processing (e.g. diverting material from landfill), biochar sales as an agricultural or horticultural product, sale of energy products and revenues from Carbon Offsets.
These platforms will be extremely diverse in nature and each will pose particular challenges both to project operators and protocol development. This presentation will identify key platforms and present a preliminary assessment of the offset potential of ach platform, the likely scale of the offset potential for each platform and an analysis of challenges that face the developers of each platform.

Identifying Challenges and Advantages of Biochar Production in Climate Change and Agriculture School Advocacy Programme for Young Farmers in Lagos

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Background
The school advocacy programme is an initiative of the Ministry to get young people practically engaged in Agriculture, protecting the environment using environment friendly ways in waste management, sustainable use of our natural resources and provide adequate agricultural trainings for young farmers which are vehicles of change for larger society, improving their awareness on mitigation of the impact of climate change in different schools, in Lagos Surveillance report found out that most of the youth under the programme are not aware of the importance of biochar use in mitigating the impact of climate change in the state.
Objectives: To assess the knowledge of youths on biochar production, in mitigating the impact of climate change and integrate biochar training into the climate change school advocacy programme for young farmers in the state.
Methods: 300 youths were trained from 6 educational districts on biochar production a carbon rich product from biomass, such as wood, manure or leaves, and other waste generated in the school communities littering the environment with high Global warming potential (GWP). Each groups produced biochar in the environment used to sequester carbon and serve as renewable energy production and serves as a valuable soil enhancer, thereby discouraging rainforest destruction, restore depleted soils, and put the Earth back in the black.
Agriculture and environment trainer provided youths sound, reality based information that increases their awareness about biochar. Agricultural fields, demonstration plots, posters and handbills with information on biochar and climate change were produced and distributed to youths.
Sessions encouraged youths to recognize the importance of biochar in mitigating the impact of climate change protecting the environment for food security and the future of the states' environment.
Result: According to the study, youth were interested in innovative approaches and technologies in mitigating and adapting to climate change. Only about 35 percent of the young men and 39 percent of the young women understands the concept of climate change. It was also determined the relationship between agriculture and climate change, methods and technologies for combating and mitigating climate change, by using biochar for carbon sequestration in a stable soil carbon pool and reducing green house gas emission GHG.
Conclusion: Integrating biochar production technologies into the school advocacy programme will help in combating climate change, ensure sustainable environment and favourable soil environment that is safe and friendly for plants environment and soil living organisms. Since youths are the future of tomorrow there is the need to train them on the importance of biochar in reduction of emission from waste and carbon sequestration while combating different environmental problems and climate change.

Greenhouse gas Mitigation by Different Types of Biochar

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In this study untreated soils were compared with three different types of biochar in terms of emission of carbon dioxide (CO_2) and nitrous oxide (N_2O). Untreated soils were sand (C = 1.3%), Terra Preta (C = 4.4%) and peat (C = 13.2%). Thermal conversion of poplar and pine wood yielded biochar from hydrothermal carbonization (HTC) (C = 56.9%), from fluidized bed gasification (C = 75.4%) and from pyrolysis (C = 79.9%). Biochar substrates were mixed with the carbon-poor sand for simulating real conditions after application of biochar to farmland. Emission rates of CO_2 and N_2O were measured from the rewetted substrates by gas chromatography after incubation in 125 ml glass vessels in an atmosphere of air for 72 hours.
The carbon content of the soils showed a clear relationship to the CO_2 emission, ranging between 0.6 mg CO_2-C kg^{-1} h^{-1} for pure sand and 17.5 mg CO_2-C kg^{-1} h^{-1} for peat. The C emission rate of the biochars ranged between 1.0 and 8.3 mg CO_2-C kg^{-1} h^{-1} and did not correspond with their total C contents. Since the CO_2 emission rates of the biochars under study were higher than that of the pure sand their carbon stability might be questioned. Long-term incubations are running to get more information about the carbon stability of these biochars.
Although considerable contents of total N and extractable ($CaCl_2$) nitrogen were found in the biochars under study, enhanced N_2O release could not be observed within our 72 h incubation experiment. N_2O emission rates in the three biochar/sand mixtures decreased from 31.6 µg N_2O-N kg^{-1} h^{-1} (sand) to 12.1 µg N_2O-N kg^{-1} h^{-1} (sand/pyrolysis biochar), 3.5 µg N_2O-N kg^{-1} h^{-1} (sand/gasifier biochar) and 0.6 µg N_2O-N kg^{-1} h^{-1} (sand/HTC biochar).
Since N_2O has a global warming potential 298 times higher than that of
CO_2, this positive effect of biochars may play an important role in mitigating CO_2 equivalents, which has to be taken into account for a balance of greenhouse gases emitted after biochar is applied to soil.
The use of biochar in soils opens the question of possible ecotoxicological side effects. First bioassays with invertebrates had shown that the contact with extracts from HTC biochar did not affect the reproduction of the nematode *Caenorhabditis elegans*.