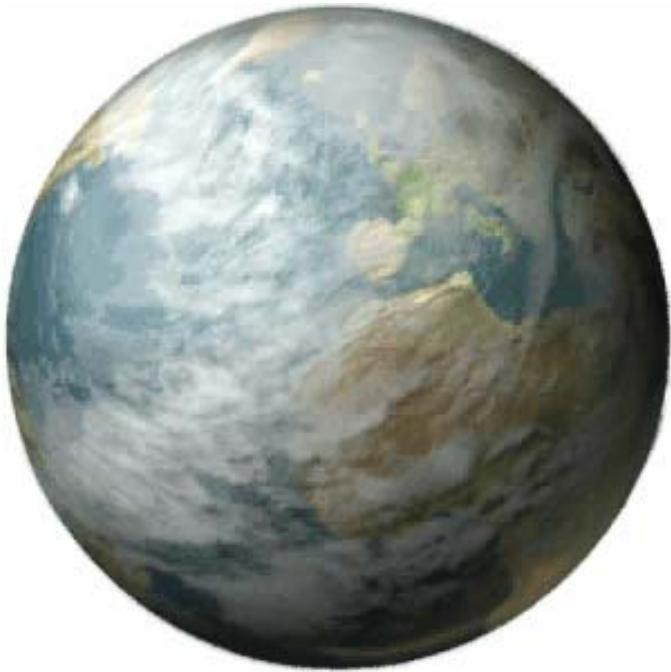


China's Agricultural Development and Implications for California Agriculture



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1. Global Overview

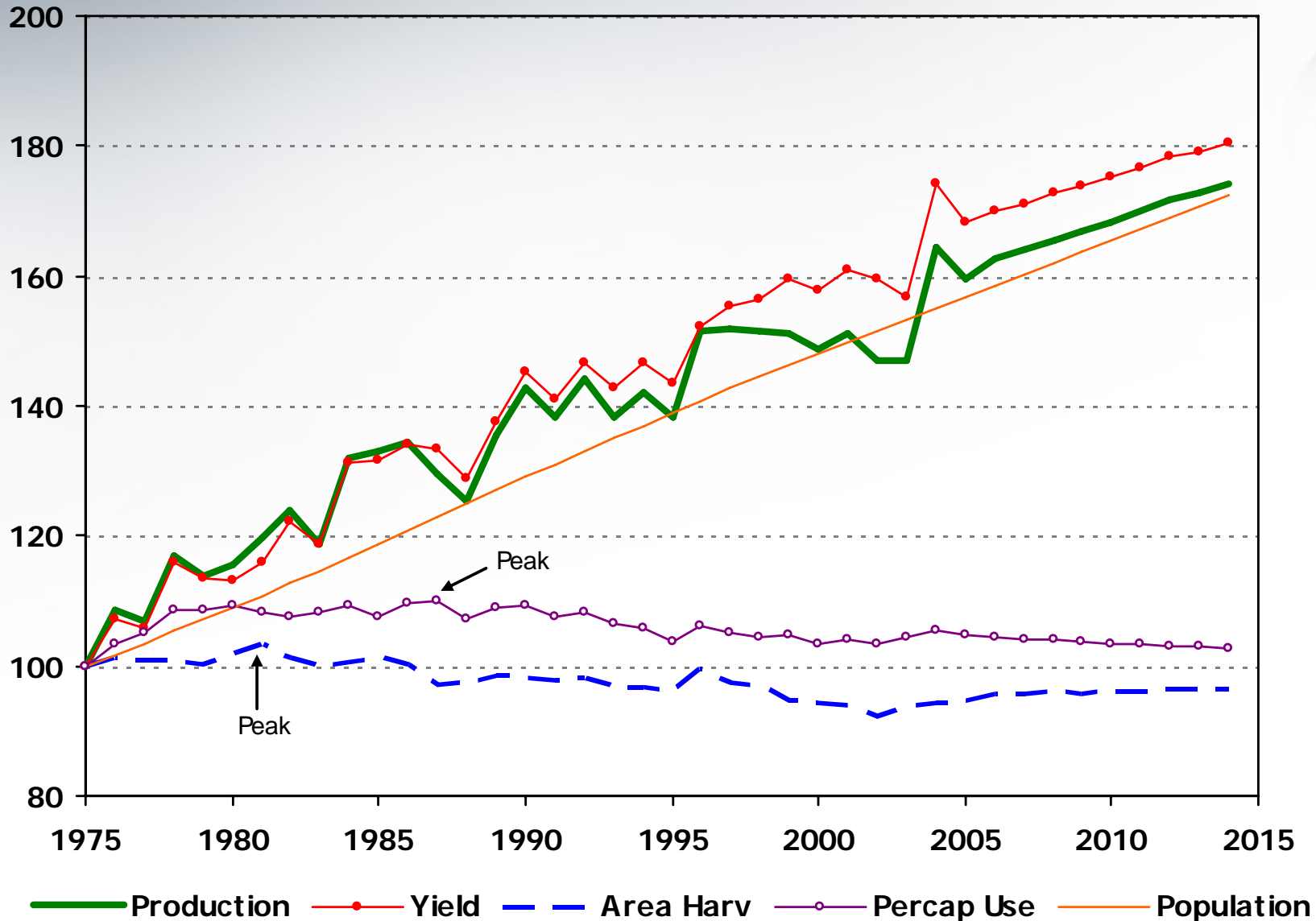


- The landscape of international agricultural trade will change rapidly in the coming decades
- Over this period, California farmers can reap large gains from this for two reasons:
 - The Doha Round will confer competitive advantages on California farmers
 - Huge food markets will emerge in Asia, led by China

How we got here: Total World Grain and Oilseeds



Index: 1975 = 100



The Meaning of Doha



- The current round of World Trade Organization (Doha) negotiations is a watershed event for global agriculture.
- For the first time in history, significant agricultural protection is on the bargaining table, including over \$350 billion of direct and indirect farm support in OECD countries.

Doha and California Agriculture



California food and farm exports will accelerate under Doha for three reasons:

1. U.S. levels of farm and food protection are lower than those of our major trading partners (Europe, Japan, and Korea), particularly for California.
2. The way we support agriculture at home is less trade distorting. This will tilt competitive advantage in our favor.
3. Huge markets will emerge in East Asia.

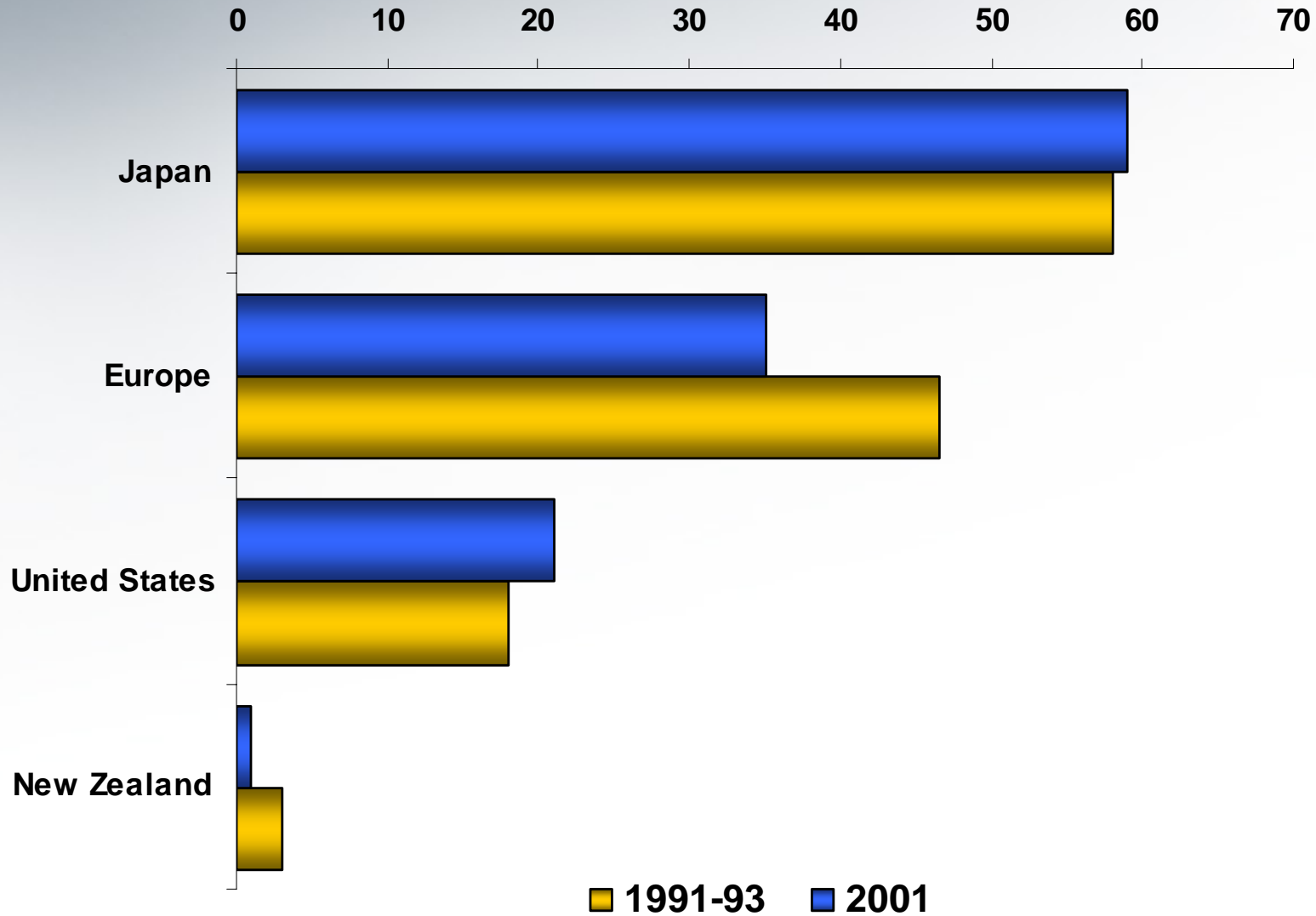
Three Pillars of Agriculture Protection



1. Direct farm subsidies
2. Market support from import protection
3. Export subsidies

US Support is Smaller

(percent of producer price)

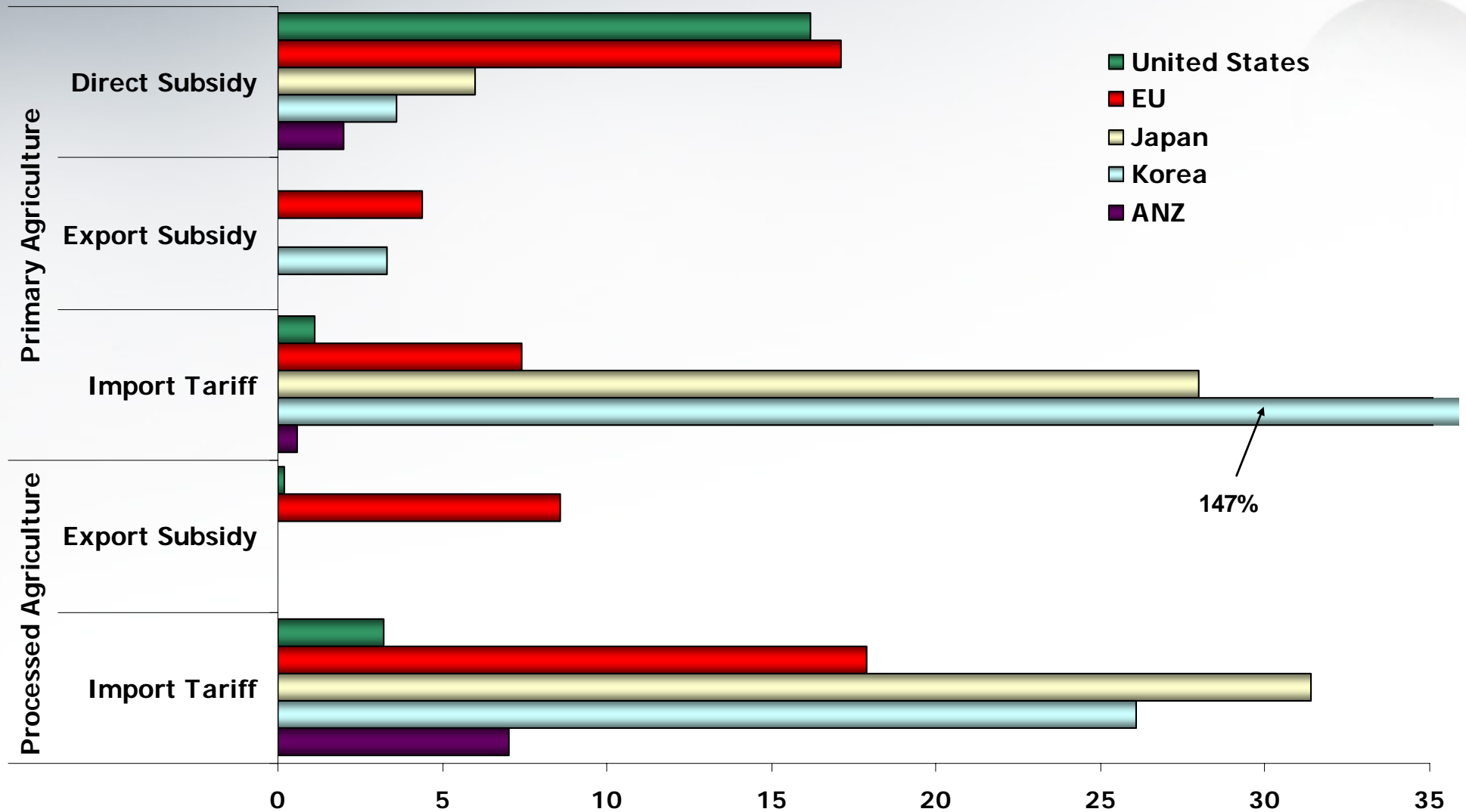


Source: USDA.

US Support is Less Trade Distorting



US support measures are less WTO negotiable/actionable.



Source: World Bank.

Doha and Agriculture: What's at Stake?



Nearly two thirds of Doha's gains will come to agriculture.
Over half will go to high income economies.

Income gains from Doha (2015, USD Billions)

	Agric & food	Textiles & clothing	Other merch.	Total
High-income countries	135	15	9	159 55%
Developing countries	47	23	58	128 45%
All countries' policies	182 63%	38 14%	67 23%	287 100%

Doha will sharply accelerate agricultural trade



World exports as a percent of world output.

	Now	Free Trade	Percent Change
Rice	3	9	200
Sugar	6	20	233
Meats	7	15	114
Other grains	12	20	66
Oilseeds	31	19	19
Dairy products	67	11	83
Other Ag	7	12	71

Source: World Bank.

2. China's Agricultural Potential



Opportunities

1. Productivity growth – impressive but not keeping pace with other sectors
2. Economies of scale – serious institutional challenges

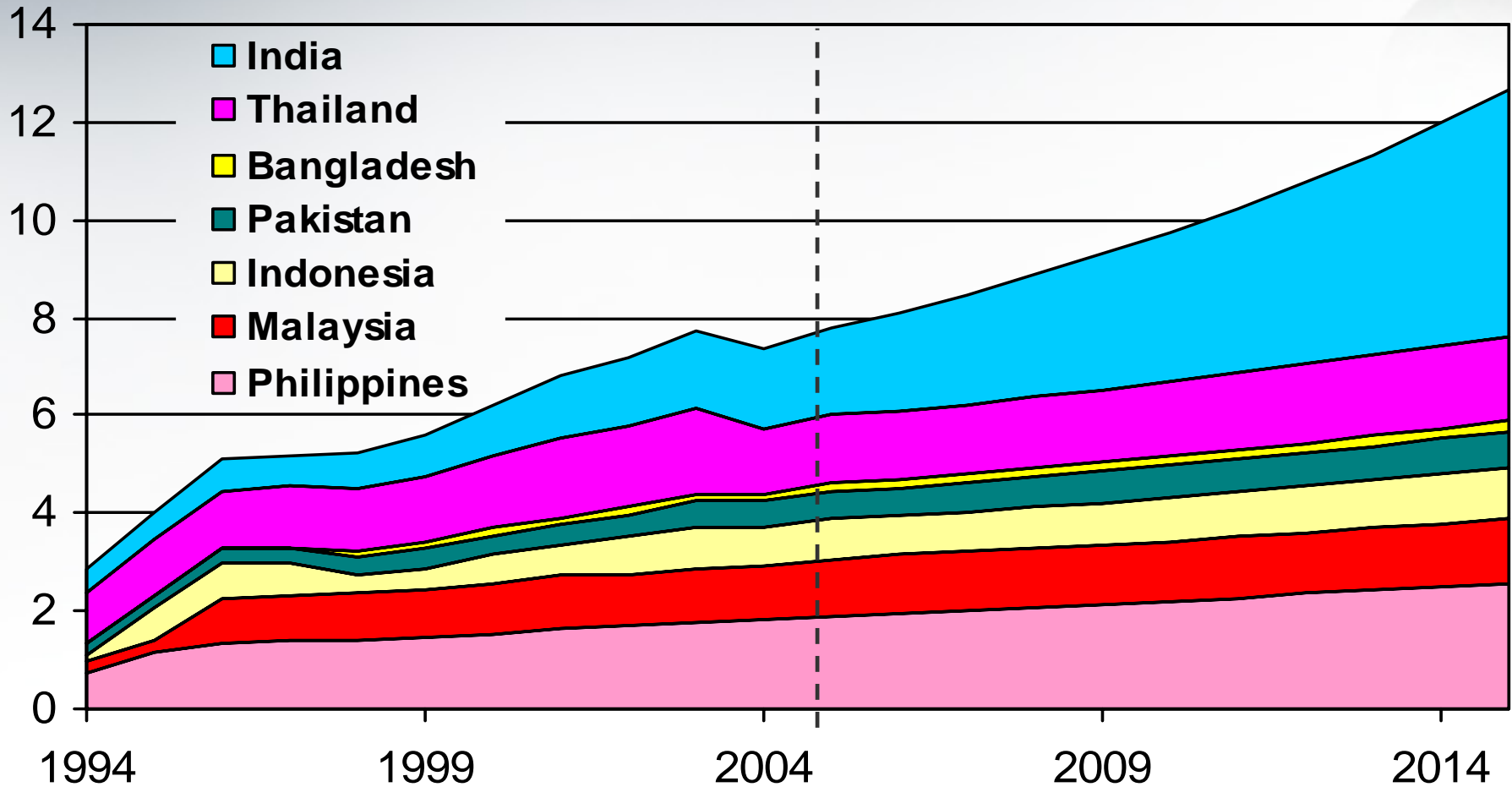
Constraints

1. Land area – small and shrinking
2. Water – nationally scarce, most major aquifers are already in overdraft

Asia Pork and Poultry Production



Million metric tons

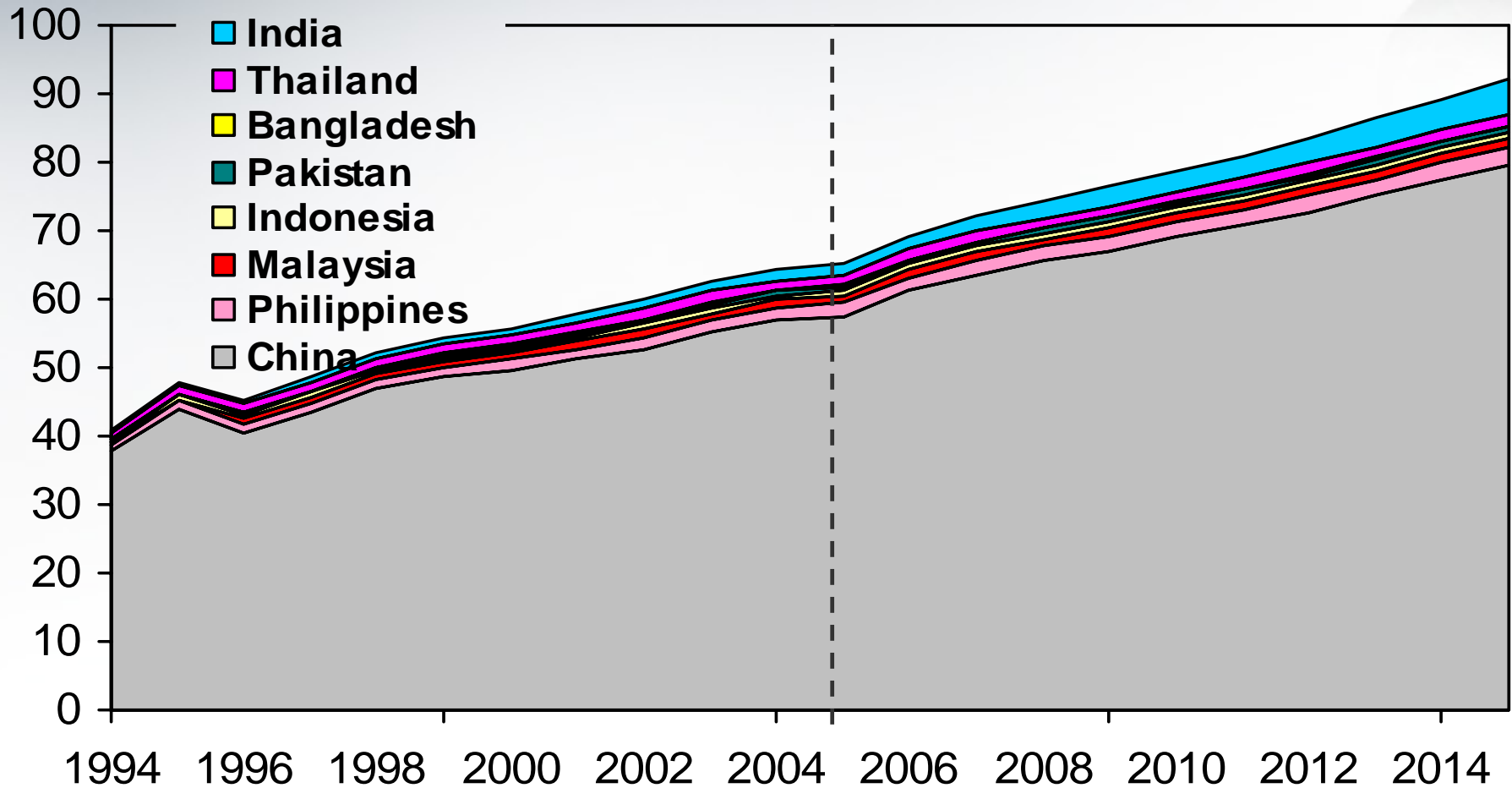


Source: *USDA*.

Asia Pork and Poultry Production



Million metric tons

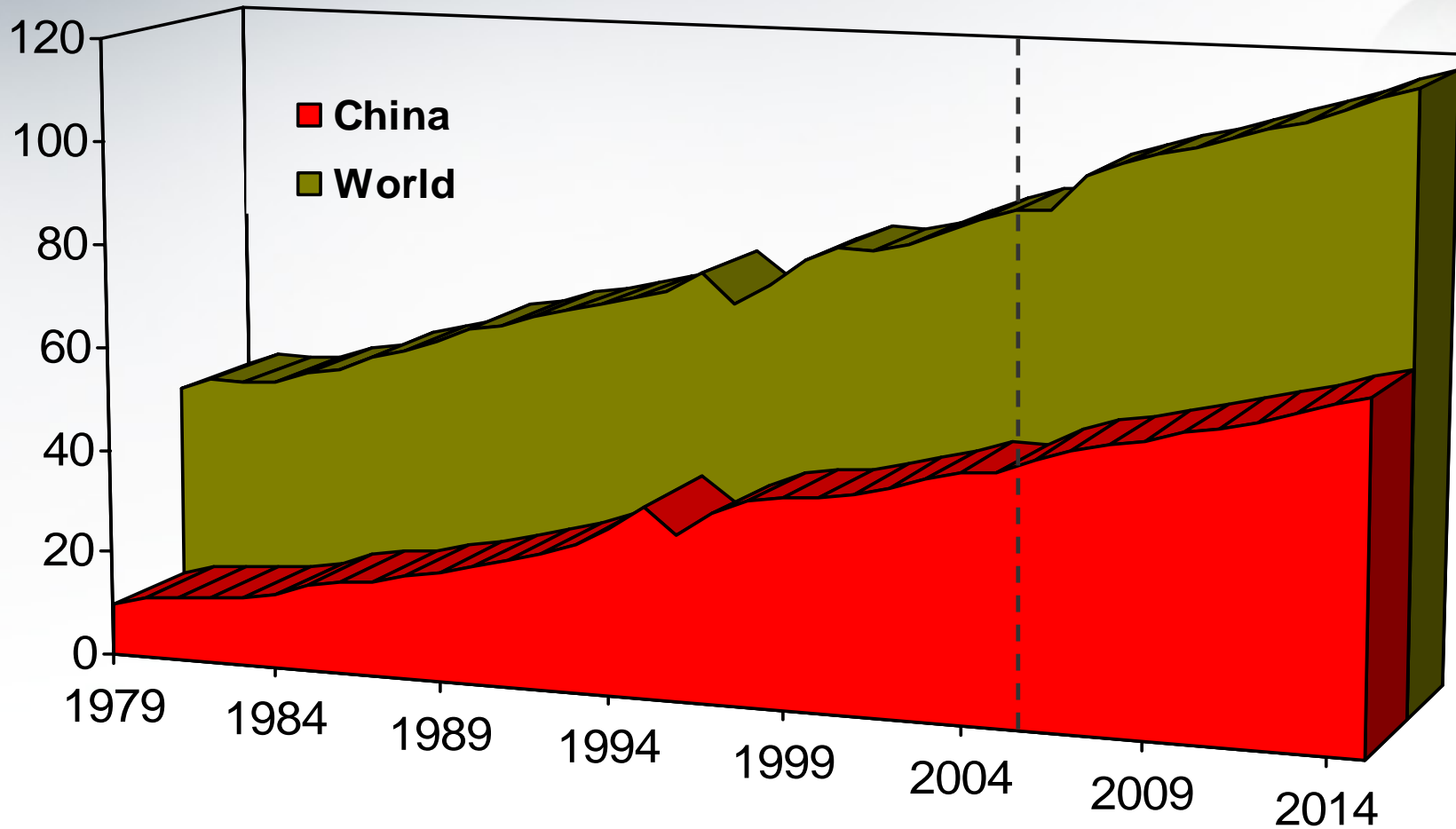


Source: *USDA*.

China Pork Production

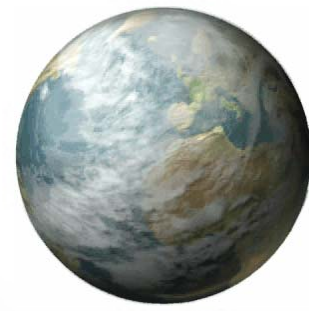


Million metric tons

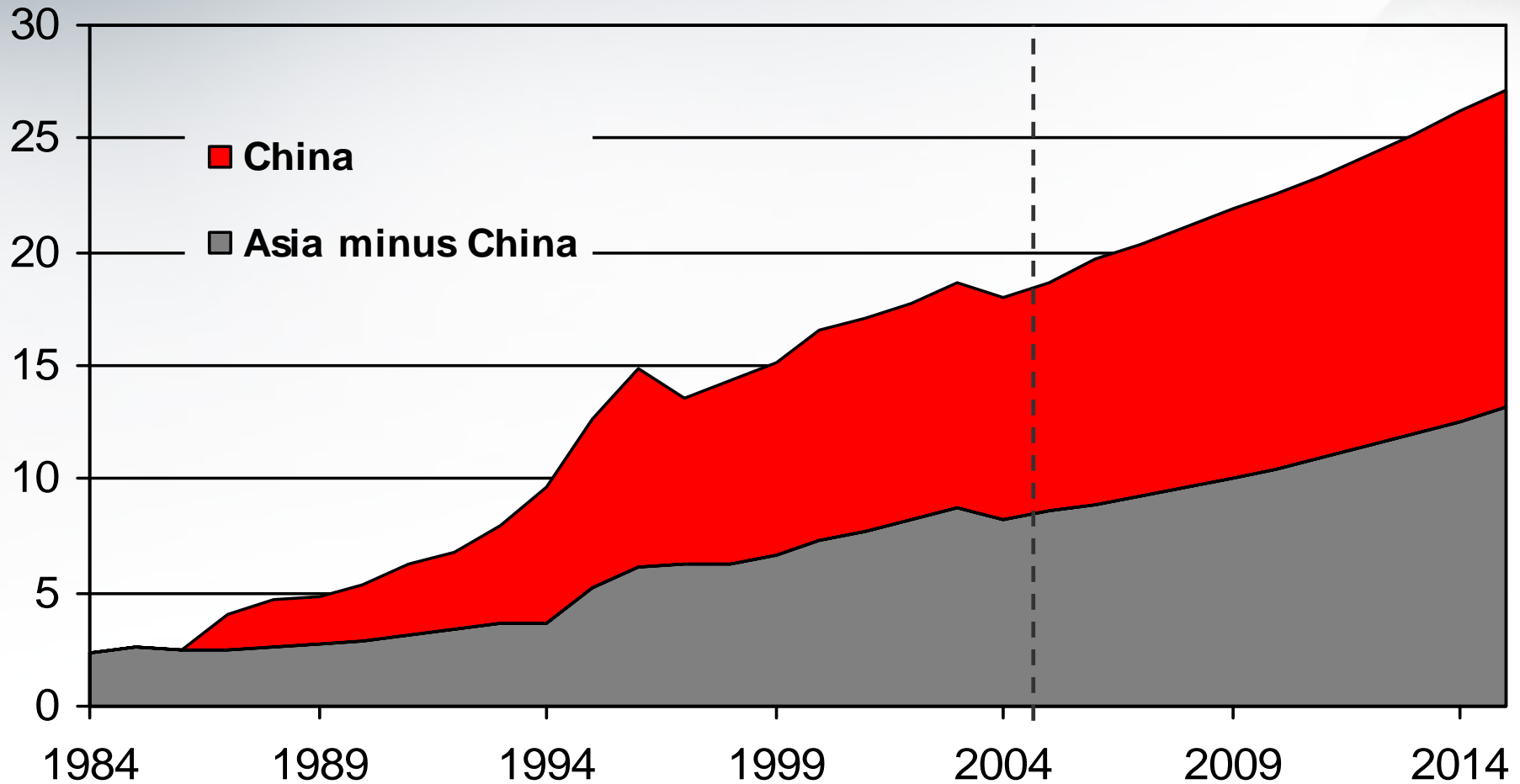


Source: ~~USDA~~ Source: *USDA*.

Asian Poultry Production

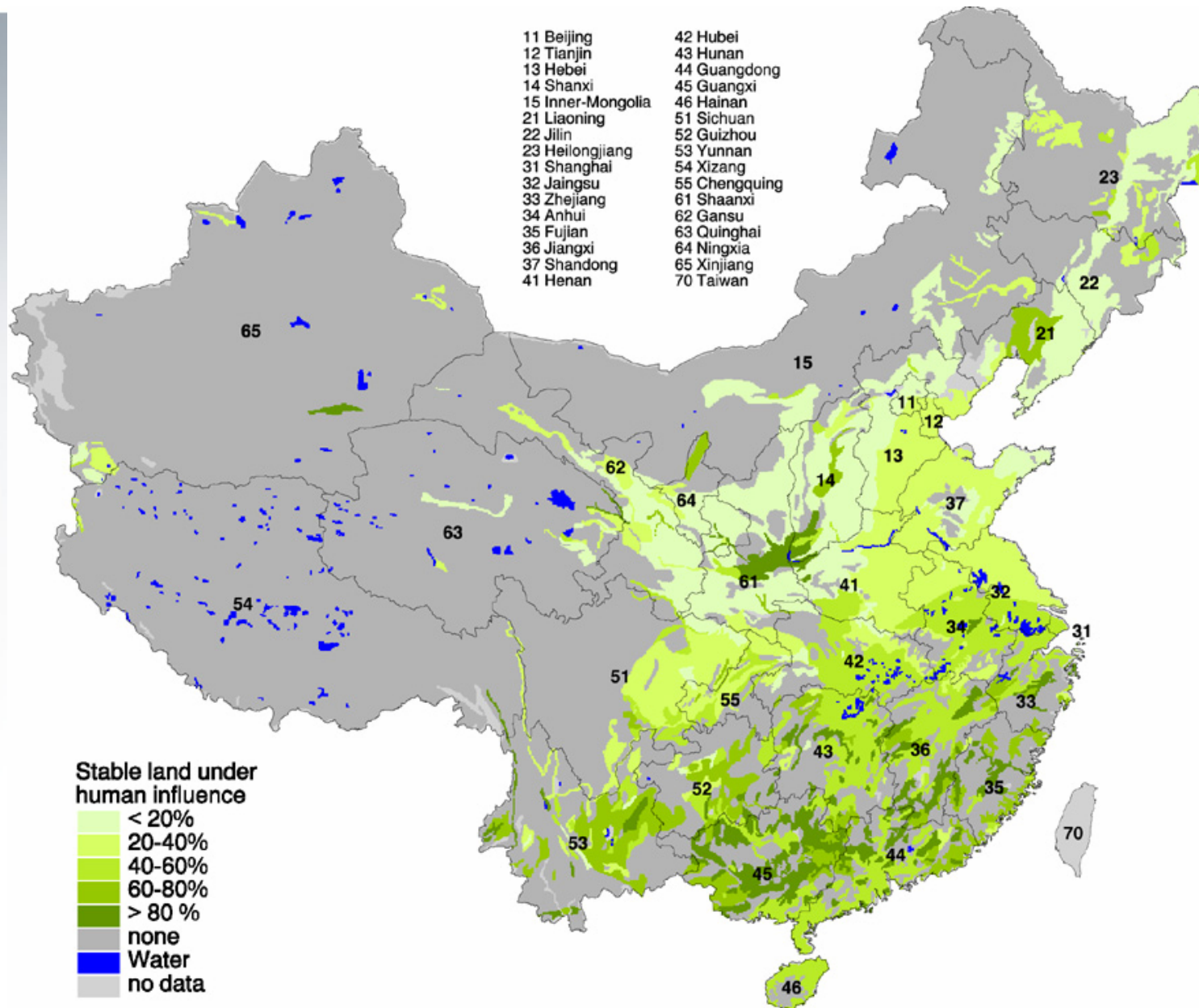


Million metric tons

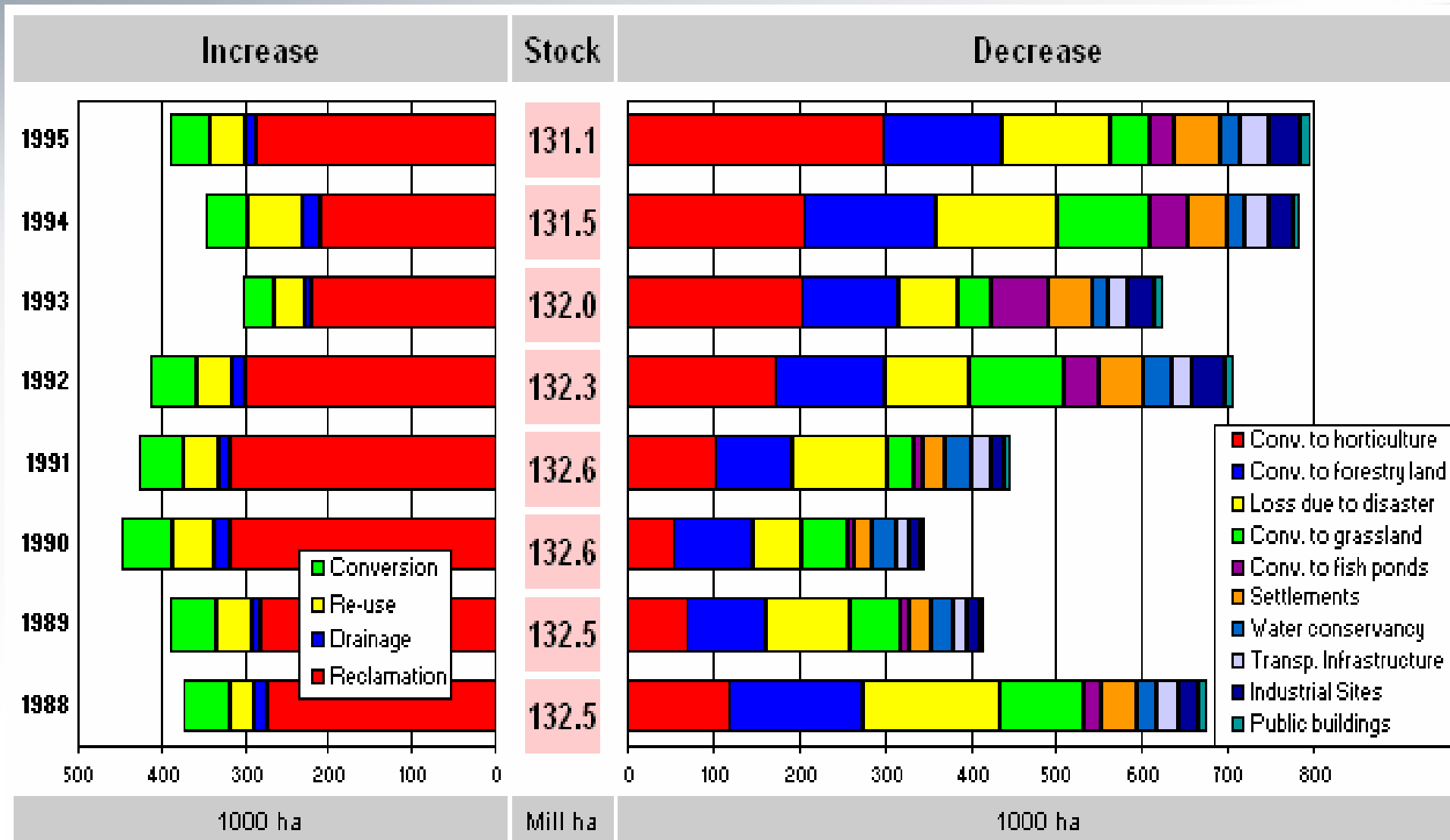


Source: *USDA* Source: *USDA*.

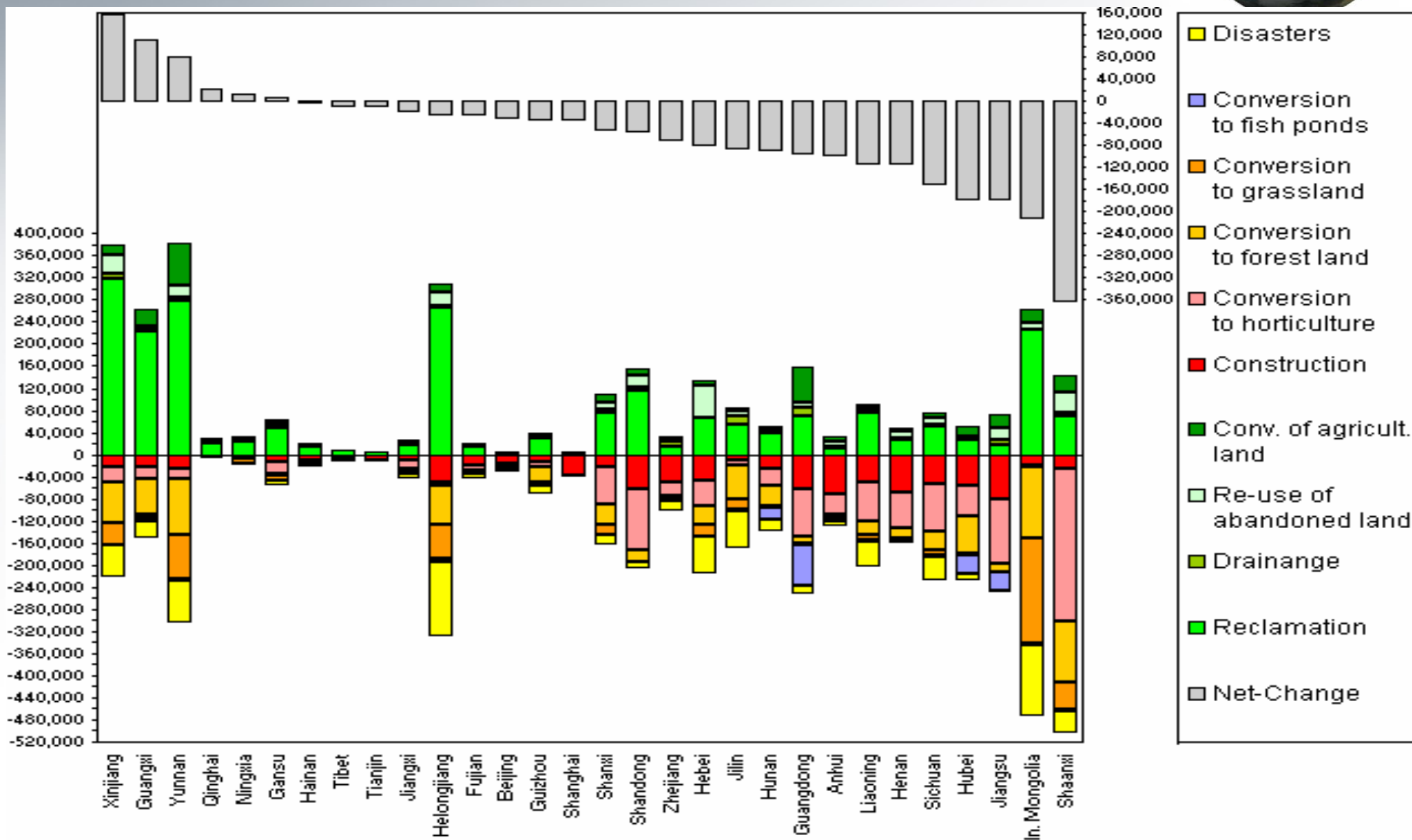
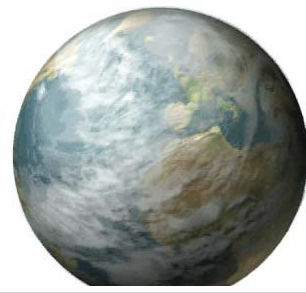
Chinese Arable Land



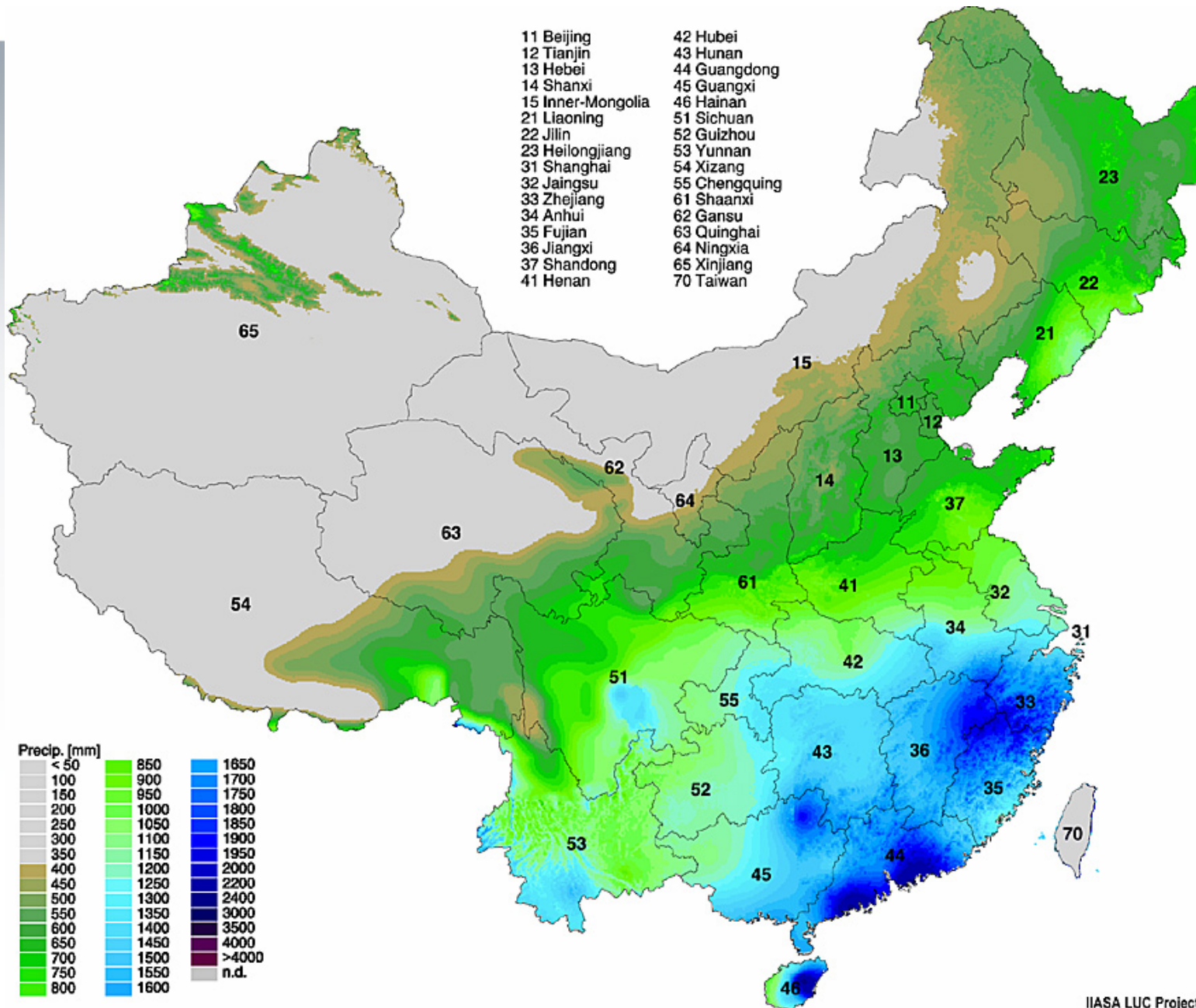
Stock of Cultivated Land in China



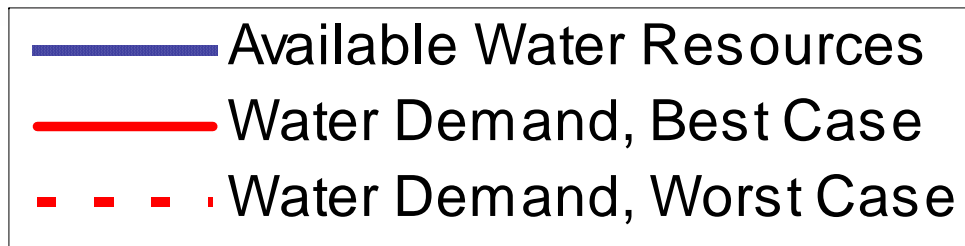
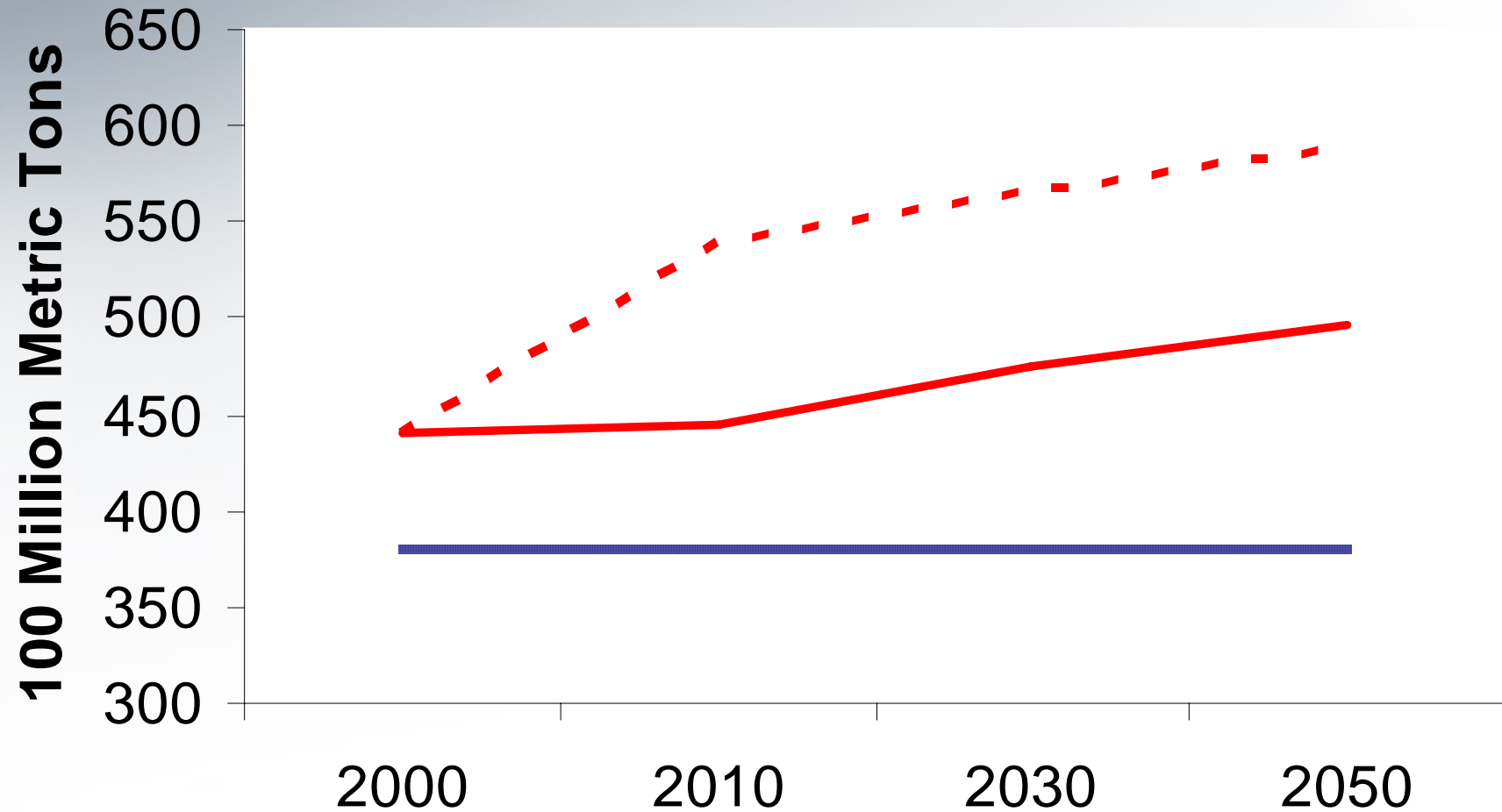
Provincial Land Stock Changes



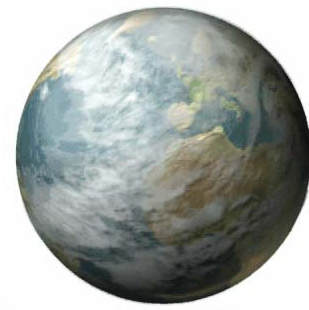
Annual Rainfall



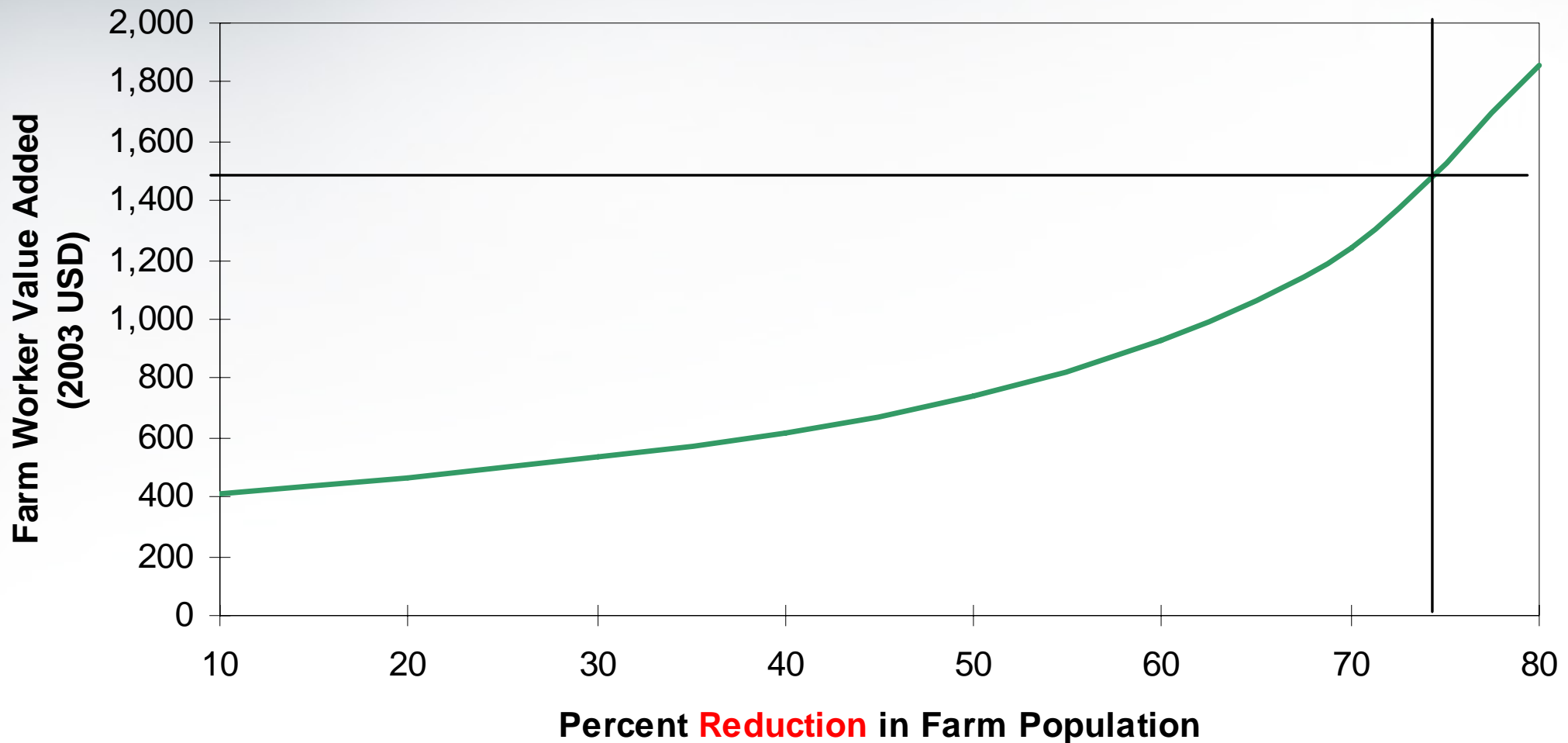
Yellow River Basin Water Use



Human Resources



Chinese farms are simply too small to mechanize and too poor to invest in innovation.



Chinese Supply Conditions



Productivity growth has been impressive, but resource constraints are very serious.

Output growth might sustain current trends for the next decade, but it is unlikely to accelerate in any major categories.

3. China's Food Requirements



One of every seven people on the planet is a Chinese farmer. Should we be worried about this?

No. One of every five people on the planet is a Chinese consumer.

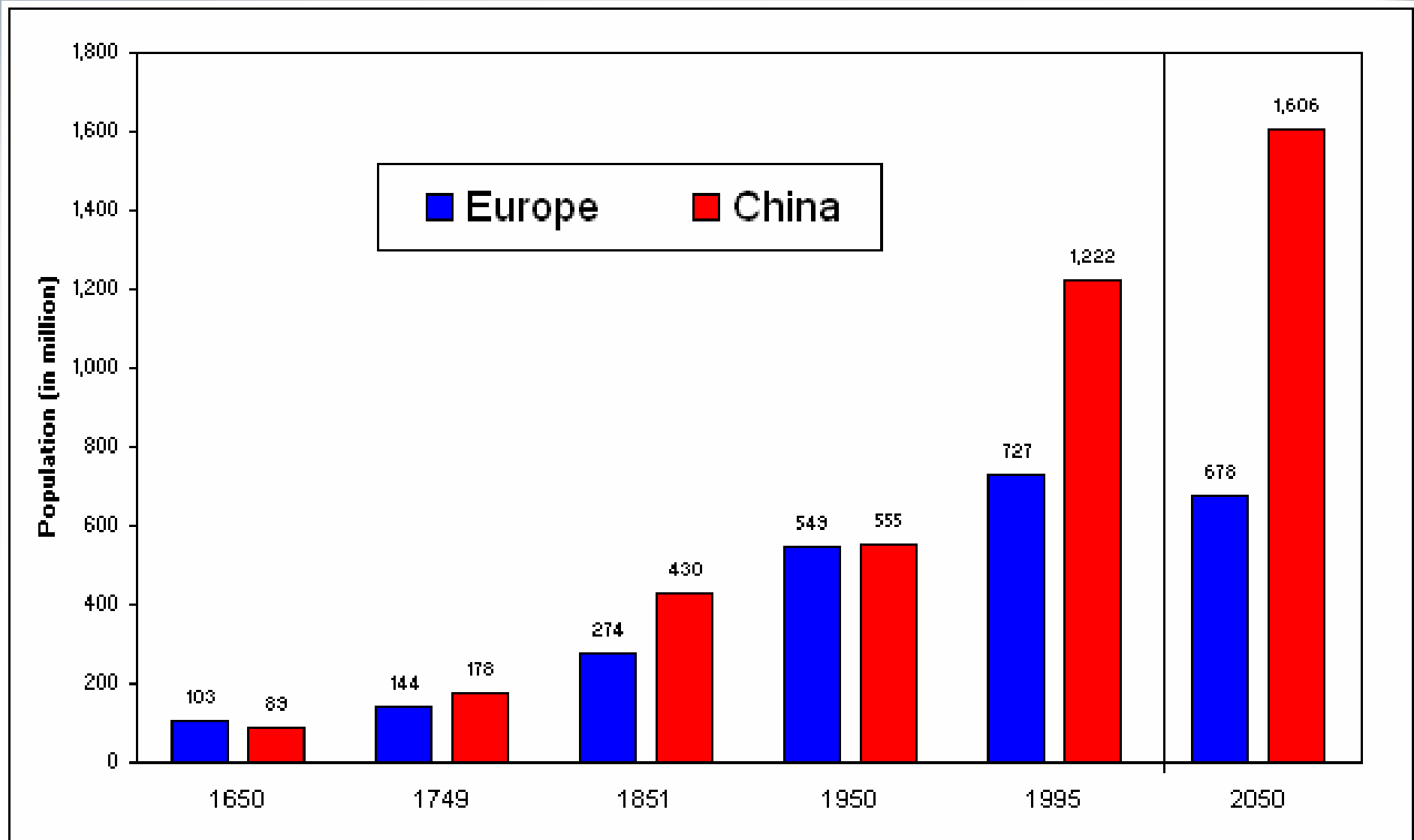
Average incomes are rising fast, and so is the resource intensity of consumption.

Conclusion: You ain't seen nothin' yet.

It wasn't always so...

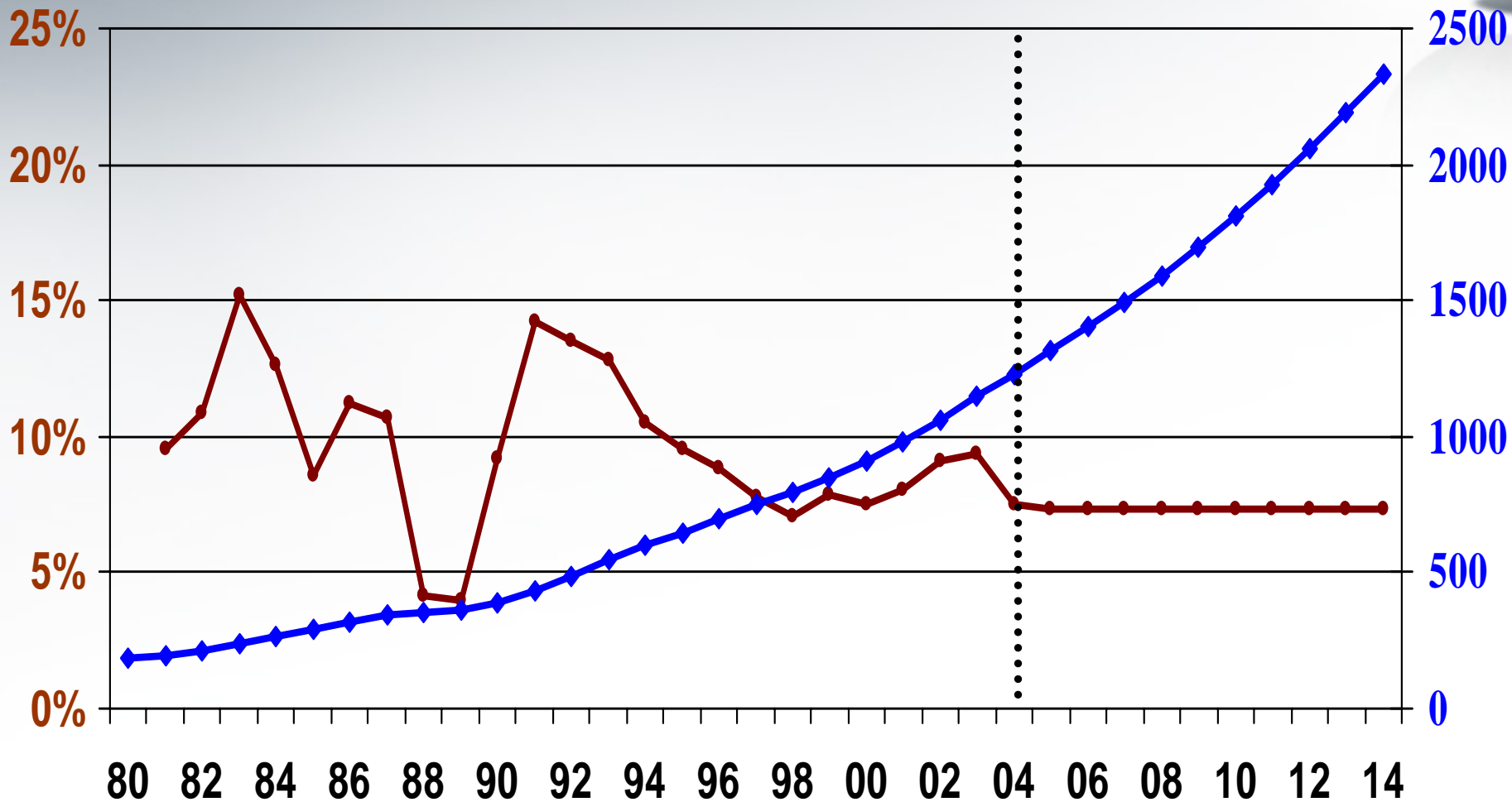


but we are in a new world now.



Income is Rising in China...

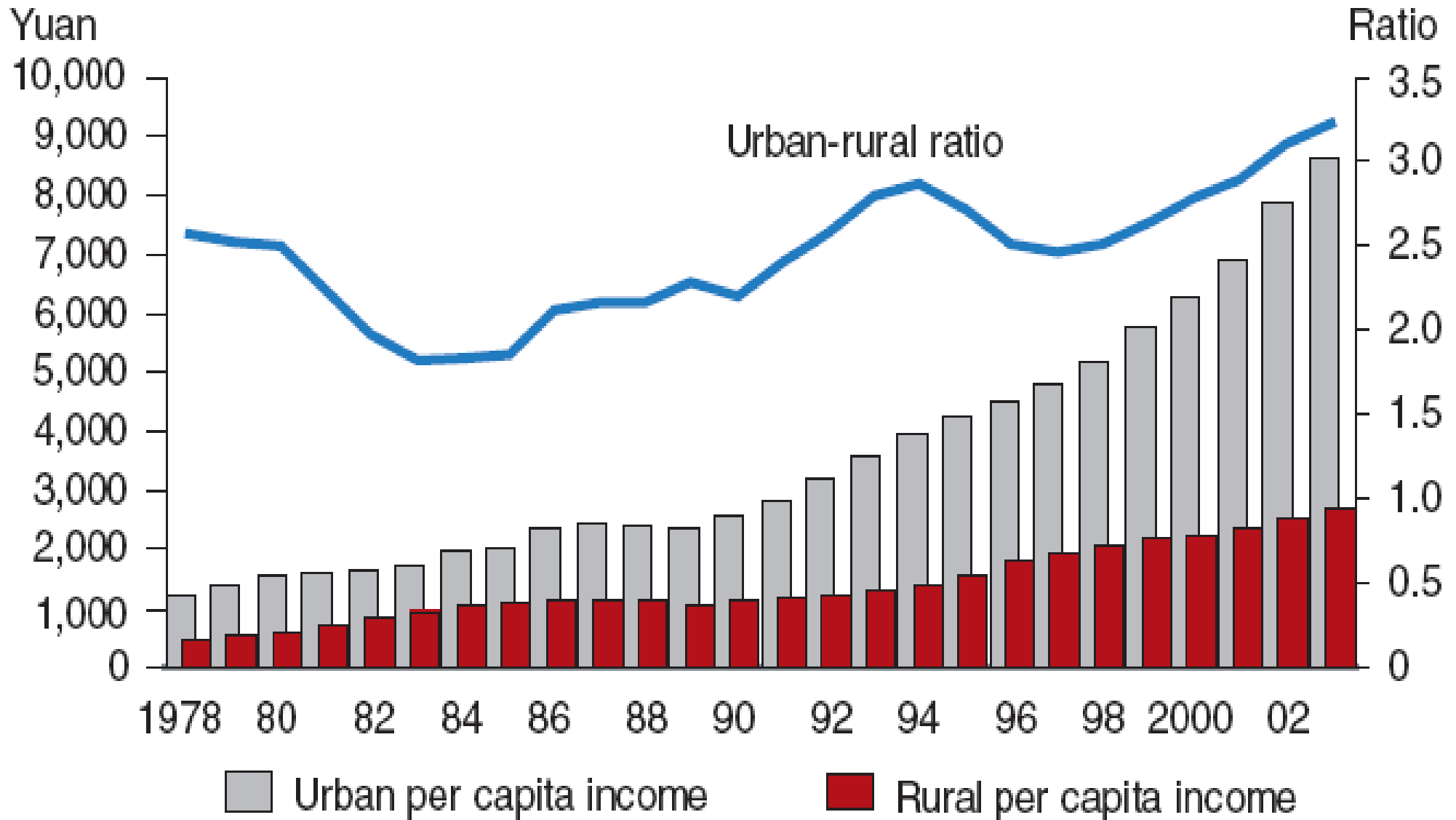
(2000 USD and growth rate)



Source: *USDA*.

—●— Domestic GDP % —◆— Per capita GDP, dollars

And so is Inequality



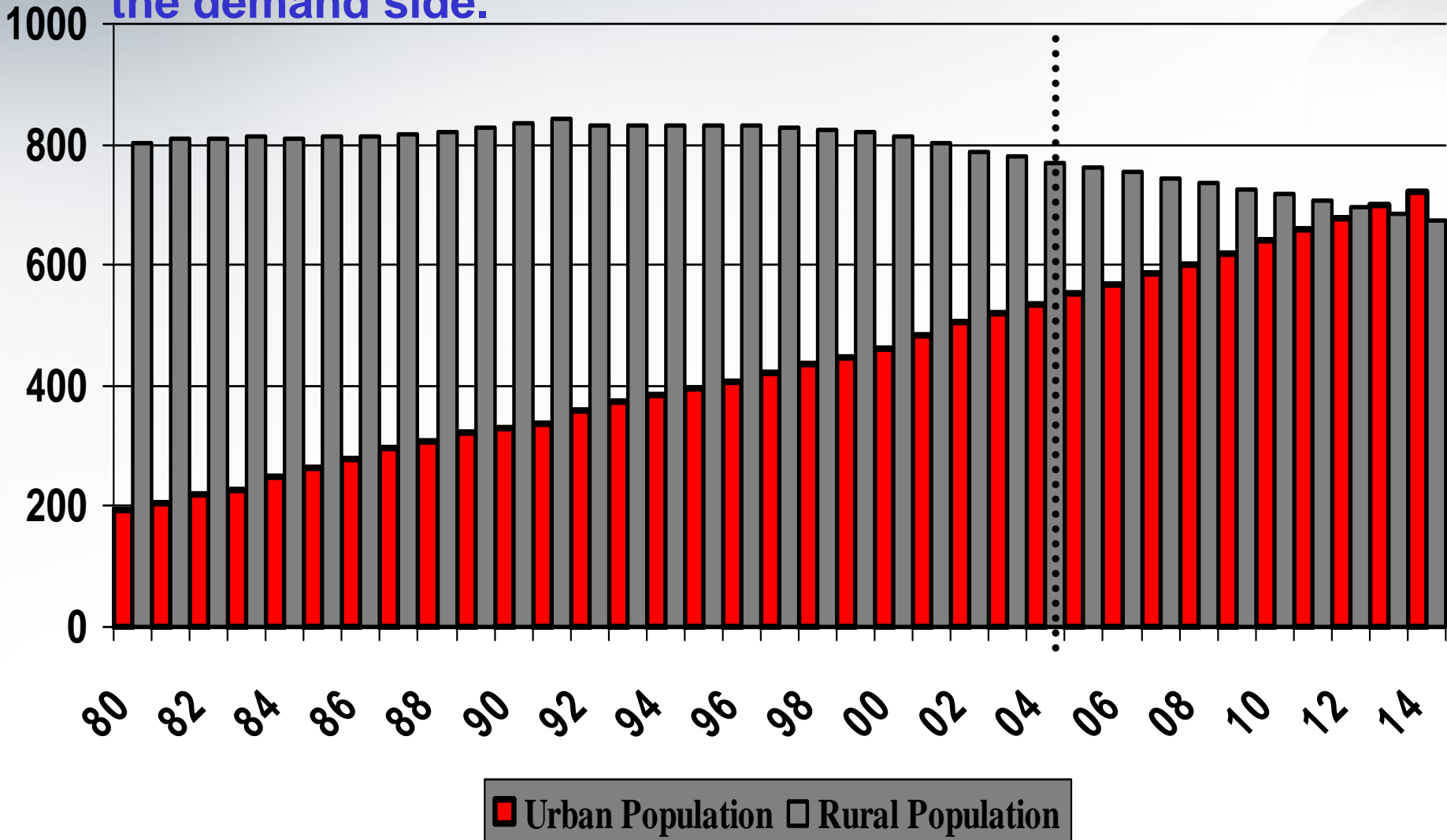
Source: USDA.

China's Population is Moving

(Rural and Urban, millions)

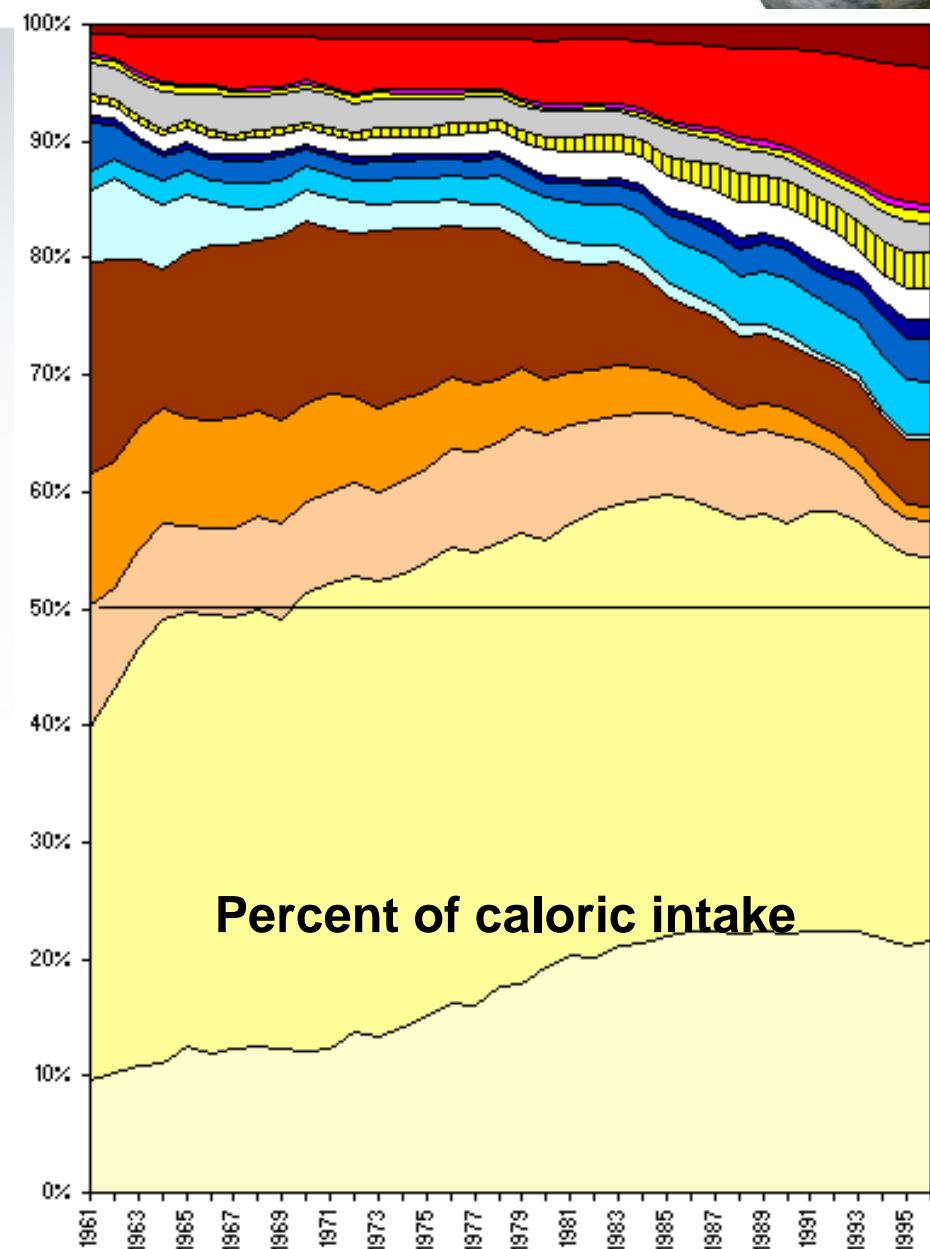
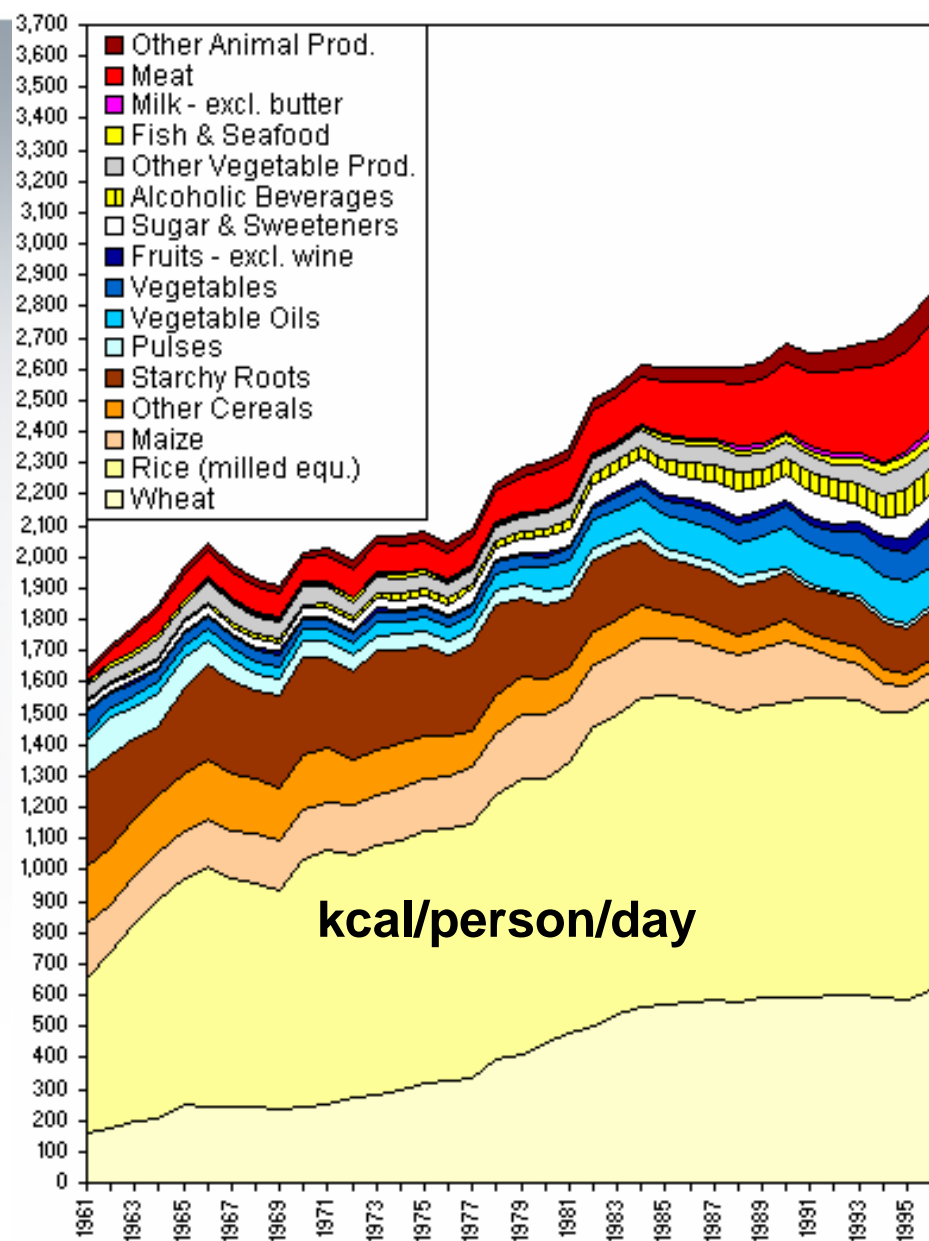
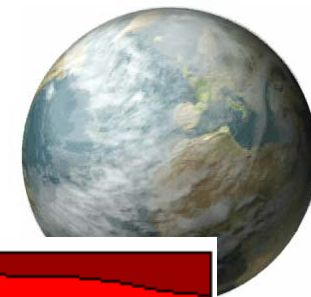


Half a billion people will switch from the food supply side to the demand side.



Source: UN.

And Diets are Changing



Emergent Imbalances



Despite significant progress in productivity, the implications of these trends in supply and demand are obvious.

China's growth can only be sustained with increased absorption of resources and resource-intensive products.

As it has with energy, China will emerge as a leading global importer of agricultural products.

Exhibit A: Petroleum



China's Net Oil Exports

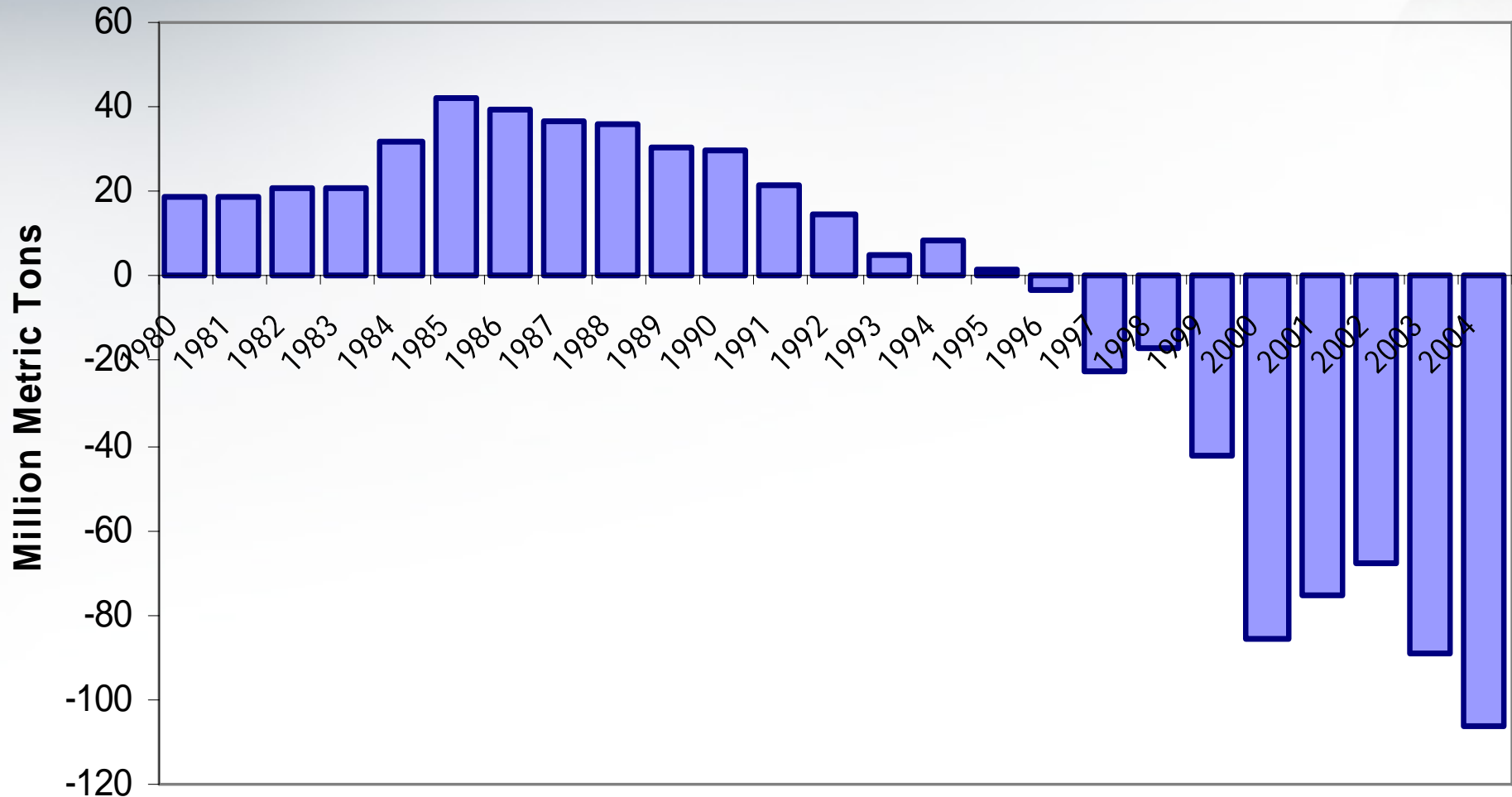
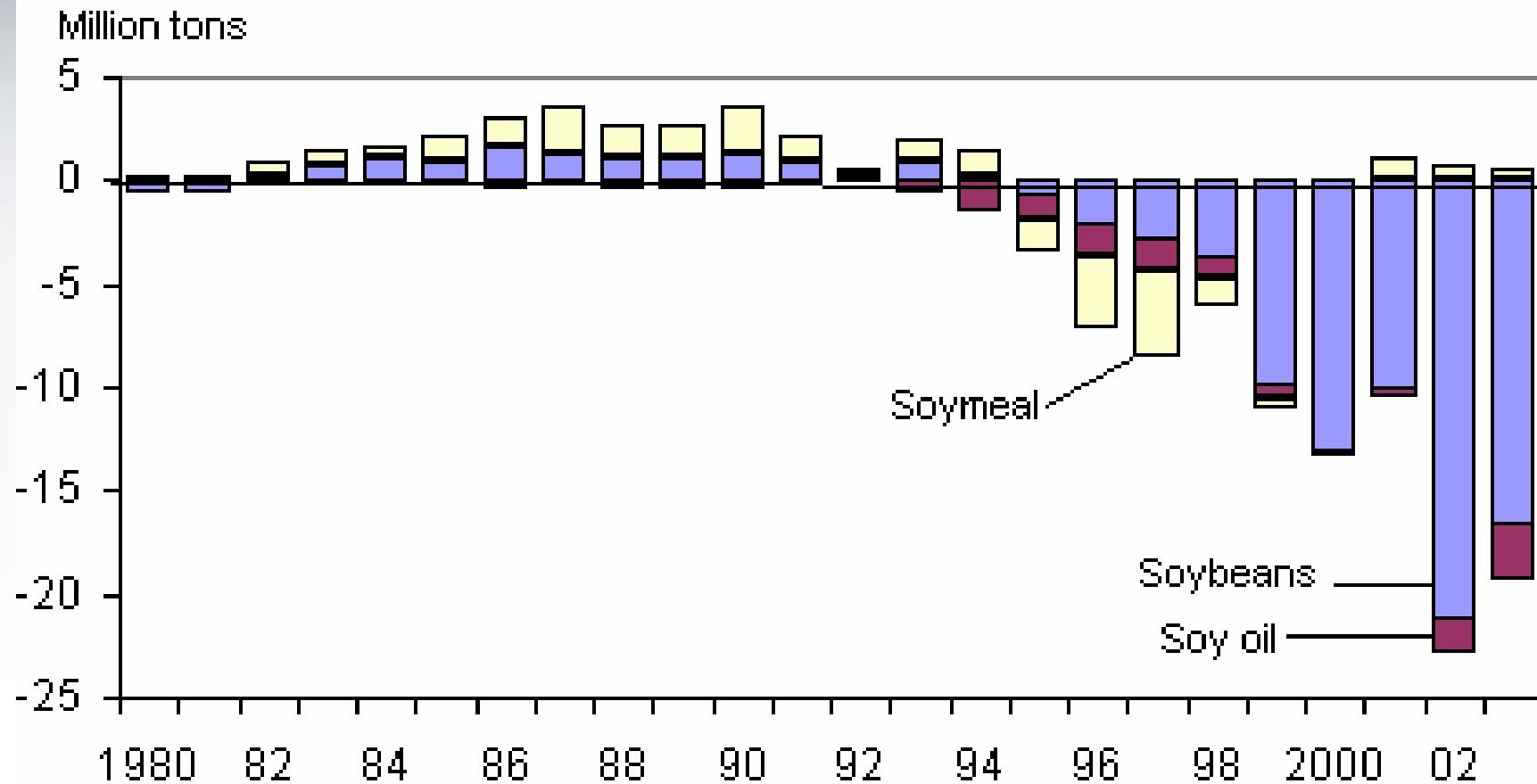


Exhibit B: Soy products



China net trade in soybeans, oil and meal, 1980-2003



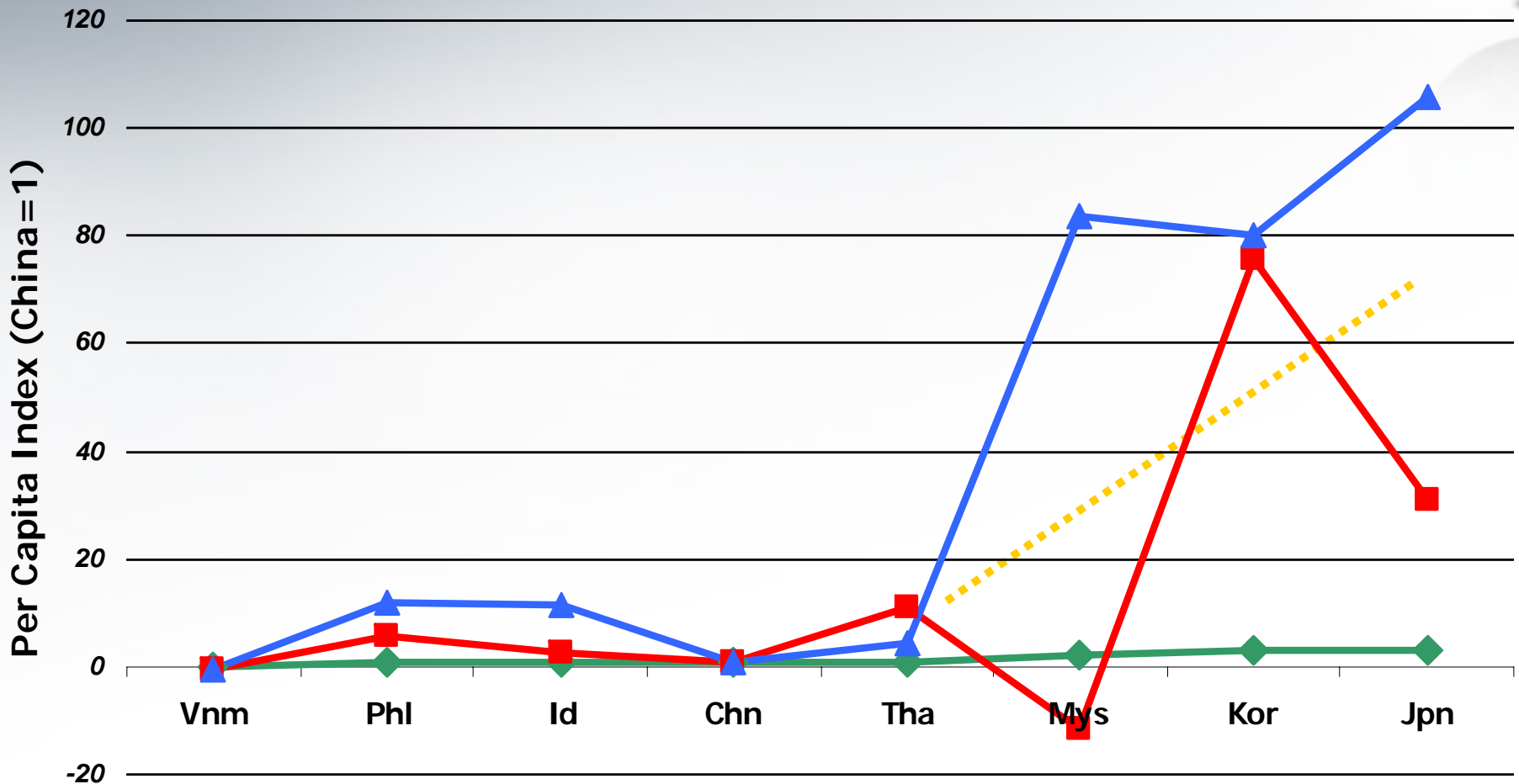
Note: net trade = exports - imports.

Source: USDA, Production, Supply, and Distribution data.

Exhibit C: Income and Imports, Meat or Feed



Import the meat or the feed to produce the meat.



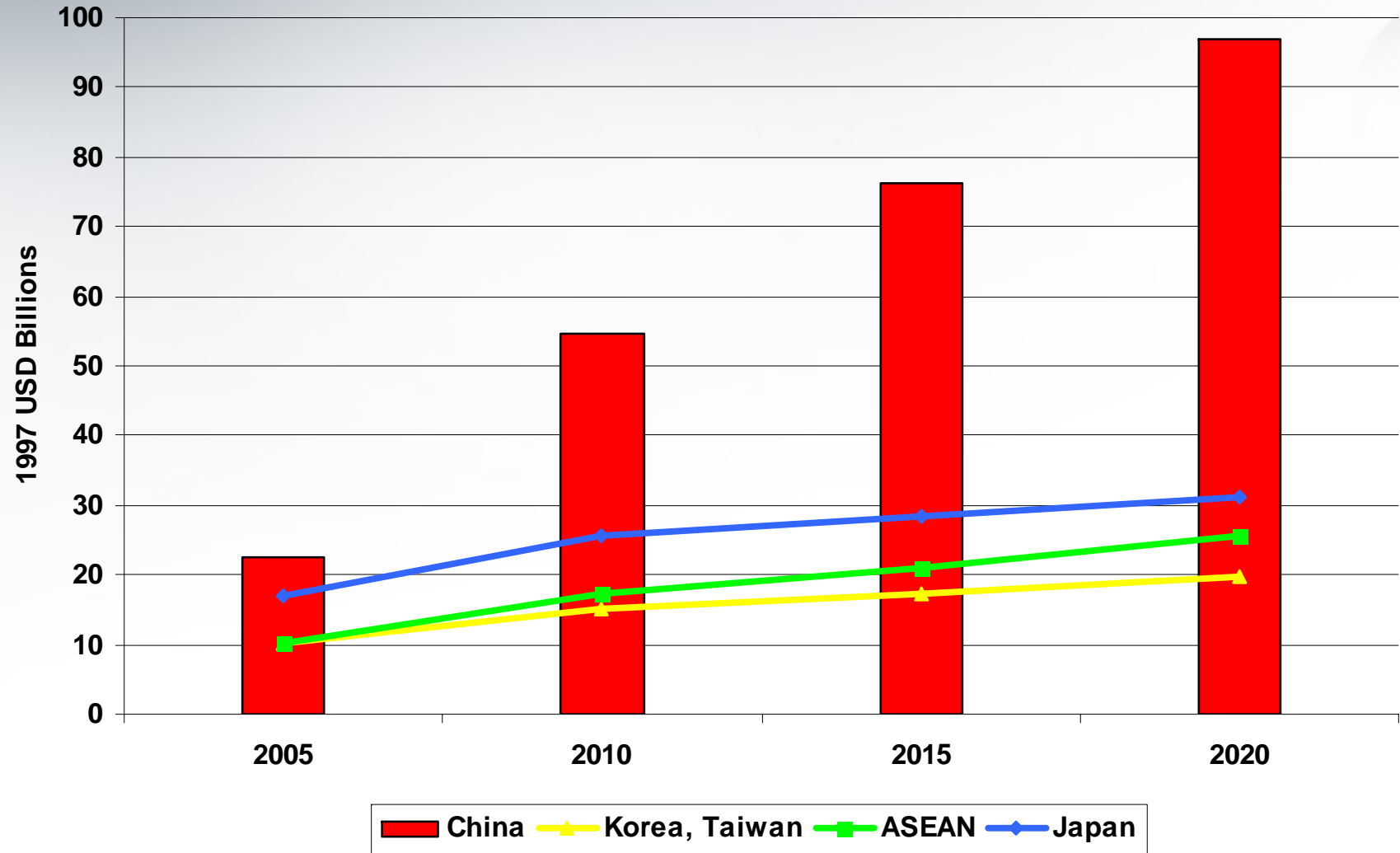
◆ Demand ■ Meat Net Imports ▲ Feed Net Imports

Poorer ← → Richer

Verdict: China Will be Asia's Largest Ag. Importer

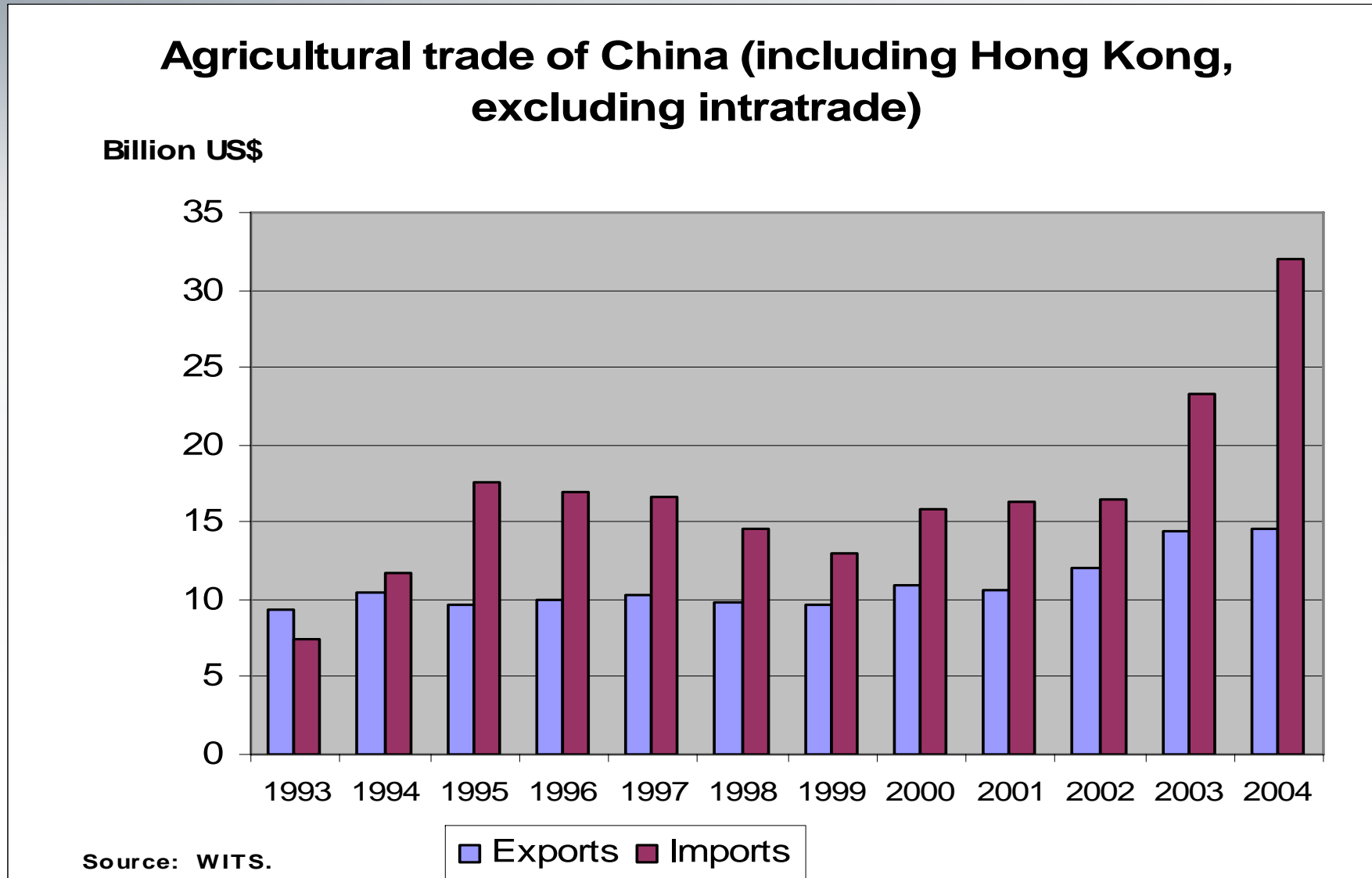


Net Agricultural Imports in 1997 USD Billions



Source: Author's estimates.

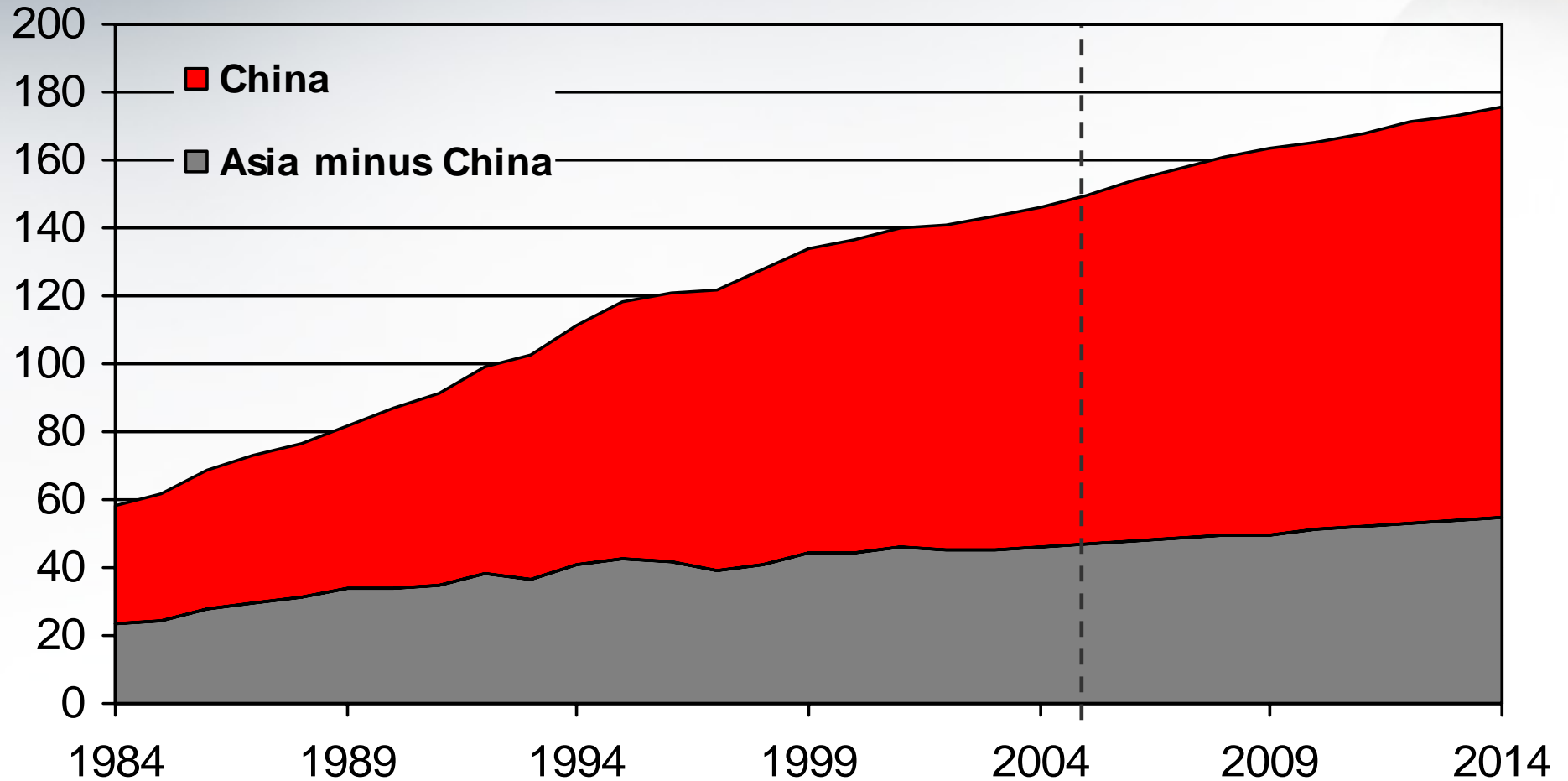
China's rapidly rising imports



Corn Feed Use



Million metric tons

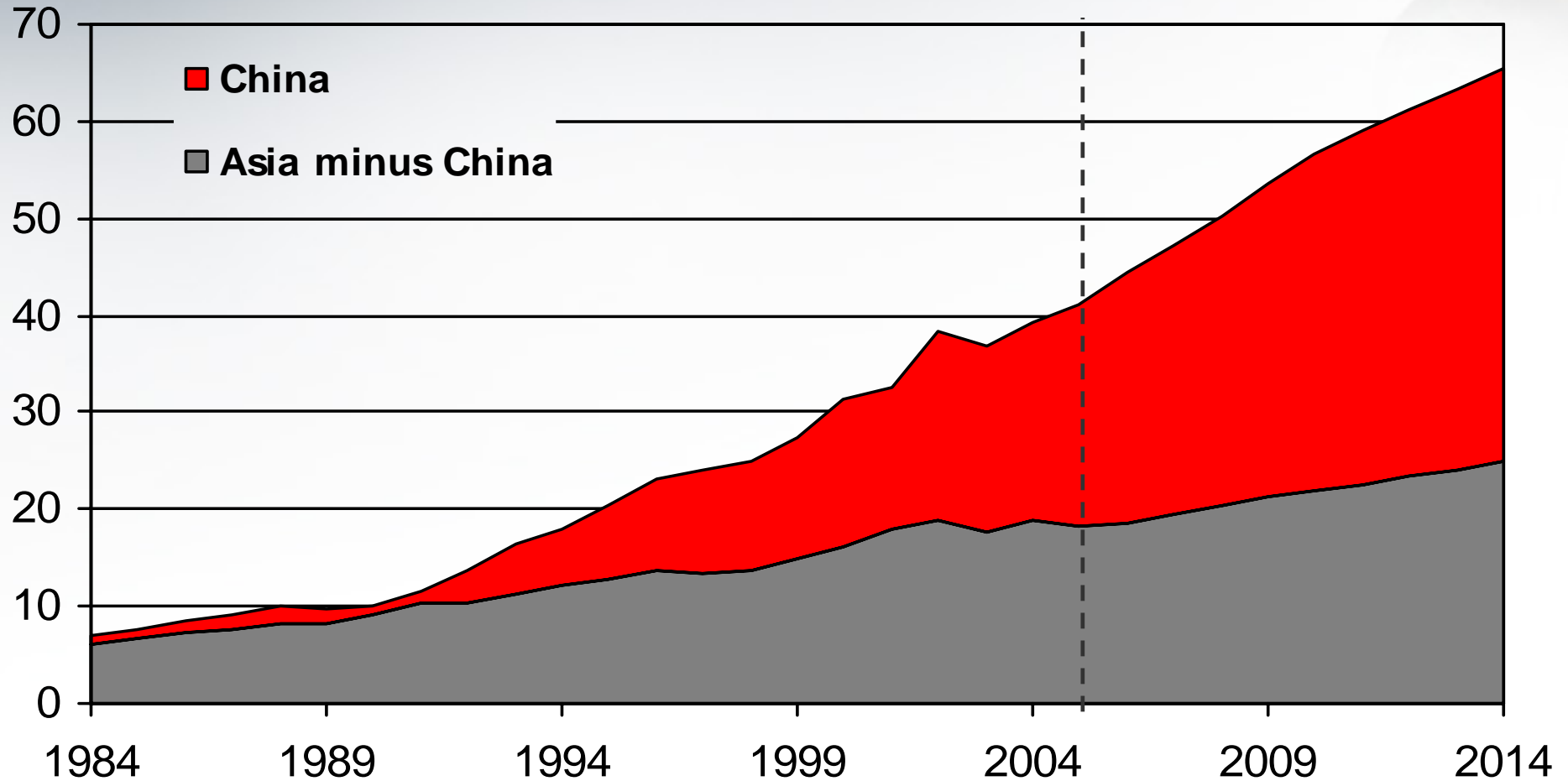


Source: *USDA*.

Soybean Meal Feed Use

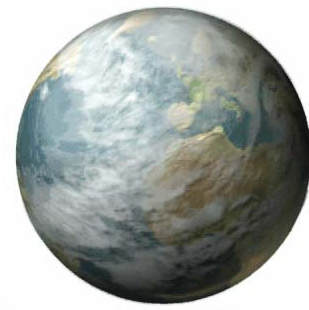


Million metric tons

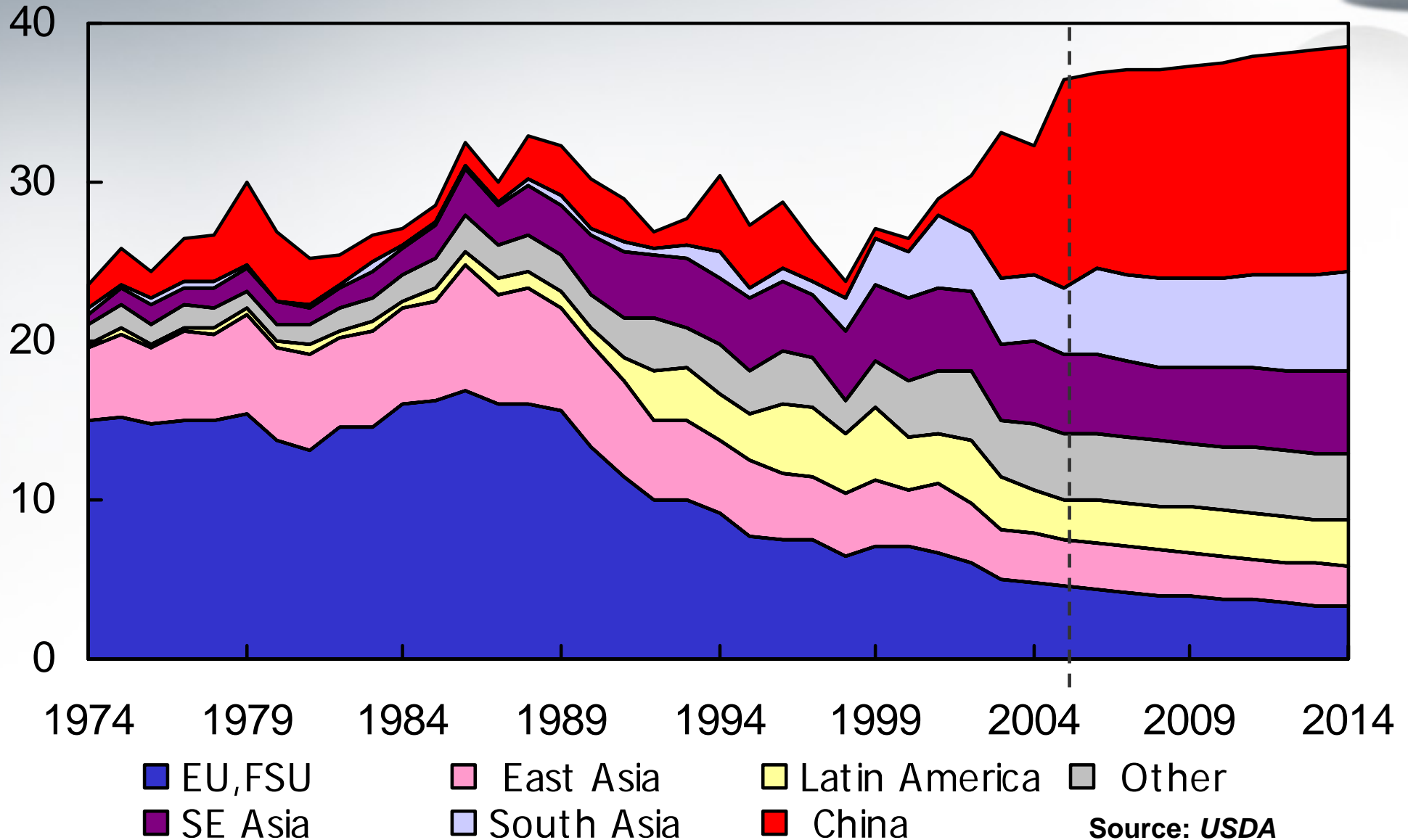


Source: *USDA*.

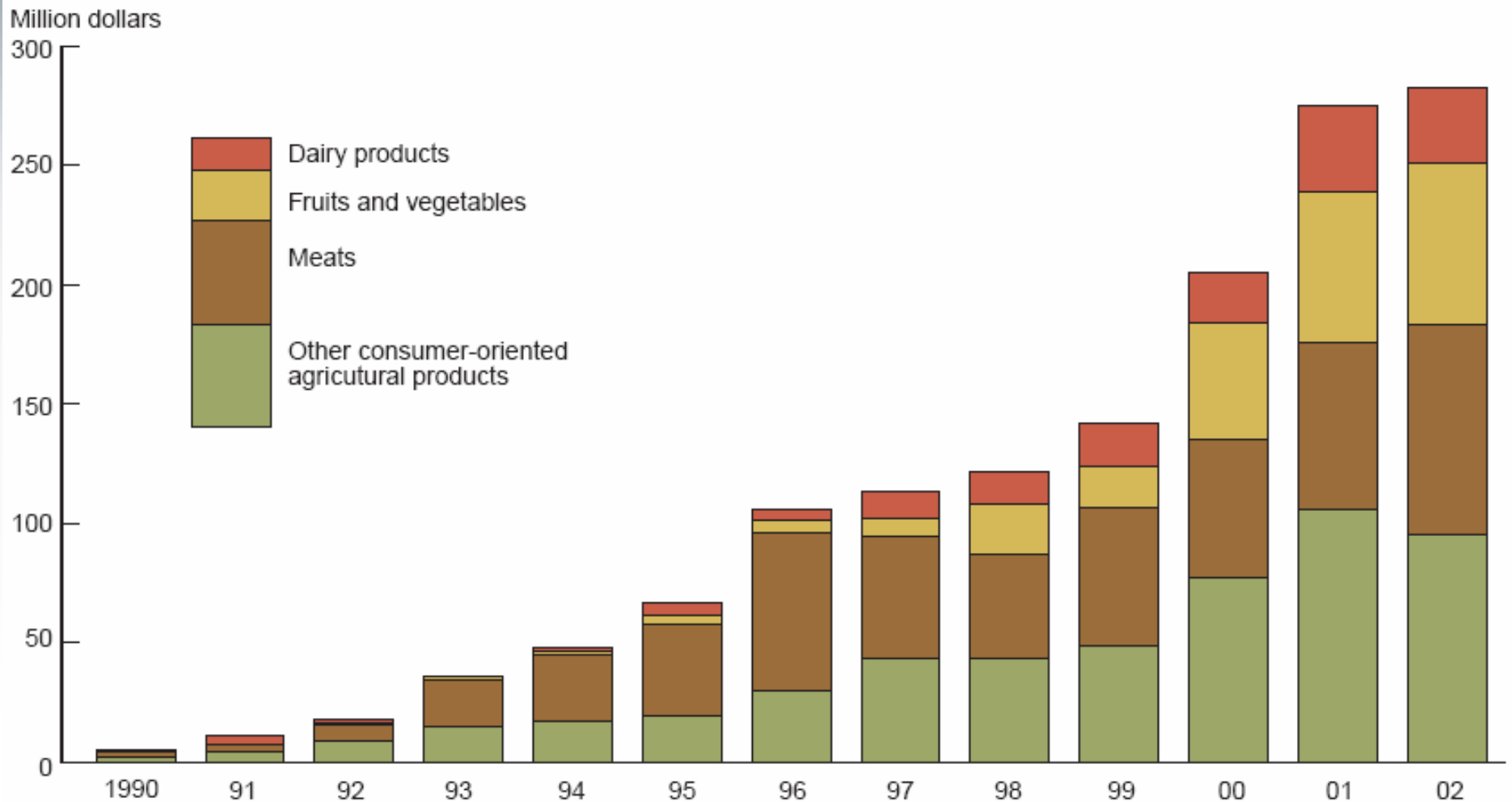
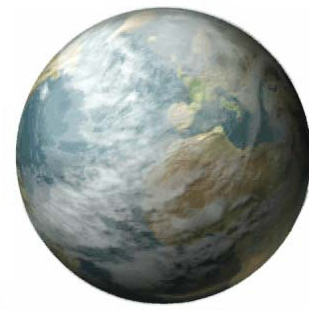
Global Cotton Imports



Million bales



Consumer Food Imports from US



Source: *USDA*.

China's Import Trends 1



Who will take these markets?

<i>Product</i>	<i>Millions in 2004</i>	<i>Annual Growth 1999-2004</i>
Almonds	4.048	22.5
Beef	7.110	4.4
Cereals	2,218.543	34.9
Cherries	2.334	160.5
Crustaceans	312.036	20.5
Blueberries	1.163	29.1
Fish - whole (chilled, frozen)	1,516.575	30.0
Fish - fillets (chilled, frozen)	45.556	24.9
Frozen Potato/French Fries	51.485	71.3
Grapes	67.546	23.4
Hazelnuts	2.297	17.6
Infant Formula	88.821	27.5
Juices and Concentrates	61.001	35.4
Lobsters (uncooked)	0.131	159.3
Mollusks	332.462	26.6
Oranges	36.994	31.4
Pistachios	17.432	21.9

China's Import Trends 2



<i>Product</i>	<i>Millions in 2004</i>	<i>Annual Growth 1999-2004</i>
Pollock	1.250	1.9
Pork	54.452	17.5
Poultry	153.413	-17.8
Prunes	0.922	39.4
Raisins	14.666	104.5
Salmon	26.612	63.0
Scallops	8.023	15.5
Soybeans	6,956.654	50.9
Soy Flour	1.758	5.9
Thickeners	12.604	14.7
Whey Powder	119.744	15.6
Wine (containers less than 2L)	25.247	30.4
Wine (containers more than 2L)	24.436	-2.0

4. The Path Ahead

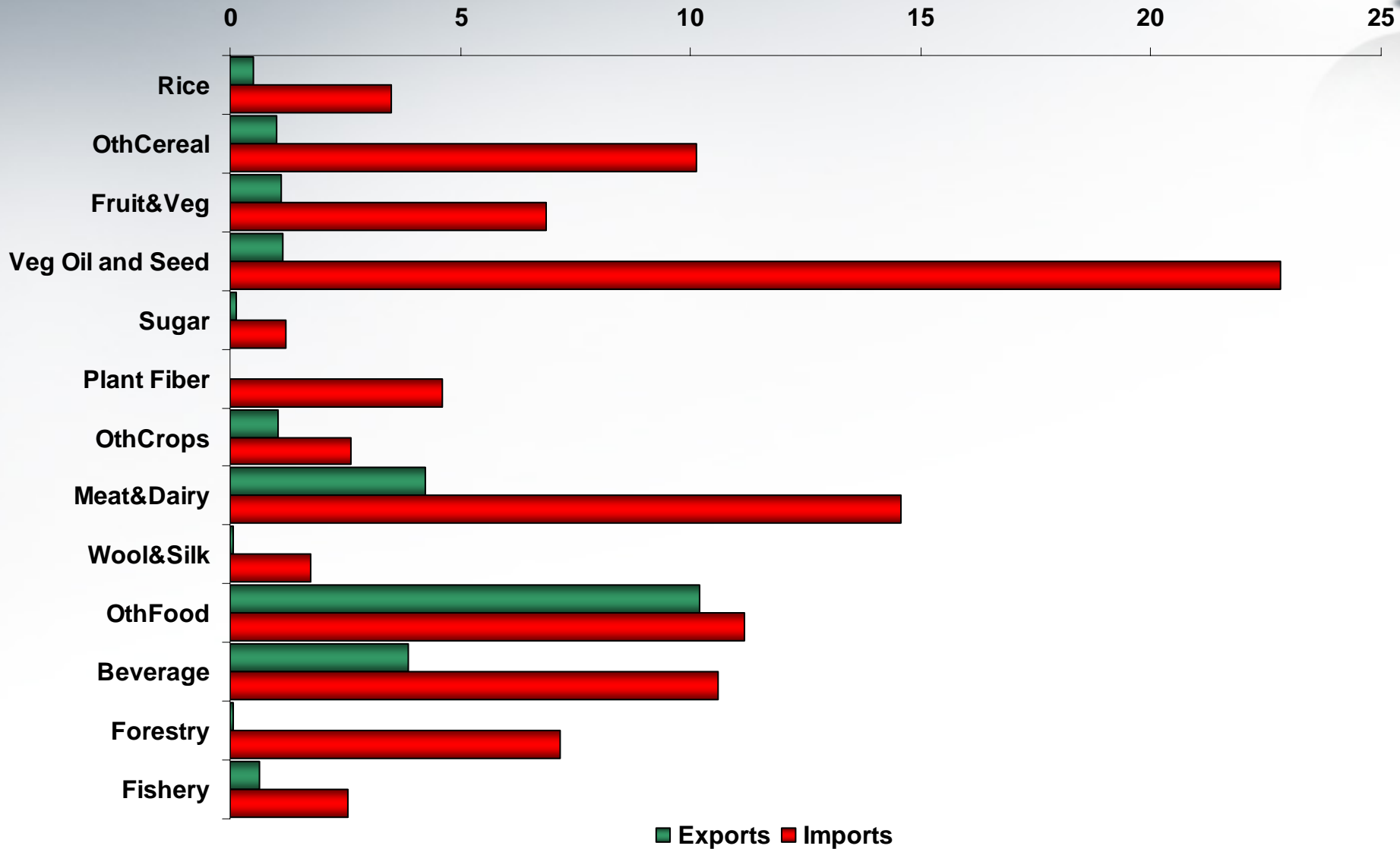


If Doha progresses, two major new opportunities exist for California farm and food exports:

1. China – an emergent giant with scarce resources
2. High income Asian countries – very high prior protection levels and significant purchasing power

Chinese Agricultural Imbalances

(USD 1997 billions in 2010)



Source: Author's forecast.

Food Cost is Rising in China

Annual CPI change by commodity, 2004



In global energy markets, China is increasingly being seen as a demand-side OPEC.

Can a single economy reverse global food price trends?

	<i>Percent</i>
Consumer price index, all items	5.0
Consumer price index, by item:	
1. Food items	14.0
Grain	32.0
Meat	22.1
Eggs	30.3
Fish	18.5
Vegetables	10.2
Fruit	-0.9
2. Tobacco, alcohol	1.5
4. Clothing	-1.5
5. Household items	-1.4
6. Health	-1.4
7. Transport, communication	-1.3
8. Recreation, culture	0.7
9. Housing	4.9

Doha's Gift to California: Japan and Korea

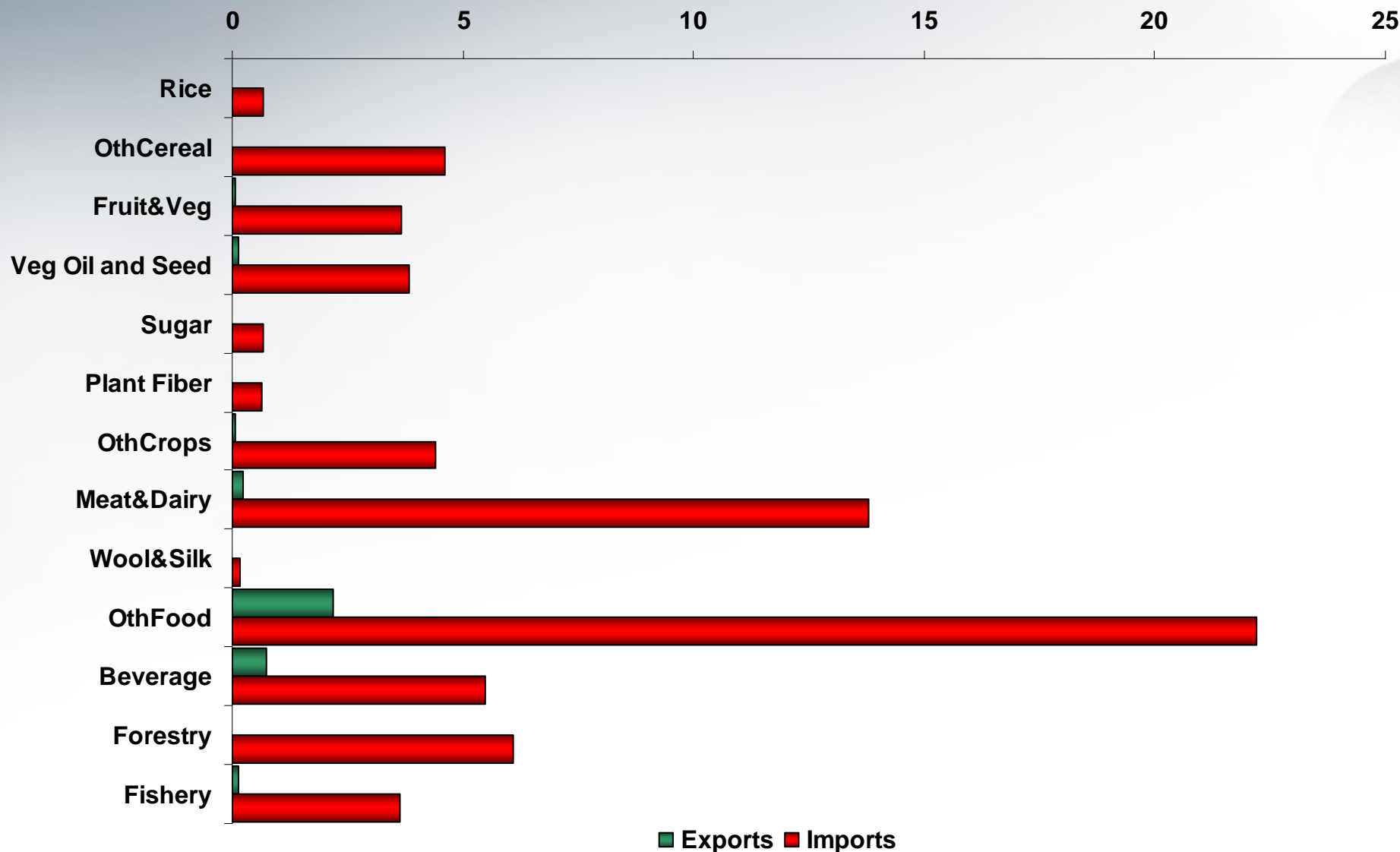
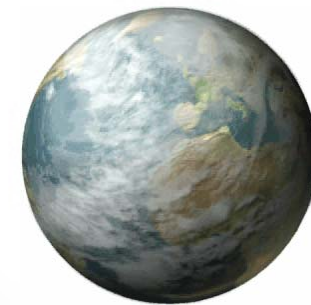


Given the scale of prior protection,
imports will increase very sharply.

Rice, Meat & Dairy, Specialty, and
Processed Foods will see most of
the absolute growth.

Japanese Agricultural Trade

(USD 1997 billions in 2010)



Conclusion



Three Friends of California Farmers

1. Doha – really
2. The Chinese consumer – riding to the rescue
3. China's Currency (RMB)
 - In China, the biggest opponent of RMB appreciation is the Agriculture Ministry
 - You should be its biggest supporter

Competitive Principles for California Agriculture



1. Resources – Your forbearers were talented and fortunate, and you can extend their legacy with entrepreneurship and stewardship.
2. Quality – As a prosperous and mature market, we set tastes and product standards for the rest of the world.
3. Innovation – Take your rightful place with IT, biotech, and the state's other knowledge-intensive industries to sustain global leadership.



Thank You