

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

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Security Savings Bank 2018 Spring Ag Update Meeting  
Eagle Grove, Iowa, March 8<sup>th</sup>, 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/agriculture and the environment](http://www.card.iastate.edu/farmland/agriculture_and_the_environment)

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## Publications

Minghao Li, Wendong Zhang, Dermot Hayes, Riley Arthur, Yantao Yang, and Xiudong Wang. 2017. ["China's New Nationwide E10 Ethanol Mandate and Its Global Implications."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Wu, Qianrong, and Wendong Zhang. 2016. ["Of Maize and Markets: China's New Corn Policy."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Zhang, Wendong. 2015. ["The Commonalities and Differences between Chinese and US Agriculture."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

A corny tale

The  
Economist

## China imports a farm from Iowa

*A slice of the Midwest outside Beijing*

### Presentations

Zhang, Wendong. 2017. ["Recent Developments in China and its Impacts on US Agriculture."](#) 2017 Pro-Ag Outlook, November 17, 2017.

Zhang, Wendong. 2017. ["From Northeast China to the Midwest."](#) AMMO Club, November 6, 2017.

Zhang, Wendong. 2017. ["Update on Chinese Ag Economy."](#) Iowa Institute for Cooperatives Member Summer Workshop, Huxley, IA, June 15, 2017.

Lawrence, John, and Zhang, Wendong. 2017. ["Understanding the U.S. Farm Bill: Policy to Practice."](#) Presentation to the Chinese Ministry of Agriculture, Agricultural Trade Promotion Center Delegation, Ames, Iowa, May 30, 2017.

Zhang, Wendong. 2017. ["What's Going On in China: Corn, GMO, Crop Insurance and High-Speed Rails."](#) 2017 Crop Advantage Series, Okoboji, IA, January 5, 2017.



2017年10月18日  
第16888号  
（星期一）  
（国内统一刊号：CN11-001）  
零售每份5分  
广告刊例：每行每日1000元

### 胡锦涛习近平等领导人亲切会见出席党的十九大代表、特邀代表和列席人员并发表重要讲话

2017年10月18日  
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零售每份5分  
广告刊例：每行每日1000元

### 习近平应约同美国总统特朗普通电话

两国领导人就中美元首时隔五年再次通电话达成共识

## 习近平同志主持会议并作重要讲话 党的十八届一中全会产生中央领导机构

#### 习近平同志主持会议并作重要讲话

习近平同志主持会议并作重要讲话，就做好当前和今后一个时期的工作提出了明确要求。他强调，要深入学习贯彻党的十八大和十八届三中全会精神，坚定信心、开拓进取，为实现中华民族伟大复兴的中国梦而努力奋斗。



10月18日，习近平同志主持十八届中央政治局第一次会议，审议十八届中央政治局常委、委员人选，决定十八届中央政治局常委、委员名单。



习近平同志主持会议并作重要讲话，就做好当前和今后一个时期的工作提出了明确要求。他强调，要深入学习贯彻党的十八大和十八届三中全会精神，坚定信心、开拓进取，为实现中华民族伟大复兴的中国梦而努力奋斗。

## 习近平同志主持会议并作重要讲话 党的十八届一中全会产生中央领导机构



习近平同志



# 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

96.1K 50.9K people are



## 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

March 4, 2018 Keith Good trade

**Farm Policy News**



**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 12K 46K

The Economist

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Back to the old days

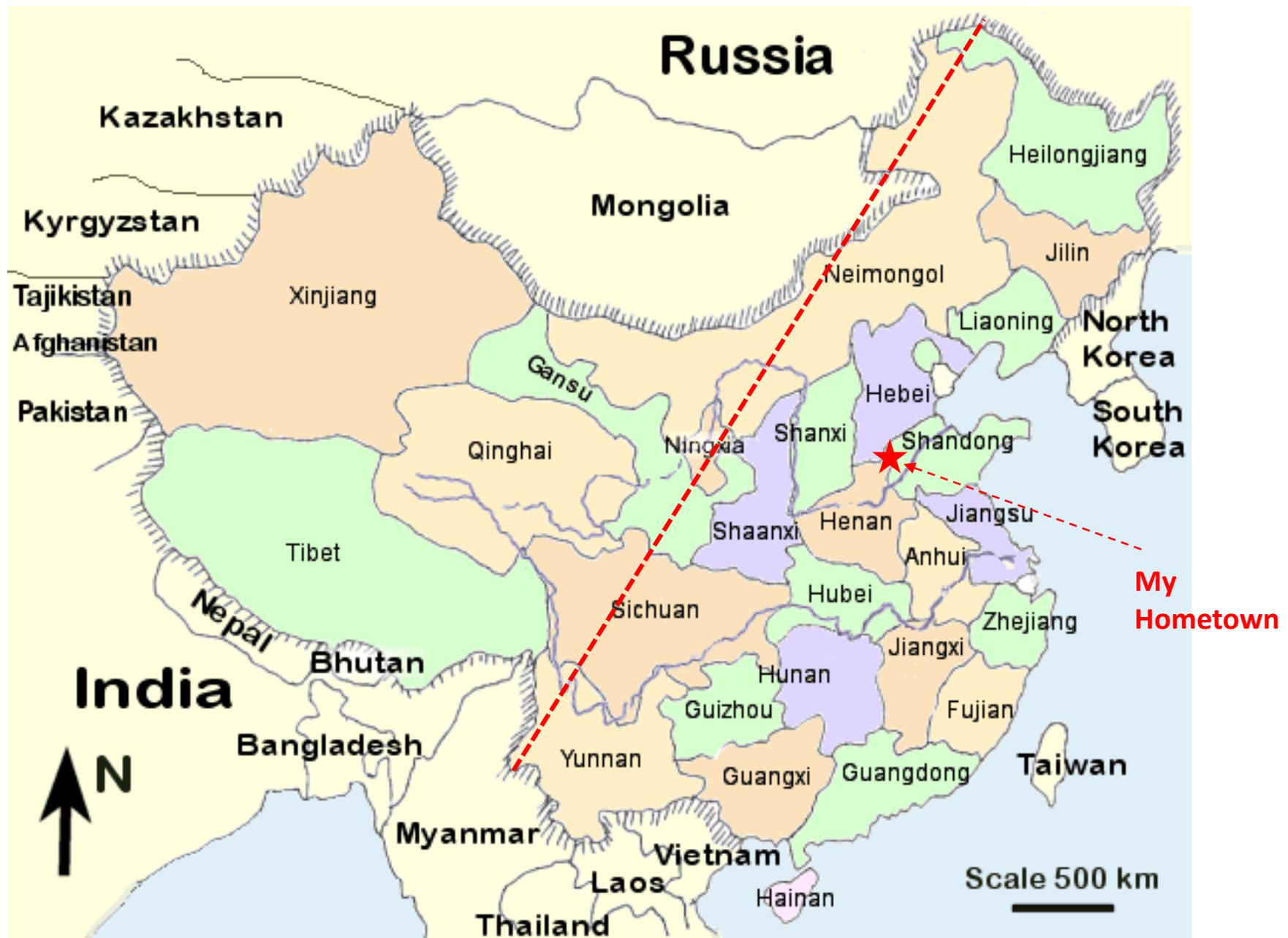
## Xi Jinping decides to abolish presidential term limits

**Donald J. Trump** @realDonaldTrump · 6h

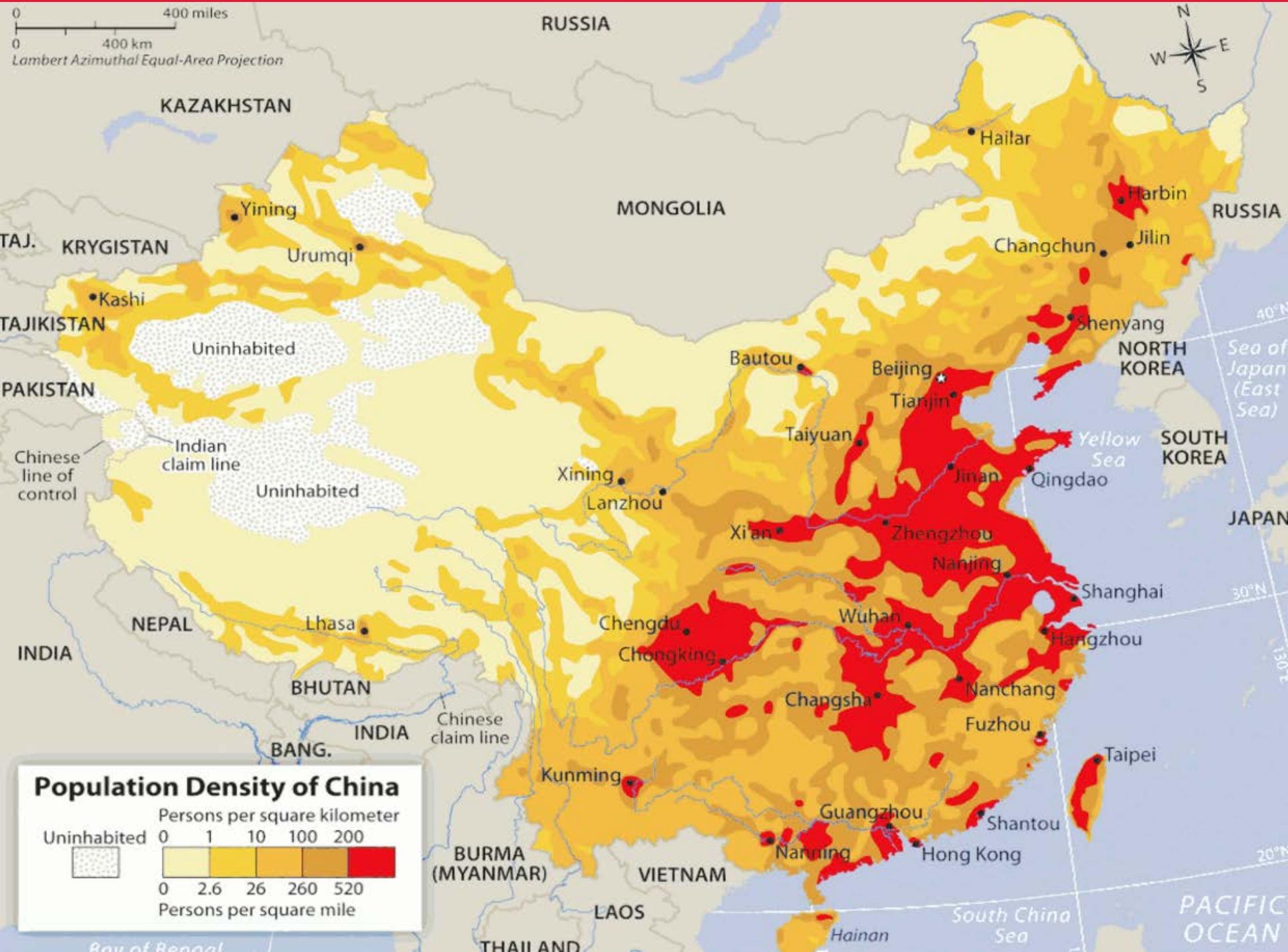
...treat our farmers much better. Highly restrictive. Mexico must do stopping drugs from pouring into the U.S. They have not done wh done. Millions of people addicted and dying.

9.8K 12K 51K

# China's Provinces







0 400 miles  
0 400 km  
Lambert Azimuthal Equal-Area Projection



KAZAKHSTAN

RUSSIA

MONGOLIA

RUSSIA

TAJ. KRYGISTAN

Yining

Urumqi

Hailar

Harbin

Changchun

Jilin

TAJIKISTAN

Kashi

Uninhabited

Shenyang

NORTH KOREA

Sea of Japan (East Sea)

PAKISTAN

Indian claim line

Uninhabited

Bautou

Beijing

Tianjin

Yellow Sea

SOUTH KOREA

Chinese line of control

Xining

Lanzhou

Taiyuan

Jinan

Qingdao

JAPAN

NEPAL

Lhasa

Xi'an

Zhengzhou

Nanjing

Shanghai

INDIA

BHUTAN

Chengdu

Wuhan

Hangzhou

Chongking

Changsha

Nanchang

Fuzhou

BANG. INDIA

Chinese claim line

Kunming

Guangzhou

Shantou

Taipei

BURMA (MYANMAR)

VIETNAM

Nanning

Hong Kong

LAOS

South China Sea

PACIFIC OCEAN

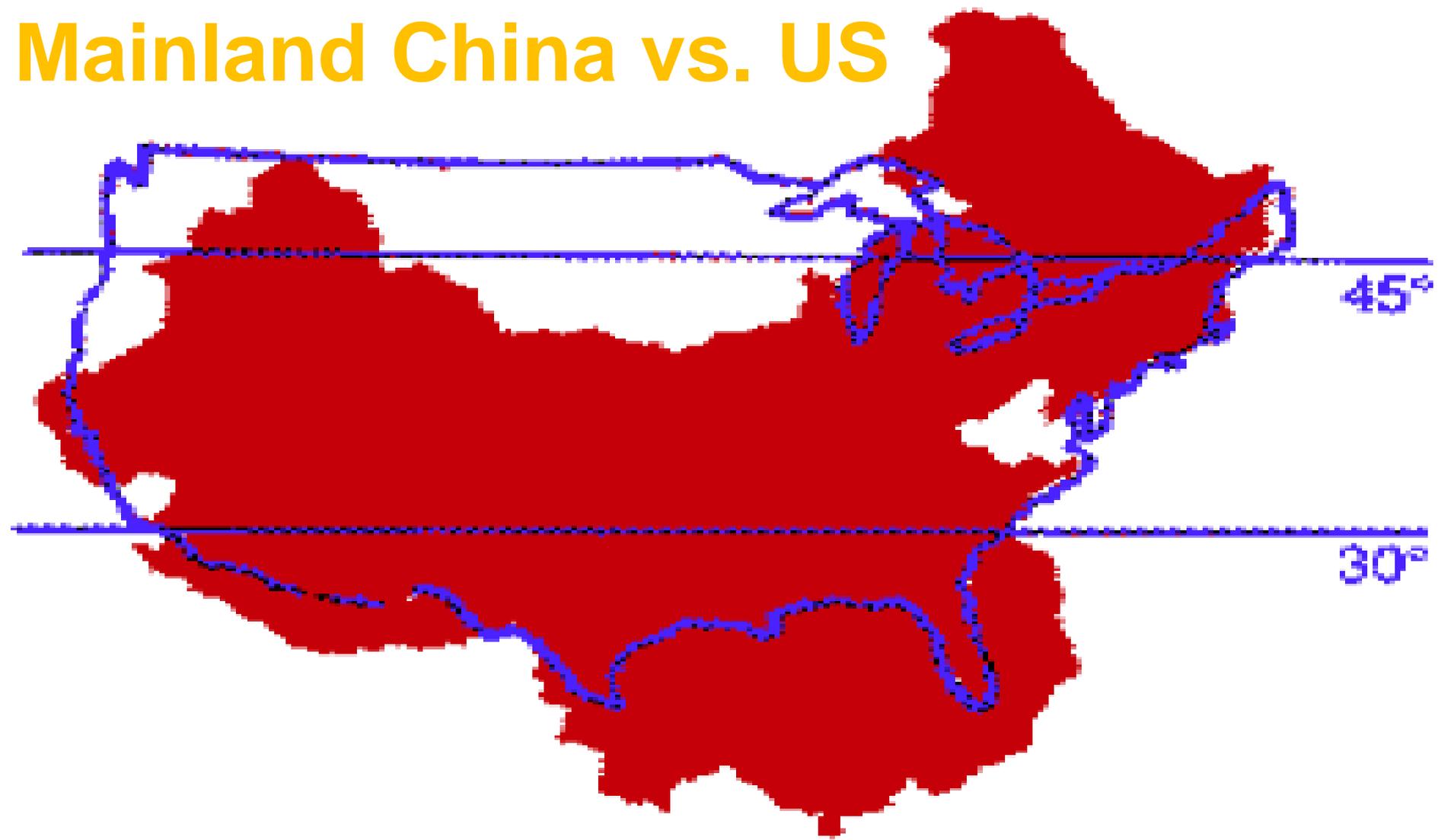
Bay of Bengal

THAILAND

Hainan

40°N  
30°N  
20°N

# Mainland China vs. US



# My hometown: Shenxian, Shandong Province

Greenhouse – plastic film - Shandong Province

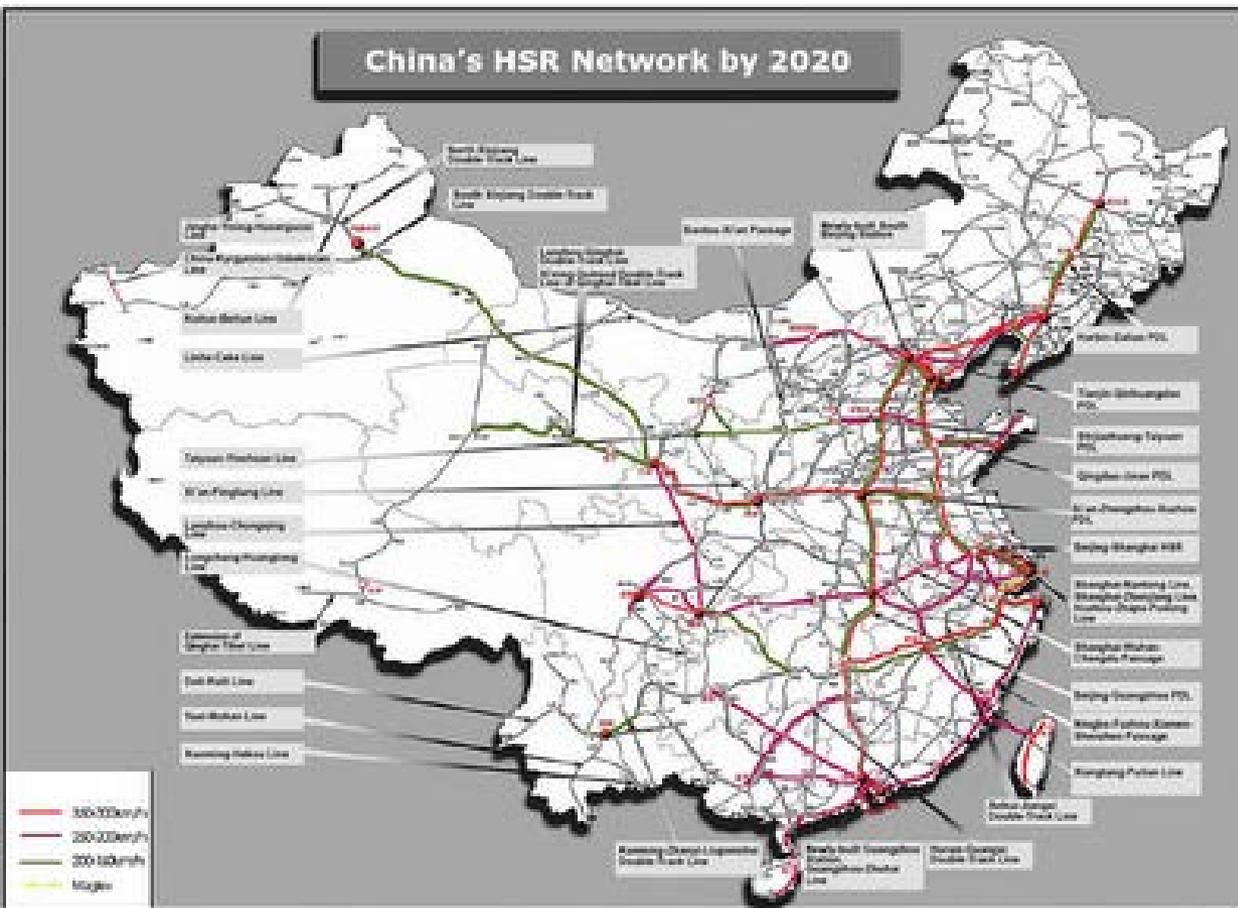


# China High Speed Train Network Map

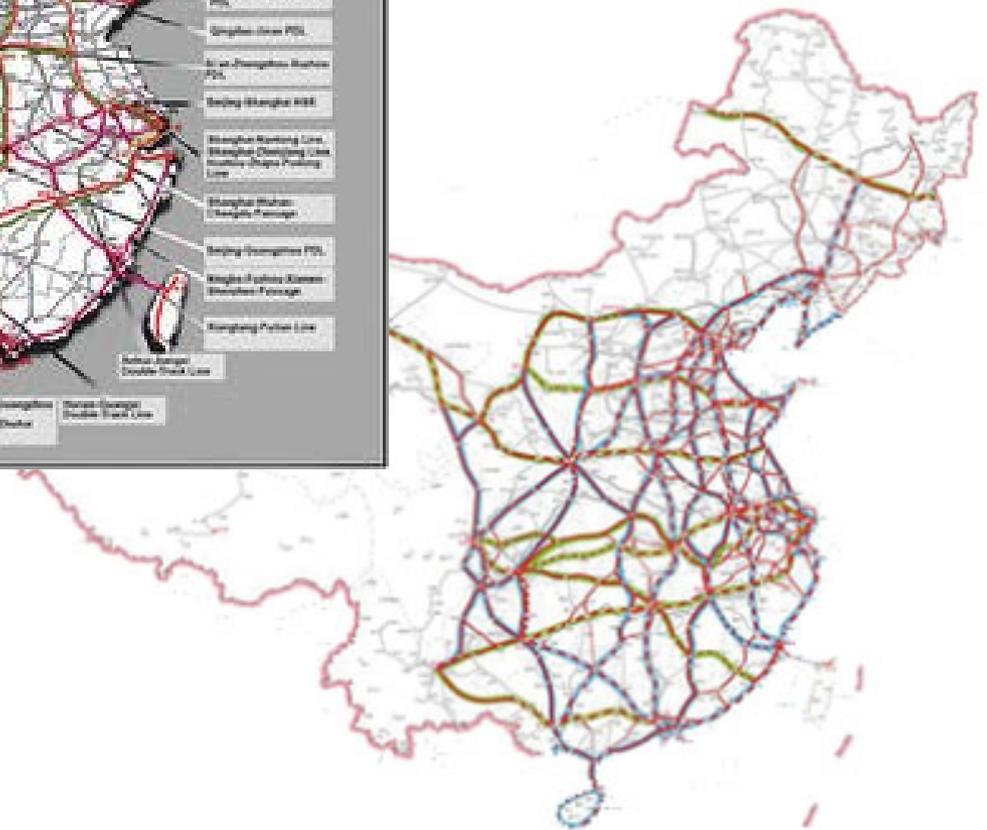
- Main Cities
- Speed of 300 km/h or above
- Speed of 200-250 km/h
- C train: intercity train



## China's HSR Network by 2020



## Speed Rail Lines to Be Built By 2030



# Future of High-Speed Rail in China



# China vs. US

*prev*

|                                    | China            | US               |
|------------------------------------|------------------|------------------|
| Total Population                   | 1350.4 million   | 318.9 million    |
| Gross agricultural production      | 555.2 billion \$ | 232.4 billion \$ |
| Share of Agriculture in Total GDP  | 10.0%            | 1.3%             |
| Share of Agriculture in Employment | 35.0%            | 2.0%             |

|  | China               | US                  |
|--|---------------------|---------------------|
| Number of Farmers                        | 241.7 million       | 3.2 million         |
| Number of Farms                          | 200.2 million       | 2.1 million         |
| Total Farmland Area                      | 406.8 million acres | 914.5 million acres |
| Corn Production Area                     | 89.7 million acres  | 87.4 million acres  |
| Soybean Production Area                  | 16.9 million acres  | 76.3 million acres  |
| Wheat Production Area                    | 59.6 million acres  | 45.3 million acres  |
| Total Size of Vegetable/Herb Greenhouses | 83.6 million sq.ft. | 61.8 million sq.ft. |
| Average Farm Size                        | 2.0 acres           | 433.6 acres         |

# Chinese land is owned by collectives (Contract Right Certificate)

Total land size

Number of parcels

Family Rep.

30-year term

With at least one  
30-year renewal

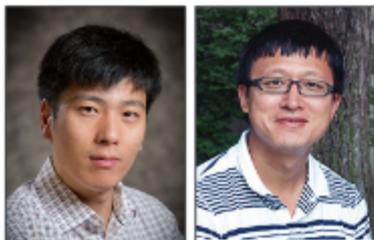
All family  
members

|              |              |    |  |                          |           |               |    |
|--------------|--------------|----|--|--------------------------|-----------|---------------|----|
| 发包方<br>全称    | 美兰县灵山乡 (盖章)  |    |  | 承包地总<br>面积(亩)            | 2.05      | 承包地块<br>总数(块) | 8块 |
| 承包方代<br>表姓名  | 吴乾洪          |    |  | 地块<br>名称                 | 面积<br>(亩) | 等级            | 地类 |
| 承包方<br>住址    | 美兰县灵山乡 村 村 组 |    |  | 秧田                       | 0.32      |               | 水田 |
| 土地承包<br>合同编号 |              |    |  | 东至:水河 南至:乾荣<br>西:亚花 北:清明 |           |               |    |
| 承包期限         | 1998年1月1     |    |  | 东至:好豆 南至:路<br>西:清明 北:双妹  |           |               |    |
| 承包方式         | 家庭承包         |    |  | 东至:清明 南至:田金<br>西:提屯 北:公路 |           |               |    |
| 承包土<br>地用途   | 农业用地         |    |  | 东至:好风 南至:清明<br>西:好风 北:乾荣 |           |               |    |
| 承包方土地承包经营    |              |    |  |                          |           |               |    |
| 姓名           | 性别           | 年龄 |  | 东至:清明 南至:乾荣<br>西:世昌 北:水沟 |           |               |    |
| 吴乾洪          | 男            | 51 |  | 东至:好风 南至:清明<br>西:好风 北:乾荣 |           |               |    |
| 林桂兰          | 女            | 54 |  | 东至:清明 南至:乾荣<br>西:世昌 北:水沟 |           |               |    |
| 吴坤森          | 男            | 24 |  | 东至:好风 南至:清明<br>西:好风 北:乾荣 |           |               |    |
| 吴亚玉          | 女            | 23 |  | 东至:水沟 南至:好风<br>西:好风 北:乾荣 |           |               |    |
|              |              |    |  | 东至:水沟 南至:好风<br>西:好风 北:乾荣 |           |               |    |
|              |              |    |  | 东至:水沟 南至:好风<br>西:好风 北:乾荣 |           |               |    |

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

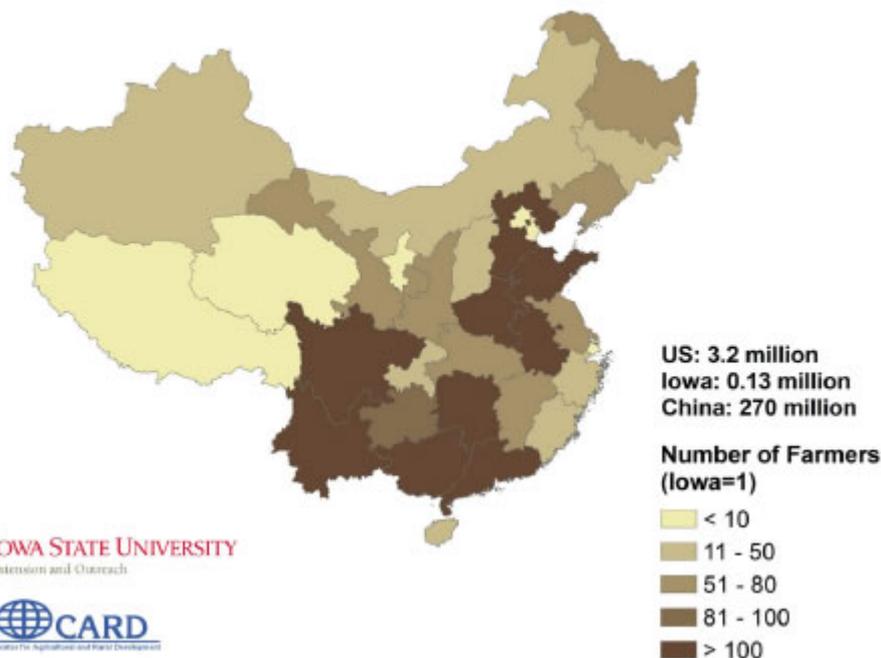
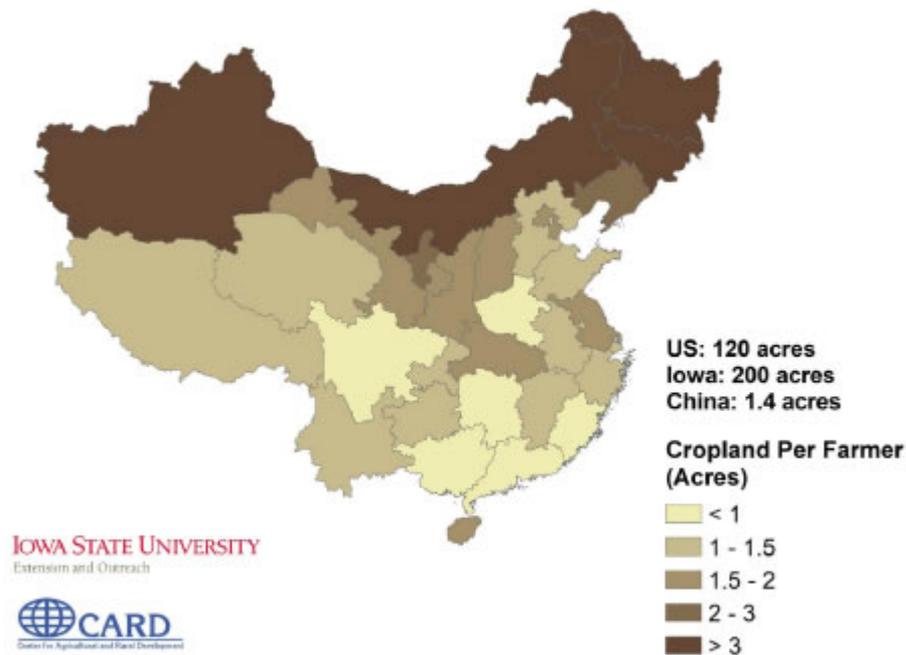
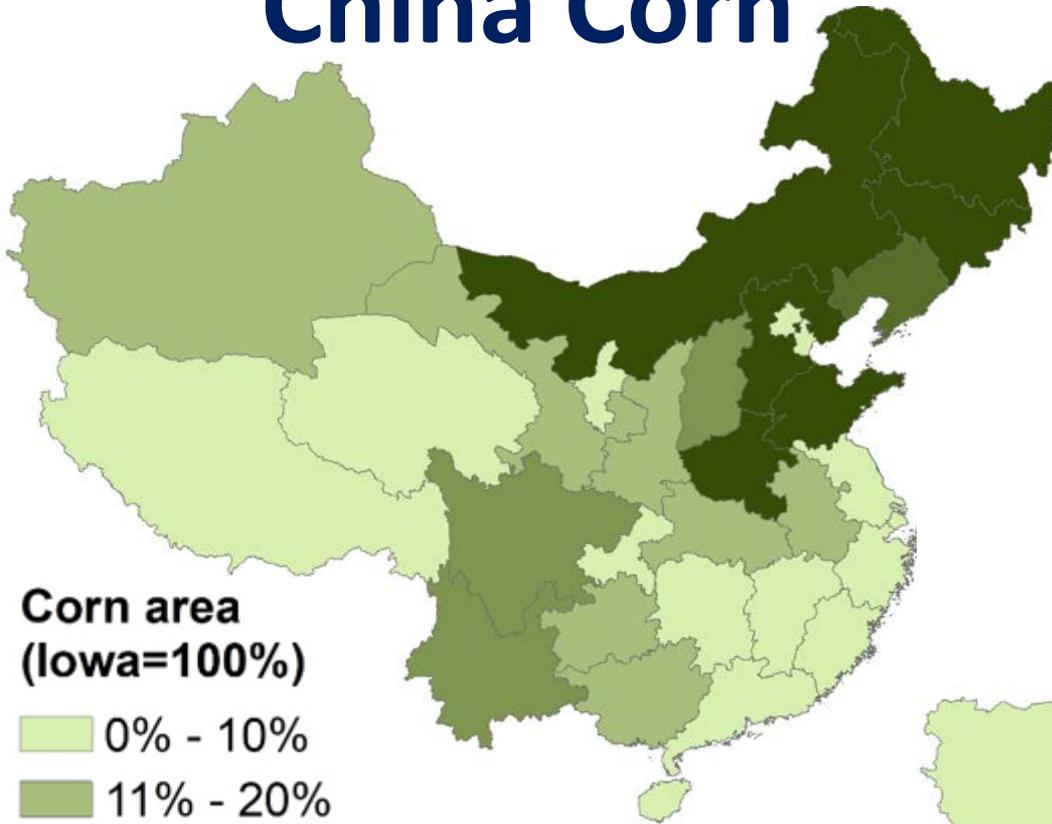


Figure 2. Crop land per farmer in China in acres



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.

# China Corn



2016

Area planted

(Yield, Bu/acre)

US: 90 mil. acres (48)

Iowa: 10 mil. acres (56)

China: 16 mil. acres (26)

Soybean area  
(Iowa=100%)

< 5%

6% - 10%

11% - 20%

21% - 25%

26% - 65%

Corn area  
(Iowa=100%)

0% - 10%

11% - 20%

21% - 30%

31% - 40%

41% - 93%

2016

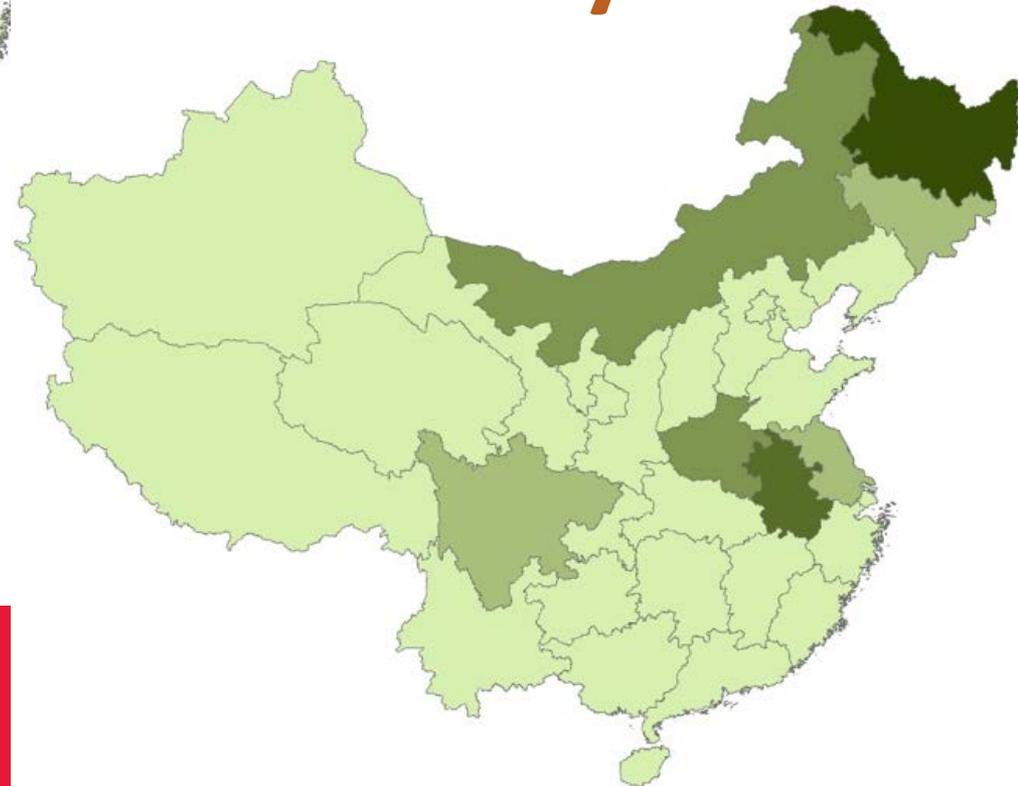
Area planted (Yield, Bu/a):

US: 88 mil. acres (154)

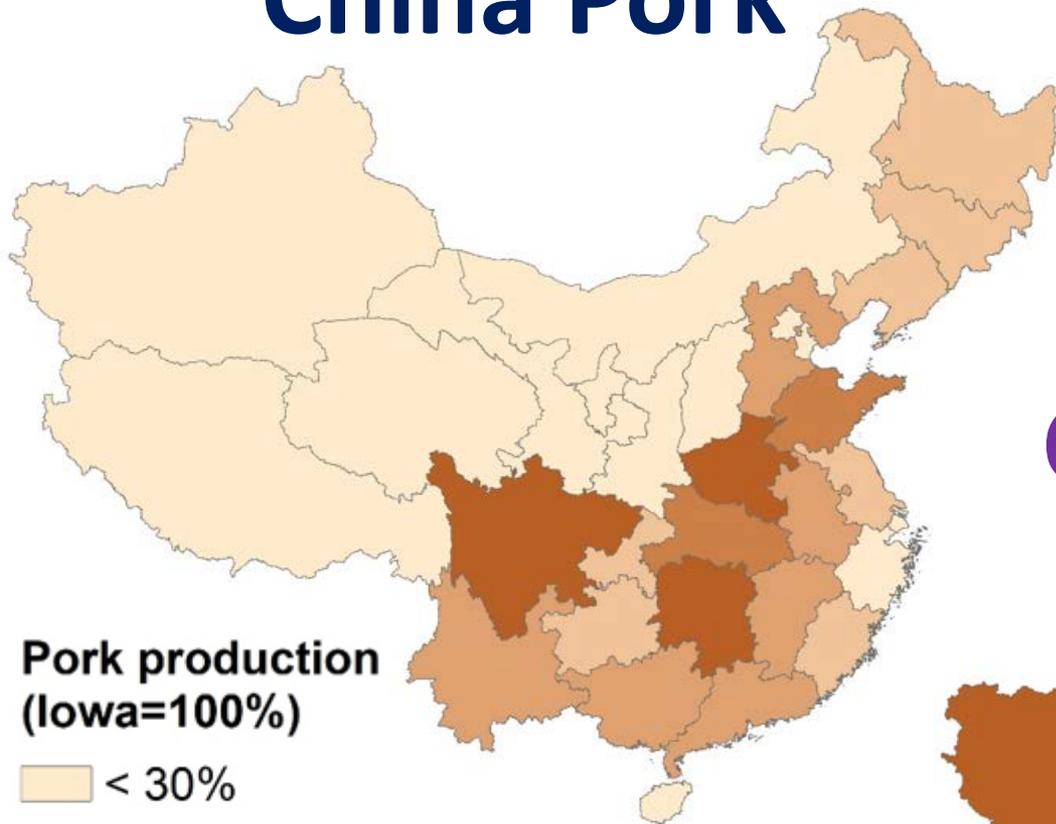
Iowa: 14 mil. acres (188)

China: 91 mil. acres (88)

# China Soybean



# China Pork



**Pork production  
(Iowa=100%)**

- < 30%
- 31% - 60%
- 61% - 80%
- 81% - 100%
- >100 %

**2016 Production**

**US: 25 Bil. lbs  
Iowa: 9 Bil. lbs  
China: 117 Bil. lbs**

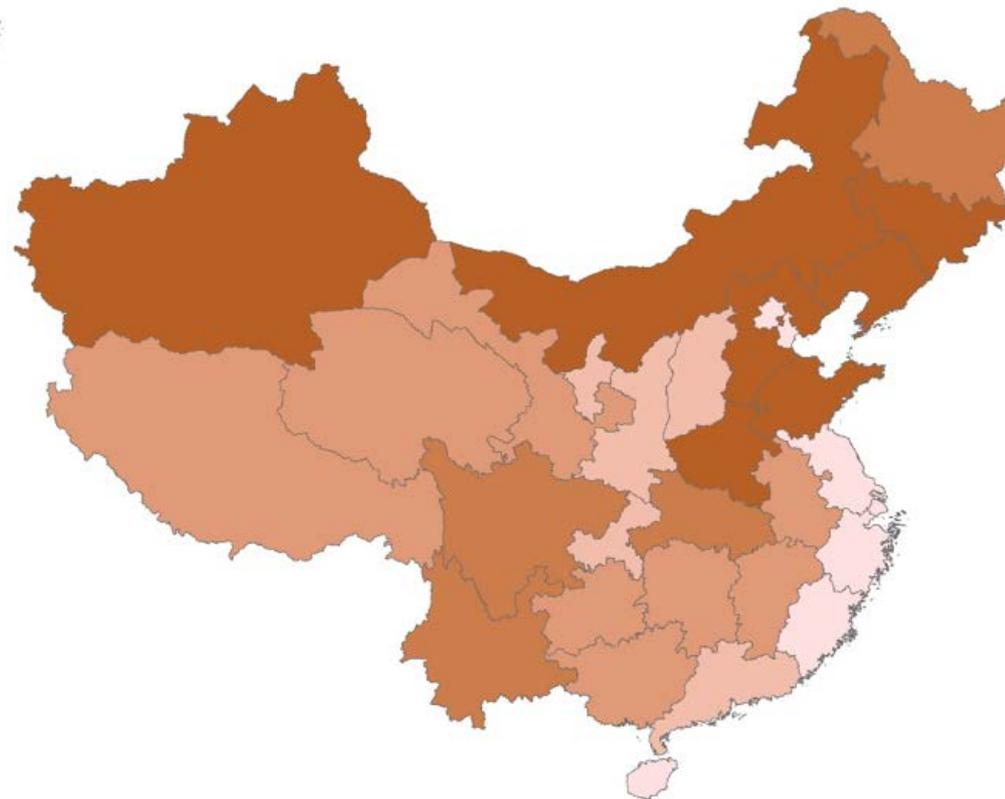
**2016 Production**

**US: 26 Bil. lbs  
Iowa: 1.2 Bil. lbs  
China: 15 Bil. lbs**

**Beef production  
(Iowa=100%)**

- < 10%
- 11% - 20%
- 21% - 40%
- 41% - 70%
- > 70%

# China Beef



# 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 1990s & 1990s, Gen Z : born after 2000  
Source : BBVA Research, China National Bureau of Statistics



# United States Department of Agriculture Foreign Agricultural Service

## 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



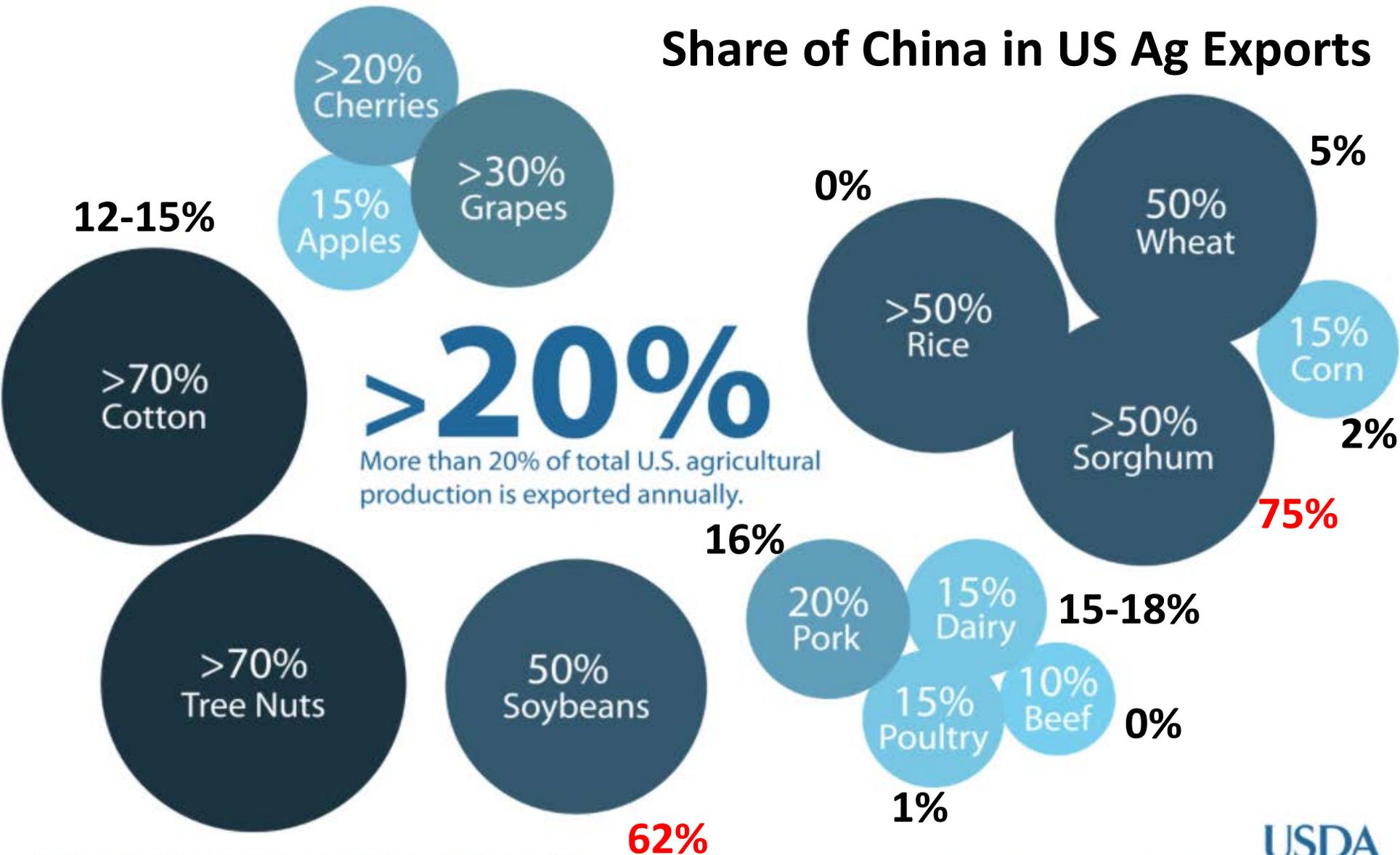
**#1**

Among U.S.  
Agricultural Export  
Markets, 2016

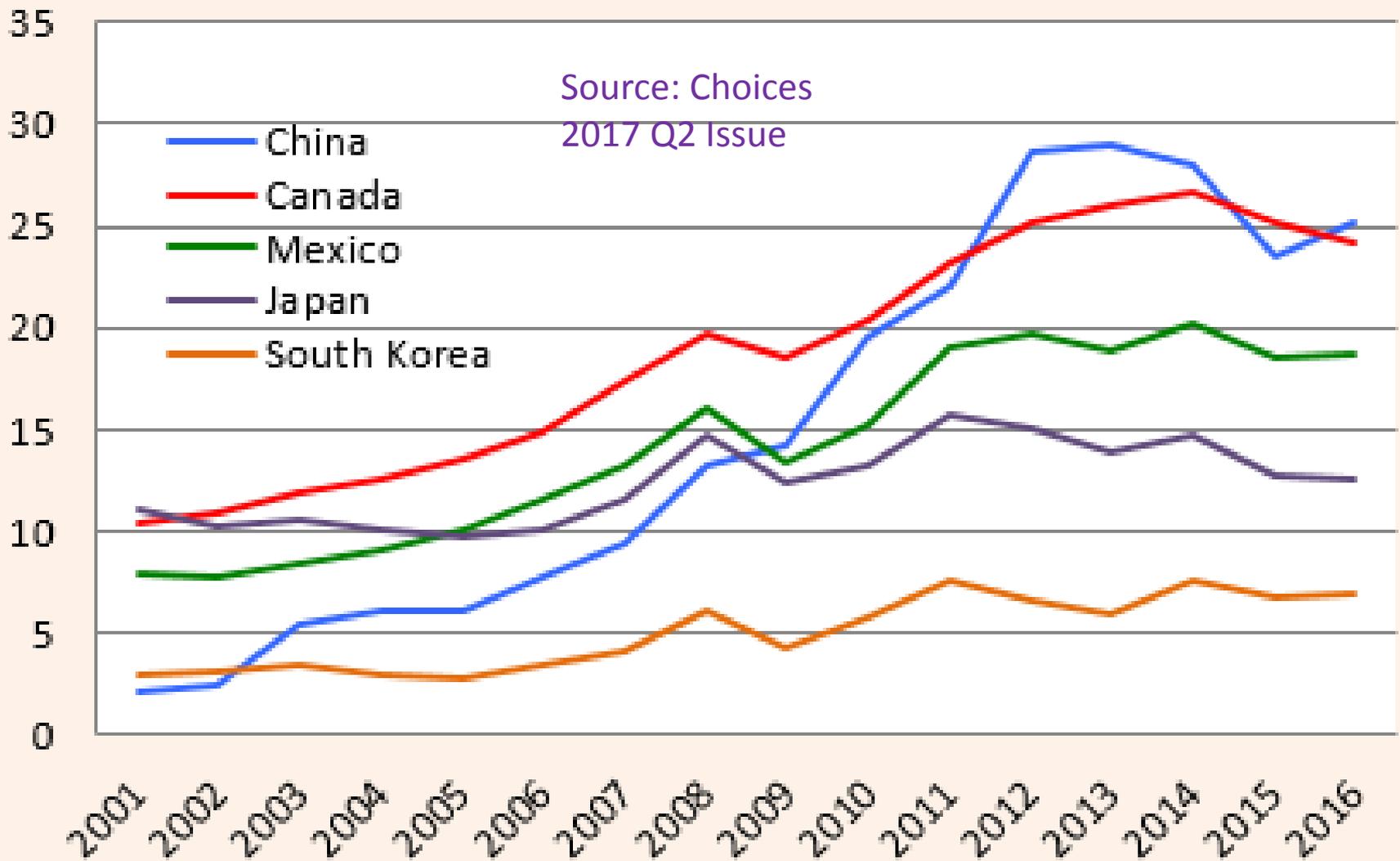
Source: FAS Global Agricultural Trade System (GATS) BICO HS- 6

# Share of U.S. Agriculture Exported in 2016

## Share of China in US Ag Exports



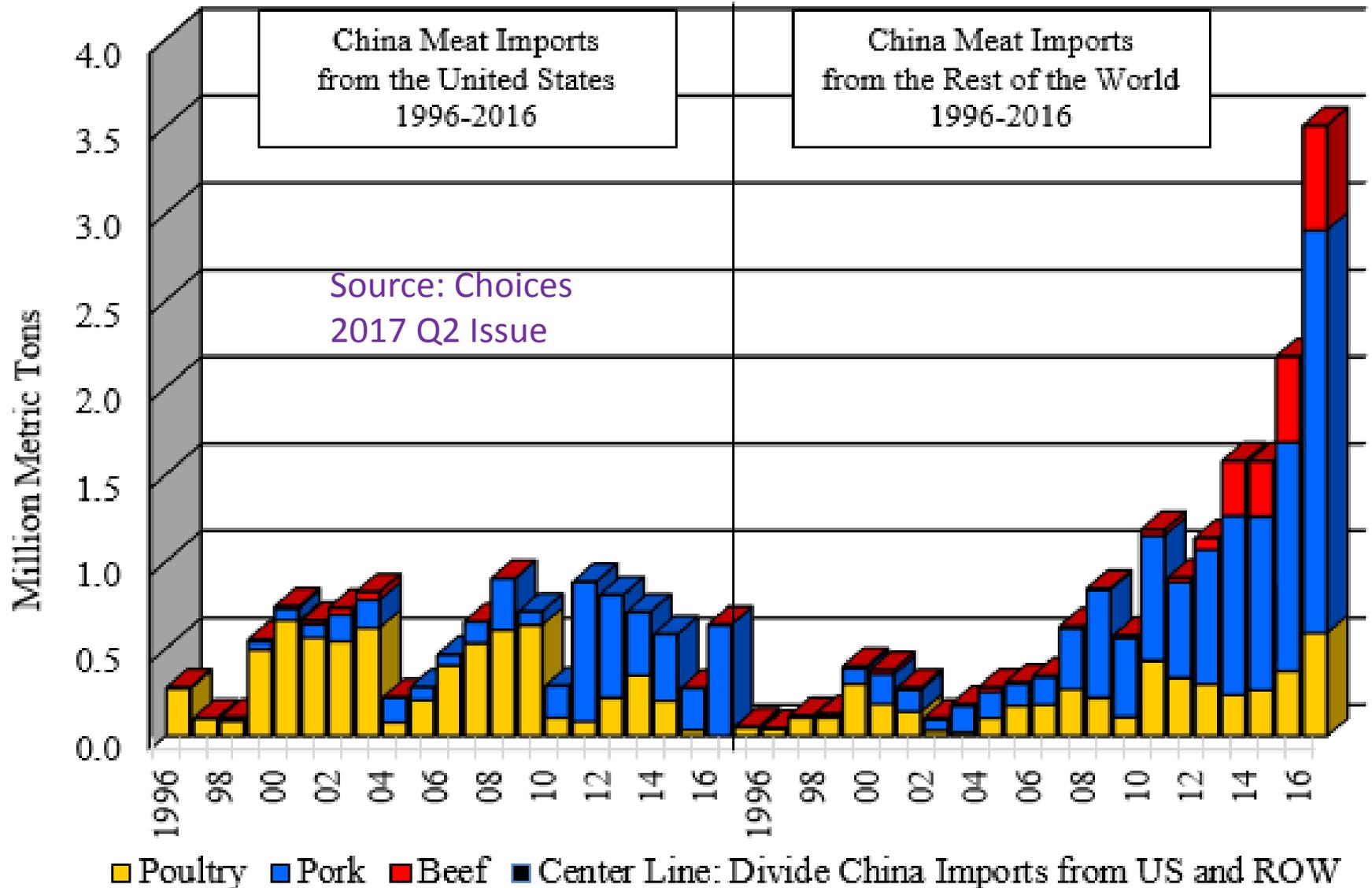
# US Ag Exports by Destination Country 2001-2016 (\$ Billion)



# China's Top Ag Imports Sources

| Commodity (2016 value of China ag imports) | USA | Brazil       | Europe       | Australia   | Argentina or Uruguay |
|--|-----|--------------|--------------|-------------|----------------------|
| Soybean (\$34.4 Bil.)                      | 38% | 47%          |              |             | A-10%                |
| Pork (\$2.32 Bil.)                         | 13% |              | 50%          | Canada: 11% |                      |
| Ethanol (\$0.38 Bil.)                      | 70% | 11%          | Pakistan 15% |             |                      |
| Beef (\$2.42 Bil.)                         | 0%  | 22%          |              | 28%         | U-21%                |
| Poultry (\$1.11 Bil.)                      |     | 79%          |              |             | A-9%                 |
| Corn (\$0.87 Bil.)                         | 10% | Ukraine: 79% |              |             |                      |

# US Loses Market Share as China Increases Meat Imports from the World



China aims to build a global infrastructure network  
 "Belt and Road" infrastructure projects, planned and completed (March 2017)

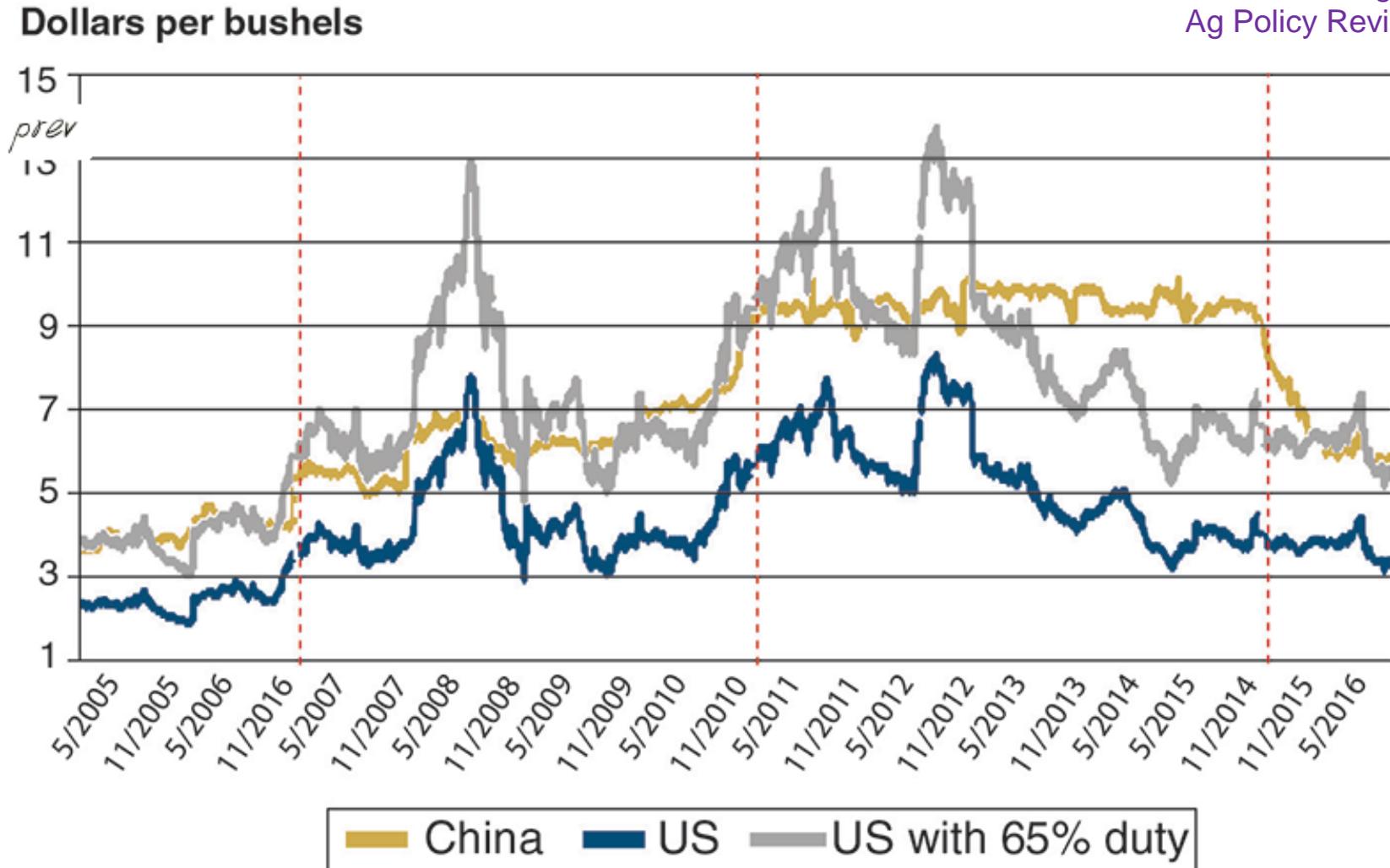
# Belt and Road Initiative

■ Silk Road Economic Belt  
■ Maritime Silk Road of the 21st Century  
■ AIIB member states

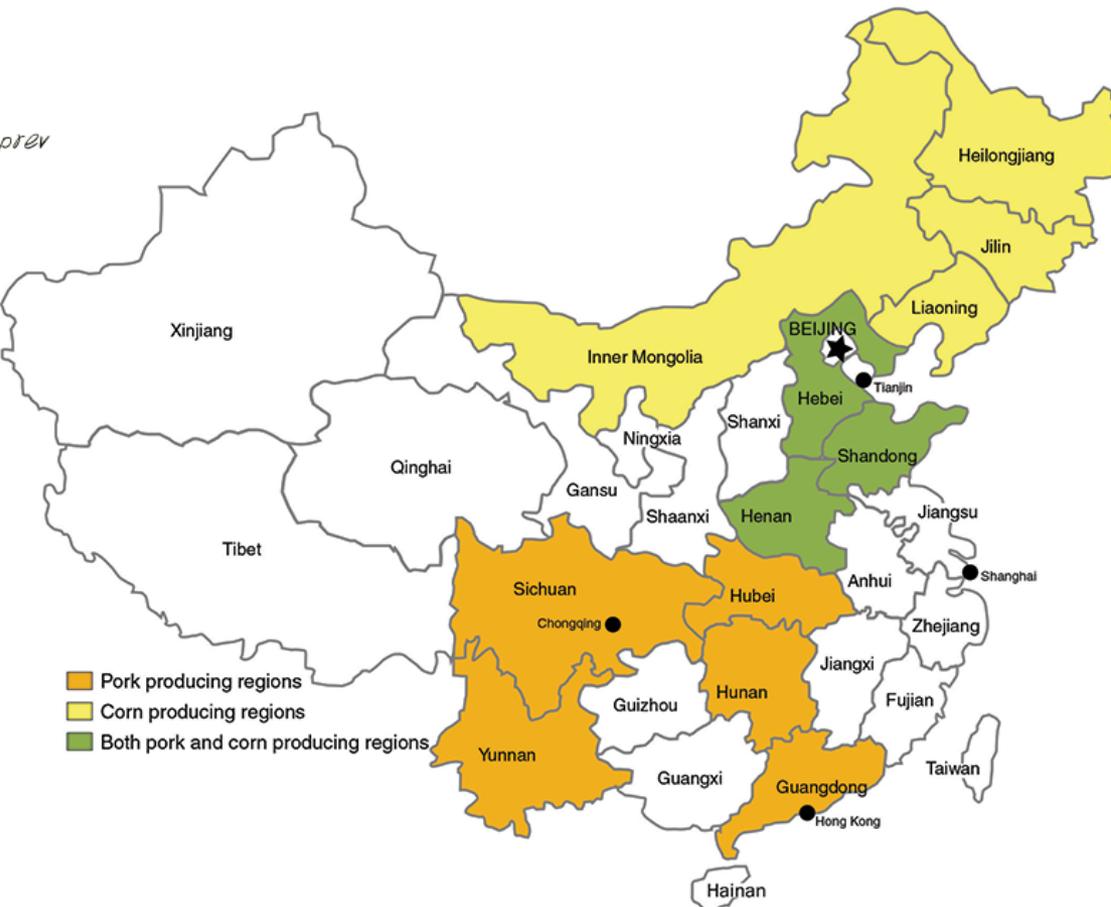


# Of Maize and Markets: China's New Corn Policy

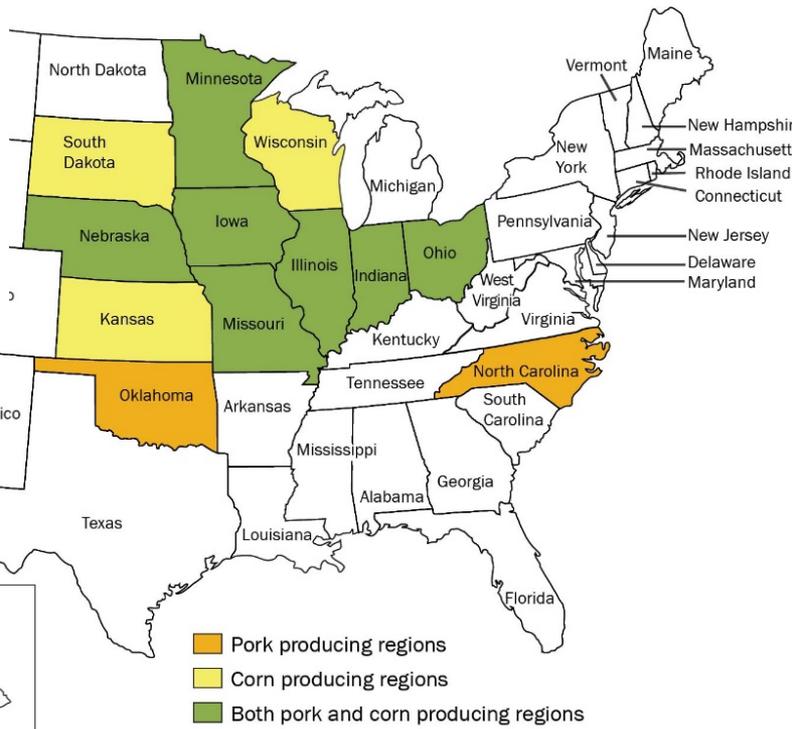
Wu and Zhang 2016  
Ag Policy Review



# Of Maize and Markets: China's New Corn Policy

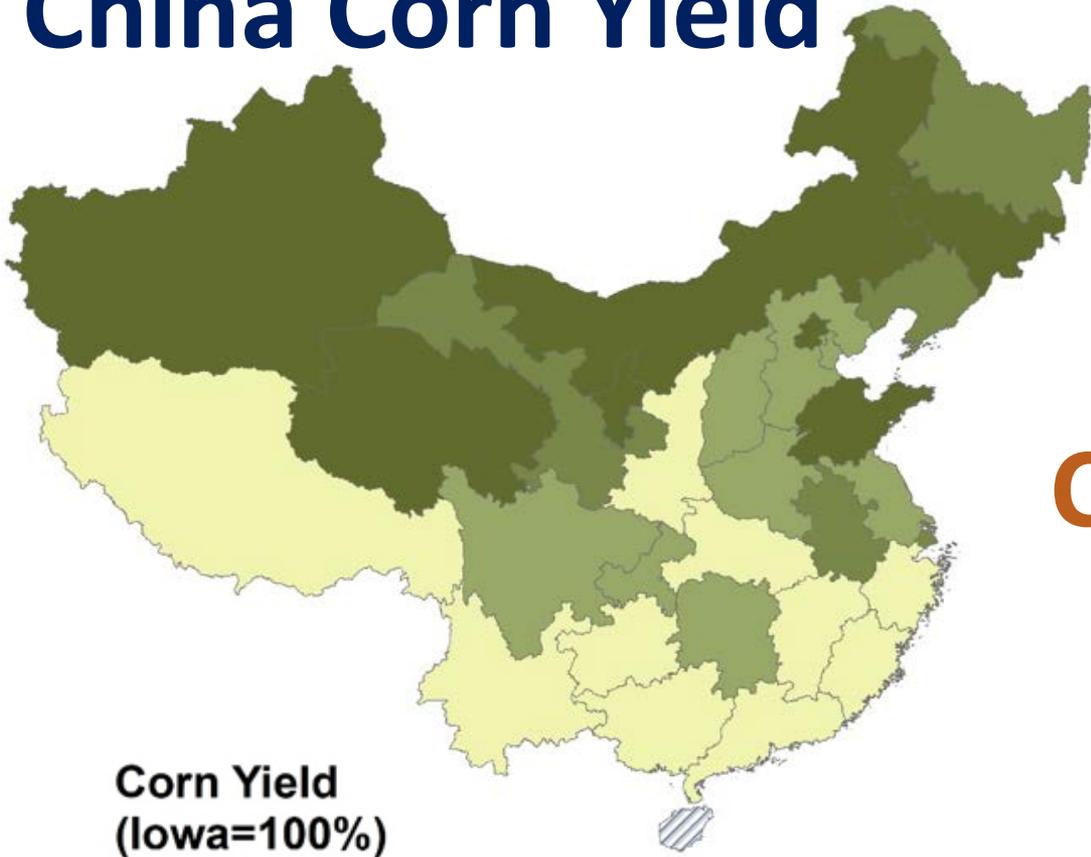


Sources: <https://www.statista.com/statistics/242632/corn-production-in-china-by-region/>  
<http://chinaag.org/services/production/>



- Pork producing regions
- Corn producing regions
- Both pork and corn producing regions

# China Corn Yield



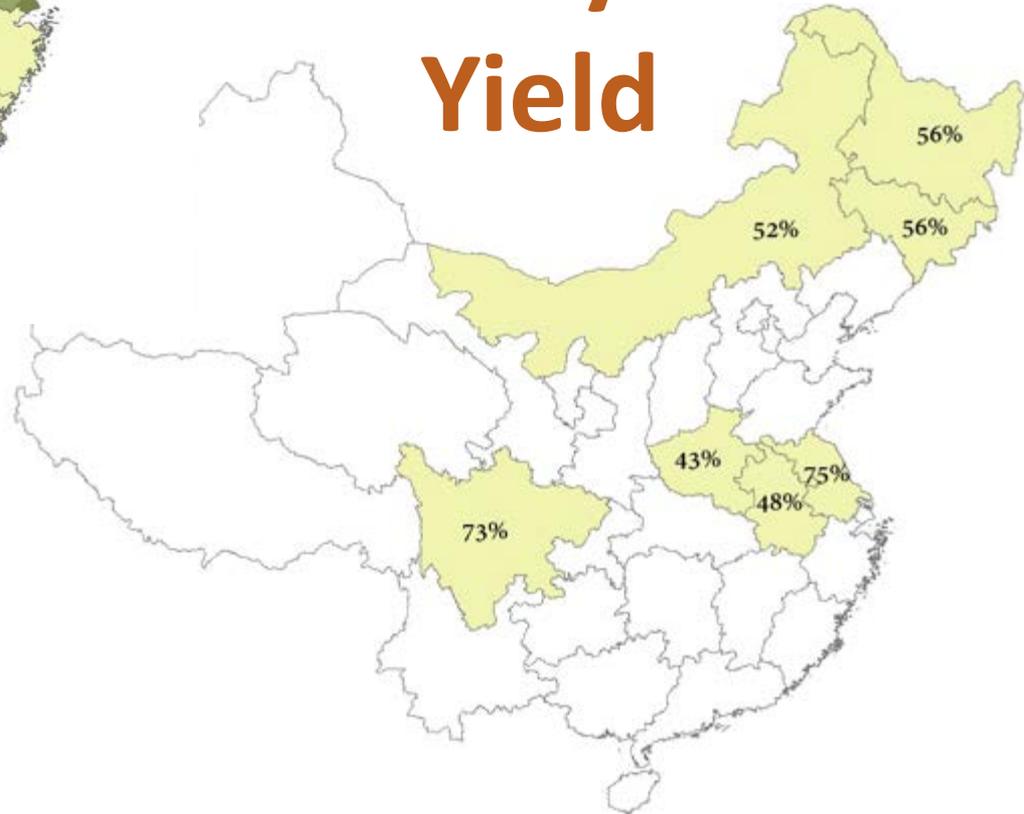
**Corn Yield**  
(Iowa=100%)

- No data
- 11% - 40%
- 41% - 45%
- 46% - 50%
- 51% - 60%

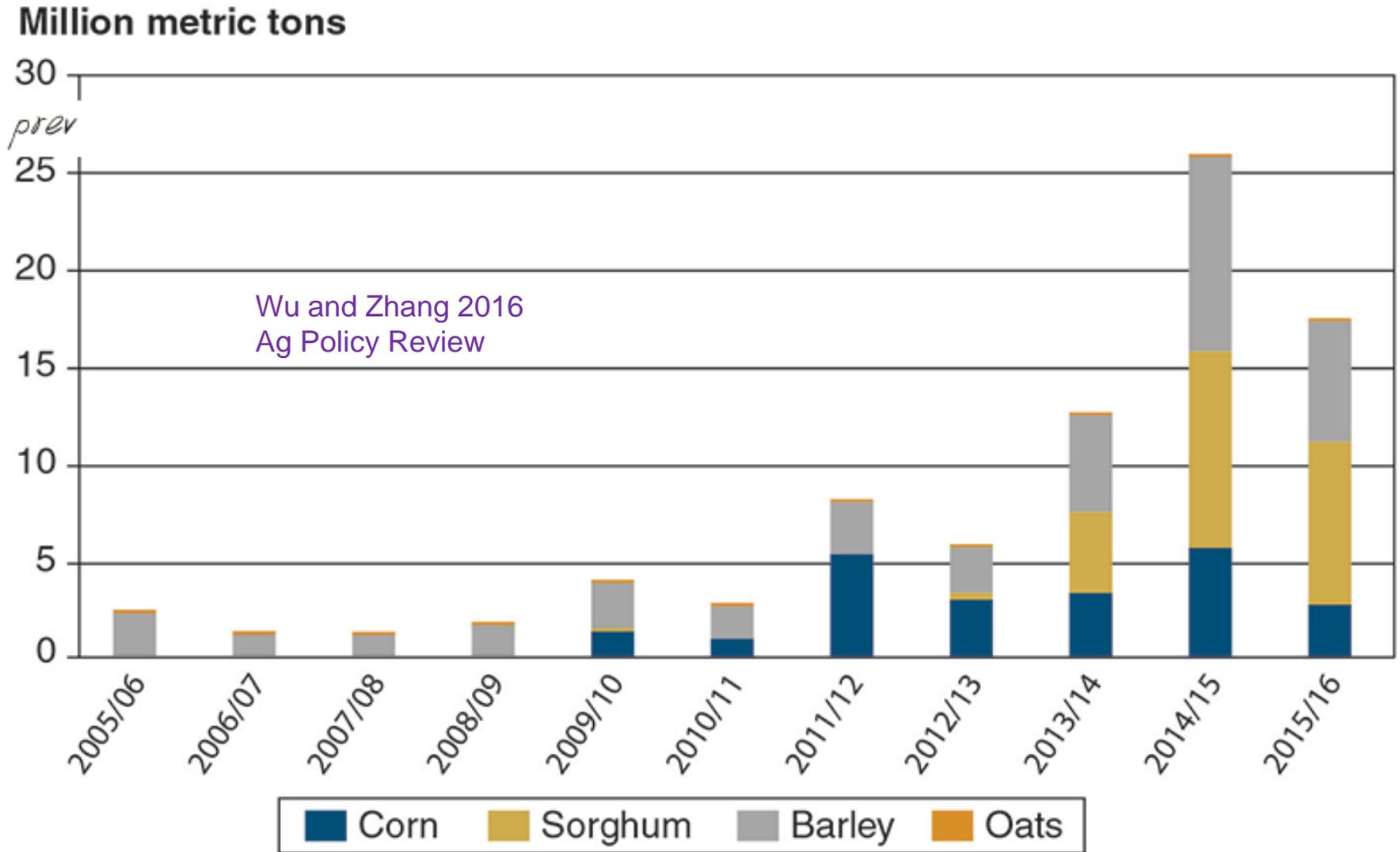
## 2015 Soybean Yield

US: 48 Bu/acre  
Iowa: 56 Bu/acre  
China: 26 Bu/acre

# China Soybean Yield



# Of Maize and Markets: China's New Corn Policy



Source: USDA FAS Grain: world markets and trade

# China sets 2020 target for nationwide ethanol use to cut corn stocks

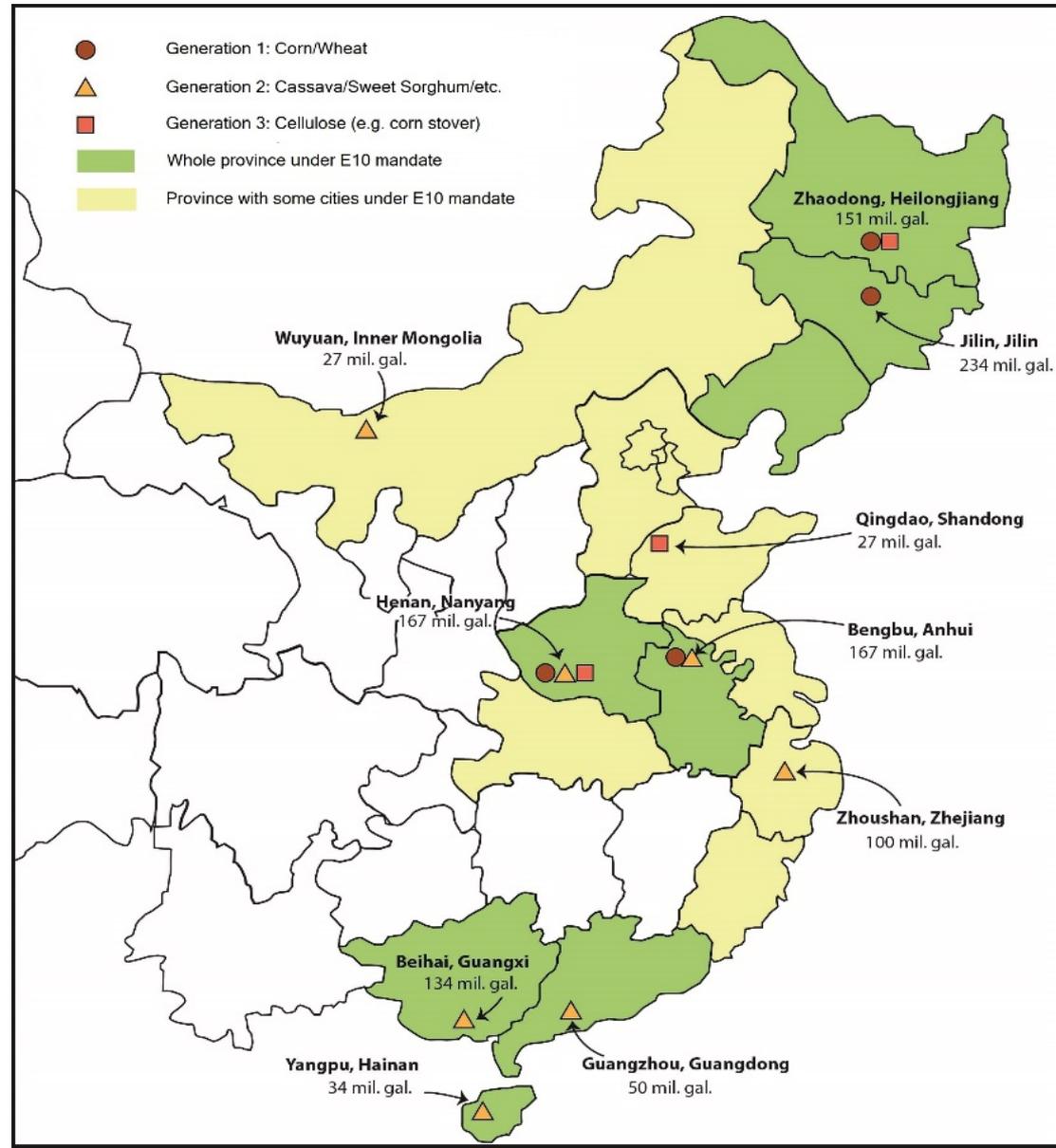
## China's Ethanol Trial

### China's Ethanol Industry in 2016

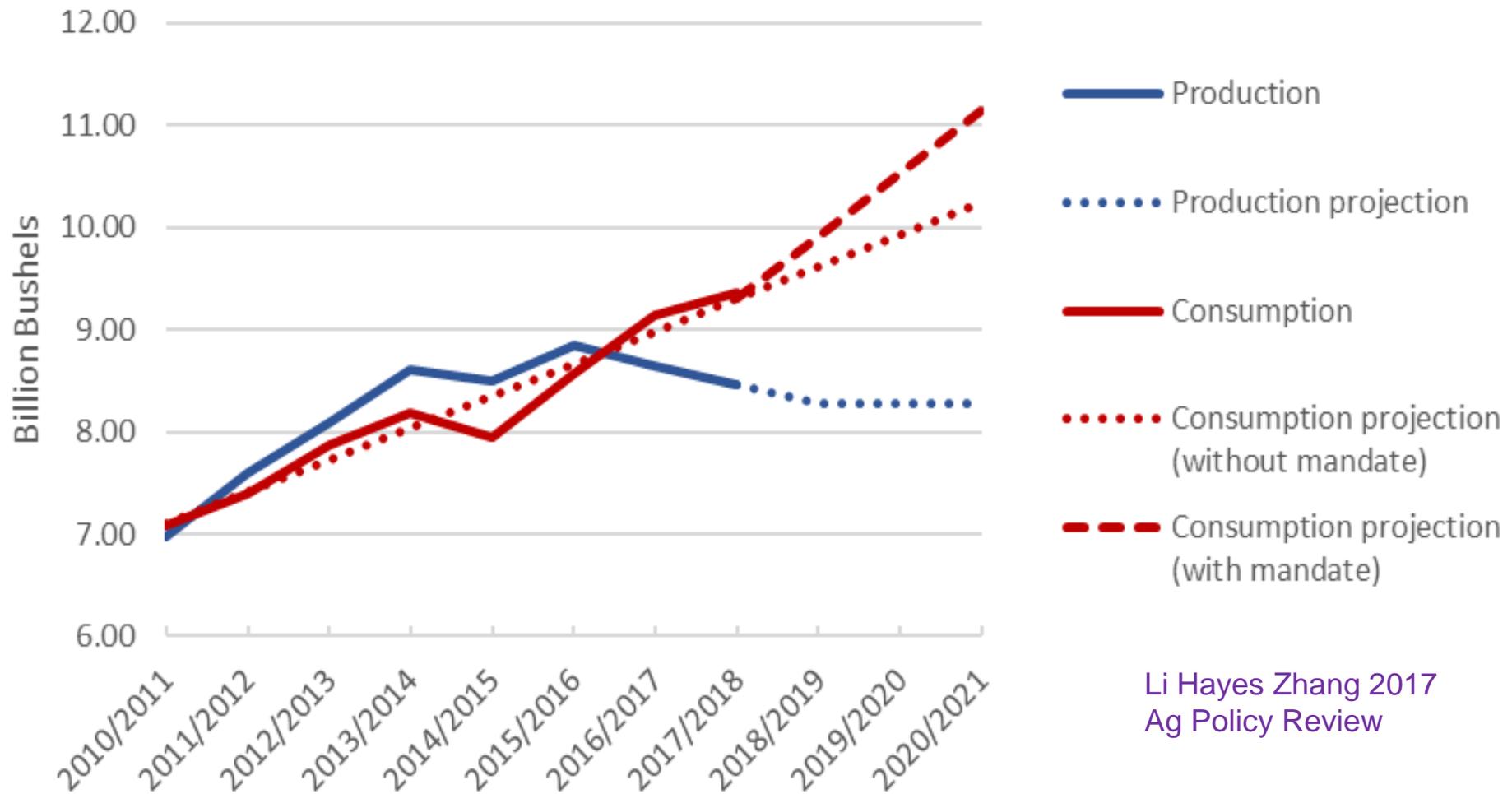
4<sup>th</sup> largest producer – 1 Bil gal.

- 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.

**BloombergView**

73 SEP 27, 2016 8:00 PM EDT

▶ **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.

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12 janv. Interviewed by Aressy Bra...

钱包 微信支付

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城市服务

滴滴打车 京东精选

Q币充值 微信红包 吃喝玩乐

信用卡还款 腾讯公益 电影票

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广州服务

医院挂号 违章办理 港澳再次签证

路况实拍 机动车年审预约 机动车快撤理

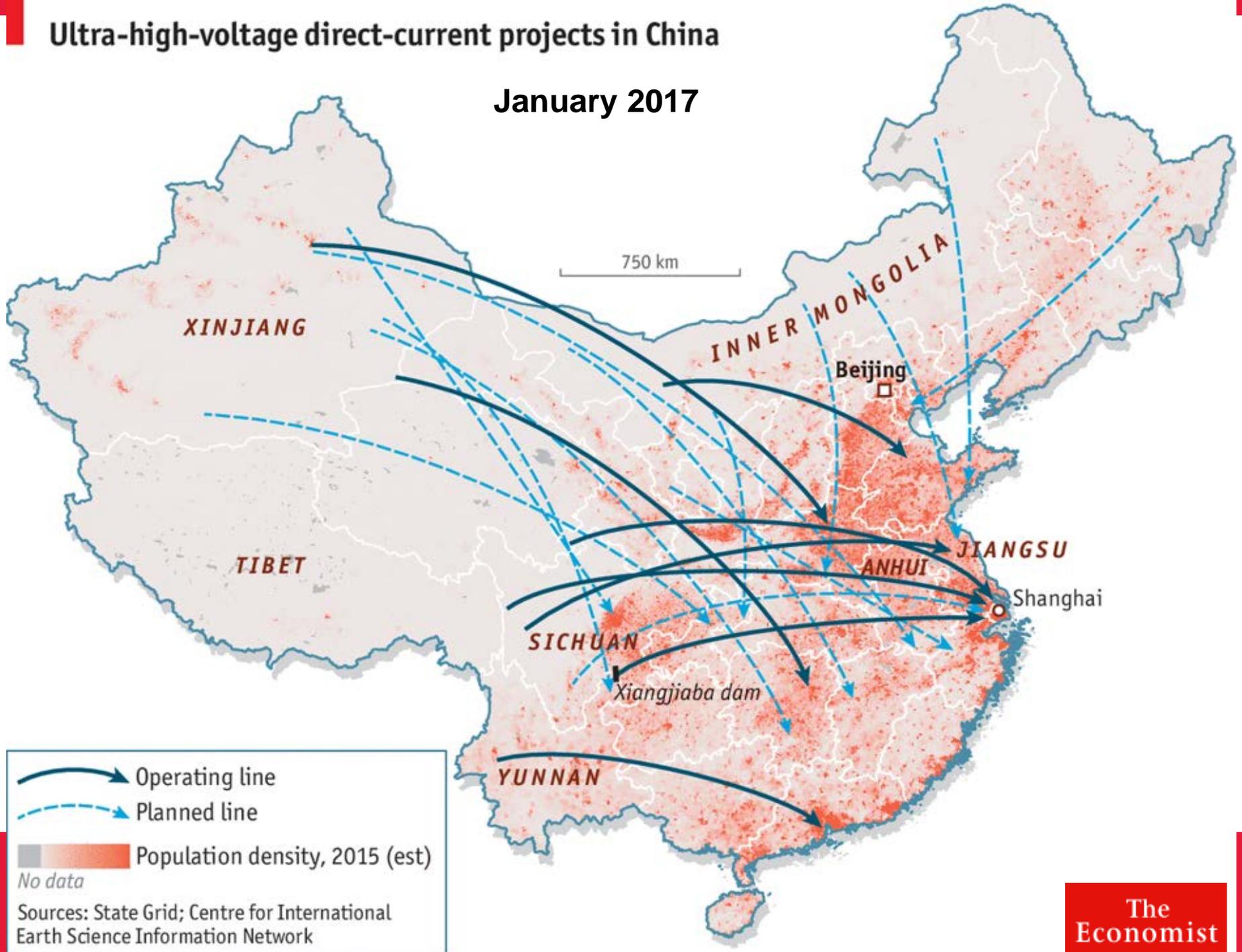
身份证业务预约 招考查询 广州天气

出入境业务预约 婚姻业务预约 新生儿重名查

住房业务预约 机动车车船税 机动车年票

# Ultra-high-voltage direct-current projects in China

January 2017



# <https://www.card.iastate.edu/china>



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Center for China-US Agricultural Economics and Policy

CHINESE ACADEMY OF AGRICULTURAL SCIENCES

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## Publications

Minghao Li, Wendong Zhang, Dermot Hayes, Riley Arthur, Yantao Yang, and Xiudong Wang. 2017. ["China's New Nationwide E10 Ethanol Mandate and Its Global Implications."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Wu, Qianrong, and Wendong Zhang. 2016. ["Of Maize and Markets: China's New Corn Policy."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

Zhang, Wendong. 2015. ["The Commonalities and Differences between Chinese and US Agriculture."](#) *Agricultural Policy Review*. Center for Agricultural and Rural Development, Iowa State University.

A corny tale

The  
Economist

## China imports a farm from Iowa

*A slice of the Midwest outside Beijing*

### Presentations

Zhang, Wendong. 2017. ["Recent Developments in China and its Impacts on US Agriculture."](#) 2017 Pro-Ag Outlook, November 17, 2017.

Zhang, Wendong. 2017. ["From Northeast China to the Midwest."](#) AMMO Club, November 6, 2017.

Zhang, Wendong. 2017. ["Update on Chinese Ag Economy."](#) Iowa Institute for Cooperatives Member Summer Workshop, Huxley, IA, June 15, 2017.

Lawrence, John, and Zhang, Wendong. 2017. ["Understanding the U.S. Farm Bill: Policy to Practice."](#) Presentation to the Chinese Ministry of Agriculture, Agricultural Trade Promotion Center Delegation, Ames, Iowa, May 30, 2017.

Zhang, Wendong. 2017. ["What's Going On in China: Corn, GMO, Crop Insurance and High-Speed Rails."](#) 2017 Crop Advantage Series, Okoboji, IA, January 5, 2017.

# Documentaries about China

- China: Time of Xi - <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>
- The world's future MegaProjects (2017-2040)  
<https://www.youtube.com/watch?v=CiQ874Zulno>
- Wild China – BBC (2008)  
<http://www.bbc.co.uk/programmes/b00bv6lk/episodes/guide>
- Chinese New Year: The Biggest Celebration on Earth (2016) – BBC  
<http://www.bbc.co.uk/programmes/b071c3mh/episodes/guide>
- China's MegaProjects – available in Chinese only

<https://www.card.iastate.edu/farmland>

# Iowa Farmland Value Portal



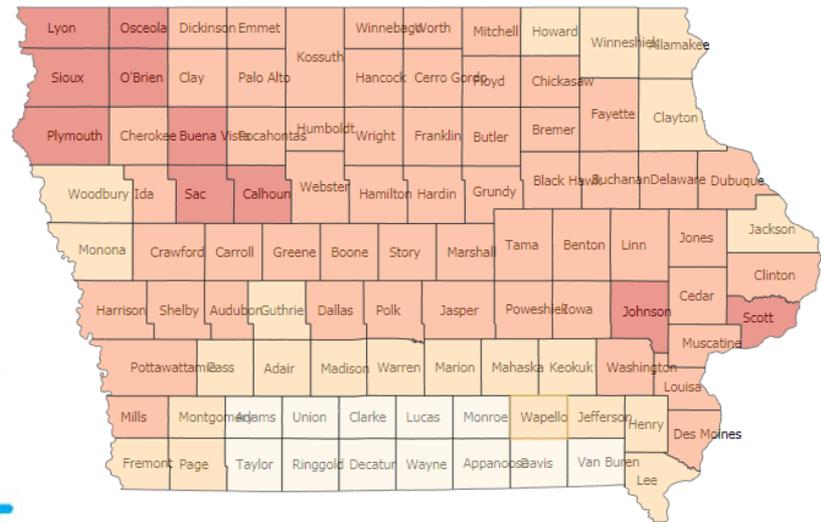
## #ISULandvalue

## 2% increase since

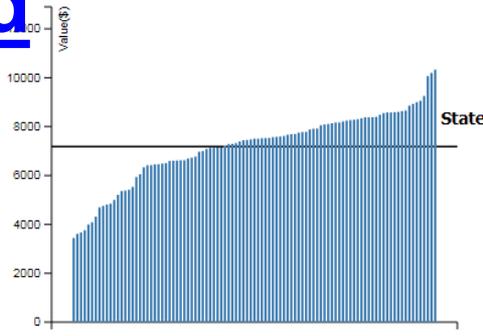
## Nov 2016



<http://bit.ly/LandResults2017>

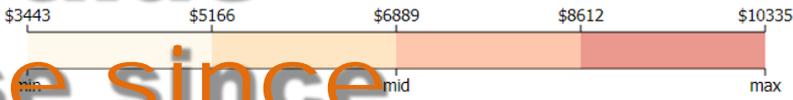
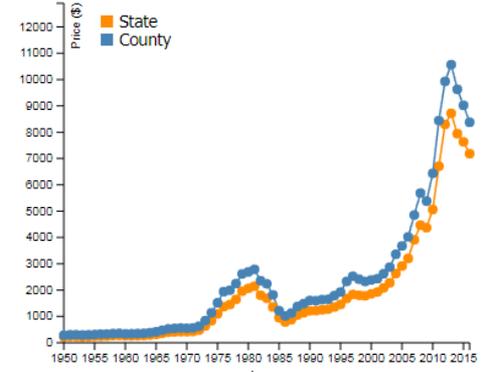


Iowa County Land Value in 2016

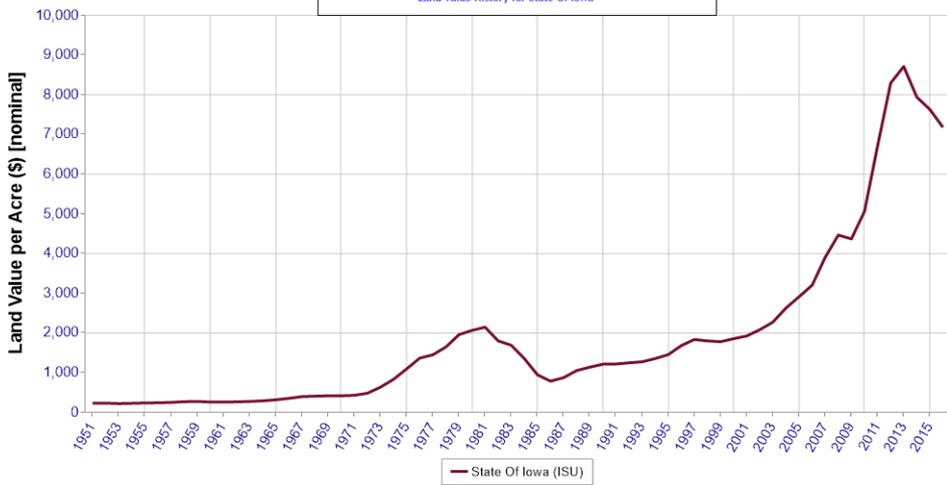


Sorted by: Value

Land Value Trend in County: Story



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# Thank You!

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