Save a burning planet with Charcoal? Beware the biochar hype!

Biochar is a 'green-sounding' term for charcoal, specifically for fine-grained charcoal which is added to soils. The process by which the charcoal is usually made (called pyrolysis) also yields two types of fuel which can be refined further into agrofuels for road transport and, potentially, for airplanes.

What do biochar advocates want?

Biochar advocates are organised in the International Biochar Initiative and in regional groups. Most of all, they want carbon credits for biochar, although they are keen on subsidies, too. If they succeed, then large amounts of funding would go towards charcoal and it would become eligible as another way of formally 'offsetting' (and perpetuating) more fossil fuel burning in the North.

A recent article by leading biochar advocates, published in science journal Nature Communications, claims that 556 million hectares of land could be 'available' for growing crops and trees to make biochar. The authors also speak about 'residues' which in practice is likely to mean more carbon offsets and subsidies for palm oil, sugar cane and other plantation companies .

What is biochar supposed to do?

Biochar advocates claim that it can help to solve just about any global crisis, from climate change to deforestation and hunger. They claim that by tilling the charcoal into soils, we can sequester carbon and help address global warming, and that it will make soils more fertile, prevent agro-chemical runoff and have other magical properties for agriculture. But this ignores all of the carbon emissions linked to biomass burning and land use changes. (whether from industrial tree plantations or sugar cane monocultures).

More land-grabbing?

Today, all biochar projects are small scale because there are no proven benefits and biochar is not commercially viable without subsidies. As with agrofuels, once policies and subsidies are put into place, we can expect the rapid development of biochar plantations, pyrolysis plants and biochar trade. The arguments and land figures used by different biochar advocates are much the same as what has been claimed by the agrofuel lobby: Vast 'abandoned croplands' (which in reality are often anything but abandoned and are home to millions of people), tropical grasslands to be turned into plantations, etc.

Where does the idea come from?

Claims about charcoal in soils are largely based on the success of "terra preta", fertile and carbon-rich soils created by indigenous farmers in Central Amazonia 500-2,500 years ago. Those farmers used a combination of biodiverse farming, highly diverse organic residues as well as charcoal over very long periods. Biochar advocates want us to believe that those complex, locally adapted techniques can be replicated over-night by stripping the soil of biomass or growing more industrial plantations, charring vast amounts of biomass and ploughing it into the soil. This is bizarre and there is no scientific evidence to back up those claims. There are no long-term field studies at all, just short term studies, many on sterile soils and even those do not provide consistent results.

Will it work?

Different types of biochar will have different impacts on different soils and with different crops. ***Nobody knows enough to predict the impacts on crops if farmers use biochar***. Although there are examples of communities which have traditionally used charcoal in agriculture, this tends to be together with organic fertilizers and the charcoal is not identical to that produced in modern pyrolysis plants. Fresh charcoal contains ash and nutrients, so at first it can sometimes (but not always) boost plant yields, as farmers practicing swidden agriculture have known for thousands of years. However, beyond this early period, biochar is not a fertiliser and cannot improve fertility on its own – if all the plant residues are stripped and charred rather than returned to soils as compost, this means more dependence on fossil-fuel based fertilisers.

As for climate change, it is not known how much of the carbon in charcoal will remain in soils, or for how long. In a recent trial in Quebec, two years after adding biochar to some fields no more carbon was found there than on fields where no biochar was used. It is known that biochar can turn some of the carbon already in the soil into carbon dioxide. There is the strong possibility that tiny charcoal

particles, like dust, will get into the air where they would have a very strong global warming impact. ***Even at a small scale, the climate impacts are unknown and could be negative***. Other claims are equally unproven.

Bad for your health?

Charcoal dust is a known cause of pneomococoniosis or 'black lung disease', which can be life-threatening.

One actually convincing claim by biochar advocates is that biochar prevents (some) agro-chemical residues from leaching into water. Less water pollution here means more toxins in soils and food.

Any toxins in biomass are concentrated in charcoal, whether they are heavy metals from air pollution which are absorbed by trees, chemical wood treatments or pesticide residues.

Who lobbies for biochar?

The International Biochar Initiative (IBI) is made up of small start-up companies, soil scientists, many of whom have links to companies, two NGOs and research institutes including Embrapa in Brazil. ConocoPhillips is at present the only multi-national company known to actively support biochar at present.

At the international level, the United Nations Convention to Combat Desertification (UNCCD) has been strongly promoting biochar carbon credits, together with the IBI.

What is likely to happen?

The IBI's main aim is to get biochar into carbon trading mechanisms. They would particularly like it to be included in the Clean Development Mechanism (CDM), and this could happen any time after 2012 but has not happened yet. Their immediate aims are to get it into voluntary carbon credits and into the Alberta Offsetting System. That is basically a tar sands 'offset' scheme and the IBI has teamed up with ConocoPhillips Canada, a leading Canadian tar sands investor. The IBI has also appointed a leading advisor to the Alberts Offsettting Scheme, Keith Driver, to draft their first 'biochar standards'. Those will be industry standards aimed at making biochar more likely to be included into carbon trading mechanisms. So biochar could soon be used to 'offset' and thus boost destructive tar sands investments!

At Cancun, proposals to consider including soil carbon as well as a whole range of tree and crop plantations and industrial logging ('forest management' into the CDM will be discussed. Those are being discussed under the term LULUCF – Land Use, Land Use Change and Forestry. If proposals are adopted then biochar CDM credits could become a reality after 2012 . Furthermore, the Global Research Alliance on Agricultural Greenhouse Gases has been set up by 20 governments which is expected to develop its own methodologies, for 'soil carbon sequestration', which could include biochar as well as another highly dubious soil carbon sequestration techno-fix: No-til, which usually involves GM soya and corn.

In ***Australia***, the government is proposing a 'Carbon Farming Initiative', which is a new offset scheme for agriculture and forestry without any emissions cap. Biochar could well be included.

In the ***US***, biochar bill, called WECHAR has been proposed which would lead to major government funding for biochar.

More information

An international declaration: 'Biochar' – A new big threat to people, land and ecosystems, signed by over 150 organisations, can be found at www.rainforest-rescue.org/news/1150/declaration-biochar-a-new-big-threat-to-people-land-and-ecosystems
For more information about biochar see www.econexus.info/pdf/Agriculture_climate_change_copenhagen_2009.pdf (Chapter 5) AND
www.biofuelwatch.org.uk/docs/biochar_africa_briefing.pdf

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