

Meat is the new coal – and what that means for potash and phosphate

Last week, according to the Friday June 6 *Commodities Weekly* bulletin from Deutsche Bank, all commodity sectors posted negative returns. With one exception: livestock. 

Then, on Saturday, *The Financial Times* printed this sentence “Meat is the new coal”. They were reporting how China is buying anything connected with pork production (including, last year, the biggest U.S. pork producer Smithfield Foods for \$7 billion) and, thanks also to China, Australian beef exports quintupled in 2013. In other words, food supply to China is going to figure as critically as mineral exports.

China’s enormous appetite for food is the subject of a special section in the World Bank’s latest China update, which showed that between 1980 and 2009 fat intake in China nearly tripled from 34 grams per person to 96g. And this was due to greater consumption of livestock products.

But what the World Bank report does not do is examine the implications of this for fertilizer, and potash and phosphate in particular. The report does mention in passing that “production of livestock-based food requires far greater resources”, but, in essence, what is required is that more grain is produced to feed the animals or better grass is grown. That requires fertilizer, and as the years go on even greater amounts of it.

Some sceptics question just how much grain needs to be produced to help animals develop, but the evidence is impressive. In 1997, researchers at Cornell University estimated that if the grain fed to livestock in the U.S. were be consumed directly by people then it could feed 800 million

folks. In 2003 the *American Journal of Clinical Nutrition* published a study showing that 2 billion people had a meat-based diet, and 4 billion did not, mainly because the latter could not afford it or did not have the resources to raise livestock. (And, of course, more of those people relying now on non-meat food, will make the switch as their living standards rise.) The study showed that U.S. livestock consumes seven times the amount of grain than does the country's human population. And the Washington-based International Food Policy Research Institute says it takes 8kg of grain to produce 1kg of beef, 2kg for 1 kg of poultry meat.

(This is just not about livestock, though. According to the World Bank Chinese vegetable production is projected to grow from 308 million tons in 2012 to 349 million tonnes in 2020; fruit output will rise from 162 million tons to 193 million tons over the same period. Some of those vegetables and fruit lines will require special fertilizer in the form of sulphate of potash.)

From 1978 to the present day total calorie intake in China has gone up almost 50%, a rise faster than the world average. Calorie consumption per capita in China is about the same as in Japan and South Korea, but still lower than in the U.S. and the European Union. Protein intake has also nearly doubled with 75% of that increase ascribed to consumption of meat.

Producing meat costs. The bank shows that China's cereal consumption expanded three-fold between 1980 and 2009, two-thirds of that attributed to rising meat production.

You can see why imports into China are growing. Self-sufficiency in grain has dropped from 92% in 2010 to 88% in 2012. China has shifted from being a net exporter of corn to a net importer. In 2012, 6.2 million tons of fresh milk in 2012 and 700,000 tons of meat (pork, beef and mutton) were purchased from abroad. "Growing demand for higher value meat, eggs and dairy products present challenges to the domestic

supply of animal feed, in particular feed grains, rising demand for which will pressure China's overall food demand and supply balance," says the World Bank report. It predicts that domestic production shortfalls will widen further, particularly as they relate to soybean, corn, edible oils, sugar and dairy products.

For both Chinese farmers, and foreign ones who will be filling the shortfalls in Chinese domestic production, this poses a challenge at a time when increasing urbanisation and dwindling arable land means yields are going to need to rise substantially. As we never tire of pointing out on Investor Intel, all roads will lead back to fertilisers. Eventually.