INVESTING IN
PLANETARY SUSTAINABILITY

SCOPE FOR IMPROVEMENT
Accounting for food loss and waste in Scope 3 reporting

Briefing Paper
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Planet Tracker

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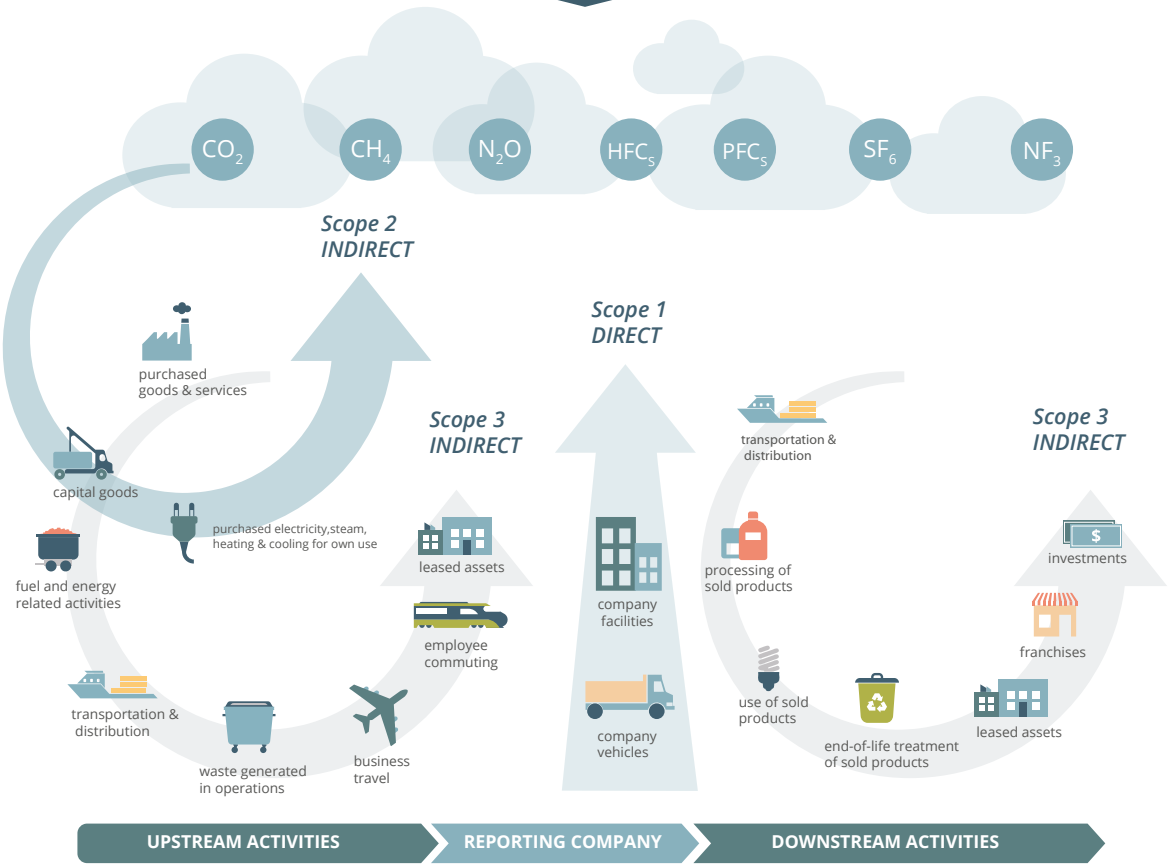
OVERVIEW OF GREENHOUSE GAS PROTOCOL SCOPES AND EMISSIONS ACROSS THE VALUE CHAIN[i]



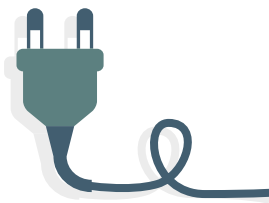
SCOPE 1

Direct greenhouse gas (GhG) emissions occurring from sources that are owned or controlled by a company, for example, emissions from combustion in owned or controlled boilers, furnaces and vehicles and emissions from chemical production in owned or controlled process equipment.

SCOPE 2

Accounts for GhG emissions from the generation of purchased electricity consumed by a company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company. Within this report Scope 2 emissions are either:

- Location-based: GhG intensity of the grids where a company's sites operate.
- Market-based: Accounts for emissions from energy contracts and instruments (such as renewable energy credits).



SCOPE 3

Emissions which result from the activities of the company but occur from sources not owned or controlled by the company. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels and use of sold products and services.[ii]

Reported Scope 3 emissions by 12 publicly listed European food retailers account for 44% of total emissions in the European food retail sector in 2018.[iii]

KEY TAKEAWAYS

FOOD LOSS

is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retailers, food service providers and consumers.[iv]

FOOD WASTE

refers to the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food service providers and consumers.

- The United Nations Food and Agriculture Organisation (FAO) estimates that between a third and a quarter of all food produced for human consumption is wasted between field and fork.[v] This loss is the equivalent of 24% of all human food calories produced.[vi]
- Scope 3 emissions make up an estimated 44% of total food waste emissions produced annually in Europe.
- The EU estimates that total associated annual costs of FLW in the EU amount to €143 billion, split 49% from production, handling and storage, processing, wholesale/retail and food service sectors, and 51% attributed to consumption or post wholesale/retail. Thus, mismanaged FLW negatively impacts both earnings and GhG emissions.
- Currently the Greenhouse Gas Protocol and Food Loss & Waste Protocol, two market leading frameworks applied by companies in measuring emissions in the European food retail sector, do not include explicit guidance for calculating and disclosing food loss and waste-based Scope 3 emissions.
- The top ten shareholders, including Vanguard, BlackRock and Norges Bank Investment Management, with investments valued at $31 billion in the top 12 publicly listed food retail companies in Europe need to ask these companies to address their significant risks from not reporting their food loss and waste (FLW) greenhouse gas (GhG) emissions.
- Combined, the reported GhG Scope 1, 2 and 3 emissions of these companies in 2018 amounted to 26.6 $MtCO_2$, equivalent to 14% of the estimated 186 $MtCO_2$ of food waste emissions produced annually in Europe.[vii]
- Of these 12 publicly listed European food retailers:
  - Only six report on the weight volume of food lost or wasted in their operations. In their latest annual and sustainability reports, two of the remaining companies report food waste in tonnes as a percentage of financial revenue or food sales and 4 disclose no food loss or waste data.
  - Only seven provide any Scope 3 emissions reporting, but, with the exception of Finland-based Kesko Corporation, none includes food loss and waste-based emissions in their accounting.
- As a result, total waste production by volume and Scope 3 emissions estimates arising from this waste for the European food retail sector are presumed to be significantly underreported.
- By not measuring and disclosing food loss and waste-based Scope 3 emissions, the remaining 11 companies and their investors are unable to correctly assess total generated emissions. As a result, investors are unable to undertake accurate emissions-based benchmarking within the sector, nor measure aggregated portfolio-based emissions exposure.

REPORT RECOMMENDATIONS

This report calls for the following stakeholders to:

FOOD RETAILERS

- **FLW reporting:** Report on food loss and waste by volume (tonnes) in their annual reports from 2021 onwards.
- **Scope 3 accounting:** Commit to explicit food loss and waste-based Scope 3 emissions accounting and reporting by 2022.
- **Combined reporting:** Aggregate food loss and waste-based Scope 3 emissions into group and company level greenhouse gas accounting and report separately on specific Scope 3 emissions related to food loss and waste by 2023.
- **Set Targets:** Set clear and transparent targets segregating Scope 1 and 2 net-emission reduction targets from Scope 3 commitments by 2023.

GREENHOUSE GAS REPORTING AGENCIES AND PROTOCOLS

- **Update Assessment Frameworks:** Include explicit methodologies for accounting for food loss and waste-based Scope 3 emissions in their protocols by 2022 to support uptake by food retailers.

FOOD RETAIL INVESTORS

- **Food loss and waste:** Request reported food loss and waste data by volume (tonnes).
- **Account for Scope 3:** Request food loss and waste-based Scope 3 emissions accounts from food retail companies.
- **Net-zero emissions:** Ask food retailers to transparently detail how they are accounting for and incorporating Scope 3 emissions into their net-zero emissions targets.
- **FLW-related Scope 3 targets:** Request clear and transparent food loss and waste-related Scope 3 reduction targets.

EUROPEAN COMMISSION

- **EU Waste Framework Directive:** Bring the Directive up to date by specifically including Scope 3 emissions reporting related to food waste and loss in the food retail sector.

The United Nations Food and Agriculture Organisation (FAO) estimates that between a third and a quarter of all food produced for human consumption is wasted between field and fork.[viii] This loss is the equivalent of 24% of all human food calories produced.[ix]

Food loss and waste (FLW) between post-harvest and the retail stage of the food supply chain, roughly 14% of total food production, is estimated to cost $400 billion per annum.[x] With a further 10% to 15% lost or wasted at pre-harvest and during and post the retail part of the supply chain, the total global economic cost of FLW stands at $940 billion per annum – see Figure 1 and Table 1.[xi]

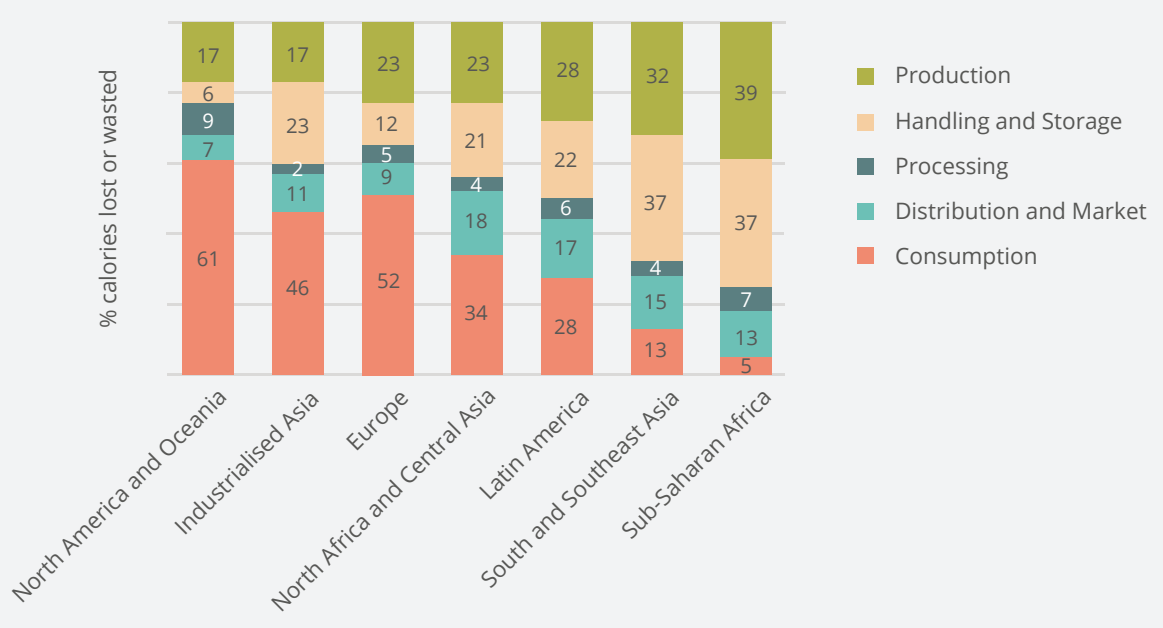


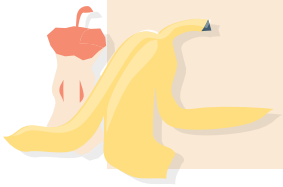
***Figure 1**: Food Loss and Waste along the Food Supply Chain* [xii]

***Table 1**: Share of Total Food Available that is Lost or Wasted* [xiii]

SHARE OF TOTAL FOOD AVAILABLE THAT IS LOST OR WASTED						
North America and Oceania	Industrialised Asia	Europe	North Africa and Central Asia	Latin America	South and Southeast Asia	Sub-Saharen Africa
42%	25%	22%	19%	15%	17%	23%

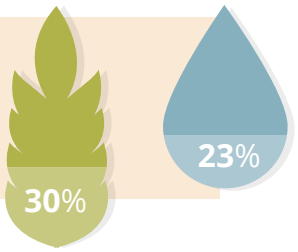
In addition to these direct costs, in 2019, global FLW-based emissions amounted to 3.3 $GtCO_2$, equivalent to 9% of total global emissions based on estimates from the Global Carbon Project.[xiv] Combining the $940 billion of direct economic costs and the $305 billion of attributed greenhouse gas costs, FLW generates a global market cost of $1.2 trillion.[xv]

United States based consumers, businesses and farms spend $218 billion a year, or 1.3% of GDP, growing, processing, transporting and disposing of food that is never eaten. That equates to 52 million tons of food sent to landfill annually, plus another 10 million tonnes that is discarded or left unharvested on farms.[xvi]



Fruit and vegetable wastage alone in the EU amounts to 50 million tonnes, equivalent to the carbon emissions of 400,000 cars.[xvii]

Globally, food lost or wasted in the supply chain uses the equivalent of 30% of total crop land and 23% of fresh water utilised for food production. Agriculture alone accounts for 70% of all fresh water consumption.[xviii]



EUROPEAN FOOD LOSS AND WASTE-BASED SCOPE 3 REPORTING GAP

Within the European Union (EU), the World Resources Institute estimates that 49% of the 88 million tonnes of annual FLW is attributed to production, handling and storage, processing, wholesale/retail and food service sectors, with the remaining 51% attributed to consumption or post wholesale/retail. In total the associated annual costs of FLW in the EU amount to €143 billion.[xix]

For food retailers within the food supply chain, FLW not only represents lost earnings potential and reduced operating profit margins, but also contributes towards their GhG footprint. Both executive management and shareholders of food retail companies should therefore be financially motivated to set FLW and related emissions reduction targets.

Accurately measuring and reporting emissions, and specifically Scope 3, enables companies to:[xx]

- Assess where the emission hotspots are in their supply chain.
- Identify resource and energy risks in their supply chain.
- Identify which suppliers are leaders and which are laggards in terms of their sustainability performance.
- Identify energy efficiency and cost reduction opportunities in their supply chain.
- Engage suppliers and assist them to implement sustainability initiatives.
- Improve the energy efficiency of their products.
- Positively engage with employees to reduce emissions from business travel and employee commuting.

Certain market signs are positive. The growing availability and granularity of emissions-based data highlights how food retail companies in Europe are becoming increasingly sophisticated and transparent in product lifecycle reporting assessments. Overall, European publicly listed food retailers have responded positively to GhG reporting and commitments. Almost all publicly listed food retailers in Europe report on Scope 1 and 2 emissions. An increasing number now also account for Scope 3 emissions.[xxi]

As a result, publicly listed European food retailers such as Ahold Delhaize, Carrefour, J Sainsbury, Kesko Corporation and Tesco should be recognised for their positive commitments to cut both emissions and FLW – see Table 2.

Table 2: European Food Retailer Reported Net Emission Reduction Targets

** In Scope includes measurements which factor at least Scope 1 and Scope 2 emissions*

Emissions Measurement	Constituent Name	Emissions Scope	Emissions Baseline Year	Emissions Target Year	Emissions Reduction Amount (%)	Reduction per Year (%)
In Scope	AHOLD DELHAIZE	1	2008	2020	30%	3%
In Scope	CARREFOUR	1&2	2008	2025	40%	3%
In Scope	CARREFOUR	1&2	2008	2050	70%	2%
In Scope	TESCO	1	2008	2020	35%	7%
In Scope	TESCO	1	2008	2025	60%	6%
In Scope	TESCO	1	2008	2050	100%	3%
Out of Scope	OCADO	N/A	N/A	N/A	N/A	N/A
In Scope	J SAINSBURY	1&2	2008	2020	30%	2%
In Scope	J SAINSBURY	1&2	2008	2040	100%	3%
In Scope	WM MORRISONS	1	2008	2020	30%	3%
Out of Scope	WM MORRISONS	N/A	N/A	N/A	N/A	N/A
Out of Scope	CASINO GUICHARD PERRACHON SA	N/A	N/A	N/A	N/A	N/A
In Scope	ICA GRUPPEN	1	2008	2020	70%	5%
In Scope	AX FOOD	1	2008	2020	75%	7%
Out of Scope	JERONIMO MARTINS	N/A	N/A	N/A	N/A	N/A
Out of Scope	COLRUYT GROUP	N/A	N/A	N/A	N/A	N/A
In Scope	KESKO CORPORATION	1&2	2008	2025	18%	2%

However, there is room for improvement. Analysing 12 of Europe's largest food retailers by market capitalisation, Planet Tracker found that all but one, Colruyt Group,[xxii] report on Scope 1 and Scope 2 emissions; but only seven reported Scope 3 emissions in their 2018/19 annual statements – see Table 3.

Table 3: Reported Emissions and Food Waste from Publicly Listed European Food Retailers 2018/19 in tCO_2

Constituent Name	Scope 1	Scope 2	Scope 3
AHOLD DELHAIZE	1,816,000	1,707,000	449,000
CARREFOUR	1,189,900	1,494,700	348,500
TESCO	1,328,543	1,045,760	913,802
OCADO	86,502	814	-
J SAINSBURY	480,190		-
WM MORRISONS	490,232	458,268	-
CASINO GUICHARD PERRACHON SA	1,140,411	283,562	-
ICA GRUPPEN	25,347	27,342	75,824
AX FOOD	17,040	3,248	721
JERONIMO MARTINS	233,404	1,663,324	211,837
COLRUYT GROUP	132,098	-	-
KESKO CORPORATION	45,139	80,822	9,680,600

Combined, the reported Scope 1, 2 and 3 emissions of these companies in 2018 amounted to 26.6 $MtCO_2$, equivalent to 7% of the estimated 186 $MtCO_2$ of food waste emissions produced annually in Europe.[xxiii] Scope 3 emissions make up an estimated 44% of total food waste emissions produced annually in Europe – see Figure 2.

However, with the exception of Kesko Corporation, none of the screened food retailers fully account for FLW-based Scope 3 emissions.[1] As a result, total Scope 3 emissions estimates for the European food retail sector are estimated to be significantly underreported.

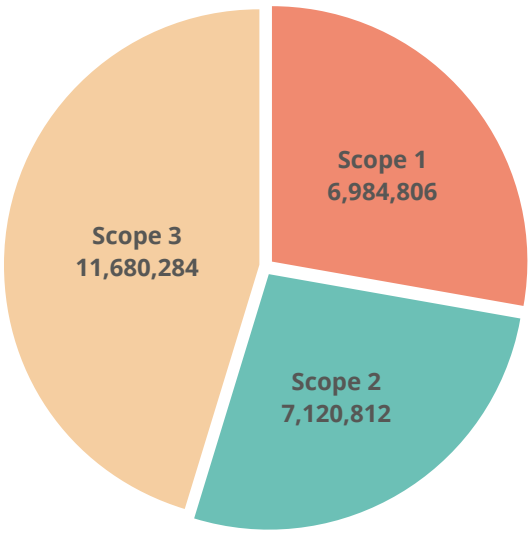


Figure 2: 2018 Total Reported Emissions in tCO_2 by Profiled European Food Retailers

Responding to the current lack of FLW-based Scope 3 reporting by publicly listed European food retailers, this report calls for these food retail businesses to:

- **FLW reporting:** Report on food loss and waste by volume (tonnes) in their annual reports from 2021 onwards.
- **Scope 3 accounting:** Commit to explicit food loss and waste-based Scope 3 emissions accounting and reporting by 2022.
- **Combined reporting:** Aggregate food loss and waste-based Scope 3 emissions into group and company level greenhouse gas accounting and report separately on specific Scope 3 emissions related to food loss and waste by 2023.
- **Set Targets:** Set clear and transparent targets segregating Scope 1 and 2 net-emission reduction targets from Scope 3 commitments by 2023.

[1] Based on 2018/19 report disclosure, Kesco Corporation was the only retailer providing a detailed Scope 3 emissions reporting breakdown

REGIONAL AND NATIONAL FLW POLICIES

Policy directives in the EU at a regional and national level are focusing attention on:

The EU Waste Framework Directive: Sets an EU wide target to cut food waste by 30% by 2025 and 50% by 2030 compared to the 2014 baseline. The Directive establishes rules on how waste should be managed and paves the way for market based initiatives such as Extended Producer Responsibility.

This report calls for this Directive to be brought up to date by specifically including Scope 3 emissions reporting related to food waste and loss in the food retail sector.

The 2020 European Green Deal: Includes the EU's Farm-to-Fork Strategy which 'aims to reduce the environmental impact of the food processing and retail sectors by taking action on transport, packaging and food waste'. While it is not explicitly clear how the European Commission intends to enforce this regulation, it is worth noting that FLW is firmly on the European Commission's climate change and biodiversity agenda.

Environment Code, France: In 2016, France became the first country to regulate food waste with the objective of reducing wastage by 50% by 2025. In an effective amendment to the Environment Code, the update requires food retailers (with a store area of >400 m^2) to ensure that edible food is redistributed before any other disposal options, such as incineration, are considered. Failure to comply with this regulation can result in fines and director liability.

FLW-based policies apply not only to physical waste but, in some cases, include GhG emissions as demonstrated in the UK:

Streamlined Energy & Carbon Reporting (SECR): Implemented by the UK government in 2019, SECR requires UK companies to report publicly on their UK based Scope 1, 2 and 3 emissions within their Directors' Report. Companies and LLPs exceeding two or more of the following criteria fall under the regulation: £36m annual turnover, £18m balance sheet total or 250 employees. SECR enforcement responsibility sits with the Financial Reporting Council. In the event of non-compliance this Council can act in line with the powers provided by the Secretary of State.

SCOPE 3 GAPS IN REPORTING FRAMEWORKS

Food retailers analysed in this report are actively utilising FLW and GhG reporting guidelines, specifically:

- **Greenhouse Gas Protocol**
- **Food Loss & Waste Protocol**
- **UK Government Environmental Reporting Guidelines**

Planet Tracker has identified a disclosure gap in these frameworks. Simply, they do not provide explicit guidance on FLW-based Scope 3 emissions accounting.[2]

This report recommends these protocol designers, in collaboration with food retailers, develop FLW specific Scope 3 measurement and reporting methodologies within these standards by 2022.

[2] The Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions provides guidance for waste production but does not include specific food waste guidance.[2]

INVESTOR RESPONSES

The lack of FLW-related Scope 3 disclosure by food retailers means investors and shareholders are not able to accurately measure their own portfolio emissions footprint. As highlighted by research from Principles for Responsible Investment,[xxiv] AXA Group,[xxv] the Society of Actuaries[xxvi] and Norges Bank Investment Management,[xxvii] measuring the carbon footprint of companies enables investors to:

- Compare portfolios against global benchmarks.
- Calculate return forecasts and equity valuations against carbon budget scenarios.
- Assess financially material climate change information informing investment decision making.
- Support active stewardship such as voting on emissions based shareholder resolutions.
- Monitor and action asset manager emission reduction targets at a portfolio level.

FLW also impacts investors in food retail businesses as lower earnings margins resulting from food losses generally reduce investor earnings from food retailers. Investors and analysts may therefore consider undertaking stress testing to determine whether company earnings and valuations would change if FLW and related Scope 3 emissions were fully accounted for and internalised on the balance sheets of food retailers.

The Top 10 shareholders across these twelve companies collectively hold $31.5 billion of equity value – see Table 4. Five of these shareholders are registered supporters of the Task Force on Climate-related Financial Disclosures (TCFD).

Table 4: Top 10 Shareholders of Europe's Leading 12 Food Retailers

Shareholder Name	PE Holdings Market Value (USD mn)
Soares Dos Santos Family	5,754
ICA-handlarnas Forbund	4,677
BlackRock	4,453
Vanguard Group	3,150
Norges Bank Investment Management	2,832
Schroders	2,687
Finatis SA	2,177
Ax:son Johnson Family	2,050
London & Amsterdam Trust Co. Ltd.	1,889
State Street Corporation	1,807
	31,476

Shareholders have significant power in helping shift our production systems towards longer term stability, but this requires actions today. This report calls for these and other shareholders to engage with the executive management of publicly listed food retail businesses to:

- **Food loss and waste:** Request reported food loss and waste data by volume (tonnes).
- **Account for Scope 3:** Request food loss and waste-based Scope 3 emissions accounts from food retail companies.
- **Net-zero emissions:** Ask food retailers to transparently detail how they are accounting for and incorporating Scope 3 emissions into their net-zero emissions targets.
- **FLW-related Scope 3 targets:** Request clear and transparent food loss and waste-related Scope 3 reduction targets.

ALIGNING SHAREHOLDER EMISSIONS COMMITMENTS WITH COMPANY REPORTING

2019 and 2020 have witnessed major commitments by some of the world's largest asset owners, GPIF for example, and asset managers such as BlackRock, to improve GhG reporting within their portfolios, amongst other indicators.

By May 2019, as an illustration, nearly 800 public and private sector organisations had announced their support for the TCFD and its work, including global financial firms responsible for assets in excess of $118 trillion.

UNEP-FI's Net-Zero-Asset Owner Alliance highlights positive commitments and momentum from institutional asset owners such as pension and insurance funds to transition their investment portfolios to net-zero GhG emissions by 2050. At the end of 2019, asset owners and managers representing nearly $4 trillion in assets under management had signed up to the Alliance.

INSIGHTS - COMPANIES CANNOT MANAGE WHAT THEY DO NOT MEASURE

In Europe, publicly listed food retailers are showing positive signs and commitments to be more effective in their emissions reporting. This is not the case for all industries and whilst this report focuses on the food retail sector, the core messages also apply to other sectors.

Significant barriers remain to widespread adoption and market transparency for Scope 3 emissions accounting. Globally, for example, only 39 countries officially reported data on an annual basis to the FAO on FLW between 1990 and 2017. In practical terms, governments cannot report FLW data if the companies contributing to national accounts are themselves not disclosing their FLW volume and total GhG footprints including Scope 1, Scope 2 and Scope 3 emissions.[xxiii]

A lack of FLW data disclosure makes it difficult, if not impossible, to benchmark companies against each other or draw any meaningful conclusions regarding the FLW or related Scope 3 efficiency of a company.

Of the 12 of European food retailers analysed in this report, Planet Tracker found that only six, Tesco, WM Morrisons, ICA Gruppen, Jeronimo Martins, Colruyt Group and Kesko Corporation report food lost by weight volume. Carrefour, J Sainsbury, Casino Guichard Perrachon and AX Food did not report FLW data in their latest annual reports whilst Ahold Delhaze and Ocado reported FLW as a proportion of sales metrics – see Table 5.

Table 5: Reported Emissions and Food Waste from Publicly Listed European Food Retailers 2018 in tCO_2

Constituent Name	Total food waste (tonnes)	FW Unit	FWR Unit	Financial Year
AHOLD DELHAIZE	5.30	t per EUR mn food sales	Percentage	2018/19
CARREFOUR	N/A	N/A	tonnes	2018/19
TESCO	79,272	tonnes	tonnes	2018/19
OCADO	0.4%	food wasted of food sales	N/A	2018/19
J SAINSBURY	N/A	N/A	tonnes	2018/19
WM MORRISONS	14,023	tonnes	N/A	2018/19
CASINO GUICHARD PERRACHON SA	N/A	N/A	tonnes	2018/19
ICA GRUPPEN	60,890	tonnes	tonnes	2019
AX FOOD	N/A	N/A	N/A	2018/19
JERONIMO MARTINS	94,193	tonnes	tonnes	2018
COLRUYT GROUP	22,815	tonnes	tonnes	2018/19
KESKO CORPORATION	18,931	tonnes	tonnes	2018/19

The lack of standardised FLW reporting by these companies prevents investors and analysts from benchmarking or comparing performance and assessing direct volume based FLW reduction targets.

If companies do not disclose FLW or Scope 3 emissions data, investors and markets cannot meaningfully set or measure Scope 3 emissions-related targets.

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ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank aligning capital markets with planetary limits. It was launched in 2018 by the Investor Watch Group whose founders, Mark Campanale and Nick Robins, created the Carbon Tracker Initiative.

Planet Tracker was created to investigate the risk of market failure related to ecological limits. This investigation is for the investor community where other ecological limits, in contrast to climate change, are poorly understood and even more poorly communicated, and not aligned with investor capital.

FOOD & AGRICULTURE TRACKER

Food & Agriculture Tracker is a thought leadership programme which examines the relationship between food and agriculture companies, environmental risks and financial return, thereby exploring the materiality of embedded nature.

Our aim is to align capital markets with the sustainable management of global food systems and agriculture resources.

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