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Feed People First

How biofuels are contributing to global
food shortages and price increases

By Edward R. Boyle



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Edward R. Boyle is a Regina-based public affairs consultant who spent 25 years working in Saskatchewan's labour, public, and Crown Corporation sectors.

Acknowledgements

This paper is based on a presentation to the McGill Conference on Global Food Security on September 25, 2008. McGill University brought together speakers from the research, NGO, aid, and academic communities, as well as government representatives at the two-day conference to discuss the causes of global food price increases and shortages. The presentation has been updated to include the impact of recent events in world markets.

This report was prepared in collaboration with the Saskatchewan office of the Canadian Centre for Policy Alternatives.

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How biofuels are contributing to global food shortages and price increases

Bad Public Policy

Many have identified demand for biofuels feedstock as one of the main causes of steep food prices in recent years, as well as a contributor to food shortages. Nearly a billion of the world's people live on less than a dollar a day and spend up to 70% of their income on food. That means that even a small increase in the price of staples threatens them with starvation. It is important to keep these facts in mind when we are engaged in the debate about food versus fuel.

The Canadian Centre for Policy Alternatives has been working on the biofuels issue for some time now, because the ethanol and bio-diesel subsidies of governments in Canada and other jurisdictions are bad public policy on three counts:

- First, they are a wasteful and inefficient use of public money, benefiting only a few at the expense of many.¹
- Second, most biofuels increase rather than reduce greenhouse gas emissions once all the energy impacts are taken into account.²
- Third, they are a major factor in the reduction of global food supplies and

resulting food price increases which have increased the threat of starvation for hundreds of millions of people.³

The Public Trough

Governments in Canada, the United States, and Europe have used a variety of tools to create and support biofuel industries, most of them involving copious applications of public money. They include:

- fuel-blending mandates which create demand and lead to the establishment of biofuel industries;
- tariffs such as those protecting American corn-based ethanol from competition with cheaper sugarcane-based ethanol from Brazil; and
- subsidies and tax exemptions which begin at feedstock production and run through the full value chain to refining, distribution, and consumption.

The United States has the most ambitious and expensive biofuel policies of any jurisdic-

tion. When President Bush told Americans a few years ago that they had an “addiction to foreign oil,” he said ethanol would be a big part of the cure. With a federal government fuel-blending mandate in place and generous subsidies available, ethanol production grew quickly. Over a third of the U.S. corn crop will go into ethanol this crop year.⁴ According to the Food and Agriculture Organization (FAO), over 30% of U.S. farm land will be required to supply the full ethanol blending mandate of 36 billion gallons a year by 2022.⁵

Early last year, the European Union adopted a mandate of 10% of all transportation fuels to come from “renewable” sources by 2020. Reaching that goal with homegrown biofuel feedstocks would use up 70% of the arable land in member countries.⁶ According to the latest news, the EU target now appears to be headed for reduction.

Here in Canada, the federal government recently legislated a biofuel blending mandate of 5% for ethanol and 2.5% for biodiesel for 2010, and committed \$2.3 billion to subsidizing the industry. The Harper government said the initiatives would create a market for 3 billion litres of biofuels a year in Canada. Two of the opposition parties, the New Democrats and the Bloc, supported the biofuels bill on second reading, but took the unusual step of changing their votes to oppose it on third reading because of new information on the harmful effects on food supplies and the environment. Despite reservations expressed by some of their MPs, the Liberals voted with the Harper government, which has a close relationship with the biofuels lobby. Two of the top executives of the Canadian Renewable Fuels Association, which led the lobby for Canada’s biofuels legislation, are former senior staff members of Prime Minister Harper and Agriculture Minister Ritz.

Some provinces did not wait for the federal initiative and have mandates and subsidized ethanol industries already in place. My home province of Saskatchewan, which has over half

of Canada’s arable land and once proudly called itself “the Breadbasket of the World,” led the way seven years ago by legislating a 7.5% mandate for blending ethanol with gasoline and offering a range of plant construction and production subsidies. We still have a head of wheat on our provincial license plate, but we also now have the capacity to turn about 11% of an average wheat crop into fuel.

The bill to North American and European taxpayers for biofuel supports is a big one. Their governments spent about \$15 billion on biofuel subsidies in 2007. That bill will rise to about \$90 billion a year by 2020 if current targets are achieved.

The Impact on Food Supply and Prices

Biofuel mandates and subsidies have turned out to be bad public policy on the fiscal and environmental fronts. But even worse is the impact on global food security of diverting the production of tens of millions of acres from people to machines. According to the Organization for Economic and Cooperative Development (OECD), biofuels accounted for almost 60% of the increase in consumption of cereals and vegetable oils from 2005 to 2007.⁷

Governments should have considered the consequences of diverting food to fuel production before they jumped on the biofuels bandwagon. Unfortunately, it took the spike in food prices last year (2008) to finally get the impact of biofuels on the global agenda. A substantial body of research aimed at measuring the contribution of biofuels to rising food prices has since been produced.

Donald Mitchell of the World Bank published a study in July 2008 which analyzed the factors contributing to the 140% rise in food prices between 2002 and mid-2008. He found that biofuels feedstock demand accounted for about 70% of the increase.⁸ Mitchell included in his calculations the role of biofuels demand in causing specula-

tion in the grains and oilseeds markets, changes in land use, and food export bans.

A much lower number came from the U.S. biofuels lobby and the White House's Council of Economic Advisors, which argued that the effects of biofuels on food prices are insignificant — at most 3%. They ask us to believe that the U.S., which accounts for nearly two-thirds of global corn exports, can distill a third of its crop into ethanol with little impact on the price of corn.

Between the World Bank and biofuel lobby estimates are the International Monetary Fund (IMF) and the International Food Policy Research Institute (IFPRI), which did not include estimated effects on speculation and export bans in their analyses, but still found that biofuels were a major factor in driving up food costs in recent years. An IFPRI official recently testified before a U.S. Senate Committee that biofuel demand accounted for 30% of the increase in weighted average grain prices between 2000 and 2007.⁹ IFPRI arrived at this conclusion using a comprehensive model which captures the interactions among grain supply, demand, and trade for 115 countries, and includes demand for food, feed, biofuel feedstock, and other uses. Maximo Torero of IFPRI has confirmed this analysis, and noted that biofuel feedstock demand was a contributing factor to the recent upsurge in protests and riots over food prices and shortages in a number of countries.

An Oxfam International paper titled “Another Inconvenient Truth,” considers the impact of biofuels on the environment and the world's poor.¹⁰ It cites World Bank estimates that 100 million people have fallen deeper into poverty as a result of food prices doubling over three years, with an additional 290 million people now threatened by hunger. Oxfam applies IFPRI's 30% figure and concludes that food price increases resulting from biofuel demand alone have dragged 30 million people into hunger and threatened nearly 100 million more.

Oxfam concludes:

“Biofuels allow rich country governments to avoid urgent decisions about how to reduce consumption of oil, while offering new avenues to continue expensive support to agriculture at the cost of taxpayers. The most serious costs of biofuel policies — deepening poverty and hunger, environmental degradation, and accelerating climate change — are being ‘dumped’ on developing countries.”

The Tide is Turning

Earlier this decade, when governments began creating biofuel industries and fuelling their growth with subsidies there was little attention paid to questions like full life-cycle emissions and the effects on food supplies of diverting food to fuel. Now that the world has more information on the consequences of biofuel policies, some governments are taking notice. Four significant events occurred in July 2008:

1. The Premier of Ontario, which has about a third of Canada's population, announced that his government will put off a planned doubling of its 5% ethanol blending mandate and re-evaluate its biofuel policies.
2. The Governor of Texas pled in vain with the Environmental Protection Agency (EPA) to cut the federal ethanol blending mandate in half in order to bring down the price of corn and provide some relief to consumers and his state's livestock industry.
3. The government of the United Kingdom received a report from the Chairman of its Renewable Fuels Agency recommending a review of biofuels policies and a new focus on fuels produced from waste.
4. The European Parliament's Environment Committee called for a much lower

blending mandate and a shift to non-food biofuel feedstocks. Then, in September, the European Parliament's powerful Industry Committee called for changes in the EU mandate which would cut in half the targets for food-based biofuels.

The fading love affair with politicians is not the only problem being faced by the biofuels industry. The upheaval in global financial markets and resulting credit crunch has hit the industry hard. In the market swoon of last September/October, most of the U.S. companies which are pure ethanol players saw their share prices plunge to penny-stock status. VeraSun Energy, which is the largest of the pure ethanol companies, was a stock market darling less than two years ago, reaching a share price of \$23. By late October, it was trading at around 50 cents. Pacific Ethanol, which attracted an \$84 million investment from Bill Gates during its heyday in 2006, saw its share price fall from a high of \$42 to less than a dollar.

The highly leveraged American ethanol industry was already suffering from bad calls on hedging corn prices when the liquidity crisis came along. Ironically, the hedging programs were necessitated by the spiraling price of corn earlier in the year which the ethanol companies helped to create.

The likely result of the shakedown in the U.S ethanol industry will be that the assets of smaller, pure ethanol companies will be bought up for pennies on the dollar by global agriculture conglomerates like Cargill and Archer Daniels Midland. These corporate giants are already large producers of ethanol, and they are far better positioned to ride out the market storm because of their size, deep pockets, and presence throughout the supply chain, including the growing, handling, brokering, and trading of grains and oilseeds.

Governments in the U.S. and E.U. are also reeling from market upheavals and facing a bill for bailing out financial institutions and possibly

other industries, which may reach several trillion dollars. It remains to be seen whether expensive biofuel subsidy programs will survive the inevitable cuts in government spending.

The Harper government belatedly acknowledged that federal finances will slide into deficit next year for the first time since the late 1990s. Will it cut provincial transfers for health and social programs while maintaining multi-billion-dollar biofuel subsidies? Most provincial economies will also be hit hard by the global economic crisis. Ontario has experienced a gutting of its manufacturing industry and, for the first time in the 51-year history of Canada's equalization program, finds itself a have-not province eligible to receive \$347 million from Ottawa in the next fiscal year. Will Canada's former economic powerhouse be able to afford its \$600 million biofuels subsidy program?

What We Can Do

With the biofuels industry facing shifting political winds and market storms, its vulnerabilities are increasingly exposed. The academic community, NGOs, research organizations, aid agencies, and global institutions all have important roles to play in continuing to conduct research and publish information on the consequences of biofuel policies.

Politics drives these policies, and I believe that, when the overwhelming weight of evidence indicates that they are causing considerable harm, politicians will react. Biofuel industry supporters are already talking about food-based fuels as a stop-gap measure that will soon give way to the next generation of ethanol and bio-diesel.

With enough solid research, information and analysis, we can help mitigate one of the major causes of food insecurity. We can help achieve the five-year moratorium on food for fuel initiatives which was called for by the Special Rapporteur to the UN General Assembly in his 2007 Report on the "Right to Food."¹¹

Second Generation Biofuels

In Canada, biofuel supporters have shifted tactics. Now they talk mostly about cellulosic ethanol, waste-based fuels, biodiesel from algae, and other experimental fuels which are referred to as second generation biofuels. They claim these new fuels are just around the corner and that we will soon see an end to using food as feedstock.

The most significant development in second generation biofuels involves an Ottawa-based company called Iogen, which has been shopping around proposals for a commercial-scale cellulosic ethanol plant in the U.S. or Canada in recent years. The story of how Iogen came to pick a location for its proposed plant provides a good example of how the development of second generation biofuels will be even more dependent on public money than the first generation has proved to be.

In 2006–07, Iogen drew \$75 million in investments from Royal Dutch Shell, Petro Canada, and Goldman Sachs, and began looking at plant locations in Saskatchewan and Idaho. An Idaho location would come with a hefty \$80 million grant from the U.S. government, plus any concessions and incentives that could be wrung out of the state and local governments. Those inducements were trumped by the Harper government's announcement in March of 2008 that it had approved a grant for 40% of the construction costs of a \$500 million cellulosic ethanol plant near Birch Hills, Saskatchewan.¹² That put Iogen \$120 million in public money to the good for locating in Canada, even before provincial and municipal subsidies were added in. It was a windfall compared to federal and provincial construction subsidies in the 5–10% range which are available for first generation plants.

The \$200 million federal subsidy will come from the NexGen Biofuels Fund. The proposed plant will break down wood chips using a solvent-based process developed and tested on a small scale in Iogen's Ottawa demonstration plant. Io-

gen said last March that it could start construction soon and be producing ethanol by 2011. In July, Royal Dutch Shell indicated its approval of accepting Canada's higher bid by increasing its ownership stake in Iogen Energy Corporation to 50%. Iogen Energy Corporation is the subsidiary the company established as a joint venture with Shell to pursue cellulosic ethanol research and development.

It is not yet known how the global financial and economic crisis has, or will affect Iogen's plans.

Don't Get Fooled Again

We have already seen the current generation of biofuels lead to serious consequences for global food supplies and prices. Let's not get fooled again. Legislators must be forced to consider the potential consequences of second generation biofuels. These include:

- Taking land out of food production and growing new generation feedstocks depletes food supplies just as much as growing grains and oilseeds for fuel.
- Putting second generation biofuel feedstock plantations on land that supported smallholders destroys their ability to feed their families. For example, the Indian government's plans to convert 11 million hectares of mainly community lands to jatropha plantations will displace tens of thousands of families engaged in subsistence agriculture.
- The production of next generation biofuels will increase the control over land and food prices of the same corporations that have positioned themselves to benefit the most from the current generation. These companies include Monsanto, DuPont, and Archer Daniels Midland, who formed a lobby group along with Deere last summer called the Alliance For Abundant Food and Energy. Their message is that, with

the deployment of new technologies, the world can grow enough food to fill both stomachs and gas tanks.¹³ Deployment of “new technologies” is code for more use of the products these companies produce, including seed, fertilizer, chemicals, and machinery.

- There will be indirect effects on land use as global agriculture responds to expanding aggregate demand for food and fuels. Oxfam points out that these indirect effects are transmitted by global markets and are impossible to manage by any single jurisdiction. For example, ethanol subsidies have prompted American farmers to switch from soybeans to corn, which has led to increased soybean production in South America, which has in turn led to new soybean growers and displaced livestock producers clearing rainforest and moving further into marginal lands. The United Nations Special Rapporteur reported a number of cases where the drive to grow more biofuel feedstock in South America has led to indigenous people being driven from their lands to make way for plantations.

The fundamental problem with second generation biofuels is that changing feedstocks does not produce an increase in our planet’s supply of productive agricultural land. What it does is increase aggregate demand and push up the competition and costs for land, water, fertilizer, and other inputs which are already in short supply in many parts of the world. Second generation biofuels will not lessen the competition for land and inputs between food and fuel. The only change will be cosmetic, with fuel dressed in a new green suit.

People First

The right to food is asserted in the Universal Declaration of Human Rights, and nations have an obligation to feed their people under international law. If such declarations and obligations are to mean anything, there must be a principle of “feed people first” applied to the allocation of Earth’s agricultural resources.

Application of this principle would ensure that only when the entire world’s people have enough to eat on a sustainable basis would land be diverted to growing biofuel feedstocks. Governments should apply the people-first principle by viewing all competing claims and interests through the lens of land use and rejecting initiatives which take land out of food production. If governments will not act in the interests of their people by safeguarding their nations’ capacity to produce food; the global community has a responsibility to intervene through institutions such as the United Nations, just as it does with emergency food aid programs.

It is up to those same jurisdictions that have created and subsidized biofuel industries to repair the damage that these policies have done to global food security.

The first step is to implement the moratorium on new or expanded ethanol and biodiesel blending mandates called for in the United Nations Right to Food Report. This would stabilize demand and reverse the momentum of the biofuels industry. A second look at biofuel mandates is already happening in some jurisdictions and, with continued political pressure, it could happen in more.

A second step is to persuade governments to eliminate subsidies to the biofuel industry. This will require a collective effort by progressive organizations which is stronger and more effective than that of the well-financed biofuel lobbies in Canada, the United States, and Europe. An industry born of politics and fuelled by public

money will die of politics if governments take its subsidies away.

Notes

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12 *Iogen wins funding tentative approval for \$500M ethanol plant*: Bert Hill, The Ottawa Citizen, March 14, 2008

13 *Agribusiness heavies form biofuels lobbying group*: Thomson Financial News; July 24, 2008

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