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Biofuels Moving Mainstream – Environmental and Social Implications

By Jim Kleinschmit

(Keynote address before the Northwest Biofuels Association, September 13, 2007)

Today, there is no question – biofuels are becoming mainstream. Biofuels have dramatically increased in public awareness, policies, investment, infrastructure, refinery capacity, and feedstocks consumed in just the last few years. One only needs to watch tv, read a newspaper, or listen to politicians' speeches to understand that biofuels have become a real part of today's energy, agricultural and forestry agenda. And no wonder.

If you care about national security and energy independence, then biofuels are part of the solution. If you make your living through farming, forestry or live in a rural community, biofuels provide the promise of new and stable markets and economic opportunities. If your primary concern is climate change, biofuels offer the chance to reduce global warming gas emissions. Water quality, biodiversity, wildlife habitat, public health – all are areas where biofuels can contribute to positive change.

With so many potential areas of benefit, it should come as no surprise that public policy – on all levels and in all possible areas – has helped spur and sustain the sector. The multiple potential "public goods" that biofuels can provide – while still being competitive on the market – makes governmental support for biofuel development appear to be a "no brainer," and the result has been a brisk succession of policies that have helped establish the sector and provide incentives for production, infrastructure, and use.

But there are consequences of this move to the mainstream. The rapid increase in feedstock production dedicated to biofuels is causing concerns about the sector's impact on food security, land use, environmental quality and biodiversity. The breakneck refinery construction raises a variety of issues, including scale, ownership, resource consumption, emissions and community impacts. And questions remain about biofuels energy value, global warming benefit, and contribution to energy security. These issues are clouding biofuels' future and threaten to reduce – or even eliminate – much of the public goodwill that exists, and is necessary for, further biofuel development.

With the move to the mainstream, these issues are unavoidable. Biofuels, as done today, are now colliding with existing agricultural, trade, food and environmental policies. But are these problems really born out of biofuels, or are biofuels merely exposing the limits, faults and gaps of policies that we already have?

Take, for example, the increasing concern about biofuels' impact on commodity prices and availability – more commonly referred to as the “food vs. fuel” issue. There is no doubt that the growing demand of the biofuels sector for feedstocks – primarily corn and soybeans in the U.S. – is having an impact on the prices of these and other basic commodity crops. Already, it is expected that ethanol will consume 20 percent of U.S. corn in 2007, and more than 30 percent of the corn crop by 2009. And if all of the proposed plants as of April 2007 were to be built (which is not likely to happen), this share could grow to as much as 54 percent.

Biodiesel's market share is much smaller, but is having a similar effect on the soy market, with the USDA projecting that the sector will consume 20 percent of soy oil production in 2007/08.

One clear result of this increased usage has been a rise in corn prices, but also in other commodities such as soybeans, wheat, oats, and barley, as farmers have shifted acreage to corn and other users have turned to them as “replacement” feedstocks. The result is that biofuels are blamed for everything from the higher prices of tortillas in Mexico to higher meat prices in America, all while raising the specter of worldwide threats of increased food insecurity.

Now, this opens up several questions – first, are these, in fact, really high prices and, second, are the fluctuations in the market the result of biofuels themselves, or are they an outcome of agricultural policies that have promoted the overproduction of a select few commodities?

For much of the last several decades, agricultural policy in the U.S. has resulted in commodity prices much below the cost of what they cost farmers to produce, with us as taxpayers making up the difference. The biofuels industry – like the sweetener, food, livestock, and other sectors – knows a good deal when they see one, so production has been focused on these commodities to the point where prices are now rising. But a reality check is needed here – prices for corn, adjusted for inflation, remain well below that which farmers received during the 1970s, and, based on recent Iowa State studies, are currently right around what it actually costs to produce these crops. So, should we be really calling these high prices, or merely a return to prices that allow farmers to – barely – make a living without taxpayer support?

And while biofuel demand has certainly contributed to the increased global commodity prices, are the “tortilla crisis” and other concerns about food security based on U.S. biofuel production really a function of biofuel demand, or are their roots in our trade policies that have dumped commodities on foreign markets below the cost of production, inhibiting local farmers' ability to make a living? Since NAFTA took effect in 1994, the price Mexican corn farmers receive for their crops has fallen by half and an estimated two million agricultural jobs have been lost, while U.S. corn exports to Mexico have increased 240 percent. This all happened long before the biofuels boom, so is it biofuels, or is it NAFTA that is the real culprit behind the tortilla crisis?

The dependence on corn, soybeans, and other intensive crops has also caused great concern about the environmental impacts from increased production of these crops and – as many of these crops are now genetically modified – their impact on biodiversity, increased chemical use, and impacts on native species and non-genetically modified crop varieties. These are without doubt valid questions, as the increased demand has led to not only the largest corn crop in U.S. history, but also more nitrogen in the Mississippi river, reduced crop rotations, and the re-introduction of crop production on sensitive lands. But again, are these problems the fault of biofuels itself, or are they outcomes of agricultural policies that favor production of certain crops without effective environmental controls on how they are introduced or produced?

In the same way, worries are increasing that demand for biofuels globally is threatening remaining natural habitat and rainforests in Asia, South America and Africa. This is, indeed, a reason for concern, as the growing demand for biodiesel, especially in Europe, is resulting in dramatic expansion of palm oil plantations, often at the expense of local, intact ecosystems and food production. But again, is the fact that millions of Europeans and Americans can spend more for calories to drive automobiles than billions of people can spend to nourish their families or protect their natural ecosystems really a biofuel-based issue, or one based on the incredible discrepancies in wealth that our trade system has helped create with-

out consideration of food sovereignty, poverty alleviation or environmental protection?

And finally, critiques are often raised about biofuels' real ability to contribute to energy security and reduce petroleum dependence. And with current fuel use and biofuel production, this is clearly fair, as converting the entire corn crop to ethanol would replace only 12-15 percent of our transportation fuels, but is this a biofuel problem, or does the real problem lie with the lack of a comprehensive energy policy that promotes efficiency, reduced consumption and other renewable energy sources?

The backlash against biofuels, based on these multiple concerns, is growing, as you all well know. Reports from everyone from environmental groups to the Organization for Economic Cooperation and Development are raising the alarm on a daily basis about the risks that an expanded biofuel industry could cause. We are now at risk of losing the public support that has been essential for establishing the full biofuel infrastructure and markets. But let there be no doubt that if biofuels are being mainstreamed, these are but the beginning of questions that will have to be confronted, whether biofuels are truly causing the problems or simply amplifying them.

But there is another way of thinking about this. While biofuels can not be absolved from some responsibility for these increasing concerns, I would offer that the conference title needs a slight twist to capture the real situation biofuels are in and the current opportunity in front of us – rather than biofuels moving to the mainstream, we need to be talking about biofuels MOVING THE MAINSTREAM in a more sustainable direction!

Society is already beginning to accept that economics isolated from environmental and social impacts is not true accounting. And the public is responding, in policy and the market place, as shown by the support for more sustainable policies and the growth in sales in all "green" sectors, from local and organic food to carbon credits and hybrid vehicles. Biofuels can help cement this understanding and capitalize on its multiple economic, environmental and social values, but to do this, the industry needs to embrace these aspects for itself and for the broader policy areas with which it intersects. From feedstock to consumption, all are areas where biofuels can help move the mainstream in ways that benefit not only the industry, but society and the environment as a whole.

Starting with the multiple concerns around feedstocks, there is a clear need for the biofuels sector to promote more sustainable agricultural and forestry policies. By including consideration of impacts on soil and water quality, wildlife habitat, greenhouse gas emissions, biodiversity and other environmental aspects into governmental policies that help determine how agricultural and forestry products are produced and supported will, in one fell swoop, address many of the environmental and climate considerations that are facing biofuel production. And by moving quickly to more sustainable feedstocks, such as perennial grasses, the environmental benefits can be even greater, while at the same time reducing the potential competition with food-based crops.

One immediate way to do this is through the Farm Bill. Currently being written, this complex 5 year policy has the most influence on what U.S. farmers grow and how they grow it, but while it initially focused on both assuring a plentiful food supply and fair prices to farmers, those policies have largely been abandoned over the last few decades in favor of a free trade orthodoxy. The result, as already mentioned, has been the overproduction of intensive crops, without sufficient consideration of environmental, food security or farm income implications. This needs to change. The biofuels sector needs to help broaden this policy to include considerations of supply, sustainable crop production, support for new crops, and rural development benefits.

Shifting more funding and emphasis to programs such as the Conservation Security Program, which provides incentives for farmers to grow crops in more environmentally-beneficial ways, can help to make sure that all crops – food, fuel and fiber – are produced in a sustainable manner. Support for new perennial crop introduction, of which several proposals have been put forward, can help bring to market new feedstocks that have higher environmental and climate performance, while broadening the diversity of crops on the landscape and helping reduce overproduction of the basic commodities.

Shifting this acreage to crops that will be used locally for bioenergy production can help keep global commodity prices high and stable enough to assure that farmers can make a living without the support of taxpayer dollars.

Trade policy is another area that the biofuels sector needs to engage in to assure that its expansion does not negatively impact food and energy security, environmental protection, biodiversity and community rights in countries around the globe. Current policy that promotes dumping of excess commodities on international markets has, as I've already said, inhibited the ability of farmers in other countries to grow crops for their own markets. Curtailing dumping and raising world crop prices is one of the most effective ways to help farmers around the world receive a fair price for their products, especially in developing countries where farmers make up a large share of the world's poorest people. For biofuels not to contribute further to increased food insecurity, a change needs to be made in our trade policies that eliminates dumping, and the distortions and impacts that it causes.

And in all of these areas, biofuels needs to embrace the "local." As David Morris of the Institute for Local Self Reliance recently wrote in an article about local food for Alternet, "Buying and using local creates a tight-knit interconnection between producers and consumers. It makes us more intimately aware of the impact of our buying and producing decisions on our neighbors. On the other hand, distance disables accountability. As we have recently discovered, food shipped across the planet, from jurisdictions and by corporations that do not view safety as their highest priority, is virtually untraceable. Or it requires global inspection agencies that themselves become unaccountable."

Whether in feedstock production, ownership and scale of facilities, or the actual consumption of the biofuels, an emphasis on local can assure more community benefit and support, a diversification of feedstocks, less stress on natural resources and infrastructure, and reduced climate impacts associated with production and consumption.

Especially for the Northwest, where feedstock production is already more diverse than in the corn/soy belt of the Midwest, local offers the opportunity to build and scale plants according to community considerations and regionally-available feedstocks that provide new markets for area farmers. In the same way, more focus on local food production – both here and abroad – can help minimize the expected disruptions that global commodity markets exert on food production and security.

In Minnesota, which has provided incentives for in-state biofuel production, consumption and ownership, the result – at least until recently – has been a profusion of smaller scale, locally owned biofuel facilities. And the benefits of this local approach are increasingly being seen. While any new development can provide some economic benefit to rural communities, the Minnesota Model has shown that locally-owned bioenergy facilities result in more jobs, tax revenues, local investment and spending.

One clear measure of this is the impact on state economies of local production and consumption. The Institute for Local Self Reliance has calculated that, for every dollar Minnesotans spend on fossil fuel, 75 cents leave the state. But the purchase of locally-produced biofuels keeps 75 cents of each dollar spent in the state, helping build the local economy. Farmers and local residents have enthusiastically pursued local ownership and the benefits it promises, resulting in our current situation where 80 percent of our plants are locally-owned, and at least 30 percent of Minnesota corn growers are now owner/investors in ethanol plants.

And when the farmer profits, so do rural Main Streets. In Benson, MN, where Chippewa Valley Ethanol Cooperative is located, it is estimated that more than \$60 million has been returned to the cooperative farmers, much of which has been spent locally, helping revitalize the town, leading to a housing boom and a downtown makeover. These outcomes, along with the increased state revenues that such development has provided, have made biofuels an issue that rural and urban citizens and legislators alike have strongly supported.

But beyond helping to shift agricultural and trade policies to consider multiple values and embrace local benefit, the biofuel sector also needs to support comprehensive energy policies that promote renewables of all stripes along with

more emphasis on conservation, efficiency and climate concerns. Only by embracing a cross-sectoral energy program, will biofuels be able to truly be seen as making a real contribution to energy security and reduced petroleum dependence.

This ranges from the first steps of promoting biofuel production made with renewable energy to pushing for transportation solutions – such as more investment in clean mass transit and the rapid introduction of plug-in flex fuel hybrid vehicles – that capitalize on the multiple renewable options that are available today. Already in Minnesota, 3 of the 16 ethanol plants in production are using some renewable directly for production, providing new markets for their farmer-members and making their ethanol some of the “greenest” in the country. New policies put forward in the state on biomass energy and wind development that favor local use are likely to make this connection even stronger.

Finally, biofuels needs to look beyond energy to the bio-based markets that are helping replace other fossil fuel products, such as bioplastics, lubricants and building materials. If the goal really is to end our dependence on fossil fuels, biofuels needs to champion the production and use of these products. This will not only reduce the markets for fossil fuels broadly, but will bring additional allies to the table that can help assure the necessary feedstock and production infrastructure and political support that the entire bio-based sector needs to grow.

Now while this is clearly an ambitious agenda, much of this is being already done at some level within the biofuels sector. You’ve heard a lot of examples from me about Minnesota and the Midwest, and in the sessions today and tomorrow I’m certain you’ll hear about related efforts here in the Northwest. But work is also being done on the national and international levels to help with this shift towards more sustainability. Initiatives like the Sustainable Biodiesel Alliance are working nationally to develop criteria and certification to assure that the life cycle of biodiesel is as environmentally and socially sustainable as possible. Internationally, efforts are underway in Germany, the UK, the Netherlands and elsewhere to create voluntary certification systems that rate biofuels on such issues as carbon intensity, environmental benefit and local considerations.

But for the U.S., which has shown its unwillingness to lead on a national level, it may lie with the states to really bring this movement forward in a creative way. Oregon and Washington, like Minnesota, have passed policies to support locally-appropriate biofuel production and use. States rightly need to take the lead in this work, focusing on local resources and benefits to determine how best to establish and support this emerging sector for their climate and community conditions.

What I have spoken about today is not easy. But before you lose heart, I want to remind you that nothing important really ever is. Before us is nothing less than an historic opportunity to reconfigure agriculture policies in support of sustainable development goals based on renewable energy, local ownership and food security. However, without these goals in mind, growth in biofuels will not be the panacea to resolve the global crisis around unsustainable use of fossil fuels and unsustainable consumption patterns that are supported by industrial agriculture and negatively impacting the environment.

Without changes based on these goals, biofuels will not solve agricultural commodity market distortions that are associated with free trade policies and have devastating impacts on other countries. And, it will not serve as a magic bullet to address social needs such as employment, local ownership, and food security.

For the biofuels sector to meet its true potential, it needs to engage in changing basic agricultural, forestry, trade and energy policies to promote and value the economic, social and environmental goals that the biofuels sector rightly claims are possible with its expansion.

The sessions at this conference have been well designed to identify in more depth the problems and benefits that biofuels bring up for society and the environment, but I challenge you to think of these not as separate issues, but to embrace the complexity and interconnections that these issues raise.

As you go through the conference today and tomorrow, I want you to think about how the sector, as a whole, can help move the mainstream towards more sustainable and linked policies and outcomes – for the environment, for the climate, and for communities here and around the world.

Thank you and I look forward to your questions.

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