

OECD Global Forum on Agriculture

Carbon Footprints for Food Systems

25 April 2023



**Summary record for the
GLOBAL FORUM ON AGRICULTURE
CARBON FOOTPRINTS FOR FOOD SYSTEMS
TUESDAY 25 APRIL 2023
Conference Centre Room CC9
OECD Headquarters, Paris, France and Hybrid**

The OECD Global Forum on Agriculture (GFA) was held on Tuesday 25 April 2023 as a hybrid meeting focusing on the theme *Carbon Footprints for Food Systems*. There were 291 delegates registered to attend this meeting, including representatives from the following non-member participants: Brazil, Bulgaria, Croatia, Egypt, Peru, Romania, South Africa and Chinese Taipei. The agenda for the meeting is contained in [TAD/CA/GF/A\(2023\)1](#) and the background note is [TAD/CA/GF\(2023\)1](#).

1. Summary

1. The agenda of the GFA focussed on the growing trend towards measuring and communicating carbon footprints in food systems, looking at several aspects:
 - Session 1 - Drivers
 - Session 2 - Standards, conformity assessment and communication
 - Session 3 - Trade implications of carbon footprints for food systems
 - Session 4 - Round table discussion: What is the role for the OECD?
2. OECD Deputy Secretary-General **Ulrik Knudsen** welcomed delegates. He opened saying that carbon emissions from food systems cannot be managed if they are not measured and that the OECD is in the business of developing reliable, cross-country comparable data and indicators for policy makers such as the Producer Support Estimate (PSE) that measures total government support to the agriculture sector. On climate change the OECD is investing in better data and indicators, through the International Programme of Action on Climate Change (IPAC) and the Inclusive Forum on Carbon Mitigation Approaches (IFCMA).
3. To achieve net zero emissions by 2050 more effort is needed to reduce GHG emissions in the food system which accounts for one-third of global emissions. Data is needed to provide clear signals to consumers, businesses, and investors, including reliable information on the carbon footprint of different products and companies. Food systems are facing a triple challenge of providing food security and nutrition for a growing population; providing livelihoods for hundreds of millions of people working in the sector; and ensuring environmental sustainability – not only in terms of greenhouse gas emissions, but also in terms of biodiversity, and water pollution. In November 2022, OECD Ministers of

Agriculture endorsed the need for food systems' transformation in their [Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems](#).

4. Carbon footprints could be a transformative solution if they are reliable and transparent, and do not impose onerous costs and administrative burdens. There are already many initiatives underway to measure and communicate carbon footprints in food systems. However, there is a risk of fragmentation and a confusing landscape of inconsistent approaches. The GFA meeting included participation from experts from across the food system (farmers, investors, researchers, standard setters, and retailers) so that discussions in the meeting could look at all aspects of this development, including the role that the OECD could play in this area to move from fragmentation to collaboration.

5. The 2023 Chair of the Global Forum on Agriculture, **David Kennedy**, Director General for Food, Biosecurity and Trade, Department for Environment, Food and Rural Affairs, from the United Kingdom highlighted the urgent challenges that all countries are facing in developing agriculture policies to ensure food security and productivity while moving towards more sustainable agriculture systems to reduce carbon emissions to net zero levels and restore biodiversity.

6. Sustainable agriculture was a central part of the UK COP26 Presidency Nature campaign, focusing on policy and subsidy reform, scaling innovation and harnessing the private sector to deliver triple win outcomes for people, climate and nature.

7. The United Kingdom launched a [Policy Dialogue on Sustainable Agriculture](#), co-convened with the World Bank, a [Policy Action Agenda](#) endorsed by 17 countries, and the [Agriculture Breakthrough Agenda](#). This campaign is catalysing action to accelerate efforts to transform agriculture and food systems to be more sustainable and resilient.

8. In England, new Environmental Land Management schemes are being implemented to contribute to the target of achieving at least net zero by 2050. The aim is that by 2028, English farmers will not rely on public, area-based subsidies, and will farm in a way that delivers profitable food production and recovery of nature, protects animal welfare, and helps to deliver climate goals. England's [Environmental Land Management](#) schemes are paying farmers to deliver a range of actions to support the environment. For example, funded veterinary visits will improve animal health and welfare; targeted soil standards will result in an increase in soil biodiversity and soil organic matter; the [Slurry Infrastructure Grant scheme](#) will improve farm productivity and sustainability; larger scale projects such as peatland restoration and tree planting will contribute to nature and addressing climate change.

9. More than 35 000 farmers are participating in these schemes. By 2028 the goal is that 70% of farms and farmland will be enrolled in schemes, with all types and sizes of farms participating. The United Kingdom has the goal of improving productivity, halting the decline of farmland biodiversity by 2030, and improving livestock health and welfare. By 2030, 75% of farmers should be engaged in low carbon practices, increasing to 85% by 2035.

10. The United Kingdom has also launched the Food Data Transparency Partnership (FDTP) to develop a standardised approach for food and drink businesses to measuring and communicating Scope 3 greenhouse gas emissions. Through the FDTP, the United Kingdom will also develop a mandatory methodology for producing voluntary eco-labels or making sustainability claims about a product. This will enable comparisons between products and inform consumer choices.

11. The United Kingdom is very supportive of the 2022 Agriculture Ministers' Declaration and is looking forward to chairing the OECD Ministerial Council Meeting in

June 2023 where net zero will be a priority topic for discussion linking to the theme of this GFA.

2. Opening session: Setting the scene

12. **Koen Deconinck**, Agricultural Economist from the OECD Trade and Agriculture Directorate presented an overview of the state of play on carbon footprints for food systems.

13. Products vary in their average carbon intensities. In addition, even for the same products, producers have varying carbon intensities. This underscores the need to move beyond averages. Robust and consistent data on product level, firm level and sector level emissions is needed. Increasingly this information is being demanded by investors, firms, retailers, and policy makers. In terms of reporting standards there are many layers and many different calculation tools. Interoperable software is needed so that data can flow between businesses, as well as regulators. Digital tools will increase the accuracy of primary carbon emissions data via measurement tools. There are many initiatives underway, but a key question now is whether we are seeing collaboration or fragmentation in this space. It is important to avoid fragmentation to reduce the risks of administrative burdens and trade costs resulting in no improvement in emissions reductions. By collaborating, the private sector and governments could agree on methodologies for measurement/communication, to avoid excessive transaction costs and negative trade implications. The OECD could facilitate this collaboration.

Session 1 – Drivers

14. This session was moderated by **Vincent Marcus**, Deputy Director of the Department of Economics and Policy Evaluation, Ministry of Ecological and Inclusive Transition of France, and Chair of the OECD's International Programme for Climate Action (IPAC).

15. **Rodrigo Barrios**, Climate Change Manager - Supply Chain, Tesco, the United Kingdom spoke about how retailers are setting Scope 3 targets and what it means for their agri-food supply chain. He mentioned that Tesco is the largest retailer in the United Kingdom and one of the largest companies in Europe in terms of number of employees. Tesco's Scope 3 emissions are significant and account for approximately 90% of its total annual carbon emissions per year. For agriculture the most pressing issue and challenge is getting the best and most robust data in order to take action in the supply chain. Tesco relies on different data sets to calculate carbon footprints, such as industry data, Defra guidance, and sectoral calculations as provided by [WRAP](#) and [CIEL](#). Tesco is using its sustainable farming groups to get primary data. Tesco is aiming to get primary data but this is difficult to obtain, aggregate, share and compare the data with the entire supply chain using different tools. Comparison is made more difficult with some measurement tools including carbon emissions and removals (e.g. if there are trees on farms, some tools would add these and calculate net rather than gross emissions), creating confusion and making it difficult to design decarbonisation incentives. A significant challenge is getting data and then making it comparable. Tesco is also participating in the Food Data Transparency Partnership.

16. Tesco is working with an aggregating tool that calculates product level emissions called [Mondra](#). With this product emissions information, how should Tesco reward compliance and award larger shelf space for the products that are less carbon intensive and thus incentivize suppliers to continue to reduce their emissions? For several years Tesco has asked all suppliers to provide their Scopes 1 and 2 data, and at the beginning of 2023

was able to report supplier information using the [Manufacture 2030](#) platform (used by Tesco's major UK competitors) and now 80% of Tesco suppliers by cost of goods sold are reporting using this platform. In 2024 Tesco will require suppliers to report their Scope 3 emissions and set a net zero target. For 2025, Tesco wants its top suppliers to have SBTi validated net zero targets. For smaller suppliers Tesco has a supplier network which is a knowledge sharing hub with additional resources to help these suppliers identify carbon emissions hot spots and help them with decarbonising.

17. **Leandro Rosa**, Sustainability Specialist, from [Marfrig Global Foods](#), spoke about how Scope 3 reporting and target setting are impacting global agri-food supply chains. Marfrig is the second largest beef producer and meat packer in Brazil and is the largest hamburger producer in the world. Marfrig is present in five countries (four in Latin America and the United States) and employs 34 000 staff. He outlined that the biggest challenge for meat packers is the methane produced by animals from enteric fermentation. More environmentally friendly manure management, pasture management, and feed use can reduce the amount of GHG emission released and Marfrig is investing in R&D and pilot projects to test new technologies that will reduce the company's Scope 3 emissions. An additional challenge for Marfrig and other big industry players in the sector is the nature of spot markets. Long-term contracts are rare, and small farms account for the majority of suppliers. This adds an additional layer of complexity for supplier collaboration and creating environmental impact reporting infrastructure.

18. For Marfrig, the drivers for addressing Scope 3 emissions are coming from investors, consumers, banks, and regulatory requirements from exporting countries. To meet these demands, Marfrig has set a target of a 33% reduction in Scope 3 emissions by 2035, using 2019 as the baseline. Marfrig is also working on deforestation commitments and using feed additives to reduce emissions. The company is partnering with suppliers to promote sustainable farming practices, and they have included 100% of their direct 8 000 farmers in the Marfrig Club. Despite the challenges, Marfrig is actively participating in discussions and striving to address the issue of Scope 3 reporting in the agricultural supply chain.

19. **Masamichi Kono**, Trustee of the IFRS Foundation, discussed the importance of sustainability disclosure standards. As part of the International Financial Reporting Standards Foundation (which also sets global financial accounting standards), the [International Sustainability Standards Board](#) (ISSB) is developing global [sustainability disclosure standards](#) for investors. The ISSB builds on existing standards set by organizations such as the Value Reporting Foundation (VRF) and the [Climate Disclosure Standards Board](#) (CDSB). Interoperability with the Global Reporting Initiative (GRI), and the European Sustainability Reporting Standards (ESRS) developed by the European Financial Reporting Advisory Group (EFRAG) is being worked on. The ISSB is working towards developing a common language for national and regional stakeholders.

20. The ISSB's first set of requirements are divided into two standards, with the first covering the [general requirements for sustainability disclosures](#), while the second is focused on [climate-related disclosures](#) risks and opportunities. All the IFRS's standards require specific disclosures of material information that could alter investment decisions if omitted. The ISSB is continuing to work on expanding the coverage of these standards to include a broader range of sustainability issues such as biodiversity and social issues. Industry-based disclosure requirements are contained in [Appendix B](#) to the [IFRS S2 Climate-related Disclosures and will be treated as reference material, initially](#). The ultimate goal is to provide a framework that allows investors to make informed decisions based on a complete and accurate picture of a company's sustainability footprint.

21. **Kristina Wyatt**, Chief Sustainability Officer at [Persefoni](#), spoke about the changing regulatory landscape and the proliferation of climate reporting standards which investors find difficult to navigate. In her view, climate change reporting is at a pivotal stage and there have been extremely important developments over the last couple of years, but there is much work outstanding.

22. She stated that investors have been asking companies for climate-related information for many years and that in the absence of regulation, diverse voluntary sustainability reporting standards have emerged to tell companies what information they should report. These standards include the following “alphabet soup” of sustainability standards: the GRI, SASB, TCFD, CDSB, IIRC, etc. These numerous standards have created confusion amongst issuers of securities, who would prefer one set of standards to follow. It has also created frustration for investors who want more consistent and comparable disclosures to guide their investment decisions.

23. In the last two years, there has been a convergence and harmonisation of standards driven by the formation of the ISSB, which rolled up many of the voluntary standard setters and set out to create global baseline sustainability standards. In addition to general sustainability standards, the first detailed set of standards will be on climate reporting, and other topics will follow, helping to create new norms for sustainability reporting across borders.

24. Also in the last year, the US Securities and Exchange Commission (SEC) proposed climate disclosure rules similar to the ISSB’s proposed climate standards. Furthermore, Europe has been developing its own sustainability reporting standards to implement the Corporate Sustainability Reporting Directive (CSRD), which covers a broad range of sustainability issues, including climate change.

25. In the United States, California has a [Climate Corporate Data Accountability Act](#), SB 253, that would require larger companies doing business in California to report their GHG emissions. Furthermore, the proposed US Federal Acquisition Regulations would require large federal contractors to disclose their GHG emissions and climate-related risks. Critically all these proposals are based on the climate risk reporting framework of the [Taskforce on Climate-related Financial Disclosures](#) (TCFD) and the carbon accounting standard, the [Greenhouse Protocol](#), so there is convergence on common standards.

26. The proposed regulations and standards all include Scope 3 emissions as defined in the GHG Protocol. The SEC proposal would require disclosure of Scope 3 emissions by larger companies if Scope 3 emissions are material to the company or if the company has set Scope 3 emission reduction targets. The ISSB’s proposed standards include Scope 3, if material. Europe’s CSRD, California’s SB 253, and the United States proposed Federal Acquisition Regulations all include Scope 3 reporting requirements.

27. Many food companies are large enough to be covered by the proposed rules for Scope 3 disclosures, which means a significant share of agri-food emissions in the European Union and the United States would be affected by these rules. Companies will not go to all their suppliers to get their emissions data but rather will use estimates. In the beginning, large food companies will report their supply chain emissions using a combination of reported emissions data from their suppliers, where it is available, and estimated data based on the quantity of goods purchased or the amount spent on specific commodities.

28. Over time, more companies will report their emissions to meet regulatory requirements, or to meet stakeholder demands and net zero commitments. Therefore, in time, more of the Scope 3 data will be based on actual reported data instead of estimates. Technology will play an important role in driving reporting and transparency. This will

occur in three phases. First, software will facilitate the calculation of accurate and assurable GHG emissions data at the company level. Software systems will help companies track the inputs they use to calculate their emissions, and provide a system of record, which is essential to accurate and reliable reporting. In the second phase, technology will facilitate the sharing of data between companies. For example, companies will be able to share data between themselves, and their customers and suppliers. This data exchange is essential to the evolution of Scope 3 reporting. The third evolution will involve the sharing of climate data throughout the global economy, regardless of what software a company uses to calculate its emission. This data interoperability will facilitate network effects that will enable the tracing of emissions throughout the economy.

29. This will enable the deployment of capital toward decarbonization solutions so that innovators that create low carbon methods or products and provide the resources to scale those alternatives will be rewarded. Furthermore, the parts of the global economy that are particularly vulnerable to climate-related risk will be more easily identifiable. Transparency is critical and the scaling of technology that enables reliable and transparent reporting, and the sharing of that data broadly across the economy to support the path to decarbonization.

30. In her intervention, **Helena Wright**, Policy Director, FAIRR Initiative, focused on investor action in global food systems. FAIRR is a USD 70 trillion investors network, launched in 2018 focussed on the risks and opportunities in the global food system. Investor members are worldwide and many of these companies have commitments to climate action and net zero commitments. [FAIRR has a protein producer index](#) covering the largest protein producer companies around the world including meat, dairy and aquatic companies and FAIRR is tracking a range of different risks for investors including climate, biodiversity, water, waste and antibiotics. Of the 60 largest protein companies the majority are in the high risk for GHG disclosures meaning they are not reporting their GHG emissions and do not have reduction targets. However during the last few years there have been considerable improvements in this GHG emissions variable due to companies adopting innovations and FAIRR investors engaging with these companies. Furthermore, in terms of innovation many of the protein companies are exposed to risks from the increasing demand for alternative proteins and this is also driving improvements.

31. Nearly a quarter of the 60 largest protein companies have conducted climate scenario analysis, up from 4% in 2019. Thirty percent of companies are trialling innovations to reduce emissions in animal farming, i.e. via feed additives, etc., but only 14% disclose Scope 3 emissions from animal and feed farming which is a low figure in comparison to other sectors, and only two companies have reduced emissions aligned with the Science-based Targets initiative (SBTi). FAIRR's [Climate Risk Tool](#) which analyses the effects of climate change on 40 of the largest livestock companies in terms of their profitability to 2030 shows that 60% of companies will operate at a loss if the Paris Agreement target of limiting the global temperature increase in this century to 2 degrees Celsius is not achieved. FAIRR investors have called for a roadmap to 2050 for the agriculture and land use sector – equivalent to the IEA's energy sector Net Zero Roadmap – to align with 1.5°C, nature protection and restoration, and food and nutrition security goals. FAO is expected to produce this roadmap in 2024 and this information will be important for investors about the types of assumptions about what will impactful.

32. During the question and answers part of the session, one question related to the relationship between product carbon emissions reporting and Tesco's carbon emissions reporting and whether these fit together. Tesco stated that there is no direct relationship between their suppliers but Tesco seeks alignment with stakeholders upstream. For Scope 3 emissions Tesco cannot control these but can work with its suppliers in this regard to

influence them. For animal protein Tesco has direct supply chain relationships via contracts with producers and therefore has more influence and can work with them on how they are farming. For fruit and vegetable suppliers Tesco has contractual relationships with direct suppliers but some supply chains are very long. It is different with regards to primary commodities, especially those that are grown where land use change is a concern (e.g. soy, palm oil). As a listed company in the UK Tesco has stringent requirements for disclosures and commitments for zero deforestation. Other companies are not bound by the same disclosure requirements. The Tesco expert stressed that there needs to be a level playing field for public and private companies in terms of transparency requirements – especially with respect to zero deforestation and land use change.

33. Marfrig supplies McDonalds and as such it needs to meet McDonalds' requirements for tracking and reporting carbon emissions. The key challenge here is how to work beyond Scope 3 estimates to obtain actual emissions data. Big clients such as MacDonalDs and Tesco are playing a role in terms of setting the policies and practices. There is a need for collaboration between companies along the supply chain to progress faster towards the emission targets.

34. In terms of the link between FAIRR and the IFRS standards investors have called for more consistent disclosure requirements to avoid fragmentation. Investors have asked that development of these reporting standards and regulations stakeholder needs to include consultations. In terms of the slow pace of reporting requirements being implemented by companies, there is the perception that sustainability reporting creates costs and reduces competitiveness. However, many companies see that not taking climate into account is a risk as consumers are asking for environmental products and this creates the demand for the data. Data disclosure varies across jurisdictions, making it hard for investors to assess risk especially for complex supply chains and this is an area that policy makers could address.

35. The IFRS's mission is to develop standards with input from consultation with stakeholders i.e. the investor community. There are multiple channels for dialogue including investor advisory groups and many outreach events to develop the ISSB standards. IFRS is overseen by a group of major capital regulators around the world, from the [International Organization of Securities Commissions](#) (IOSCO) which plays a pivotal role in ensuring the uptake of IFRS standards.

36. New Zealand asked whether or not consumers are really demanding sustainability as an attribute, over food safety, quality, price, and taste; and whether sustainability information will add value to products and for farmers. Is reporting creating value added, or should it just be reframed as a “ticket to play” and a requirement to trade? **Rodrigo Barrios** from Tesco responded by saying that Tesco does have to create a value proposition and also needs to report on its company sustainability commitments in order to comply with investor requirements. In the United Kingdom, with the current economic circumstances, consumers are placing a lower priority on sustainability.

37. Rodrigo Barrios highlighted a range of questions: How can companies drive minimum sustainability requirements in a product range while maintaining affordability and not contributing to food insecurity? How should competition law evolve to allow for this collaboration in relation to sustainability? How to create a uniform communication stream with customers so that claims of “carbon neutral” are meaningful and verified and that contradictory messaging is eliminated? He noted that mandatory eco-labelling in the United Kingdom will be critical for consumers to drive sustainability and dietary shifts.

38. The representative from Danone made an intervention following Tesco asking what consumers can deliver in terms of market signals. Consumers can help, but businesses

cannot rely on this. Accusations of green washing has chilled claims and valorisation of these claims by companies. Given the risks for farmers, there is a need for solutions and for credible measurement, data and accounting.

39. The United Kingdom asked whether prioritising Scope 3 carbon reporting could result in other environmental issues that might create trade-offs. According to FAIRR with regards to trade-offs focusing solely on climate might have detrimental effect on other systemic risks (biodiversity, AMR, etc.). For instance, if production moves towards more intensive livestock, there could be negative impacts related to biodiversity outcomes, AMR, etc.

40. Sweden asked about how inflation is impacting consumer choices and demands. According to Tesco, products within a product range need to be sustainable enough and increasingly sustainable with time but cannot be at a prohibitive price so that consumers cannot access sustainable products. There are levers to pull including supply chain finance. Green finance is an interesting option for addressing the negative adoption incentives created by costs of sustainability. Tesco noted that a game changer would be to drive towards diet change, i.e. consumers shifting away from animal protein towards beans which are cheap and nutritious and reintroducing these products back onto the shelf and onto consumer plates.

Session 2 – Standards, conformity assessment and communication

41. This session was moderated by **Kaya Axelsson**, Net Zero Policy Engagement Fellow at the University of Oxford; Strategic Advisor to the Race to Zero Campaign leading the [ISO Net Zero Guidelines](#). She introduced the session highlighting the importance of standards working hand in hand with policy regulations, and the need to reform current adverse agricultural policy incentives to support sustainability. Standards are useful to improve practices, boost innovation, level the playing field, measuring progress and comparing with peers. But they need to be developed through expert led processes and strong governance structures to avoid being captured by private interests.

42. **Anna Stanley-Radière**, Director at Climate Transparency and Member of the Extended Leadership Group of the World Business Council for Sustainable Development presented the [Partnership for Carbon Transparency \(PACT\) Pathfinder Framework](#) facilitating the sharing of Scope 3 emissions information across the value chain.

43. Companies need accurate data to be able to define their strategy and compare their outcomes with other firms. However, fundamental hurdles prevent transparency across supply chains - the current carbon accounting system is in urgent need of fixing. The PACT Pathfinder framework has been developed to enhance coordination. It brings together an ecosystem that seeks harmonisation of emission accounting for products, standardisation of data exchange across value chains, and collaboration across all players, including policy makers. Currently, standards' methodologies are too flexible and companies tend to use secondary data, rather than primary (raw) data. The challenge is particularly acute with respect to Scope 3 emissions. Exchange of data is key to overcome the methodological challenges with the main standards (ISO, GHG protocol, sectorial standard, and product standards). This includes development of Application Programming Interfaces (APIs) so that different data platform can exchange data with each other. PACT aims at bringing this transparency, with a first-of-its kind exercise involving over 120 companies calculating and exchanging real data using different technology solutions. Business has shown strong interest for the initiative and is supportive of its development – moving from discussing the why to discussing the how. Governments need to lean in on this initiative.

44. **Pankaj Bhatia**, Global Director of the GHG Protocol and Acting Director of the Climate Program at the World Resources Institute, spoke about the Greenhouse Gas Protocol and its Land Sector and Removals Guidance. The GHG protocol was created in 1998 and the focus is increasingly shifting to its successful implementation within Scope 3. It developed eight different standards (for companies, cities and governments) that are currently the most widely used within companies reporting to CDP (18 000 companies) with 90% of the Fortune 500 companies using GHG Protocol standards. The standard was developed to have a comprehensive coverage of emissions all along the value chain due to concern of leakages if sector emissions decrease in Scope 1 but increase in Scope 3. Concerns about double-counting should not overlook that the purpose was to spread the market signals on climate policy through the value chain. The land sector guidance – currently being finalised - builds on three important previous standards – the Corporate accounting and reporting standard, the Scope 3 standard and the Scope 2 standard – which highlights the solid foundations for this new standard. The accounting building blocks have been adopted by most other corporate accounting and management schemes – standard such as ISO, voluntary initiatives like CDP, target initiatives such as SBTi, financial disclosure standards (TCFD), regulatory reporting in the United States and the European Union, and carbon market programs (e.g. VCMi). The GHG Protocol standards are used upstream in the corporate management approach, to measure emissions, whereas downstream steps – target settings, reporting/disclosure, emissions reductions and information updates with other initiatives can all be performed in a consistent manner.

45. The land sector and removal standard, which aims at covering all emissions from agriculture and land use change, was developed through a global, multi-stakeholders process, involving over 100+ advisory committee and expert group members, 1 500 registered reviewers and over 140 pilot testing companies. It offers a path forward to include emissions from forests, agricultural soils, long-lived biogenic products, bioenergy (not considered carbon neutral but reported with their life-cycle analysis), and geological reservoirs. It also considers safeguards in the context of the monitoring of removals as these can be considered as carbon credits. Different methodologies can be applied depending on the granularity of the traceability of the products, for which contracting will be key to access real data from specific farms. The GHG protocol will also offer digital tools to support implementation of this new standard.

46. **Adam Chambers**, Leader for Environmental Markets and Conservation Finance Activities at the United States Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS), presented how farm level emissions are measured using the [COMET-Farm](#) calculation tool and how the information is used to improve performance.

47. USDA produces several consistent inventories for international and national reporting for the agricultural sector. A unified methodological framework currently based on a 2014 USDA report on quantification methods underpins these. This report will be updated this year through a public consultation process involving all actors of the value chains, including agri-food companies. COMET is a set of tools incorporating all the calculation methodologies into a user interface to allow measurement of GHG emissions and carbon sequestration for farms, ranches and forestry projects, consistently with the inventory methodologies, using a dynamic baseline. It allows to account for the effect of conservation practices, while providing transparency on the underlying science. Several tools were designed within COMET. The COMET-farm tool incorporates several modules specific to crop, livestock, forestry activities. The COMET-planner tool allows producers to explore how change in practices could affect farm climate performance.

48. **Vivian Ribeiro**, Spatial Intelligence Lead for [Trase.Earth](#), discussed data tools for measuring and tracing deforestation risks in global agricultural supply chains. Trase is an

independent science-based supply chain transparency initiative, jointly created by Global Canopy UK and the Stockholm Environment Institute directed towards consumers, the private sector and governments. It relies first on a supply chain mapping approach, connecting consumption to production locations, while tracing the municipalities, facilities, port, traders involved. This is done through data collection from customs and agricultural census statistics, but also mathematical modelling of spatial export flows. This is then combined with impact metrics on deforestation and GHG emissions. Trase currently covers 66% of agricultural commodities driving tropical deforestation and aims to reach 70%. This is done by intersecting high resolution crop location layers with maps of historical deforestation obtained through remote sensing. This provides insights on how traders are contributing to deforestation outcomes based on the products they trade. In Brazil, the domestic market was also scrutinized and targeted through a crowd sensing campaign, considering 80% of the beef production is destined for the domestic market.

49. **Yeona Hong**, Research Fellow at Korea Rural Economic Institute, presented on certification of low-carbon agricultural products in Korea. The Certification System of Low Carbon Agriculture is a scheme introduced in 2014 in Korea that grants certification to agricultural management companies (or farms) that have reduced greenhouse gas emissions by applying low-carbon agricultural technologies and reducing the amount of energy and agricultural material inputs used in production. It recognizes 18 low-carbon agricultural technologies for 65 products, which then receive a low-carbon footprint label. The government provides about USD 1 million per year to support this scheme which is estimated to have led to a reduction of 80 200 tCO₂-eq in 2021 with 5 753 farms certified. The Korea Agriculture Technology Promotion Agency is in charge of the operation and certification of the low-carbon agricultural products certification system and conducts its activities – consulting on the preparation of the accounting reports informs on and audits, training on the certification process, linking business with distributors, and promoting the sale of low-carbon certified products. That latter activity is supported by the distribution of a Green Card to customers that gives them points when purchasing low-carbon and eco-friendly products (with possibility to cover up to 5% of the purchasing cost or get various other gift or donation options). The Green Card is used by 23 hypermarkets and 49 015 retail points; 21.1 million cards had been issued.

50. **Ernesto Hartikainen**, Chief Executive Officer, Biocode, demonstrated the [Biocode Carbon Footprint Calculator](#). Biocode is an online service developed to help food brand, producers and farmers manage their GHG emissions and carbon removals across their supply chains, from the field to retail. The collection of primary data in life cycle assessment is critical to obtain accurate measures and effective emission reductions. It is important to focus on the most impactful sources – fertilisers, agricultural soils, etc. – and to take into account carbon removals. Reducing costs of measurement is also key for the future monitoring of footprints. Last, trust will be important to support the development of these measurement systems. Transparent reporting will also be key to enhance the accuracy of measurements. Accurate reporting and communication will allow to substantiate green claims and build climate transition plans based on precise monitoring and substantiated reduction efforts. Digital solutions can help for this purpose and ensure the information remains up to date and valid. The calculator is grounded on ISO and GHG protocol standards, to ensure consistent methodologies with the rest of the sector.

51. During the question and answers part of the session, Korea asked **Yeona Hong** to provide more information on the growth in GHG emission savings obtained through the Certification System of Low Carbon Agriculture since its creation, as well as the lessons taken from the use of the Green Card in changing consumers' behaviour. **Yeona Hong** replied that the growing success of the program is mostly related to the number of farms that certified their products within the system. She also emphasized the importance of

consumer-driven changes to purchase low carbon products to achieve effective reduction of emissions, which motivated the design of the Green Card program.

52. Spain emphasized that one part may be missing in the discussion, which relates to the support to the inventory system. In Spain, a similar system as what USDA presented is in place to support the national inventory with transparent information provided on the methodology. Farm reported information is introduced in a calculator that is used to construct the information in the inventory. enquired whether livestock is taken into account in the calculator and if COMET allows estimation of carbon footprint of food products. **Adam Chambers** clarified that livestock is represented in the COMET tools, using information on animal intake and management – manure management, grassland practices, etc. The information is then combined with crop and grassland management to provide a holistic vision of the impact of the farm.

53. Brazil asked whether Trase could integrate aspects related to due diligence obligations. Could Trase provide relevant information to importers to manage their risks, in particular in the context of new heterogeneous regulations implementing no-deforestation criteria? **Vivian Ribeiro** indicated this was indeed a hot topic in the European Union at the moment, and Trase was involved in many consultations with their partners and the JRC to see how to best support implementation of the regulation. The first way to support is to inform on the degree risk for benchmarking at international but also subnational level – e.g. for large countries like Brazil. Second, working with partners on the location of the facilities and relating them to remote sensing data on deforestation can help. Last, improving the combination of local and global datasets to harmonise the data and reconcile information derived from these could provide additional insights.

54. EU also asked how the data collected were used to derive some more general statistical patterns. **Anna Stanley-Radière** highlighted that data collection was key and it was important that the data be verified and audited. A lot of work has also been done at the level of government that needs to be reconciled with the new data currently being collected, and for which policy maker could have an important role to play.

55. Japan asked how scheme such as the one deployed in Korea could take on-board smallholders, who represent an important part of the producers both in Korea and in Japan, and how such a scheme could be financed. **Ernesto Hartikainen** explained that in Finland, enrolment of smallholders was also an important challenge. These farmers are very traditional, therefore rural advisors have a key role to play to help adoption of relevant technologies. Such measures should come from those who get most value out of the food systems – consumers but also retailers. **Pankaj Bhatia** added that the success of such transitions will indeed be conditional to the mobilisation of sufficient investment, but the private sector was likely to play a key role, in particular with the green claims being made through science-based targets and other schemes. The industry will need good quality data to fulfil their commitments. **Yeona Hong** explained that support from the government was also key in the implementation, through the training and the premium provided to get smallholders onboard. Costs of such programs are shared between the government and also credit card companies who are participating in the programs.

56. Sweden highlighted that one difficulty in supply chains is that raw agricultural products (e.g.milk) could be mixed together in the value chain to obtain a final product, and asked how this could be handled in the current tools in use. **Vivian Ribeiro** explained that tracing the different origins was quite difficult. In Trase, for the beef supply chain, data are aggregated to some extent, because disaggregating data would not lead to a robust measurement due to local shuffling and indirect effects within a supply chain.

57. Chinese Tapei asked the United States how it was possible to support smallholders like organic farmers in their measurements when historical data is not always available. **Adam Chambers** indicated that the baseline was very important to determine the footprint for producers who claim having low carbon footprint. In the case of organic farming, emissions could increase or decrease depending on the counterfactual considered. The use of transparent and consistent assumptions for the baseline is key to ensure legitimacy of such claims.

Session 3 – Trade implications of carbon footprints for food systems

58. This session was moderated by **Natasha Santos**, Head of Global Stakeholder Affairs and Strategic Partnerships, Bayer Crop Science.

59. **Alan Matthews**, Professor Emeritus of European Agricultural Policy, Trinity College in Dublin, highlighted that carbon standards, whether public or private, will be an additional friction in trade, and a form of non-tariff measure that will increase trade costs. This does not mean they are necessarily a bad idea, as gains in consumer welfare and in avoided environmental and climate damage may well exceed these costs. Still, countries should aim to minimise costs by agreeing minimum international standards, by encouraging mutual recognition and equivalence of different standards that achieve the same objective, and by providing technical and financial assistance to low income producers and countries that have difficulty in implementing these standards.

60. Already there are examples of imposing carbon-related public standards on imports in the agri-food sector, such as the mandatory due diligence regulation in the European Union. This imposes an obligation on traders of forest-risk commodities to ensure that their supply chains are deforestation-free and is driven by concern over the carbon consequences as well as the loss of biodiversity of continued deforestation. The European Union also has a measure in place limiting and proposing to phase out the eligibility of biofuels to count towards the renewable energy targets of Member States if they are produced from feedstocks, such as palm oil, grown on land with high carbon stocks.

61. However, the role of carbon standards in international trade is met with suspicion because standards play a dual role. Producers in a country required to meet specific carbon standards before they can place their goods on the market, or otherwise to meet emissions reduction targets, will generally experience a rise in costs and a loss in competitiveness. Some domestic production will be replaced by imports and by production in other countries, resulting in carbon leakage. Producers will then apply political pressure to demand that imports should meet the same standards, to ‘level the playing field’.

62. This may lead to political pressure from producers to demand that imports meet the same standards. Carbon standards can help to reduce carbon leakage, minimize political opposition to climate measures, and spread good practices globally.

63. Carbon standards on imports are likely to be highly discriminatory against developing countries, as the emissions intensities of the same product in developing countries are often much higher than in developed countries. The large range of emissions intensities are striking for livestock products. For example FAOSTAT figures show that CO₂e emissions per kg of milk are about 0.5-0.6 kg in the EU and the United States, about 1.0-1.1kg in Asia and Latin America, and 3.2 kg in Africa. For beef, in the EU and the US emissions are 10-20 kg emissions per kg product, 30-40 kg in Asia and Latin America, and 65 kg in Africa.

64. Thus, carbon standards on imports will weigh disproportionately on imports from developing countries. This will occur even though responsibility for historical emissions

lies disproportionately with developed countries, and that the Paris Agreement explicitly recognises the principle of ‘common but differentiated responsibility’ to take mitigation action. It might be argued that, unlike food safety standards where the health of consumers is at stake and SPS standards must apply uniformly to all imports, there may be greater Scope to differentiate environmental standards such as carbon standards according to the capacity and responsibility of the exporter. But this would be contrary to WTO rules re non-discrimination, with only very limited exceptions permitted for least developed countries. Imposing carbon standards on imports will be a continual source of contestation in international trade.

65. **Marco Rossi**, Director Standardisation and Technical Policy at ISO, explained that harmonised carbon footprint methodology for agriculture is important but that fragmentation indicates that many public, private, and multistakeholder initiatives are focused on this issue and so there are lots of ideas and attention being dedicated to the topic. Fragmentation can lead to competitive distortion. At some point in the future all players will need to pay the same price for carbon which will necessitate coherent global measurement. If any loophole exists it will be exploited to the detriment of climate action. The WTO recognises the value of international standards for harmonisation and for reducing barriers to trade.

66. Standards need to be inclusive so capacity building in developing countries is being undertaken by the international standard setters including by the ISO. Standards need to be trusted based on strong methodology and conformity assessments through verification. There needs to be a wide portfolio of standards supported by many actors (public, private, NGO, academic) for a solid foundation. It is important to differentiate between disclosure standards and implementation standards and methodology.

67. Tracking carbon will require that digital tools are scaled up globally. The future of the ISO is as an “app store” of standards that can capture data from the field and verify it automatically. To summarise fragmentation is a sign that the world is taking things seriously and now what is needed is cooperation to converge in an inclusive manner so that there is a global international standard.

68. **Miet Maertens**, Professor, Division of Bio-economics, University of Leuven highlighted that there is little evidence on the impacts of emerging carbon footprint initiatives on low income countries LMICs, but that a parallel can be drawn between carbon footprints and the earlier experience of the evolution of food safety and private sustainability standards.

69. There are concerns with the low income countries (LICs) losing competitiveness in international markets because their production has higher GHG emissions or because they do not have the capacity to document their carbon footprint to demonstrate compliance. There is evidence that the adoption of Voluntary Sustainability Standards (VSS) increases trade, especially between trade partners where the income gap is large. But adoption of VSS is lowest in LICs countries. With carbon footprint initiatives there is a danger of targeting countries with capacity to calculate and report carbon footprints but where potential gains in carbon reductions (or trade) are low, i.e. developed countries.

70. Will the carbon initiatives and Scope 3 reporting that are now emerging in HICs be a catalyst for GHG reductions in LICs? This is unclear, because indirect effects may dominate. For instance, voluntary standards that emphasize forest protection are often simply not certifying farmers located in deforestation-prone areas, where these standards are actually most needed. With carbon footprint initiatives there is similarly a danger of

exclusion of most vulnerable areas and farmers, and indirect negative effects. There is also a need to reduce consumption-based carbon emissions in LICs as this is where the growth in future food demand, through population and income growth, will happen. LICs should be involved in the design of guidelines and standards, and should have a seat at the table.

71. With a diverse landscape of corporate and non-profit initiatives, harmonization, transparency and consistency is very important for LICs. A study of more than 9 000 SMEs in Africa shows that information constraints are at least as important as cash and credit constraints for farmers and small food businesses to invest in the adoption of standards. The harmonization of initiatives and tools for carbon footprint calculations and reporting will likely benefit LICs. But initiatives to reduce farm-level carbon footprints in LICs, through capacity building and technical support to farmers, need to be context specific. The actual impact of the adoption of VSS on the agricultural practices, yields and profits is very context specific. For instance implementing organic certification in areas where there is not enough organic matter or manure available can be detrimental for yields and farmers' income, even if price premia are paid to farmers. Practices, guidelines and standards to reduce GHG emissions differ between LIC with very intensive agricultural systems, and LIC with very extensive agricultural systems, so there is a need to get the right balance between harmonizing or standardizing and differentiating.

72. A final point: LICs are a vulnerable group of countries, where the future impacts of climate change are predicted to be particularly severe. For example according to the latest IPCC report climate-change induced yield reductions in DR Congo, Western-African countries, Pakistan, and countries in Central America could be 30-40%. In addition to the challenges this creates, it would also increase the carbon footprint of food produced in these countries. There are also risks for these countries in terms of losing market access due to climate change policies, so the vulnerability of LICs requires initiatives that go beyond private sector responsibilities.

73. **Erik Wijkstrom**, Head of the Technical Barriers to Trade Section, Trade and Environment Division, WTO, emphasised that sustainability, climate change and trade is a very complex and broad area. His intervention focused on the standard and regulatory aspect and not taxes and subsidies. Countries have the right to protect the environment, but WTO rules govern how they should do this and there are conflicts and frictions. WTO has undertaken research on standards and regulations in the steel industry and the findings of this are relevant to the agricultural sector.

74. Steel is used in everyday life (e.g. car, washing machine) and 8% of global CO₂ emission come from steel production with a large share of global steel production traded. But there are also opportunities with innovations including the production of green steel. At the moment, this might mean that production costs increase by 10-20%, which could in turn mean that e.g. the price of cars increases by USD 100-200. What are the incentives to get there in a cost-efficient way? Who is going to bear this cost? What is the role of governments in promoting green steel production? How this is relevant to trade?

75. WTO discussions often focuses on standards, regulation, and measurement. The problem is that there are too many standards, definitions, measurement methodologies, thresholds meaning it is different to compare across products. Getting standardized measurement is important to enable comparison and provide clear information to consumers. Current WTO rules, i.e. the TBT Agreement, say to use international standards. But which one(s)? ISO standard? What's clear is that there will not be one standard, but standards need to be interoperable and comparable. The verification aspect is also very

important in the context of trade: regardless of the standard chosen, there is a need to demonstrate compliance to trading partners. And this is a problem especially for developing countries as even if they produce more efficiently, they often cannot demonstrate compliance with standards and therefore cannot access markets.

76. In terms of the role of the WTO, the TBT Committee already undertook work on how to set international standards and came up with [six principles](#) that countries need to use when developing international standards, guides and recommendations these need to be: transparent, show the data, use best science, include developing countries, be technology neutral, efficient. But there are several areas where improvements are required: operationalizing these principles; increasing regulatory cooperation (to fight standard fragmentation); developing more and early cooperation instead of waiting until it is too late; making sure developing countries are included in the development of standards; and creating infrastructure in these countries to have capacity to demonstrate compliance.

77. **Francesca Cerchia**, Global Segment Manager for Industries and Environment at SGS, first introduced her company. They undertake conformity assessments and are a certification body which performs verification across all sectors, including both corporate and product GHG accounting. For corporate accounting the GHG Protocol standard is used and the role of SGS is to verify that companies comply with methodology in calculating their GHG emissions. SGS does that by: 1) verifying conformity with the standard; and 2) data verification: looking into the data collection, focussed on data quality, and data gaps.

78. For product accounting different standards and protocols can be used (e.g., ISO standards, LCA). The verification process is very similar but an added difficulty relates to data quality because carbon footprint involves the entire product supply chain (i.e. from cradle to grave). Data quality is the most challenging aspect (e.g. how to deal with Scope 3 emissions?), and there is always an element of subjective judgement.

79. For agriculture from farm to plate (including transportation) there is still lots of work to be done. For instance, primary data is needed but this is very hard to collect across full supply chains. This means companies and business owners need to work with the best data available now and reduce emissions based on that information. It is possible to break down the supply chain and collect primary data bit by bit (i.e. on farm, transport, supermarkets), and then verify. A uniform and consistent way of accounting is needed for comparability.

80. During the question and answers part of this session **Marco Rossi** stated there is a need for a mix of technologies to collect the emissions data and the set of technologies needs to converge. Measuring primary data requires a sensor to measure and then the hardware, software to record it and the infrastructure to capture the data. This is the solution ecosystem.

81. The delegate from Brazil asked the **Erik Wijkstrom** about the proliferation of standards on GHG emissions and the work done at the WTO (i.e. under the SPS and TBT Committees). How does the WTO regulate standards from different actors not only governments? Is there anything in the TBT Agreement on the implementation of equivalence (Article 2 of the TBT Agreement), something on equivalency of countries actions? If not, how can WTO regulate trade measures put in place by countries and different standards developed by the private sector? How does the WTO TBT Agreement address the proliferation?

82. According to **Erik Wijkstrom** an important first step is to differentiate between standards and regulations. The WTO does not set standards – these are set by other actors i.e. ISO. The WTO rules simply encourage countries to use international standards in support of their regulations and to align to them. The WTO does not regulate the setting of

standards, it only promotes the use of international standards. Regarding equivalency, there should be recognition that there are different ways of achieving an agreed upon objective and this recognition should be based on the results of conformity assessment. So if one country recognises that the objective of its policy measure is achieved, the methodology for achieving it does not matter. There is likely to be more discussion on conformity assessments at the WTO for example the TBT Committee is currently negotiating a guideline on conformity assessments.

83. In response to a question concerning the ways to mitigate negative impact of import standards on developing countries **Alan Matthews** responded by saying that it is desirable to have an agreed minimum set of international rules, but these are very difficult to reach. **Alan Matthews** asked OECD delegates where the international rules on sustainability will be negotiated? He highlighted that the EU had proposed extending the mandate of the Codex Alimentarius for this purpose but that this proposal had been rejected by members. Will international standards for sustainability be agreed under the Paris Agreement in the UNFCCC?

84. **Miet Maertens** stated that it is crucial to involve policy makers in developing countries in the development of standards right from the beginning. Food safety initiatives emerged in high-income countries, low-income countries were standards takers, and the costs of adopting these food safety systems has been significant for LICs.

85. **Marco Rossi** highlighted the need for capacity building in developing countries and noted that this is a major focus for ISO. ISO capacity building is delivered in different ways depending on the needs and the requests from countries and it can include building infrastructure and undertaking training on the international standards. Furthermore, there is a need to convey best practices to increase participation in standard setting processes in areas including: food, transport, safety. Fundamental knowledge is required on the specific needs from the different fields to enable experts from developing and developed countries to speak the same language.

86. In response to a question from the EC to regarding the interdependency in trade and the need for a more cooperative approach, **Erik Wijkstrom** stated that standards are not always a barrier to trade. Problems arise when there are too many different standards and requirements and that there is Scope for more cooperation for more coherence and alignment. There has been improvement in particular with respect to measurement in the steel sector. In the TBT Committee, 50% of issues raised are linked to agriculture (e.g., nutrition and labelling) and differences in labelling taken by countries have led to trade concerns being brought to the TBT Committee (and trade concerns can sometimes be a precursor to a trade dispute). With regards to disagreements over nutrition, nutrition standards and labelling Codex has revised [guidelines on front of pack nutritional labelling](#). Cooperation and convergence are needed to avoid trade frictions.

87. The OECD Secretariat asked ISO where exactly the proliferation of standards can be seen. It seems that with regards to the methodology to measure GHG emissions there are only a few standards (GHG Protocol, ISO), with regards disclosure standards there appear to be a handful. Where is the proliferation happening? At the product level (label)? Or is it upstream or downstream? **Marco Rossi** responded by stating that on the measurement side there are indeed only a few players but that it does not take much for fragmentation to be harmful. There are not so many players per category of standards but there are still too many.

88. **Francesca Cerchia** from SGS observed that labelling is clearly also a current issue. Consumers are more concerned about nutrition and the recyclability of packaging than carbon footprints of products. There are hundreds of labels that signal different things, and

that are calculated using different methodologies. The European Union is not moving forward with EU-wide labelling. There needs to be guidance about what is important to put on eco-labels. This rule should be applied EU-wide so then equivalence can be recognised.

89. In response to the question from Chinese Taipei about what the main difficulties are, **Francesca Cerchia** responded by saying sometimes there are too many standards and methodologies, and sometimes there are not enough. For agriculture, there is not enough (only the GHG Protocol). There is a need to ensure farmers follow standards for methodology, then SGS will verify that the method has been used correctly. Also there are difficulties in terms of data quality and data gaps.

90. Romania stated that while there is a need to solve carbon footprint issue, money is important to farmers and financing and the administrative aspects of reporting are difficult for farmers. There is a need to create a level playing field for farmers and avoid negative social impacts. According to **Marco Rossi**, these are systemic challenges. Investments have to be taken into account as well as social impacts and part of the effort should be in making things simpler for companies, regardless of their size. Carbon pricing is also important, and efficient carbon markets must include small farmers.

Session 4 – Round table discussion: What is the role for the OECD?

91. This session was moderated by **Chris Carson**, Agriculture Counsellor, New Zealand Ministry of Foreign Affairs and Trade and Chair of the OECD Joint Working Party on Agriculture and Trade.

92. **Thomas Duffy**, Vice President, European Council of Young Farmers (CEJA) and an Irish dairy farmer spoke about the challenges facing farmers of attracting young people to the sector, in addition to the climate and biodiversity crises. The average age of farmers is high which has implications for implementing farm management changes. Many farmers in Europe have not accessed higher levels of education and globally this is an even bigger challenge making collecting data and measuring carbon emissions at the farm gate more complicated.

93. Accessibility to IT systems and mobile technologies is difficult for farmers and in some locations there is no mobile coverage. Farmers may not have the skills to keep up with the rapid digital transformation. Another issue is the replication of data and of information requests. Reporting requirements are substantial already, especially in the European Union, so platforms to assist farmers with their reporting requirements are necessary. Farmers will adopt technologies that have added value. Is the consumer's role being overemphasized? Is data being collected to create a price premium or is it simply the cost of entry? Knowledge transfer, data ownership and demonstrable returns will incentivise farmers to adopt technologies.

94. **Jared Greenville**, Executive Director of the Australian Bureau of Agricultural & Resource Economics & Sciences (ABARES), emphasised the OECD's role as a forum where countries come together to share experiences. He noted that countries use these dialogues combined with OECD research to create better policies.

95. With regards to the OECD's role in carbon footprints for food systems, Jared Greenville expressed the view that the OECD could explore the link between R&D and agricultural support settings and policy measures that can assist with reducing emissions intensity. Exploring different approaches to agricultural innovation systems and other forms of support and how this interacts to improve productivity and reduce environmental impacts.

96. Countries have national level targets and reporting and are focussed on how to reach global emissions targets efficiently. There also needs to be a set of rules around carbon reporting as calculation choices will imply different costs and create different incentives. There are interactions between reporting, targets and food systems objectives, and trade implications. Where food is produced will change with climate change and trade will be important so countries should avoid imposing technical barriers to trade. The OECD can provide best practices for rolling out reporting and uptake and comparing reporting requirements and the effectiveness of meeting targets via cross-country comparisons. What are the challenges, solutions, and pitfalls to create the right incentives to bring producers along without imposing transaction costs.

97. **Justine Garrett**, Project Lead of the [OECD's Inclusive Forum on Carbon Mitigation Approaches](#) (IFCMA), explained that in the IFCMA it was understood that countries will follow different approaches to decarbonise their economies, starting from different places and going at different speeds. This diversity is legitimate but countries are interested in understanding what policy measures are working best and how to measure progress towards meeting climate goals. IFCMA is trying to address this knowledge gap by facilitating data and information sharing and creating evidence based mutual learning and a platform for inclusive multilateral dialogue. The OECD has a track record in collecting statistics, inclusive engagement, and for facilitating high level engagement.

98. Terms of reference for the work of the IFCMA were agreed in February 2023 and are organised around two modules: stocktaking and mapping an inventory of climate mitigation policies at the sector level organised around a taxonomy, i.e. pricing (carbon taxes) and non-pricing policies (standards and subsidies), policies that have a material impact on GHG emissions regardless of their aim, and broad country coverage beyond OECD membership. Assessing impacts of policies on emissions by reviewing the methods for assessing effects on emissions and applying a common approach across countries and estimate the effects of individual policies in reducing emissions. The first sectors of focus will be the electricity, industrial and transport sectors. Agriculture could be a pilot study used to assess the impacts of policies.

99. IFMCA will also look at the methodologies for measuring carbon intensity (by product, by firm, by sector) and will be reporting on these efforts in 2024. Each of these metrics can play an important role in the transition to net zero and can play a key role in providing consumers and investors the necessary information to develop these markets and underpin the transition to net-zero. IFCMA will provide a bird's eye view of work done to date and assess what has been inhibiting carbon metrics. This work will be complementary that undertaken around the OECD, including with TAD. The next IFCMA meeting will take place 19-20 June 2023 at a technical level where the proposed approach will be presented for discussion. During the second half of 2023 the IFCMA will meet again to present an update of the scoping paper based on delegates' input and the second half of 2024 the IFCMA will meet again to present the final report for approval.

100. **Jeanette Coombs Lanot**, Public Affairs and Sustainability Director, Danone - a major global food and beverage company specialising in dairy, plant based, specialised nutrition and water product categories. Danone has set science-based GHG emission reduction targets in alignment with the 1.5°C including targets for forest, land and agriculture. At the beginning of 2023 Danone became the first food and agriculture company to set a methane specific target aligning with the global Methane Pledge and it aims to reduce emissions from fresh milk by 30% from 2020 to 2030. It has been rated AAA from CDP and is at the forefront of the climate action movement. Two-thirds of Danone's emissions come from agriculture and so reducing methane emissions will be complicated, in particular for milk. Danone is working to find ways to support farmers in

the transition. An area for the OECD to contribute is by researching how to better support farmers in the transition and what role can policy play. There are several new policies in the US with the Inflation Reduction Act, the EC's Farm to Fork, and New Zealand pursuing on-farm carbon pricing and so the OECD could look at best practice and what is working from an environmental standpoint, and what are the impacts of policies on the farmers. Danone has been working on regenerative agriculture transitions for many years now and there are many pilots throughout the world. Yet there is continued need for systemic change and policy to accelerate support to farmers to drive the transition.

101. Measuring and accounting emissions is another area where the OECD could contribute. A balance is needed between practicality (so that new tools can be implemented on farms readily) and the fact that tools and measures have to be credible. The challenge is there is fragmentation creating tensions within voluntary standards, and between voluntary and regulatory standards. Danone is less concerned with fragmentation in the measurement of carbon footprints as this is evolving as data collection improves. For instance, Danone is using the [Cool Farm Tool](#). To meet its methane reduction commitment Danone plans to use the methane inhibiting technologies on farm and since these are new it there is a need for a science-based understanding on how to integrate this innovation into the carbon footprint and into Danone's reporting. The problem here is with carbon accounting. Danone uses the GHG Protocol and it is critical that it aligns with the Protocol for reporting. Reality has moved faster than the language. For example, with regards to carbon credits – does this mean an offset? or a value chain transformation (an inset)? The language is confusing which creates tension as companies do not know what the rules are and this needs to be clarified. Ambiguity in the voluntary standards creates a tension in the regulatory standards. One example, is the rules around biogas connected to the dairy sector and manure management practices. In the regulatory setting there is confusion about whether reductions in biogas can be counted both as carbon credits sold to the fossil fuel industry and at the same as time as voluntary corporate accounting through the GHG Protocol.

102. When policy pushes for carbon markets and towards offsets this could have a chilling effect on investment and on voluntary standards i.e. the GHG Protocol. For example, when removals are sold as offsets this might be allowed and recognised by regulatory settings but it is not permitted or recognised by voluntary standards i.e. the GHG Protocol. In this case Danone cannot count removals sold as offsets as in its reporting. In the scenario of the commoditisation of carbon, farmers may sell carbon credits to the government but then not be able to sell their milk to Danone who cannot account for the offsets in its reporting. OECD can contribute evidence-based analysis here as well as a move towards convergence on accounting standards across geographies, and across voluntary and regulatory, an assessment of what is moving the transition for farmers at the speed required.

103. **Dexter Galvin**, Chief Commercial and Partnerships Officer of CDP (the global environmental reporting system) shared his observations on Scope 3, developed by the GHG Protocol. CDP was founded in the early 2000s using the power of investors to get large corporations to disclose their carbon emissions to CDP. CDP represents 764 institutional investors with over USD 110 trillion in assets (more than half of the world's invested capital). About 90% of the S&P 500 and 65% of the world's capitalization discloses to CDP. Over 350 of the world's largest purchasing organisations, with an annual spend of over USD 6.5 trillion dollars disclose their carbon emissions to CDP. This includes the US government. At COP27 in November 2022, President Biden announced the [Federal Supplier Climate Risks and Resilience Rule](#), requiring companies supplying the federal government to disclose their greenhouse gas emissions and climate-related financial risks (to CDP), and to establish science-based emissions reduction targets. Dexter Galvin proposed that this procurement model should be adopted by other countries because most

companies will be reporting in alignment with the GHG Protocol standard and so there is no need to reinvent the wheel.

104. On product level data CDP has the objective of obtaining the most granular data possible so that what is collected is ‘decision useful’ data. With detailed data firms can identify hot spots in a corporate supply chain and the best places to intervene, facilitating more effective climate mitigation actions at the different levels of the supply chain. Data collection requests are going to smaller organizations and so there needs to be a feedback loop when collecting data. Data collection has to drive action. There is currently an explosion of climate technologies and lots of venture capital is going into this space but many of the tools are using secondary data to help firms speed up their emissions calculations, and that is not sufficient given the urgency of the climate targets.

105. **Dexter Galvin** considered that the OECD should contribute to efforts to harmonise standards. CDP has been working with ISSB and so this international standard is fully aligned with CDP Scope 3 disclosures. CDP is working to make six of its core data sets publicly available to help the transition. There is a role for the OECD here on thought leadership and harmonisation to avoid duplication. Furthermore the OECD can work with different jurisdictions, to ensure that the model already being used by the corporate world can be deployed in the public sector.

106. During the question and answers part of this session **Thomas Duffy** responded to a question about the potential trade-offs between carbon offsets and the production of food by saying that the sector is divided on this topic both among countries and between farmers and landowners (He noted that it needs to be recognised that farmers are not necessarily landowners and landowners are not necessarily farmers). A lot of farmers would think if they make improvements then offsets make sense. However if this means they cannot sell their product to companies that have their own targets, there is a disincentive to make these improvements. This is a good research question that the OECD can help with – what are the ramifications of these two models? Furthermore, given the growing global population overall agriculture productivity must increase, so how can a reduction in agricultural emissions and an increase in food security occur simultaneously. Where is additional land use for this increased production going to come from? Consideration must be given to the just transition and if farmers are moving out of farming, how are spillovers on to the local economy going to be managed. Other questions that farmers are reflecting on are: What is best way to fund climate transition? And what is the best way to activate this and make sure that the land market does not get imbalanced?

107. **Jeanette Coombs Lanot** from Danone added that offsets are often seen as a silver bullet and a way to finance the transition yet for Danone this logic does not hold. There could be major gains by increases in innovation, infrastructure and more technical support. More investment is needed in R&D. Danone highlighted the US government’s Climate Smart Commodity Act (and the Inflation Reduction Act) with its proposition of co-funding investments that prompted Danone to partner with others in the value chain. Policy measures like this are an opportunity to drive scale and catalyse action on the ground. Having a no regrets approaches to these difficult policy decisions is an important concept.

108. There was a suggestion from Chinese Taipei that OECD could lead work to develop a policy framework to incentivize farmers to reduce their carbon emissions and increase their carbon sinks. Following on this intervention Danone asked whether the OECD could research the principles for a just and sustainable rural transition. In this space the private sector is focussed on the term regenerative agriculture, and it is important to align the language across public and private sectors so the action taken to pursue the objective is the same.

109. **Vivian Ribeiro** from Trase stated that since the world will need to produce more food using less land, and carbon footprints are higher in developing countries, there is a need for the optimization of systems, it is useful to know where the yield gaps are.

110. **Dexter Galvin** stated that the CDP has expanded into other environmental topics including deforestation, water and biodiversity and companies need to take action on these areas. CDP saw that when it was collecting deforestation data from companies there were a lot of commodity traders in the middle and traceability was not so easy for large corporate buyers. So CDP arrived at a jurisdictional approach, whereby cities, states and regions provide data to CDP to prove that they are sustainable (this is verified by satellite, etc.) and so traders can buy from that area/region. Can we establish sustainable jurisdictions? Technology is key to supporting this approach.

111. **Thomas Duffy** stated that interventions to increase yield gaps need to take into account the suitability of the land. Innovation in crop and livestock genetics could be applied in developing countries to assist farmers achieve better outputs from local genetics. **Jared Greenville** highlighted that in Australia targeted innovation driven by producers has been successful in terms of identifying where productivity improvements can take place. This has meant more food is produced using less land. By reorienting support to ensure that policy objectives and government expenditure are aligned, overall productivity has improved.

112. **Guillaume Gruère** highlighted the activities of the OECD [Network on Agricultural Total Factor Productivity and the Environment](#), and the work on sustainability, productivity and resilience (e.g. through country level reviews) being undertaken by the OECD Trade and Agriculture Directorate.

113. Sweden suggested that the OECD could empirically test the effectiveness of standards and their trade impact. **Justine Garrett** stated that the IFCMA is using the OECD's convening power to ensure inclusivity. The IFCMA is investigating how governments are organizing themselves to deliver climate action. In summary **Chris Carson** mentioned the key words from the session including the importance of principles, comparability, data, inclusive engagement and better support for farmers for the just transition taking into account different types of farmers/landowners and the intergenerational aspects.

3. Closing remarks

114. The Chair of the Global Forum on Agriculture, **David Kennedy**, Director General for Food, Biosecurity and Trade, Department for Environment, Food and Rural Affairs, United Kingdom, reiterated that measurement is needed in order to target action to reduce carbon emissions from food systems and that there are opportunities do to this. We have to measure the reductions and there is a demand for transparency from consumers and investors. There has been a good response from industry and progress is being made on the methodology and tools to enable this and during the meeting there were presentations about some useful tools.

115. Scope 3 emissions are where the questions are for food systems. The current fragmented landscape of different methodologies and approaches is not necessarily a bad thing because it reflects the innovation and energy that people are devoting to addressing these issues. This diversity of methodologies and approaches will allow more harmonised approaches to emerge. At some point a common approach for measuring Scope 3 will be needed. The challenge is big and should not be underestimated. There are issues with technology, data and verification which need to be worked through together. It is not

insurmountable, however, and discussions in the GFA highlighted many reasons to be optimistic. This is particularly important nationally and internationally due to the trade aspects and the need for a level playing field to avoid carbon leakage. This will be a challenge that governments will need to solve together.

116. End-to-end approaches will enhance transparency and inform the decisions of consumers and investors. Transparency will play an increasingly important role in efforts to tackle climate change. Governments will need to provide support to farmers to change practices for knowledge transfer and upskilling farmers. The private sector has a role to play too to support all parts of the supply chain to decarbonise.

117. The OECD has an important role to play in convening policy makers to share best practice in terms of carbon methodologies, policies to reduce emissions, and pathways for food systems to drive down emissions. In November 2022 when OECD Agriculture ministers met, they adopted a set of priorities and objectives for the triple challenge of ensuring food security and nutrition for a growing population, supporting people's livelihoods and doing this in an environmentally sustainable way which the OECD's Committee for Agriculture is progressing. The Chair emphasised the continuity of focus and priorities on sustainable agriculture, food systems and net zero from the Agriculture Ministers Declaration to the G7 Agriculture Ministers recent statement and the forthcoming OECD 2023 Ministerial Council Meeting in June 2023.

118. **Tetsuo Ushikusa**, Chair of the OECD Committee for Agriculture, offered his thoughts on the main insights from the Global Forum of Agriculture and how it informs the work of the OECD Committee for Agriculture. He noted that the G7 Agriculture Ministers had just discussed the fact that agriculture is at a turning point and in ten years time the sector will be very different, so there is a sense of urgency to transform.

119. At the OECD Agriculture Ministers meeting in November 2022 Ministers focussed on the triple challenge facing agriculture and food systems and recognised that now is the time to take concrete actions with the OECD countries embarking on this. The G7 Agriculture Ministers emphasized the need for innovation that is targeted for local agriculture conditions/climate conditions and that the private sector efforts in this space are very important.

120. Key words that were mentioned in the GFA meeting included: urgency, perfect being the enemy of good, the need to learn from each other, and data sharing. With regards to the role of the OECD the discussion at the meeting and the inclusion of stakeholders in the meeting was very valuable. This type of meeting needs to occur regularly to promote discussions of research findings with a range of private sector actors so that the OECD so can learn from other sectors. Labelling is beyond climate and the OECD Agriculture Ministers highlighted that synergies and trade-offs exist.

121. **Kumi Kitamori**, Deputy Director of the OECD Environment Directorate, underscored the collaboration between the Environment Directorate and the Trade and Agriculture Directorate and highlighted that the discussion at today's meeting was at the frontier of methodology for measuring carbon intensity from agriculture. In agriculture the links between climate mitigation and adaptation are very strong but there are trade-offs with other broader environmental issues, links with biodiversity, water, and land use in general. With regards to ecosystem services how much of these are part of agriculture value add? A systems thinking approach is necessary. The OECD's IFCMA and the Horizontal Project for building climate resilience are part of the key work that OECD is doing in this space. At the June 2023 MCM the IPAC horizontal project will launch a synthesis report. Phase 2 of the Horizontal Project has a new emphasis on measurement. In order to achieve

a just transition, countries will need to pay particular attention to all sectors as they decarbonise their economies.

122. **Marion Jansen**, Director of the OECD Trade and Agriculture Directorate, closed the Global Forum highlighting that the purpose of the meeting had been to identify solutions. She emphasized how useful it has been to meet just six months after the Agriculture Ministers Meeting to discuss practical tools to reducing GHG emissions from food systems -- one aspect of the triple challenge facing food systems highlighted in the Ministers' Declaration on Transformative Solutions for Sustainable Agriculture and Food Systems--.

123. What gets measured, gets *mitigated* - and from the discussions it is clear that carbon footprints in food systems are being measured, but there is fragmentation rather than collaboration in this space. If every country or company comes up with its own scheme, with different reporting requirements and ways of communicating the results consumers will be confused, farmers will be frustrated, and we will not manage to reduce emissions, because we will be too busy trying to compare inconsistent carbon footprint claims. We also risk significant transaction costs to global trade as a result.

124. However, with collaboration there is agreement on what to measure and how to measure it, and how to communicate the results. An infrastructure can be created where reliable carbon footprint data can be transmitted smoothly from farm to fork, across supply chains, and across international borders. And this information should flow easily across sectors reflecting the fact that energy, transport, and industry provide inputs to food systems, and in turn food systems provide inputs to those sectors as well.

125. But there are some important differences between food and other sectors. For instance, there are many more actors in food systems. Second, biological processes are more variable than industrial processes. The emissions on a farm can be influenced by the weather, or by soil conditions. Also food systems have a large impact on other environmental issues, such as deforestation, biodiversity, soil health, or water pollution.

126. Over the next two years, TAD will work with national experts as part of the OECD Food Chain Analysis Network on measuring and communicating environmental impacts in food systems.

127. In closing, **David Kennedy** expressed his thanks to the speakers and participants, including those of non-member countries, as well as the contributions of interpreters and other OECD colleagues supporting the event.