

Farm Foundation Forum

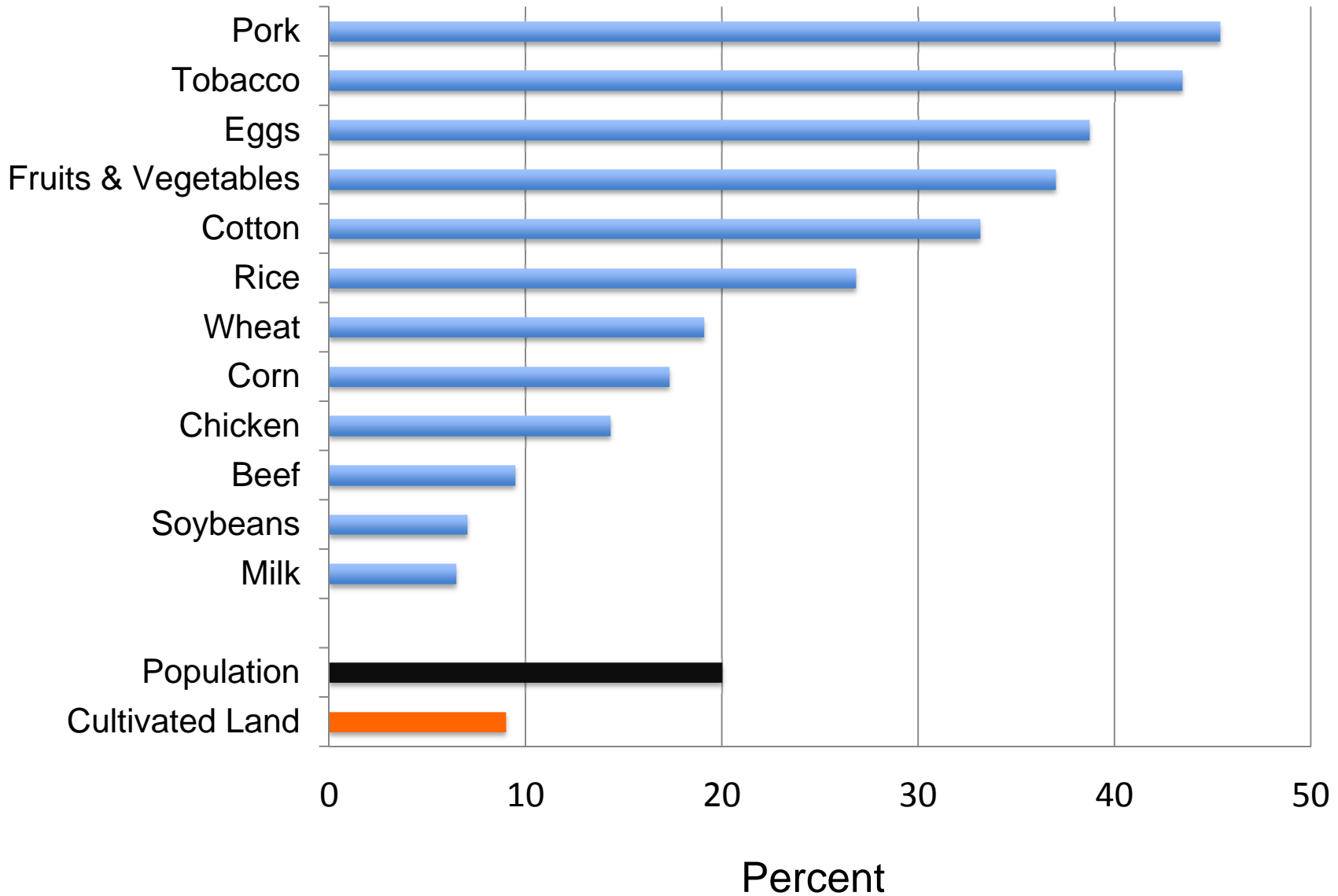
China's Future Economic Performance in Agriculture

Colin Carter, UC Davis, Mar. 2012

Overview of China's Ag

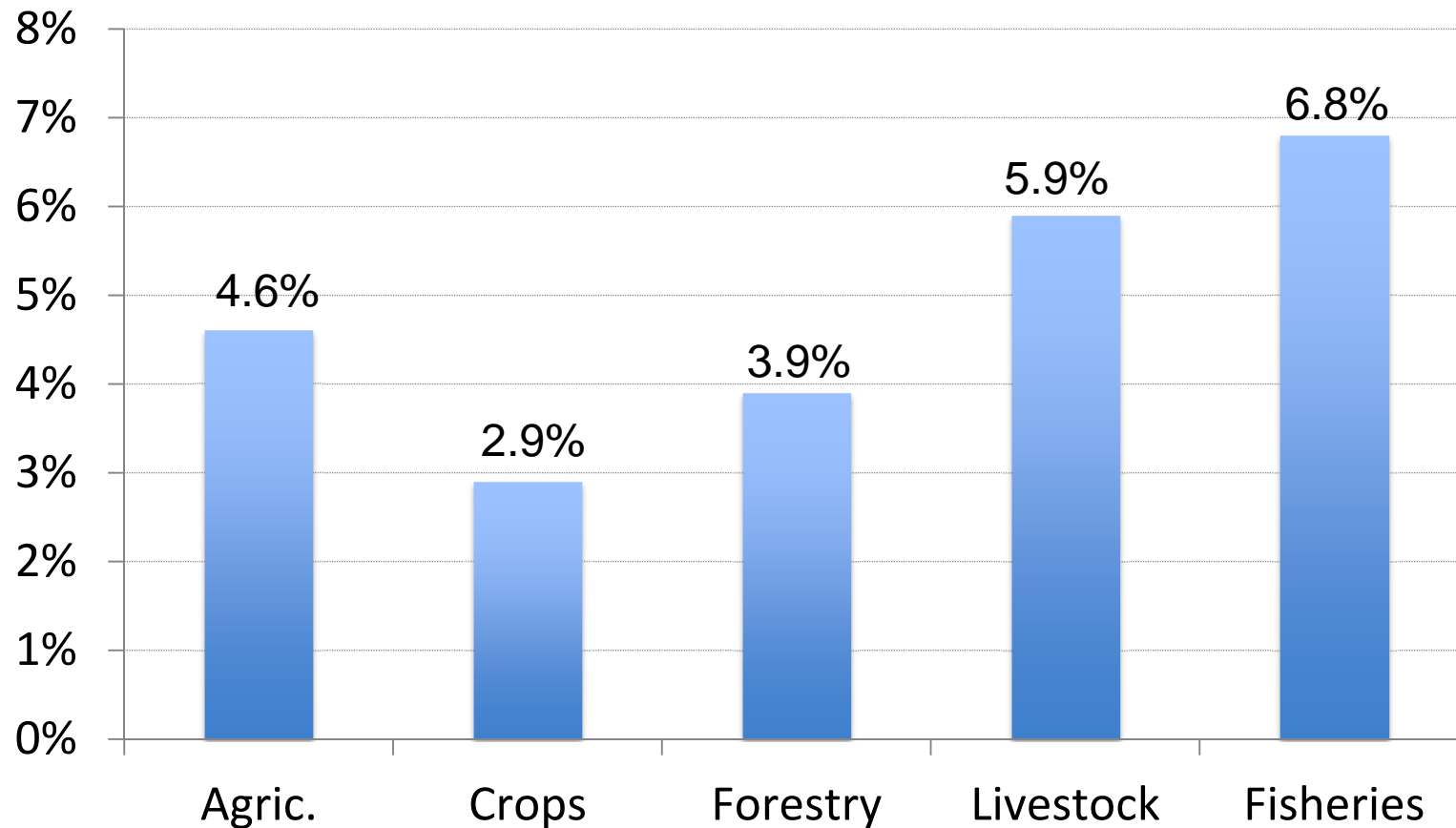
- China is world's largest agric. economy & #1 producer of pork, wheat, rice, tea, cotton, fish, etc.
- Farms are very small (approx. 1 acre).
- Almost 300 million workers "remain" in agriculture.
- Highly intensive use of labor, water & fertilizer.
- Most farmers remain poor (per capita < \$1,000/yr).
- After joining WTO in 2001, China has played a greater role in the world agric. trade.
- Food self-sufficiency remains a policy priority.

China's Share World Food Production: 2009

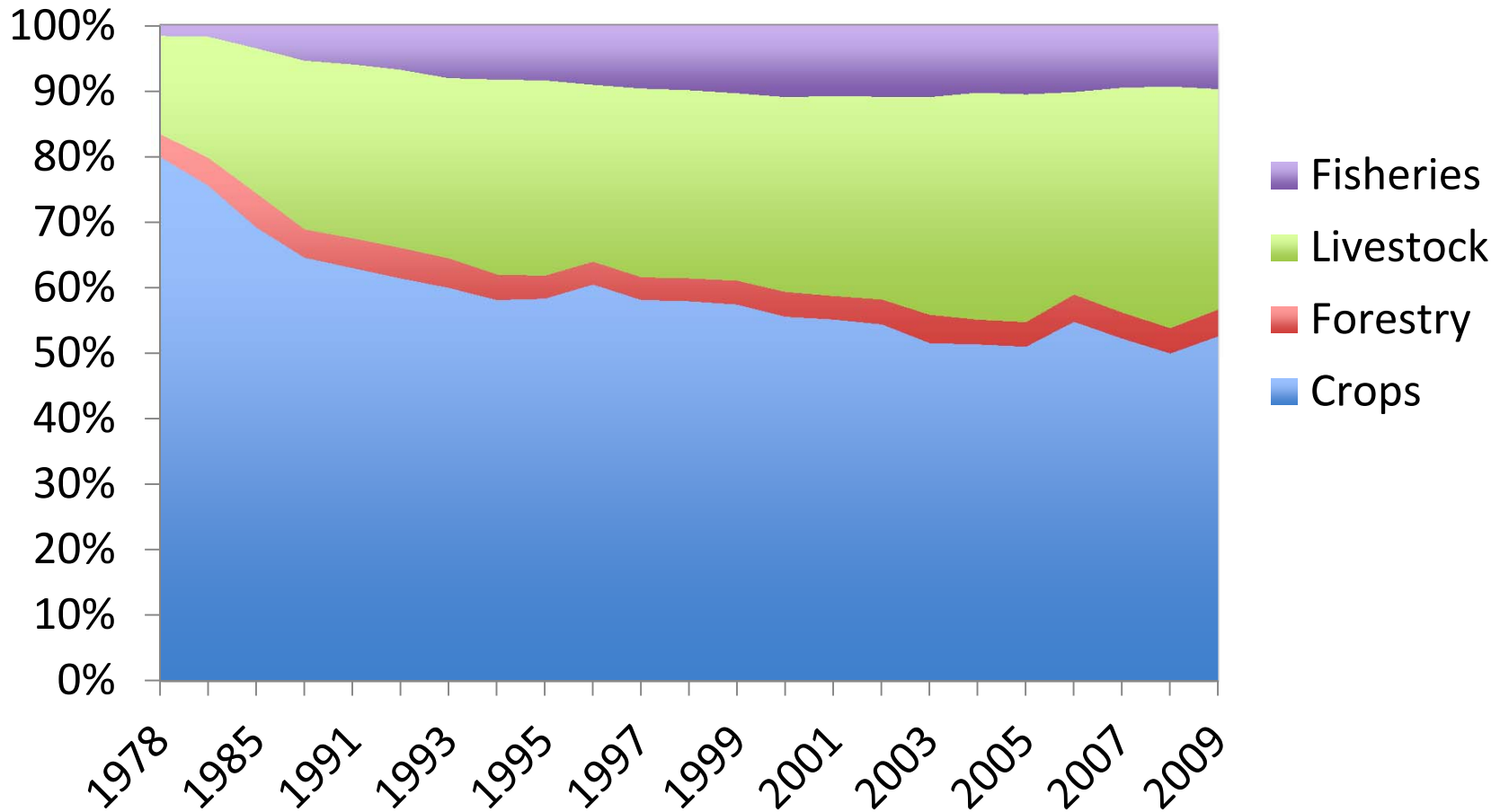


Source: compiled from FAO data.

Average Annual Growth Rates: China's Agric. & Components: 1978-2009



Share of Agric. Output Values



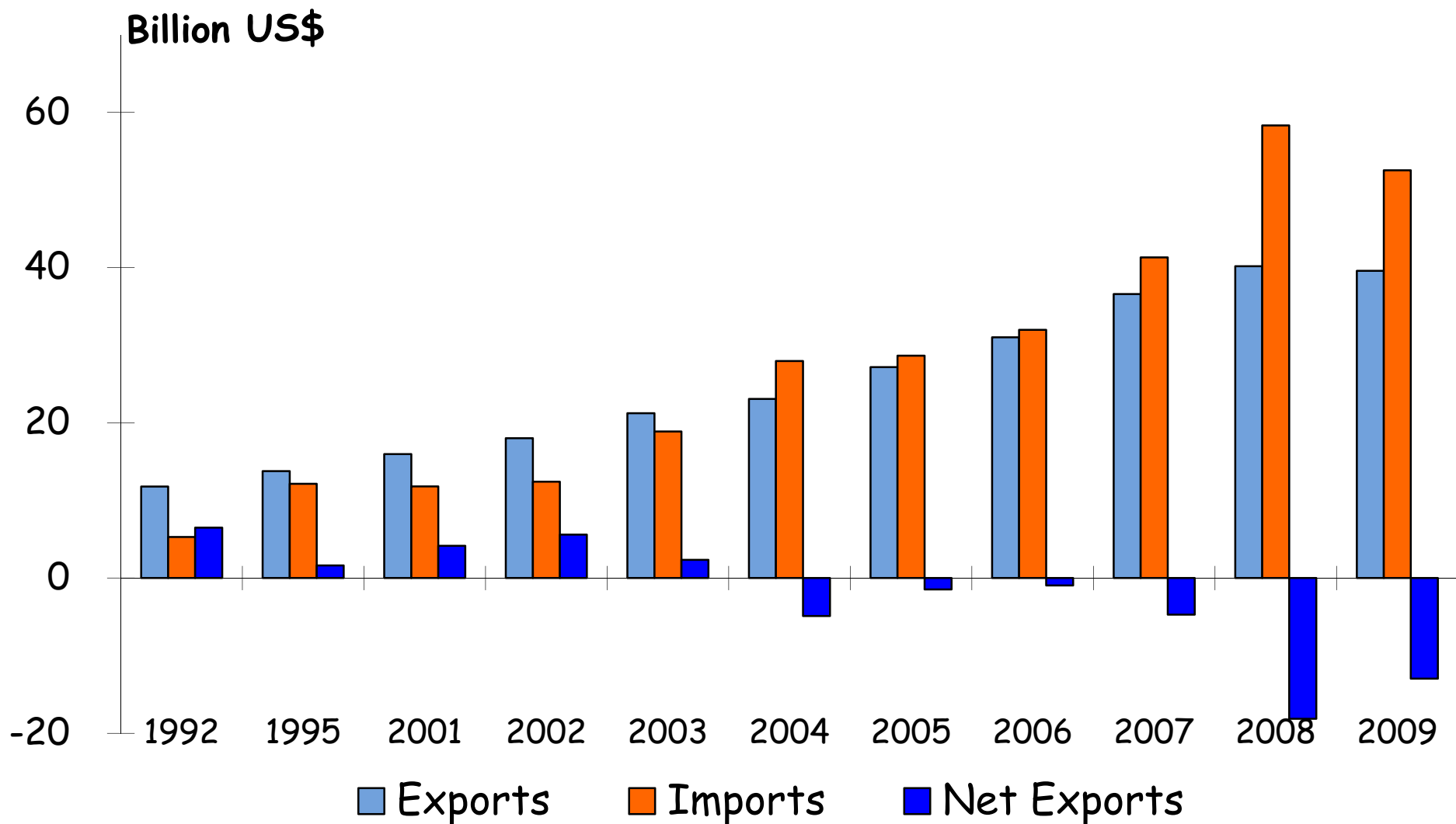
Shift from low value to high-value agriculture

Food Consumption in China (kg/capita)

	Urban			Rural		
	1990	2005	2009	1990	2005	2009
Food Grain	130.7	77.0	81.3	183.5	146.2	132.5
Vegs.	138.7	118.6	120.5	134.0	102.3	98.4
Edible Oil	6.4	9.3	9.7	5.2	6.0	6.3
Meat	25.2	32.8	34.7	12.6	22.4	21.5
Eggs	7.3	10.4	10.6	2.4	4.7	5.3
Fish	7.7	12.6	15.0	2.1	4.9	5.3
Milk	4.6	17.9	14.9	1.1	2.9	3.6
Melons/Fruit	41.1	56.7	56.6	5.9	17.2	20.5

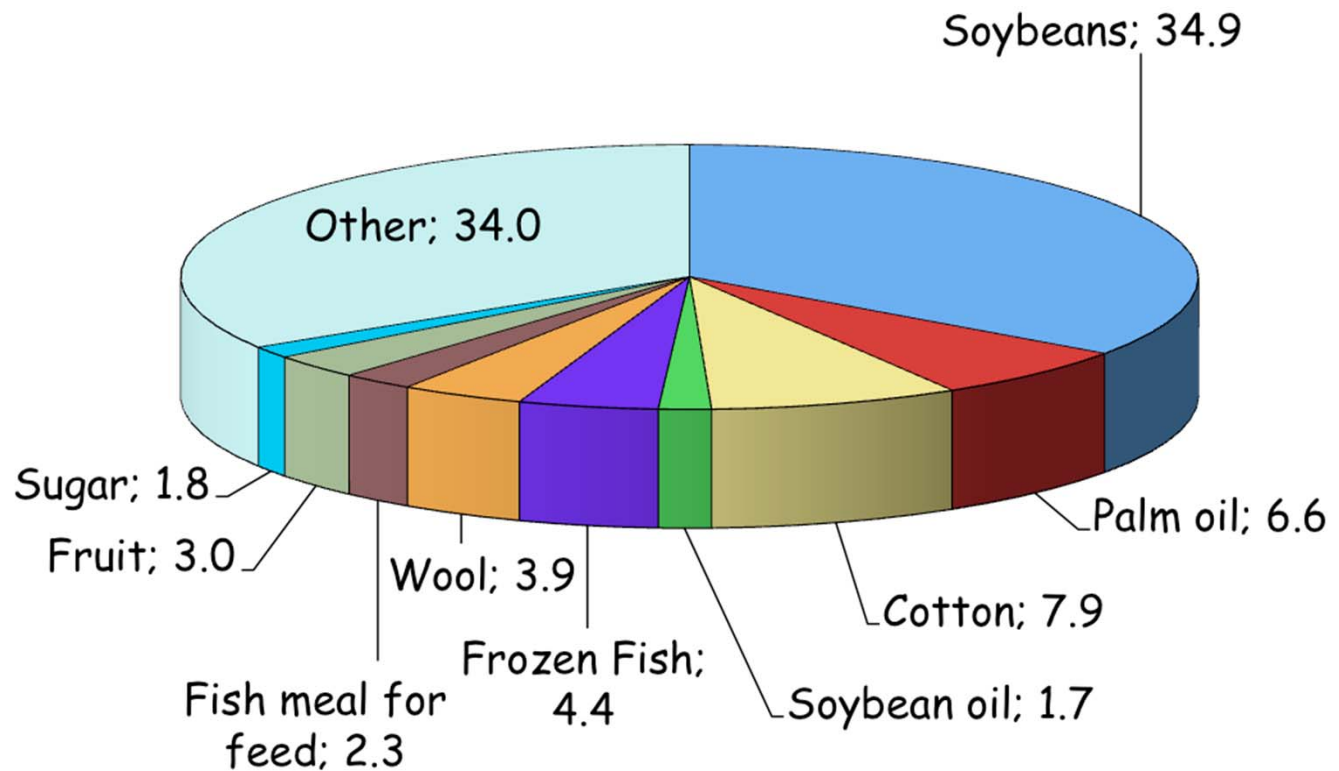
Urbanization will be a key driver of changing consumer diet

China's position in world agric trade reversed



Source: China's Customs Statistics. DRC.

Make-Up of China's Agric. Imports (%): 2010

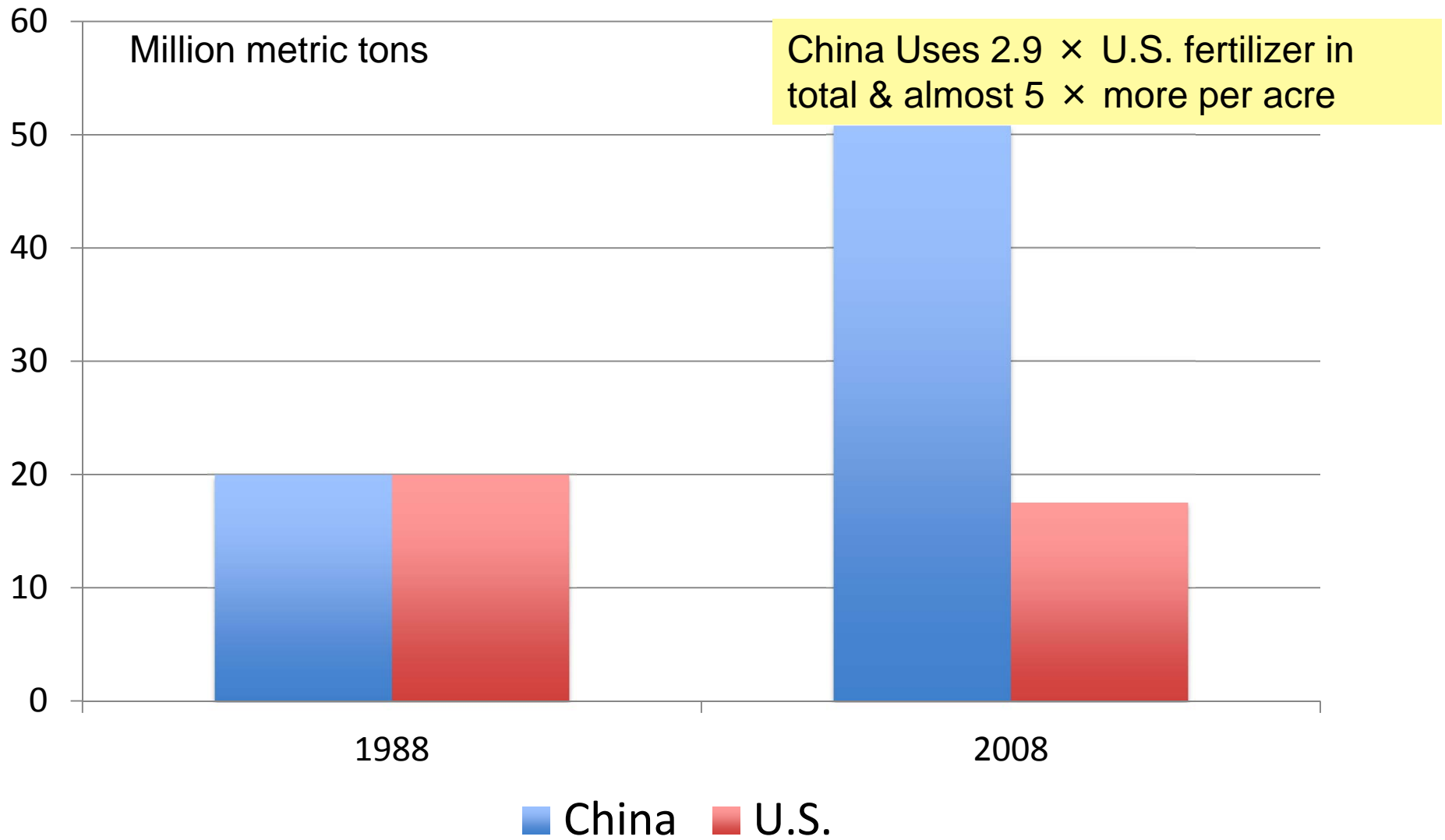


Source: China's Customs Statistics.

U.S. Ag. Trade with China

- Bilateral relationship has grown. U.S. enjoys ag. trade surplus with China > \$13B.
- China is #1 market for US ag exports & 3rd most important supplier US ag imports.
- Trade disputes: garlic, mushrooms, apple juice, honey, shrimp, poultry, fertilizer, DDGs.
- China is an emerging competitor for USA in many specialty crops.
- "Since when did we start importing organic broccoli from China? Why should I believe this product is "organic" given the melamine and banned antibiotics in wheat & catfish? What is going on?" [anonymous blogger](#)

China's Fertilizer Use Has Grown Sharply



China's global share of Chem. fertilizer use is 3 × its share of ag. land

Source: FAO

Low Labor Productivity in Ag. remains a Problem

- China's farmers make up 38% of the national labor force but produce about 10% of the GDP.
- Labor productivity in agric. $< 1/4^{\text{th}}$ that of industry & $< 1/3^{\text{rd}}$ of that in service sector.
- Labor does not move freely between rural & urban employment.

Ageing Farmers May Solve the Problem

	2009
Ag. Labor Force	297 million
Dedicated Ag. Workers	100 million
Dedicated Farmers as % of Labor Force	13%
% Dedicated over 45 yrs age	60%
% Dedicated under 35 yrs age	14%

	2035
Dedicated Ag. Workers	25 million
% of Labor Force	3%

Ageing will speed up decline in ag. labor force & allow for larger farm size

Water

- With 20% of the world's population & 7% of its fresh water, China faces water issues.
- 76% of the country's water is used by agric., but is facing greater competition from urban areas.
- In the south there is 10× more water available per capita than in the north. But the north produces 50% of China's wheat & 30% of its corn—which means that water efficiency must be improved.
- Pricing of surface water & groundwater must play a greater role in the allocation.

Key Policy Issues in China

- Food/grain security vs. farmers' incomes (e.g., land tenure & size of farms).
- Rural-Urban income gap & growth in income inequality.
- Management of natural resources, technology, & institutions – water scarcity.
- Resource depletion, heavy use of chemicals, & rising agric. pollution are major concerns.
- Role of International Trade; state trading etc.
- Role of Biotechnology/GMOs?