WHICH POLICY FOR BIOCHAR DEPLOYMENT IN SOUTHERN EU? AN INTEGRATED APPROACH IS POSSIBLE

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Intro the subject – summary of content – unique aspects – specify relevance to the conf. References at bottom

The scope of the present paper is to address possible policy schemes that could potentially enable widespread diffusion of biochar in the EU Mediterranean area. In fact, despite the rapid development of biochar technologies and processes, the actual exploitation is mostly dependent on the actual support scheme that is in place. However, one single support instrument will unlikely be sufficient to cover the costs connected to biochar production and use: moreover, developing totally new policy instruments is a very long and time consuming process. The approach of the present work is to investigate the possibility of combining different EU policies that are already in place (with only minor adaptations), and analyze if a combined action would allow for achieving economic sustainability and thus commercial deployment of biochar in agriculture, favouring decentralized production of biochar.

The EU legislative elements that are considered here refers to three main pillars: the EU agricultural policy, the EU Carbon sequestration & storage policy (seen in the framework of the COP21 agreement and its core goals), and the EU renewable energy policy. The regional focus of the analysis is the Mediterranean area.

The first policy component and basic idea of the proposed approach is to utilize biochar as a mean to fight the loss of land that is occurring in the EU, and in particular in the Southern EU/MED region, due to desertification and salinization. The fundamental goal is to avoid land loss through biochar use before land abandonment actually occur. Desertification and salinization is in fact a well-known process, which evidence is available and large number of studies and assessments have already been carried out. There is thus no reason to delay the development and implementation of precautionary policy measures that can tackle this effect before it happens. This action can be carried out mobilizing EU Common Agricultural Policy instruments.

The second policy component could be derived from Climate Change mitigation, and the 2 °C issue. As clearly stated at COP21 in Paris, it is not anymore sufficient to think and act in terms of carbon neutral projects, but rather carbon negative actions are necessary, in order to achieve the goal.

The third component is given by the development and implementation of EU policies in the field of bioenergy and bioproducts, or in other words the so called green and circular economy. Renewable Energy Directives, and the Circular Economy Package, could support the intervention on marginal or pre-marginal land by leveraging resources for green actions.

Biochar use in Southern EU areas could meet the key goals of all these policies.

In fact, a main effect of biochar use in the soil is to keep the water moisture, making this better available to the crops and avoiding loss in the atmosphere and the soil (together with nutrients, as Nitrogen). Moreover, soil is the second most abundant C sink after the oceans: biochar is a clear mean to sequester and store C, with is a technically feasible a C-negative action that goes in perfect agreement with the EU (ETS) and International (COP21) policy for the coming decades. Finally, the allocation of these lands to the cultivation of feedstock necessary for to bioenergy and bioproducts can generate financial resources to implement concrete actions. Low ILUC crops (according to the current EU RED2 proposal from the European Commission) could be allocated in these lands for a limited period of time (e.g. 5 or 10 years) so to mobilize the financial resources of the green economy, in addition to those from agriculture and C-sequestration policies.

The scope would thus be to cover the additional costs for producing and deploying biochar and derived products in the soil of land that is known to be at desertification/salinization risks in the next decades, an action that otherwise farmers would never do by themselves.

A cost model based on decentralized biochar production has been elaborated, and some preliminary case studies developed, based on EU policies that are in place and targeting post-2020 scenario. Results are encouraging, with sustainable cost projections at around 200-400 €/t of biochar delivered on site. A dedicated R&D project should then target on-field demonstration to consolidate these figures and conclusions with sound experimental data.