

*International Biochar
Initiative 2008 Conference:*

Parallel Discussion Sessions Implementation



International
Biochar Initiative

Session D:
**Biochar and bioenergy from
purpose grown crops and
waste feedstocks.**
**Relevance for developed and
developing countries?**

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Questions raised during discussion

- **Should crops be purpose grown, or should the biochar industry seek wastes?**
- **Biochar ain't biochar! So, what properties do we want in biochar and how can this be influenced by the biomass?**
- **What are the differences in biomass requirements between pyrolysis for biochar and pyrolysis for energy?**
- **Do we have enough feedstock, or do we need to think outside the square? Yeast and algal feedstocks?**
- **What are some of the key benefits for waste management? Which wastes should we target for making "good" biochar?**
- **Competition for biomass (lignocellulosic)**
- **Can biochar be made from lignocellulosic and 1st generation biomass energy waste?**
- **Prejudice against feedstocks?**
- **Can we increase efficiencies?**
- **Energy/electricity to make it viable?**
- **Refer to sustainability of feedstock standard**

Discussion of questions

- **Should crops be purpose grown, or should the biochar industry seek wastes?**

Biomass resource (waste) is readily available and can be used, depending on equipment, etc. It also has the benefit on landfill avoidance (economic driver).

Clean biomass can be considered to avoid difficulties in application/ implementation/regulations.

Terminology: should be defined as biomass resource and not waste.

We should not limit ourselves to an individual/single market. Individual factors that count and that are financially viable.

Competition for biomass resource eg 1st (ethanol) and 2nd generation (lignocellulosic). Still undefined. Don't know what the competition is.

Discussion of questions

- **Biochar ain't biochar! So, what properties do we want in biochar and how can this be influenced by the biomass?**

All works but works differently (200 °C, 300 ° C, 500 ° C...) depending on the purpose. For CO₂ sequestration we need a biochar that doesn't degrade. Torrefacted material works well in developing countries.

Properties may be driven by energy and waste management (economically and cheaply) rather than a good biochar for agricultural amendment

Never able to compete carbon credit with energy credit price. Risk between biochar in soil (food) or char for energy... However, it is NOT a conflict, it's a MARKET.

Choose energy or char? Optimise depending on demand !

Guidelines are needed for a classification of biochar. For that we would like IBI intervention.

Discussion of questions

- **What are the differences in biomass requirements between pyrolysis for biochar and pyrolysis for energy?**

Global inventory? Some say yes, some no.

Availability of biomass feedstock: energy or biochar

We should remember that NO other technology can do what this technology do. Technology could be flexible depending on demand.

Biochar in soil is C negative, and some feel that we should focus on that. However, just biochar for soil may not be enough. Others think that best mechanisms is through energy. What are drivers to make it happen?.

We compete. Renewable energy incentives make pyrolysis for energy more competitive...

Discussion of questions

- **Do we have enough feedstock, or do we need to think outside the square? Yeast and algal feedstocks?**

Not enough infrastructure and biomass.

So we need to grow energy crops fast to produce enough feedstock. Including novel approaches (such as algae)

Feedstock then will come down in price.

Remaining questions raised

- What are some of the key benefits for waste management? Which wastes should we target for making “good” biochar?
- Competition for biomass (lignocellulosic)
- Can biochar be made from lignocellulosic and 1st generation biomass energy waste?
- Prejudice against some feedstocks?
- Increase efficiencies?
- Energy/electricity to make it viable?
- Refer to sustainability of feedstock standard

Other issues discussed

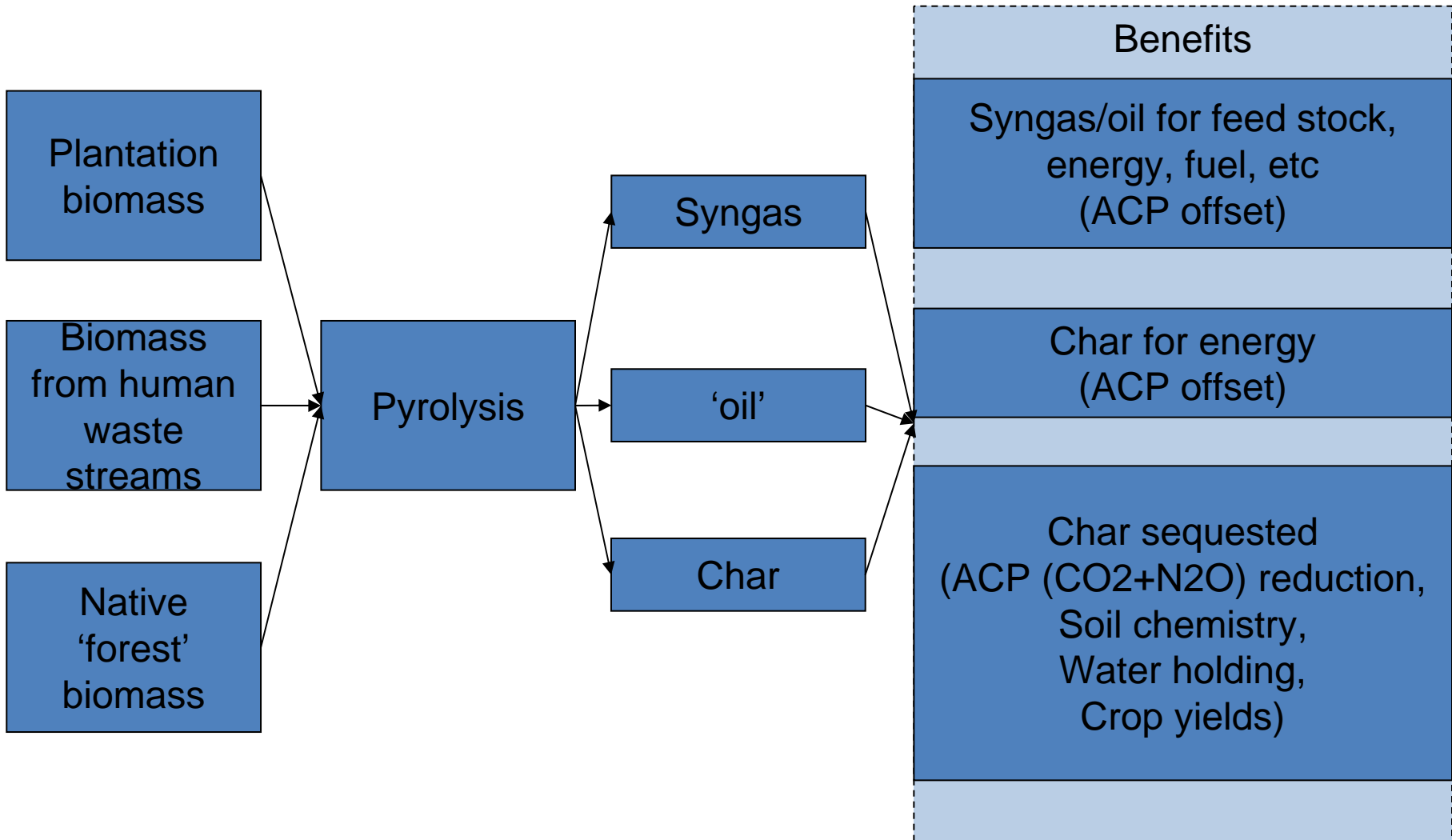
- outputs need to be peer review. Quality assurance. Keep in mind place in agriculture and soil sciences.
- Not all crops have to grow on arable land. Energy crops can grow in other land (such as brown sites)
- Need new plantations (e.g. Ireland) lots degraded land that could be brought back into production. Example: in dry land in other places in Europe. Help with land degradation (land

Outcomes. Recommendations to IBI

- Role of biochar versus biofuel. Risk competition with biotechnologies (2nd generation fuels). Residues from biofuel tech could be beneficial to soil as well.
- Integrated systems are important such as alternative energy+agriculture. Add more value. Get everything out of the system.
- Investigate how much money is going to CDMs. If some diverted to biochar development, what would the impact be?
- From studying to doing it. Many projects at the verge, that will help strength IBI.
- Safeguards to make feedstock available.
- Improve quality of biochar type for soil application. Need research on activation of slow release of fertilizer. More advantage for farmers. Work on how biomass will improve properties of biochar.
- What properties do we want as soil amendment.
- Make it and drop it, because expensive to transport it.
- Different feedstocks: Need IBI to facilitate communication between researchers (results of feedstocks and what they do).
- Biochar not only from pyrolysis. Also from other processes. Flow of feedstocks shows different quality effects. IBI could produce database to help (inventory?).
- 2 major issues: emissions and reduce them. IBI 2 challenges: industry off the ground (small challenge) and the 8GT Carbon challenge (big challenge).
- IBI Guidelines for biomass and biochar (Ethical and environmentally sound)

What is Biochar?

Where does IBI fit?



ACP = Atmospheric Carbon Pollution