



## Open Letter on Biofuels

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Now is the time when everyone is writing letters to the new Obama administration. It seems like it might be worthwhile discussing a letter written by a group of organizations warning of the dangers of biofuels. The letter can be found at the site of the [Global Justice Ecology Project](#). The statement on the website about this letter says:

Corn and sugar based agrofuels have already come under extreme scrutiny due to their documented contribution to the food crisis, with venture capital investment in these so-called 'first generation biofuels' dropping to zero. The open letter exposes the further problems that will result from the so-called 'second generation' of agrofuels. These problems range from wholesale destruction of the world's rainforests and other sensitive forests, to the forced displacement of entire communities to make way for agrofuel expansion, and the biosafety risks of gambling on novel technologies like Synthetic Biology and genetically engineered trees. The letter also makes clear that agrofuels made from inedible plant feedstocks (cellulosic fuels) will continue to exacerbate the food crisis by monopolizing additional agricultural lands for the growing of agrofuel crops such as grasses and trees, instead of food crops.

*(Editors note: Please note that this letter is for discussion purposes. The Oil Drum does not make an endorsement of particular policies; each member of the staff has his/her own view, and these are not necessarily the same. I personally agree with many of the agrifuel issues mentioned in this letter, but I do not agree with the solutions. The authors seem to want to eliminate fossil fuels and nuclear, substituting wind and solar. This is not possible, in my view. I see wind and solar as fossil fuel extenders that do not exist for long in the absence of fossil fuels. Also, I see no way that wind and solar can be scaled to the level where they can substitute for fossil fuels and nuclear.*

### **[1] OPEN LETTER: Unsustainable Biofuels: Fueling Climate Change, Poverty and Environmental Devastation**

As a diverse alliance of organizations concerned with climate change, agriculture and food policy, human rights and indigenous peoples rights and biodiversity protection, we ([Global Justice Ecology Project](#), [Institute for Social Ecology](#), [Heartwood](#), [Energy Justice Network](#), [Grassroots International](#), [Food First](#), [Native Forest Council](#), [Family Farm Defenders](#), [ETC Group](#), [Dogwood Alliance](#), [Rainforest Action Network](#)) issue this open letter in opposition to agrofuels (large scale industrial biofuels).

If you would like to join us, please add your organizational signature to this letter by emailing [contact@globaljusticeecology.org](mailto:contact@globaljusticeecology.org).

We strongly oppose the rapid and destructive expansion of agrofuels; the large-scale industrial production of transport fuels and other energy from plants (corn, sugar cane, oilseeds, trees, grasses, waste etc.). Agrofuels are a false solution and a dangerous distraction and they must be halted.

### **Agrofuels are a "false solution":**

Many prominent voices in the United States, including President-elect Obama, have voiced support for the large-scale production of agrofuels as a central strategy for solving the problems of energy supply and global warming. A growing body of scientific evidence, however, indicates that this is a tragic misconception and that continued pursuit of agrofuels will aggravate severely rather than resolve the multiple and dire consequences of the climate, energy, food, economic and ecological crises we face. Like other dirty and dangerous technologies and devices being promoted by industry to supposedly address climate change-including "clean coal," carbon capture and storage [CCS], coal gasification, nuclear power, carbon offset markets, and ocean fertilization-agrofuels are a distracting "false solution" promoted for their potential to reap profits rather than their capacity to address problems effectively. [1]

### **Agrofuels worsen climate change and poverty:**

A growing body of literature from all levels of society is revealing that, when all impacts are considered, agrofuels create more, not less, greenhouse gas emissions; deplete soil and water resources; drive destruction of forests and other biodiverse ecosystems; result in expanded use of genetically engineered crops, toxic pesticides, and herbicides; and consolidate corporate control over access to land. While claims are made that agrofuels will benefit the rural poor, in reality, indigenous and smallholder farmers are increasingly displaced. Industrial agriculture and the destruction of biodiversity, two leading causes of global warming, will be further facilitated by agrofuels. [2]

### **Next generation "cellulosic" fuels will not resolve the problems:**

With recognition of the role of agrofuels in driving up food prices, there has been increasing attention to the social and ecological costs of corn and sugar cane derived ethanol. In response, there is now a massive push to develop non-food, so-called cellulosic fuels based on claims that these new feedstocks (grasses, trees, and "waste" products) will not compete with food production and can be grown on "idle and marginal" lands. The incoming Obama Administration is clearly positioning to advocate strongly on this platform. [3] Unfortunately, these claims do not hold up to scrutiny.

An enormous additional demand for trees, grasses and other plants, edible or inedible, will not avert the problem of land-use competition. Land that could be used for food crops or biodiversity conservation will be increasingly diverted into energy production. Demand for land for both agriculture and timber is already intense and escalating globally as water, soil and biodiversity dwindle and the climate becomes increasingly unstable. [4]

### **The scale of demand cannot be met sustainably:**

Virtually all of the proposed cellulosic feedstocks (including dedicated energy crops such as perennial grasses and fast growing or genetically engineered trees, agricultural and forestry "wastes and residues", municipal wastes etc.) present serious ecological concerns on the scale required to maintain biorefinery operations and significantly contribute to U.S. energy demands. Furthermore, renewable fuels targets in the U.S. mandate the use of 15 billion gallons of corn ethanol per year, an amount that requires one third of the nations corn crop, and an additional 21

billion gallons a year of "advanced" agrofuels, the definition of which opens the possibility that demand will be met with foreign sources. The massive new demand for agrofuels is escalating deforestation and resulting in conversion of biodiverse and carbon-rich native forests and grasslands into biologically barren and carbon-poor industrial tree plantations and other crop monocultures. [5]

Land use changes resulting from industrial agriculture, including widespread deforestation, are major causes of climate change. Recent research finds that old growth forests sequester far more carbon than was previously estimated, (i.e. Intergovernmental Panel on Climate Change underestimated carbon stocks for temperate old growth forests by two-thirds). This means that deforestation has been a much larger causal factor in global warming than initially thought, and that intact natural forests are critical for sequestering carbon. It is imperative therefore that we protect remaining forests, grasslands and other carbon-rich ecosystems. [6]

The widespread application of biotechnology for agrofuel production, including genetically engineered (GE) feedstock crops such as GE grasses and GE trees, and plans to use synthetic biology and other genetic engineering techniques to alter and construct microbes, is an unacceptable and dangerous risk. [7]

Sustainability criteria cannot address the problems with agrofuels because they are incapable of addressing many complex and often indirect ecological and social impacts. Neither can they be implemented under globally diverse ecological, social and political situations. Similar efforts to develop criteria for soy, palm oil and timber, for example, have proven vastly inadequate. Finally, these efforts are based on the fundamental and flawed assumption that such massive demands can and should be met.

### **Agrofuels are not a renewable energy source:**

While plants do re-grow, the soils, nutrients, minerals and water they require are in limited supply. The diverse and complex ecosystems that native plants belong to are also limited and not easily regenerated. Subsidies and incentives for renewable fuels should be focused on truly renewable options, like wind and solar energy. Instead, currently in the U.S. close to three-quarters of tax credits and two-thirds of federal subsidies for renewable energy are being wrongly invested in agrofuels. [8]

### **Agrofuels are a disaster for people:**

As governments, investors and corporations recognize the increasing demand for and profitability of land for food, fiber and now energy, we are witnessing a veritable tidal wave of land grabbing on a global scale. This is disastrous for rural and indigenous peoples who are increasingly being evicted or displaced. If tariffs currently limiting international agrofuel trade are diminished or eliminated, social and ecological damages will escalate.

Social movements around the world, including the international peasant movement, Via Campesina, call for "food and energy sovereignty." Via Campesina, along with the independent International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), a long-term independent assessment of agriculture involving over 400 scientists and diverse stakeholders, point to the key importance of a return to locally controlled, diverse, ecologically sensitive, and organic agriculture practices as vital to both addressing climate change and poverty. In demanding a halt to the insanity of agrofuel expansion, we stand in solidarity with peoples around the world who are resisting the loss and destruction of their lands, and with the wildlife and biodiversity being driven to extinction for corporate profit. [9]

### **Real solutions must be given a chance.**

There are numerous better options for addressing climate change. These are generally proven, do not involve risky technologies, return control of resources to local inhabitants rather than profiting irresponsible corporations, and are more equitable. [10]

These include but are not limited to:

- \* A massive focus on improvements in energy efficiency, public transport and reduced levels of consumption within the United States (and other affluent countries);
- \* A rejection of industrial agribusiness and biotechnology and a return to locally adapted and community controlled diverse agricultural practices with the goal of feeding people, not automobiles, while conserving soil and water, maximizing carbon sequestration and protecting biodiversity;
- \* Repeal of the 36 billion gallon per year Renewable Fuel Standard biofuel target in the Energy Independence and Security Act.
- \* Support for indigenous land rights and community stewardship initiatives as the major focus of efforts to preserve biodiverse ecosystems and the implementation of free and prior informed consent from indigenous peoples with respect to projects proposed on their ancestral lands and territories.
- \* Reducing demand for forest products and aggressively protecting remaining native forests and grasslands;
- \* Rejection of coal and nuclear technologies, which are inherently toxic and dangerous;
- \* Scaling up of decentralized and unequivocally renewable and cleaner wind and solar energies;
- \* Leaving fossil fuels in the ground, where they cannot contribute to climate change;
- \* Rejection of ineffective market-based approaches that commodify the atmosphere, biodiversity, and humanity itself.

Signed:

Global Justice Ecology Project  
Institute for Social Ecology  
Heartwood  
Energy Justice Network  
Grassroots International  
Food First  
Native Forest Council  
Dogwood Alliance  
Family Farm Defenders  
ETC Group  
Rainforest Action Network

NOTES:

[1] A recent comprehensive review of a variety of technologies proposed for addressing climate change, including wind, solar, nuclear, geothermal, tidal etc. found: "...cellulosic- and corn-E85 were ranked lowest overall and with respect to climate, air pollution, land use, wildlife damage, and chemical waste.... biofuel options provide no certain benefit and the greatest negative impacts."<sup>1</sup>

Resources and information on the false solutions involving coal, nuclear, incineration, biofuels, natural gas and more are available at: <http://www.energyjustice.net/>  
For information on ocean fertilization: [http://www.etcgroup.org/en/materials/publications.html?pub\\_id](http://www.etcgroup.org/en/materials/publications.html?pub_id)

For a review of climate geo-engineering technologies: A. Ernsting and D. Rhugani. 2008. Climate

geoengineering with "carbon negative" bioenergy.  
<http://www.biofuelwatch.org.uk/docs/cnbe/cnbe.html>

Opposition to these "false solutions" is growing.<sup>2</sup>

[2] Climate: According to recent studies, when all direct and indirect land use change emissions are accounted for, agrofuels produce from 17 to 420 times MORE greenhouse gas emissions than would be saved by avoided use of fossil fuel. Another study revealed that emissions of nitrous oxide from increasing fertilizer use for biofuel crops reduces or even cancels out gains from offsetting fossil fuel use with agrofuels. <sup>3,4,5</sup>

People: rural and indigenous peoples are increasingly displaced, often violently from their lands to make way for expanding industrial agriculture. Agrofuels are contributing to this.<sup>6,7</sup> The global peasant farmers movement "Via Campesina" states: "small farmers feed the world, industrial agrofuels fuel hunger and poverty" (Jakarta, June 24th 2008: International Conference on Peasant Rights)<sup>8</sup>

The UN FAO reported that food prices have pushed the number of starving to more than one billion, 14% of the human population.<sup>9</sup> A leaked memo from the World Bank stated that 75% of the food price increase could be attributed to diversion of food crops into fuel production.<sup>10</sup> The FAO stated that mandated targets may need to be reconsidered. Reports on the impacts of cane ethanol in Latin America paint a grim picture of oppression and destruction.<sup>11</sup>

[3] Obama, a long standing advocate of corn ethanol has stated that he will increase the renewable fuel standard from the current level at 36 bG/yr to 60 bG/yr. His cabinet appointments include 1) Tom Vilsack (Secretary of Agriculture), known for his advocacy on behalf of biotechnology and his close relationship with Monsanto and support for corn ethanol 2) Steven Chu (Secretary of Energy) who was instrumental in establishing agrofuels as the major focus of Lawrence Berkeley Labs (which he directs) and overseeing the establishment of the Energy Biosciences Institute, a \$500 mil partnership involving UC Berkeley (a supposedly public educational institution) and BP, along with the Lawrence Berkeley labs, the goal of which is research and development of cellulosic fuel technologies. 3) Ken Salazar (Secretary of the Interior) has been a major proponent of flex-fuel car production and cellulosic fuel development.<sup>12</sup>

[4] As demands for food and bioenergy expand, enormous land grabbing is underway with countries, corporations and investors buying up large amounts of arable land in a scramble to gain access to dwindling and profitable resources.<sup>13</sup> For example, Daewoo, a South Korean company is seeking to acquire a 99-year lease on a million hectares of Madagascar's agricultural land, Kuwait is looking to acquire millions of hectares in Cambodia, and other investors are moving in on approximately 15 per cent of Laos's agricultural land.

Soil: In the U.S., some of the best agricultural soils occur in Iowa, but over the past century these have declined from an average of 18 to just 10 inches of depth over the past century due to erosion. Erosion rates exceeded soil regeneration rates on close to 30% of agricultural lands in the U.S. in 2001. This loss of topsoil and organic residues results in declining productivity. In an effort to stem the tide of erosion, the U.S. Conservation Reserve Program was introduced in 1985 and paid farmers to plant lands sensitive to erosion with grass or tree cover protection and to use no-till farming, terracing and contour strip farming. These CRP lands are shrinking due to incentives to produce agrofuel feedstocks. Removal of "wastes and residues" from agricultural and forested lands for agrofuel production depletes soil organic matter and nutrients and increases erosion.<sup>14</sup>

Water: Water resources in the U.S., including major irrigation sources such as the Oglalla aquifer and the Colorado river, are in decline. Agriculture is the largest use of freshwater, and biorefinery processes also require massive amounts of water.<sup>15</sup> According to the International Water Management Institute (IWMI): freshwater usage worldwide has increased six-fold over the past 100 years, largely due to irrigation; water resources are dwindling; the price of water is predicted to double or triple over the coming two decades. Meanwhile, severe droughts are resulting in water shortages in Australia, India and South Central China. Droughts and ice melting at high altitudes are likely to result in declining water supplies in many regions of the world.<sup>16</sup>

[5] According to biotechnology industry estimates, a moderately sized commercial-scale biorefinery using agricultural residues would require harvesting a minimum of 500,000 acres of cropland. Electricity production through the burning of wood is increasing rapidly and creating huge demands for trees. For example, Prenergy Power Limited, of London, England is planning a 350 megawatt power plant, which will be fueled by approximately 3 million tons per year of woodchips imported, in part from the U.S. Some bioenergy processes claim to utilize wastes and residues, but a recent industry market report stated: "...these operators, hungry for large volumes of wood, and frequently armed with government subsidies, are finding that the perceived overabundance of 'waste wood' in the nation's forests is simply not there. As a result, the increased demand for more traditional forms of woodfiber has already triggered wood price spikes and cross-grade competition in the tightest markets."<sup>17</sup> Wood is under demand by expanding pulp and paper industry, timber products industry, rapidly growing chip and pellet production for heat and electricity, and now for liquid transportation fuels as well. This level of demand simply cannot be met sustainably. It is also driving the demand for faster-growing "designer" trees genetically engineered to enhance their ability to be transformed into energy. This in turn is threatening native forest ecosystems with genetic contamination.

[6] Deforestation in the Amazon is directly correlated with the market price of soy, a biofuel feedstock. When farmers in the U.S. switched from soy to corn production to meet the demands for corn ethanol, the price of soy rose, and deforestation increased.<sup>18</sup> The push for more land to grow energy crops has resulted in the elimination of set-aside lands in the EU and a reduction of CRP lands in the U.S. The loss of these critical habitats is reducing pollinator and bird populations dramatically.<sup>19,20</sup>

A recent long-term study of forest carbon in old growth temperate forest (AUS) found that carbon storage was far greater than previously assumed. The IPCC default values for example were one-third the value observed, highlighting the enormous impact of deforestation and the critical relevance to climate change of preserving forests.<sup>21</sup>

[7] Agrofuels have become the major focus of biotechnology R&D. In addition to a suite of new GE feedstock developments, companies like Arborgen in the U.S. are developing GE tree varieties with 1) reduced lignin content 2) disease, insect and stress resistance, 3) fast growth, 4) cold tolerance, 5) modified oil content (jatropha and oil palm) and 6) sterility - all characteristics deemed profitable for agrofuel and pulp applications. Given that trees spread their pollen and seeds across huge distances and/or have many wild relatives in native forest ecosystems, cross contamination between GE trees and native trees is inevitable and entails unpredictable, potentially disastrous implications for forest ecosystems, wildlife and forest dependent human communities.<sup>22</sup>

The newly emerging technique of "Synthetic Biology" is focused on developing microbes that can efficiently produce enzymes for fuel production. If genetic modification has raised biosafety concerns, those pale in comparison to the safety and ecological risks of synthetic organisms.



Unlike earlier genetic engineering where genes are sourced from existing organisms, synthetic DNA sequences may have no known analogue in nature, and numerous pathways are combined. The consequences of contamination by such organisms are entirely unpredictable. Currently, the push for microbes for agrofuel production is driving the Synthetic Biology industry forward, making the ability to build dangerous and deadly microbes including bioweapons, cheaper, easier and harder to control.<sup>23</sup>

[8] True renewables such as wind and solar are losing out in competition with agrofuels. Ethanol accounted for three-quarters of tax benefits and two-thirds of all federal subsidies provided for renewable energy sources in 2007. This amounted to \$3 billion in tax credits in 2007, more than four times the \$690 million made available to companies trying to expand all other forms of renewable energy, including solar, wind and geothermal power. It is estimated that by 2010, ethanol will cost taxpayers more than \$5 billion a year -- more than is spent on all U.S. Department of Agriculture conservation programs to protect soil, water and wildlife habitat.

[9] Almost weekly new reports are made of abuses and violence in the context of land conflicts over the expansion of industrial monocultures and access to land and resources, and social movements working in resistance. Below are just a few of the more recent examples.<sup>24,25,26,27,28</sup>

These include:

- \* The civil society organizations in Latin America who protested the International Biofuels Conference, demanding food and energy sovereignty;
- \* The recently freed "sugar slaves" working in Brazil's ethanol industry;
- \* The indigenous peoples in the village of Suluk Bogkal, in Riau province in Sumatra who were fire bombed on December 18th 2008 when they resisted eviction from their lands to make way for a pulpwood plantation under Sinar Mas;
- \* The friends and families of Paraguayan smallholder farmers violently murdered when they resisted eviction to make way for the expansion of soy monoculture;
- \* The Tupinikim and Guarani in Brazil, who spent twenty years fighting to regain control of their ancestral lands which were taken over by the pulp industry for industrial eucalyptus plantations;
- \* The over one billion people now suffering from chronic undernourishment while food crops are diverted into fuel for automobiles;
- \* The diverse plants and animals moving precariously closer to extinction as their habitats are destroyed for conversion to agrofuel monocultures and industrial tree plantations;

People's access to land and the right to feed themselves is fundamental. Via Campesina along with many other social movements around the world call for food and energy sovereignty, not agrofuels.<sup>29</sup> Numerous calls for moratoria have been made worldwide, including one from organizations in the U.S.

<http://agrofuel-moratorium-campaign.nireblog.com/>

Declarations of opposition to agrofuels: [www.biofuelwatch.org.uk/declarations.php](http://www.biofuelwatch.org.uk/declarations.php)

[10] A growing global alliance of individuals and organizations is demanding real solutions to climate change based on principles of justice and equity. This position is based on the understanding that the root causes of climate change are the same as the root causes of poverty and injustice. One cannot be addressed without the other and doing so is the only effective path towards a sustainable future.<sup>30,31</sup>

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