China's Meat Revolution and Its Need for Feed

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February 11, 2014

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Global Meat Complex: The China Series

China's Pork Miracle?

Agribusiness and Development in China's Pork Industry

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The Evolution and Future Trends of China's Dairy Industry

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IATP's China Series Webinars

Webinar 2

China's Meat Revolution:
Agribusiness, Growth and its Limits

Wednesday, Feb 19, 10 a.m. CST

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IATP's China Series Webinars

Webinar 3

From Melamine, Dead Pigs to Bird Flu:

Can Food Safety Become a Game Changer Against Industrializing Meat Production in China?

Tuesday, February 25, 10:00 a.m. CST

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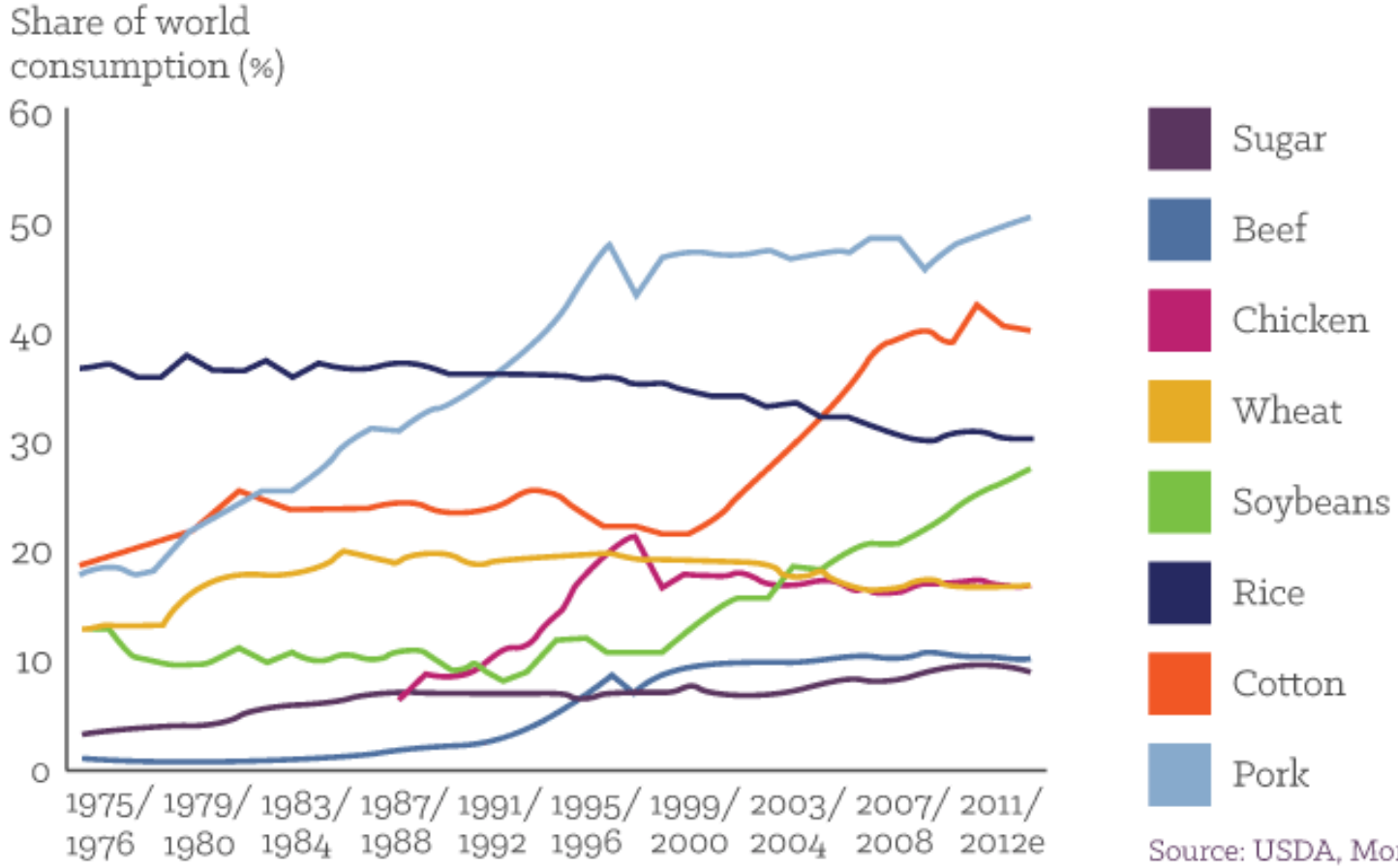
Figure 1: World cereal market at a glance

WORLD BALANCE	2011/12	2012/13 ESTIMATE	2013/14 FORECAST	CHANGE: 2013/14 OVER 2012/13
	MILLION TONNES			%
Production	**2,354.2**	**2,309.8**	**2,460.5**	**6.5%**
Trade	**317.2**	**306.1**	**306.2**	**0.0%**
Total utilization	**2,328.3**	**2,33.2**	**2,402.0**	**2.9%**
Food	1,066.4	1,082.7	1,097.9	1.4%
Feed	794.1	795.5	833.0	4.7%
Other uses	467.7	455.0	471.1	3.5%
Ending stocks	**521.5**	**510.9**	**568.8**	**11.3%**

Figure 2: Chinese domestic consumption of commodities and foods as a percent of world total



Source: USDA, Morgan Stanley Commodity Research.

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Grain Self-Sufficiency = Food Security

- China has long held a policy of 95 percent "self-sufficiency" in the production of rice, wheat and corn
- Liberalized the imports of soy in the 90s just as China's meat production was ramping up
- By '96, China switched from being net exporter to net importer
- Imports increased by 253% b/w '03 and '12 (from 17 mt to 60 mt, moving towards 70 mt this year)

Figure 4: China's soybean imports by country of origin from MY10/11 to MY12/13

COUNTRY	MY10/11		MY11/12		MY12/13	
	MILLION TONS	SHARE	MILLION TONS	SHARE	MILLION TONS	SHARE
United States	24.98	48%	23.06	39%	9.52	68%
Brazil	18.3	35%	26.45	45%	1.6	11%
Argentina	7.4	14%	7.86	13%	1.68	12%
Others	1.6	3%	1.86	3%	1.27	9%
Total	**52.3**	**100%**	**59.23**	**100%**	**14.08**	**100%**

Source: World Trade Atlas; *MY12/13 data up to December 2012

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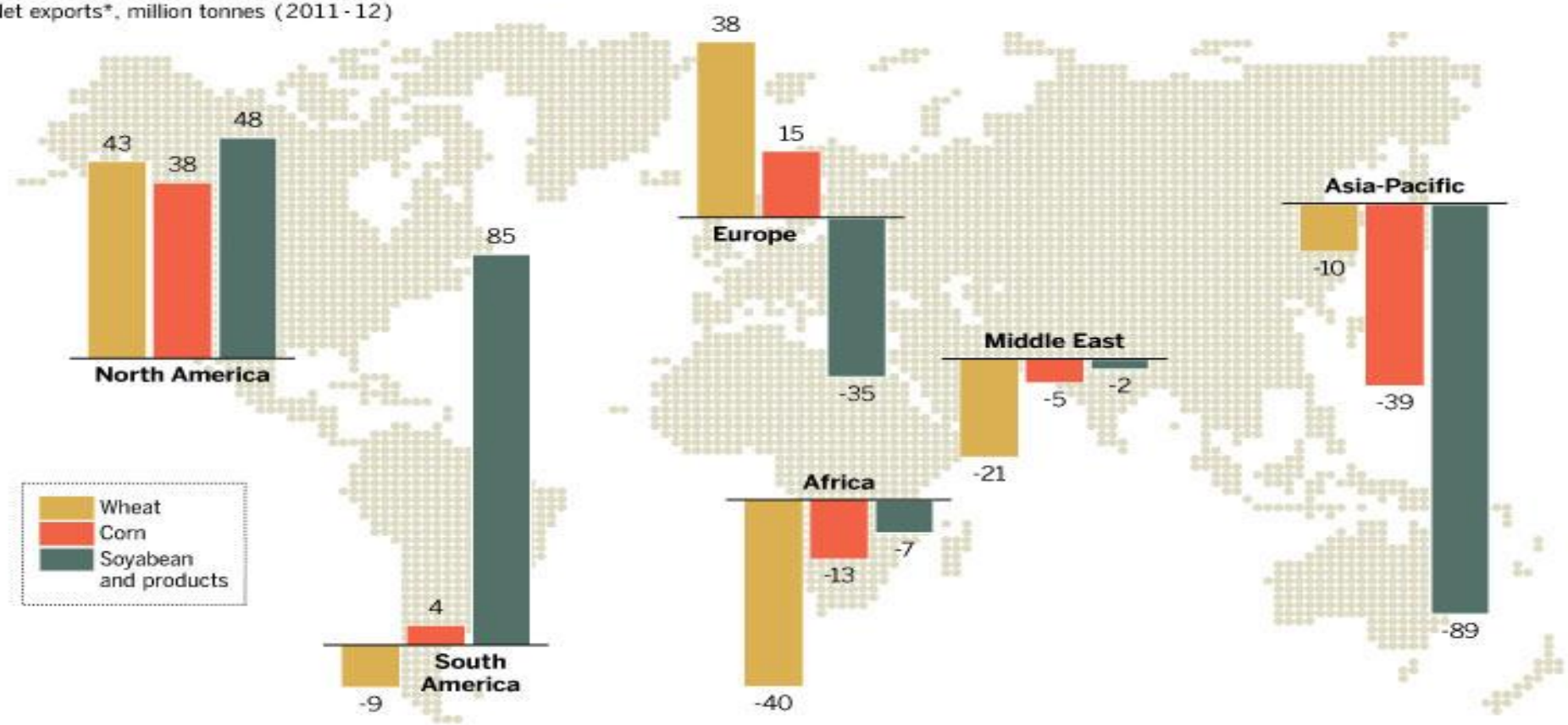
Trading on the world's appetite

Global agricultural trade flows

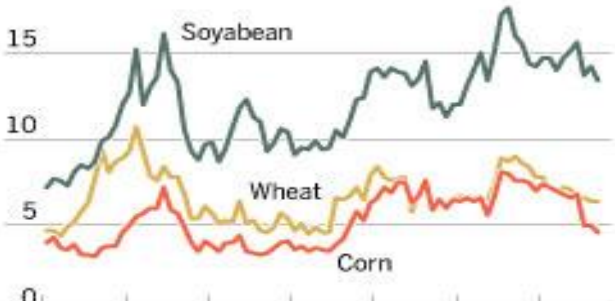
Net exports*, million tonnes (2011-12)



* Exports minus imports

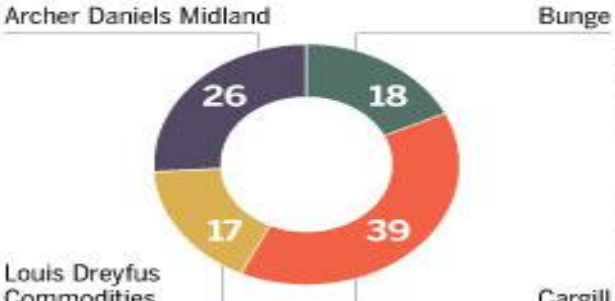
Wheat, soyabean and corn prices

Front month ($ per bushel)

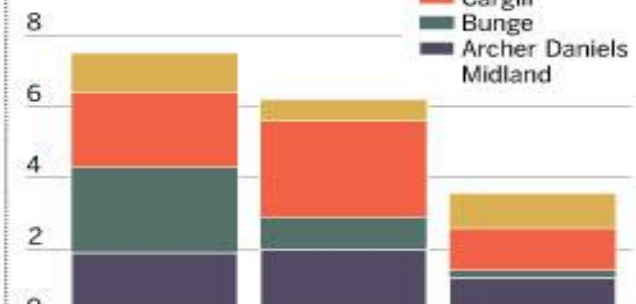


Agricultural trading houses

Revenue share, 2012 (%)**



Net profit, 2012 ($bn)**



Regaining control of the crushing industry

Figure 5: Market shares as percentage of China's soy crushing sector (installed capacity) (2010)[44]

Wilmar International	20
China Agri-Industries (COFCO)	12
Heilongjiang Jiusan Oil and Fat Co. Ltd	9
Chinatex (state owned)	9
Cargill	7
Noble	5
Bunge	4
Hopefull Grain and Oil Group Co. Ltd	4
Shandong Bohai Industries	3
Louis Dreyfus Commodities	2
Others	25

Source: Reuters, 'Company News: Movers and Shakers in China's soy crushing sector', 7 April 2010, at http://mobile.reuters.com/article/companyNews/idUSSGE63502O20100407

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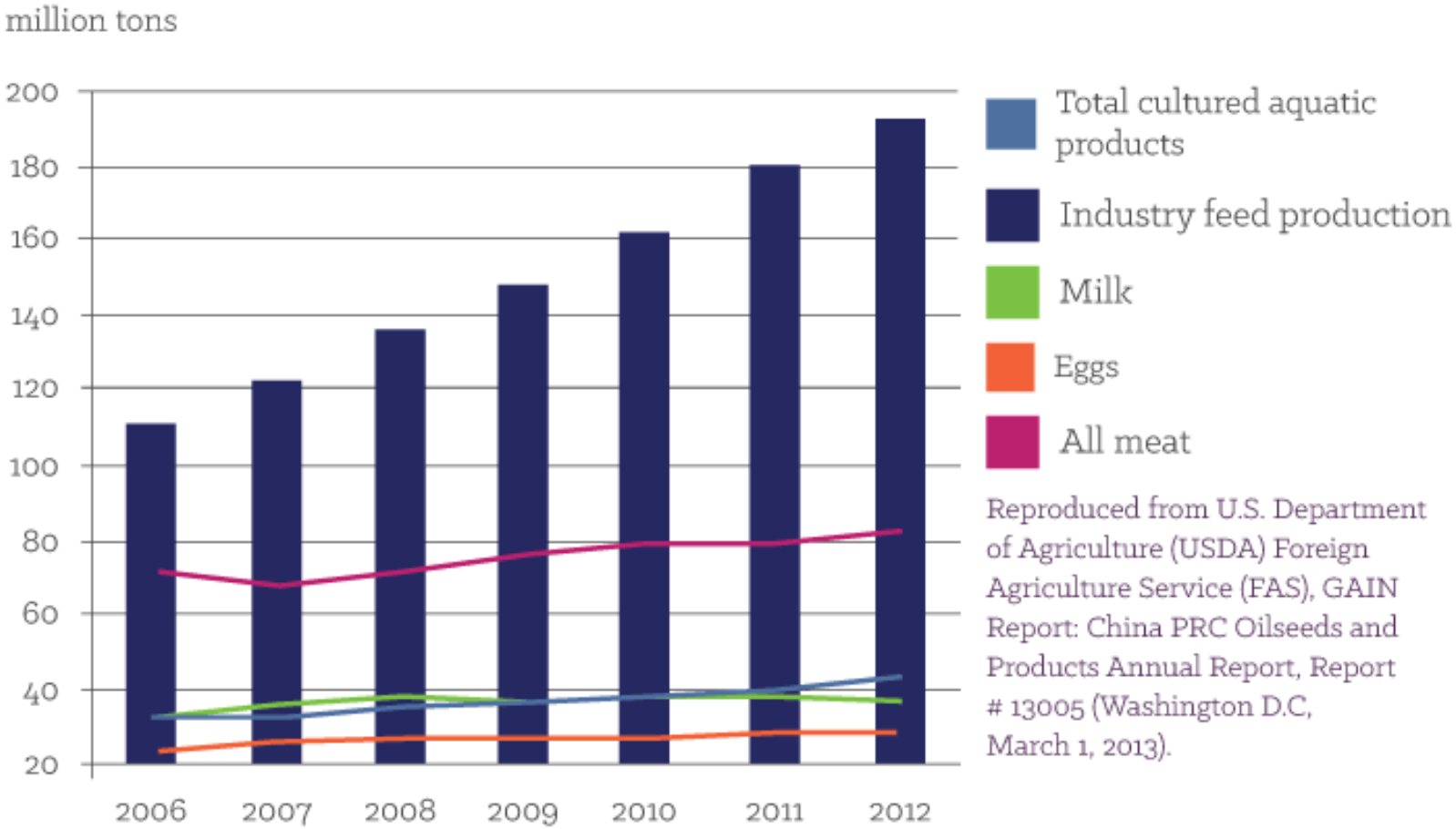
We must be in charge of maintaining a balance of corn supply and demand; and resolutely prevent Chinese corn from becoming the "second soybean.

–Agriculture Minister Han Changfu, May 2012

Figure 7: Production of industrialized feed and animal products



Reproduced from U.S. Department of Agriculture (USDA) Foreign Agriculture Service (FAS), GAIN Report: China PRC Oilseeds and Products Annual Report, Report # 13005 (Washington D.C, March 1, 2013).

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Top 100 feed companies in the world according to wattagnet.com

- 29 Chinese companies in the top 100
- 8 in the top 20
- New Hope Group is number 3, just behind Cargill

Figure 11: Decline in number of feed companies 2006–2010

2006	2008	2010	% DECLINE IN FOUR YEARS
15,501	13,612	10,834	30%

Source: http://www.efeedlink.com/contents/08-20-2012/78965fc9-92d7-4907-af7a-aa8439861623-d001.html

Will corn go the way of soy?

Figure 9: China's Corn Supply and Imports

MARKETING YEAR (MY)	MY IMPORTS	PRODUCTION (MMT)
05/06	0.1	139.4
06/07	0.0	151.6
07/08	0.0	152.3
08/09	0.0	165.9
09/10	1.3	164
10/11	1.0	177.2
11/12	5.2	192.8
12/13	3.0	205.6
13/14	7.0	211
Source: USDA/FAS: Grain: Markets and Trade, July 2013		

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Figure 8: China corn imports by country

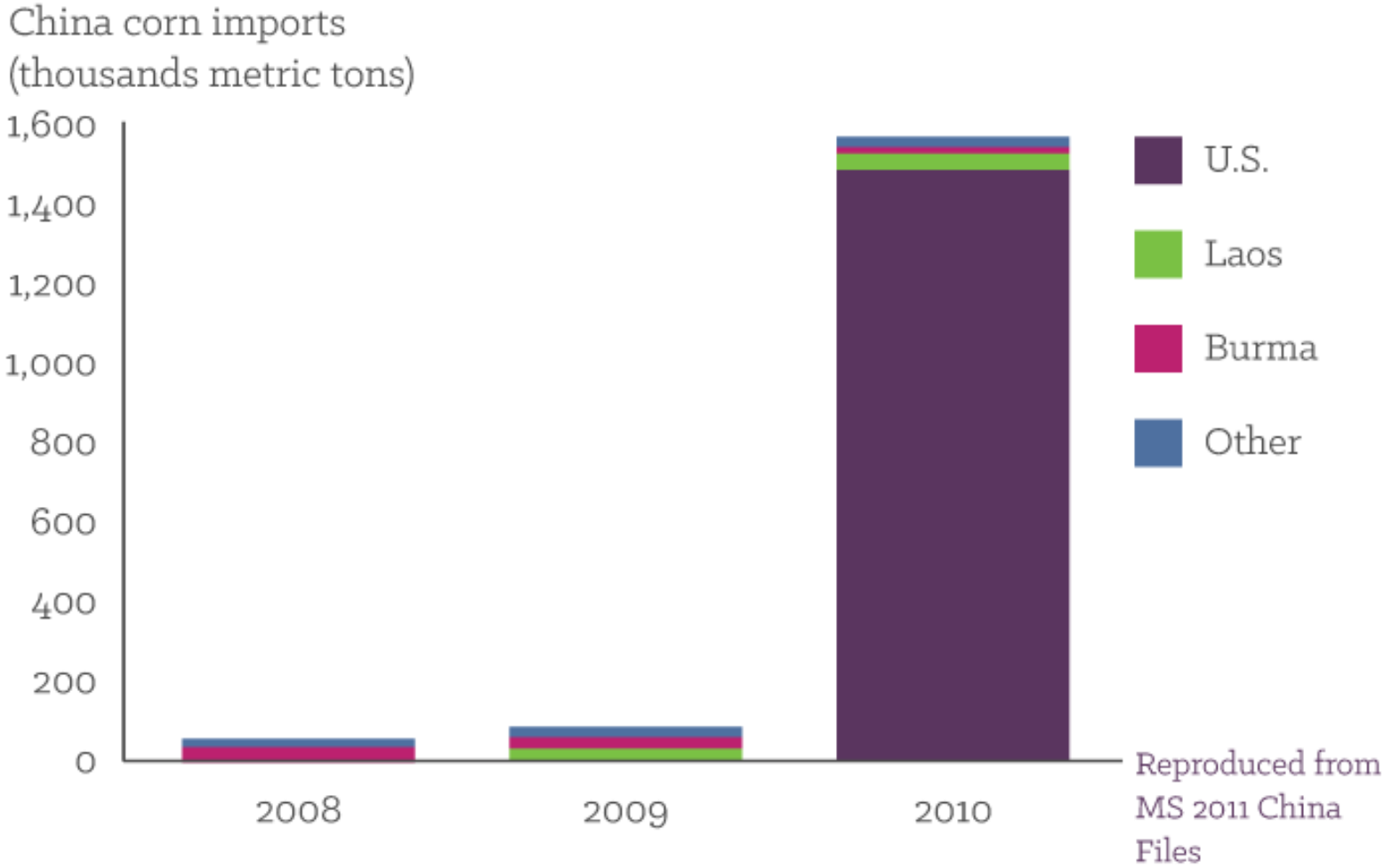

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Figure 10: Countries allowed to export grains to China (Updated April 2013)

Wheat	Australia, Canada, France, Kazakhstan, Hungary, United Kingdom, United States, Serbia and Mongolia
Corn	Thailand, United States, Peru, Laos, Argentina, Ukraine and Russia* (only for the experimental imports that are planted by Chinese contracted farms in Russia)
Barley	Australia, Canada, Denmark, France and Argentina
Reproduced from USDA FAS, , Report Number: 13029 (Beijing, June 28, 2013).	

China's "Go Out" Directive

- National Development and Reform Commission issued two directives by the end of 2007
  - Strengthen domestic soy sector
  - Direct investment in Brazil and other countries
- To "go out" and develop the supply chain for greater control over the imports

Figure 15: Geography of Chinese investment in livestock feed-related land deals.

SOYBEAN INVESTMENTS	
Brazil	Bolivia
Democratic Republic of Congo	Zambia
Argentina	Kazakstan
Sudan	Russia
CORN INVESTMENTS	
Burma	Philippines
Cameroon	Tanzania
Cambodia	Bolivia
Democratic Republic of Congo	Zambia
Uganda	Russia
Sudan	Zimbabwe
Source: Smaller et al. (2012)[88]	

Some "feed for thought": Longer term impacts of this trajectory

- Only 12% of China's land is arable.
- Water, land, labor shortages making grain production at home expensive relative to the global market
- Exporters happy to provide China with grains
- What impact on world market prices if China gives up its grain self-sufficiency principle?
- What are the social and environmental impacts of converting land to feed in other countries?

Impacts of ag intensification in China

- High yields are leading to high soil salinity and water scarcity
- In six years, water tables dropped by 61% in the North and Northeast
- In the past decade, agriculture shifting to more fragile grasslands in the North and Northeast.
- What are the tradeoffs for China for producing feed vs food on this land?
- And what will this mean for China's food self-sufficiency in the future?

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