



## Food Scarcity – A Myth?

Is the world facing a potential food scarcity challenge? In this article, Al Scholz looks at the facts, and potential solutions, to this very important issue

By Al Scholz

The year 2011 started off with low world stocks and improving commodity prices. The rising prices are largely due to challenging weather anomalies around the world reducing yield and quality. Combine this with an increasing world population, improved living standards and growing demands for livestock products which requires more grain production – and the future for Canada’s agricultural commodities looks pretty good.

Similar to 2008, some market analysts are bullish on long-term commodity price increases. Sustained profitability is predicted based on the belief that global food demand will outstrip supply capacities.

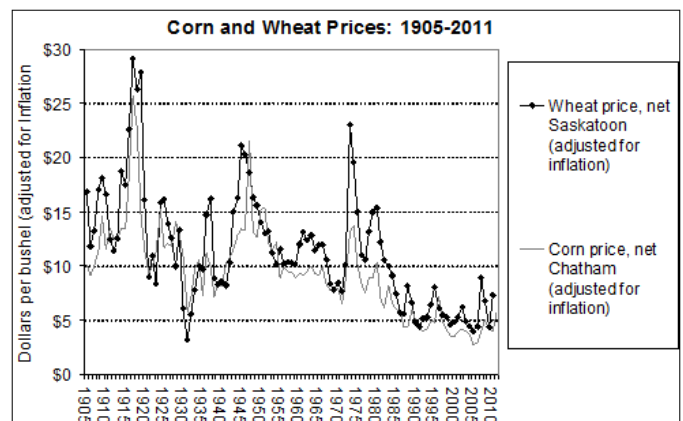
On the other hand, I’ve run across commentaries recently that question the prediction of “food scarcity”. There are several reasons why the minority of analysts believes the world will not face food scarcity challenges and is, in fact, optimistic about increasing supply and food availability.

First of all, consider the real price of Canadian wheat over a 105 year period (Figure 1). Despite some annual market fluctuations, it is on a slow decline. Given the capacities of 21<sup>st</sup> century technology, innovation and communication to increase production with improved efficiencies, why would this long-term trend reverse?

There are management and technology innovations emerging that are already reducing the amount of fossil-fuel based fertilizers and crop protection products per ton of grain or kilo of livestock. This is critical to the transformation towards a sustainable global food system.

Secondly, there are substantial areas of quality farm land that are currently under-utilized; some obvious spots include parts of Russia, Kazakhstan, Ukraine and Africa. The UK Government’s 2011 *Foresight Report* estimates that the application of existing knowledge, management techniques and technology could increase average yields two to threefold in many parts of Africa, and twofold across the former Russian Federation.

Figure 1: Real Price for Canadian Wheat, 1905 - 2010



Source: National Farmers Union

Another factor of the food scarcity myth is the staggering amounts of food (grains, vegetables and fruit) lost to poor post-harvest handling and storage around the world. The Economists 2001 *Special Report on Feeding the World* documents that up to 50% of the world’s food production is

lost to spoilage, insect damage and storage and transportation inefficiencies.

According to FAO, in Africa the post-harvest waste largely explains why many small farm holders are net purchasers of food even though they technically grow enough for their families to eat. In poor countries, most food is wasted on or near the farm. Rats, mice and locusts eat the crops in the field or in storage. Milk and vegetables spoil in transit. These are sometimes considered losses rather than waste and experts believe such losses could be cut in half in order to assist the poorest on the planet to improve their family nutrition and income.

Food waste is defined as edible material intended for human consumption that is discarded, lost, degraded or consumed by pests as food travels from the point of harvest to the consumer. While such a broad definition is appropriate, it creates difficulties in gathering accurate estimates of total global food waste. Generally, literature focuses on food waste that is either not used at all or not used productively.

Rich countries waste about the same as poor ones, up to half of what is produced, but in quite a different way. Studies in Britain and the USA find that a quarter of food from shops goes straight into the trash or is thrown away by shops and restaurants. Top of the list are salads, about half are chucked away. Also, a third of all bread and a quarter of fruits and vegetables are thrown out uneaten.

A November 2010 report from the George Morris Centre estimates \$27 billion of Canadian food ends up in landfills. This represents approximately 40% of all the food produced in Canada.

If all rich countries waste food at the same rate as Britain, Canada and the USA, very roughly 100 kg per person per year, the total waste adds up to 100 million tonnes of food per year, equivalent to one-third of the entire world's supply of meat!

Reducing waste through various measures will alleviate pressure on the production side, lower greenhouse gas emissions and contribute to other policy agendas such as cutting the need for more landfills.

If Western waste could be halved and the food distributed to those who need it, the problem of feeding 9 billion people would vanish. This will be a challenge. Western spoilage is a result of personal habit, food safety law/regulations and the fact that food is cheap enough to be tossed out. Prices are unlikely to rise enough to change that attitude.

Post-harvest loss of agricultural commodities and food waste down the supply chain cannot be entirely eliminated, but simple steps such as better management practices could easily reduce losses.

Halving the total amount of food spoilage and waste by 2050 is considered a realistic target. If the current global estimate of food loss of 30% is assumed, then halving that total could reduce the food required by 2050 by approximately 25% of today's production. It will require a shift in focus from production to preservation and have an enormous economic, environmental and social impact on the rural poor in emerging nations.

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## Doing more with less

The solution is not just to produce more food or change diets or eliminate waste – but to do all of the above. The future opportunities cannot be met by making piecemeal changes. It is essential that policy-makers address all areas simultaneously.

From an environmental sustainability perspective, food production will not see big gains from taking in new land, using more irrigation or putting more fertilizer on existing fields. Additional gains will come from: narrowing the gap between the worst and best producers (extension); spreading intensive livestock production (improving breeding, nutrition and disease control) and above-all – taking advantage of new plant technologies (gene revolution).

## A well fed world: A prospect of plenty

Today almost 1 billion people go to bed hungry and another billion are under-nourished. It would be a huge relief if the future population of 9 billion could be well fed without large supply disruptions or price spikes.

There are plenty of reasons to worry about food: uncertain politics, volatile prices, hunger amid plenty. Yet when all is said and done, the world is at the start of a new agricultural revolution that could, for the first time ever, feed all mankind adequately. That surely, is cause for optimism.

Shrewd farm business managers should not rely on the presumption that commodity prices will increase in the long-term, nor that the profitability of commodity agriculture will improve. They should continue to innovate and look for higher value marketing opportunities outside the race to be the “lowest-cost bulk producer” of grains and livestock.

Is food scarcity a reality or a myth? No one can predict the future – but there are a broad range of opportunities to counter the possibility by improving production efficiencies, reducing waste, enhancing distribution, reducing poverty, and all with a lower environmental footprint. It will take ingenuity, invention, innovation, and a liberal sprinkling of common sense.

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