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## Response

# Through biofuels we can reap the fruits of our labours

If we use sewage, refuse or agricultural waste, biofuels can be sustainable - and cut poverty, says Ron Oxburgh

Lord Oxburgh

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George Monbiot has gone too far. Whatever sympathy one has with his campaign against some present-day biofuels, it is absurd to say none are sustainable (Apart from used chip fat, there is no such thing as a sustainable biofuel , February 12).

A month ago the Royal Society published a thoughtful paper, Sustainable Biofuel: Prospects and Challenges, which concluded that, done carefully, biofuels could reduce greenhouse gas emissions from transport. There certainly are sustainable biofuels, and producing some of them can help alleviate poverty in developing countries.

Monbiot seems to assume that biofuels can be produced only from crops that are planted for the purpose. This is far from the truth. We shall be increasingly dependent on what we grow not only for food but also for fuel, and for raw materials for industrial processes. This will mean that the whole plant is used, with different parts meeting different needs, and the term "agricultural waste" will disappear from our vocabulary - in effect a return to the more integrated agricultural production of earlier centuries.

In so far as he might argue that we are not there yet, Monbiot would be right. He states: "When land clearance ... is taken into account, all the major biofuels cause a massive increase in emissions." If a crop is grown solely as a fuel and on agricultural land displacing food production, or is cultivated in such a way that the emissions from producing it are greater than those of the fossil fuel, it is clearly a nonsense. Perverse US agricultural subsidies promote this today. But this is not the only route.

Biofuels can be made from anything that grows or was produced from something that grew. Some "agri-wastes" (eg straw) can be converted to the petrol substitute ethanol. Probably the largest untapped source of bioenergy is the organic content of urban and industrial refuse and sewage. Obviously as much as possible should be recycled, but - although it is not easy, as Monbiot points out - the remainder can be gasified either to generate electricity directly or to make fuel liquids. To state that "there is no such thing as a sustainable biofuel" is nonsense.

The company that I recently joined reforests degraded and marginal tropical land with a drought-resistant tree, *jatropha curcas*. After planting in small hand-dug holes it then takes five years before full fruiting. The fruit contains seed that can be crushed to give non-edible oil for use directly in heavy diesels or to be refined into high-specification fuel. The protein-rich seed cake left after oil extraction is useful too.

Cultivation and fruit picking by hand is labour-intensive and needs around one person per hectare. In parts of rural India and Africa this provides much-needed jobs - about 200,000 people worldwide now find employment through *jatropha*. Moreover, villagers often find that they can grow other crops in the shade of the trees. Their communities will avoid importing expensive diesel and there will be some for export too.

Mr Monbiot, there are biofuels and biofuels. Some make good sense.

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