BIKE BIOFUELS PRODUCTION AT LOW - ILUC RISK FOR EUROPEAN SUSTAINABLE BIOECONOMY

BIKE BRIEFING NOTE #8

BIKE is a Horizon 2020 project whose objective is to support uptake of the low ILUC-risk concept for biofuel feedstocks. This series of Briefing Notes seeks to explore issues in the EU policy sphere which may impact low ILUC-risk value chains and identify opportunities for fostering an enabling policy environment.

Sustainably delivering carbon farming and low ILUC-risk

Cultivation of *Camelina*, used as sequential crop (Greece).

Soils have considerable potential as a carbon sink. This has been recognised by the European Commission, which is developing a certification framework to incentivise climate-friendly land management practices that build soil carbon. At present, the Sustainable Carbon Cycles Communication[i] and the proposed Carbon Removal Regulation[ii] are the two principal texts establishing the Commission's vision for carbon farming mechanisms; a succession of future acts and amendments is expected to hone this vision, and provide implementation details.

Another Briefing Note in this series[iii] highlights the cross-over in methods and objectives between this developing soil carbon framework on one hand, and low ILUC-risk biofuel feedstock production on the other, arguing that the low ILUC-risk system and associated farming practices could contribute to building soil carbon on both unused land and existing agricultural land. This Briefing Note examines how complementary sustainability criteria imposed under the two systems could streamline certification requirements, and potentially promote stakeholder uptake.

Safeguarding sustainability outcomes

Both the low ILUC-risk provisions and the proposed Carbon Removal Regulation identify potential unintended side-effects arising from their core goals, and include language intended to provide assurance that negative outcomes can be avoided. There are some cases in which additionality measures associated with low ILUC-risk projects naturally overlap with measures that can improve soil carbon and quality. This will often be the case, for example, when cover crops are introduced to systems where no cover crop was previously used. In other cases, however, changing farm management practices in pursuit of low ILUC-risk feedstock production may introduce environmental stresses, for example through agricultural intensification, or by increasing soil degradation through over-harvesting of intermediate cover crops. Similarly, some measures to increase soil carbon sequestration by de-intensifying agricultural practices could lead to reductions in crop productivity. These risks are addressed by the RED II requirement to "take into account the emissions where additionality measures lead to increased fertiliser and herbicide use"[iv], and to[v]:

> *"not compromise future growing potential by creating a trade-off between short-term output gains and mid/long-term deterioration of soil, water and air quality and pollinator populations. The additionality measures shall not result in homogenisation of the agricultural landscape through removal of landscape elements and habitats such as solitary trees, hedgerows, shrubs, field edges or flower strips."*

The Carbon Removal Regulation, for its part, also safeguards against unintended consequences, referencing ILUC as an example[vi]:

> *"Relevant greenhouse gas emissions that should be taken into consideration include direct emissions, such as those resulting from the use of more fertilisers, fuel or energy, or indirect emissions, such as those resulting from land use change, with consequent risks for food security due to displacement of agricultural production."*

These two excerpts suggest that, in principle, closer integration of the carbon farming and low ILUC-risk frameworks could be a natural complement to both: soil carbon crediting would give low ILUC-risk projects assurance that they are not increasing land-based emissions; and certain types of carbon farming projects could use low ILUC-risk certification to show that indirect displacement effects have been avoided. (Indeed, certain low ILUC-risk measures may improve productivity across the board.)

Following this last point, three broad categories of carbon farming projects are identified. The table below outlines their connection to the low ILUC-risk framework.

Marginal land prepared for *Brassica* cultivation (Greece).

1. Cases in which carbon farming projects could have a positive impact on biomass production	
→	E.g., introducing cover crops and inter-crops in sustainable rotations; soil enrichment on agricultural land, or on unused land which is brought into agricultural use. In many cases, well-designed interventions to improve soil carbon and structure can increase the productivity of land, allowing increased yields for a main crop and sometimes delivering a complementary second crop. These types of projects feature the strongest natural overlap of the carbon farming and low ILUC-risk systems.
✓✓	Here, low ILUC-risk certification of additional yield, or of production from unused and abandoned land, could provide a guarantee that carbon farming projects have avoided creating ILUC effects.
2. Cases in which carbon farming projects would have no impact on biomass production	
→	E.g., soil enrichment on unused land which remains unused
X	For projects on purely non-agricultural land, there is no connection with the low ILUC-risk system.
3. Cases in which carbon farming projects could potentially have a negative impact on biomass production	
→	E.g., fallowing of plots; lower tillage systems; reducing the main cropping period to allow a cover crop to be harvested. Prioritising soil carbon formation could be associated with a reduction in productivity from an existing cropping system. For example, in some cases conservation tillage systems could lead to reduced yields[vii]; or, introducing a productive intermediate crop could be associated with limiting the growth window for a main crop which has the potential to reduce main-crop yields.
✓	The low ILUC-risk methodology includes a mechanism for quantifying any yield impact arising from changing practices. These elements of the existing low ILUC-risk methodology could be used as a basis to provide assurance that projects were not causing negative outcomes; this would also reduce the complexity of audits for farmers and auditing bodies by limiting the number of independent data-points in play.

Additionality conditions

The low ILUC-risk concept is founded on an 'additionality' principle: certification may be granted to projects only if they are implementing new and/or improved farm practices, and only if these practices go beyond business-as-usual management. Assessment of the last point is conducted through an 'additionality test', which requires that a project[viii]:

"becomes financially attractive or faces no barrier preventing its implementation only because the biofuels produced can be counted towards EU targets for renewable energy."

As it stands, this additionality test is satisfied if a project can show negative NPV (net present value)[ix] once renewable energy incentives are excluded. An additionality requirement is also included in the Commission's proposed Carbon Removal Regulation[x] (though this may change as the text develops):

"the carbon removal activity shall meet both of the following criteria:
(a) it goes beyond Union and national statutory requirements;
(b) it takes place due to the incentive effect of the certification."

While the nature of the "incentive effects" in item (b) are as yet undefined, this provision nevertheless seeks to ensure that the project is producing additional carbon savings that would not have happened anyway. (These requirements apply only to projects which are using a 'project-specific' baseline for carbon removals; see Briefing Note #7 for further discussion.)

Some innovative sustainable agriculture projects may become financially viable only if they are able to exploit the natural overlap between low ILUC-risk and carbon farming practices, and 'stack' the value signals from both systems. However, in the policy implementation details there is at present some ambiguity in how the two additionality systems will interact for such projects. The Commission should ensure that they are compatible even as they evolve.

Recommendations

Projects in the low ILUC-risk and soil carbon systems are required to demonstrate positive soil stewardship and avoidance of indirect emissions respectively. So far, what constitutes sufficient proof is left to the discretion of Member States, certification bodies and auditors. This Briefing Note has highlighted some instances where the two systems are well placed to provide mutual assurances, and we recommend that the Commission heeds these overlaps when formulating its rules.

For example, the Commission could update the low ILUC-risk text to include words to the to the effect of: 'A low ILUC-risk project shall be considered to have no negative impact on long-term soil carbon if it has received certification under the Carbon Removal Regulation'. The Carbon Removal Regulation could likewise be updated with: 'The potential impact of a carbon farming project on agricultural production can be assessed using appropriate elements of the low ILUC-risk methodology'; and, 'For carbon farming projects which claim a positive impact on agricultural production, low ILUC-risk certification will be taken as sufficient supporting evidence to show that ILUC effects have been avoided'.

The additionality test is another area where practical harmonisation of regulations and certification procedures is possible. If the Commission were to ensure mutually consistent approaches to additionality assessment in the Carbon Removal Regulation and in low ILUC-risk certification; this would allow projects to certify both carbon removals and low ILUC-risk status when the combination of the two incentives is needed for overall project viability.

Detail of *Camelina* plants (Greece).

I. Commission Communication COM 2021/800 (henceforth 'Carbon Communication').
II. Commission Proposal for a Regulation COM 2022/672 (henceforth 'Carbon Removal Regulation').
III. BIKE Briefing Note #7, "Soil carbon crediting and the low ILUC-risk system" (henceforth 'Briefing Note #7'); accessible at https://www.bike-biofuels.eu/briefing-notes/.
IV. RED II, Annex V, Part C, Point 6. Note that some quotations in this document have been lightly edited for flow: e.g., abbreviated without ellipses, or with changed verb tense. Please see the original reference for the exact quote.
V. Commission Implementing Regulation (EU) 2022/996, Annex VIII, §A (henceforth 'Implementing Regulation').
VI. Carbon Removal Regulation, Recital 8.
VII. Pittelkow et al., 2015, "When does no-till yield more? A global meta-analysis"; https://www.sciencedirect.com/science/article/pii/S0378429015300228.
VIII. Commission Delegated Regulation (EU) 2019/807 (henceforth 'Delegated Regulation').
IX. Implementing Regulation, Annex VIII, §B.
X. Carbon Removal Regulation, Article 5, Paragraph 1. See also Recital 11.

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