

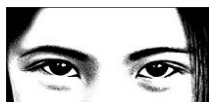


Terre des hommes

# 2021 Carbon Footprint Report

February 2023

**ecoact**  
an Eviden business



**Terre des hommes**  
Helping children worldwide.

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# Executive Summary

Terre des hommes (Tdh) is an international children's aid non-governmental organization, committed to an environmentally sustainable functioning and model of action.

The footprint report below, carried out in partnership with Eco Act and following a model provided by the Climate Action Accelerator, quantifies the various sources of greenhouse gas emissions for which Tdh is accountable. The approach taken complies with the international standard on the matter (ISO 14064) and follows the GHG Protocol methodology<sup>1</sup>.

This assessment begins by outlining Tdh's commitment's and explores its different activities to estimate the organization's CO<sub>2e</sub> emissions in 2021. Although incomplete in some respect, the report can nevertheless give an overview of Tdh's main categories of emissions. In particular, it highlights the high proportion of business travel and commuting and purchase of capital assets, goods and services in the organization's activities. This is quite understandable given the organization's large geographical scope (more than 30 countries).

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**Tdh's total greenhouse gas emissions in 2021 amounts to 18'500 tCO<sub>2e</sub>.**

A few large items are responsible for more than half of the total footprint:

- Purchase of services: 13% of the total footprint, or 2412 tCO<sub>2e</sub>
- Business travel by car: 12% of the total footprint, or 2279 tCO<sub>2e</sub>
- Commuting by car: 9% of the total footprint, or 1678 tCO<sub>2e</sub>
- Purchase of furniture, equipment and IT material: 12% of the total footprint, or 2196 tCO<sub>2e</sub>
- Road transport: 9% of the total footprint, or 1652 tCO<sub>2e</sub>

If we look more closely, the use of car in freight and business travel alone accounts for 4032 tCO<sub>2e</sub> or 21% of total Tdh emissions (excluding commuting).

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In addition, the footprint report presents a breakdown by regions of intervention. By putting this data into perspective with local contexts, new approaches can emerge with regards to how Tdh's delegations can contribute to reduce emissions. The report also explores the limitations of Tdh in collecting information, and provide recommendations in the final chapters. Indeed, it will be important to drive improvements in monitoring and reporting if Tdh is to accurately track and improve its footprint and use this exercise to develop its roadmap

The information presented below is intended to help Tdh guide its environmental action, working with teams to find solutions to reduce the organization's footprint by 50% by 2030, in line with the 2015 Paris Agreements on Climate Change. It is the result of numerous exchanges with people from headquarters, the field and outside the organization, who should be warmly thanked for their time, patience, and efforts.

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<sup>1</sup> [Greenhouse Gas Protocol | \(ghgprotocol.org\)](https://ghgprotocol.org/)

# Introduction

Terre des hommes (Tdh) is an international children's aid non-governmental organization founded in 1960 in Lausanne, Switzerland. Today, the NGO works in more than 30 countries, where it deploys programmes in migration, health and access to justice, supported by transversal expertise in child protection and WASH.

Tdh's collaborators are witnessing daily how climate and environmental crises aggravate the threats against child protection and fundamental rights. It is estimated that around 1 billion children are at extremely high risk of being impacted by a climate-related hazard such as drought, heatwaves or floods<sup>2</sup>. Moreover, climate and environmental changes act as "threat multipliers" that intersect with other crises such as conflict or food insecurity, thus exacerbating situations of vulnerability for children. All this considerably increases the number of children and young people in need of humanitarian assistance.

There is still time to do something, but the window of opportunity is rapidly closing. Therefore, Tdh is firmly determined to engage in rapid action on mitigation and adaptation in the context of its activities, and to advocate for more engagement from other actors.

**In 2021, the organization pledged to reduce its carbon emissions by 50% by 2030, in line with the Paris agreement, in a contribution to limit the rise in temperatures to 1.5 degrees Celsius.**

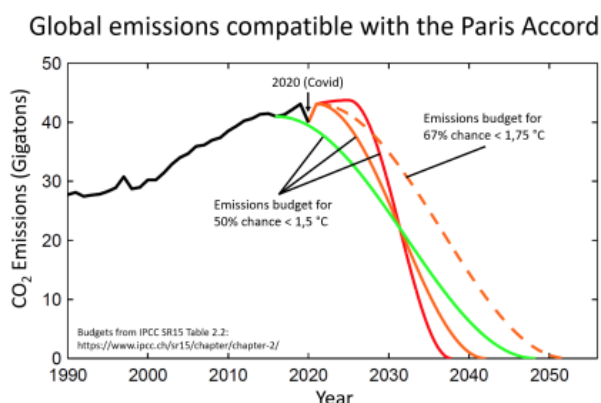
This study aims to present a first complete footprint of the organization. Over a period of 6 months, data was collected and analyzed following the principles of the World Resources Institute (WRI) Greenhouse Gas (GHG) Protocol.

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## Tdh commits to science-based targets compatible with the Paris Accord.

The graph below serves as a reminder of the objectives of the Paris Agreement (COP21), i.e., the need for a 50% reduction in emissions by 2030 to achieve carbon neutrality by 2050 in order to limit global warming to below 1.5 °C. Tdh pledge reflects this global ambition and urgency for drastic emissions reductions.

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<sup>2</sup> [Office of the Special Representative of the Secretary-General on Violence Against Children, 2022. The climate crisis and violence against children.](#)

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# Methodology

The methodology chosen for this assessment of Tdh's carbon footprint complies with the international standard on the matter (ISO 14064) and follows the GHG Protocol methodology<sup>3</sup>, particularly with regards to relevance, comprehensiveness, consistency, transparency, and accuracy. Carrying out a GHG assessment allows an organization to:

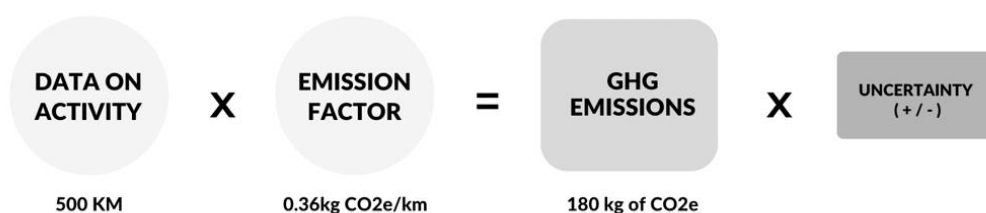
- Structure its environmental policy
- Identify actions to reduce its emissions and energy bills
- Evaluate and monitor the decarbonation efforts made
- Stand out as an example
- Comply with regulations (if subject to them)
- Involve employees or partners in this exercise and raise awareness

## What is a greenhouse gas assessment?

The main objective of a GHG assessment is to give a global overview of an activity with an indicator that is not economic (CHF, euros, \$), but related to its contribution to the climate crisis (greenhouse gas emissions expressed in tons of CO<sub>2</sub>). The greenhouse gases and their impacts are defined in the Kyoto Protocol (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub><sup>4</sup>). In addition to these, there are a number of so-called “non-Kyoto” gases, including halocarbons (similar to HFCs, PFCs), which are found in air conditioning systems, which are relevant here as they are emitted through Tdh's activities.

## Methodology for calculating emissions

To calculate Tdh's GHG emissions, we collected activity or “raw” data (CHF, km travelled, litres of fuel consumed, etc.) and multiplied them by a standard emission factor<sup>5</sup> to calculate their equivalence in terms of the quantity of CO<sub>2</sub> emitted<sup>6</sup>. As different gases have a different global warming potential (GWP) they are converted to CO<sub>2</sub> equivalents to allow for streamlined reporting.



<sup>3</sup> [Greenhouse Gas Protocol | \(ghgprotocol.org\)](https://www.ghgprotocol.org/)

<sup>4</sup> Carbon dioxide (CO<sub>2</sub>) ; methane (CH<sub>4</sub>); nitrous oxide (N<sub>2</sub>O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF<sub>6</sub>).

<sup>5</sup> Emissions factors are developed by measuring the life-cycle emissions of products or services, i.e. the emissions required for their manufacture, operation and disposal.

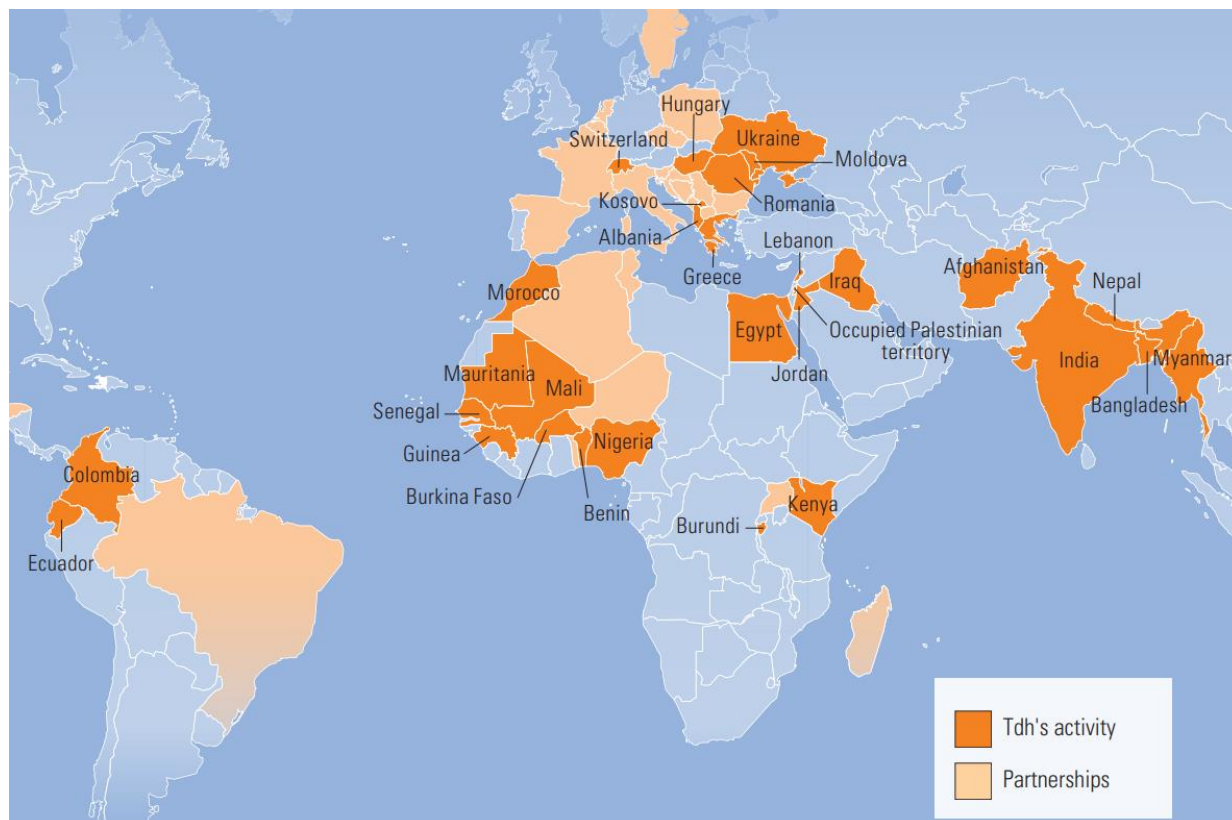
<sup>6</sup> GHG emissions are always expressed in Kgs or tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e).



# Perimeters of the footprint calculation

Determining the scope of the footprint calculation is a crucial step. It determines the scope and comprehensiveness of the study as well as the period covered. It must certainly include all the entities and activities that enable the organization to carry out its social mission. Once the scope has been defined, it is validated by the Direction of the organization.

## Organizational scope



The carbon measurement is applied to all entities that are financially dependent on Tdh (in 2021). This includes the Lausanne headquarters (including other buildings owned by Tdh in the Switzerland), the Zürich office, as well as all countries where Tdh has an operational capacity ("Tdh's activity" in the map above).

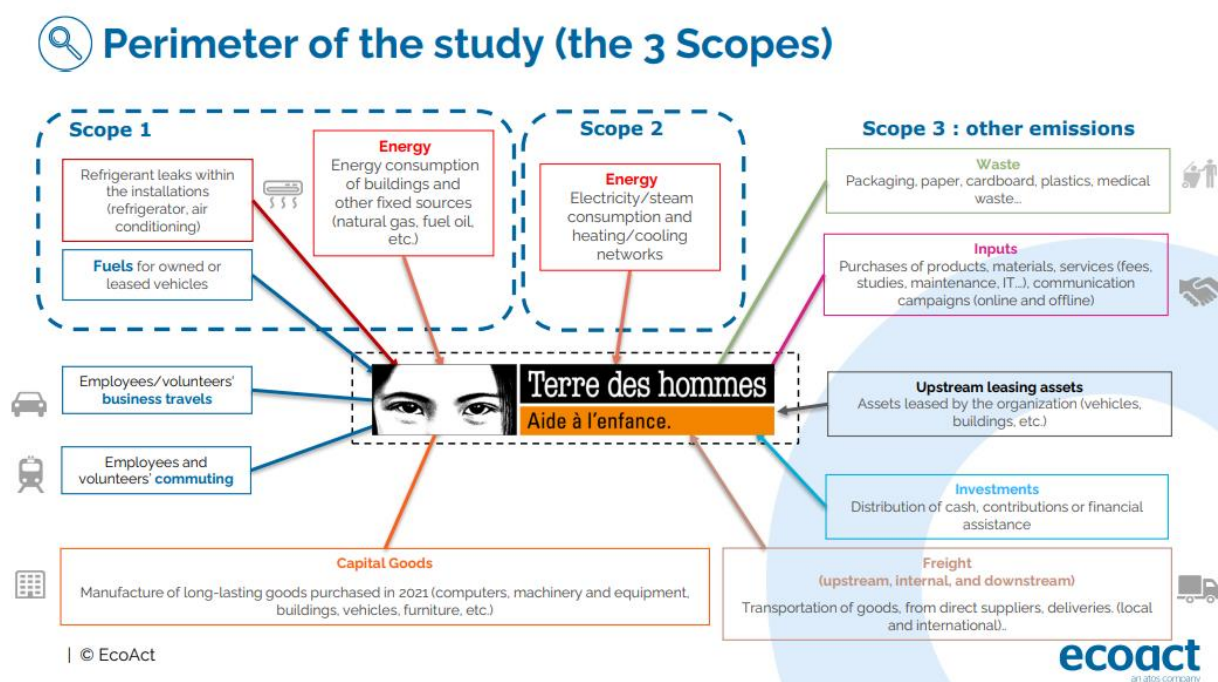
<b>HQ</b>	Lausanne, Switzerland
<b>Field offices</b>	29 countries (Albania, Afghanistan, Bangladesh, Benin, Burkina Faso, Burundi, Colombia, Ecuador, Egypt, Greece, Guinea, Hungary, India, Iraq, Jordan, Kenya, Kosovo, Lebanon, Mali, Morocco, Mauritania, Moldova, Myanmar, Nepal, Nigeria, Palestine, Romania, Senegal, Ukraine)
<b>Employees</b>	2190
<b>Budget</b>	97.9 mio CHF

## Operational scope

International carbon accounting classifies greenhouse gas emissions into three groups:

- **Scope 1:** direct emissions from the combustion of fossil fuels (from fixed or mobile installations located within the organizational perimeter)
- **Scope 2:** indirect emissions associated with the consumption of purchased electricity, cooling and heating
- **Scope 3:** all other indirect emissions

The operational scope defines which processes of the organization are included in the measurement. It includes all activities for which the organization is considered responsible. In the case of Tdh's carbon footprint, the operational scope can be visualized as follow:



In the diagram above, the “investments” box corresponds to an estimate of the emissions linked to the activities of our local operational partners in the implementation of projects financed by Terre des hommes. This attempts to capture only the emissions in a limited sense, directly related to the project. It is therefore mainly emissions related to scopes 1 and 2 (energy consumption) and sometimes to scope 3 for the purchase of specific goods in the context of the project. We will come back to this point in the detailed analysis of this category (p.25).

### Selected emission sources

It was decided that all significant sources would be included in the scope of the study.

- **Scope 1 and 2:**
  - Fuels for stationary and mobile use
  - Electricity purchased
  - Fugitive emissions from air conditioning units

- **Scope 3:**
  - Purchased goods and services (“inputs”)
  - Fixed assets (“capital goods”) acquired in 2021
  - Fuel- and energy- related activities not included in Scope 1 and Scope 2
  - Transportation and distribution (upstream, internal and downstream freight)
  - Business travel
  - Employee commuting
  - Waste
  - Investments (“operational partners”)

### **Main limitations in the assessment of certain emission categories:**

Among the categories of emissions included in Scope 3, some have been subject to important limitations and have requested extrapolations (on extrapolation methodology, see details on the section “measurement uncertainties”).

- *Goods and services (“inputs”)*: the data available for this category were incomplete, and almost always reported in the form of financial data, which generates a particularly high level of uncertainty.
- *Business travel*: the data available for this category were often incomplete, due to a lack of systematic monitoring of business trips (distance travelled in km, means of transport, reason for the trip). In the absence of such data, it was often necessary to resort to financial data, which generates a high level of uncertainty.
- *Freight*: the data available for this category were often incomplete, due to a lack of systematic monitoring of the transport of goods (distance in km, means of transport, weight (kg) or quantity (units) of goods transported, upstream/internal/downstream freight). In the absence of such data, it was often necessary to resort to financial data, which generates a high level of uncertainty.
- *Commuting*: to evaluate emissions linked to commuting, data were collected through a survey distributed to all Tdh staff. The response rate obtained (about 15%) obliged us to resort to important extrapolations, accompanied by a high rate of uncertainty.
- *Waste*: waste emissions were mostly extrapolated, using different ways to assess waste production at the level of each delegation. There is currently no monitoring tool for the waste generated and its treatment. Data related to waste are thus accompanied by uncertainty.
- *Investments (“operational partners”)*: the objective of this category was to assess emissions of Tdh’s operational partners in the context of the implementation of projects financed by Tdh in the field. However, confusion over what constitutes an operational partner, the data to be selected, and a general lack of information lead us to question the results obtained for this category.

## **Temporal scope**

The measurement is for the full year 2021, in order to define a baseline measurement for Tdh. This choice is based on the availability of the data and their ease of access by the different actors involved in the data collection. It should be noted here that the special nature of the year 2021 has been considered, as it was strongly impacted by the COVID-19 pandemic, drastically reducing air travel in particular.



# Tdh's 2021 Carbon Footprint

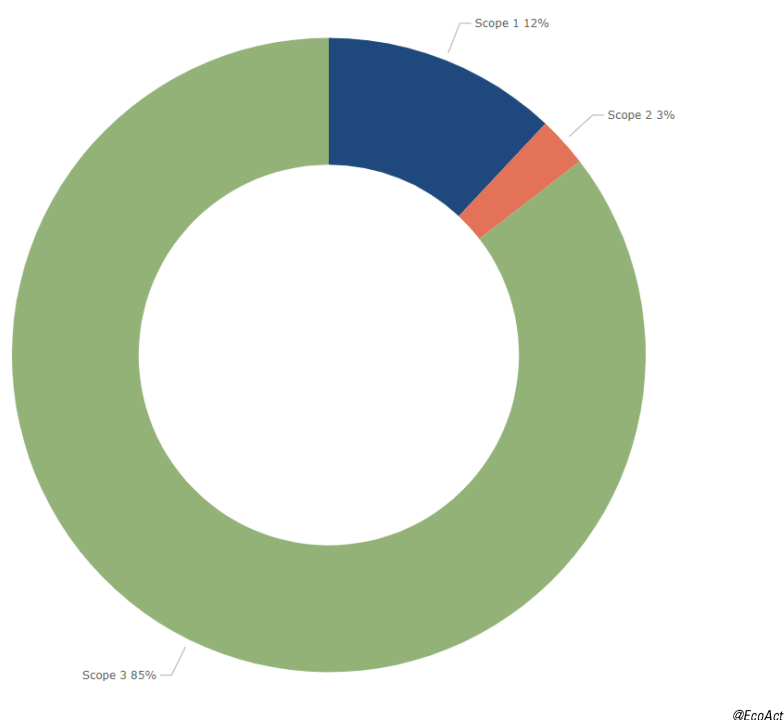
The result of this carbon footprint will be presented in two forms:

1. An analysis by Scope 1, 2 and 3 in accordance with the GHG Protocol
2. An analysis by emissions category: the analysis by emissions categories and sub-categories will be more detailed

## Global carbon footprint by scopes

Tdh's greenhouse gas emissions in 2021 total **18'500 tons CO<sub>2</sub> equivalent**, as shown below. Direct emissions from scope 1 represent 12% of the total footprint. Scope 2 emissions account for 3%, and finally, Scope 3 emissions account for 85%.

*The level of uncertainty of the assessment amounts to 43%. This means that the total carbon footprint can be lower or higher, ranging from 10'545 to 26'455 tons of CO<sub>2</sub>e. This percentage is high but is in line with the uncertainty rates found in the calculation of first carbon footprints in other comparable organizations. The first exercise often serves primarily to identify limitations and monitoring needs in certain categories, and it is therefore expected that the uncertainty rate will decrease as monitoring mechanisms are put in place and staff are better trained in the data collection methodology.<sup>7</sup>*



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<sup>7</sup> The calculation of emissions entails a certain level of uncertainty, related to: 1) The qualitative or quantitative reliability of data pertaining to the activity; 2) The level of uncertainty of the chosen emission factor (data available in carbon database). The level of uncertainty is estimated and expressed in % of the total footprint. A footprint with an uncertainty level of 40% means that the total can be 40% higher or lower than the emissions provided in the footprint.

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### **Scope 1: 12% or 2'304 tCO2e**

This scope accounts for the organization's direct emissions generated by the combustion of fossil fuels, such as oil or gas for heating or fuel for the vehicles owned by the organization. Tdh's sources of emissions scope 1 are mainly composed of fuel combustion in vehicles, emissions resulting from the heating of premises, and fugitive emissions.

### **Scope 2: 3% or 576 tCO2e**

Scope 2 includes indirect emissions related to the consumption of purchased energy: in this case, the consumption of electricity from the grid. As Tdh do not use any steam or cooling networks, Tdh's scope 2 sources of emissions consist exclusively of the purchase of electricity.

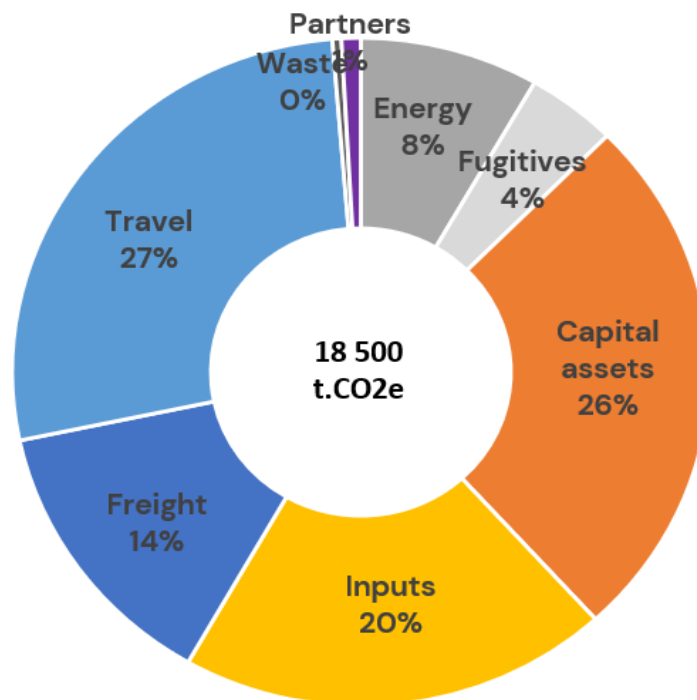
### **Scope 3: 85% or 15'620 tCO2e**

Scope 3 includes all other indirect emissions induced by the organization's activity, such as: emission from purchased goods and services, business travel and employee commuting. The posts of emissions from Scope 3 are as follows:

- Purchase of goods and services
- Purchase of capital assets
- Business travel
- Freights
- Waste
- Investments (operational partners)
- Staff commuting

**Emissions from Tdh's activities are heavily dependent on Scope 3.** A more detailed description for each emission category is provided in the section "Details of emission sources by category". This brief analysis already helps us to identify activities which are the most important carbon emissions sources.

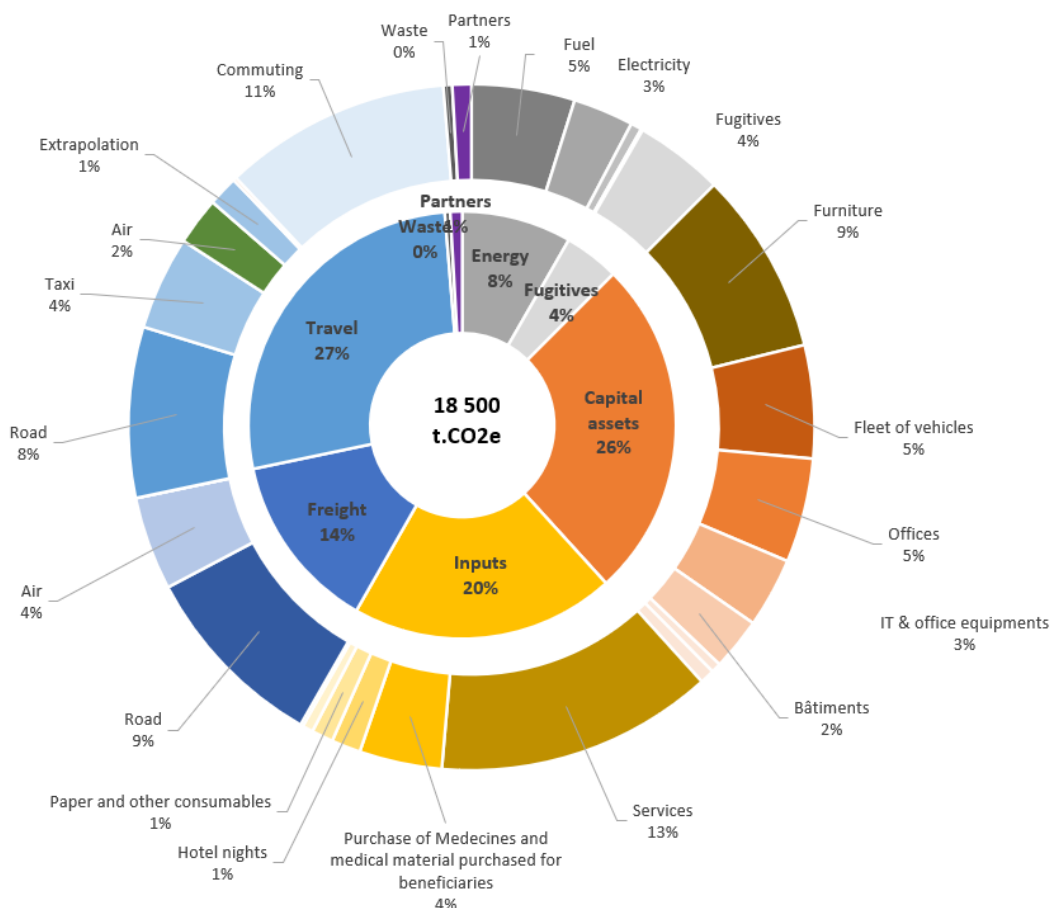
## Global carbon footprint by emission category



This breakdown provides a more operational overview of the composition of Tdh's carbon footprint. **Tdh carbon footprint is particularly concentrated in three categories of emissions: travel (27%), capital assets (26%) and inputs (purchase of goods and services) (20%).** These accounts for **almost 75% of the organization's total emissions.** Freight (14%) and energy and fugitive<sup>8</sup> consumption (12%) are the two other important categories of emission.

In the graph on the next page, a more detailed look into each of these categories can be found; the subcategories within each category, which also correspond to the sources of emissions and data points collected, are outlined.

<sup>8</sup> Fugitive emissions are leaks and other irregular releases of gases or vapors from a pressurized containment - such as appliances, storage tanks, pipelines, or other pieces of equipment. In addition to the economic cost of lost commodities, fugitive emissions contribute to the local air pollution and may cause further environmental harm. Common industrial gases include notably refrigerants and natural gases.



- **All purchases represent 46% of the total footprint, i.e., 8346 tCO<sub>2</sub>e.**
  - *Purchase of goods and services represent 20% of the footprint, or 3687 tCO<sub>2</sub>e.* Goods notably includes medical and other programme support equipment as well as office supply, whereas services cover the emissions coming from services performed by external providers.
  - *Purchases of capital assets represent 26% of the footprint or 4749 tCO<sub>2</sub>e.* This covers items such as furniture, vehicles, and building (construction, renovation or leasing) bought during the year of reference, with a life span of more than 1 year.
- **All transport represents 41% of the footprint, i.e., 7520 tCO<sub>2</sub>e.**
  - *Travel represents 27% of the footprint, or 5039 tCO<sub>2</sub>e.* It is mainly business travel, particularly road travel and air travel, as well as commuting.
  - *Freight represents 14%, or 2481 tCO<sub>2</sub>e of the footprint.*
- **Energy and fugitive emissions together represent 12% of the footprint, i.e., 2303 tCO<sub>2</sub>e.**
- **Waste represents less than 1% (i.e., 77 tCO<sub>2</sub>e) and investments (operational partners) 1% (i.e., 165 tCO<sub>2</sub>e).**

## Details of emission sources by category

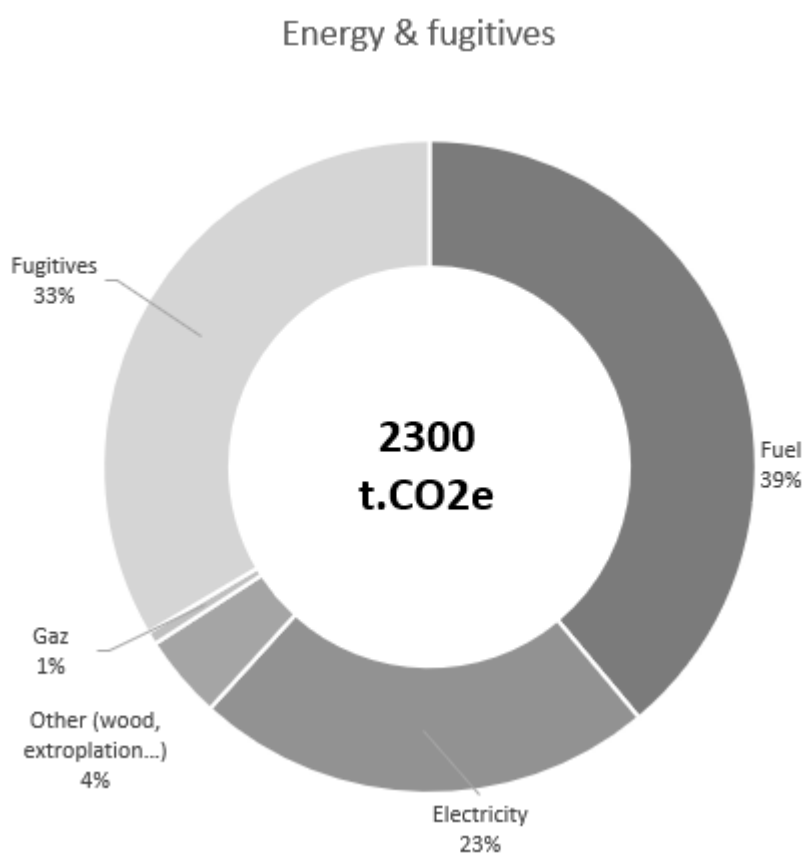
The categories below are each represented in detail, in order that they appear in the footprint diagram above (clockwise):

Page 14	ENERGY & FUGITIVE
Page 15	CAPITAL ASSETS
Page 17	INPUTS (PURCHASED GOODS AND SERVICES)
Page 19	FREIGHT
Page 21	TRAVEL
Page 24	WASTE
Page 25	INVESTMENTS (OPERATIONAL PARTNERS)



## Energy and fugitive emissions

Energy-related emissions accounts for 12% of the total footprint with 2300 tons of CO<sub>2</sub>e.



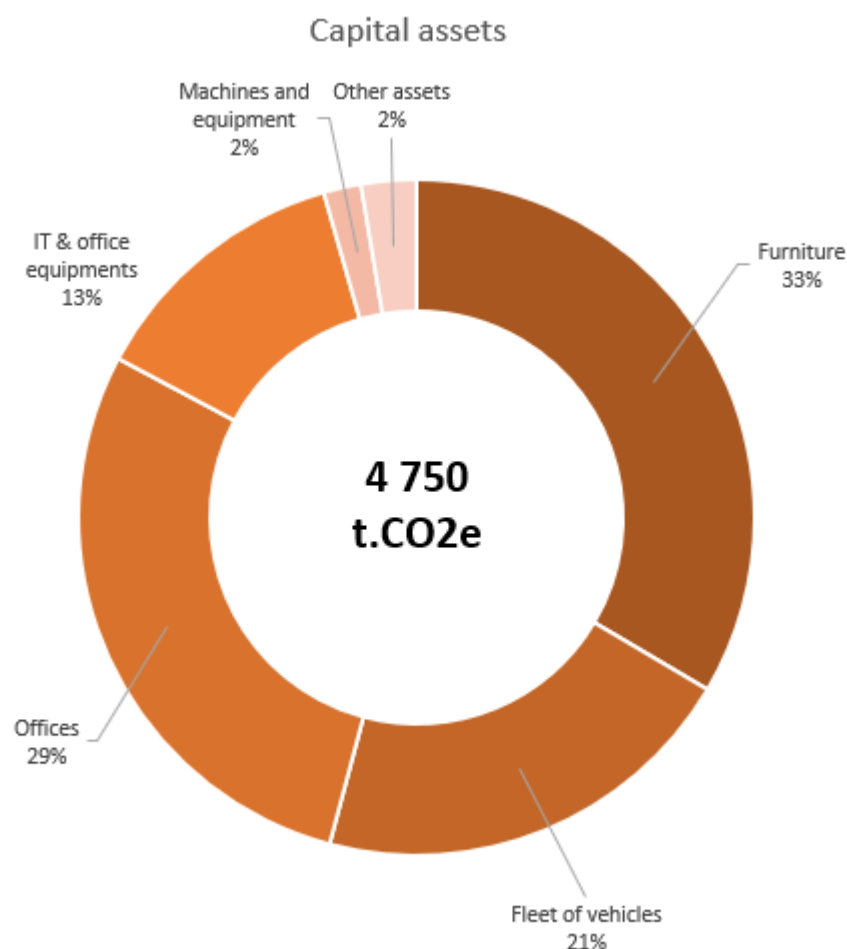
### Analysis:

Energy and fugitive, with 12% of emissions, i.e., 2 303 tCO<sub>2</sub>e, is the organization's **fifth** largest GHG emission source. This category of emissions represents the fuels and electricity consumed by the organization's headquarters and 29 field offices.

- **Fuel used represents 39% of this category (896 tCO<sub>2</sub>e)**
- **Electricity represents 23% of this category (525 tCO<sub>2</sub>e)**
- **Fugitive emissions (refrigerant leaks) represents 33%% of this category (770 tCO<sub>2</sub>e)**

## Purchase of capital assets

Purchased capital assets account for 26% of the total footprint with 4750 tCO<sub>2</sub>e.



### Analysis:

Purchase of capital assets accounts for 25% of CO<sub>2</sub>e emissions with 4750 tCO<sub>2</sub>e. This is the **second** largest category of emissions for Tdh.

Main emissions items for purchase of capital assets in order of importance:

- **Furniture:** 1591 tCO<sub>2</sub>e, or 33% of capital assets. This subcategory covers the purchase of furniture (desks, tables, chairs, shelves) for offices or other buildings for the year considered.
- **Fleet of vehicles:** 980 tCO<sub>2</sub>e, or 21% of capital assets. This subcategory covers the purchase of vehicles (van, small car, compact car, family car, truck, SUV) for the year considered.

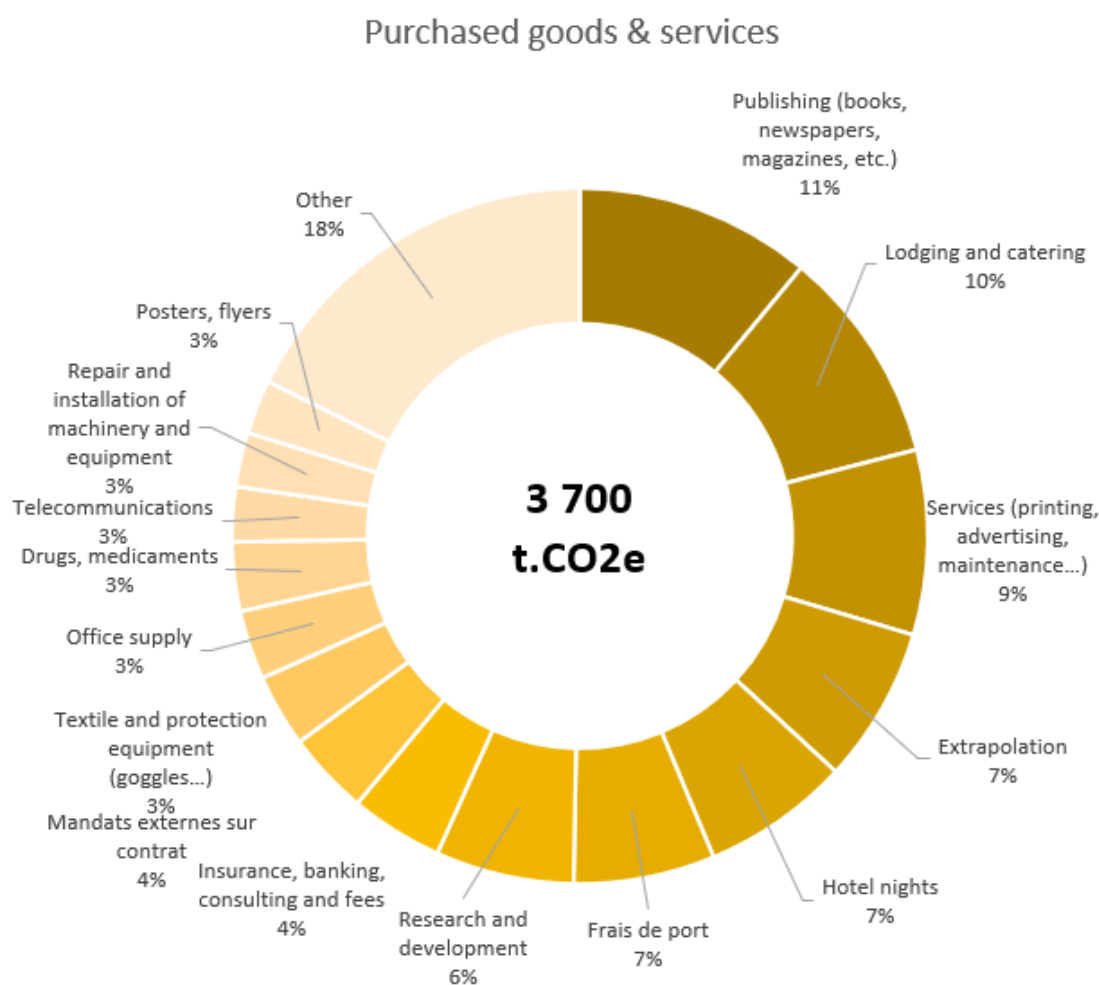
- **Offices building and leasing:** 1360 tCO<sub>2</sub>e, 29% of capital assets. This subcategory aims to assess the emissions linked to the construction, purchase, new renting or major renovation work of buildings and car parks for the year considered. For 2021, two constructions were signaled by the delegations, explaining the relatively high percentage attributed to this subcategory.
- **IT and office equipment:** 607 tCO<sub>2</sub>e, 13% of capital assets. This subcategory covers the purchase of IT material and other related equipment (computers, laptops, screens, phones, hard drive, GPS, handset, printer, photocopy machine, switch, etc.) for the year considered.
- **Machines and equipment:** 85 tCO<sub>2</sub>e, 2% of capital assets. This subcategory covers the purchase of other machines and equipment such as air conditioning systems, refrigerators, coffee machines, etc.).
- **Other assets:** 125 tCO<sub>2</sub>e, 3% of capital assets.

***Point of attention:*** The GHG Protocol methodology accounts for all emissions related to the purchase of capital goods in the year in which they are purchased, without spreading the emissions over the “life” of the good. Therefore, a major purchase such as a new building will have a very large impact on the organization's carbon footprint for the year in which it is built.

*This appears to have been the case for Tdh in 2021, as two delegations reported undertaking new construction or leasing new space as of that year. This explains the large share attributable to “offices.”*

### Inputs (purchased goods and services)

Purchased goods and services account for 20% of the total footprint with 3700 tCO<sub>2</sub>e.



### Analysis:

Purchase of goods and services accounts for 20% of CO<sub>2</sub>e emissions with 3700 tCO<sub>2</sub>e. This is the **third** largest category of emissions for Tdh.

**Purchase of services represents 76% of the emissions linked to this category** (13% of Tdh global emissions), i.e., 2416 tCO<sub>2</sub>e, with the most emissive subcategories being publishing, lodging and catering and other services activities.

**Purchase of material represents 24% of the emissions linked to this category** (5% of Tdh global emissions), i.e., 904 tCO<sub>2</sub>e. The most emission-intensive goods purchased are for medical activities (drugs, equipment, supplies), which represent almost 80% of the emission linked to purchased goods (717 tCO<sub>2</sub>e).

Main emission items for **purchases of services** in order of importance:

- Publishing (books, newspapers, magazines, etc.): 11% of emissions for this category (405 tCO2e)
- Lodging and catering: 10% of emissions for this category (369 tCO2e)
- Other services (printing, advertising, maintenance): 9% of emissions for this category (317 tCO2e)
- Hotel nights: 7% of emissions for this category (253 tCO2e)
- Frais de port: 7% of emissions for this category (242 tCO2e)
- Research and development: 6% of emissions for this category (237 tCO2e)
- Insurance, banking, consulting fees: 4% of emissions for this category (159 tCO2e)
- "Mandats externes sur contrat" (external consultants): 4% of emissions for this category (142 tCO2e)
- Textile and protection equipment: 3% of emissions for this category (124 tCO2e)
- Telecommunications: 3% of emissions for this category (93 tCO2e)

It is important to note here that most of the emissions linked to services are linked to the headquarters in Lausanne. For example, HQ accounts for more than 95% of the emissions linked to "publishing".

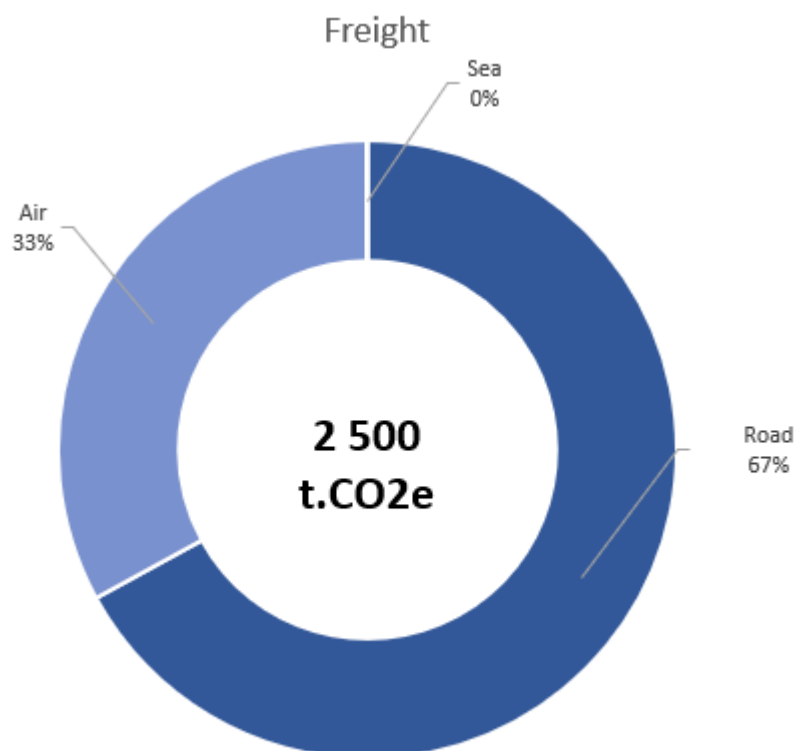
Main emission items for **purchase of goods** in order of importance:

- Drugs, medicaments and medical consumables: 5% of emissions for this category (169 tCO2e)
- Office supply: 4% of emissions for this category (141 tCO2e)
- Posters, flyers: 2% of emissions for this category (92 tCO2e)
- Number of meals prepared or bought: 2% of emissions for this category (92 tCO2e)
- Nutrition (ready to use food): 1% of emissions for this category (53 tCO2e)
- Education and training material: 1% of emissions for this category (36 tCO2e)
- Notebooks: less than 1% of emissions for this category (28 tCO2e)
- Hygiene kits: less than 1% of emissions for this category (27 tCO2e)
- Water filtration: less than 1% of emissions for this category (25 tCO2e)
- Clothes kits: less than 1% of emissions for this category (21 tCO2e)
- Kitchen / cooking kits: less than 1% of emissions for this category (20 tCO2e)
- Pen, pencil: less than 1% of emissions for this category (18 tCO2e)
- Other items: 5% of emissions for this category (182 tCO2e)



## Freight

Freight accounts for 14% of the total footprint with 2'481 tons of CO<sub>2</sub>e,



### Analysis:

Freight is responsible for 2'500 tCO<sub>2</sub>e, or 14% of totalTdh emissions. It is the **fourth** largest source of GHG emissions. The largest sources of emissions from freight are road freight (1'697 tCO<sub>2</sub>e) representing 67% of emissions in this category, then air freight (783 tCO<sub>2</sub>e) with 33%, and sea freight (1 tCO<sub>2</sub>e) with less than 1%.

Two sources of data were used to estimate freight: shipments made by headquarters and freight organized directly by the delegations. Freight emissions are slightly underestimated as it is not always possible to isolate the emissions related to freight. Part of the emissions are sometimes accounted for under other headings (purchased transport services, fuel combustion ofTdh vehicles, etc.).

### Comparisons between emissions and volumes transported per km:

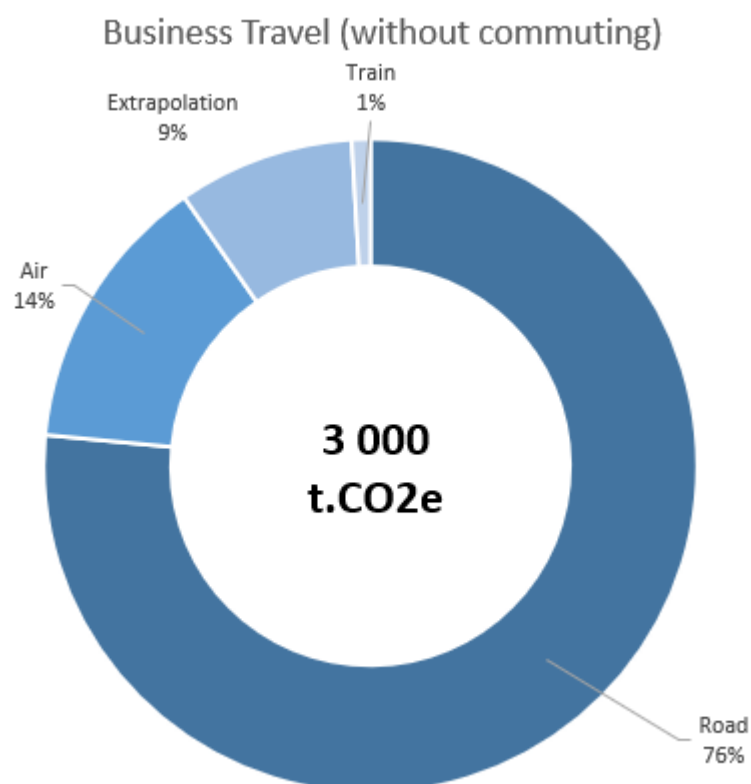
- Cars and trucks constitute the main mode of transport of goods as road transport represents 97% of the volumes transported per km and accounts for 68% of the emissions in this category.
- Air transport accounts for 32% of the emissions in this category but only 2% of the volume. Air freight emitted 783 tCO<sub>2</sub>e, i.e., is responsible for 4% of Tdh's total CO<sub>2</sub> emissions for 2% of the volumes transported.
- Maritime transport accounts for less than 0.5% of the emissions in this category, and 0,4% of the volume transported. Transport of goods by the sea is responsible for 1 tCO<sub>2</sub>e.

We can also distinguish and analyze according to 3 types of freight:

- Upstream freight (all movements of goods from suppliers to Tdh sites) represents 592 tCO<sub>2</sub>e, or 24% of the emissions for this category.
- Downstream freight (all movements of goods from Tdh sites to beneficiaries) represents 518 tCO<sub>2</sub>e, or 21% for this category.
- Internal freight: (all movements of goods between Tdh sites and bases) is estimated at 1356 ktCO<sub>2</sub>e or 55% of emissions for this category. Internal freight however could be over or under-estimated because it is not currently possible to distinguish between vehicles used for movements of passenger and freight transport. Some of the emissions could have therefore been accounted for in the fuel combustion of Tdh vehicles.

## Travel

Business travel and employee commuting accounts for 27 to 30% of the total footprint with 5000 to 5739 tons of CO<sub>2</sub>e.



### Analysis:

Travel is the **first** source of the organization's GHG emissions, accounting for 27 to 30% of total emission with 5000 to 5739 tCO<sub>2</sub>e (including commuting).

**Business travel alone accounts for 16% of Tdh global footprint, with 3000 tCO<sub>2</sub>e.**

**Employee commuting accounts for 11 to 14% of the global footprint, with 2000 to 2742 tCO<sub>2</sub>e, depending on different extrapolations methodologies (point developed below).**

## Main travel-related emissions:

- **Road travel: 76% of the business travel category emissions, with 2279 tCO<sub>2</sub>e (12% of Tdh total footprint).** This represents almost 13 million of kilometers travelled throughout the year. This emissions item concerns exclusively field offices and consists of the fuel consumption of Tdh's vehicles as well as the fuel purchased for non-Tdh vehicles. Emissions linked to the consumption of rented vehicles as well as taxi were also included in this subcategory.
- **Air travel: 14% of the business travel category emissions, with 415 tCO<sub>2</sub>e (2% of Tdh total footprint).** This represents almost 2.5 million of kilometers travelled. The high carbon-intensity of air travel explains why the percentage of emissions is still relatively high compared to the distance travelled by plane. A study of the details of air travels booked by the headquarters shows that almost 80% of these emissions come from long-haul flights (more than 3500 km).

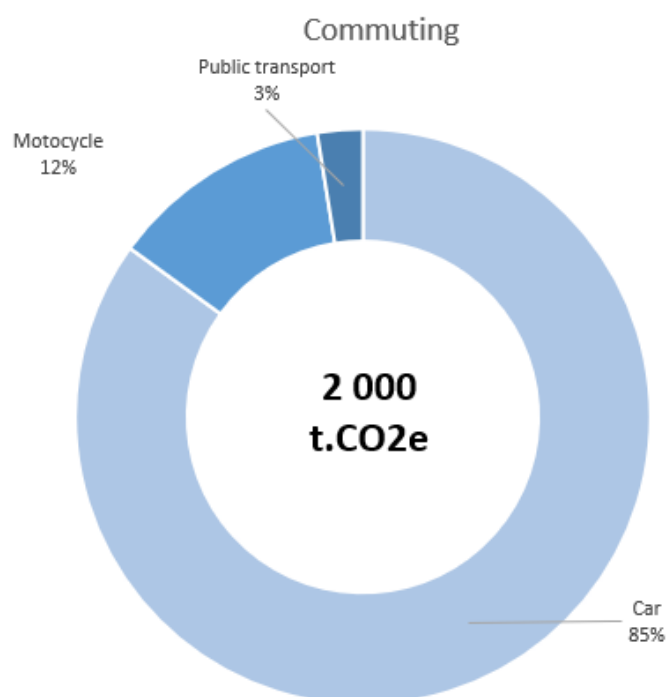
***Point of attention:*** the results for business travel by air are particularly low compared to other organizations. At Tdh, air travel represents 14% of the "travel" category, and 2% of the organization's overall footprint. At MSF OGC, for example, business travel by air represents 13% of the global footprint, and in the case of Tdh Switzerland, this percentage rises to 25% of the global footprint. ***It is therefore very likely that the emissions related to air travel have been underestimated.***

*This can be explained in several ways, in particular because the data collected on air travel was in most cases financial data. However, emission factors linked to financial data on flight have a very high level of uncertainty. For example, in certain cases financial data minimizes the distances flown by up to 50%. The important point to remember here is that it is crucial to collect travel data more systematically, in physical units, especially on the distance travelled (in km), which, combined with the means of transport, remain the most accurate way to assess carbon emission linked to travel.*

*Another explanation to consider is that the base year used for this carbon footprint (2021) was still a year marked by the COVID pandemic and that air travel at Tdh was lower than usual, especially on short and medium-haul flights. Indeed, we have seen that plane tickets purchased in 2021 are almost 40% lower than tickets purchased in 2022 in numbers.*

- **Train: less than 1% of the business travel category with 28 tCO<sub>2</sub>e**

- **Employee commuting: 11 to 14% of Tdh global footprint with 2000 to 2742 tCO<sub>2</sub>e**



Main means of transport in terms of emissions:

- **Car:** 85% of emissions related to commuting, i.e., 1600 tCO<sub>2</sub>e
- **Motocycle:** 13% of emissions related to commuting, i.e., 247 tCO<sub>2</sub>e
- **Public transport:** 3% of emissions related to commuting, i.e., 50 tCO<sub>2</sub>e

To evaluate emissions linked to commuting, data were collected through a survey distributed to all Tdh staff. The response rate obtained (about 15%) obliged us to resort to important extrapolations, accompanied by a high rate of uncertainty.

The margin presented in the results (11 to 14%) comes from the fact that two separate assessments of commuting were made:

- One by Eco Act, which resulted in a 13% share of commuting in Tdh's overall footprint
- One (presented above) by the Climate Action Accelerator, which resulted in an 11% share of commuting in Tdh's overall footprint.

These differences can be explained by the use of different methodologies in extrapolating the results.

**Point of attention:** In both cases, these commuting results are quite high compared to other organizations. At Tdh, commuting accounts for almost half of the emissions of the "travel" category, while for MSF OGC, for example, it is more like 5%. It will be necessary to re-evaluate this figure in the future, by obtaining a better participation in the survey, especially from the field.



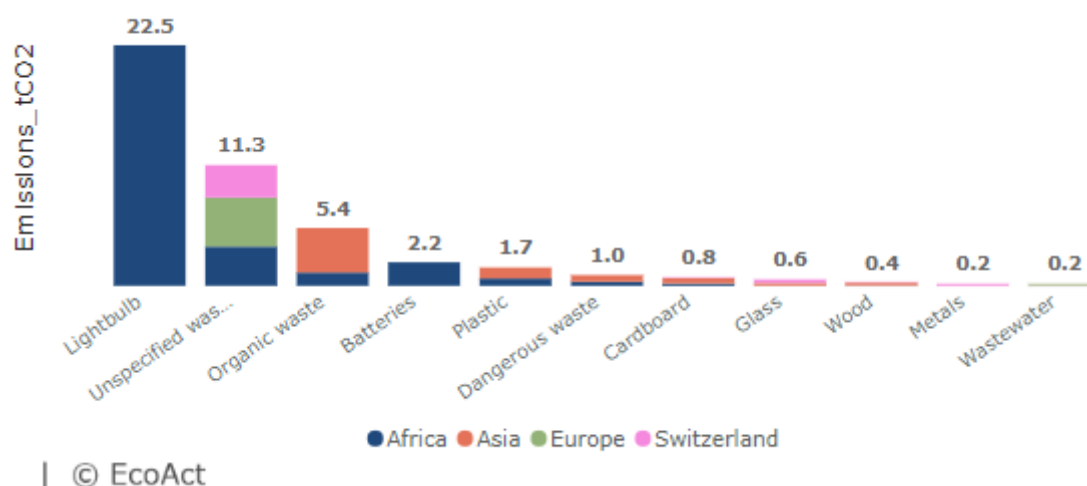
## Waste

### Waste emission is estimated at 77 tCO<sub>2</sub>e, or 0.4% of the total footprint

This only considers the 'climatic' impact of waste and not the environmental impact (soil pollution, thin particles, etc.), which is not included in the scope of a carbon study.

Waste emissions were mostly extrapolated, using different ways to assess waste production at the level of each delegation. There is currently no monitoring tool for the waste generated and its treatment. This figure is therefore an estimate applied to the delegations according to the number of full-time equivalents and does not consider the operational specificities of each delegation and projects carried out.

It is not possible today to have a precise idea of the composition of this waste (medical, plastic, recyclable, etc.). The estimate made here is rough as it is based on the little information that is currently available.



**Point of attention:** the results obtained here confirm the shortcomings in the waste monitoring system. Moreover, we note that an error was certainly made in the data collection regarding lightbulb (which come in first position): indeed, this category cannot realistically constitute the most important source of waste at the global level for Tdh.

### *Investments (operational partners)*

The objective of this category was to assess emissions of Tdh's operational partners in the context of the implementation of projects financed by Tdh in the field. This attempts to capture only the emissions in a limited sense, directly related to the project. It is therefore mainly emissions related to scopes 1 and 2 (energy consumption) and sometimes to scope 3 for the purchase of specific goods in the context of the project.

According to the retrieved data, more than 10mio. CHF were "invested" by Tdh to implement projects through operational partners in the field, and MENA is the region which invested the most.

In terms of emissions, investments would represent barely 1% of Tdh total emissions, or 165 tCO<sub>2</sub>e. Beyond these preliminary indications, it is difficult to go further at this stage.

However, confusion over what constitutes an operational partner, the data to be selected, and a general lack of information lead us to question the results for this category. Also, the methodology used for assessing emissions from operational partners is not yet complete, which could be one of the reasons for the very low figure for this category.

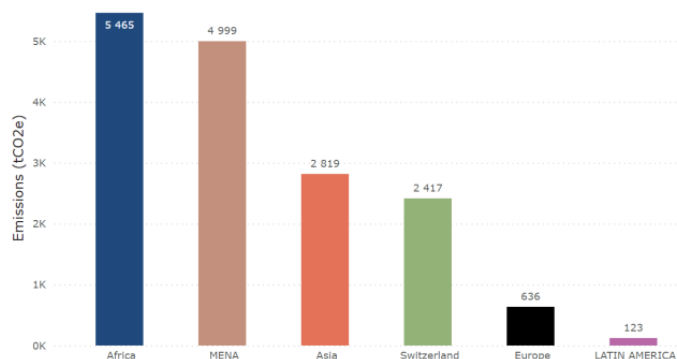
In any case, it will be necessary to find better assessments methods, but above all to directly involve the operational partners in the efforts to calculate their emissions and mitigate their environmental impact. This is why some organization such as the Climate Action Accelerator are working to develop specific approaches directed at operational partners, to better engage them in the future.

# Emissions by regions

## Carbon Footprint 2021

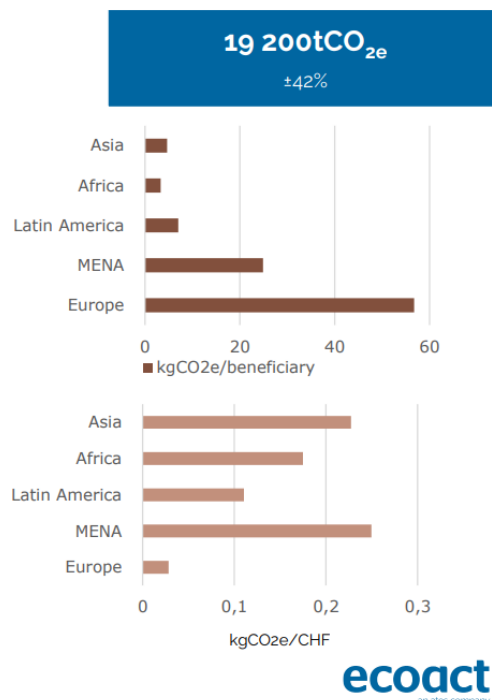
### Results\* by region

Africa and MENA account for almost **2/3** of the TDH's GHG emissions.  
Europe and MENA are the most carbon intensive regions. **The regional intensities vary significantly** from <3kgCO<sub>2</sub>e/beneficiary to >57kgCO<sub>2</sub>e/beneficiary.



| © EcoAct

\*General emissions excluded: T&D losses / commuting



The data collection was done by region, which allows us to compare them on certain aspects. It should be noted, however, that these comparisons must be taken with caution, as some regions of activity are larger than others in terms of volume, budget, employees, etc. In the future, the objective will be to calculate the footprint at the level of each country of activity, in order to obtain more precise information than can be used to orientate the decarbonization efforts.

Some of the tendencies observed are the following:

- **Africa:** most emissive region, as it represents almost 33% of Tdh global emissions (5465 tCO<sub>2</sub>e). 75% of the emissions come from the travel (1128 tCO<sub>2</sub>e), freight (1044 tCO<sub>2</sub>e), inputs (1000 tCO<sub>2</sub>e) and capital goods 993 tCO<sub>2</sub>e) categories.
- **Mena:** this region is the second most emissive, with 30% of Tdh global emissions, (4999 tCO<sub>2</sub>e). 85% of the emissions come from capital goods (1905 tCO<sub>2</sub>e, due to a new building signaled in one country), travel (1353 tCO<sub>2</sub>e) and freight (1024 tCO<sub>2</sub>e).
- **Asia:** third most emissive region, with 17% of Tdh global emissions, (2819 tCO<sub>2</sub>e). Capital goods are responsible for more than 60% of the emission for this region, mostly due to a new building signaled in one country.
- **Switzerland (HQ):** fourth most emissive "region," with 15% of Tdh global emissions, (2417 tCO<sub>2</sub>e). This is mainly due to the purchase of services mainly acquired in HQ.
- **Europe:** fifth most emissive region with 4% of the global footprint (636 tCO<sub>2</sub>e). Inputs, travel and energy are the most emissive categories.
- **Latin America:** sixth most emissive region with less than 1% of the global footprint. Due to insufficient data, emissions for all categories in this region have been extrapolated.

# Measurement uncertainties

The **level of uncertainty of the assessment amounts to 43%**. *This means that the total carbon footprint can be lower or higher, ranging from 10'545 to 26'455 tons of CO<sub>2</sub>e.* Uncertainties are mainly situated within scope 3. This can be explained by the fact that Scope 3 emissions are largely derived from financial data, which means that uncertainties can be as high as 80% in certain cases. Uncertainty levels per category are distributed as follows:

- Energy:  $\pm 7\%$  (low level of uncertainty because most of the data were collected in physical units (kwh, liters, etc.) instead of financial units)
- Business travel:  $\pm 27\%$
- Freight:  $\pm 32\%$
- Commuting:  $\pm 41\%$
- Purchase of capital goods:  $\pm 51\%$
- Inputs (purchase of goods and services):  $\pm 81\%$

We can see that there are many uncertainties at various levels. Some of these uncertainties can be improved by Tdh, by working on the data collection process and thus on the quality of the data, but others are inherent in the process of measuring carbon emissions.

This invites us to take a step back from the figures. While one can analyze and breakdown the exact tCO<sub>2</sub>e of each activity, it is also important to reflect on these figures in terms of the **orders of magnitude and proportions they indicate rather than the absolute value of the carbon emissions**.

## Emission factors<sup>9</sup>

Part of the uncertainty also comes from the unit used during the data collection. As we saw, for many categories, data were only available in financial units. **Uncertainties can be improved by using emission factors with more precise units** (physical units). For example, by using the number of computer monitors purchased rather than the volume of expenditure on monitors, the uncertainty of the factor would decrease.

While well documented and relatively reliable, **emissions factors themselves have some level of uncertainty**. Certain emission posts, such as the carbon intensity of a country's electricity for example, can be measured quite accurately. It is possible to obtain a carbon equivalent value with an uncertainty of less than 5% for this. In contrast, activities that depend on many factors generate more uncertainty. For example, the transport of a ton of goods by air over a given distance depends on the occupancy rate of the aircraft, the weather conditions (temperature, pressure), the type of engine of the aircraft and many other factors. The uncertainty here can easily reach 50%. For specific sectors, it is also difficult to obtain reliable values. For example, for medicines, there is currently no emission factors to ascertain the emissions of medicines based on physical data such as weight and volume. It is only possible to measure the carbon footprint of medicines on the basis of their price, by applying an emission factor to an average, leading to an uncertainty of up to 80%.

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<sup>9</sup> Emission factors are representative values that allow a unit to be converted into a carbon equivalent. This quantity therefore makes it possible to transform a volume of fuel, a distance or a product into a carbon equivalent. It is the bridge between the organization's data and its carbon footprint.

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## Activity data

The level of uncertainty is also linked to the **availability and quality of the data collected**. These uncertainties **can be improved by implementing more reliable and comprehensive data collection tools**.

Activity data is the information available to Tdh on the content of its activities. It is this data that is multiplied by the emissions factors to obtain the carbon footprint measurement.

As already mentioned in the document, this data is often imperfect, and this is quite normal. It is not possible to have today the electrical consumption of all Tdh infrastructures around the world, nor the total volume of fuel consumed during the year 2021. These data points require a lot of work to collect in the field and are not, in many cases, otherwise used by the organization.

Assessing the quality of the data collected and its reliability, there is a non-negligible level of uncertainty that also exists at this stage. Numerous emission posts are not monitored, such as information on internal freight or waste. In those cases, it is very difficult to have a precise idea of the volume depending on the delegation, and estimates are therefore very uncertain.

## Extrapolations

Extrapolation refers to the process used when data is missing. If a country cannot have access to data on a category, we still must add a value for this category in the footprint calculation, otherwise we risk greatly minimizing the carbon impact of the category in question. To do so, we need to extrapolate. Extrapolations are defined by using some data collected by other countries that we consider “comparable” (located in the same region, for example). These data are then adjusted according to the characteristics of the delegation considered (size, budget, number of employees, office space, beneficiaries, etc.). **Extrapolation thus inevitably introduce uncertainty and potential errors in the calculation of the footprint.**

The emissions of some countries have been fully extrapolated due to a lack of data (Benin, Nigeria, Senegal, Moldavia, Romania, Ukraine, Maroc, Pakistan, Colombia, Ecuador). The list of extrapolations used for each category and region is available upon request.



# Performance indicators & benchmark

This assessment of Tdh's footprint allows for the production of a certain number of indicators that will enable future assessments to monitor the organization's carbon intensity.

Key performance indicators	Value	Unit
Per employee (full time equivalent)	8,5	tCO <sub>2</sub> eq/FTE
Per CHF spent	0,19	kgCO <sub>2</sub> eq/CHF

## Benchmark

For reflection purposes, here are some indicators of emissions in the aid sector. It is important to be critical: as not all organizations have assessed exactly the same scope of activities, the emission factors used may differ and the activities in question are not necessarily the same. These comparisons are thus limited.

Benchmarking indicators	Tdh	MSF OCG	ALIMA	ACTED	ICRC	Tdh CH	Unit
Per employee	8,8	10,26	6,74	10,36	58,54	10,44	tCO <sub>2</sub> eq/FTE
Per CHF spent	0,19	0,26	0,21	0,23	0,6	0,13	kgCO <sub>2</sub> eq/CHF

It is sometimes difficult to grasp the GHG emissions indicators in tons or kilograms of CO<sub>2</sub>e.

To further illustrate the volumes obtained in Tdh's carbon footprint, which are **18'500 tons** of CO<sub>2</sub>e, here are some useful comparisons (orders of magnitude):



# Recommendations

## Monitoring and continuous improvement of measurement

The process of measuring Tdh's GHG emissions is a long-term exercise, beginning in 2021 with the organization's first footprint report. **The study of the evolution of the organization's emissions should be repeated on a regular basis** (every other year, to start in 2023), in order to ensure continuing improvement and an accurate read of reductions. This will help determine the organization's decisions and strategy in a coherent manner, but also monitor the impact of the actions implemented as part of the environmental roadmap.

Monitoring supports a continuous improvement process. The latter has the following essential functions:

- To enable the organization to gradually improve the quality and comprehensiveness of the data collected
- To facilitate, or even automate, the collection process
- To evaluate the successes and shortcomings of the emissions assessment process but also of the decarbonization actions implemented
- To enable Tdh to develop a "climate culture" within the organization, which will encourage the implementation of mitigation actions.

## Suggestions for improvements

This measure suffers first and foremost from a **lack of data**:

- Focus the data collection efforts on the most important categories, in Tdh's case: travel, purchase of goods and services (inputs) and purchase of capital goods.
- Adjust existing processes or develop intermediary tools to collect data for categories for which a monitoring already exists, keeping in mind what are the important information needed:
  - For business travel, collect information on the kilometers travelled, the means of transport and the reason of the travel (field visit, training, workshop, HQ visit, etc.).
  - For freight, collect information on the weight or volume of goods transported, the kilometers travelled (departure / destination) and the means of transport.
  - For purchase of goods services (inputs), try to collect data in physical units and not in financial unit to improve accuracy. For services, monitor more systematically the expenses.
  - For capital assets: implement precise record of the quantities and specifics of the equipment purchased (vehicles, generators, IT material, etc.).
- Improve and systematize data collection for Scope 1 and 2 emissions, for which Tdh is directly accountable (electricity consumption in kWh, fuel consumption of vehicles and generators in liters with the split for each of them, etc.).
- Start collecting information for categories with no monitoring systems, such as:
  - Commuting: participate to surveys or monitor commuting habits at the level of your delegation.

- Waste: set up a reporting system to estimate the volume of waste and its treatment.

Moreover, an effort on **data quality** must also be made, focusing on the unit used:

- Collect physical data (e.g., tons, units, km, etc.) instead of financial data, especially for the purchased goods, business travel, and freight categories to reduce uncertainty.

Finally, there is a need for **capacity building** at the staff level on data collection and on the carbon footprint calculation process more generally:

- Appoint “carbon footprint focal points” in each delegation
- Support the focal points by offering them specific training session, coaching and support document.
- Better communicate and share information on the project and on the global climate/environmental situation to raise awareness and improve engagement.
- Provide more space for discussion to better consider focal points perspectives and improve available tools and guidance.

## Feedback on data collection survey

After the first data collection, a survey was distributed to all those involved in the exercise, both in the field and at headquarters. 23 responses were obtained, allowing the following conclusion to be drawn:

- Most of the people involved come from the logistics and finance sectors.
- Main reasons to explain the difficulties encountered include lack of preparation, awareness and information before data collection; lack of monitoring tools on certain data; lack of time and resources; selected year (2021) not representative.
- Main measures to put in place in order to facilitate the process include the development of intermediate collection tools for each emission category; the implementation of collection tools “as we go along, i.e., that allows to collect data throughout the year; better support through individual trainings for the focal points.
- Other recommendations include the allocation of specific financial and human resources to support the process; to allow for more space for discussion on what data is most important for the calculation, in order to focus efforts.

These important results will also allow the project team to better prepare for the next data collection exercise.

**This report was based on a template provided by the Climate Action Accelerator.**

### Question?

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