China Enters “New Era”: What It Means for US and Global Agriculture

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Eagle Grove, Iowa, March 8th, 2018
A Quick Introduction: Dr. Wendong Zhang

– Grown up in a rural county in NE China
– Attended college in Shanghai and Hong Kong
– Ph.D. in Ag Econ in 2015 from Ohio State
– 2012 summer intern at USDA-ERS on farm economy and farmland values
– Research and extension interests:
  - land value/ownership [www.card.iastate.edu/farmland/](http://www.card.iastate.edu/farmland/)
  - agriculture and the environment

China Ag center [www.card.iastate.edu/china](http://www.card.iastate.edu/china)
A corny tale

China imports a farm from Iowa

A slice of the Midwest outside Beijing

Presentations


China enters "New Era"

- Chinese Dream
- Belt and Road Initiative
- Xi Jinping 2030?
- COE of China
Trade war is bad for the trade-dependent U.S. agriculture

Donald J. Trump @realDonaldTrump

When a country (USA) is losing many billions of dollars on trade with virtually every country it does business with, trade wars are good, and easy to win. Example, when we are down $100 billion with a certain country and they get cute, don’t trade anymore—we win big. It’s easy!

4:50 AM - Mar 2, 2018

China Launches Probe Over U.S. Sorghum Imports
Move follows Trump administration decision to put tariffs on Chinese solar panel imports

Trade Retaliation Measures Could Hurt U.S. Farm Sector

Donald J. Trump @realDonaldTrump · 6h

We have large trade deficits with Mexico and Canada. NAFTA, which is under renegotiation right now, has been a bad deal for U.S.A. Massive relocation of companies & jobs. Tariffs on Steel and Aluminum will only come off if new & fair NAFTA agreement is signed. Also, Canada must.

7.3K t 12K 46K

Back to the old days

Xi Jinping decides to abolish presidential term limits

Donald J. Trump @realDonaldTrump · 6h

...treat our farmers much better. Highly restrictive. Mexico must do stopping drugs from pouring into the U.S. They have not done what they promised. Millions of people addicted and dying.
China’s Provinces

My Hometown
Mainland China vs. US
My hometown: Shenxian, Shandong Province

Greenhouse – plastic film - Shandong Province
Future of High-Speed Rail in China
## China vs. US

<table>
<thead>
<tr>
<th>Parameter</th>
<th>China</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>1350.4 million</td>
<td>318.9 million</td>
</tr>
<tr>
<td>Gross agricultural production</td>
<td>555.2 billion $</td>
<td>232.4 billion $</td>
</tr>
<tr>
<td>Share of Agriculture in Total GDP</td>
<td>10.0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Share of Agriculture in Employment</td>
<td>35.0%</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parameter</th>
<th>China</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Farmers</td>
<td>241.7 million</td>
<td>3.2 million</td>
</tr>
<tr>
<td>Number of Farms</td>
<td>200.2 million</td>
<td>2.1 million</td>
</tr>
<tr>
<td>Total Farmland Area</td>
<td>406.8 million acres</td>
<td>914.5 million acres</td>
</tr>
<tr>
<td>Corn Production Area</td>
<td>89.7 million acres</td>
<td>87.4 million acres</td>
</tr>
<tr>
<td>Soybean Production Area</td>
<td>16.9 million acres</td>
<td>76.3 million acres</td>
</tr>
<tr>
<td>Wheat Production Area</td>
<td>59.6 million acres</td>
<td>45.3 million acres</td>
</tr>
<tr>
<td>Total Size of Vegetable/Herb Greenhouses</td>
<td>83.6 million sq.ft.</td>
<td>61.8 million sq.ft</td>
</tr>
<tr>
<td>Average Farm Size</td>
<td>2.0 acres</td>
<td>433.6 acres</td>
</tr>
</tbody>
</table>
Chinese land is owned by collectives
(Contract Right Certificate)

Family Rep.

30-year term

With at least one 30-year renewal

All family members

Total land size

Number of parcels

China’s New Rural Land Transfer Reform

2016: 77 million acres (35% of cropland) transferred;
2007: 5%

Among them: 30% to co-ops or corps; 80% non-grain production
Navigating the Chinese agricultural economy through the lens of Iowa

By Wendong Zhang, extension economist, 515-294-2536, wdzhang@iastate.edu; Minghao Li, postdoctoral researcher, Center for Agricultural and Rural Development, Iowa State University

Figure 1. Number of farmers in Chinese provinces compared to Iowa

US: 3.2 million
Iowa: 0.13 million
China: 270 million

Number of Farmers (Iowa=1)
- < 10
- 11 - 50
- 51 - 80
- 81 - 100
- > 100

Figure 2. Crop land per farmer in China in acres

US: 120 acres
Iowa: 200 acres
China: 1.4 acres

Cropland Per Farmer (Acres)
- < 1
- 1 - 1.5
- 1.5 - 2
- 2 - 3
- > 3

Because crop land per farmer is so small in China, using Iowa as the unit here would create too many decimal points. We use acres instead.
2016
Area planted (Yield, Bu/acre):
US: 90 mil. acres (48)
Iowa: 10 mil. acres (56)
China: 16 mil. acres (26)

2016
Area planted (Yield, Bu/acre):
US: 88 mil. acres (154)
Iowa: 14 mil. acres (188)
China: 91 mil. acres (88)
2016 Production
US: 25 Bil. lbs
Iowa: 9 Bil. lbs
China: 117 Bil. lbs

2016 Production
US: 26 Bil. lbs
Iowa: 1.2 Bil. lbs
China: 15 Bil. lbs
China’s demographics – large is beautiful

1.39 bn
Population
54% urban

453 mn
Households

415 mn
Millennials
(30% of population)

217 mn
Gen Z
(18% of population)

1005 mn
Working age population

79 mn
College graduates

1042 mn
Smartphone subscribers

US$ 606 bn
Online retail market size

Note: Millennials are those born in the 1980s & 1990s, Gen Z, born after 2000
Source: BBVA Research, China National Bureau of Statistics
China

$21.4 billion U.S. Agricultural Exports, 2016

Top 5 U.S. Exports
1. Soybeans ($14.2 billion)
2. Course Grains* ($1.0 billion)
3. Hides & Skins ($949 million)
4. Pork ($578 million)
5. Cotton ($550 million)

*Excluding Corn

Export Growth 2006-2016

$6.7 billion 219% Increase $21.4 billion

#1 Among U.S. Agricultural Export Markets, 2016

Source: FAS Global Agricultural Trade System (GATS) BICO HS-6
Share of U.S. Agriculture Exported in 2016

Share of China in US Ag Exports

> >20% Cherries
> >30% Grapes
> 15% Apples

> >70% Cotton
> >70% Tree Nuts
> 50% Soybeans

> 62%

> 50% Wheat
> >50% Sorghum
> >50% Rice

> 75%
> 5%
> 15%

> 20% Pork
> 15% Dairy
> 15% Poultry
> 10% Beef

> 1%
> 1%
> 15-18%

More than 20% of total U.S. agricultural production is exported annually.

Twitter: @USDAForeignAg  Website: www.fas.usda.gov
Source: USDA-FAS Global Agricultural Trade System (GATS)

United States Department of Agriculture
Foreign Agricultural Service
US Ag Exports by Destination Country 2001-2016 ($ Billion)

Source: Choices
2017 Q2 Issue
## China’s Top Ag Imports Sources

<table>
<thead>
<tr>
<th>Commodity (2016 value of China ag imports)</th>
<th>USA</th>
<th>Brazil</th>
<th>Europe</th>
<th>Australia</th>
<th>Argentina or Uruguay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean ($34.4 Bil.)</td>
<td>38%</td>
<td>47%</td>
<td></td>
<td></td>
<td>A-10%</td>
</tr>
<tr>
<td>Pork ($2.32 Bil.)</td>
<td>13%</td>
<td></td>
<td>50%</td>
<td></td>
<td>Canada: 11%</td>
</tr>
<tr>
<td>Ethanol ($0.38 Bil.)</td>
<td>70%</td>
<td>11%</td>
<td></td>
<td>Pakistan 15%</td>
<td></td>
</tr>
<tr>
<td>Beef ($2.42 Bil.)</td>
<td>0%</td>
<td>22%</td>
<td>28%</td>
<td></td>
<td>U-21%</td>
</tr>
<tr>
<td>Poultry ($1.11 Bil.)</td>
<td></td>
<td>79%</td>
<td></td>
<td>A-9%</td>
<td></td>
</tr>
<tr>
<td>Corn ($0.87 Bil.)</td>
<td>10%</td>
<td></td>
<td></td>
<td>Ukraine: 79%</td>
<td></td>
</tr>
</tbody>
</table>
US Loses Market Share as China Increases Meat Imports from the World

Source: Choices 2017 Q2 Issue
China aims to build a global infrastructure network
“Belt and Road” infrastructure projects, planned and completed (March 2017)

Belt and Road Initiative
Of Maize and Markets: China’s New Corn Policy

Wu and Zhang 2016
Ag Policy Review

Source: http://www.quandl.com/
Of Maize and Markets: China’s New Corn Policy

http://chinaag.org/services/production/

Wu and Zhang 2016
Ag Policy Review
China Corn Yield

2015 Soybean Yield
- US: 48 Bu/acre
- Iowa: 56 Bu/acre
- China: 26 Bu/acre

China Soybean Yield

Corn Yield (Iowa=100%)
- No data
- 11% - 40%
- 41% - 45%
- 46% - 50%
- 51% - 60%

IOWA STATE UNIVERSITY
Extension and Outreach
Of Maize and Markets: China’s New Corn Policy

Wu and Zhang 2016
Ag Policy Review

Source: USDA FAS Grain: world markets and trade
China’s Ethanol Industry in 2016

4th largest producer – 1 Bil gal.
- After US, Brazil and EU
- Corn ethanol 64%
- Also uses cassava, sorghum, corn stover
- Imported 225 mil. gal, mainly from U.S.
- Tariff rose from 5% to 30%

China consumes 40 bil. gal gasoline; 1 bil. gal ethanol in 2016
China’s projected corn import potential and the role of ethanol

Li Hayes Zhang 2017
Ag Policy Review
GMO in China: Controversy/Divide

China Wants GMOs. The Chinese People Don't.

After Decades Of Wariness, China To Grow GMOs

The Chinese have long been wary of genetically modified organisms. The country allows imports of genetically modified corn and soybeans for animal feed. But it’s held off on domestic commercialization of those crops.

Over the past year, China has signaled it would relax that stance. This week it released its latest five-year plan for science and technology, saying it would push for the commercialization of biotech corn and soybeans in the next few years.
China OKs two GMO products for import

07/17/17 2:45 PM   By Steve Davies

WASHINGTON, July 17, 2017 - China has approved two more genetically modified products for import, which should leave four products awaiting decisions from the Chinese Ministry of Agriculture (MOA). But Dow AgroSciences said today that the ministry is “now indicating that Enlist soybeans is not covered” by a 100-day economic action plan initiated by the U.S. and Chinese governments in April.

The ministry has approved Syngenta’s Agrisure Duracade corn, engineered to be resistant to corn rootworm, and Monsanto’s Roundup Ready corn. Dow received import approval last month for Enlist corn, which China approved along with a Monsanto soybean variety, Vistive Gold. At the time, Dow said it had received inquiries from China’s National Biosafety Committee about Enlist soybeans and planned to address those questions quickly.

Today, Dow AgroSciences said it “understands Enlist soybeans was considered one of ‘the eight pending biotechnology traits’ by the U.S. Department of Commerce for the 100-day initiative referenced in the (U.S.-China) joint release on May 10,” which provided a progress report on the 100-day plan.
Ultra-high-voltage direct-current projects in China

January 2017

Operating line
Planned line
Population density, 2015 (est)

No data

Sources: State Grid; Centre for International Earth Science Information Network
A corny tale

China imports a farm from Iowa

A slice of the Midwest outside Beijing

Publications


Presentations


Documentaries about China

- China: Time of Xi - [https://www.youtube.com/watch?v=NEGp6y3uGIA](https://www.youtube.com/watch?v=NEGp6y3uGIA)
- One Belt One Road [https://www.youtube.com/watch?v=_NtprkECCiU](https://www.youtube.com/watch?v=_NtprkECCiU)
- A Bite of China – Chinese cuisine/culture [https://www.youtube.com/watch?v=Awj4u-_Ntgs&list=PLYOTfstAG_IPjyEeT472GEJzafYmBiA3w](https://www.youtube.com/watch?v=Awj4u-_Ntgs&list=PLYOTfstAG_IPjyEeT472GEJzafYmBiA3w)
- Bird’s Eye China – aerial China by province [https://www.youtube.com/watch?v=LVjnASDa6Pw](https://www.youtube.com/watch?v=LVjnASDa6Pw)
- The world’s future MegaProjects (2017-2040) [https://www.youtube.com/watch?v=CiQ874Zulno](https://www.youtube.com/watch?v=CiQ874Zulno)
- China’s MegaProjects – available in Chinese only
https://www.card.iastate.edu/farmland

Iowa Farmland Value Portal

#ISUIlandvalue

2% increase since Nov 2016

http://bit.ly/LandResults2017
Thank You!

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