

With support from



Federal Ministry
of Food
and Agriculture



by decision of the
German Bundestag

Sino-German Agricultural Centre

Introduction to China's Agriculture and Trade

by Prof. Liu Yonggong

17 Jan. 2020



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1. An Overview on Chinese Agriculture

Facts about Chinese Agriculture

- Chinese agriculture: Produces food to feed 1.39 billion people; ca. 5.0 million annual net increase;
- Arable land resource: 134.88 million ha, about 7.0% of the world total. High standard farmland: 42.6 million ha, ca. 30% of the total;
- Annual crop sowing area: 117 million ha.

1. An Overview on Chinese Agriculture: Crops

Facts about Chinese Grain Production

- Total production: 650 million tons (2017, 2018);
- Average yield: 5500 kg/ha;
- Grain possession: 470kg/person;
- Food security rate: set up at 95% by domestic production, declined in recent years from 95% to 85-90% due to the increase of feedstuff consumption demand;

China Grain Production 1996-2017

Unit: x 10000 tons

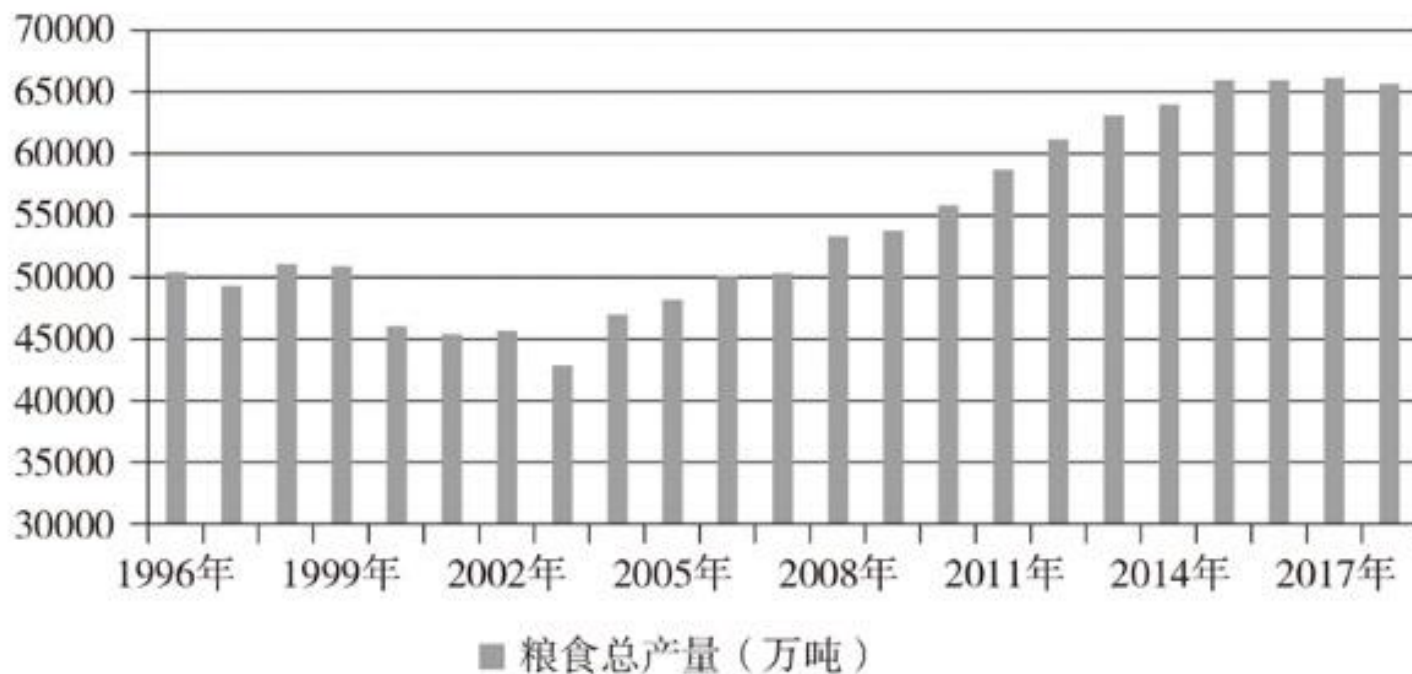


图 3: 中国粮食总产量(1996~2018 年)

数据来源: 国家统计局

Source: China State Statistic Bureau

Average Grain Yield (kg/ha) 1996-2017

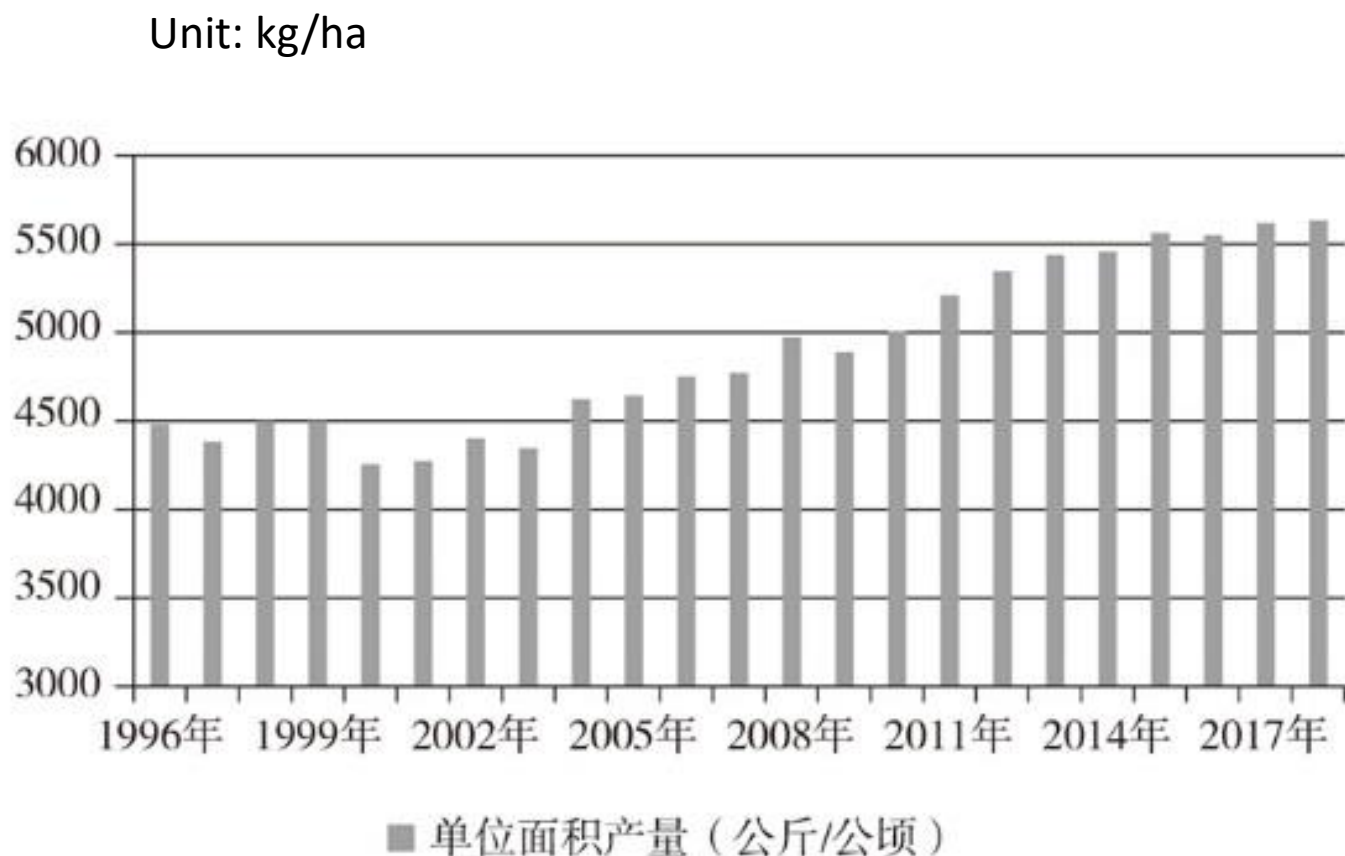


图 1: 中国粮食单位面积产量(1996~2018 年)

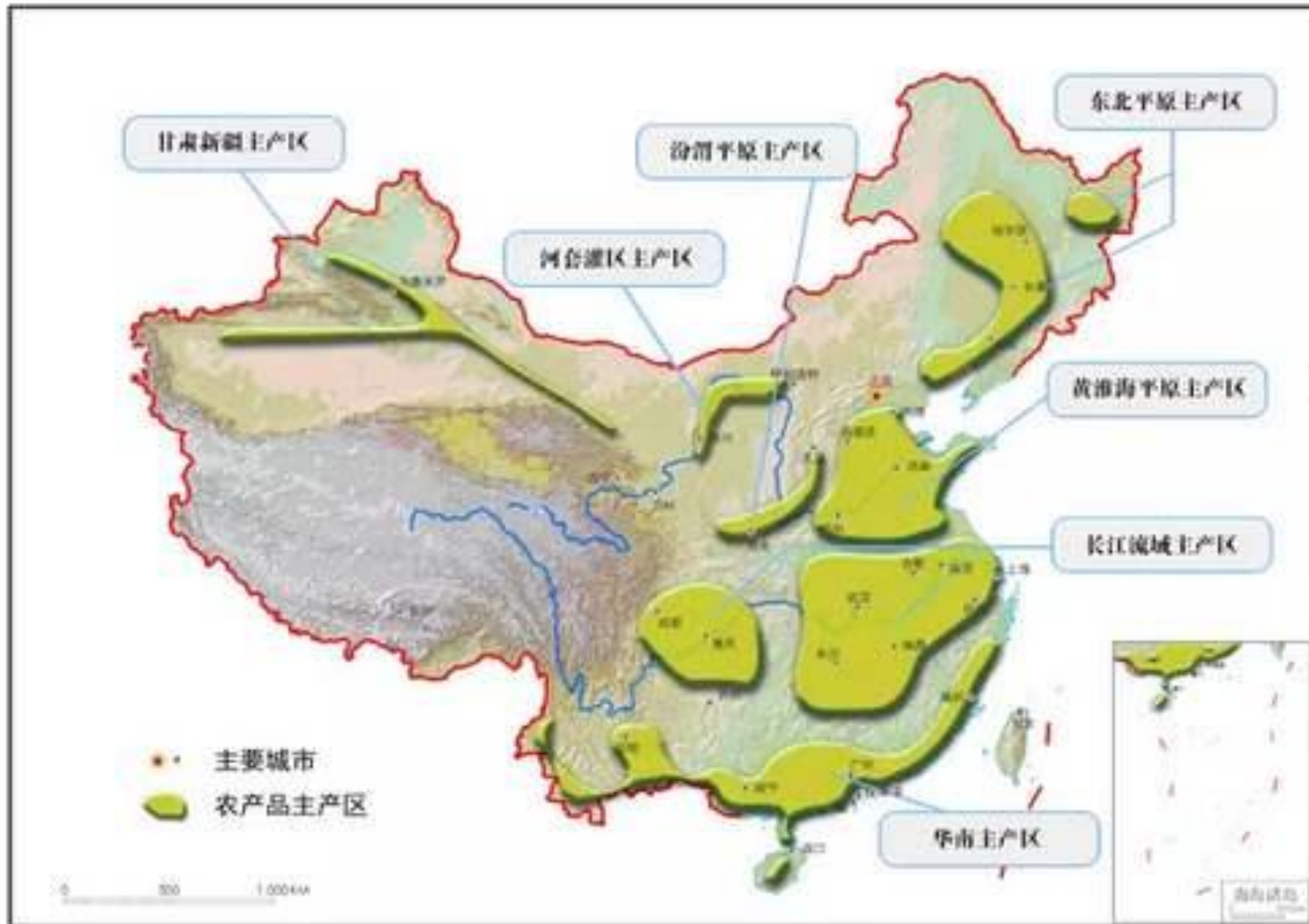
数据来源: 国家统计局

Source: China State Statistic Bureau

13 Major Grain Production Provinces in China

Province	Products
Liaoning	corn, soybean; rice
Hebei	corn, wheat, rice;
Shandong	corn, wheat, rice
Jilin	corn, soybean, rice
Inner Mongolia	rice, corn
Jiangxi	rice
Hunan	rice
Sichuan	rice
Henan	rice, wheat, corn
Hubei	rice
Jiangsu	rice, wheat
Anhui	rice, wheat
Heilongjiang	rice, soybean

Map of Grain Production Regions in China



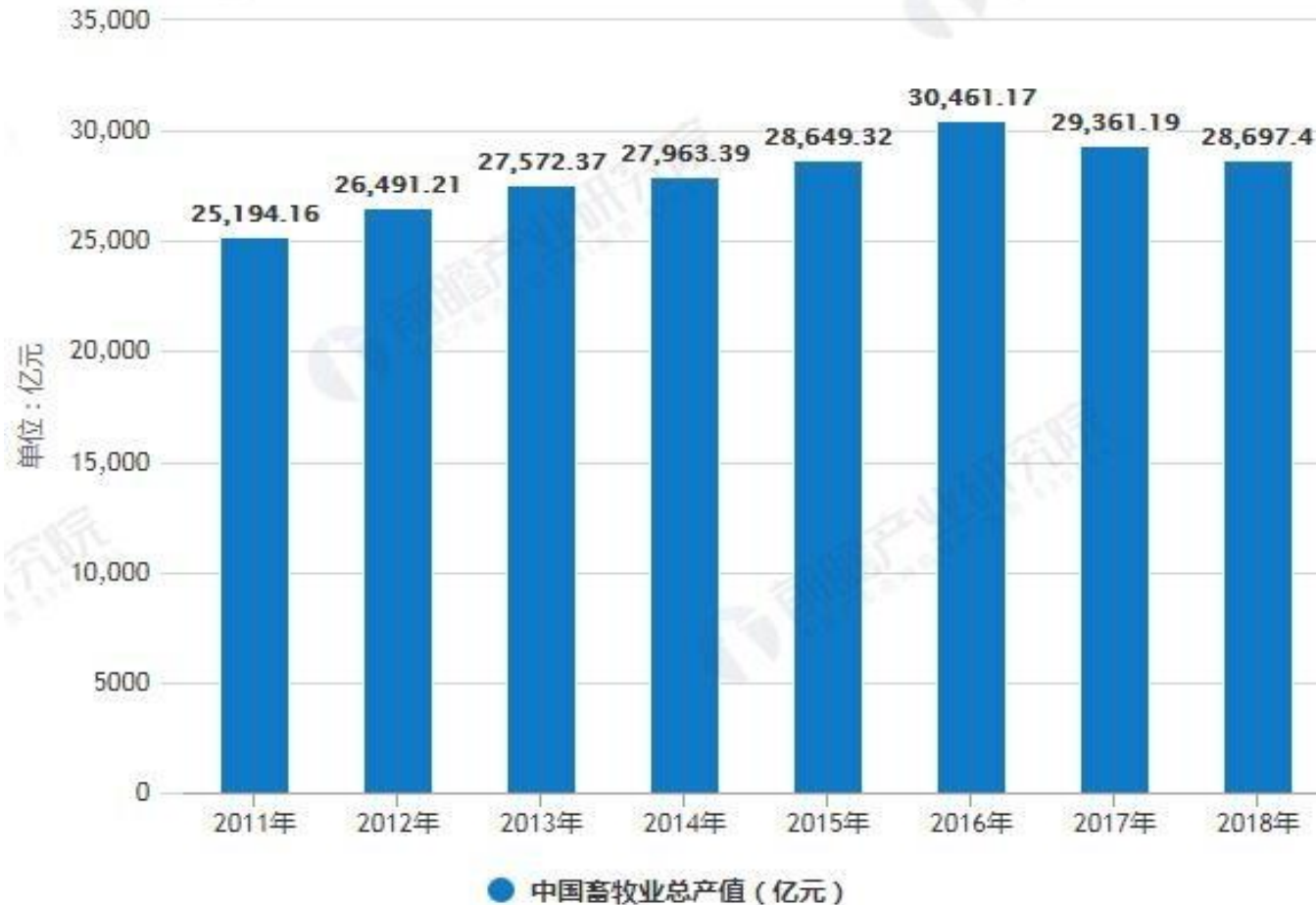
1. An Overview on Chinese Agriculture-Livestock

Facts about Chinese Livestock Production in 2018

- Total livestock meat: 87.51 million tons, increased by 0.3%;
- Pork: 54.04 million tons, -0.9%
- Beef: 6.44 million tons, 1.5%
- Mutton: 4.75 million tons, 6.8%
- Poultry meat: 19.94 million tons, 0.6%
- Egg: 31.28 million tons, 1.0%
- Milk: 30.75 million tons, 1.2%

Source: Ministry of Agriculture and Rural Affairs (2019)

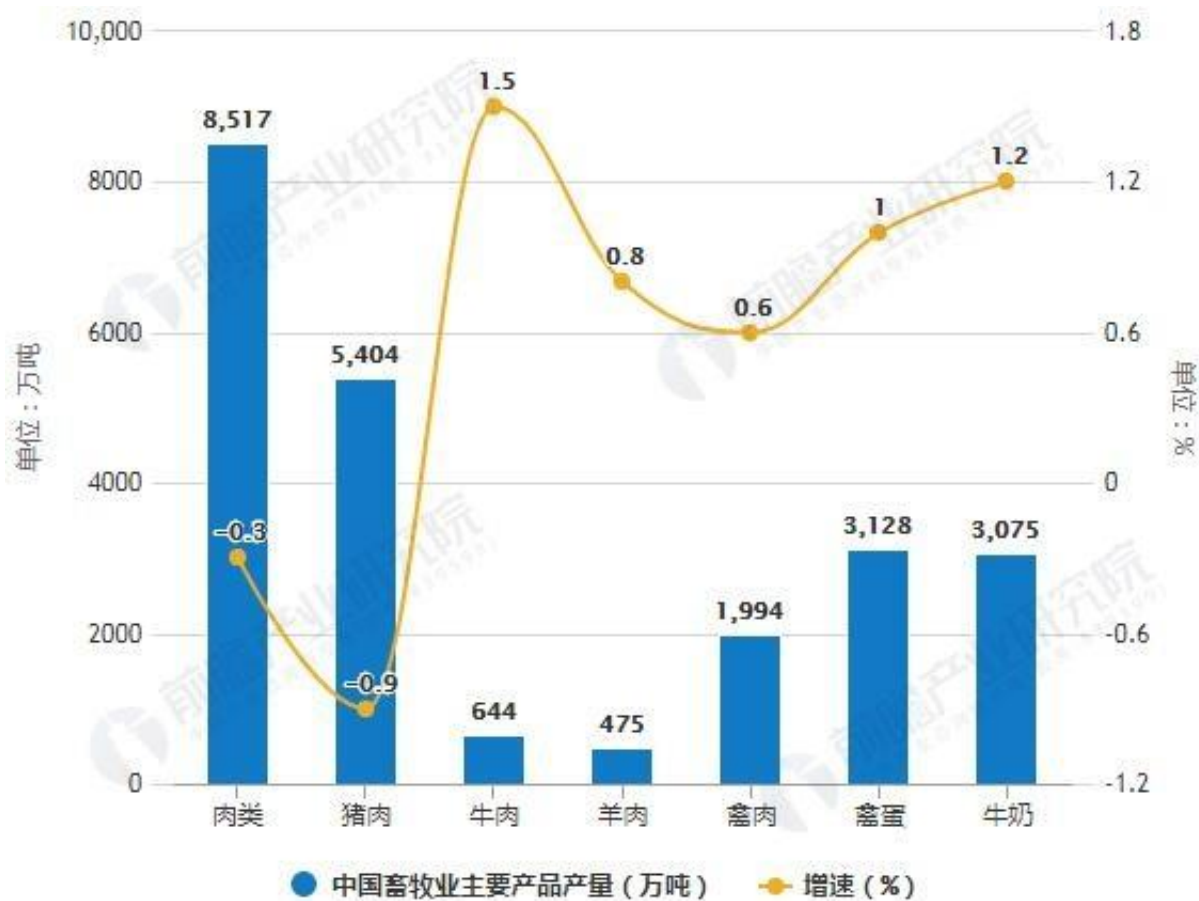
Stagnated Increase of Livestock Production in China (2018)



Production value: million CNY

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2018 China Livestock Production



Production: 10,000 tons, increase: %

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Seven Major Livestock Production Regions in China



Geographical Regions for Livestock Production in China

Regions	Ecosystem	Livestock Farming
Qinghai-Tibet Plateau	Upland Meadow	Extensive livestock farming, yak
Meng-Xin Upland	Dry land, Gobi	Extensive livestock farming, sheep
Loess Plateau Region	Dry land, crop-livestock farming	Integrated crop-Livestock farming, swine, sheep
Southwest Mountainous Region	Mountainous land with crop farming	Integrated crop-Livestock farming, swine, goat, sheep
Northeastern Region	Plain area with corn and soybean	Intensive livestock farming with sufficient feedstuff, swine, dairy, poultry, etc.
Huang-Huai-Hai (Rivers) Region	Major farming area	Intensive livestock farming, swine, dairy, beef cattle production
Southeastern Region	Hilly land with paddy rice production	Intensive livestock, swine, poultry farming

1. An Overview on Chinese Agriculture: Technologies

Agricultural technology and innovations needed in China:

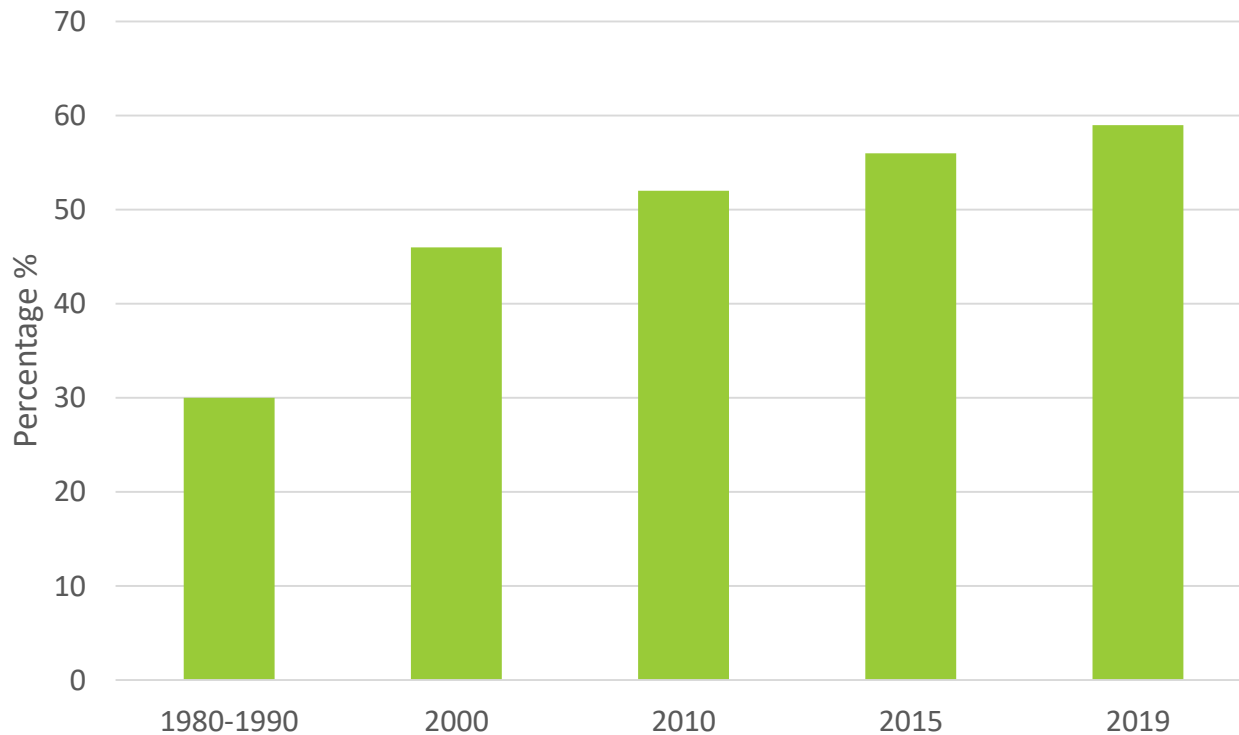
- Mechanization of Farmland Management
- Water Saving Technologies/Dryland Farming Techniques
- Precision Agriculture Technologies
- Digitalization/Information Technologies
- Internet in Marketing Agricultural Products
- Processing Technologies and Equipment
- Seed Breeding, Livestock Breeding Technologies
- Introduction of Good Agricultural Practice;

1. An Overview on Chinese Agriculture: Technologies

Technologies/indicators	Application and Contribution (%)
Overall science and technology Contribution	59.2%
Comprehensive mechanization rate in planting, farming and harvesting	70%
Application new varieties and seeds	95%

Source: China Agricultural Year Book

Contribution of S&T Achievement to Chinese Agriculture 2000-2019



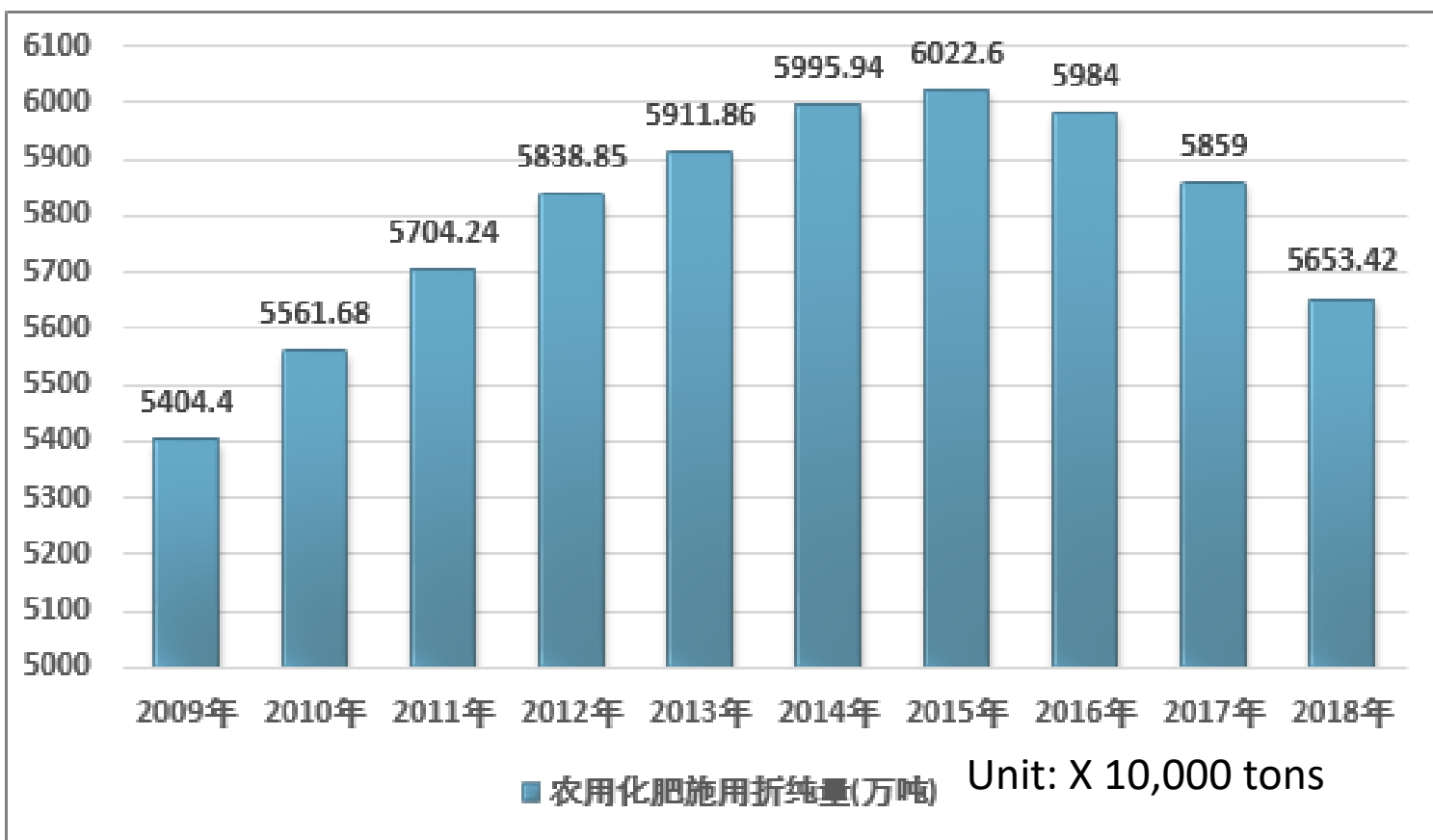
Source: China Agricultural and Rural Development Report; China Economic Daily

1. An Overview on Chinese Agriculture: Change of Chemical Application Pattern

Reduction of chemical applications in agricultural production:

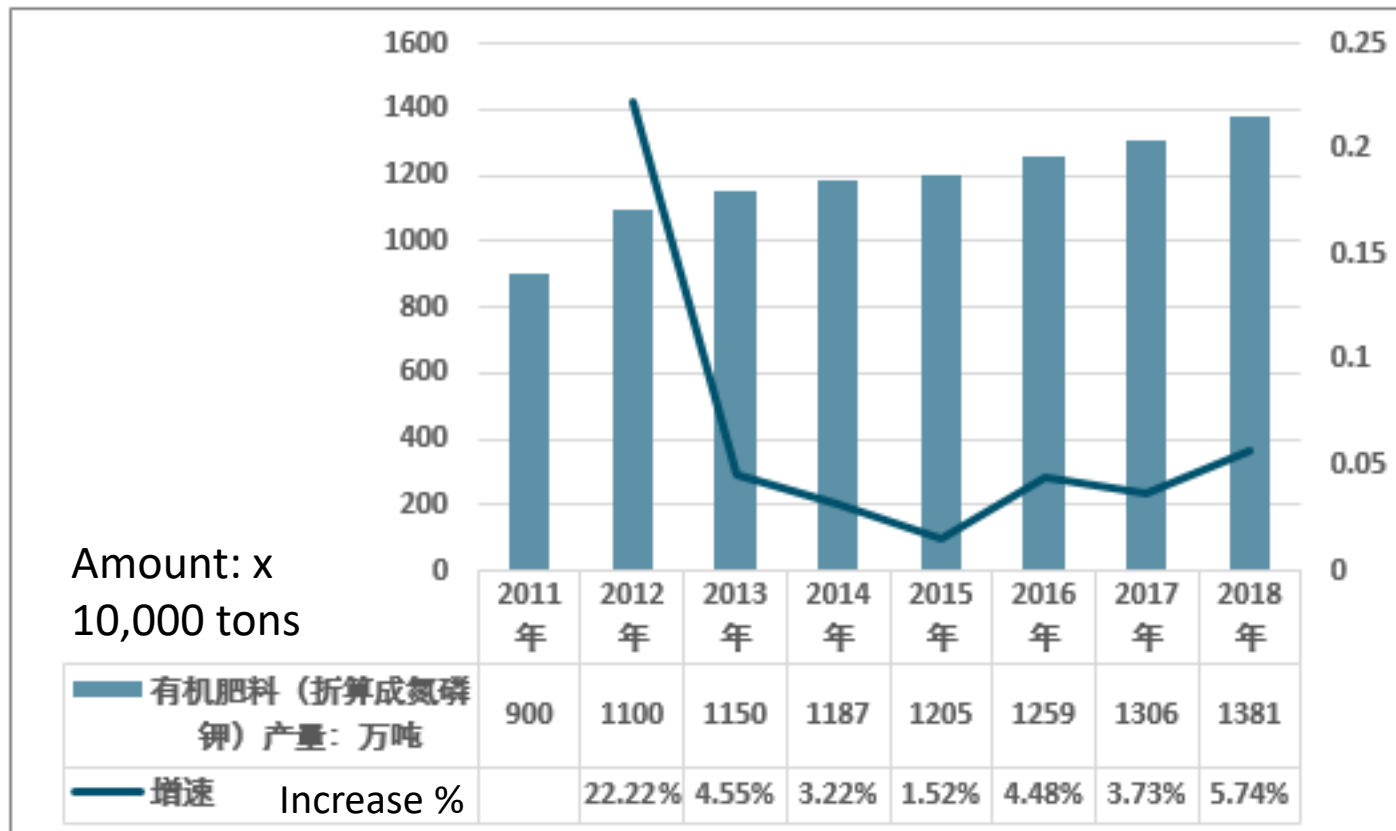
- According to MARA, in 2013, per ha chemical fertilizer application in China is about 328.5 kg/ha which is respectively 2.6 and 2.5 times of US and EU. In 2015 MARA endorsed the environment-friendly agriculture policy by implementing:
 - Action Plan for achieving Zero Increase of Chemical Fertilizers (N, P,K) by 2020
 - Action Plan for achieving Zero Increase of Chemical Pesticides by 2020
- Application amounts of both chemical fertilizers and pesticides turned to declining since 2015.

1. An Overview on Chinese Agriculture: Declined application of chemical fertilizers



1. An Overview on Chinese Agriculture:

- Increased application of organic fertilizers



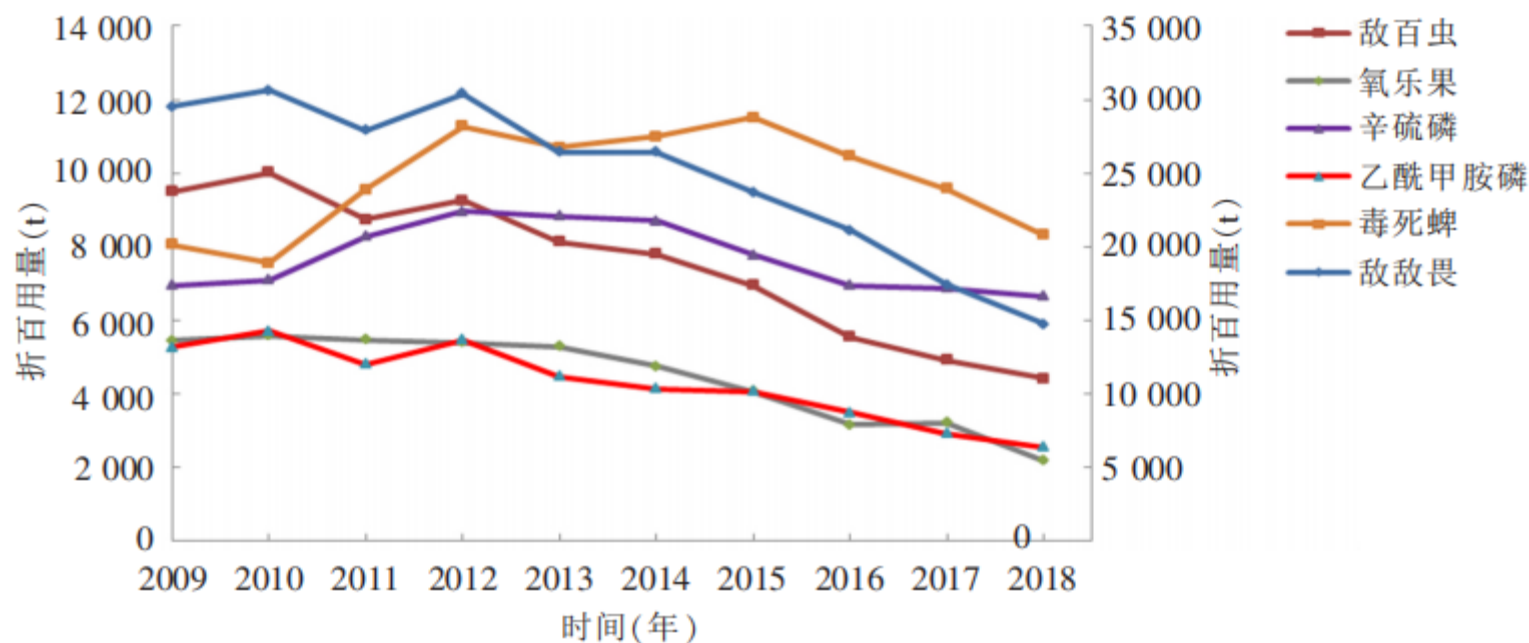
1. An Overview on Chinese Agriculture:

Stagnated and declined chemical pesticides application

- Since 2015, the total application of chemical pesticides and herbicides stagnated at **900,000** tons (commodity amount), annual declining **1.5-2.0%** afterwards.
- Effectivity rate: 36.6% in 2015 to 39.8% in 2019, increased 3.2%;
- Average application: 14 kg/ha (commodity amount in 2016), about 2 times of the world average, still high potential to reduce the application.
- Increased application of biological pesticides: 10% to 15%;

1. An Overview on Chinese Agriculture:

2009-2018 declination of the organophosphorus pesticides
(pure effective amount-tons)

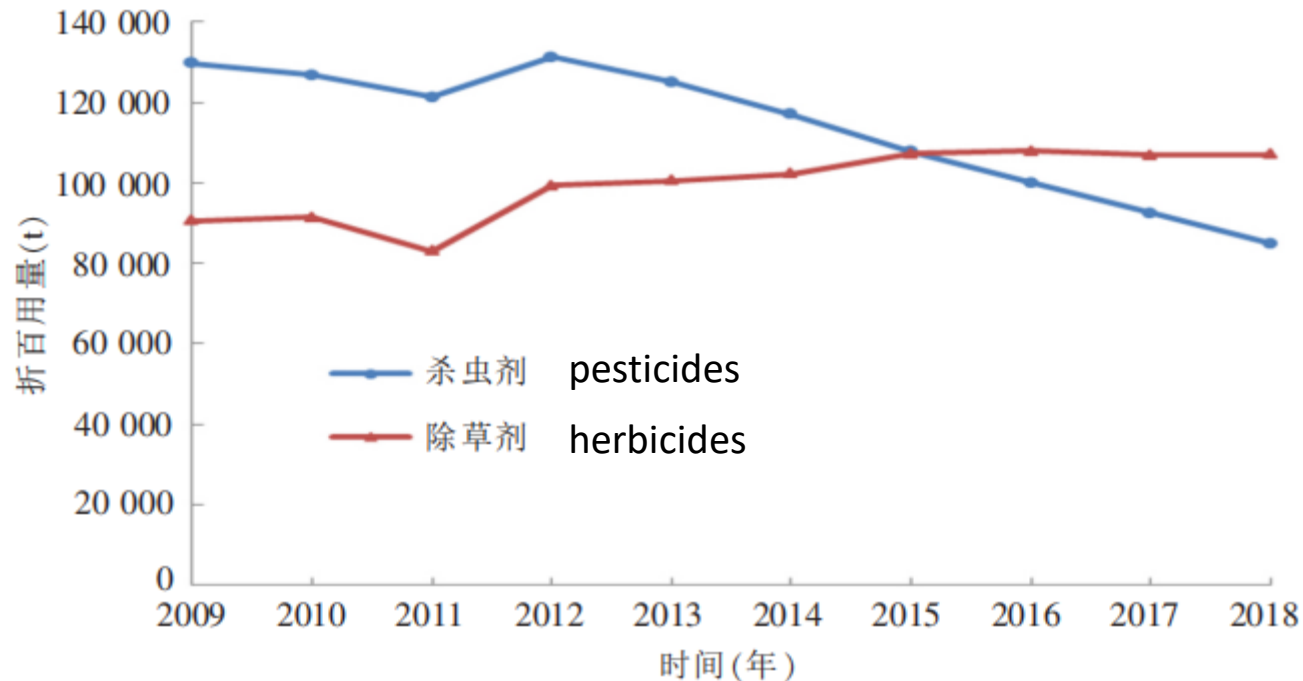


右侧 y 轴对应敌敌畏折百用量, 左侧 y 轴对应其他
5 种农药的折百用量, 单位均为 t

Source: National Agricultural Technology Center-NATEC, 2019

1. An Overview on Chinese Agriculture:

2009-2018 application of pesticides and herbicides in China



Source: National Agricultural Technology Center-NATEC, 2019

1. An Overview on Chinese Agriculture: Structural Change

Major structural changes in the past two decades

- Labor migration: shortage of labors, high demand on mechanization;
- Circulation of land use rights: promoting enlargement of the farm size to cope with the challenges of market competition;
- Change of major producers/entrepreneurs, until end of 2018:
 - 600,000 family farms established;
 - 2.17 million farmers' cooperatives set up;
 - 370,000 Agricultural Service Organizations;
 - 1276 Agricultural Demonstration and Production Parks/Districts;
- Development of Modern Agricultural Enterprises: 2019 MARA nominated 1542 large agricultural enterprises covering the whole value chain of agriculture.

2. The Chinese Agricultural Trade: General Overview

- 2018 China agricultural trade :
 - Total trade value: 216.8 billion USD, increased by 7.7%;
 - Export value: 79.7 billion USD, increased by 7.7%
 - Import value: 137.1 billion USD, increased by 8.9%
 - Trade Deficit: 57.3 billion USD, increased by 14.0%
- **Conclusion:**
 - **China is net import country of both crop and livestock products.**
 - **The annual import value increases by ca. 3-5%.**

2. The Chinese Agricultural Trade: Crops

Trade of crop products in 2018

- Total import: 20.50 million tons, decreased by 39%
- Total export: 2.54 million tons, increased by 57%
- Trade deficit: 4.8 billion USD

2. The Chinese Agricultural Trade: Crops

Product	Import	%	Export	%	Deficit
Wheat	3.09 million tons	-29.9	268,000 tons	56%	
Corn	3.52 million tons	24.7	12,000 tons	-85%	
Rice	3.07 million tons	-23.6	2.08 million tons	74%	
Barley	6.81 million tons	-23.1	0.91 million tons	-1.9%	
Sorghum	3.65 million tons	-27.8	48,000 tons	-17%	

2. The Chinese Agricultural Trade: Livestock

2018 China Livestock Product Trade:

- Total import value: 28.5 billion USD
- Total export value: 6.86 billion USD
- Deficit value: 21.6 billion USD

2. The Chinese Agricultural Trade: Livestock

Product	Import	%	Export	%	Deficit
Pork	1.20 million tons	-2.0			
Chopped pork	0.93 million tons	-25%			
Beef	1.03 million tons	49.0			
Mouton	319,000 tons	28%			
Milk powder	1.03 million tons	11%			
Fishery	1.48 million tons	31.0	2.23 million tons	5.6	

3. Opportunities for Sino-German Agribusiness Cooperation

Opportunities for German Agribusiness Partners (crop production)

- Food processing technologies and equipment;
- Food storage facilities and equipment;
- Water Saving Irrigation Equipment and technologies
- Agricultural machines: 10 million ha high standard farmland will be constructed for large scale production; large scale farms
- Agriculture production means, seeds, etc.;
- Production technologies;

3. Opportunities for Sino-German Agribusiness Cooperation

Opportunities for Cooperation with China (animal husbandry)

- Livestock and poultry epidemic management/control;
- Animal Waste Treatment Equipment and Technologies;
- Livestock Farm Design
- Livestock breeding, introduction of high-performance livestock varieties;
- Training of young livestock technicians and farmers

3. Opportunities for Sino-German Agribusiness Cooperation

Agricultural and food trade between China and Germany

- China is the third largest export partner, and second import partner for Germany;
- In 2017 Sino-German total trade value is 180 billion USD, however, the trade value of agricultural products is only 2.9 billion, makes only 1.6% in the total trade value.
- For German Partners: Export Products: Pork, beef, chicken and processed dairy products to China;
- For Chinese Partners: Fruits, fishery, forestry products? processed livestock foods to Germany?

Sino-German Agricultural Trade 2017

Products	Germany- China (million USD)	Annual increase %	China- Germany Million USD	Annual increase %
Animal Products	973	-25.8	696	9.6
Plant product	-		572	-10%
Food and drinks	679	26.7	-	-
Total	1652		1268	
Source:	China Commercial Research Academy, 2018			

**Thank you very much for your
attention !**