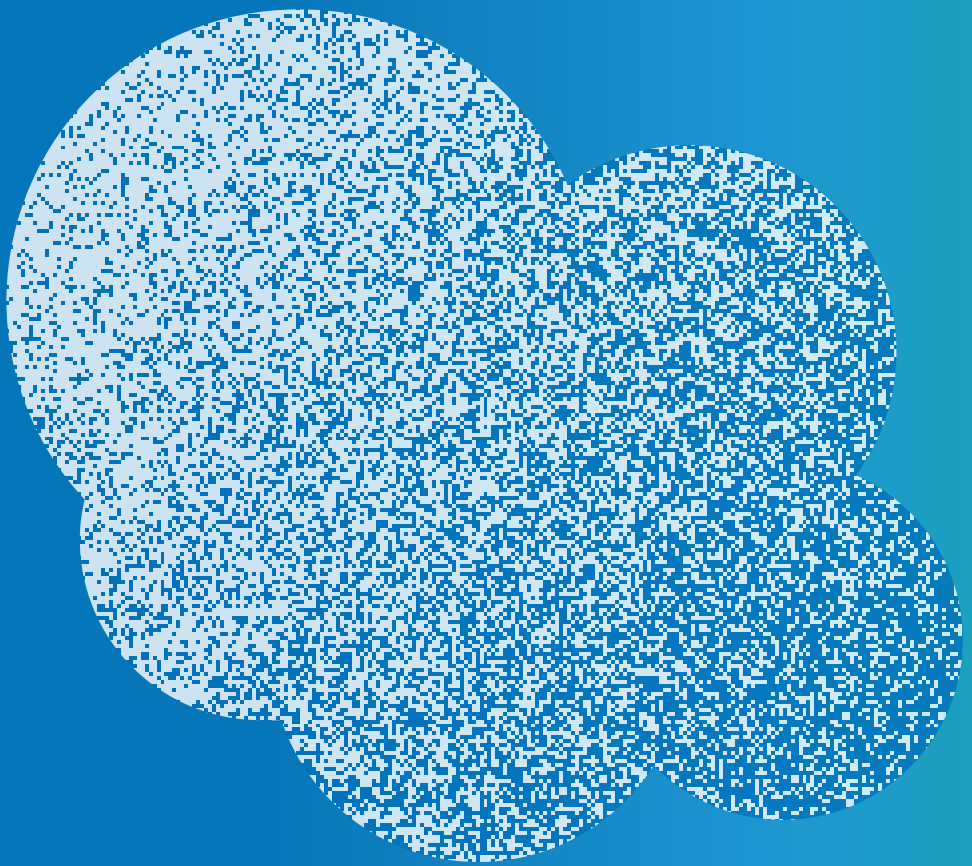
UNHCR
The UN Refugee Agency

UNHCR Greenhouse Gas Emission Calculation

Instruction on Scope 3
Emissions in Downstream Transport

REPORT SUMMARY



Introduction

Climate change, particularly the phenomenon of global warming, is now widely recognized as a universal threat due to its dire implications for all forms of life on our planet. **Considering the role of greenhouse gases (GHGs) as the driving force of global warming**, it is of paramount importance to accurately assess the carbon emissions of companies and organizations.

According to the GHG Protocol[1], the GHG emissions of an organization are classified into Scope 1, 2 and 3. Scope 1 emissions are defined as emissions generated onsite from the activities an organization owns and/or controls. Scope 2 includes indirect emissions generated from purchased energy. **Scope 3 emissions are all those emissions an organization is responsible for, but which happen outside of its walls and are controlled by other parties up and down the value chain**.

The knowledge of all three scopes of emissions provides a tool to strategically reduce environmental pollution by understanding from where it originates. However, only Scope 1 and 2 are mandatory to report on, whereas Scope 3 is voluntary and the most difficult to evaluate. At the same time, it is now well-accepted that Scope 1 and Scope 2 do not sufficiently capture the footprint of an organization, as Scope 3 emissions may account for more than 50 per cent of an organization's total emissions[2].

The overarching account of emissions (which includes Scope 3) is notoriously difficult to assess. Therefore, in accordance with the holistic greening approach of UNHCR, the UN Refugee Agency, it is important to develop a unified methodology that aims to capture Scope 3 emissions stemming from the organization's activities.

The main reasons behind developing the Scope 3 inventory of UNHCR are as follows:

- Identify and understand risks related to value chain emissions.
- Identify GHG reduction opportunities and reduction targets, and track performance.
- Engage supply chain partners in GHG emissions reduction.

1 https://ghgprotocol.org/

2 https://doi.org/10.1088/1748-9326/aae19a

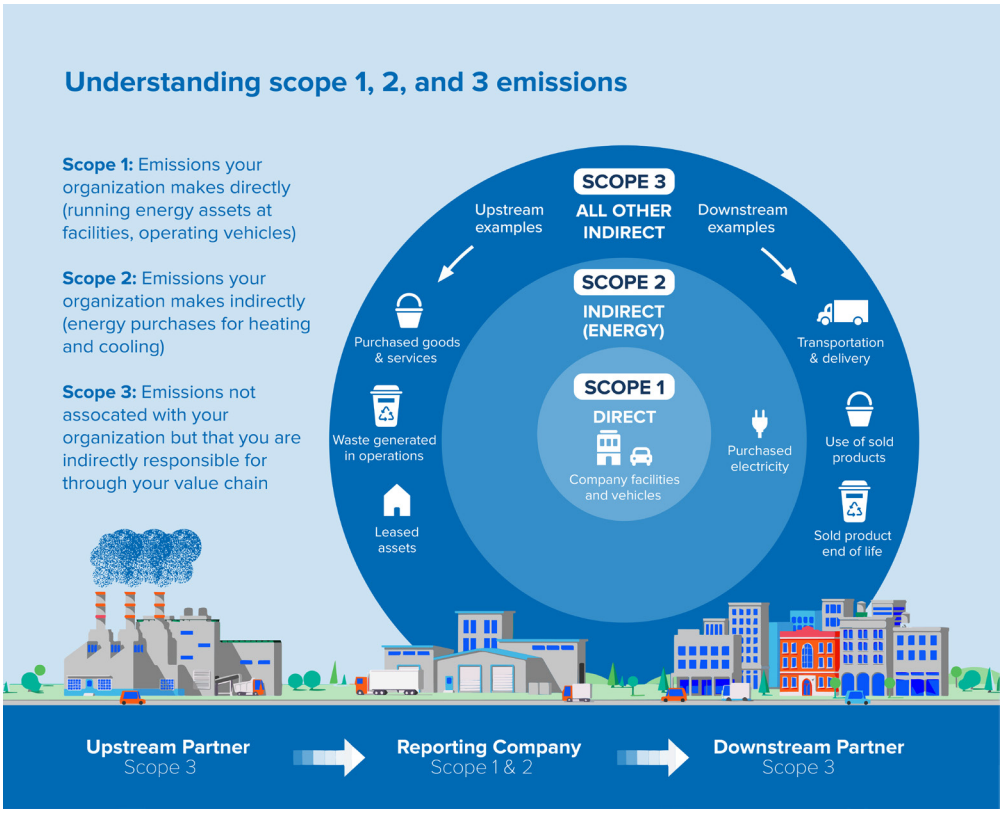
What are Scope 3 emissions?

Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but which appear in its value chain. Scope 3 emissions include all sources not within an organization's Scope 1 and Scope 2 boundaries. According to the GHG Protocol, Scope 3 emissions are separated into 15 categories[3], which are broadly divided into upstream emissions and downstream emissions.

Based on the GHG Protocol, the Scope 3 emissions of a given organization can be summarized as follows:

- Generated outside the premises of the given organization, which is determined by a third party in the value chain of a given entity.
- Originate from both upstream activities (transport, distribution and purchased goods) and downstream activities (processing of sold products or end-of-life treatment). Difficult to monitor for GHG accounting and reduction purposes.

The majority of the Scope 3 emissions of UNHCR originate from the activities of suppliers and freight forwarders.

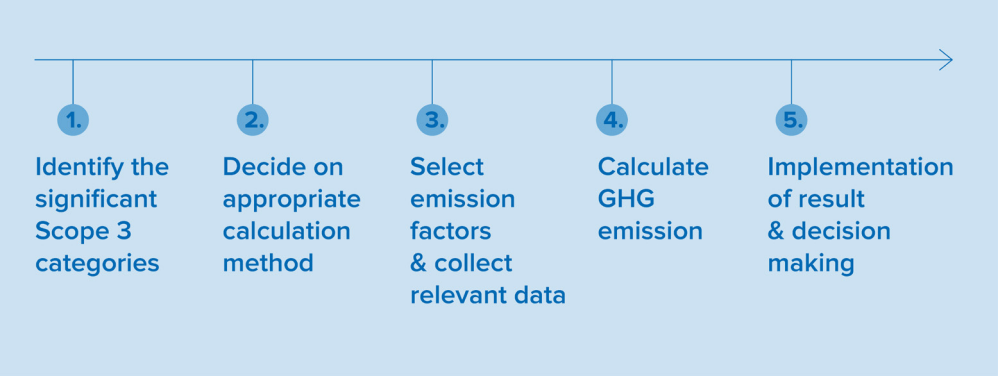


In total, there are 15 categories of Scope 3 emissions. 6 categories are highlighted for visualization purposes.

3 https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf

Steps to calculate emissions

A general framework for Scope 3 emissions calculations includes 5 consecutive phases.



Phase 1: How to decide which categories of Scope 3 emissions are relevant for your organization

The bulk of indirect emissions of humanitarian organizations often occurs when raw materials are extracted, transformed, manufactured and assembled into goods to be distributed as part of relief efforts. According to estimations[4], between 40 and 60 per cent of emissions in the humanitarian sector are linked to the supply chain. The analysis of the carbon footprint of UNHCR procurement identified a list of ten core relief items[5] (CRIs) responsible for more than 250 $ktCO_2e$ per year. This is more than 60 per cent of the organization's total GHG emissions. Therefore, in this methodology, we define the category "purchased goods and services" (which is "purchased CRIs") as one of the main categories for evaluating Scope 3 emissions.

The second largest contributor of Scope 3 emissions of UNHCR procurement activity is the downstream transportation of the purchased CRIs. Hence, in this methodology, we define "downstream transportation of CRIs" as the second main category for evaluating Scope 3 emissions.

Phase 2: Decision on calculation Method

The Methodology of the Scope 3 emission is developed in accordance with GHG Protocol Corporate Standards. The scope definition should include the following elements:

- Impact categories
- System boundary
- Functional unit and reference flow
- Additional information included in the study
- Assumptions/Limitation

4 https://www.thenewhumanitarian.org/investigations/2021/10/27/aid-sector-carbon-footprint-environmental-impact

5 Blankets, family tents, refugee housing units, mattresses, kitchen sets, tarpaulins, sleeping mats, buckets and jerry cans, generators, laptops

Phase 3: Selection of emissions factors and collecting relevant data

Data availability is one of the major issues in calculating Scope 3 emissions within the humanitarian supply chain. In practice, collecting relevant, quality and unified data for Scope 3 is a challenging task. Generally, there is a high chance of obtaining a database with non-unified and incomplete data. Therefore, it is essential to develop principles for effectively calculating emissions. All the data needed for Scope 3 calculations can be divided into three categories:

1. Primary data is the data that is measured or collected directly by UNHCR at a specific facility or set of facilities. Whilst it is the most reliable type of data, its availability can be limited in many cases, such as smaller freight forwarders, remote location transportation, etc.

2. Secondary data is generic data from literature, scientific papers, different databases, industry association reports, government statistics, etc.

3. Proxy data is the data on product-level emissions factors that are available from value chain partners. This trusted data can be used as a proxy for identical or comparable products from other partners.

Based on the type of data available, different calculation scenarios are possible.

There are several different sources of GHG emissions factors. Some data related to the factors are available for free, such as those published by national governments, while others are offered on a commercial basis. The source of emissions factors should be clearly and transparently reported alongside the calculation of emissions. It is also strongly recommended to use the factors in a consistent way, i.e., from the same source for all categories (where possible) and on a year-on-year basis.

Phase 4: Calculation of GHG emissions

Organizations may use the following methodologies to calculate Scope 3 emissions from transportation:

1. Fuel-based method: the calculation is based on the amount of fuel consumed and the emission factor of the fuel.

2. Distance-based method: the calculation is based on the mass, distance, mode of each shipment and mass-distance emission factor for the vehicle used.

3. Spend-based method: the calculation is based on the amount of money spent on each mode of business travel transport and by applying secondary environmentally extended input-output (EEIO) emission factors.

The following decision tree will help decide how an organization should calculate its GHG emissions.

Phase 5: Interpretation of data and decision-making:

The GHG impact of any activity can be expressed as a simple product of two drivers: the activity level (e.g. the km driven) and the GHG intensity of that activity (e.g. the amount of CO_2e emitted per km). These two drivers are simultaneously the mechanisms/interventions that companies can address to reduce their GHG impact. Any measure to address one or both levers is described as a reduction lever.

In short, reduction levers can be projects, programmes, business decisions or other actions, which either reduce the level of activity or improve GHG intensity and result in emissions reductions.

Conclusion

Accounting for GHG emissions, which indirectly and directly contribute to climate change, is crucial in reducing the impact of organizations, such as UNHCR, on the environment. Three separate sources of GHG emissions were identified: Scope 1 emissions, which are generated onsite from the activities of the organization; Scope 2 emissions, which originate from the purchased electricity by an entity; and Scope 3, which are the results of activities from assets not owned or controlled by the reporting organization, but which appear in its value chain and can account for more than 50 per cent of total emissions. Scope 3 emissions are significantly difficult to measure. Therefore, a unified methodology, as presented in this document, is required to properly identify where emissions can be reduced.

Identifying emissions that fall within the Scope 3 category and developing an inventory for them helps to pinpoint and understand the risks related to value chain emissions. It also supports the identification of GHG reduction opportunities and targets, the tracking of performance and the engagement of supply chain partners in GHG emissions reduction. The description of the scopes of emissions, the established methodology and the example calculations in this report aim to provide a better understanding of where environmental pollution originates in the overall activities of the organization. Going forward, the comprehensive approach of UNHCR to improve the sustainability of its supply chain will play a crucial role in mitigating the adverse environmental effects associated with humanitarian assistance.

SUMMARY OF UNHCR REPORT:

UNHCR Greenhouse Gas Emission Calculation: INSTRUCTION ON SCOPE 3 EMISSIONS IN DOWNSTREAM TRANSPORT

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