



Promoting negative emission technologies (NETs) for tackling climate change using an experimental citizen science and public engagement approach.

Rebecca Hood-Nowotny, Elisabeth Ziss , Andrea Watzinger, and Anna Wawara

Institute of Soil Research, University of Natural Resources and Life Sciences (BOKU), Peter-Jordan-Straße 82, 1190 Vienna, Austria (Elisabeth.ziss@boku.ac.at)

In this science communication project Biochar NET-2-U-2, we sought to make the public aware of climate change combating nature-based negative emission technologies (NETs), specifically making tangible links to the Paris-COP (Conference of the Parties) Four per Mille campaign, which is an International Soils for Food Security and Climate Change initiative, which promotes soil based carbon sequestration as one of a basket of measures to alleviate the impacts of climate change. Biochar addition to soil fits well into this framework. By making links with this global initiative we endeavored to engage the public in a horizontal dialogue on climate change and to inspire attitude and behavioral changes, working both at local and global scales. In particular, we sought to highlight and publicize the role science plays in ensuring that these potential technologies, such as biochar addition to soils are risk free and good for humanity, and that decisions on their use are grounded in evidence based findings.

We conducted public outreach in the at larger public events aimed at urban and rural, wine and (small/allotment) “klein” gardeners, “Kids Uni” etc. reaching out to a large number of people in Austria. We presented our Kon-Tiki biochar kiln in action; a flaming center piece to inspire fire-side discussions. We also presented our newly developed biochar-jiko, which is modified cook stove/micro-gasification unit being trialed in our ADA-research and development project in Uganda, which has the potential to address many issues at the Food-Energy-Environment Nexus. We underpinned this crowd pulling strategy with an interactive semi-permanent exhibition about biochar and NETs, in Austria and beyond. Moreover, at each event we encouraged the public to participate in our pot-scale Citizen Science endeavor; collaboratively investigating the benefits of using biochar to improve the nodulation of legumes and thus nitrogen fixation, we tested these effects using state of the art stable isotope techniques. This soil based tacit activity, drew and fueled interest from both young and old, facilitating discourse with the general public. We collected, collated, discussed and interpreted the data, we then brought together all the scientists and social actors we had engaged with in a Second Big-Biochar-Day where set out to foster a global outlook by making tangible links to on-going projects in developing countries. Finally, to archive and promote the insights gained at the Big Biochar Day event to a wider audience we produced a Pod-Cast, recording interviews with key players in the field of Biochar research in Austria.

We will present and discuss the successes and failures in our science communication approach.

<https://www.wabo.boku.ac.at/ibf/forschung/forschungsschwerpunkte/stable-isotope-group/projekte/biochar-net-2-u-2/>