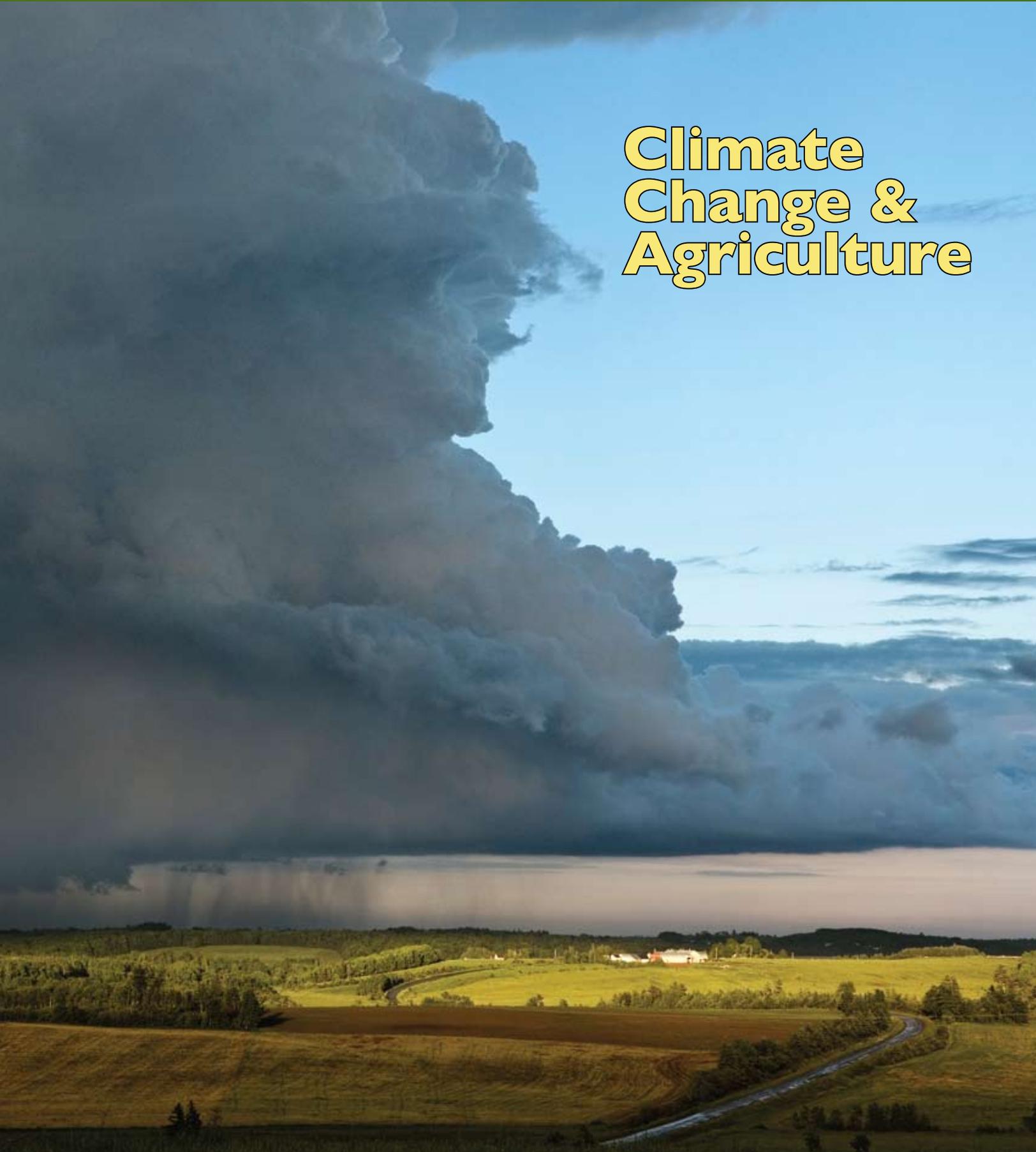


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The political, social, ecological, energy- and climate-related impacts of biofuels are complex. Civil society groups around the world, including Pesticide Action Network, have raised concerns about the destructive impacts of current large-scale production systems, particularly “agrofuels” that displace food crops. As the authors of this analysis explain, small-scale, localized biofuel production in the U.S. presents slightly different issues, while having its own challenges.

Growing Greener Biofuels

by Jim Kleinschmit and Julia Olmstead, Institute for Agriculture and Trade Policy

The biofuels industry is now becoming large and mature enough to have a big impact on energy, climate and economic goals, but whether that impact is positive or negative depends largely upon what policies we pursue. Done right, biofuels have the potential to reduce greenhouse gas emissions, enrich wildlife habitats and boost rural economies. But taken in the wrong direction, biofuel development will threaten water and soil resources and food security while doing little to slow climate change. Considering the strong role of policy in determining biofuel development, it is up to the stakeholders—farmers, producers, rural residents and energy users—to determine shared goals for the sector, and what policies will best support those outcomes.

Many of the problems associated with biofuels primarily lie with the industrial agricultural and energy model under which most biofuels are produced—as well as with a corporate-led global trade system that doesn’t care how or where those fuels are produced.

To contribute to sustainability goals, biofuel feedstocks must be produced in ways that do not degrade land or water resources. Many people consider “first generation” biofuel feedstocks like corn to be inherently unsustainable, but the answer is not quite that simple. Corn can be part of a multi-year, sustainable crop-rotation system that maximizes soil quality and soil carbon storage, reduces fossil fuel inputs and minimizes pest and disease pressure.

But monocultural corn production, which requires heavy doses of fossil fuel-derived fertilizers and pesticides, will never be a sustainable feedstock. Nor will Brazilian sugarcane or

fast-growing trees harvested by laborers working for less-than-subsistence wages. But without a way to qualitatively distinguish between fuels—judging them, for example, on environmental performance, global warming contributions and community impacts—it’s difficult to see the path under existing policies to sustainability for biofuels.

Much of the international debate over biofuels has focused on production mandates set by the U.S. and European Union. These mandates, when fulfilled in part by imported biofuels, have led to forest and perennial landscape destruction as land is cleared for biofuel crops. It is crucial, then, that production mandates like the U.S.’s Renewable Fuel Standard be limited to domestic production. After all, the RFS is ostensibly designed to reduce U.S. dependence on foreign energy sources.

In the U.S., where corn is grossly overproduced, converting to diverse, perennial cropping systems for biofuels is an option. The deep roots of perennial plants hold carbon in, harvesting can be done more than once a year, and replanting is infrequent (alfalfa, for example, can thrive for five seasons before replanting). Ideally, biofuel farmers can grow a mixture of grasses, legumes and other plants that mimic ancient prairies, using no pesticides or synthetic fertilizers and far less energy.

Biofuel policy must go beyond production quotas to focus on environmental, social and economic performance. Instead of just mandating the number of gallons to be produced and assuming that will get us the broader benefits we seek, state and federal policies should require that ethanol and biodiesel are made in ways

that meet agreed-upon sustainability indicators and contribute to our shared goals. Ideally, biofuels will be made in the same region in which they are used. If biofuels are imported, it must only be under very strict sustainability and equity standards. These must include not only environmental criteria around soil, water, climate and biodiversity, but also social and economic considerations covering labor rights, fair trade protections and the promotion of community-owned and locally-scaled biofuel facilities.

Some of these qualitative policies are already in place, but much more needs to be done. The latest version of the RFS and changes in subsidies provide more support for cellulosic ethanol and other advanced biofuels. And a program in the 2008 Farm Bill—the Biomass Crop Assistance Program—will help farmers grow other crops, including perennial grasses and woody plants, for bioenergy and “next generation” cellulosic biofuel production, which will contribute to better water quality and wildlife habitat.

But even these more sustainable types of emerging biofuels will not fulfill their potential if they are seen as a substitute for, rather than supplement to, deep cuts in energy and fuel consumption. Socially just and environmentally sustainable biofuel development will need to be paired with significant strides in fuel conservation, higher efficiency vehicles and reduction in miles driven for it to truly contribute to more sustainable transportation.

Excerpted and adapted from a longer article entitled “Navigating the Maize,” which appeared in the Izaak Walton League’s *Outdoor America*, Spring 2009.