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East of England Biochar Report Released

A report released by EEDA today suggests that biochar application to soils in the East of England could have a very significant impact on crop profitability in the region. These benefits, if realised, could have a significant knock-on impact on job creation and economic activity across the region. The report also highlights that biochar could potentially play a major role in tackling climate change via the long term removal of carbon from the atmosphere and by reducing the emissions of other greenhouse gases from the soil.

The report entitled "Biochar and Carbon Sequestration: A Regional Perspective" was written by authors from the University of East Anglia's Low Carbon Innovation Centre with assistance from Cranfield University's National Soil Resources Institute and Collison and Associates Ltd. This is the first time such a comprehensive study of biochar has been undertaken in the UK context and it places the East of England at the forefront in respect of strategic decision making on bioenergy, biochar production and biochar benefit for agriculture.

Biochar is the carbon-rich product that remains when biomass is heated to high temperatures in reduced oxygen conditions. Charcoal is one form of biochar familiar to everyone. Almost any kind of biomass can be treated to create biochar including wood, bioenergy crops, wood waste, and biowaste from agriculture, domestic waste or sewage sludge. The various types of feedstock would produce biochar yields that could have a variety of uses.

Biochar is believed to have a lifetime in soils of hundreds or thousands of years as evidenced by the existence of so-called dark earths in Amazonia and elsewhere that were created by early agriculturalists. Unlike compost or other biowaste that is presently applied to soils to assist fertility, and which will decay in just a few years, biochar appears to permanently sequester (keep immobilised) the carbon that growing plants have absorbed from the atmosphere.

Trials of biochar in South America and elsewhere have shown a positive impact of biochar on soil fertility and crop yields. Benefits reported include enhanced water-retention by soils, reduced fertiliser requirements, and reduced emissions from soils of the potent greenhouse gas nitrous oxide. The report identifies the East of England's light and sandy soils, that require high water input and high fertilizer input and on which many high-value crops are grown, as potentially showing greatest benefit from biochar application.

There is presently no supply chain of biochars produced by modern methods of gasification or pyrolysis and little work has been done in the UK or Europe to evaluate the potential of biochar. The report emphasises the importance for this region of establishing a biochar production capability and of organising scientific trials to understand the mechanisms via which biochar enhances soil properties and field trials to demonstrate the impact of biochar in practice.

EEDA presented the report, and the authors outlined the findings of the report, at a stakeholder meeting at the University of East Anglia, Norwich, on 29 May. The

audience, representing the agriculture and food industry, included the Environment Agency, Natural England, the Soil Association and Defra, as well as researchers from several UK universities and agricultural colleges endorsed the conclusions of the report and there have already been offers to host field trials.

Johnathan Reynolds, Sustainable Development Manager at EEDA said: "We are delighted to have such a thorough and thought-provoking report to disseminate. As a predominantly rural region with high economic dependency on agricultural sectors, the East of England is well-placed to become a leader in this newly-emerging area and has the expertise, experience and network in place to maximise the potential of biochar."

Dr Bruce Tofield of the University of East Anglia's Low Carbon Innovation Centre and one of the report's authors said: "There is no doubt that biochar could have great potential both to help combat climate change and also to help agriculture and its impact on the environment. At UEA, across the Norwich Research Park, and more widely in the region we have an unrivalled resource to help understand how biochar actually works in the soil and to work with the agricultural sector to maximise the economic and environmental benefit to the region."

You can find the report at: <http://www.uea.ac.uk/lcic/Biochar>

Notes for editors

The Low Carbon Innovation Centre serves as the hub for all UEA's commercial carbon-related activities. LCIC specialises in novel approaches to CO₂ emissions reduction through the application of technology and the stimulation of behavioural change. Its offerings include Carbon Connections, and the Carbon Reduction Programme (CRed).

As befits a University with a world-leading School of Environmental Sciences, the University of East Anglia is a research-led University and has led the way in the sustainable development of its campus. It has created a number of low-energy buildings that have been held up as exemplars for the United Kingdom and has reduced carbon emissions by 53% since 1990. When its pioneering biomass plant comes on stream at the end of 2009, emissions will be cut even more significantly, allowing UEA to achieve the Kyoto target of a cut of 60% in its emissions from energy usage by 2011, years ahead of its own ambitious target of 2025.

Cranfield University's National Soil Research Institute is a leading centre in soil science specialising in understanding soil systems, soil resources, pedometric methods, soil management and conservation.

Collison and Associates Ltd - lead by consultant Martin Collison, a farmer and rural consultant, specialising in rural development issues.

Contact:

Matt Dolan, Marketing Manager, Low Carbon Innovation Centre, UEA
Tel: 01603 591358 Email: m.dolan@uea.ac.uk

Laura Chellis 19th June 2009