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Hoping for China's Success

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There is one effort in which everybody should wish to see China successful: preservation of the country's farmland. It has already been reduced to well below the level needed to keep the country self-sufficient in grain production.

There is always some reason for the West to worry about China. How far will Chinese companies go to acquire major Western businesses? Do the Chinese have too much influence in too many African economies? Why do they provocatively claim sovereignty over entire seas? What are their strategic intentions after years of large spending increases on their military? In these cases, and many others, the best possible outcome for the rest of the world might be if things did not go entirely China's way, and if the Chinese had to lower their ambitions. But there is one concern where everybody should wish to see China successful: preservation of the country's high-quality arable land.

Simple arithmetic explains the wish. Tiny nations can be fed entirely by imports, and even some major economies can live with very high food dependence: Japan buys 75 percent of its grain, and South Korea imports 70 percent of its supply. When you eat *tonkatsu* (breaded pork cutlet) in Tokyo or *buldak* (spicy chicken) in Seoul you are eating transformed American corn and soybeans. What would happen if China became a truly major grain importer? In 2012, China produced about 540 million metric tons (Mt) of grain, 21 percent of the global total. If it were to buy relatively as much as South Korea, then it would have to import at least 380 Mt — but in 2013 only about 320 Mt were traded internationally. A China with imports on South Korea's scale would absorb all of the world's traded grain and still be short. Even if China were to buy just a third of its grain supply (180 Mt compared to 23 Mt bought in 2013), the globally traded volume would have to expand by more than 70 percent, an increase that would raise global prices and bring undesirable environmental consequences (higher use of farming inputs, cultivation of marginal, erosion-prone land, etc.).

Consequently, it is in the interest of the scores of grain-importing countries that China remains a

relatively small-scale buyer of food and feed grains. And while major grain producers (the United States, Canada, Australia, and Argentina) could sell more of their product, higher prices in these countries, where most of the domestic supply goes toward animal feed, would raise the cost of meat, and drought-induced low-production years would have a globally destabilizing impact.

Nearly two decades ago, a slim book by Lester Brown asked *Who Will Feed China?* and concluded that the Chinese will not be able to do it themselves, and that China's grain output had already peaked, with huge supply deficits ahead. Catastrophically inclined media, and not a few instant China experts, agreed with Brown. I did not. In 1995, I wrote that there is no “insurmountable biophysical reasons why China should not continue feeding itself ... well-known and well-proven economic and technical fixes ... can extract enough additional food from China's agroecosystems to provide decent nutrition during the next generation.” And that is exactly what has happened. In 2013, China had yet another record grain harvest, and average per capita food availability is now higher than in Japan (but with less animal protein); grain imports are less than 5 percent of domestic output.

A key reason for my confident appraisal was that, like many others, I knew that the official figures were gross underestimates. When post-Mao China resumed its statistical publications in 1978, its official arable land total was 99.4 million hectares, and by 1995 it had declined to 95 Mha. However, in 1980 the National Centre of Remote Sensing used satellite images to put the total at 135.8 Mha, and during the next 15 years other studies and sample surveys found the totals between 133 and 140 Mha. China’s first National Land Resource Survey, concluded in 1996, found 130 Mha. But by 1998, when China had finally discarded its old erroneous claims and put the official total at 130 Mha, that total was already also wrong, as the world’s fastest and most extensive industrialization and urbanization was destroying high-quality peri-urban farmland at an unprecedented pace.

That pace had further accelerated during the first decade of the 21st century, and, by 2006, official estimates put the total at 121.85 Mha, more than a 6 percent loss in just 10 years. I expected that the latest nationwide land survey, completed in 2009, would show substantial reduction of arable land, but for years the government refused to release its results. Finally, President Xi Jinping ordered the Ministry of Land and Resource to publish the study at the end of 2013: it shows 135 Mha of farmland, nearly 4 percent more than in 1996 and almost 11 percent more than the estimate for 2006. The obvious question is how could there be such a large increase of cultivated land in a country that has recently built an inter-provincial highway system whose length surpasses the total of the U.S. interstate highways, whose rapid train links are more than twice as long as those in Japan and France combined, and that has scores of new large airports, surface mines, and water reservoirs? All of these developments have been massive consumers of arable land. Since the year 2000, more than 5 Mha of the most fertile, flat, suburban land disappeared under factories, mines, highways, high-rises for the poor, and gated housing estates (and golf courses) for the rich.

The unreliability of Chinese statistics is an explanatory factor, and in this particular case China has plenty of company: land use data are usually quite unreliable. But much of the increase in arable land has been, unfortunately, real. It has come from undesirable conversion of northern forests and grasslands, from the cultivation of many deforested slopes in the southern highlands, and from turning parts of lakes into paddy fields. The latest survey is a purely quantitative exercise that has counted any cultivable land in the farmland category, a sweep that includes nearly 3.5 Mha of land that cannot be planted with food crops due to heavy contamination, as well as millions of hectares that are highly vulnerable to recurrent droughts as more cultivation has shifted from the rainy south to the arid north.

Even a minimal quality adjustment shows that China's farmland already has been reduced to well below 120 Mha, the level that has been officially designated as the minimum needed to keep China virtually self-sufficient in grain. That translates to just 0.088 ha (0.2 acres) per capita, 40 percent less than in India, only one-third as much as in France, and less than one-fifth of the U.S. rate.

No dramatic shifts are imminent: China's grain imports have remained restrained (although the country already buys 20 percent of the world's soybean harvest) and there is always the option of using less feed grain and eating less meat. But the relentless pace of China's urbanization, continued loss of cropland, and qualitative decline of many intensively cultivated soils all point in the wrong direction, and before too long China's farmland may drop below 100 Mha.

Official admonitions to preserve high-quality cropland have been ignored and penalties for illegal land acquisition have been repeatedly avoided: concerns about feeding China in 2050 carry little weight compared to immediate rewards flowing from the profits earned by building on what used to be prime suburban farmland. But perhaps no other thing that China can do — for its own stability and for the world's benefit — is more important than the preservation of its farmland. That would guarantee China a high level of continued food self-sufficiency — and hence relatively stable world grain prices and affordable access of the poorest nations to grain imports. All countries should wish that, in this regard, China will find ways to succeed.

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***FURTHER READING*: Smil also writes "Germany's Energy Goals Backfire," "Memories of Peak Oil," and "Just How Polluted is China Anyway?" Blake Hurst reveals "The Next Real Estate Bubble: Farmland."**

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