

THE VIEW from..... the future



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Around the globe, the environmental Life Cycle Assessment will soon be the new math for businesses and farming. It will create a new battle for market share, and provide family farms with a new kind of marketing opportunity that will transform how food is produced

By Al Scholz

The climate is changing and whatever the cause — be it greenhouse gas emissions or normal historical climate change — the way we farm is going to have to adapt.

Farm businesses deserve great credit for completing environmental farm plans and for taking action to reduce their farm's carbon footprint. Still, more will be demanded from us.

There is a new environmental impact and assessment tool that is showing up across the global food chain. It is called "Life Cycle Assessment" or LCA. It will change the way we farm, how food is processed and how consumers make their food purchase decisions.

Best of all, there are many positive opportunities for Canada's family farm businesses to gain measurable premiums in the market place using this new assessment tool.

Developed by industrial engineers in the 1960s and 70s, LCA is a method for deconstructing everything that goes into a product. It systematically breaks down any manufactured item into the components and the processes that went into making it. LCA then measures, with near-surgical precision, a cradle-to-grave inventory, assessing the total impact on the environment from the beginning of production all the way through to final disposal.

Now, LCA can convert every food product into a single number that reflects everything including the carbon footprint of the tractors and equipment used on the farm plus production inputs, chemicals, livestock feed, treatment of workers, and much, much more.

This will soon be the new math used in businesses and farming across the globe.

LCA is rapidly being adopted by agriculture and food production systems. Leading firms are already using LCA. For example, a snack-sized bag of Walkers salt and vinegar potato chips (a UK product) has a label that tells you its carbon footprint is 75 grams of carbon emissions (compared to 713,000 grams per passenger on a jumbo jet from Frankfurt to New York).

The bag also proclaims that Walkers has been working with an outfit called the Carbon Trust to analyze the carbon footprints of its products and to find ways to reduce them. This comprehensive process analysis is quickly gaining momentum. Tesco, the huge British super market, has committed to labelling the carbon footprint of all 70,000 products it carries.

A California research group known as GoodGuide is devel-

oping software that will allow shoppers to point their cell phone camera at the bar code of almost any consumer product. The picture is sent to the GoodGuide server and within seconds GoodGuide's server will send back a three-bar rating of that very item. It reveals in red, yellow or green the relative impact of the product's life-cycle in terms of environment, health and society.

This level of transparency will transform the food system in favour of products with lower carbon footprints. Why? Because it will be very easy for consumers to see — and to reach for — environmentally friendly products.

LCA is not always straightforward. Sometimes it gives surprising results. One of the classic LCA studies, published in *Science* in 1991, was an analysis of the merits of paper versus plastic cups. The study showed that a single paper cup consumes 33 grams of wood (four packs of toothpicks) while a Styrofoam cup uses only about four grams of fuel oil or natural gas (the equivalent of half of a small lighter). Both require a handful of chemicals but in the end the paper cup consumed 36 times more electricity and produced 580 times more wastewater.

Producing a paper cup had a much higher environmental cost in terms of production and disposal than plastic cups. This was a surprise to many but underscored the importance of accurate calculations to determine products that were environmentally most damaging and those that are most friendly.

Farmers have been price takers, not price makers. Using the LCA tool can change the way family farms do business

As the LCA system of full disclosure becomes more widely used, Canada's farmers can expect to be penalized in the marketplace if they leave too big a carbon footprint by using too many petroleum-based inputs.

On the other hand, they can expect to be rewarded by consumers for production systems that are able to cycle and recycle energy and nutrients and reduce their carbon footprint, such as farms with a mix of livestock and crops that serve local markets and local processors.

LCA is clearly not a simple calculation. It was recently reported by environmental scientists from Lincoln University in Christchurch, New Zealand that lamb shipped to Britain from New Zealand has a carbon footprint just 25 per cent that of British lamb. This is in part because most of the electricity in New Zealand comes from renewable sources and their climate with ample rain and sun means that their New Zealand pastures require less fertilizer than in cloudy Britain. Although it requires shipping across the globe, the transportation foot-

print of containers from New Zealand turned out to be less than the local trucking in the UK.

The lesson is that no one should assume that local production is always more environmentally benign or, conversely, that imports always have a high environmental cost. Global trade will continue to be important in the future but the key competitive factors will increasingly move from price and quality to include environmental impact.

What does LCA hold for the family farm business model in 10 years? Farming will become much more intensive and localized and will have to focus on ways to reduce the use of inputs connected to fossil fuels. As an export-based agriculture, it is likely that only highly processed products will stand the carbon footprint test of long transportation distances in the future.

This means a marked reduction in the environmental viability of exporting raw (unprocessed) commodities and a move to more beef production and value-add processing. This runs counter to the current economic signals which have resulted in declining livestock production and the closure of slaughter facilities.

There are opportunities on the horizon for our farm families, especially those that can adapt to the sweeping changes that technology permits and consumers now demand. It will be an interesting, fast-paced ride and by the year 2020, our agriculture will look (indeed, it will have to look) very different. **CG**