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New emissions standards for agri-businesses hold promise to transform food supply chains

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The 2024 UN climate conference, COP28 in Dubai, saw a flurry of agri-food pledges. In terms of policies, over 150 governments will include agriculture and food in the next round of their national climate plans, due 2025, per the UAE Declaration on Agriculture, Food and Climate.

Carbon accounting standards may not be an obvious climate hero. Yet two recent developments hold the potential to transform the global food industry by funnelling money towards decarbonisation within the supply chain, known as Scope 3 emissions. The global agri-food supply chain is dominated by smallholder farmers in emerging markets, who face vulnerabilities and inefficiencies in production and distribution and need support to transition to net zero.

How can agri-food supply chain tackle the vulnerabilities of On-farm greenhouse gas emissions, especialy smallholder ?

The first development is the upcoming Land Sector and Removals Guidance by GHG Protocol, due mid-2024. It will present a more standardized and comparable approach to quantify the impacts of changes in farming practices on emissions, from deforestation to soil carbon storage. Accurate measurement and verification of such effects will be crucial in promoting carbon sequestration processes attributable to specific companies and products.

The second is the Forestry, Land and Agriculture (FLAG) guidance by the Science-based Targets Initiative (SBTi), issued in September 2022. Agri-businesses must separate their GHG emissions into two buckets.

1) energy and industry emissions,

2) FLAG emissions that occur â??to farm gateâ??, i.e. before agricultural commodities are sent off-farm for processing.

Companies must now set separate targets and decarbonisation pathways for each bucket of emissions, ensuring a focus on both energy/industry and land emissions sources.

The FLAG guidance helps companies to decarbonise by enabling verifiable carbon removals on the farm to be subtracted from FLAG emissions, reflecting a lower corporate carbon footprint even for downstream companies like food processors and retailers. It will help incentivise and support climate action within the agri-business value chain rather than using carbon offsets outside the supply chain, leading to longer-term resilience in our food systems.

How do companies strategies sustainable farming practices?

Offsets versus on-farm carbon removals :Take the scenario of a packaged food manufacturer (Company A) that sources grains from thousands of smallholder farmers upstream. Company A calculates its greenhouse gas emissions in a carbon offset landscape and compensates for its emissions by buying the same volume in carbon credits to claim carbon neutrality. The carbon credit provider, in turn, finances projects outside the value chain of Company A. These could be energy efficiency, blue carbon, forestry or waste management projects, to name a few. The carbon credits do not directly benefit the company's value chain stakeholders, in this case, smallholder farmers. Nor is Company A incentivised to understand its supply chain and the low-hanging interventions needed to decarbonise the grains being produced for Company A.

Compare this to another scenario, Company B, a plant-based ingredients purchaser in Asia serving customers worldwide. Company B purchases from thousands of smallholder farmers in the region. Company B sets a science-based net zero target with the new carbon accounting guidance, including FLAG and the opportunity to track carbon removals. Company B aims to decarbonise upstream emissions by supporting smallholder farmer regenerative agriculture.

Some key strategies include zero deforestation, site-specific fertiliser application, valorising waste to produce biofertilizers and restore soils, and other sustainable farming practices. These can create additional revenue, cost savings, and reduce emissions. Company B monitors fertiliser application practices, forest cover, irrigation practices and other critical indicators in its sourcing regions through remote sensing with satellites and farm-based data collection. Per the new carbon accounting guidance, the resultant carbon removals can be counted towards FLAG emission reduction targets by Company B and its customers down the food supply chain, aligning incentives for net zero and reducing corporate emissions.

How can agri-businesses create opportunities to reduce emissions in their process value chain?

System change through value chains: The example shows that the two new guidelines create opportunities for agri-businesses to reduce their Scope 3 emissions by focusing on their value chain. According to the Asia Food Challenge report, over two-thirds of Asia's agri-food value chain emissions occur before the produce leaves the farm gate. Smallholder farms typically produce more emissions per unit of commodity due to limited machinery, and infrastructure access. Farmers lack incentives for optimal agronomic practices, resulting in less efficient input use, lower yields, and food loss. About 17% of food produced in Asia is lost before leaving the farm, compared to a global average of 15%, due to inadequate storage.

Large agri-businesses can support upstream smallholder farmers to decarbonise through for example longer-term offtake contracts, financing arrangements, knowledge, and access to technology for improved practices. Critical concomitant benefits include greater biodiversity and community engagement. Decarbonisation objectives can help future-proof agri-businesses by creating resilient value chains that carbon offsets outside of a companyâ??s value chain may not achieve.

Primary data and supply chain traceability become essential for food and beverage companies heavily dependent on land resources in their value chain. For primary data, companies must have data related to the specific supplierâ??s carbon sinks and pools where carbon is stored. Traceability requires the company to trace the carbon removal's physical location throughout the removal pathway. Only with such reliable data can Company B claim the carbon removals per the new accounting guidance and continuously manage reductions along its value chain.

The global broadening and deepening of regulatory requirements for land sector emissions warrant more emphasis on data quality and management.

As a case in point, The European Union Deforestation Regulation (EUDR)[1] will establish strict measures to prevent companies from exporting or placing EU products linked to deforestation or forest degradation. This legislation will cover cattle, cocoa, coffee, palm oil, soya, wood, rubber, charcoal printed paper products, and derived products such as leather, chocolate and furniture, and palm oil derivatives, with compliance to EUDR becoming mandatory by the end of 2024. Such legislation only reinforces the need for supply chain traceability down to the farm level, complementing the FLAG guidance.

For exporters to the EU from different parts of the world, including Asia, the computation, management and disclosure of such information is an increasingly crucial requirement.

Decarbonising with imperfect data

Food is in focus. The agri-food sector accounts for 34% of global emissions. The two new guidance documents for land sector emissions allow credible on-farm carbon removals to be counted in annual corporate carbon footprints across the agri-food value chain. This makes meeting net zero targets more attainable and incentivises emissions reductions within upstream value chains, especially smallholder farmers in emerging markets. However, companies planning to count carbon removals must invest in measuring it through supply chain traceability, primary data, and more. Technology solutions for the new land sector carbon accounting requirements are readily available.

Expect to start with imperfect data and improve over time. Obtaining data that reflects real-world supplier changes will be an iterative process, with the pace of investments in both the data and the decarbonisation solutions driven by the regulatory and competitive environments already underway. The direction is clear.

Lia Nicholson is the Head of Sustainability at Terrascope, a climate leader, and has been the interface of national and local government, business, and civil society across the Caribbean, West Africa, and the Pacific. Lia was a climate negotiator in the United Nations and senior advisor to the Alliance of Small Island States (AOSIS) - a bloc of 39 countries facing existential climate risks and considered the moral voice for climate action. Lia spent several years with C40 Cities Climate Leadership in West Africa, where she supported the mayorâ??s offices in Abidjan, Accra, Dakar and Lagos to prepare city-level GHG inventories and develop Paris Agreement-aligned climate action plans.

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