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Don't Expect Too Much from Biofuels

In the latest Agricultural Outlook, the OECD and FAO warned against rising food prices because of growing demand for biofuel crops. Brice Lalonde, former French environment minister and chairman of the Roundtable of Sustainable Development at OECD, weighs the pros and cons of mass producing biofuels.



"The most effective way to use biomass is probably to burn it. "

Brice Lalonde, Chairman of the Roundtable of Sustainable Development at OECD
(Photo: OECD)

Why have biofuels been getting so much criticism lately? The problem we found is that if you have more and more biofuel, you are going to compete with food. The first reason is simple: you need land to grow food and biofuels and you don't have much more land available. The second reason is that food and biofuel production use the same feedstocks right now.

Are there specific crops and products that are affected?

Beer, for example. Carlsberg has issued a statement saying that the prices for feedstock are getting very high and that they cannot contain the price of beer, which will have to go up. The price of wheat and other cereals is also very high. It is not true for sugar, though.

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You can make biofuel from sugar cane, corn, rapeseed, and many other plants. Are all methods essentially the same, or are some more efficient than others?

You can definitely make distinctions. There are lots of factors involved. The main issue is that biomass grows twice as fast in tropical countries than in temperate countries when the plants have enough water. This is especially true for sugar cane. This is also because in order to produce ethanol, you have to distil sugar, and this means you have to put energy into the process. That is why the total energy output of ethanol

coming from beet fruit, corn, cereals, and starch is not very high.

With sugar cane, however, you can use the cane byproducts for heating so the plant not only provides the sugar, but also the energy needed to heat up the feedstock. So, yes, there is a big difference. The same also applies to palm oil compared to rapeseed or sunflowers. The yield of palm oil is about four times as high as what you can get from rape or sunflower seeds, but this is also a special case, because palm oil is such an important food product.

Environmentalists say that biofuel production destroys the environment. What have you found out about that?

Well, there are certain spill-over effects. If you grow sugar cane, for example in Brazil, on a fairly marginal land which is not important for agriculture, say pasture land, that is okay. But if you do that, you displace cattle ranches. So you must raise the cattle elsewhere, and you probably also have to grow soy beans to feed the cattle. So you displace these cattle towards the North, and when you go North in Brazil you will end up cutting down the forest.

There is also some debate about whether biofuels produce energy at all, given that you need so much energy to grow and distil them.

It is true, but only to a certain extent. The question of sustainability for biofuels is roughly the same as for agriculture. You have to put fertilizers, you have to irrigate, you have to have energy inputs. Fertilizers are probably one of the biggest energy inputs. But nevertheless, sugar cane and palm oil do produce energy. All the wheel-to-wheel life-cycle analyses show that. The most important thing, however, is to save energy and be more efficient. Biofuel production is just one of a large array of policy decisions that have to be taken. and you must not bet all your resources on one thing.



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How sustainable are biofuels? See five of the most important crops and whether they help to fight climate change

There is talk of a second generation of biofuels. Could that be an alternative?

The second generation of biofuels seems more interesting, because competition with food will be less. The first generation is sugar and vegetable oils coming from direct agricultural production; the so-called second generation is cellulose and eventually any other sort of biomass. It is expected that it would not compete with food, because feedstock will be taken from switch grass, bushes, and eventually from trees, straw, and waste.

But the industry is not yet ready. If you want to produce alcohol from cellulose, which is a complex sugar, it is difficult to degrade. The technology is not there for the time being, and will probably be expensive. Some people believe that technological improvements will come fast and that we will get to the second generation of biofuels much faster than we think. They believe that money and technology will save everything. We are just saying, be careful and do not expect too much from biofuels.

If you compare biomass power plants to biofuel production, what is more efficient?

You have a much more efficient output with biomass power plants, especially if you use them for energy and heat. That's another issue. The most effective way to use biomass is probably to burn it. That has been done for centuries and centuries, but if you turn it into liquid fuels, it becomes more complicated, of course.

The report also mentions market liberalization for biofuels. What would that mean?

Basically, tropical countries are more efficient producers of biofuels. This means that the biofuels industry in Europe and the United States has to be heavily subsidized to be competitive. We should open the biofuel market and stop subsidizing biofuels, otherwise it is not fair for the developing countries. But we need a certification system to ensure that biofuels are harvested and produced in a sustainable way for the environment.

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