

### Lack of agricultural land

Despite its vast size, China does not have very much agricultural land, just seven per cent of the planet's total. Only about ten to fifteen per cent of the land in China is good for agriculture, compared to 50 per cent in India, and twenty per cent in the United States. As a result, it has just 0.09 hectares of arable land per capita, less than half of the global average and a quarter of the average for Organization of Economic Cooperation and Development member countries. The United States, for example, has six times the arable land per capita as China. Indeed, between 1997 and 2008, China saw 6.2 per cent of its farmland lost to what its government calls "planned ecological cropland conversion".

### Quality of agricultural land

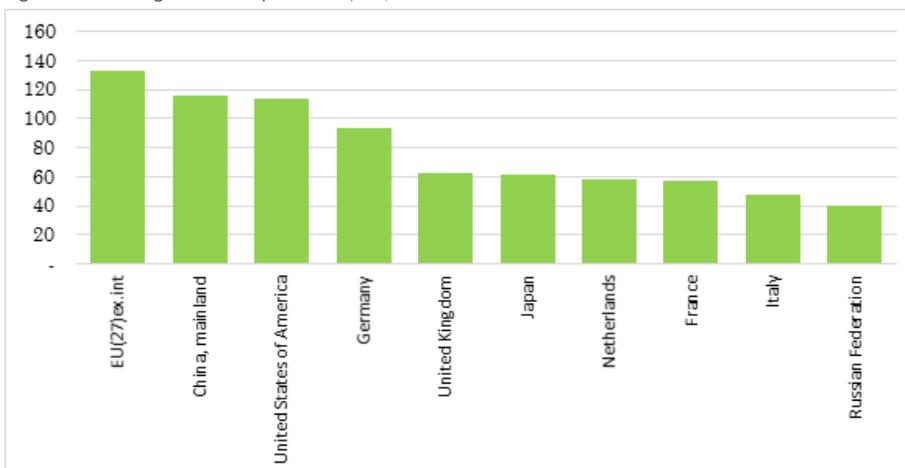
As a consequence, agricultural land in China is intensively utilised. There is 545,960 square kilometers of irrigated land in China. Forty per cent of China's crop land is irrigated, compared to 23 per cent in India and the average yield per acre in China is double that of India.

But this intensity brings its own problems. Heavy use of nitrogen fertilizer reduces the quality of soil, causing pH levels drop and turning soil acidic and less productive. One study found that overuse of fertilizer has caused the pH of soil across China to drop by roughly 0.5, with some soils reaching a pH of 5.07. If the trend continues some regions could eventually see the soil pH drop to as low as 3 and "No crop can grow at this level of acidification" says Fusuo Zhang, a soil and plant scientist at the China Agricultural University in Beijing. Indeed, it is estimated that the acidification has already lessened crop production by 30 to 50 per cent in some areas.<sup>5</sup> An estimated 40 per cent of China's arable land has been degraded by some combination of erosion, salinization, or acidification. Nearly twenty per cent is polluted, whether by industrial effluent, sewage, excessive farm chemicals, or mining runoff. China considers its soil problems state secrets. The Chinese government conducted a national survey of soil pollution in 2006, but it has refused to release the results.<sup>6</sup>

### Imports

As a result of this rising demand increasingly running up against these supply constraints, China has become an importer of food. Indeed, in 2013, China was by value the world's second largest importer of agricultural products (See Figure 12).

Figure 12 – Total agricultural imports 2013, US\$bn



Source: Food and Agriculture Organization of the United Nations

*"In the past five years, the average net income in rural areas has witnessed faster growth than that in urban areas...The ratio of average per capita disposable income in urban China to the per capita net income in the cities and towns narrowed down to 2.97 to 1 in 2014. It was the first time that the ratio dropped to below 3:1 since 2002"*

...Professor Esteban Escamilla

While China produces all of the meat that it needs today, with more increases in per capita income on the way, demand will come to outstrip China's ability to produce. As a result, the country is expected to become a major meat importer. By 2050, China will import an estimated \$150 billion annually of chicken, pork, and beef. Domestic producers will also need more feed for their livestock. According to a report by the United States Department of Agriculture's Economic Research Service, China is expected to account for 40 per cent of the rise in the global corn trade over the coming decade, and will become the world's leading importer of corn by 2023.

<sup>5</sup> <http://www.nature.com/news/2010/100211/full/news.2010.67.html>

<sup>6</sup> <http://www.bloomberg.com/news/articles/2013-02-25/soil-pollution-is-a-state-secret-in-china>