



Climate Action
Accelerator

1.2 What is in a ... ?

Baseline Carbon Footprint report – Walkthrough Example





SUMMARY

**1. Carbon Footprint reports –
Examples**

**2. Walkthrough Example– DNDi
Baseline Report**





MSF OCG Carbon Footprint Report 2019

[October 2022]



[Read MSF OCG's report](#)



[Read ALIMA's report](#)



[Read MSF OCP's report](#)



DNDi's Carbon Footprint report



TABLE OF CONTENTS

DNDi
2019
Carbon
Footprint

PAGE	
	INTRODUCTION
04	PRESENTATION CAA
05	DNDi'S CONTEXT
06	CALCULATION METHODOLOGY
09	PERIMETERS OF THE FOOTPRINT EXERCISE
10	SCOPE OF THE SURVEY
11	RESULTS BY SCOPES
12	TOTAL EMISSIONS BY SCOPES
13	SCOPE 1&2, SCOPE 3
15	RESULTS BY ACTIVITIES
18	OFFICES FOOTPRINT
32	R&D FOOTPRINT
37	EMISSIONS BY COUNTRIES
38	SUMMARY AND RECOMMENDATIONS
40	BENCHMARK
41	RECOMMENDATIONS





1

Introduction





About the CAA

The Climate Action Accelerator, a non-for-profit association, aims to mobilise a critical mass of community organisations in order to scale up climate solutions, contain global warming below 2°C and avoid the risk of dangerous runaway climate change.

Enabling them to work as a community, the Climate Action Accelerator will help these organisations to, at least, halve their own GHG emissions every decade from now on, become champions within their own ecosystems and deliver valuable transformational change.

Initiative's objectives

● EMPOWER

Empower emblematic organisations to **at least halve their emissions by 2030**, through a network of experts and a “one-stop-shop” support service.

● CHAMPION

Transform them into **champions of change within their networks**, able to influence their ecosystems.

● COMMUNITY

Build a global community of action, sharing **climate solutions as a free universal good**, in order to scale up their implementation.



DNDi's health & climate commitments

- DNDi is a not-for-profit research organization developing new treatments for neglected patients. Today, climate is integrated in DNDi's mission: developing drugs for climate-sensitive diseases while reducing carbon emissions.
- DNDi is developing a four-pronged approach, to power both mitigation and adaptation to the climate crisis.
 - ❖ Innovation
 - ❖ Greening R&D
 - ❖ Advocating for a responsible biomedical innovation ecosystem
 - ❖ Halving carbon emissions and its environmental footprint by 2030

- The World Health Organization (WHO) estimates that between 2030 and 2050, climate change will result in an additional 250,000 deaths per year from heat stress, malnutrition, dengue and malaria alone.
- The global biomedical innovation ecosystem fails to invest in the development of essential medical tools for diseases that primarily affect poor and marginalized people living in low- and middle-income countries. The same communities are also disproportionately impacted by climate change.
- DNDi is investing in efforts to discover and develop drugs for climate-sensitive NTDs such as leishmaniasis and dengue with academic, public, and industry partners, especially from the Global South; as well as engaging in policy discussions and advocating for a more equitable, inclusive, sustainable, and access-oriented R&D ecosystem.





Calculation methodology

Why a carbon footprint?

- Assess the carbon dependency and vulnerability of an organisation in order to allow a reflection on its development strategy
- Give a global picture of an activity with an indicator that is not economic (CHF or Euros), but climatic (greenhouse gas emissions expressed in tons of CO₂). The methodology chosen for the evaluation of the climatic impact of DNDi's activities scrupulously respects the international standard of reference in the matter (ISO 14065).

Benefits for the organisation :

With the help of a carbon footprint, DNDi will be able to :

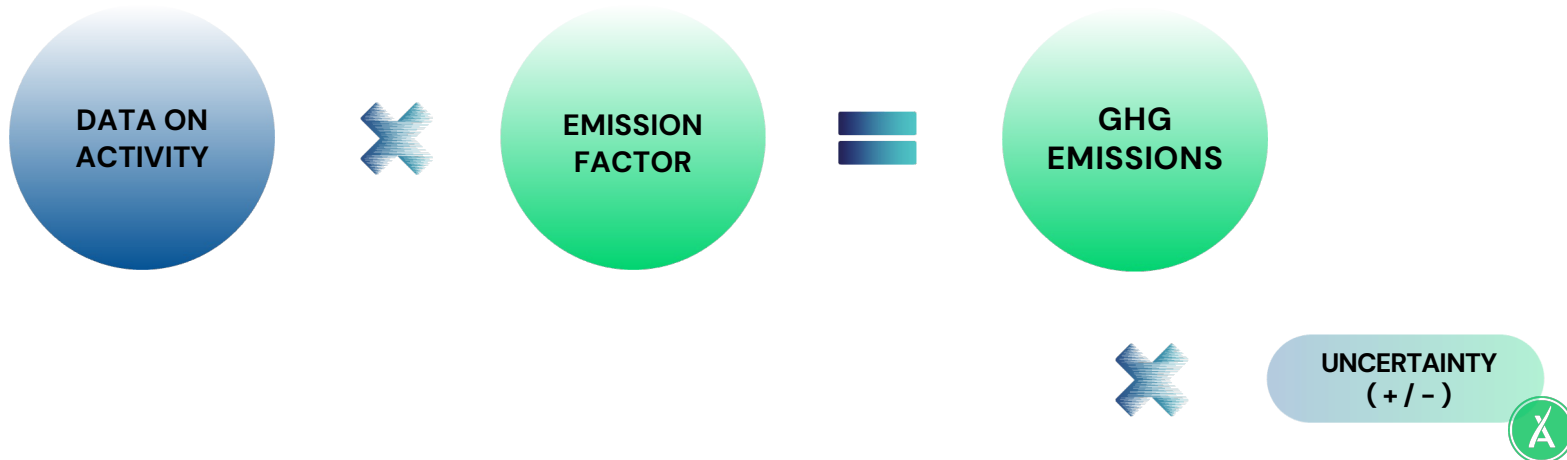
- Structure its environmental policy
- Identify actions to reduce its energy bill and its overall impact
- Assess its vulnerability
- Stand out from the crowd by being an example
- Involve its employees and partners.

Calculation methodology

Calculation method: The GHG Protocol



To calculate DNDi's greenhouse gas emissions, we collected activity data (€, km travelled, litres of fuel consumed, etc.) and multiplied them by an emission factor to calculate their equivalence in terms of the quantity of CO₂ emitted. In order to take into account the quality of the data obtained, a level of uncertainty completes the estimation of the results. It is generally expressed as a percentage.



Calculation methodology

Calculation method: The GHG Protocol

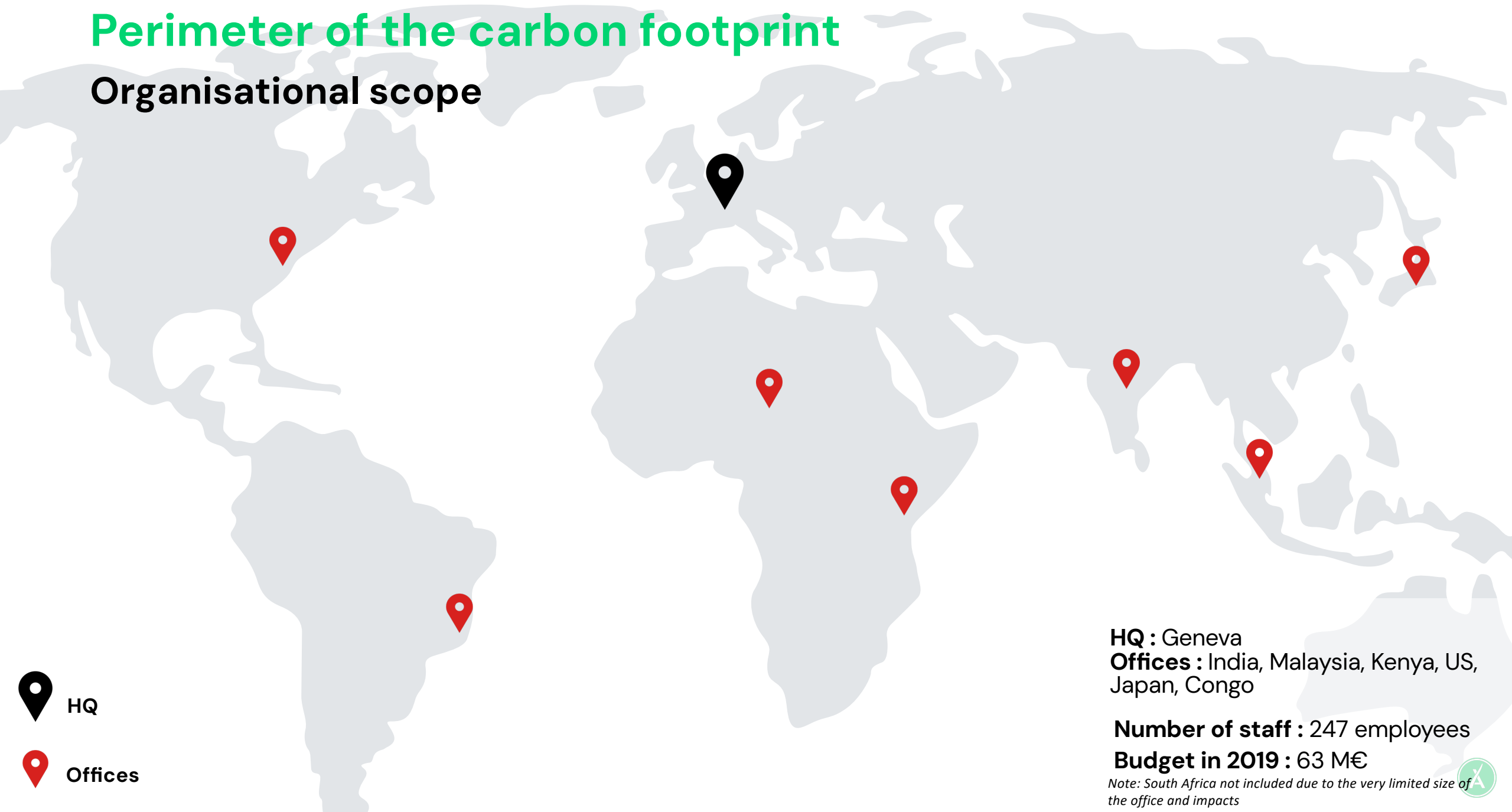
The GHG protocol distinguishes 3 scopes according to the type of emissions :

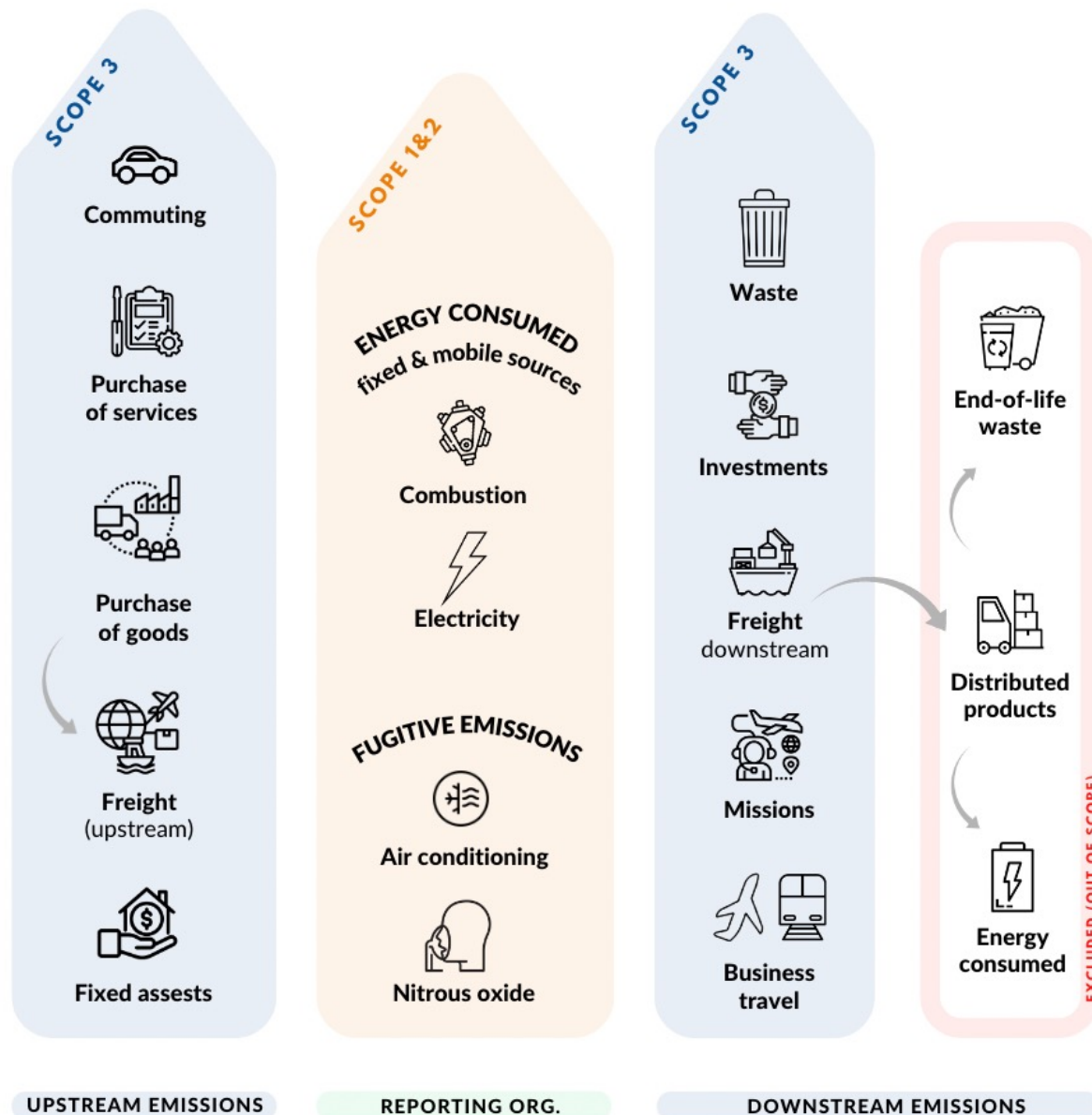
Scope 1	Scope 2	Scope 3
Direct emissions associated with the activity in the organisation	Indirect emissions from energy consumption	All other significant indirect emissions (transport, procurement)



Perimeter of the carbon footprint

Organisational scope





Perimeter of the footprint

Temporal scope

The measurement is for a full year and represents the year 2019, in order to define a baseline measurement for DNDi that does not take into account the disruptions related to COVID-19. Indeed, the years 2020 and 2021 were strongly impacted, drastically reducing air travel in particular.

Operational scope

The operational scope takes into account all emissions generated by the activity, be they emitted directly or indirectly.

- Excluded emission sources:
 - Distributed products
- Limitations:
 - R&D related activities
 - Waste (incomplete data)





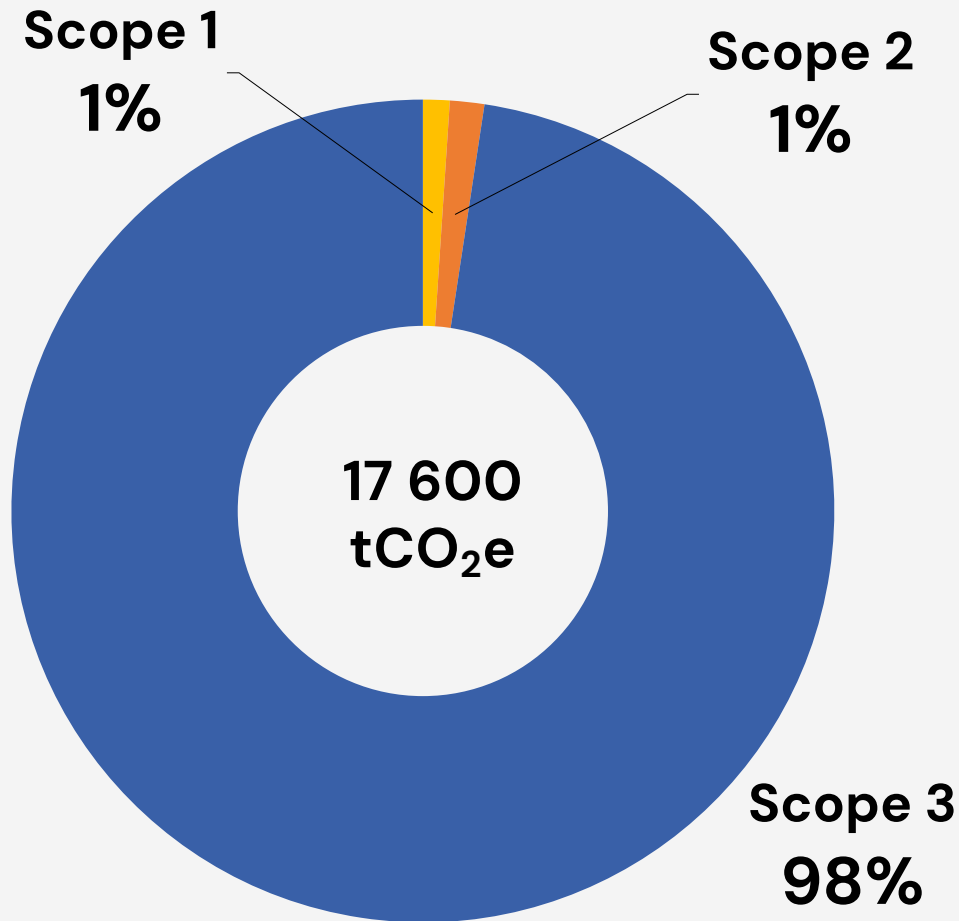
2

Results: Presentation by scopes*

**Based on GHG Protocol
standardised classification*



Total emissions by scope



Scope 1

1% or ~ 185 tCO₂e
Fossil fuel consumption
& fugitive gases

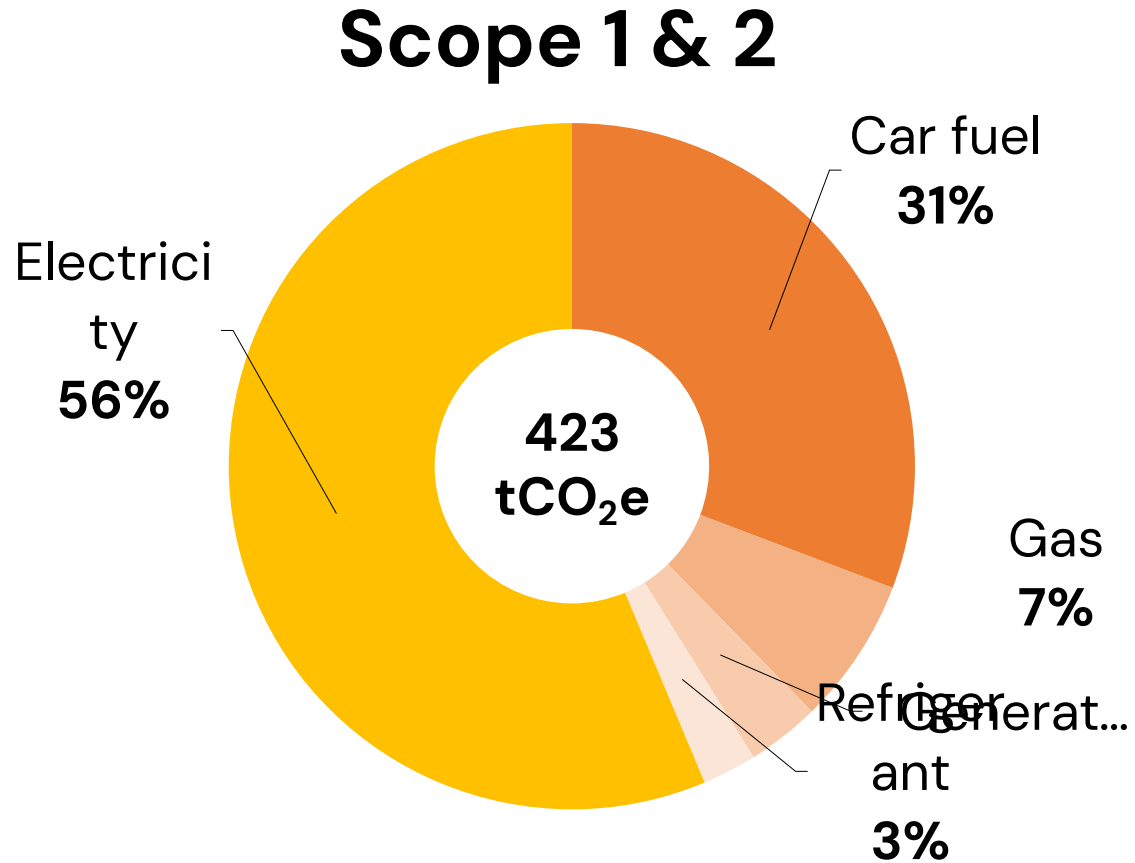
Scope 2

1,4% or ~ 240 tCO₂e
Electricity

Scope 3

98% or ~ 17,200 tCO₂e
Purchased goods
Purchased services
Travel & Freight
Investments
Waste

Emissions by scopes



Scope 1: 1% or 185 tCO₂e

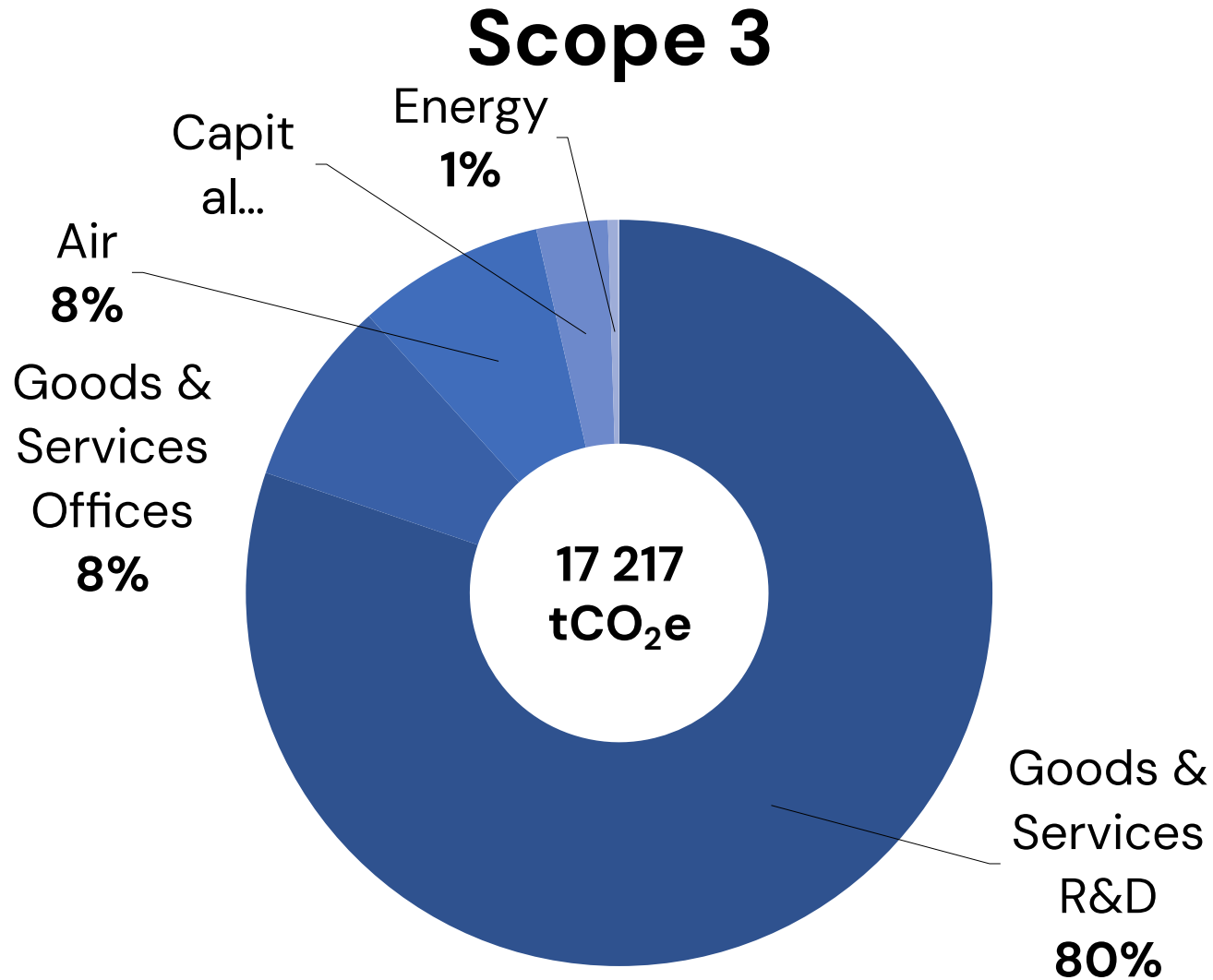
This scope accounts for the organisation's direct emissions generated by the combustion of fossil fuels, such as oil or gas for heating or fuel for the vehicles owned by the organisation (represented in the orange hues in the graph below). DNDi's scope 1 is mainly composed of:

- fuel combustion in vehicles with 130 tCO₂e
- heating of premises (via gas or coal) with 29 tCO₂e;
- generation of electricity via generators (diesel combustion) with 14 tCO₂e;
- fugitive emissions (refrigerant gas leaks in refrigerators and air conditioners) with 11 tCO₂e).

Scope 2: 1,4% or 238 tCO₂e

Scope 2 includes indirect emissions related to the consumption of purchased energy: in this case, the consumption of electricity from the grid (in yellow, in the graph below). As DNDi do not use any steam or cooling networks, scope 2 consists exclusively of the purchase of electricity. The purchase of electricity from local networks therefore represents 100% of scope 2 and 56% of Scope 1 & 2.





Emissions by scopes

Scope 3: 98% or 17,200 tCO₂e

Scope 3 includes all other indirect emissions induced by the organisation's activity, such as: emissions from purchased goods and services, business travel and employee commuting.

R&D goods and services are the different phases of research (discovery, implementation, development and implementation) carried out among DNDi's stakeholders.





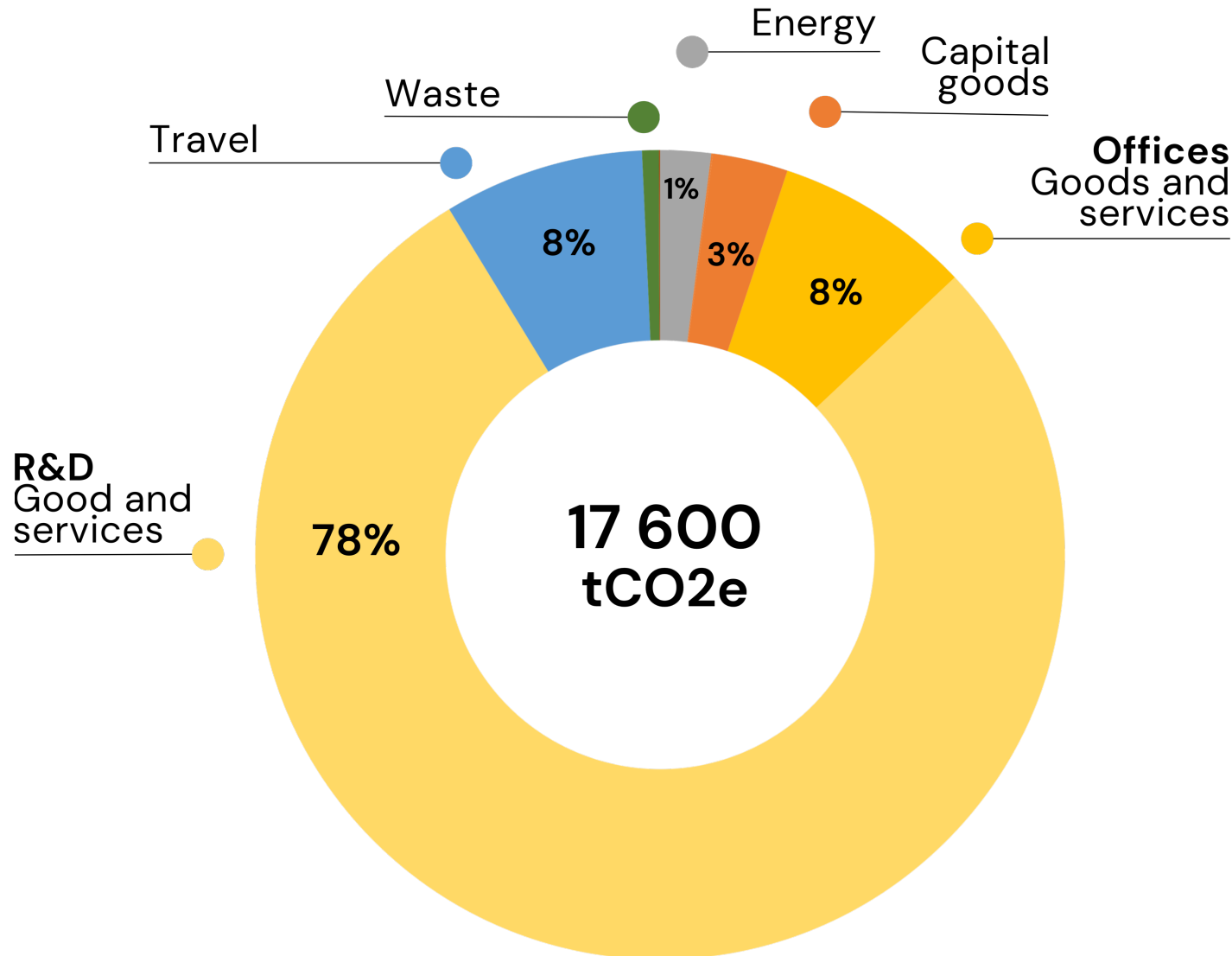
3

Results: Presentation by categories*

**An adapted categorisation
based on DNDi's activities*

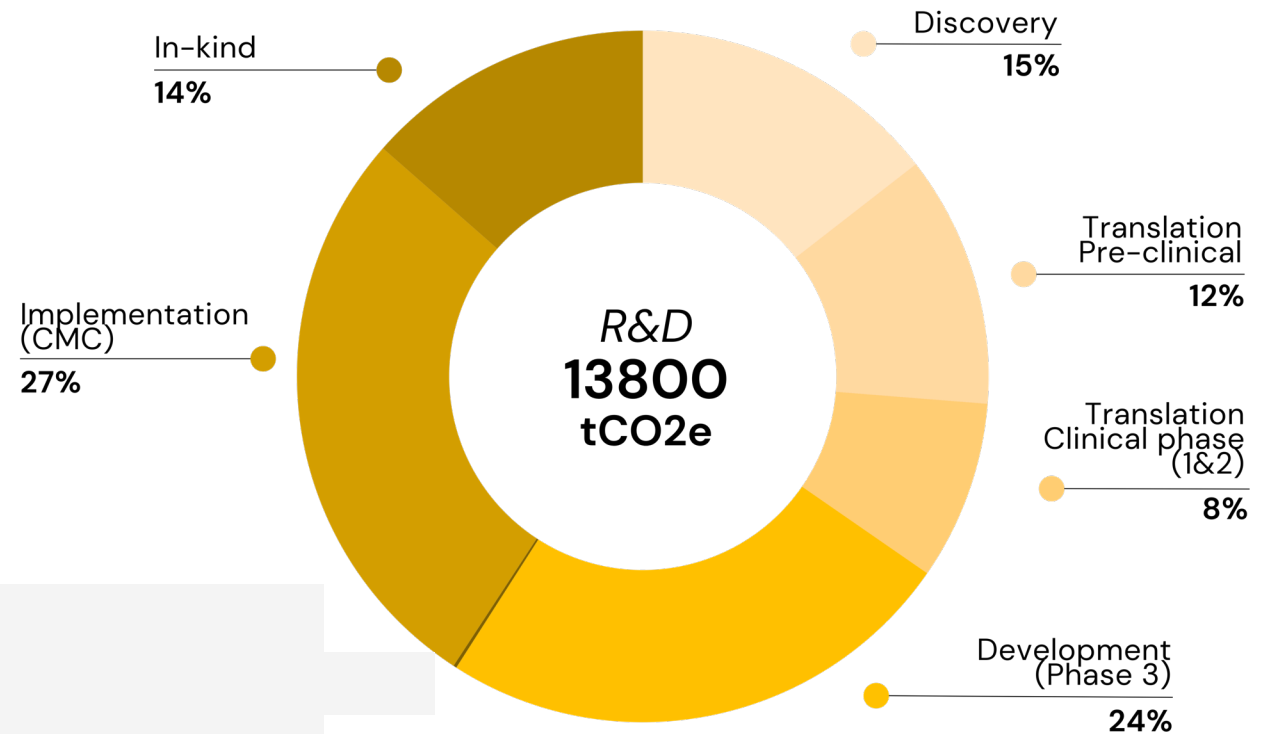
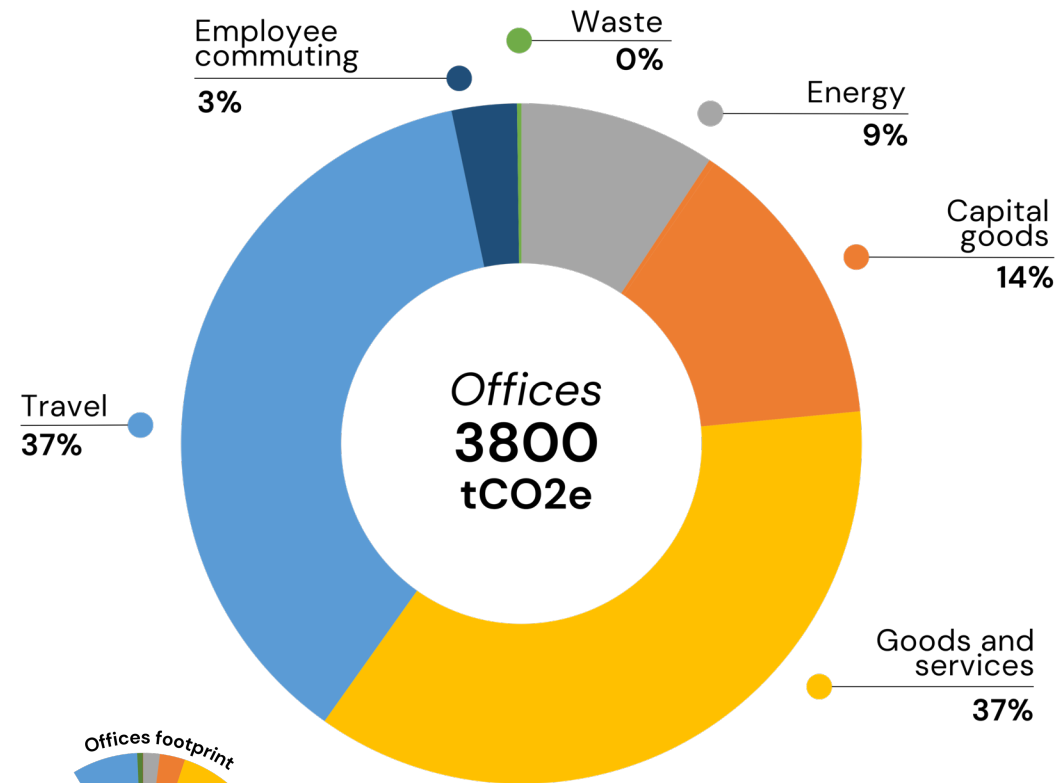


Total footprint (offices and R&D)



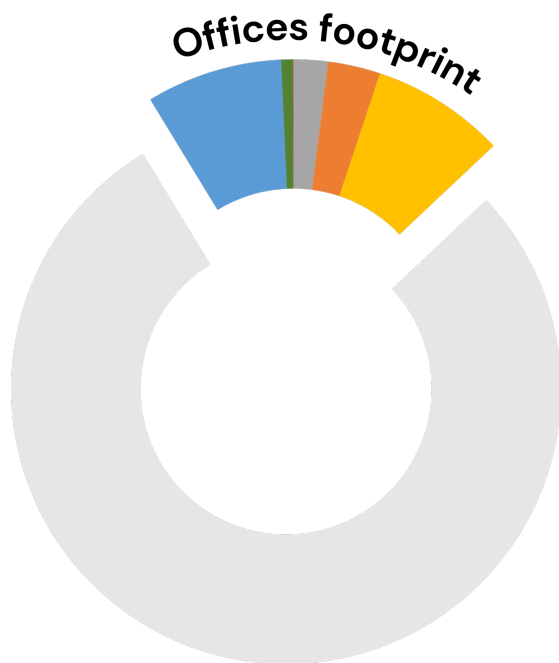
- **Purchased goods & services:** 86% or ~ 15 200 tCO₂e
 - R&D (90% of this category)
 - Offices : accommodation & restaurant, event & communication, offices supplies, digital and other services required to support R&D.
- **Capital goods:** 3% or ~530 tCO₂e
 - Construction, furniture & machinery, IT & telecom equipment, car.
- **Travel:** 8% or ~1 400 tCO₂e
 - Business travel by air, road transport and public transport.
- **Energy:** 2% or ~350 tCO₂e
 - Electricity from generators and local grid, heat production, and air-conditioning.
- **Commuting:** 1% or ~120 tCO₂e
- **Waste :** 0,05% or ~8 tCO₂e

Emissions by: Offices and R&D



Offices footprint

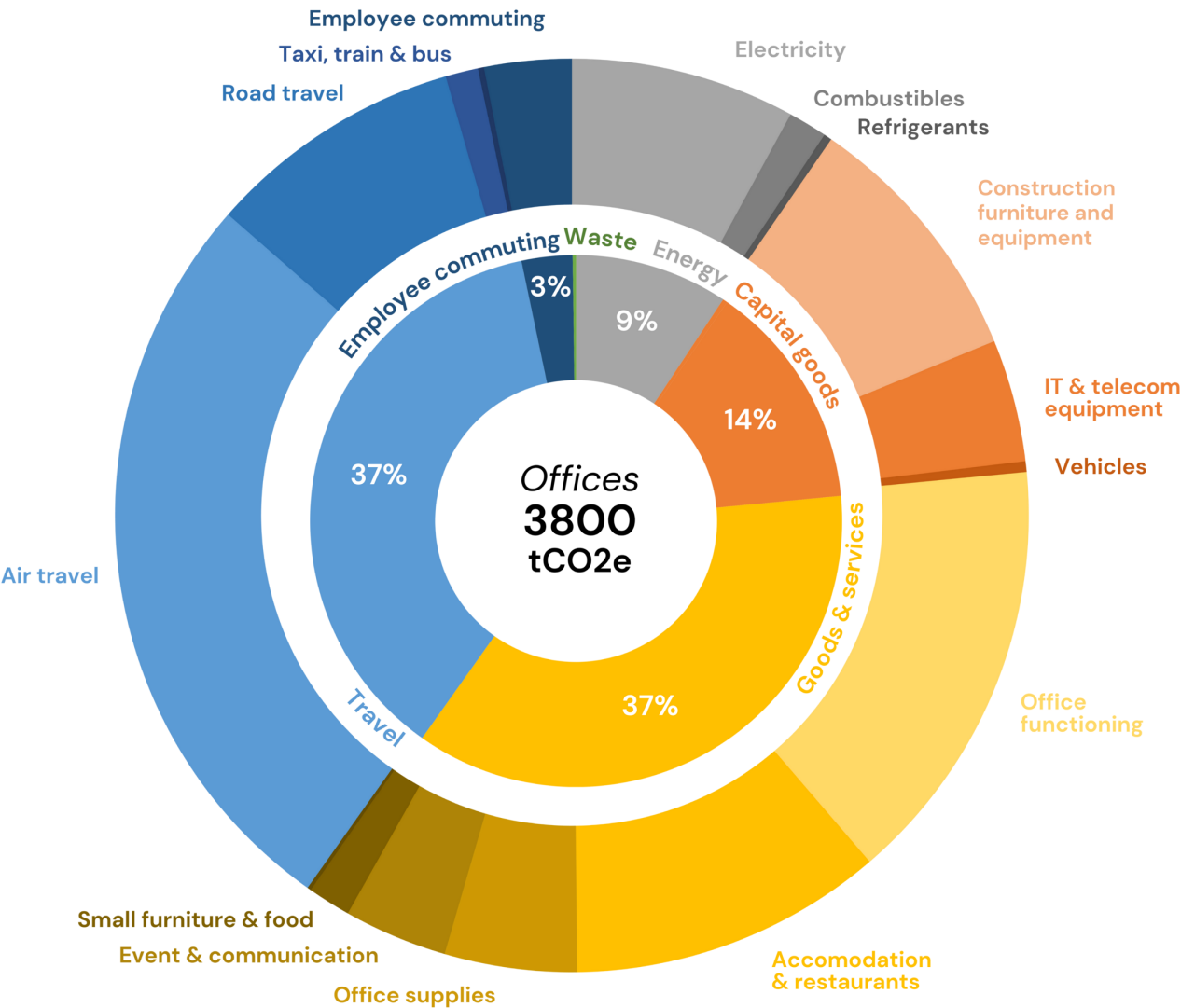
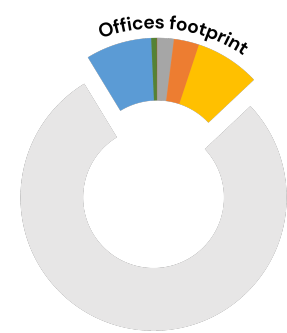
22% of total footprint



Emissions by categories and sub-categories

Offices footprint

22% of total footprint



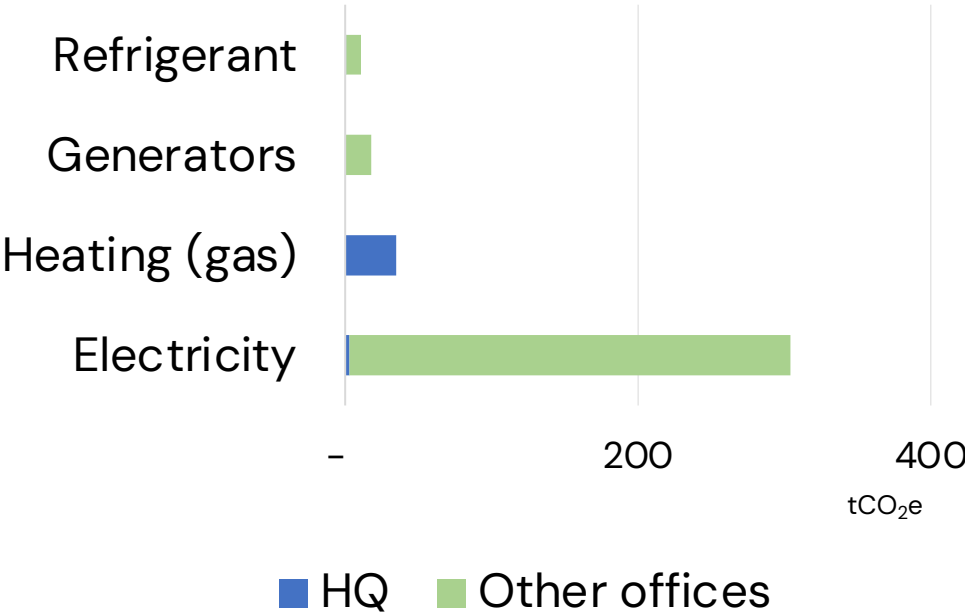
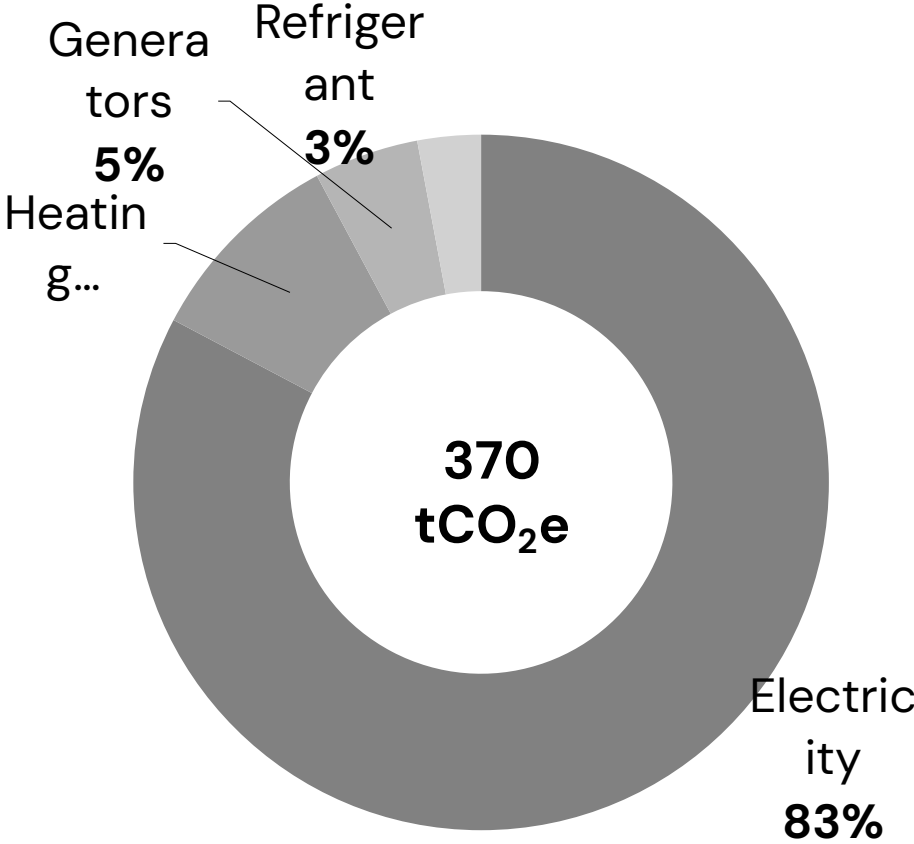
Energy & fugitive

2%

of total footprint

9%

of offices footprint





Energy and fugitive

- 83% of CO₂ emissions from energy primarily come from purchasing electricity from local grids, often generated using fossil fuels.
- Second highest contributor: Gas purchase for heating the headquarters, accounting for 9% of emissions.
- Third largest source: On-site electricity generated by generators, contributing 5% to the total emissions.
 - Particularly relevant for the DRC office (99%)
 - To a lesser extent, the Kenyan office is also affected.
- Air conditioning emissions make up 3% and are attributed to estimated fugitive gas leaks.
- 90% of CO₂ emissions in these categories are field-based, mainly due to carbon-intensive local electricity production.

Energy, with 2% of emissions, i.e., 370 tCO₂e, is the organization's fourth largest GHG emission source. Details of the emissions (kgCO₂e):

	Total	HQ	Offices
Electricity	304 216	2 722	301 494
Heating (gas)	34 724	34 724	–
Generators	17 941	–	17 941
Refrigerants	10 831	668	10 164
	367 712	38 114	329 598

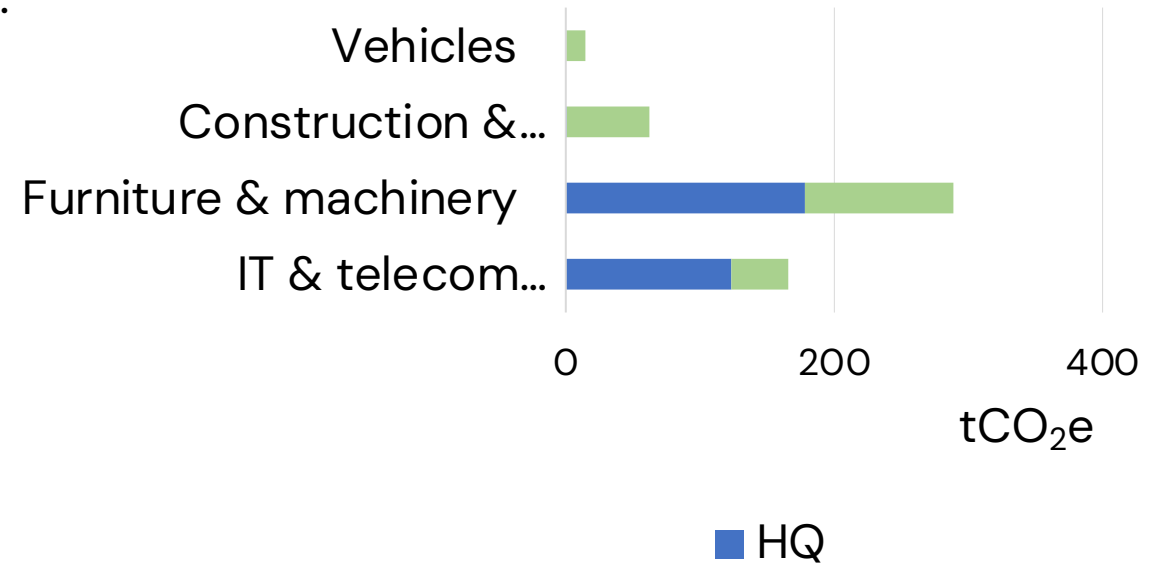
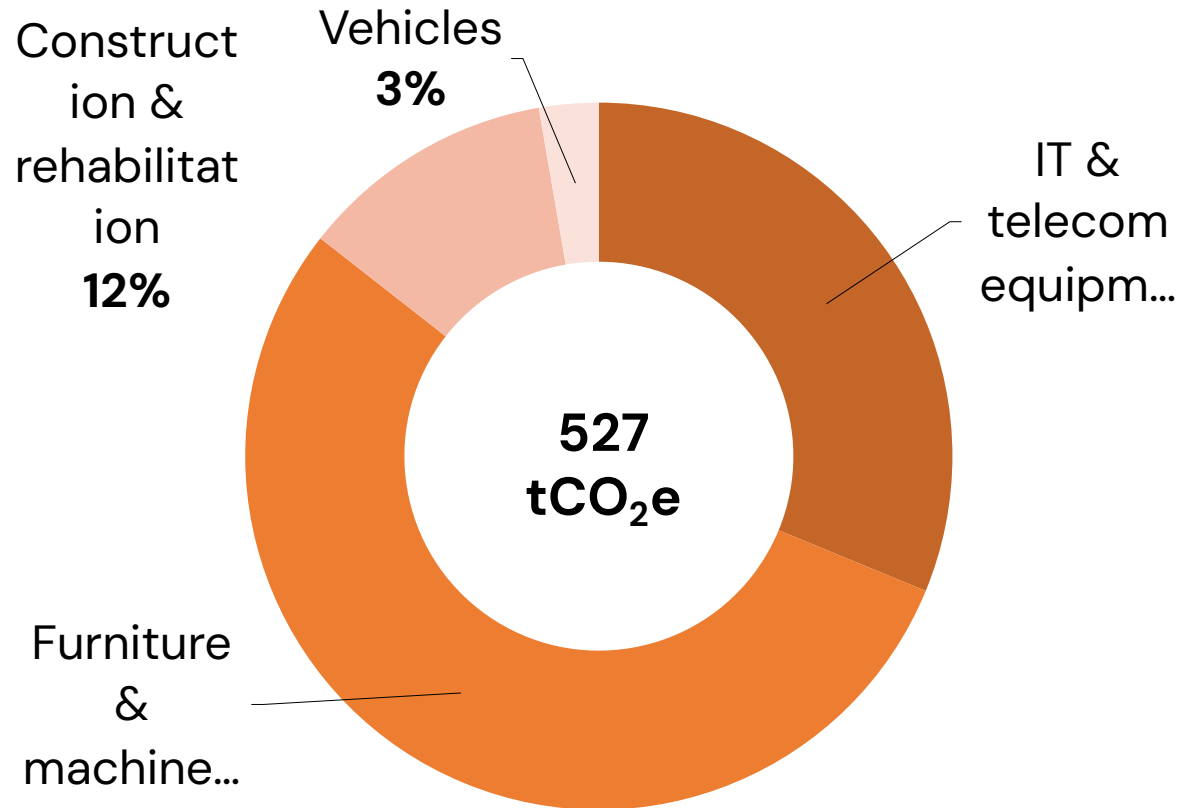
Capital goods

3%

of total footprint

14%

of offices footprint



**Furniture & machinery includes furniture, office equipment, laboratory equipment...*





Capital goods

KEY POINTS

- Office and laboratory equipment is the largest item with 54% of emissions (290 tCO₂e)
- The second most important source is IT equipment (31%) with 165 tCO₂e. If we add the related services described above, IT accounts for 30% of offices emissions (506 tCO₂e).
- Construction and rehabilitation comes in 3rd place (12%), and is particularly important in the DRC (72%) and Kenya (25%).
- Emissions from purchased services are mostly coming from the headquarters (57% or 302 tCO₂e) compared to field (43% or 228 tCO₂e)

Emissions related to purchased services represent 3% for DNDi's footprint (527 tCO₂e). It is the third largest offices GHG emissions.

By convention, capital goods are defined as durable products with a life span of more than one year.

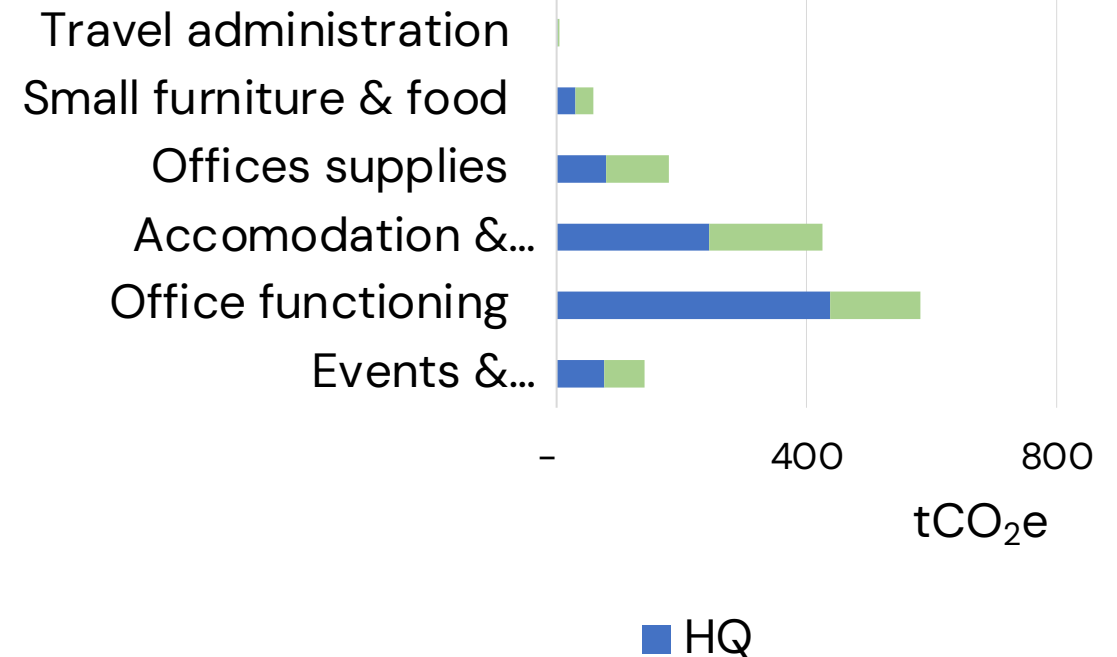
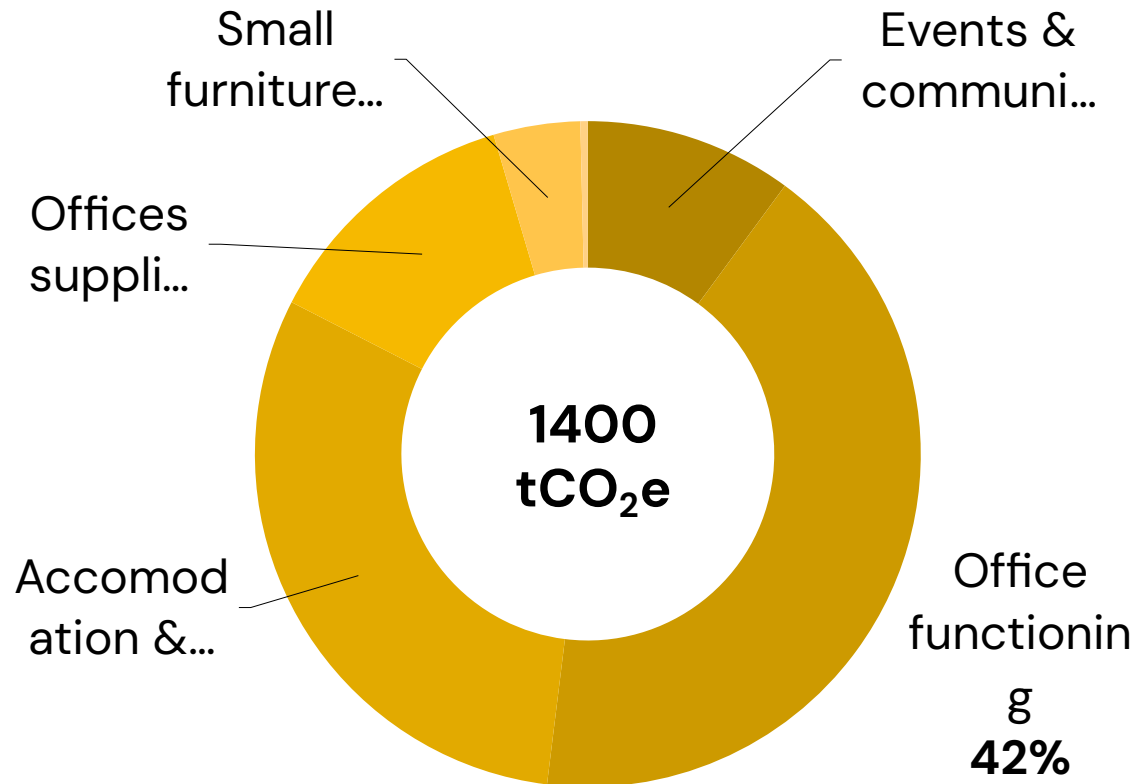
Purchased goods & services

8%

of total footprint

36%

of offices footprint



- Offices functioning: IT maintenance; software license; audit; bank services; photocopies & leasing; telecommunication; training.
- Accommodation & restaurant: hotel, restaurant, per diem, room renting, travel expenses
- Events & communication: meeting & visit; event & conferences; communication; publication





Purchased goods & services

KEY POINTS

- It is the second largest sources of offices GHG emissions
- Emissions from office operations account for 42% of emissions. Among the most important services we have IT maintenance, software licenses and telecommunication (70%). Other general services (auditing, maintenance, leasing, banking services, etc.) account for only 30%.
- The second source of emissions (30%) is the accommodation and restaurants which are mostly related to travel and events.
- Purchases of office supplies are the 3rd largest source of emissions (13%).
- 62% of emissions come from headquarters (870 tCO₂e)

Emissions related to the purchase of office goods and services represent 8% of the DNDi's footprint and 36% of the offices footprint (14 000) tCO₂e).

Goods & services repartition :

	kgCO ₂ e	
Goods	237 887	17%
Services	1153 117	83%

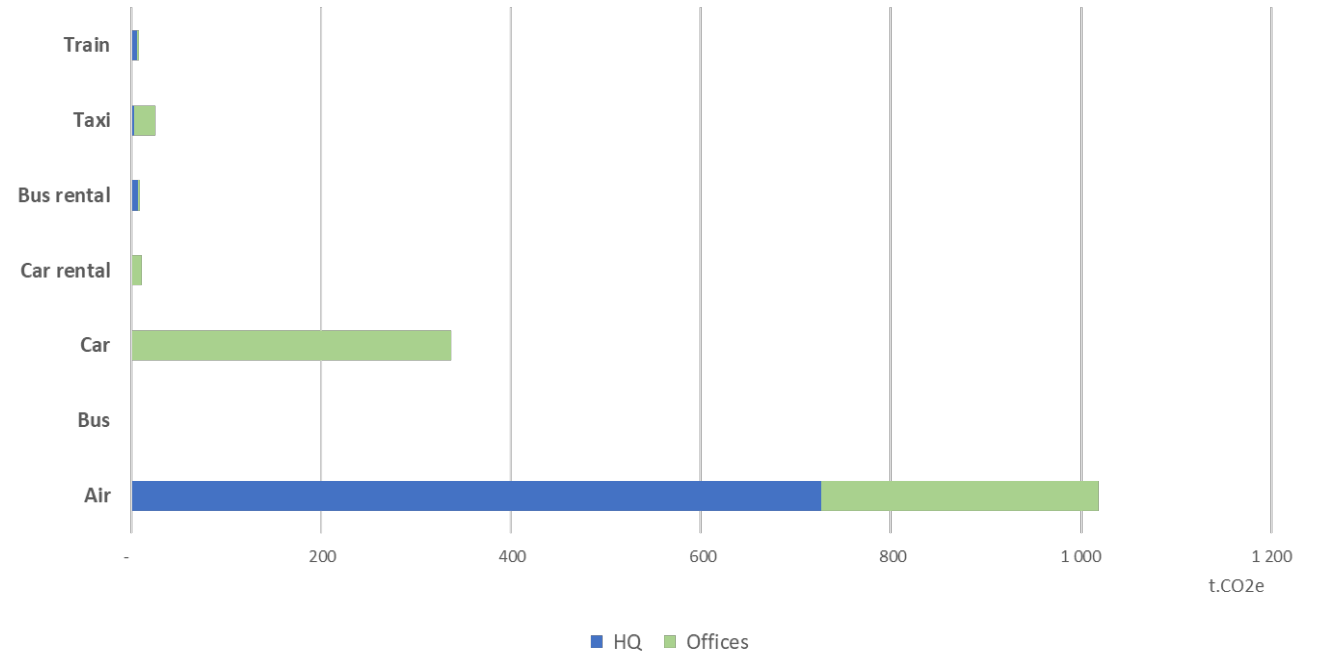
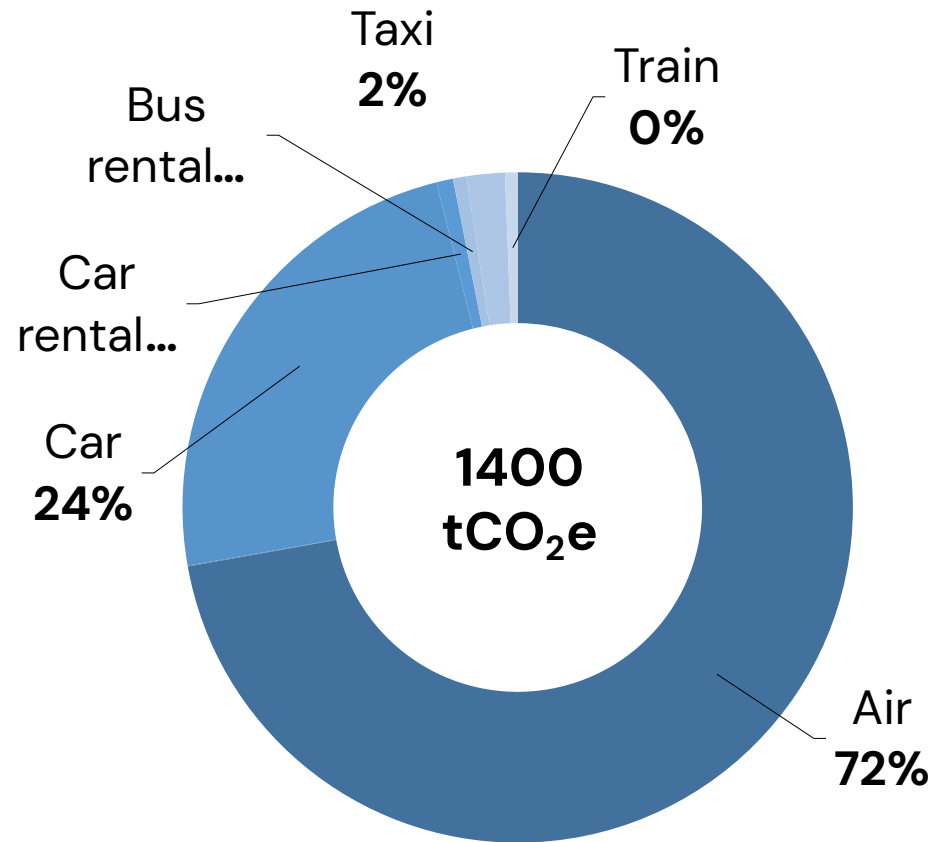
Travel

8%

of total footprint

37%

of offices footprint





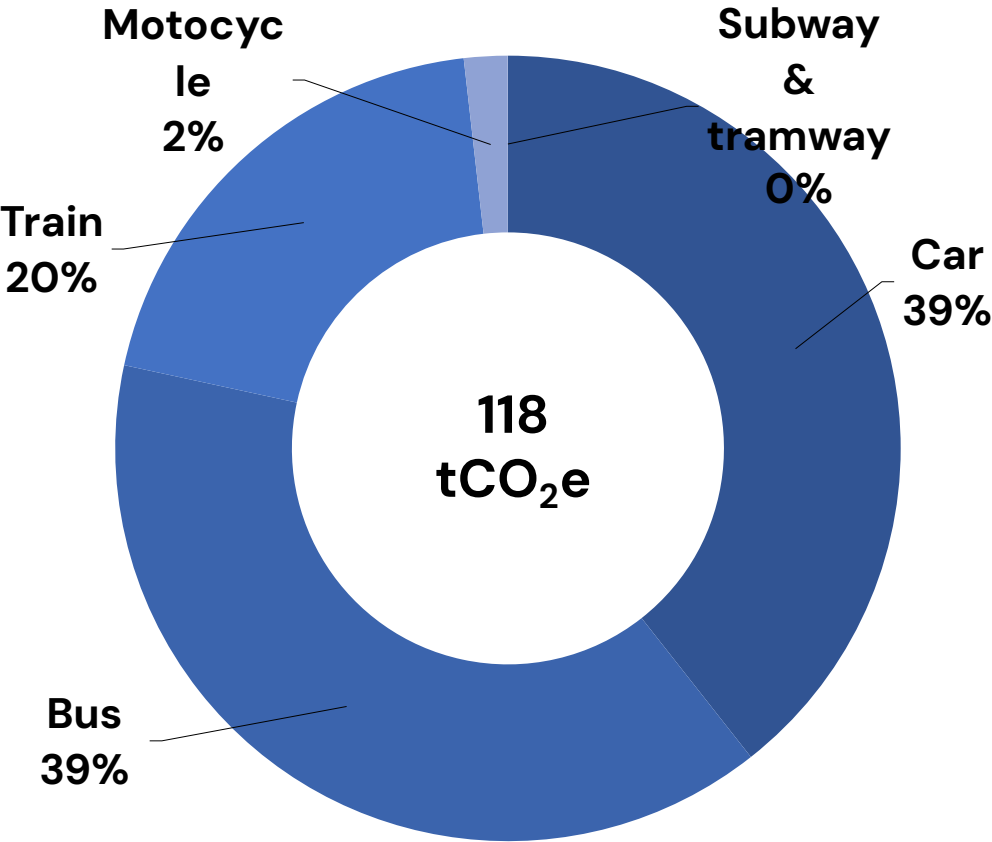
Travel KEY POINTS

- It is the largest office source of GHG emissions (37%).
- 96% of emissions come from two main sources
 1. Air travel:
 - Makes up 72% of this category and 6% of total emissions.
 - 70% of flights cover distances over 500km (20% middle-haul, 50% long-haul).
 - Mainly associated with R&D support.
 - Majority undertaken by headquarters staff (71%).
 2. Fuel consumption in vehicles:
 - Contributes 24% to this category of emissions.
 - Exclusively from the DRC, amounting to 337 tCO₂e.

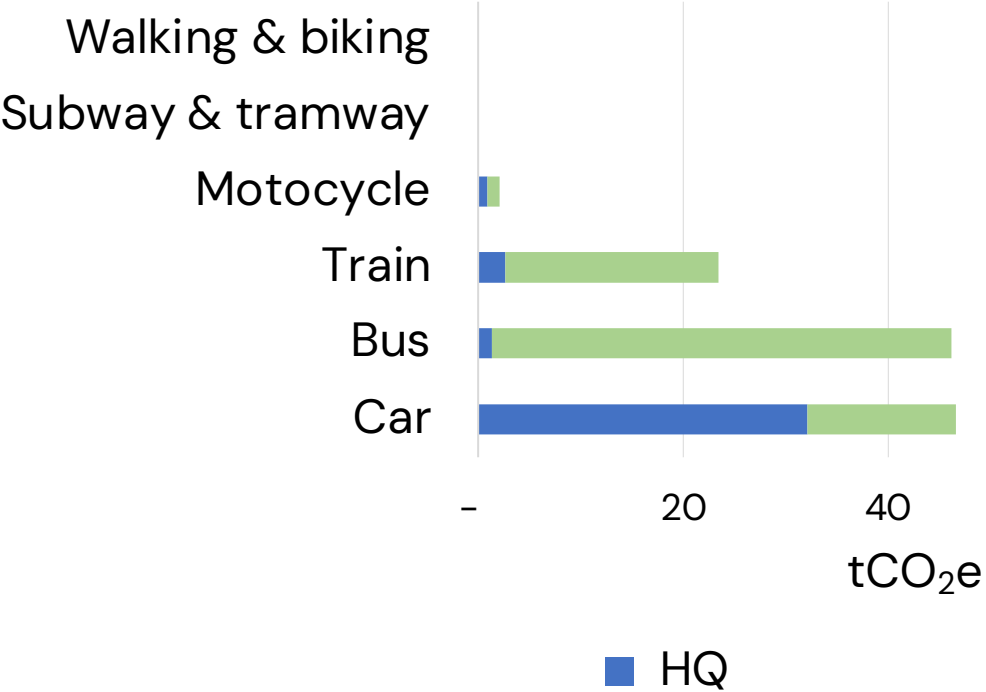
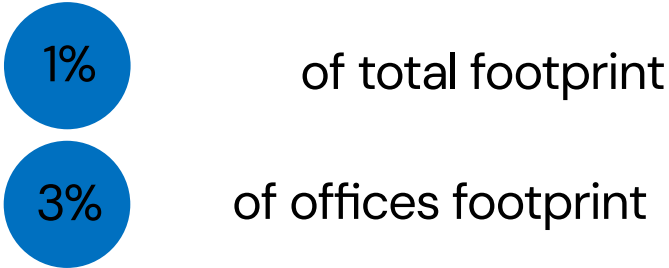
Emissions related to transport represent 8% for DNDi’s footprint (1 400 tCO₂e). Details of travel emissions sources:

	kgCO ₂ e	%	HQ	Offices
Air	1 018 988	72%	726 875	292 112
Bus	557	0%	-	557
Car	337 035	24%	-	337 035
Car rental	11 407	1%	1 084	10 323
Bus rental	9 129	1%	7 677	1 452
Taxi	25 996	2%	3 688	22 308
Train	8 585	1%	6 644	1 941
	1 411 698		745 968	665 730

Emissions by category



Commuting





Employee commuting

KEY POINTS

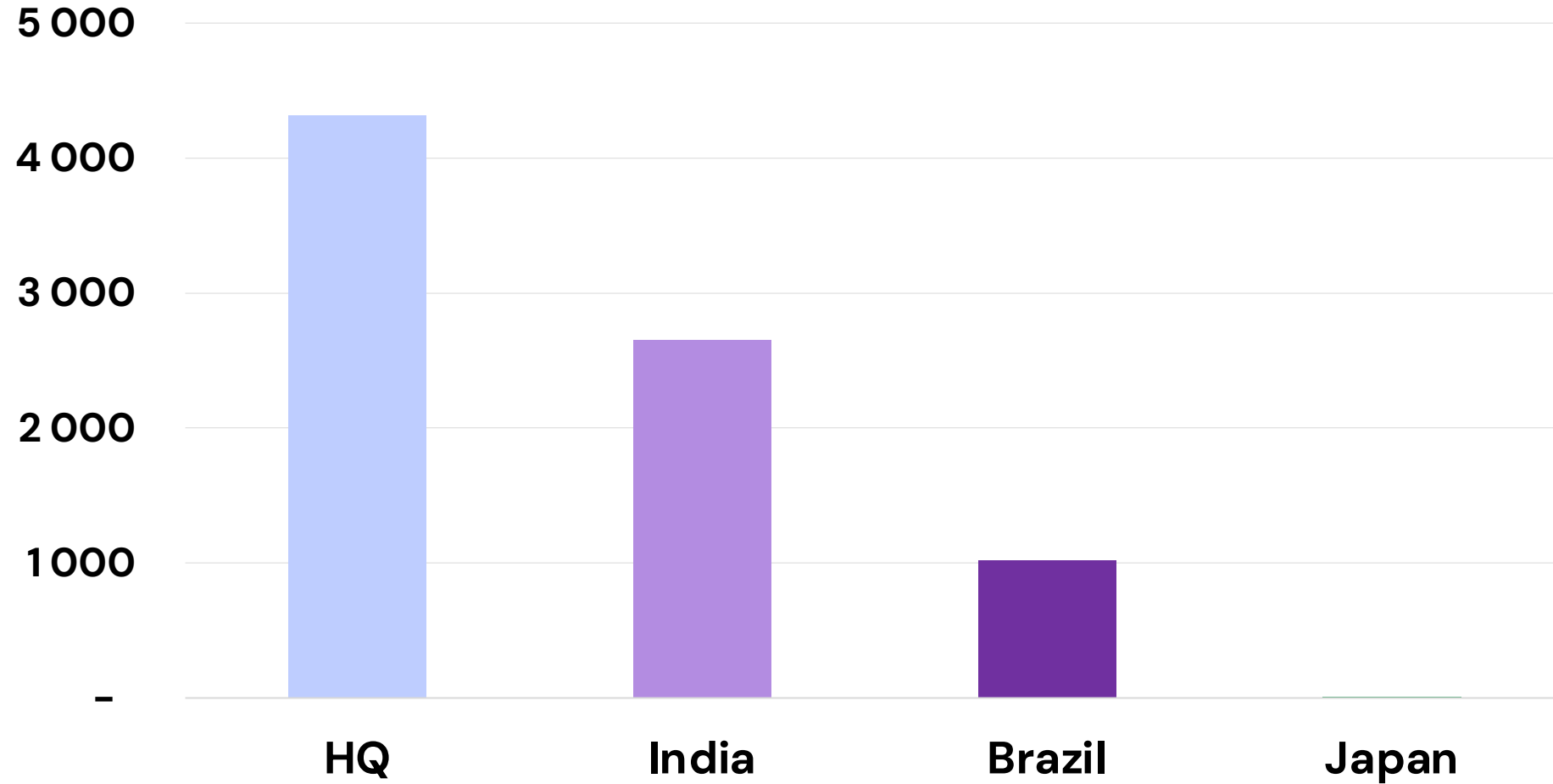
- Road travel is responsible for 80% of commuting emissions.
 - 70% of the car commuting is done by headquarter staff
 - 97% of bus commuting is done by field staff
- Rail travel (train, subway...) is the third most used mode of transport (20%) .
- Headquarters employees account for 31% of commuting emissions but with 53% of total staff.
- Offices employees account for 69% of commuting emissions but with 47% of total staff.
- 90% of headquarters commuting emissions come from car and motorcycle (3%) use.
- 70% of offices commuting emissions come from bus & train use.

Emissions related to commuting represent 1% for DNDi's footprint (120 tCO₂e) and 3% of the office footprint.

WASTE

3%

of total footprint





Waste

3%

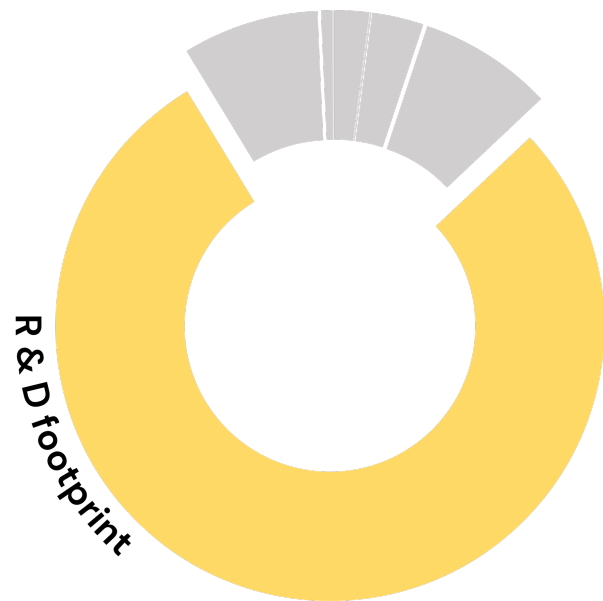
of total footprint

Emissions related to waste account for 0,05% of DNDi's total footprint (8 tCO₂e).

- Waste-related emissions only concern waste from office activities. They are therefore negligible but also poorly estimated due to the lack of data from some countries.
- Waste-related to the activities of R&D partners are not estimated in this study. It is nevertheless important from an environmental point of view (soil pollution, fine particles, etc.) more than from a climatic impact.

R&D footprint

78% of total footprint



Emissions by sub-categories

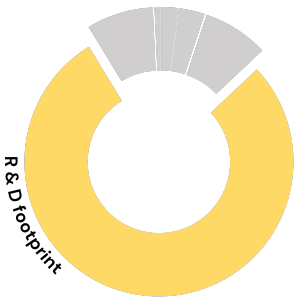
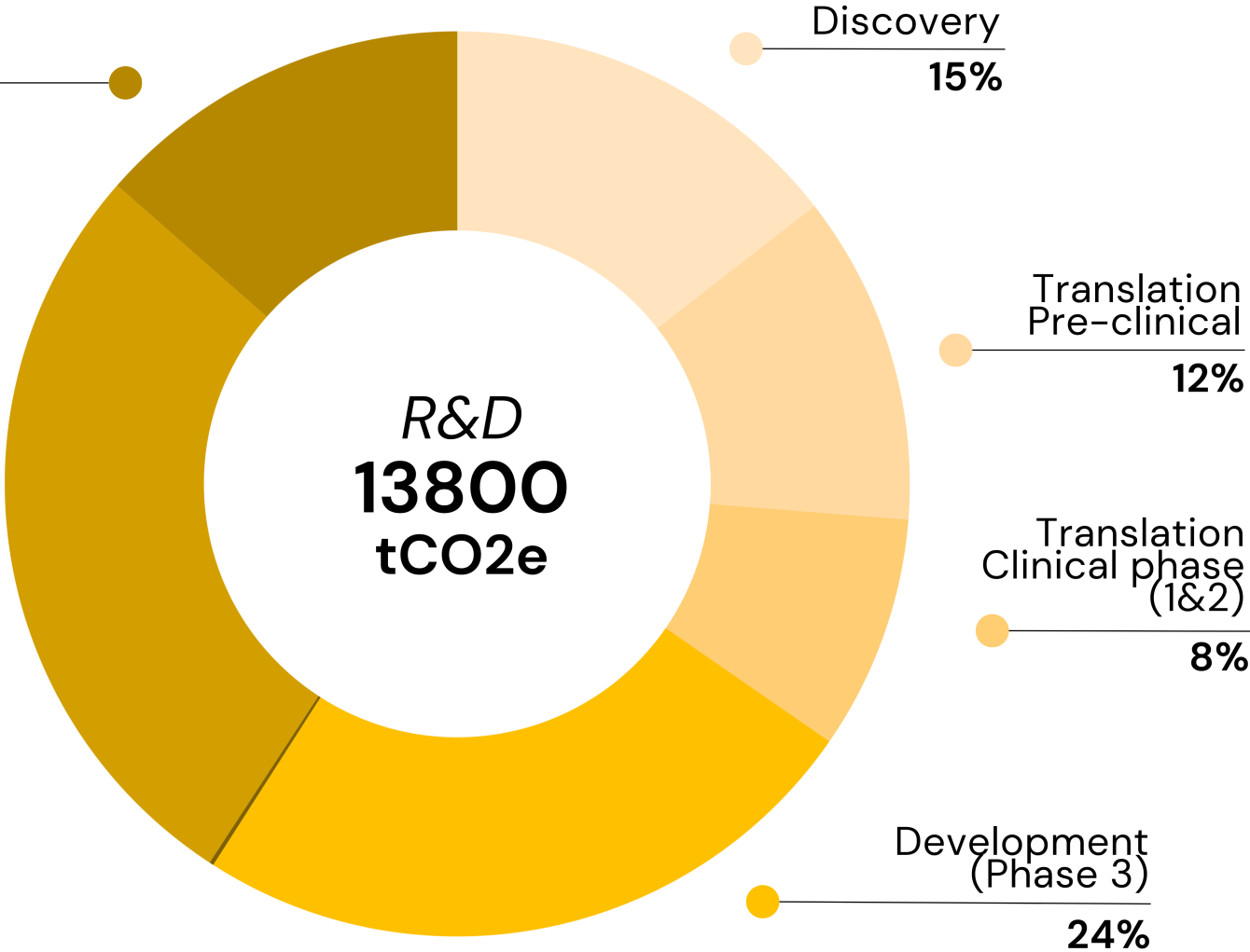
R&D footprint

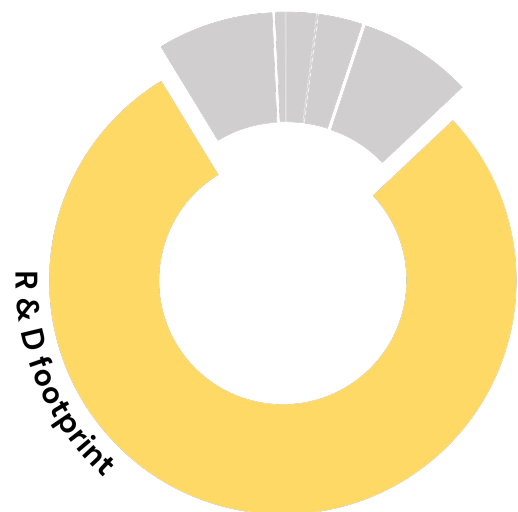
78%

of total footp

CMC
27%

In-kind
14%





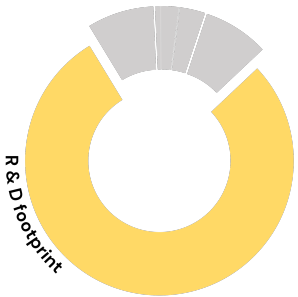
Emissions by category: R&D

R&D

78%

of total footprint

- The study of the emissions of DNDi's partners from the realisation of the R&D was the object of 3 successive different approaches to try to reduce the uncertainty as much as possible.
- The results obtained are a first step to better understand and determine missing or insufficient information.
- This challenge is not unique to DNDi but concerns the entire medical research sector, which has not yet developed standards that can be easily applied to assess its climate impact more accurately.
- Having diverse research backgrounds and gaining experience will pave the way for continuous improvement.
- These first results therefore have a high level of uncertainty (80%).



R&D

Carbon footprint assessment: Three different approaches

1st
assessment

Carbon footprint assessment made with the same emission factor for all R&D phases without taking in kind into account:

- 1 Emission Factor (Production of drugs)

23 000 t.CO₂e
0,540 kgCO₂e/€

2nd assessment

Carbon footprint assessment made with detailed accounting entries and estimated in kind:

- 64 accounting data from general ledger
- 8 Emission Factor

9 700 t.CO₂e
0,277 kgCO₂/€

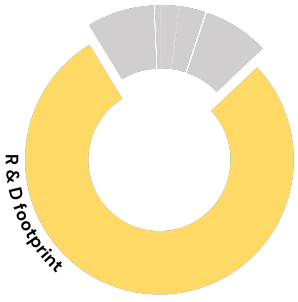
3rd assessment

Carbon footprint assessment achieved with the study of budgets financed by R&D phases and in kind:

- 55 type of cost
- 21 Emission Factor

13 800 t.CO₂e
0,288 kgCO₂/€

Similarity in outcomes despite differing methodologies. The third estimate is chosen as it most closely aligns with the modus operandi of the various research phases.



R&D

Analysis: R&D phases carbon accounting

Discovery:

- Financial data and quantity of API (not significant as very small quantity)
- Emissions factor used: R&D France Bilan Carbone data base, API (from literature review)
- Important data to collect: deepening of the main means involved (number of FTEs, material, laboratory analyses)

Pre-clinical:

- Financial data only
- Emissions factor used : R&D France, Bilan Carbone data base
- Important data to collect: number of FTEs, number of in vitro studies; number of in vivo studies with number and type of animals and duration of studies.

Clinical 1,2 &3:

- Financial and physical data
- Emissions factor used : activities for human health; insurance, accommodation and catering, office supplies, IT, travel, freight, food, printing, architecture and engineering, multi-technical building maintenance, security, cleaning, security, travel agency, other business services, R&D.
- Important data to collect: number and type of laboratory analysis, number and type of FTEs, quantity of samples transported.

Implementation:

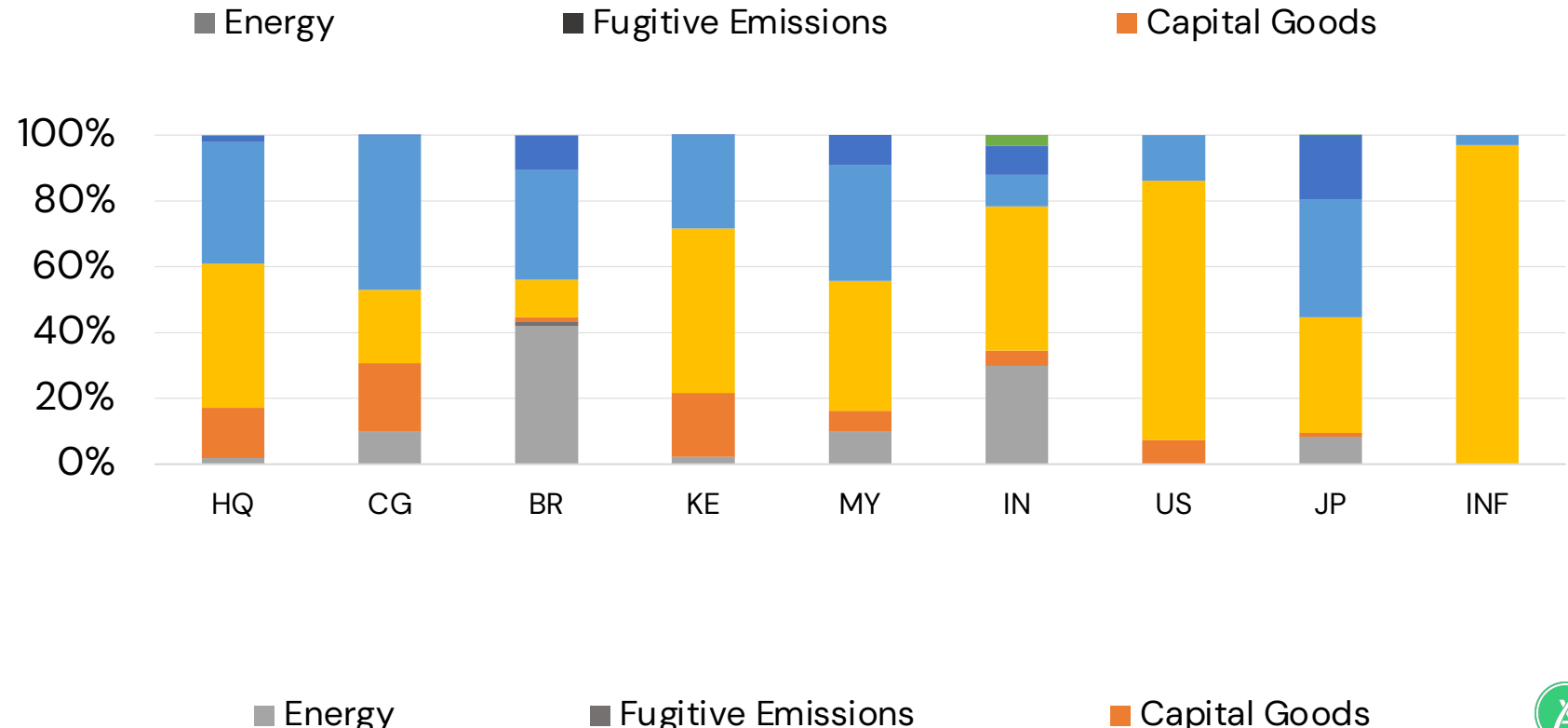
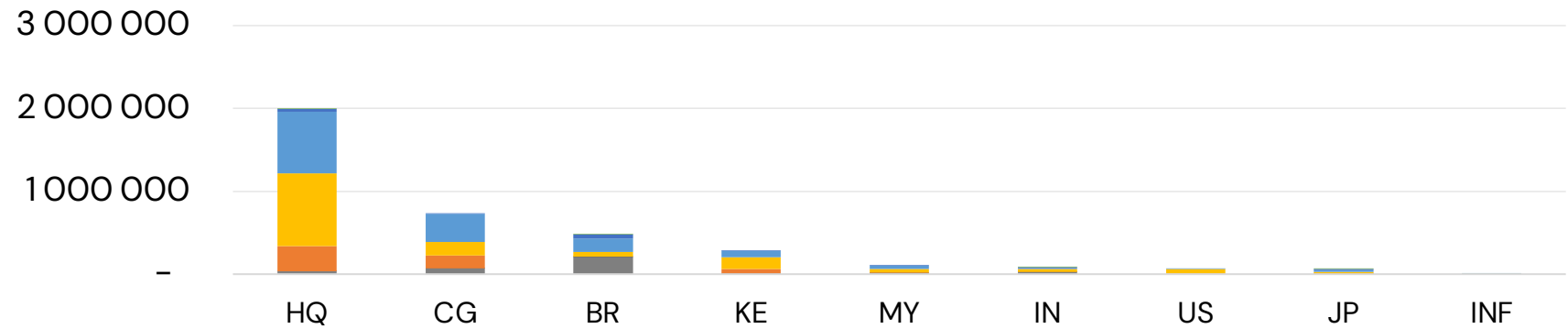
- Financial data and quantity of API (not significant)
- Emissions factor used: Pharmaceutical products (drugs, vaccines, infusion); API (from literature review)
- Important data to collect: manufacturer's footprint, packaging, transport and storage.

The approach used details of a number of partners' R&D budgets. The results obtained were extrapolated to the total amount spent per phase.



Emissions by country

- Top 3 countries (HQ in Geneva, Congo and Brazil) represent more than half of the footprint with 56%, i.e., 3,209 tCO₂e.
- HQ still represents the biggest part of emissions, with 35% of the footprint alone, or 1,998 tCO₂e.





3

Summary, benchmark and recommendations



Category	Subcategory	kgCO ₂ e	%
Energy 356 881 (2%)	Electricity	304 216	1,7%
	Combustible	52 665	0,3%
Fugitive	Refrigerant	10 831	0,1%
Capital goods 762 797 (3%)	IT & telecom equipment	165 872	0,9%
	Construction, furniture & machinery	350 939	2,0%
	Vehicles	14 465	0,1%
Purchased goods & services 15 203 755 (86%)	Events, communication	140 279	0,8%
	Offices functioning	582 459	3,3%
	Accommodation & restaurant	425 370	2,4%
	Offices supplies	179 302	1,0%
	Small furniture & food	58 585	0,3%
	Travel administration	5 008	0,0%
	R&D	13 812 752	78,3%
Travel 1 411 698 (8%)	Air	1 018 988	5,8%
	Car	348 442	2,0%
	Public transport	44 268	0,3%
	Commuting	118 308	0,7%
	Public transport	5 571	0,4%
	Vehicles	15 663	0,1%
Waste	Waste	7 999	0,0%
TOTAL		17 640 749	100%



Benchmark

- This assessment DNDi's footprint allows for the production of a certain number of indicators that will subsequently allow to compare and monitor the organisation's carbon intensity.
- For comparison purposes, here are some emissions indicators in the aid sector. It's crucial to approach these with a critical lens, as not all organisations have assessed the same scope of activities, and emission factors may vary.

Benchmarking indicators	DNDi	Epicentre	MSF OCG	Value
Total GHG emissions per employee	71,42	11,28	10,20	tCO ₂ e/FTE
Total GHG emissions per € spent	0,28	0,25	0,29	kgCO ₂ e/€

Benchmark

Orders of magnitude

It is sometimes difficult to grasp GHG emissions indicators in tonnes or kilograms of CO₂e. To further illustrate the volumes obtained in DNDi's carbon footprint, here are a few comparisons (orders of magnitude):

DNDi

**17 600
tCO₂e**



DNDi per employee
(71.42 tCO₂e/year)

Switzerland per capita
(consumption-based)
(12.36 tCO₂e/year)*



17,600 tCO₂
equivalent
to emissions from
37,000 barrels
of oil°



17,600 tCO₂ equivalent
to emissions to driving
66 million kilometres°
= 1600 trips around the globe

* <https://ourworldindata.org/grapher/consumption-co2-per-capita>

° <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>



Recommendations

Raise awareness among all the organisation's stakeholders (internal and external). The improvement and automation of carbon measurement is highly dependent on the contribution of all the actors involved in the smooth running of the organisation.

Plan for continuous improvement in measurement. DNDi should focus the annual collection of activity data on the most important items. Planning for improvement efforts on the quality and completeness of measurement should be the subject of a dedicated roadmap.

Projects to be implemented to improve future footprint calculations:

1. Strengthening life cycle analysis
2. Integrate a template for data collection in budgets submitted by R&D partners



Climate Action
Accelerator

THANK YOU



margot.vaneijkern@climateactionaccelerator.org



www.climateactionaccelerator.org



<https://www.linkedin.com/company/theclimateactionaccelerator/>



[@climateactionaccelerator](https://www.instagram.com/climateactionaccelerator)