

“Major Constraints to Agricultural Development in China: Opportunities for Research”

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A. Major Trends and Issues in China’s Agricultural Sector

In the past 50 years China has made remarkable achievement in its agricultural sector. A widely recognized achievement is its success in meeting the food need to its population, one fifth of the world total, with one fifteenth of the world agricultural land. Level of energy and nutrient level increased dramatically over the past twenty years. Rate of poverty alleviation is also remarkable.

However, agriculture in China is not without challenges. Since mid 1990s, agricultural growth and rural income growth have been stagnant. Many factors that effectively motivated previous agricultural growth now became ineffective. China’s agricultural sector is looking for new sources of growth. Solving problems surrounding China’s agriculture, rural area and farmers (“San Nong” problems) remains high in China’s political agenda.

The following trends and issues characterize recent development occurring in China’s agricultural sector:

1. Sources of China’s agricultural growth in the new millennium

Researches (Huang et al) indicate that institutional innovation explains the high growth in agricultural productivity for the period of 1978-1984, when rural household responsibility system was first adopted. Grain production enjoyed a yearly growth rate of 4.7%. Since mid 1980s, however, growth was mainly due to technological progress. In addition, China has carried out price and market reform along the way and invested large amount in upgrading its irrigation system. Increased fertilizer and pesticides use, along with the expansion of cultivated land also contributed to the growth.

In the new millennium, many of the above-mentioned instruments will become ineffective, especially after China’s entry into WTO. Facing more severe international competition and increased market volatility, strengthening competitiveness where China holds comparative advantage and diversifying agricultural production become priority. This strategy calls for increased investment in agricultural research and more effective technological dissemination.

2. WTO and its impact on China’s agricultural sector

China officially entered WTO in December 2001. Before the WTO entry, there was a general pessimism with regard to the impact of the WTO accession on China’s

agricultural sector. The pessimism was largely a reflection of the knowledge that China cannot compete with international supplier in the crops that demand large area of land and that are water consuming, in which China is relatively disadvantaged.

The pessimistic anticipation did not materialize in China's first year in WTO. Imports of land intensive crops, such as cotton, oil and sugar, did not increase. Some of the land intensive crops, corn in particular, even increased exports. Contrary to the general anticipation, exports of labour intensive agricultural products did not show large increase.

The reason that WTO entry has not created the anticipated large negative impact on China's agricultural production was due to the fact that WTO entry was mere a continuation of China's long process of agricultural market liberalization. Researches (Huang et al, 2003) have shown that, in China, price protection rate over agricultural products have been declining over the past 20 years, contrary to the trend of increasing price protection rate in many developing countries. The reduced protection enhanced ability of China's agricultural producers to adjust to the newly introduced international competition.

China will continue to adjust its production toward where it has the most comparative advantages. Along the process some farmers will gain and some will lose. It will be most interesting to see what portion of the agricultural population will gain and lose and the implication of the consequences on China's policy in trade, agricultural investment and poverty alleviation.

The impact of China's entry into WTO on agricultural structural change, therefore on China's rural environment, will also be very important area to study.

3. Taxation Reform

Rural income growth has been slowed down since mid 1990s, mainly due to stagnant agricultural products market and ever rising tax burden over farmers. During the 1990s, agricultural tax load increased more than 4 folds. Based on statistics, currently average tax load per urban people is 37 Yuan per year and average tax load per rural people is 146 Yuan, indicating large tax bias against rural population and farmers.

China launched a new round of rural tax reform in 2002. After two years of pilot reform in one province since 2000, the experiment was extended to 20 provinces. Owing to its large scale and wide scope, the reform was called the third revolution in China's rural area.

The reform calls for integrating all reasonable rural taxes and fees into a single agricultural tax, and eliminating all unreasonable fees imposed on farmers. The purpose of the reform is to reduce tax burden on farmers and increase farmers' income from agricultural production. To compensate gaps in local government revenue, central government will provide financial transfer.

Evidence from the first province carrying out the pilot reform demonstrates that after the reform, tax burden of farmers can be reduced by 31%.

The well willed reform created two problems: relatively biased tax reduction among different group of farmers and gap in local government budget. The first is against the purpose of the reform and the second will create obstacle to the reform and lead to the danger of reform failure.

The new tax scheme simplified the tax procedure and move tax base from all sources toward agricultural land. Although all farmers reduce their tax burden, farmers who rely more on agricultural production will benefit less from the tax reduction and farmers who are relatively better off will benefit more from the tax reduction.

Local governments rely on tax and fee revenue to pay salary and administrative expenditure. The reform reduced government revenue dramatically, creating large gap between government revenue and expenditure. If financial transfer does not meet the gap and government expenditure does not decline, some forms of new fees will re-appear and effort to reduce farmers' tax burden will fail, like what happened many times in history.

Priority reform in the short-term

- Establishing linkage between central financial transfer and tax reduction in rural area to eliminate the gap created by the reform;
- Carrying out institutional reform in rural area, simplifying government function and reduce government function and employment.

Priority policy research issues

- Analysing role of rural taxes on agricultural productivity growth and rural income distribution;
- Analysing role of rural public goods on rural development and agricultural growth, and most efficient way of rural public goods provisions;
- Studying ways to reduce government regulation and increase use of market and rural community to provide rural public good and services (Zhang X. et al, 2002).

4. Solidifying Land Rights for Farmers

China's twenty years of remarkable economic growth results from successful rural reform. The early remarkable agricultural productivity growth originated from the establishment of rural household responsibility system, which gave farmers use right to agricultural land. The land right reform provided farmers unprecedented incentive to improve their agricultural productivity. Agricultural production soared after the reform in early 1980s. Productivity peaked in 1984, then it got stagnant, so was the rural farmers' agricultural income. Furthermore, the user right that farmers were given was subject to adjustment based on population change and local policy needs, creating insecurity of land rights and disincentive to invest in long term productivity growth.

In August 2002, the people's congress passed the "rural land contract law". The law rules out the possibility of land right adjustment and gives farmers right to inherit and transfer the land contract within the contract period (extended to 30 years). The law marks the first time in the last half century that farmers in China have been given long-term and secured land use rights.

The first foreseeable benefit of the issue of the land contract law is increased incentive for farmers to invest and manage the land for long term use due to the secured use rights. The second benefit will be the increased opportunity for land integration in areas where scale economy is needed. Land segmentation was considered main obstacle to use of advanced agricultural technology and to higher agricultural productivity.

Researchable issues:

Although land tenure security is important to provide farmers incentive for long term investment in land, cost of fixing the land rights to future agricultural labour and newly added rural population. The fixed land tenure also may impose social welfare loss in the use of common property. In anticipation of the implementation of land contract law, there were cases that readjustment of land rights occurred in an effort to reduce the impact of the land right fixation.

5. Rural migration

Rural migration is pivotal to China's overall economic growth and the reduction of rural poverty. From 1981 to 2000, the share of off-farm employment in total rural labour force increased from 16% to 43%. Off-farm labour force increased from 40 million to 200 million, a 4 time increase.

Researches (Zhang L. et al, 2002; Tao and Brooks, 2002) show that migration became major form of off-farm employment, youngsters take up majority of the off-farm jobs, labour market developed the fastest in developed areas, but poorer areas are catching up, and job specialization is forming among farmers, especially among young farmers.

Obstacles remain for smooth development of rural migration. Universal examples include restriction of residence on migrants, and difficulty for migrants' children to enter school. Other services, such as medical insurance, housing, etc, rendered to urban population are still yet extended to rural migrants.

Researchable issues:

Assessment of rural migration and its contribution to economic development and rural poverty reduction, as well as rural environmental restoration; Evaluation of policies that help reduce obstacles to rural migration.

6. Agricultural Water Use

Improving efficiency in agricultural water use is most critical to solve Chinas' water shortage in the process of economic growth and increasing demand for water.

Agriculture sector still uses up to 70% of the total surface water, making water saving critical and difficult in the sector.

China's has promoted various forms of water saving technology, such as dripping irrigation, in north and northwest China, where water conflict has been most serious. The dissemination of the water saving technology has achieved very limited success, due to its high cost nature and irrelevance to local soil condition. On the other hand, experiment in establishing community based water management system has achieved promising results.

The new institutional experiment, including water management contrast system and water use association, focuses on providing incentives for water use managers to save water and enhance agricultural productivity. Recent survey (Lohmar et al, 2003; Wang et al, 2003) indicated that by providing right incentives, agricultural water use can save by 25-40%.

Researchable issues:

- Agricultural productivity implications and welfare implications of water saving institution;
- Efficient institutional arrangement not only within rural community, but also between communities, regions and sectors.
- Effective pricing and compensation scheme of water re-allocation.

B. Forestry

China's forest sector has received increasingly higher attention over the past 5 years due to the implementation of Natural Forest Protection Program (NFPP) and the Steep Cropland Conversion (to forest and grassland) Program (SLCP).

The two programs were established seemingly to respond to the catastrophic Yangtze River flood in 1998 and Yellow River Drought in 1997. They had deeper reasons. For Natural Forest Protection Programs, the long-term deforestation and consequential economic crisis in China's state forest sector have been the driving factor. For Land conversion program, the idea of downsizing agricultural activities in the mid and upper Yellow and Yangtze River Basins in order to improve rural economy in western China, reduce water and soil erosion and making more efficient use of water resources, are key rationales.

1. NFPP

To implement NFPP, government provided subsidy to help state owned forest enterprises to transform their operation from timber harvesting to tree planting and forest protection, and to release surplus labour. The subsidy also goes to local government to compensate for their fiscal loss due to the reduced timber revenue. Welfare loss in the rural communities relying on timber shipment, processing and services is not included in the subsidy scheme, causing widespread social problem and economic hardship (unemployment, school drop-out, etc).

Collective forests within NFPP areas were also banned from logging without any compensation. This created huge tenure insecurity issues and posed a threat to sustainable forest management in the areas.

Priority policy reform:

Collective forest farmers and farmers living in NFPP areas are victimized by the blunt government program without sufficient compensation. Their forest tenure is also violated in the program. These are social costs of the program and should be taken into account in government compensation schemes. Otherwise, logging bans imposed on collective forests should be removed.

Researchable issues:

- Social cost-benefit analysis over the implementation of NFPP to design complete compensation schemes;
- Study of sustainable management systems in state-owned natural forest areas;

Logging bans and the compensation provided opportunity for deforestation in natural forests to slow down, but they did not provide a cure to the ill-placed incentive system and inefficiency problem. Exploration of a new incentive system that ensures efficiency and sustainability in forest resource management should be under way. The potential contribution of the private sector in increasing forest community income and reducing wasteful use of forest resources, and market mechanisms in enhancing the management of forest resources should be paid particularly high attention.

2. SLCP

After 3 years of piloting in 13 western provinces, the SLCP was formally launched in 2002, extending to 25 provinces. The program calls for converting 2 million ha of steep cropland to forests, bushes, and grassland. In return, government provides farmers food, cash and seedlings as compensation. The program aims to increase welfare transfer to poor farmers, help adjust rural economic structure, reduce water and soil erosion, and to alleviate water conflicts between upper and lower reaches of the river basins.

Evaluation of the early implementation of the program (Xu et al) demonstrated mixed results. The program was welcome by local government and farmers, due to the compensation package. Nevertheless, researches (Xu et al, 2002) raised concerns over the growing implementation and monitoring costs and declining quality of the project implementation, due to the fast expansion of the program and insufficient funding for local implementation agencies. The environmental impact of the project was controversial and sustainability of the program was not without doubt.

Priority policy reform

Balancing program expansion with local implementation capacity and budget and slowing down implementation to accommodate adjustment based on learning by doing.

Researchable issues:

- Develop indicators to monitor the ecological and environmental impact of SLCP, in terms of reduced water and soil erosion and balanced water supply;
- Study ways to improve efficient allocation of project targets to enhance ecological performance and poverty alleviation;
- Establish market based program implementation scheme to reduce cost and improve performance.

C. Environmental Policy

1. Pollution Tax

China uses a concentration based pollution tax to curb water and air industrial pollution. The system has been in place since early 1980s. Along the course of rapid economic expansion, pollution was not reduced but increased steadily. Criticism over the pollution tax system showed that the tax rate was too low relative to marginal abatement cost. And, even with the low tax rate, it was not strictly enforced. Local enforcement agencies adjust policy implementation based on local conditions and implementation cost, further reducing economic incentive for polluting mills to abate hazardous emissions.

Due to the general failure of economic instruments, since 1996, Chinese government resorted more toward command and control approaches, namely, mill closure.

Researchable issues:

- Study marginal abatement cost of industrial enterprises to establish effective tax rate;
- Evaluate various pollution abatement policy instruments, comparing their relative value in terms of economic efficiency.

D. Emerging Issues

1. Agricultural and Urban Pollution

Non-point source pollution (rural and urban) has surpassed industrial pollution as the major polluting source to watersheds. Its scale and trend are just noticed but effective policy instruments are yet to develop.

2. Climate Change and China's Strategy

The importance of mitigating greenhouse gas emission and reducing impact of climate change has been recognized in Chinese society. Although China, as a developing country, is not one of the countries committed to greenhouse gas reduction for the time-being, prospect of near-future commitment was recognized and certain level of action has been taking place. China gives high priority to actions in energy sector, but there is increasing recognition of the role of carbon sink in forest, grassland and other forms of agricultural land use.

Researchable issues:

- Understanding of the role of carbon sink and its impact on agricultural land use pattern is still limited.
- Potentials and challenges with regard to utilizing carbon sink to benefit agricultural land users and achieve sustainable economic development are yet to be fully analysed.
- Ensuing policy change and its impact on land and natural resource use need to be well examined.

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