact, this cost was one of the highest, next to Turkey and Korea, compared to other important agricultural producers and much higher than the OECD average (Figure 2). This means that for a relatively poor country with a large agricultural sector, even if the level of agricultural support as measured by the PSE is low, the cost of support to the economy can be relatively high.

**Table 2: Total Support to Chinese Agriculture**

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Total Support Estimate (TSE), billion CNY</b>	81.5	63.3	174.6	100.0	111.3	125.0	54.6	204.2	276.9	289.3	379.1	356.8	428.9
of which:													
Producer Support Estimate (PSE)	-127.1	13.9	117.3	40.5	41.8	31.1	-44.8	87.8	151.2	173.8	254.2	216.1	291.8
General Services (GSSE)	42.7	46.9	54.9	57.5	67.6	92.2	96.8	114.1	125.0	115.3	124.8	140.6	137.0
Transfers to consumers from taxpayers	3.0	2.5	2.4	2.0	1.9	1.8	2.7	2.3	0.7	0.2	0.1	0.1	0.1
<b>Total Support Estimate in:</b>													
billion USD	-10.5	7.3	20.9	12.0	13.4	15.1	6.6	24.7	33.5	34.9	45.8	43.1	52.4
billion Euro	-12.1	6.2	16.0	9.5	11.8	13.5	6.2	26.7	37.4	37.0	40.5	34.7	42.0
<b>TSE as share of GDP, %</b>	-2.3	1.3	2.9	1.4	1.4	1.5	0.6	2.1	2.5	2.4	2.8	2.2	2.3

Source: OECD PSE/CSE databases, 2006

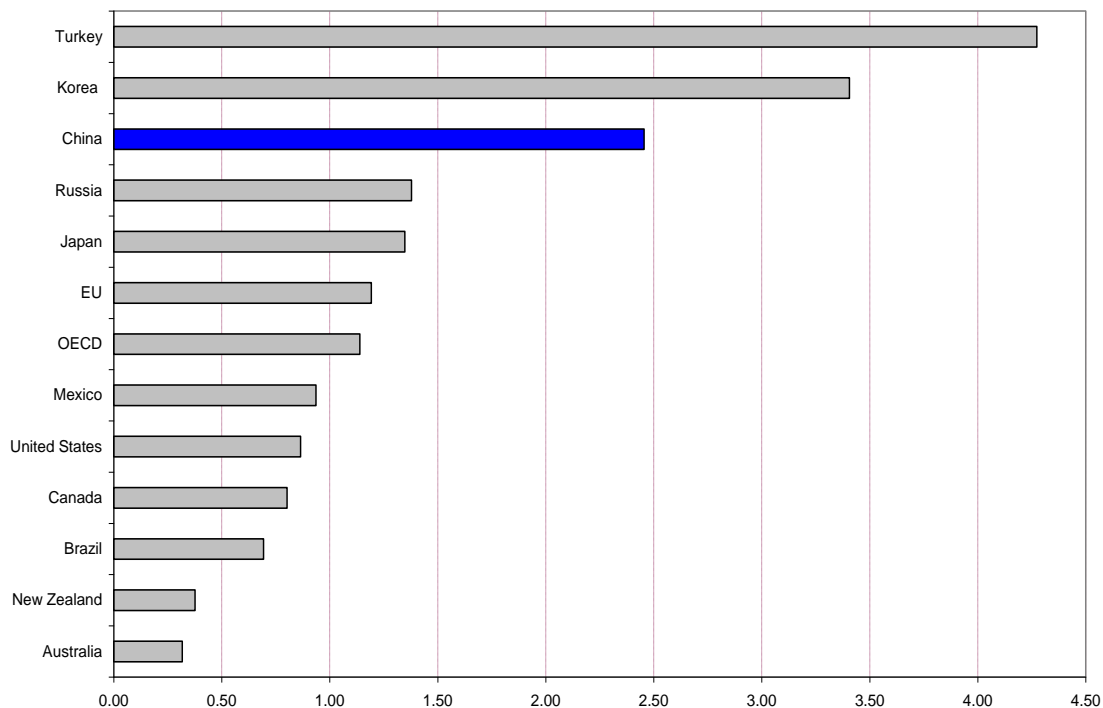
Notes: p: provisional

Another factor contributing to China's high percentage TSE, even though China's percentage PSE is low, is the high relative importance of general services in total support (Table 2). This is a positive factor in that general services in the areas of rural infrastructure, advisory services, training, research and development, and inspection services can improve long-term productivity or expand the sector's production capacity, since the distorting effects



on production and trade are generally much lower than other forms of support.<sup>3</sup> The share of GSSE in the total was still relatively high at 35% in 2003-2005, but lower compared to 47% in 1995-97, reflecting a growing importance of measures providing support to producers (the PSE component). However, even the share over 2003-05 compares favorably to the OECD average at 18% in the same period. Only in countries with the least distorting policies, such as Australia and New Zealand were the average shares were at or above 35% (OECD, 2006).

**Figure 2: Total Support Estimate in China and Selected Countries, 2003-2005 (average % of GDP)**



Source: OECD PSE/CSE databases 2006

Notes: EU15 for 2003 ; EU25 2004 on

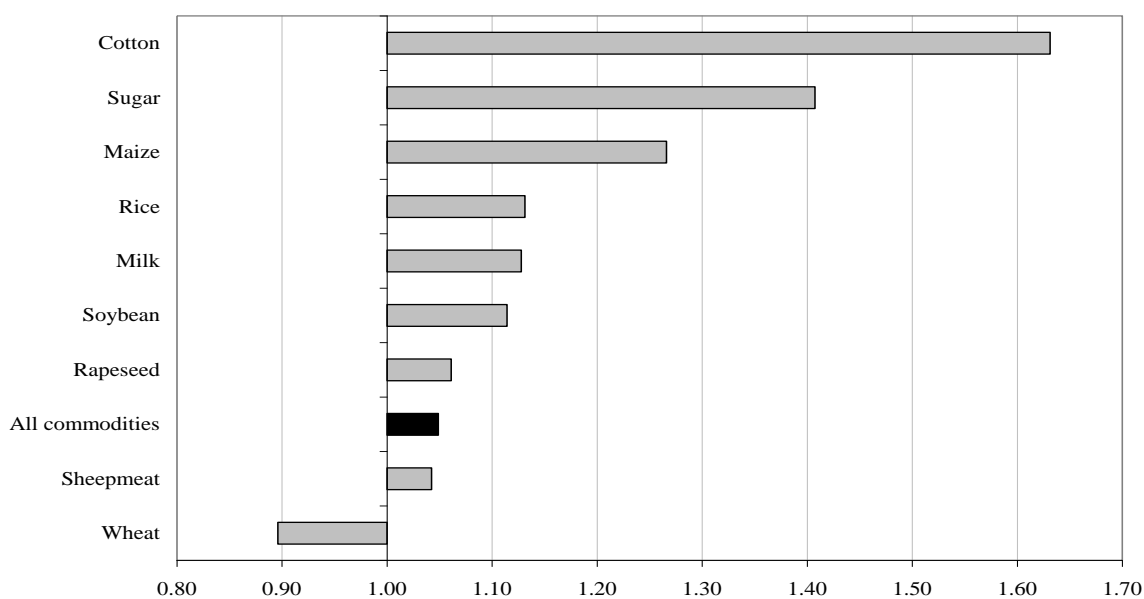
(iii) Commodity Profile of Producer Protection: While China's aggregate producer support is low, the level of protection as measured by the Nominal Protection Coefficient (NPC) varies significantly across commodities. There is a clear distinction between the levels of protection for imports and exports (Figure 3). For major imports, such as cotton, sugar, and soybeans, the average level of prices received by producers was more than 10% higher than those received in the world market in 2003-05 (i.e., the NPC was above 1.1). In contrast, for the majority of

<sup>3</sup> Support for general services to agriculture does not depend on individual farmer's production decisions regarding output or use of factors of production, and does not directly affect farm receipts.

exports, such as pig meat, beef and veal, eggs, poultry, peanuts, and apples, the NPC was equal to 1, reflecting no explicit policies supporting livestock, fruit, and vegetable producers.

Grains do not fit into this general picture, as domestic prices for exportable maize and rice were higher, and domestic prices of importable wheat were lower than world prices. One possible explanation is the dominant role of state trading in grain transactions, even if the role of private traders increased in line with China's WTO commitments. Trade flows in grains are still not driven by profits and relative price levels but rather by the government decisions reflecting concerns over food security and the level of grain stocks.

**Figure 3: Chinese NPC by Commodity, 2003-2005 (average)**



Source: OECD PSE/CSE databases, 2006

Notes: In the case of eggs, poultry, pig meat, beef and veal, apples and peanuts the NPCs amounted to one

### **Conclusions**

Applying the OECD methodology to measuring support of agriculture yields a sound basis for international comparison of Chinese agricultural policies. The level of support for agriculture is low compared to other countries, including OECD members and some important non-members. As measured by the PSE, the amount of support provided to Chinese farmers has been low, and sometimes negative, during the 1990's, but has gradually been rising. This rise reflects changes in policy priorities, which gradually shifted from the objective of grain self sufficiency and low

consumer prices towards supporting farm household incomes. However, during the period analyzed, the impact of various agricultural and trade policy policies on gross farm revenues in China was relatively small.

Although the contribution of support to farmer's incomes is low compared to many other countries, the total support to China's agricultural sector (measured by the TSE) places a relatively high cost on the Chinese economy, which is much higher than the OECD average. This is partly due to the economic importance of agriculture in a relatively poor economy and partly due to large budgetary expenditures on general services.

The share of producer support (the PSE) in the total support to the agricultural sector (the TSE) started to increase in the 2000s, but the share of general services in the total is still very high, mostly due to large investments in agricultural infrastructure. The high share of general services can be viewed as a positive feature of China's policy, as such support is provided through measures characterized by relatively low production-distortions. General services also contribute to broader policy goals related to rural development. Modern research and extension services, food safety agencies, and agricultural price information services which provide widespread benefits to producers and consumers throughout the economy will be of crucial importance for the future of rural areas.

In the 1990s China's government was still applying a large number of distortive policies such as grain quotas, government fixed prices for selected crops, and state trading. But domestic prices, including those set by the government, were usually fixed at levels close to world prices. Budgetary support for producers was low. As a result, the level of support, as measured by the percentage PSE, although fluctuating, was generally low.

The level of support in the 2000s increased, but remained far below the OECD average. The increase in support may mean that, within the context of retreating state intervention in markets, producer prices started to adjust to reflect market conditions as well as border protection, in particular for imported commodities. Therefore, even as border protection declined, tariffs and other border measures started to have a stronger impact on domestic prices compared to the 1990s. At the same time, budgetary support tended to increase, which contributed to a rise in the level of support.

While China's producer support is low, the level of domestic prices relative to border prices varies significantly across commodities. The highest levels of domestic prices are found for

import-competing commodities, such as cotton, sugar, milk, and soybeans, as well as some export commodities such as maize and rice. The distortions on grain markets are still high, mostly due to state trading, which continues to drive a wedge between domestic and world prices.

The mix of measures used to support China's farmers is dominated by market price support and input subsidies, categories known to be amongst the least efficient and most trade distorting ways of providing agricultural assistance. In particular, low transfer efficiency means that only a small part of support is effectively received by producers.

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## Appendix 1: OECD Indicators of Support to Agriculture: Definitions

*Producer Support Estimate (PSE)* measures the annual monetary transfers to farmers from three broad categories of policy measures that:

- Maintain domestic prices for farm goods at levels higher (and occasionally lower) than those at the country's border (market price support).
- Provide payments to farmers based on, for example, the quantity of a commodity produced, the amount of inputs used, the number of animals kept, the area farmed, an historical reference period, or farmers' revenue or income (budgetary payments).
- Provide implicit budgetary support through lowering farm input costs, for example for investment credit, energy, and water (budgetary revenue foregone).

The measurement of support resulting from agricultural policies is based on how policies are actually implemented – and not on the intended objectives or impacts of those policies. A crucial point to emphasize is that the estimates of support not only comprise budget payments that appear in government accounts (which is often the popular understanding of support), but also budgetary revenues foregone, and the gap between domestic and world market prices for farm goods - market price support. The latter element represents in many countries the largest component of the PSE, but has been decreasing as a share of overall support in many countries in recent years.

*Consumer Support Estimate (CSE)* is the annual monetary transfers to consumers from policy measures that:

- Maintain domestic prices paid by first consumers (measured at the farm gate) at levels higher (an implicit tax on consumers) or lower (an implicit subsidy to consumers) than those on world markets at the country's border. It is the mirror image of market price support to farmers.
- Provide subsidies to keep prices of commodities consumed by certain groups in the economy lower than would otherwise be the case, such as cheap food for poor people, public institutions and some processors.
- In general the CSE is negative because the implicit tax on consumers from market price support more than offsets that from consumer food subsidies.

*General Services Support Estimate (GSSE)* is the annual monetary transfers to agriculture but not to individual producers that provide budgetary-financed expenditures for the provision of such services as research, development, training, inspection, marketing, and promotion.

*Total Support Estimate (TSE)* is the overall monetary cost of the transfers in a country from policy measures calculated by adding the PSE, the taxpayer cost of consumption subsidies (in

CSE) and the provision of general services (GSSE), and by subtracting associated import tariff receipts (budget revenues).

*Nominal Protection Coefficient (NPC)* is the ratio between producer and border prices.

*Nominal Assistance Coefficient (NAC)* is the ratio between farm receipts (including support) and those generated in the market without support.

The PSE indicators are expressed in both absolute monetary terms (in national currencies, in US dollars and in Euros) and in relative terms – in the case of the %PSE as a percentage of the value of gross farm receipts (including support payments) in each country for which the estimates are made. The %PSE shows the amount of support to farmers irrespective of the sectoral structure and inflation rate of a country, making this indicator the most widely acceptable and useful indicator for comparisons of support across countries and time.

The main purpose of the calculations is to show the estimates and composition of support each year, and to compare the trends across countries and through time, in order to monitor and evaluate the extent to which OECD countries are making progress in policy reform to which all OECD governments are committed.

## Appendix 2: China's PSEs: What and How?

*Period covered:* 1993–2005

*Products covered:* wheat, maize, rice, rapeseed, soybeans, peanuts, apples, sugar, cotton, milk, beef and veal, pig meat, sheep meat, poultry, eggs. These 15 commodities accounted for about 80% of the total value of gross agricultural output (GAO) in China in 1994-95, but this share fell to 53% in 2002 and then increased to 60% on average in 2003-05. Changes in the shares reflect restructuring in China's agriculture (switch from grains and other traditional PSE products to fruits and vegetables), changes in relative prices, and, most likely, an overestimation of fruit and vegetable production in China in more recent years. An attempt has been made to include such products as tea, tobacco and oranges (0.7-1.0% of GAO each), but insufficient price information and quality gaps made it impossible to assess the level of support for these commodities.

### *Market Price Support*

Exchange rate CNY/USD: weighted average for 1993 to reflect two exchange rates then applied for trade transactions: official and secondary. As exporters were obliged to sell 20% of foreign currencies earned at official rate and 80% they could sell at secondary markets, the weighted average was calculated as follows:  $(0.8 \times 8.28) + (0.2 \times 5.76) = 7.776$ . Following the devaluation of the CNY at the beginning of 1994, official rate was used for trade transactions. Therefore, for the period 1994-2005 official exchange rates were applied for the price gap calculations.

Producer prices: unit values of above mentioned agricultural commodities sold by rural households through different marketing channels. Data originate from the yearly rural household surveys conducted by the NDRC in various regions.

External reference prices: FOB prices for exports and CIF prices for imports registered at the Chinese border.

Marketing margins: estimated on the basis of price gaps between domestic wholesale and farm gate prices for a given commodity. Available technical coefficients were used when needed (e.g. to convert paddy to milled rice; sugar cane to sugar or live weight to slaughter weight). As data on wholesale prices were not sufficient to assess the level of margin, this source was supplemented for almost all products by phone interviews with various traders in China. A marketing margin for a given commodity was expressed as a percentage of a farm gate price. While it was assumed that the percentage margin remained at the same level over the whole period, its equivalent in absolute terms varied depending on the level of farm gate price in a given year. The absolute value of the margin in a given year was subtracted from the border reference price.

Transportation costs: (between China's border and domestic wholesale markets): assessed on the basis of phone interviews with traders and expressed as a percentage of the border reference price. These percentages have been converted into absolute values and added to the CIF price for imports and subtracted from the FOB price for exports.

Quality adjustments: all efforts have been made to select such products traded by China whose quality corresponds best to products produced domestically (like with like comparisons). In most cases identifiable quality gaps reflected in price differences were small, 1-5% of the reference price. Therefore, quality adjustments have not been made with the exception of wheat. In the case of wheat, there have been two tendencies: a share of higher quality wheat in the overall wheat production has been growing, but at the same time the share of high quality durum wheat in total wheat imports has also been increasing (until 2003). Therefore, the CIF import price of wheat on the Chinese border has been adjusted by the same coefficient of 0.85 for the whole period under analysis. The coefficient has been calculated on the basis of detailed price survey conducted in October 2001 (Huang, Rozelle and Min, 2004).

Price gap estimates: for all the above mentioned products, relevant data have been collected and price gaps calculated. But, as for selected exportable products such as peanuts, apples, beef and veal, pig meat, poultry and eggs; no export subsidies and no other market price policy supporting or taxing producers have been identified, in line with the OECD methodology applied for other countries; the price gaps for these products have been set at zero.

### ***Budgetary Support***

Budgetary information for the period 1993-2005 originates from the Ministry of Finance. In addition, expenditures for different programs have been checked with partial information from China Statistical Yearbooks 2003-06.

While all budgetary expenditures from various government bodies and at various levels of government administration should be accounted in the Ministry of Finance reporting, it is difficult to verify if this is the case. A general problem is that publicly available budgetary data, including on expenditures related to agricultural policy, tend to be strongly aggregated and do not allow precise assessment of the amounts actually spent on various policy measures and

thereby evaluate their effectiveness. Moreover, more detailed information is not available for free and is released with long delays.

It is particularly difficult to disaggregate payments for investments in agriculture-related infrastructural projects. This is by far the largest component in government's budgetary support for agriculture and a major tool for the government to achieve development targets. Expenditures include those for pollution control, land rehabilitation, water and soil reservation, transport, and irrigation infrastructure maintenance and development. The coverage of payments within a given program is so large that it is impossible to separate precisely:

- PSE-type payments from those which could be classified as General Services; and
- Support to agriculture from support to rural areas in general, including for non-agricultural activities in rural areas.

On the basis of available information and in consultation with the Chinese experts, the overall amount budgeted for rural infrastructure has been distributed in the following way: 50% of the total has been allocated to General Services in the category infrastructure; 25% of the total has been allocated to category called payments based on on-farm investment; and the remaining 25% of the total has been excluded from the PSE and GSSE calculations under the assumption that this part represents expenditures not serving agriculture.