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## [Fuelling Biodiversity Loss: Biomass for Biofuels, Bioenergy, Biochar and the Technologies of the new Bioeconomy](#)

Industrial scale biofuels and bioenergy, with their new demands for wood, agricultural products and other plant biomass, are having serious and irreversible impacts on biodiversity, especially forests. Driven by overseas investment, large tracts of land are changing to bioenergy feedstocks in the global south, undermining the rights of Indigenous Peoples, food sovereignty, agrarian reform and land rights. CBD language “to promote the positive and minimise the negative impacts of biofuel production” must be replaced by a call to end all perverse incentives that promote the further expansion of industrial bioenergy production.

### **What is at stake?**

Industries come together to form the new bioeconomy. Biofuels and bioenergy generally are emerging as the energy basis of the “knowledge based bioeconomy (KBBE)”, based on the idea of replacing fossil oil as a source of energy and other products with biomass. Major industries, including GM biotechnology, agribusiness, petroleum, timber, pulp and paper industries all see profit potential in the “new bioeconomy” and the development of plant-based chemistries.

The EU and the US continue to promote the bioeconomy, while India, Brazil and China are among those exploring it. Expanding large-scale, industrial bio-energy (biofuels and biomass) is part of a political agenda that claims to address climate change and energy security, but seriously compromises small-scale, traditional uses.

Bioenergy targets in the US and the EU alone are increasing demand so dramatically that already large regions of the global south are being converted to industrial monoculture plantations and energy crops for export. While this is done in the name of reducing greenhouse gas emissions, lifecycle accounting for most bioenergy processes including transportation fuels and burning for electricity indicates a net increase in emissions. The promotion of biochar (turning biomass to charcoal) to supposedly 'sequester carbon' and thus provide offsets for emissions would further increase biomass demand.

### **Impacts on biodiversity**

Since the last CBD COP in 2008, a number of reports have further illuminated and documented the impacts of industrial bioenergy. These include:

(1) As subsidised bioenergy demand grows, biodiversity is destroyed. Bioenergy demand is driving further conversion of natural ecosystems to industrial plantations, and also has significant impact on water resources, chemical and pesticide contamination, and forests. In the EU and the U.S., new industrial scale wood burning facilities are creating a major new source of demand for wood, which seriously compromises policies to conserve and restore forest biodiversity.

(2) Industrial bioenergy competes with food production and worsens hunger. Industrial bioenergy

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competes with food production for crops, water and land. Yet diversion to energy 'crops' continues to escalate, displacing other crops to replace biodiversity and forest elsewhere. Promoters claim that future technologies that exploit cellulose, non-food plants and trees will avert this conflict, but the underlying requirements for land, soil and water remain. Crops that are sources of both biofuel and animal feed such as soya and maize add to the pressures. Further, studies have shown that there is not sufficient land for biofuel production to meet the current demand for energy.

(3) Industrial bioenergy is fuelling global speculation and investment in land, resulting in a new era of colonization and "land grabs". Investors are taking over large areas of lands around the globe, to meet expanding demand for both food and bioenergy crops. According to the International Food Policy Research Institute (IFPRI), foreign investors are negotiating deals on up to 20 million hectares (49 million acres) of land in Africa, Asia and Latin America. It is often claimed that such land is "marginal, abandoned and degraded" whereas in fact it may be used by pastoralists, small food producers, indigenous peoples and local communities.

The impacts are clear: people are expelled from their land and become food insecure, women and their families lose access to traditional bio-energy for local use, ecosystems are degraded, fragmented and lose their resilience and capacity to regenerate, water supplies are damaged and depleted, biodiversity is lost and bioenergy plantations effectively prevent regeneration of native ecosystems on these lands.

(4) Industrial bioenergy is increasing the development and use of new crops and potentially dangerous technologies. Genetically engineered crops and trees are proposed as solutions to everything from increasing the speed of growth, to making crops and trees easier to process for energy production. Eucalyptus, poplar and other tree varieties are being developed and tested to grow faster and contain reduced lignin (a structural material in wood that interferes with processing), and newly developed corn varieties have been engineered so that both grain and stalks can be converted to ethanol, among many other examples. Modified trees and crops have the potential to contaminate wild relatives and seriously threaten biodiversity.

Synthetic biology promises the construction of "synthetic" microbes to aid in digesting plant cellulose for industrial refining and conversion to biofuel and "bioproducts". However, synthetic biology is largely unregulated and the consequences of releasing synthetic organisms on ecosystems are entirely unknown.

Invasive species: many biofuel crops are known to be invasive species, e.g.: switchgrass, miscanthus, jatropha, moringa, eucalyptus, willow, yet cultivation of these plants is being widely encouraged and supported.

### **What should happen at COP 10 and beyond?**

Despite all these increasing impacts and threats to biodiversity, language in the CBD actually encourages biofuel development by speaking of the "need to promote the positive and minimize the negative impacts of biofuel production and its use on biodiversity". Rather, Parties must stick close to the fundamental principles of the CBD, especially those related to Indigenous Peoples' rights, the precautionary principle and ecosystem approach.

Parties at COP 10 must:

- Reaffirm that biodiversity and ecosystems are basic to our survival and their resilience and

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restoration is fundamental. All forms of government incentives for industrial bio-energy should be classified as perverse incentives and must be removed.

- Support a moratorium on commercial use and environmental releases of synthetic organisms as partly proposed by SBSTTA 14.

- Not give any incentive to large-scale biofuel production.