China's Evolving Agri-Food Sector: Challenges for NAFTA Countries

Remarks on Rising Demand, Trade Prospects and the Rise of China's Horticultural Industry

a NAAMIC commissioned paper by Rozelle, Paggi, Sumner and Huang

Brad Gilmour

I’d like to thank Mai Dang, Cheng Guoqiang, Amos Tin, Cam Short, Joan Langley, Peter Chen, Hugh Deng and Greg Giokas for their remarks. However, opinions expressed and any remaining errors and omissions are my own.
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1. Review, Reiteration and Context of Some Major Observations Made by the Authors

2. Examination of Constraints, Bottlenecks, Supply Chain Challenges Identified

3. Summing Up: Things to Watch For
The locality for which the analysis applies is not representative of China in general. It could, however, be considered as a bellwether ... which may be more useful in anticipating where China is headed.

Beijing and the cluster of surrounding provinces and municipalities are among the more prosperous in China. Hence, findings will not be “representative” of overall circumstances, but they – perhaps – can be seen as bellwethers.

Shanghai and environs is another prosperous cluster

Guangdong and provinces in the greater Pearl River Delta are arguably the most prosperous in China

Sources: China National Bureau of Statistics
China’s leaders are learning where and when to facilitate, enable, and when to simply get out of the way. BUT the process has not been linear.
China has come a long way in its “transition”: planned to market responsive and largely incentive based; rural subsistence to urban market-based economy;

China is now a member of the WTO and will have an increasing influence in international regulatory and policy fora. Since their evolving policy direction was already pretty much in keeping with the nature of their prospective obligations as a WTO member, one of China’s motivations in joining the WTO was to secure disciplines on the behaviour of their trading partners and competitors.

The evolution of China’s economy and society will provide both opportunities and challenges … but NAFTA firms, sectors and officials have to equip themselves to better understand and take advantage of these opportunities, and respond to the challenges.
Until the early 1990s, China taxed agriculture. In the mid-1990s, concerted efforts were made to increase agricultural production. Over time, it was found that getting incentives right was more effective than administrative fiat.

Up until the early 2000s, the main concern of agri-food policy appeared to be to ensure a high level of self-sufficiency. In recent years, however, raising incomes and the level of well-being of farmers and rural residents income levels have increased in importance.

In 2004-2006, agriculture and rural areas have become a focal point of the Government’s “No. 1 Document” (equivalent to Canada’s Throne Speech or the U.S. State of the Union Address). For the first time in the history of the PRC agriculture is a net beneficiary of fiscal transfers, marking a significant change in approach.

China has moved from placing burdens on agriculture to a modest subsidizer of agriculture. However, support levels remain ~ 1/3 of NAFTA levels and well below the OECD average.
Since the 1990s, China has moved from placing burdens on agriculture to modestly subsidizing it. Support levels are well below NAFTA levels, however, and still further below support levels in the EU and other East Asian economies.

**Percentage PSEs for China and selected countries, average 2000-2003**

As per cent of gross farm receipts

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*Note: E115.*

*Source: OECD PSE/CSE databases 2005.*
The confluence of more enabling domestic policies, more open foreign policies and infrastructure policies of benefit to rural areas and remote regions have allowed China’s farmers to specialize and move more toward industries where comparative advantage is manifested.
While China’s arable land is not in abundance ... it is not in extreme shortage.
Use to availability ratios are much higher and water deficits are chronic in particular areas, like the Hai, Huai and Huang river basins.

How China deals with water issues will greatly influence what and how much it produces and directly influence trade and investment opportunities.
This shortfall is one of the main motivations behind China’s south to north water transfer project.


North China Water Deficit Prospectus: No Policy Change, No Physical Relocation
With better infrastructure and governance, China has already started to produce fewer land extensive agri-food products and more labor intensive products, particularly fruits and vegetables. These trends are likely to continue for at least another decade.
As Rozelle et al (2006) indicate, sectoral adjustment has occurred. But it has been affected by on-going bottlenecks and constraints.

**Infrastructure and Perishability Linkages**
- China has become dominant supplier of relatively less perishable horticultural products (garlic, onions, shallots, carrots)
- Growth has also been rapid for transformed products where perishability is less of concern (tomato paste, juice, deep frozen products)
- To date, success on more sensitive chilled, vacuum-pack or fresh equivalents has not been as stark.

**Tenure Insecurity Linkages to Investment and Husbandry Issues**
- Contrasting experiences of perennials (orchards) versus annuals indicative of investment decisions in the face of tenure insecurity

**Finance and Credit Issues**
- China’s farmers have been discriminated against within China’s formal credit system. Consequently, a reduction in this “credit bias” will help unleash their productive potential even further.
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What can be expected from rural credit reforms?

- The trend toward a greater commercial orientation will continue, with fewer favors for state-linked commercial enterprises.

- Farmers and rural entrepreneurs will have more equal access to credit and financial services, provided they have credible business plans.

- A greater portion of private savings will be harnessed for both production and consumption purposes. This will add to the diversity of agricultural production and rural value-added activities.

- Because of China’s own reforms, as well as WTO obligations, trends in the provision of rural financial services cannot be easily reversed.
Land Tenure Issues

What can be expected from land tenure reforms?

- Existing system with uncertain tenure security means that farmers may be reluctant to make investments that are not easily transferable or that can not be recouped in a short period of time.

- Recent statements by senior officials and influential policy advisors suggest that significant changes in tenure and ownership rules are likely within the next few years.

Changes to improve tenure security and reduce fears of appropriation is likely to positively affect households’ investment in agriculture. It will be to the particular benefit of crops and industries where long-term tenure security is important: orchard production; asparagus production.
As Rozelle and Paggi et al suggest, China’s comparative advantage does not lie in the production of land extensive crops. Rather, there is an emerging consensus that China's comparative advantage probably lies in the production and further processing of vegetables, fruit, horticultural products, and select livestock, poultry and aquaculture products. However, it must be observed that – in addition to being labour-intensive – many of these products are perishable in nature.

Therefore, a prerequisite for China to fully exploit its comparative advantage is to have in places the necessary institutions, infrastructure and human capital to deal with such products. Adequate transportation and handling systems, reliable electricity, cold storage, and quality-control services are all critical components of this. Consequently, higher value-added agri-food sectors will develop lock-step with developments in these “time sensitive” services and supporting infrastructure.
Reflection

- China’s Household Registration system and other policies have kept more people in rural areas than would otherwise be the case.

- These restrictions may have led many rural citizens to invest in the horticultural industry as a “2nd Best” solution. So, if migration rules become less stringent, the flow of resources to horticulture may be dampened.

This massive set of engineering projects will augment North China water supplies by 10 to 15 percent, or an estimated 38 to 43 billion cubic meters per year.
Under-pricing water may have contributed to its over-exploitation, as users treat it as abundant.

<table>
<thead>
<tr>
<th>Country</th>
<th>Agriculture ($ USD / m3)</th>
<th>Industry ($ USD / m3)</th>
<th>Households ($ USD / m3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>1.440</td>
<td>1.08</td>
<td>3.16</td>
</tr>
<tr>
<td>Austria</td>
<td>1.005</td>
<td>...</td>
<td>1.05</td>
</tr>
<tr>
<td>France</td>
<td>0.081</td>
<td>0.95</td>
<td>3.11</td>
</tr>
<tr>
<td>Greece</td>
<td>0.052</td>
<td>...</td>
<td>1.14</td>
</tr>
<tr>
<td>Spain</td>
<td>0.049</td>
<td>1.08</td>
<td>1.07</td>
</tr>
<tr>
<td>United States</td>
<td>0.046</td>
<td>0.60</td>
<td>1.25</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.021</td>
<td>1.68</td>
<td>2.28</td>
</tr>
<tr>
<td>Australia</td>
<td>0.020</td>
<td>...</td>
<td>1.64</td>
</tr>
<tr>
<td>North China Plain</td>
<td>0.013</td>
<td>0.12</td>
<td>0.22</td>
</tr>
</tbody>
</table>

Note: Some caution is needed in comparing these figures, because water for agricultural purchases is generally of lesser quality than for households. Further, volumetric infrastructural and conveyance costs may be lower.

Sources: 张金松 博士 (2005)中国北方城市水管理研究项:供水部分研究, 深圳市水务（集团）有限公司总工程师 (世界银行项目) and OECD (2004)
Researchers at China’s Ministry of Water Resources, UNESCO and CGIAR found that net “virtual flows” (in product form) of water from North to South are considerably more than the offsetting “real” flows that will occur when South to North Water Transfer Project is finished. So, obviously, getting incentives right must be part of any long-term solution.

Recognizing that water is under-priced, Huang et al (2006) have done some unique work on water scarcity and incentives on the North China Plain.

- Water tariffs must increase substantially to be effective.

- Preliminary findings, and research elsewhere, suggests that crops and enterprises which can cover marginal costs will not suffer. Hence, the expansion of horticultural production is not likely to abate. Indeed, more rational water pricing may lead to less competition for the resource from other less lucrative enterprises.

- The production of irrigated corn and wheat crops, however, will be affected.

A practical application of Game Theory sheds light.

Selten (1973) found that “4 are Few & 6 are Many”.

Groups are self-disciplining without significant monitoring and policing costs when the number of people involved are less than 6. The finite number of collaborators in the buying and trading groups found by the authors may reflect:

1. The balance between the need to work together to achieve economies in procurement and distribution on one hand, and,
2. The need to minimize costs and effort required to monitor and discourage shirking, without need of complex contractual arrangements on the other.
Reflected

- Consumers face quality uncertainty
- Quality for “Search” goods can be determined through simple inspection.
- Quality for “Experience” goods must be sampled before their quality or properties are known.
- In the absence of reliable inspection services, consumers must incur “search” costs to discriminate between heterogeneous products.
- Consumers’ “Search” costs can be reduced by:
  - (a) becoming better informed themselves, and
  - (b) making repeat purchases from suppliers they have found to be trustworthy and reliable.

** Not all consumers are alike; some consumers may be more astute at judging quality through simple inspection while others may need to sample the goods.

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Credit Biases may have retarded adjustment into sectors like horticulture.

Ironically, greater foreign presence in the banking sector may well help break down biases against farmers and private entrepreneurs. So, a greater foreign presence in banking will help China’s farmers. China is to open its banking sector at the end of this year, under its WTO obligations.

Tenure Policy Biases may have retarded adjustment as well.

If progressive steps continue to be taken, horticultural production will likely expand considerably, particularly perennial crops if tenure insecurity issues are dealt with. Several leading officials have suggested that changes are likely within the next 5 years.

Migration Policies

Policies aimed at “Keeping Folks on the Farm” may have resulted in horticultural production as a second-best solution to raise income.
Summing Up: Things to Watch For

- Transportation and Infrastructure
  - enable the development of a market economy and trade
  - determine the capacity for trade in perishables and non-perishables
  - China has already shown some strength in regional markets for vegetables, temperate fruit, poultry and pork … but longer term prospects depend on putting prerequisite infrastructure in place

- Water and Its Management will be Critical

  Water charges currently encourage waste, with both economic and environmental consequences. Higher charges are unlikely to significantly impair horticulture production but preliminary research suggest that wheat and corn production are likely to be adversely affected.

- China’s farmers are poor, highly adaptable and extremely resilient.

  China’s farmers and rural citizens have survived and, sometimes, even thrived in spite of historical discrimination against them. As China embraces more incentive-based approaches, farmers are likely to prove highly responsive.
The End

Thank You!