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Institute for Agriculture and Trade Policy's (IATP) response to the European Commission's "Call for evidence" for the initiative "Certification of carbon removals – EU rules"

The Institute for Agriculture and Trade Policy (IATP) welcomes the opportunity to give feedback on the planned carbon removal certification framework. We urge the European Commission (EC) to fundamentally rethink its approach on integrating carbon removals into the EU climate framework.

As stated in our response to the EC's public consultation questionnaire on EU rules for the certification of carbon removals, the Commission's approach to removals presupposes that the certification of MRV protocols generating carbon credits financed by carbon markets is a given. This approach would open the floodgates to more carbon offsets by formalizing removal credits that would allow polluters and governments to delay and obfuscate action towards real emissions reductions urgently needed this decade. It would also hinder the systemic transformation needed for EU's agricultural sector to transition to agroecology. Our comments below outline why this approach is flawed for agriculture. We urge you to take into serious consideration the "scientific evidence for reference" listed in the last section for any proposed framework on carbon farming and carbon removals.

I. Carbon farming offsets undermine urgently needed climate action

The Communication on Sustainable Carbon Cycles focused heavily on carbon farming practices as carbon removal solutions due to ecosystems' capacity to sequester carbon in soils, forests and biomass. It envisions the generation of carbon farming removal credits based on the quantity of carbon sequestered in natural carbon sinks. The credits could then be traded as offsets on a carbon market. Yet, this approach to carbon farming could be detrimental to the EU's climate mitigation efforts as land-based sequestration is far from permanent. They are therefore unsuitable as a basis to offset atmospheric emissions.

Offsets delay and distract from urgently needed emissions reductions

The latest IPCC report reiterates the urgency of deep emissions cuts with the need to peak emissions before 2025 to have a fighting chance to stay within a 2°C scenario. A carbon offset approach would instead create a major loophole for corporate actors and member states to delay or stall emissions reductions. Although the EC's Communication on Sustainable Carbon Cycles states that the removals are intended to offset "residual emissions," enacting an offset mechanism would in effect divert critical resources and focus on drastically reducing emissions

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now. There is also no evidence that carbon offset programs work to reduce greenhouse gases (GHGs). Offset programs are ripe for fraud (see U.S. and Australia forestry offset credits) and vulnerable to reversal (see U.S. forestry offsets burned in wildfires). The Clean Development Mechanism, REDD+ and other initiatives have shown how offset schemes have failed to deliver on the climate and communities.

Land-based sequestration is not a permanent removal; thus, cannot neutralize ongoing and rising emissions

A reliance on large-scale use of negative emissions to "neutralize" greenhouse gases that will remain in the atmosphere for thousands of years is not only scientifically unfeasible, but also poses a real danger of locking up society into a high-temperature pathway and temperature overshoot[i]. The idea that a tonne of carbon can "neutralize" the effect of a tonne of atmospheric carbon is flawed for multiple reasons:[ii] (1) Net-accounting implies that carbon once removed from the atmosphere will never be added back within a timespan relevant for human society. (2) Human action, natural catastrophes and global warming itself can reverse carbon sequestration.[iii] If carbon removals are used to offset continuous emissions and removals are reversed, it will result in even higher atmospheric GHGs than without the removal having taken place.[iv] (3) Fossil and biogenic carbon are fundamentally different in terms of timescales.[v] Fossil carbon released into the atmosphere, which is the primary cause of climate breakdown, overburdens the short biogenic carbon cycle. Carbon farming cannot undo this damage. (4) Global and European soils have continuously lost soil carbon, largely due to an unsustainable agricultural system.[vi] While removing carbon and storing it in land has the potential to tackle some of past emissions[vii] (if no reversals occur), it could not neutralise present or future emissions, including non-CO_2 emissions from industrial agriculture. (5) A focus on land-based carbon removals ignores linkages with other non-CO_2 greenhouse gases, e.g., empirical studies suggest that the potential of soil carbon sequestration as mitigation measure might be offset by increasing nitrous oxide emissions from soils.[viii]

Avoided emissions, emissions reductions and emissions intensity reductions are not removals

The European Commission's Sustainable Carbon Cycle Communication outlined a range of carbon farming practices that are not per se actual removals. Measures such as peatland restoration are critical and must be supported, but they primarily reduce and avoid emissions. Some Member States are suggesting that emissions intensity reduction should be counted as removals. Agribusiness' key climate mitigation strategy is reducing the emissions intensity of its climate footprint: reduction of emissions per kilo of produce or unit of finance, rather than changing a destructive model of production. Yet, as long as agribusiness continues to increase its total emissions (i.e., by expanding overall production), incentivising emissions intensity reduction does little to mitigate the climate crisis. It could even incentivise more production due to a rebound effect. The Commission must clarify that no emissions intensity reductions can be certified as carbon farming removals. A conflation of all those terms would fundamentally undermine any credibility of a carbon *removal* framework.

Measurement of soil organic carbon (SOC) cannot be simple and robust at the same time due to lack of technological accuracy and complexity of soils

Precise measurement and accounting of emissions are crucial for any removals. Yet, from a soil science perspective, the EC's intention to establish "a robust but simple" certification mechanism

for removals from agricultural soils is unrealistic. Soils are complex ecosystems characterized by significant spatial heterogeneity within seemingly homogenous sites. Soil carbon content in two seemingly homogenous sites can vary by as much as fivefold.[ix] Decade-long soil sampling has shown that depending on the plot's history, the soil carbon content of two adjacent plots under the same management practice might even move in different directions.[x] Even direct sampling methods differ widely in their accuracy.[xi] They are also immensely costly with measurements more reliable at greater depths in soils. A scientific literature review of soil sampling at various depths in the U.S. showed that shallow soil sampling might overestimate the amount of carbon sequestered under a no-till treatment by an amount equivalent to 58% of the country's agriculture emissions.[xii] The existing monitoring, reporting and verification (MRV) protocols for soil carbon credits rely on assumptions that might not be applicable for the soils to which they are applied, such as the persistence and accrual of soil carbon over time.[xiii] Sensor-based (putting a sensor in a section of soil) as well as remote-sensing technologies[1] are currently not reliable measurement technologies, partly due to low sensitivity of the sensors to measure extremely small changes of soil carbon levels over a shorter period of time[xiv] and lack of calibration of models to specific sites. Carbon credits require the verification of the precise amount of carbon sequestration which cannot be guaranteed for soil carbon over time and space.

II. <u>Carbon markets are unfit as a financing mechanism for farmers and hinder a just transition of the agricultural sector towards agroecology.</u>

Carbon markets do not provide fair and reliable finance for farmers

Carbon markets are extremely volatile. Farmers require stable and predictable finance to make ongoing changes to their farms to make lasting shifts to green practices on their lands. The lack of stability could result in farmers abandoning good practices because of the high financial risk involved in carbon farming schemes. The beginning of the war in Ukraine caused investors to withdraw from the EU Emissions Trading Scheme (ETS) en masse, causing the price of carbon permits to plunge dramatically – after it surged to record highs post-COP26.[xv] Similarly, recent changes in the Carbon Farming Initiative in Australia showed a drastic price fall of 30%, contributing to mistrust of the scheme amongst farmers.[xvi] Australia's CFI, the only major government mandated scheme currently in action, has been called "largely a sham" by the former head of the government's Emissions Reduction Assurance Committee, Prof. Andrew Macintosh, stating that carbon credits granted by the scheme face "serious integrity issues, either in their design or the way they are being administered."[xvii] Carbon markets do not provide a reliable and stable source of funding to farmers that need to make real green investments and planting decisions in ample time and with a heavy burden of economic risk on their shoulders.

Action-based results rather than quantification of soil carbon will deliver optimal outcomes for the climate and rural communities

Additionality is a core requirement for certifying carbon farming credits whereby a project owner must prove that they have stored "additional" carbon as a result of the project than without it. This principle favours poor practitioners rather than supporting responsible ones. Carbon credits go to farms that are depleting soils at the outset of a project rather than those that are

[1] Sensor-based technologies rely on in-field measurement through e.g., spectroscopy, which does not rely on direct sampling and analysis of soil probes. Remote-sensing technologies uses satellite data to model soil organic carbon levels on the ground.

contributing to ecosystem restoration in a "results-based payments" scheme reliant on quantification of soil carbon sequestration. The system does not reward responsible management of soil carbon stocks that already exists at the outset of the project. Farmers already implementing agroecological and regenerative practices would not receive funding from carbon markets. Public financing that supports concrete actions and outcomes (soil health, water retention, biodiversity) in the agriculture sector would be far more effective in encouraging a transition from poor practices and expansion of responsible management. It would address agriculture's climate impact from a holistic perspective that would not only help soils sequester carbon, but also restore biodiversity and ecosystems. It would also be more truthful in terms of accounting from a climate science perspective given the uncertainties in measuring soil carbon.

Additionality is illusive for soil carbon. Soil carbon offsets based on uncertain quantifiable units of soil carbon are risky prospects for income support. MRV requirements for "additionality" or the creation of more carbon in the soil once a project has begun is difficult to prove with any credibility. Even if a cost-effective and precise measurement of soil carbon levels would be achieved and sustained over years, carbon sequestration tends to plateau once soils reach their "saturation point" (their peak level of soil carbon sequestration). Various factors determine saturation point such as the level of soil carbon at the start of measurement, climate and natural events that disrupt soils and ongoing management practices.[xviii] In a best-case scenario, it can take soils up to 20-35 years depending on soil type to reach saturation. But a best-case scenario is unrealistic given the acceleration and intensity of natural events related to rising temperatures. It is also unrealistic to assume farmers will maintain a certain set of practices consistently through decades without responding to their environmental, economic and social circumstances. This also means that the MRV requirements for "additionality" or the creation of more carbon in the soil once a project has begun is difficult to prove with any credibility. In addition, practices have been certified as "additional" that would have happened anyway and traded on carbon markets, thereby jeopardising climate outcomes.

The technical complexity of carbon MRV protocols make farmers dependent on carbon consultants for their payments, directly threatening their autonomy. Contracts between farmers and agribusinesses open new roads of corporate control and the possibilities for companies to place all risk and burden on farmers for little compensation. MRV protocols will require the monitoring and recording of all on-farm actions, potentially providing large quantities of farmer-owned data to private actors including corporations that may have vested interest in selling other products to farmers.

Crucially, the European Commission's Communication on Sustainable Carbon Cycles does not clarify the question of liability in case of reversals or loss of sequestered soil carbon. Current MRV protocols on the voluntary carbon market have a wide range of criteria for projects. Some projects allow MRV for a duration of five years such as France;[xix] the Canadian government proposes a 100-year timeframe for soil carbon sequestration.[xx] On the one hand, farmers would be burdened with a disproportionate risk for the liability of reversals during the project period; on the other, liability must be a central element of any carbon removal credit otherwise no one can be held accountable for bad results, either during or after the project period. Without legal liability for the maintenance of soil carbon after the end of a project, reversals could seemingly occur without any liability to the credit holder. Five years for a land-based carbon project seems a farce given the dynamics of soil carbon, and 100 years is both too long in terms of liability for farmers and too little in terms of a genuine removal. No land-based project can realistically meet the requirements of a permanent removal. A long-term project commitment also means a lock-in to

specific practices that farmers might need to adapt or change due to external circumstances. Therefore, several questions remain: Will governments take responsibility for potential reversals and losses after the project period? Who is going to pay for any damage done?

A carbon market approach incentivises industrial agriculture and increases cost of land and land speculation

Instead of a just transition to agroecology, the Commission could inadvertently incentivise an industrial and extractive agricultural system with a CRC framework centred on carbon markets. Carbon project aggregators and major corporate actors with the need to offset a large quantity of emissions look for large bundles of carbon offsets. This allows agribusiness to delay or avoid reducing its own emissions. Large-scale farms with soils dependent on chemical inputs and industrial practices provide carbon consultants with an opportunity to aggregate and MRV on a large reservoir of soil carbon. Larger tracts of land attract investors, as it allows them to profit from a large "pool" of potential carbon. Large, well-capitalised farms also are likely to have better infrastructure and resources to implement the burdensome requirements of MRV processes. Experience from the Australia's Carbon Farming Initiative shows that high costs and administrative burdens and the need for project aggregation have limited participation of small farms.[xxi]

Pressure on European land prices is already immense. Carbon credits increase the possibility of investors to profit from and own land. This increases the value of land and could significantly amplify the risk of capitalization in land prices. Foreign or corporate land grabbing could increase even more. The flawed CAP payments based on the hectare size of a farm have already contributed to the concentration of land, making it difficult for young and small farmers to gain access to land. The creation of additional market for land based on carbon farming credits bears the risk of detrimentally exacerbating this untenable situation.[xxii]

Finally, the Communication on carbon removals suggests that "sustainable carbon fuels" could count as removals strategies and classifies biogas as one such fuel. If protocols for large-scale biogas production from manure are certified as a carbon removal technology, there is a danger that the certification will perversely incentivise large-scale animal agriculture production. Economically viable biogas production requires large amounts of manure due to high capital costs of investing in biogas infrastructure. A study from the state of Idaho in the U.S. found that a minimum of 3,000 cows was required to make a biogas plant economically viable without massive public subsidies.[xxiii] Our research on the most polluting livestock companies headquartered in Europe show that biogas is a key strategy for their emissions reductions,[xxiv] yet none of the companies we have examined intend to reduce the number of animals in their supply chains. Ninety to 97% of their emissions stem from the animals themselves. Credits for biogas supports a destructive model of mass livestock production rather than incentivise systems change. The actual emissions reduction potential of this technology also largely depends on the actual substitution of fossil fuels and systems boundaries of the emissions calculations. It also does not solve other environmental justice issues related to intensive animal farming, such as phosphate or nitrate pollution in rural communities. In addition, significant leakage from biogas plants has been reported.[xxv] Models suggests that each percent of leakage causes a 7% reduction in the expected positive climate impact.[xxvi] Instead of incentivizing the necessary reduction of animal numbers[xxvii] through a transition to much more agroecological approaches to livestock raising, such a scheme would support increased industrial livestock production.

III. Public financing and action-based results are the way forward

The EU's Common Agriculture Policy (CAP) has failed to foster fundamental changes in the EU's agricultural system,[xxviii] however that is a poor reason to dismiss it as the primary policy and financial instrument for climate mitigation and adaptation in agriculture. The climate crisis requires that the EU fundamentally reform the CAP to deliver on these objectives in a way that supports systemic transformation of the agriculture sector. Rather than spending taxpayers' money and EU institutional resources on MRV and false climate solutions, the EU has an opportunity to contribute to a holistic transformation of the sector. The EC's carbon farming initiative could instead require and reward proven practices that build soil health, water retention, biodiversity and additionally sequester carbon.

The European Commission must not certify carbon credits and spend public money on the infrastructure of carbon markets for offsets. Carbon sequestration in the land-sector plays a crucial role in the context of ecosystem restoration for climate adaptation. Agroecology is the only approach that unifies climate, environmental and social solutions for a systemic transformation of the agriculture sector that respects all planetary boundaries and food sovereignty. Carbon farming must therefore be incentivized through public funding for practices rather than per-tonne equivalences. The CAP and national programs can and must be the primary vehicle for this support. The European Commission's proposal on carbon removals must not stand in the way for necessary climate action and the must needed transformation of the EU's agricultural sector.

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