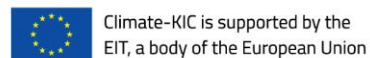


# ACCOUNTING FOR LAND USE CHANGE EMISSIONS FROM AGRICULTURAL SUPPLY CHAINS: KEY FINDINGS AND RECOMMENDATIONS



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## The importance of measuring land use change emissions in corporate supply chains

Reducing emissions from deforestation and other types of land use change is critical for companies and investors to align their strategies with a 1.5°C future. Shifting to sustainable land use can [deliver 30% of the climate solutions needed](#).

For many companies sourcing agricultural commodities, [the majority of their land use-related emissions lie outside their direct operations](#), known as Scope 3 emissions. These emissions located in the supply chain, are on average [four times higher than those in a company's direct operations](#).

Measuring emissions from land use change in the supply chain can be challenging. There are several different calculation methods as well as data constraints in corporate supply chains. Without clear standards, methodologies and tools, companies are unable to accurately account for land use change emissions. Consequently, it is challenging for companies to report and disclose these emissions in a standardized format and take meaningful action to reduce them.

This in turn leaves investors in the dark, unable to fully understand the impacts of land use change on their investments. But investors and the financial sector have the skills and expertise to help companies transition towards sustainable land use and achieving the goals of the Paris Agreement.

### Risks in agricultural supply chains

Companies in agricultural supply chains are likely to face risks associated with land use change (LUC), as highlighted in the [2017 CDP Global Forests Report](#),

87% of companies had identified at least one inherent risk, related to either producing or sourcing agricultural commodities, with the potential to generate a substantive change to their business operations, revenue or expenditure. These risks could include one or more of the following: restricted market access, reputational damage, physical risks and regulatory uncertainty (see figure 1).

This risk translates to investors through lower revenue/profitability, stranded assets, and non-performing loans.

The Task Force on Climate Related Financial Disclosure (TCFD) identifies the Agricultural, Food and Beverage, and Forest Products sectors as key sectors where there is a need for more transparent climate-related financial disclosure ([refer to the recommendations for further details](#)). In particular, the TCFD recommends that company's disclose on changes to carbon stock as a result of LUC (Scope 1). The TCFD recognizes these risks as critical, companies and investors involved in these sectors should provide specific disclosures on LUC emissions and the associated risks if they adopt the TCFD recommendations.



### Physical

Reduced yields,  
increased costs



### Regulatory

Higher costs or  
fines



### Market

Shifting consumer  
preferences



### Reputational

Companies held  
accountable for links  
to deforestation and  
other environmental  
damage

Figure 1- Agricultural supply chain risks (adapted from [Financial Institution Guidance: Soft Commodity Company Strategy](#))

#### CDP's approach to tackling this issue

CDP together with Quantis won a project funded by Climate-KIC, a European climate action funding agency, to help companies account for and report on their greenhouse gas (GHG) emissions from land use change (LUC) (For more details on the project please see this [briefing document](#)). As part of this project, [some pilot questions and guidance have been drafted by Quantis](#). The focus was to capture the full scope of emissions from LUC, both in direct operations (Scope 1) and in the supply chain (Scope 3). The questions also cover:

- ▼ LUC methodologies used by companies and investors;
- ▼ The year-on-year change in LUC emissions;
- ▼ LUC emissions reduction targets;
- ▼ The source of origin of agricultural-based fuels;
- ▼ Direct and indirect LUC in risk assessments; and
- ▼ Metrics to quantify the impacts of forests-related commitments.

Organizations were invited to take part in this project if they have agricultural products at the core of their business. In particular, organizations have been targeted based on the following:

- ▼ Previous disclosure to CDP's forests and/or climate change questionnaire; and
- ▼ Research or pioneering work on LUC emissions.

Note that none of the pilot questions will be included in the 2019 CDP questionnaires, however the outcomes will inform future development of the questionnaires.

The following sections provides a summary of the feedback received from the engagement with companies and investors, and recommendations for action.

## Overview of responses

There was a variety of respondent stakeholder types, including; companies, investors, not-for-profit organizations, research institutions and consultancies (Figure 2). The majority of the respondents were companies, investors and not-for-profit organizations. 80% of companies that responded to the survey are from the agricultural sector (Figure 3).

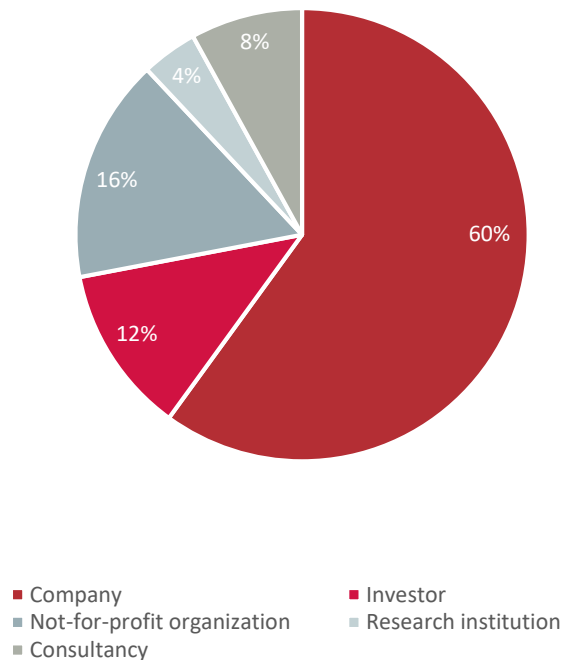


Figure 2- Proportion of stakeholder respondents

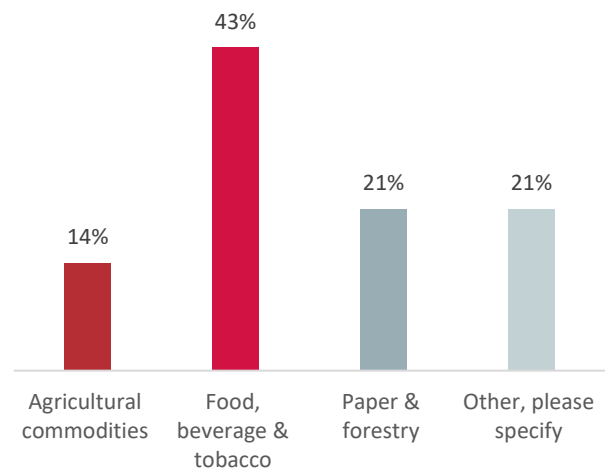


Figure 3 – Company respondents by sector

## Key learnings

1. **There is mixed support for the inclusion of the proposed questions on LUC in future CDP questionnaires**
  - ▼ 53% of all respondents did not support their inclusion in future CDP questionnaires.
2. **Mismatch in company and investor expectations**
  - ▼ 100% of investors were supportive of these questions, compared to 50% of companies.
3. **Companies are not yet able to provide data on indirect LUC**
  - ▼ 100% of companies stated that they could not provide this information.
4. **Companies are not accounting for the full scope of LUC emissions**
  - ▼ While 50% of companies are accounting for emissions from LUC, this only applies to their direct operations.

## Feedback received and insight for action

### ▼ There is mixed support for the inclusion of the proposed questions on LUC in future CDP questionnaires

All respondents to the survey were asked to consider how the proposed questions could be used to help them report and assess progress on their commitments and targets. As shown in Figure 4 below, the majority of respondents (64%) were satisfied that these questions filled this criterion.

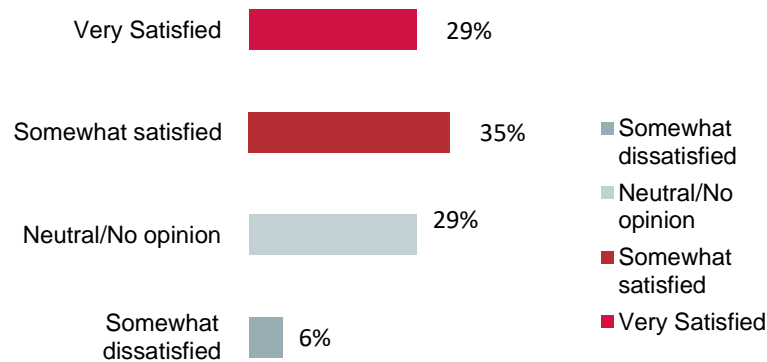


Figure 4 – Response to the question “Overall, how satisfied are you that these questions allow your organization to report/assess progress on your commitments and targets?”

In a separate question, respondents were asked if there are “particular questions that you are supportive of and would like to be included in future CDP questionnaires?”, over half (53%) stated that they were not supportive.

When asked to provide more information on their selection, respondents identified certain areas where they would like more information and guidance. The complexity of supply chains, unclear definitions, increased reporting effort, and a lack of clear methodologies and tools were all cited as areas for improvement.

To rectify this, not-for profit and consultancy organizations should provide additional support to companies. While this project focused on how GHG emissions from LUC can be best reported in a standardized way, such as through CDP’s information request to companies. Other organizations that CDP have partnered with are working on guidance and tools on the accounting aspect (e.g., [Measure the Chain: Tools for Assessing GHG Emissions in Agricultural Supply Chains](#) and the [Quantis LUC guidance](#)). CDP will also be looking to improve its reporting guidance around this topic in the future.

## ▼ Mismatch in company and investor expectations

The pilot questions were well supported by investors, not-for-profit organizations, and research institutions (see Figure 5). In particular the following new questions: “Do you calculate greenhouse gas emissions related to land use change in your direct operations and/or in other parts of your value chain?”, and “Do you measure the impact of your forests-related commitment(s)?” were highlighted as important questions (see pilot questions in the Appendix).

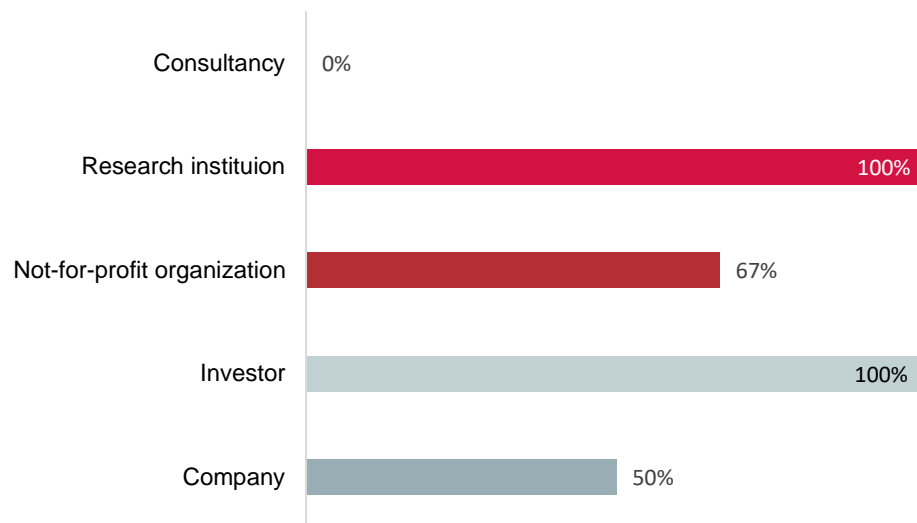


Figure 5- % that supported the proposed questions being included in CDP questionnaires by respondent type

An investor, who supported the proposed questions, believed the questions “are for members at the very early stages of understanding their land use emissions” and that they would have to “evolve in future” to capture the information that they require.

Companies (50% support) and consultancies (0% support) had different expectations of the proposed questions. While there is agreement that LUC is an important topic, there is uncertainty and difficulty when accounting for emissions from LUC. One company felt that the questions would add to their reporting effort without adding value, they stated that it is not always necessary to model GHG emissions to understand the related risks and opportunities. Another company highlighted that LUC is something that can be accounted for at a country or regional level, but it is too complex to be translated accurately across a company’s supply chain.

Investors require clear, standardized information on LUC in supply chains, to ensure they are less exposed to the risks that this could present. On the other hand, companies need to have a better understanding of what is happening in their supply chain, as external stakeholders (Investors, not-for-profits, research institutions) are requesting for this information.

▼ **Companies are not yet able to provide data on indirect LUC**

Respondents were asked if they are able to provide data on GHG emissions from indirect LUC. There was unanimous agreement from companies that they are unable to provide this data.

When attributing LUC to a particular commodity or activity, there are two aspects that companies can account for, *direct* and *indirect* LUC (as illustrated in Figure 6).

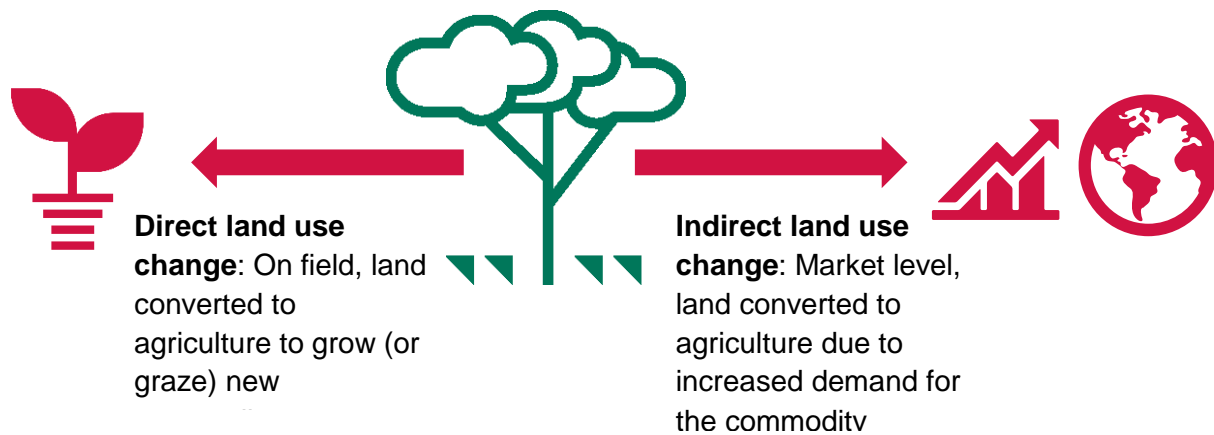


Figure 6- Direct and indirect land use change

Most standards and tools do not currently include indirect LUC in their list of required metrics neither provide guidelines for it. Nevertheless, guidelines and methods for estimating indirect LUC is included in the LUC Guidance developed by Quantis and advised by other frameworks as good practice, such as the Accountability Framework initiative. Through these guidelines and methods, companies can get a complete picture of their LUC impact and they can identify measures to address this, e.g. increase the yield on existing land to reduce demand for new land conversion elsewhere.



▼ **Companies are not accounting for the full scope of LUC emissions**

Half of the companies responding to the survey are accounting for their LUC emissions (in their direct operations) and one third provided a specific methodology, standard or tool they used to account for LUC.

The source of GHG emissions from LUC will be attributed to different scopes depending on the stages of the value chain that the organization operates in. For processors, traders, manufacturers and retailers, emissions from LUC would fall under Scope 3 emissions. For producers and companies integrated along the full value chain, this would be considered Scope 1 emissions.

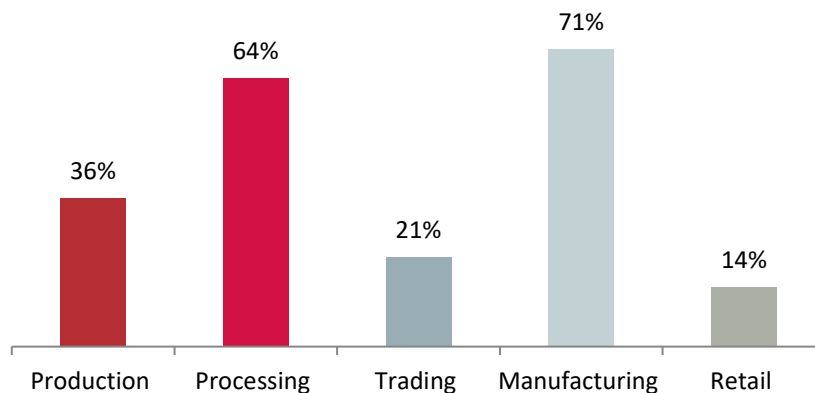


Figure 7 – Company respondents by value chain stage(s)

As shown in Figure 7, responding companies covered the entire value chain, with strong representation from manufacturing (71%) and processing (64%). However, only companies from the production stage stated that they are accounting for GHG emissions from LUC. This would apply only to Scope 1 emissions, none were able to disclose their Scope 3 emissions from LUC. This is despite the fact that an array of methodologies and tools have been developed in recent years to allow companies to measure LUC in their supply chain.

While respondents from this survey might not be representative of all companies and it is a small sample, this lack of tracking LUC emissions in the supply chain is reflected in wider research. A recent survey conducted by Ceres found that less than a third of the 50 largest food and beverage companies in North America disclose emissions from agricultural production. 30% of the companies provided Scope 3 emissions and only 16% have targets to reduce these emissions ([Ceres, 2018](#)). This was mirrored by a CDP report in 2015 that found less than a quarter of food and beverage companies account for agricultural emissions in their supply chains ([CDP, 2015](#)).

## Final remarks

From the key findings in this survey, and replicated in wider research, companies are not yet accounting for LUC emissions in their supply chain. Respondents identified that there is a need for clearer definitions, guidance and examples to aid companies in accounting for and reporting LUC emissions. However, there are a plethora of new resources for companies to use when accounting for LUC emissions. This includes but is not restricted to: the ‘Quantis LUC Guidance’, the ‘GHG Protocol Agricultural Guidance (project level)’, and ‘Measure the Chain: Tools for Assessing GHG Emissions in Agricultural Supply Chains’.

Once these emissions have been assessed, it is possible to disclose this information through CDP’s current climate change questionnaire. Companies across the supply chain can disclose on Scope 1, 2, and 3 emissions. CDP is keen to continuously improve its questions and guidance for companies wishing to disclose on LUC emissions.

Investors are increasingly engaging with companies to help manage and mitigate the risks posed by LUC. This was highlighted through the 44 investors representing US \$6.4 trillion in assets, who called on companies sourcing cattle products to mitigate and eliminate deforestation risks from their supply chains. [The investors stated that a two-degree trajectory is impossible without reducing emissions from land use change.](#)

Investors should engage with companies to account for and disclose LUC emissions in their supply chain (as shown in Figure 8).



Figure 8 – [An investor roadmap for engagement](#)

Going forward, [as investors and other financial institutions continue to increase their interest in LUC emissions from their investees](#), and as new methodologies and frameworks are developed, companies should assess LUC emissions in both their direct operations and the rest of the supply chain. This information should be made available to investors, purchasing customers and other stakeholders in a consistent, standardized way.

## Appendix

- ▼ The analysis and results presented in this report are based on the 13 organizations that responded in full to our targeted engagement. For further information on this engagement and the pilot questions please refer to the following link: [Accounting for land use change emissions from agricultural supply chains.](#)

### New pilot questions

*Please note the question numbers for the new pilot questions do not represent actual CDP Questionnaire numbers but provide a logical order to review the questions. Amendments to current questions, however, will use the same numbering. To see the question text and full response options [here](#).*

#### ▼ Agricultural Climate Change Questionnaire

(1) Do you calculate greenhouse gas emissions related to land use change in your direct operations and/or in other parts of your value chain?

(1a) Break down your land use change emissions for your direct operations and for your value chain.

(1b) Identify the reasons for any change in your total land use change emissions and explain how the land use change emissions from your direct operations and/or other parts of your value chain compare to the previous year.

(1c) Why do you not calculate greenhouse gas emissions for land use change in your direct operations and/or in other parts of your value chain?

#### ▼ Forests Questionnaire

(1) Do you measure the impact of your forests-related commitment(s)?