WREC Coalition Greenhouse Gas Emission Info Session: Automated Carbon Accounting

19 November 2025, 14:00-15:30 PM CET
Global.WREC@wfp.org

LOGISTICS CLUSTER
DRC DANISH REFUGEE COUNCIL
IFRC
Save the Children
WFP

Where are you joining us from?

How are you feeling today?

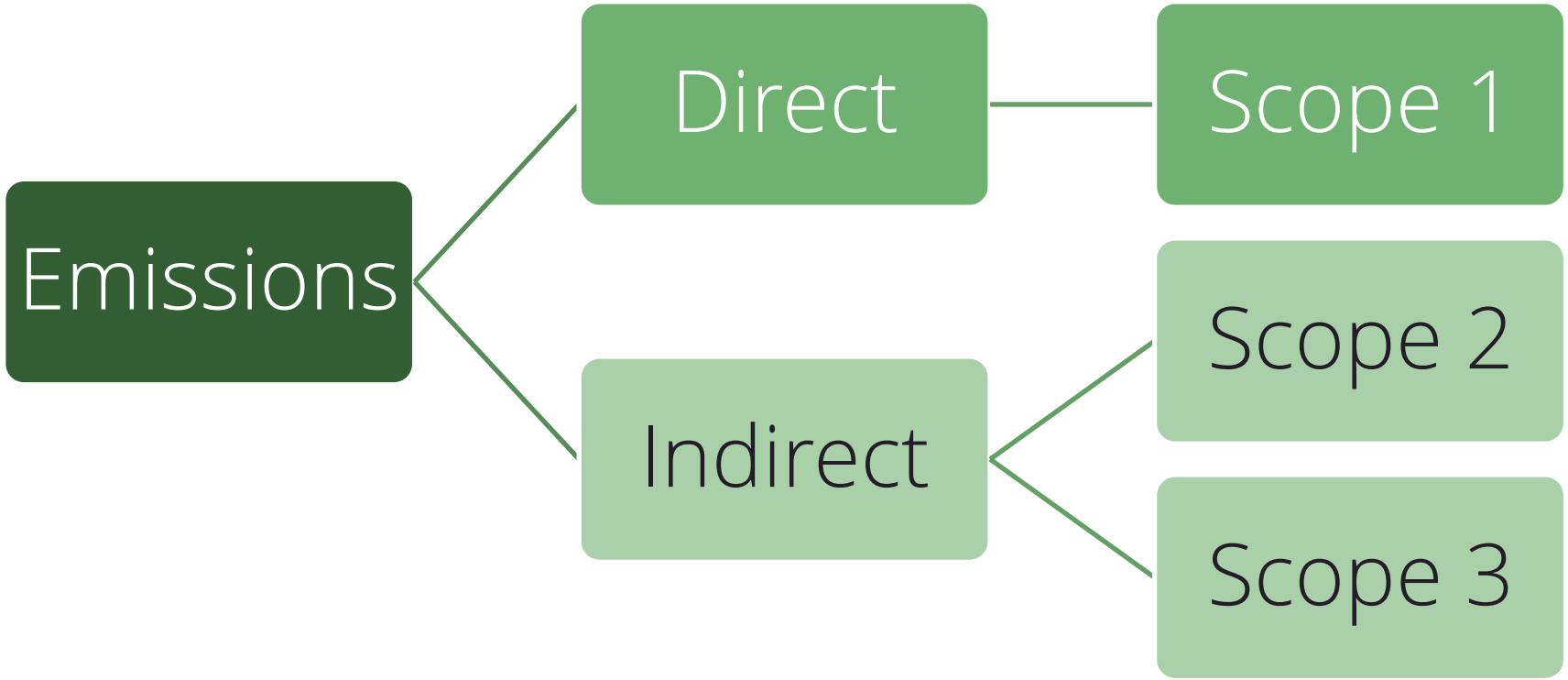
Agenda

1	**Introduction**	**5 mins**
2	**Carbon accounting data collection:** How to get started & sample templates	**15 mins**
3	**Automated Carbon Accounting with ECODASH**	**40 mins**
4	**Discussion and Q&A**	**25 mins**
5	**AOB**	**5 mins**

What is your biggest challenge in carbon accounting?

Carbon accounting data collection

The scopes



Source: GHG protocol

The scopes

SCOPE 1

Direct emissions from sources controlled by your organization.

Typically around 1-20% of emissions.

Where? Facilities, fleet & distribution.

Fuel & combustion from:

- Owned vehicles
- Generators, boilers, furnaces
- Airconditioning

SCOPE 2

Emissions generated by purchased services consumed by the organization.

Typically around 1-20% of emissions.

Where? Facilities.

Purchased power:

- Electricity
- Heating
- Cooling

Source: WREC Coalition

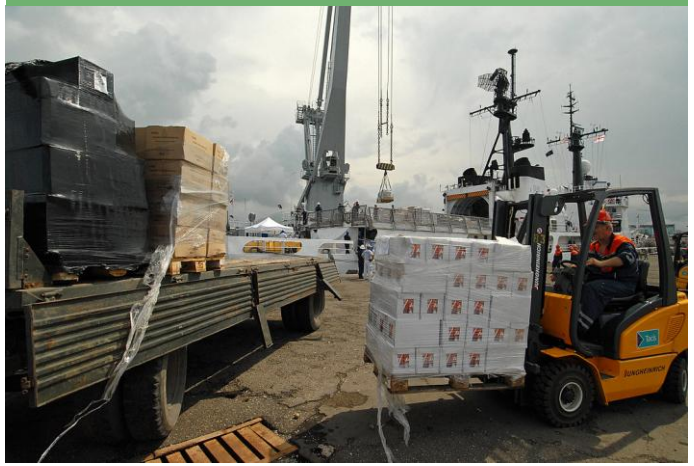
Setting the scope 3 boudnary

GHG category	Source of emission	Priority level
3-1	Purchased Goods and Services	1
	In-kind donations	2/3
	Cash assistance	1/2
	Financial Support (upstream emissions)	1/2
3-2	Capital Goods	1
3-3	Fuel & Energy related to activities not included in scope 1 & 2	1
3-4	Upstream transportation and distribution	1
3-5	Waste generated in operations	3
3-6	Business travel	1
3-7	Employee commuting	1
3-8	Upstream leased assets	Not relevant
3-9	Downstream transportation and distribution	1
3-10	Processing of distributed products	1
3-11	Use of distributed products	1
3-12	End-of-life treatment of distributed products	1
3-13	Downstream leased assets	Not relevant
3-14	Franchises	Not relevant
3-15	Investments	Not relevant
3.1 bis	In-kind donations	2/3
	Cash transfer	1/2
	Financial Support (downstream emissions)	1/2

How do you currently collect GHG emission data across your organisation?

Setting the scope 3 boundary:

Map your supply chain during a typical time frame



Get a rough estimate of all activities before you exclude any

1. Create a list of activities
2. List purchased goods & services
3. List & rank suppliers

Source: GHG protocol scope 3 standard.

Source: GHG protocol scope 3 training.

Data collection

Prioritise data collection efforts

Select data

Collect data and fill gaps

Improve data quality over time

Source: GHG protocol scope 3 training.

Data collection

Prioritise data collection efforts

Select data

Collect data and fill gaps

Improve data quality over time

SIZE

Significant contribution to organisation's scope 3 emissions

INFLUENCE

Strong influence over emission reduction

RISK

Contribution to organizational risk exposure (e.g., regulatory, reputational risk)

STAKEHOLDERS

Deemed critical by key stakeholders

Source: GHG protocol scope 3 training.

Data collection

Prioritise data collection efforts

Select data

Collect data and fill gaps

Improve data quality over time

SIZE

Significant contribution to organisation's scope 3 emissions

INFLUENCE

Strong influence over emission reduction

RISK

Contribution to organizational risk exposure (e.g., regulatory, reputational risk)

STAKEHOLDERS

Deemed critical by key stakeholders

1 **Emission-based screening**

2 **Finance-based screening**

Source: GHG protocol scope 3 training.

Data collection

Prioritise data collection efforts → **Select data** → Collect data and fill gaps → Improve data quality over time

1 **Emission-based screening:**
Activity data and reasonable assumption, e.g., look at emissions factors.

2 **Finance-based screening**
Spend or revenue. CAUTION

Source: GHG protocol scope 3 training.

Data collection

The (fictional) organisation 'Dedicated Humanitarians' purchases and distributes rice. The do a financial screening. To be safe, they double check and compare this with an emissions screening

Financial screening		VS	Emission screening	
Activity	Amount spent in %		Activity	% CO2e via EF conversion
Rice	80%		Boiling water for rice	70%
Road transport	2.4%		Rice	10%
Boxes	2.4%		Waste to incineration	1.4%
Water transport	1.6%		Road transport	0.8%

Source: GHG protocol scope 3 training.

Data collection

Source: GHG protocol scope 3 training.

Data collection templates

Obtaining energy data from landlord

Obtaining travel data from travel agency

Obtaining cooling data from facility manager

[Facilities Carbon Emission Data]

Data collection example

BritishRedCross

Covers all buildings and cars

Fleet: National fuel card supplier. Centralised expenses system (for people driving their own cars).

Electricity and gas: National contract. Supplier provides data broken down by property.

Using organisation-level data

Emission calculators

Humanitarian-specific calculators

Humanitarian Carbon Calculator

Spanish Red Cross Carbon Footprint Calculator

UNHCR GHG Emissions Calculator

Standard calculators

GHG protocol calculation tools

Calculators for SMEs

Small Business Carbon Calculator

Advanced Business Carbon Calculator

Calculators for events

Carbon calculator for food

Carbon calculator for hotels

Data collection example

Template from HCC adaptation

From central HR and finance: FTE and total expenditure/location

Using Local currency unit to ease burden

HCC template plus central collection

Data collection example

GENERAL INFORMATION

Entity Name		
	Select office type	CO
Reporting Period	FY24 (01.07.2023 - 30.06.2024)	

Total number of Building Facilities	
Total floor Area of building Facilities (m^2)	

*Building facilities includes leased or owned office spaces, warehouse, guest houses and other similar facilities.

# FTE (Staff)	

GHG Emissions Data Collection Template (Ver. 1.1)

GENERAL INSTRUCTIONS

Introduction: This template is designed for the collection of data relevant for calculating greenhouse gas (GHG) emissions associated with our activities as an organisation. This covers both our supply chain and programmes. The template was adapted from the *Humanitarian Carbon Calculator (HCC), with the purpose of simplifiying data collection.

General Information Tab: The general tab is mandatory to fill. It contains a few lines of general entity-level data.

Data Tabs/Emission Categories: The other tabs (tabs 1 to 10) represent the emission categories, and should be populated with data that is relevant to each office/entity within the reporting period. Each category is made up of sub-categories. Use the check boxes that are attached to each sub-category to indicate whether or not it is a relevant to your office (yes or No)

Tab Mapping

#	Tab Title	Type of Data Required	Emission Scope	Potential Sources of Data
0	General Information Tab	General entity information including facility space, annual budget,	*NA*	Financial records, P&C Unit/HRIS, SAP, facility general information, facility owner, direct measurements (for facili space)
1	Stationary Combustion	Data from the combustion of fossil fuels at Plan leased or owned facilities (warehouse / office).	Scope 1	Bills, Invoices, receipts, Logbooks, SAP, Tracpoint
2	Mobile Combustion	Data from mobile combustion sources; the combustion of fuel in Plan-owned vehicles, or leased vehicles	Scope 1	Tracpoint, Logbooks, reciepts
3	Direct Fugitive Emissions	Data from the refilling/recharging of fire surpressant systems, and refridgerants. Fugitive emissions are leaks or unwanted releases of GHGs into the atmosphere	Scope 1	Equipment Specifications Equipment specification Plates or Ratig Labels, Service/Maintainance Record, invoice, Equipment User Guide, internet, SAP, facility owner
4	Purchased Electricity	Data from the purchase of electricity from a mini or national grid	Scope 2	Bills/Invoices, meter readings, facility owner, SAP
5	District-Level Steam, Heating, Cooling	Data from the use of centralized/district-level heating, cooling or steam.	Scope 2	Bills/Invoices, meter readings, facility owner, SAP

Data collection example

GENERAL INFORMATION

Entity Name		
	Select office type	CO
Reporting Period	FY24 (01.07.2023 - 30.06.2024)	

Total number of Building Facilities	
Total floor Area of building Facilities (m²)	

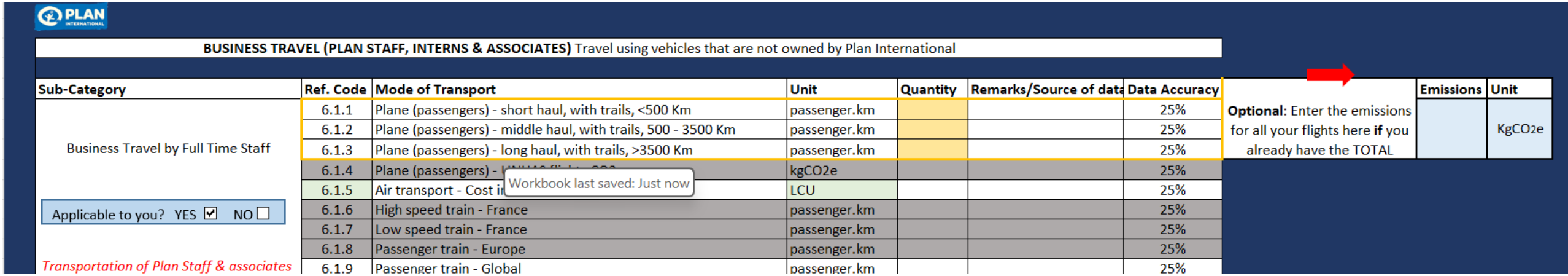
*Building facilities includes leased or owned office spaces, warehouse, guest houses and other similar facilities.

# FTE (Staff)	

FUEL FOR GENERATOR, HEATING, INCINERATORS AND OTHER USES (NOT FOR VEHICLES)

Category	Ref. Code	Fuel Type	Unit	Quantity	Remarks/Source of data	Data Accuracy
Direct Emissions from Stationary Combustion:	1.1.1	Natural gas - ICV	kWh ICV			25%
	1.1.2	Natural gas - SCV	kWh SCV			25%
Fill in activity data related to the combustion of fossil fuels at Plan leased or owned facilities (warehouse / office).	1.1.3	Natural gas - m3	m³			25%
	1.1.4	Butane - kg	kg			25%
	1.1.5	Butane - ICV	kWh ICV			25%
	1.1.6	Butane - litre	litre			25%
e.g. natural gas, piped gas, fuel oil, petrol	1.1.7	Propane - kg	kg			25%
	1.1.8	Propane - ICV	kWh ICV			25%
	1.1.9	Propane - litre	litre			25%
Applicable to you? YES ☐ NO ☐	1.1.10	Fuel oil - industrial purpose	litre			25%
	1.1.11	Burning oil - domestic purpose	litre			25%
	1.1.12	Petrol	litre			25%

Data collection example



BUSINESS TRAVEL (PLAN STAFF, INTERNS & ASSOCIATES) Travel using vehicles that are not owned by Plan International

Sub-Category	Ref. Code	Mode of Transport	Unit	Quantity	Remarks/Source of data	Data Accuracy
Business Travel by Full Time Staff	6.1.1	Plane (passengers) - short haul, with trails, <500 Km	passenger.km			25%
	6.1.2	Plane (passengers) - middle haul, with trails, 500 - 3500 Km	passenger.km			25%
	6.1.3	Plane (passengers) - long haul, with trails, >3500 Km	passenger.km			25%
	6.1.4	Plane (passengers) -	kgCO2e			25%
	6.1.5	Air transport - Cost in	LCU			25%
Applicable to you? YES ☑ NO ☐	6.1.6	High speed train - France	passenger.km			25%
	6.1.7	Low speed train - France	passenger.km			25%
	6.1.8	Passenger train - Europe	passenger.km			25%
Transportation of Plan Staff & associates	6.1.9	Passenger train - Global	passenger.km			25%

Workbook last saved: Just now

Optional: Enter the emissions for all your flights here **if** you already have the TOTAL

Emissions	Unit
	KgCO2e

Automated Carbon Accounting with ECODASH

Nicholas Finney
Supply Chain Sustainability Officer
World Food Programme (WFP)

WREC
Environmental Sustainability in Humanitarian Supply Chain

LOGISTICS CLUSTER

What were the drivers for starting our Scope 3 journey?

1. Increased **external pressure from donors** to mainstream sustainability.

2. **WFP leadership** expressed the need to account for the environmental impact of global operations.

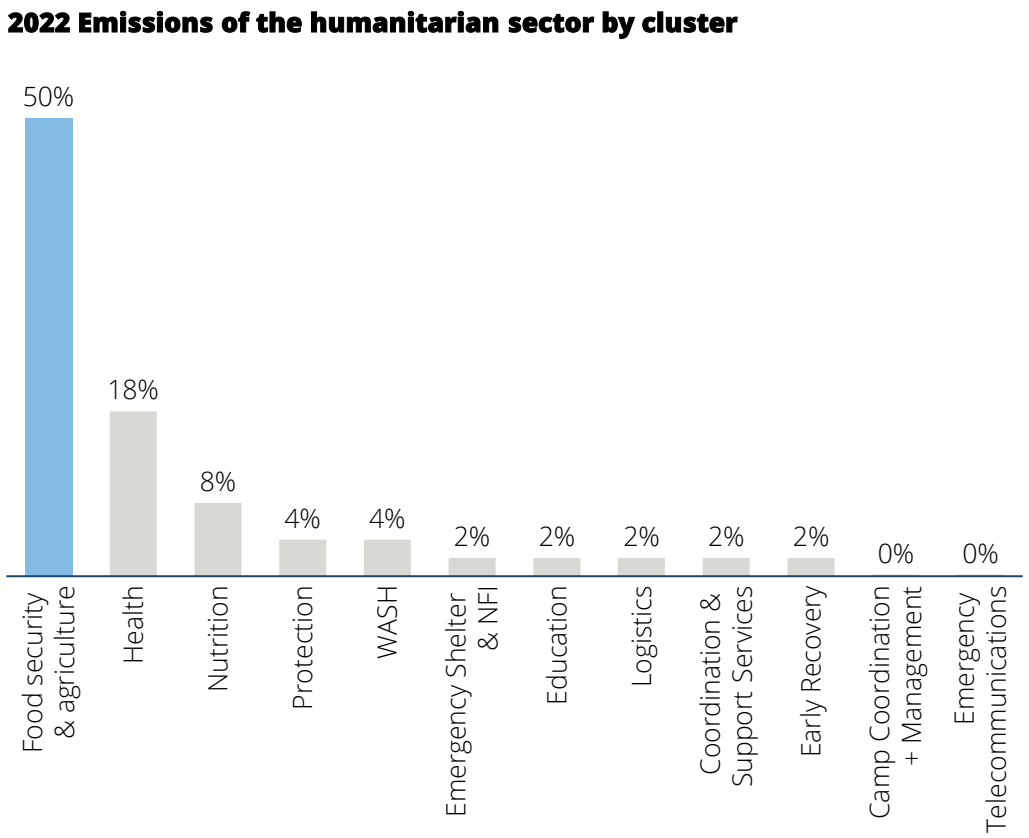
3. **Increased internal demand** to learn about and act on sustainability.

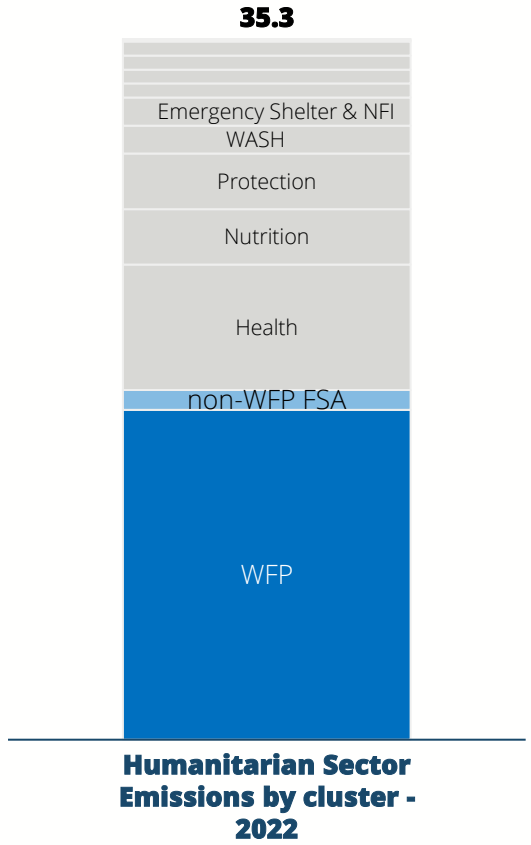
4. Supply chain chain emissions are significant, typically **80% of organisation's emissions** and WFP represents around **50% of sector emissions***.

Source: Climate Action Accelerator's Roadmap for halving emissions in the humanitarian sector; WFP's validated carbon baseline carbon accounting`

The external perspective of WFP's environmental impact

Half of entire humanitarian sector's carbon footprint is related to **food production**, and WFP makes up most of food security and agriculture emissions-producing activities.





Source: Climate Action Accelerator's Roadmap for halving emissions in the humanitarian sector; WFP's validated carbon baseline carbon accounting`

Identifying supply chain emissions whilst enabling future scale

Our carbon accounting approach required the **separation of supply chain-related activities** from others in WFP. We did this using an **operational control** approach and **materiality assessment**, defined by the GHG Protocol.

However, our aim in measurement was to great a structure that can **easily scale to a full organizational footprint** over time

Through this we identified activities within GHG Protocol categories that are **relevant** to supply chain and where it has operational control, meaning it normally takes decisions that affect these activities.

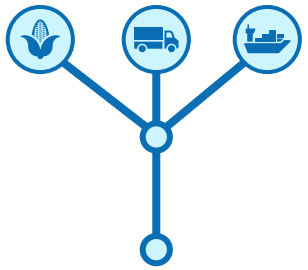
- Procurement (supply chain)
- Shipping
- Truck Freight
- Warehousing
- Aviation
- Delivery & Distribution
- Cash Assistance

Materiality focused on **magnitude** of emissions and the **level of influence** that exists to reduce those emissions

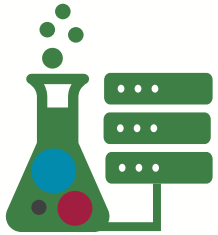
Based on the assessment, the following emissions activities are considered **strategic focus areas** for carbon reduction:

What is ECODASH?

ECODASH is an **automated digital tool** for measuring and analyzing supply chain environmental impact – currently including **carbon emissions** and **packaging waste.**



Supply Chain Operational Data Sources



Academic and Governmental Sources of Emission Factors

'Best-practice" standards for Greenhouse Gas Accounting in Supply Chains

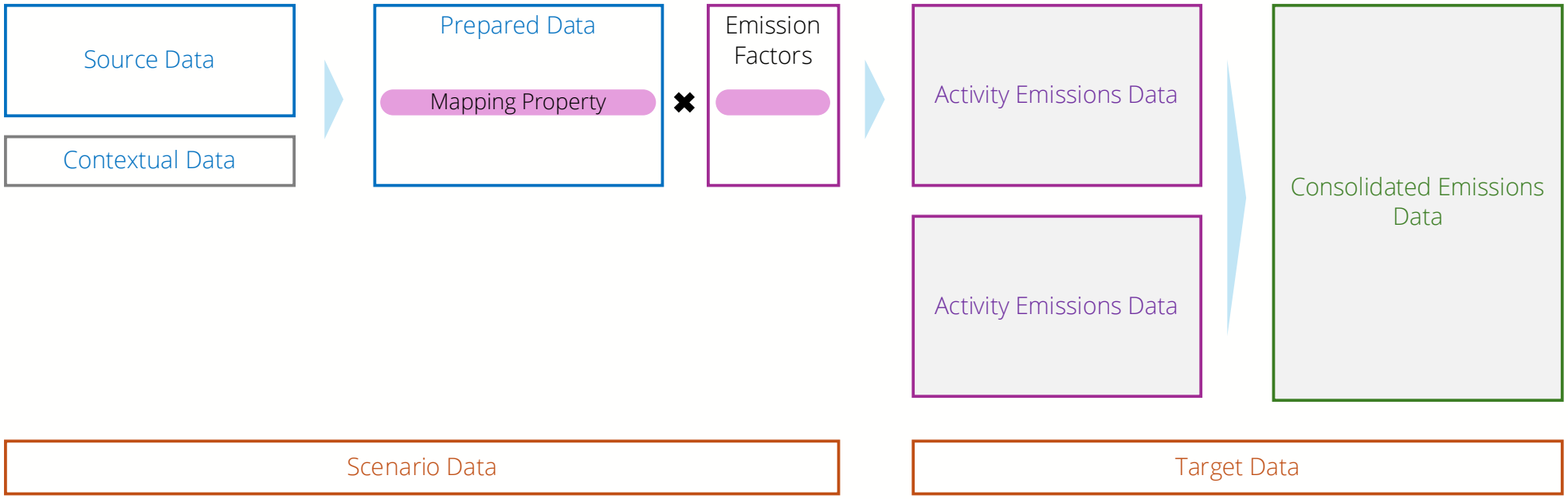
ECODASH

- **Emissions Reporting**
- **Measuring Sustainability Initiative Success**
- **Modelling possible carbon reduction scenarios**
- **Environmental impact data access/integration**

SSC Guidance and Consultative Support

Country Offices | Regional Offices | HQ

ECODASH Data Architecture



Defined:

- Specific activity categories *(below GHG Protocol)*
- Target Emissions Datasets
- Mapping Properties

Standardised:

- Column names
- Table structures
- Levels of Aggregation

What kind of environmental data would you most like to automate?

Short Demo

Reflections on automation – consider the following aspects

- Sustainability Objectives
- Existing Data Landscape
- Team Capacity / Skills
- Quality and Consistency

Reflections on automation – Sustainability Objectives

Sustainability Objectives

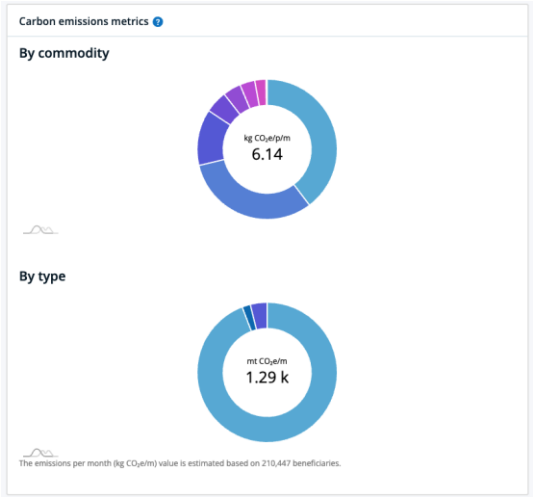
What are your sustainability goals and what role do carbon emissions data play in them?

Regular Decisions ⟷ Annual Reporting

More automated ⟷ More manual

ECODASH Perspective

- We wanted emissions data to have an impact on everyday and cyclical decision-making.
- This meant putting the data in the right place, in front of those decision-makers.
- Data automation allows eventual integration of sustainability data to ERP systems, planning systems, etc



In 2025, ECODASH was integrated with Optimus, WFP's food basket planning tool so that countries planning their rations could consider environmental impacts. This achieved a 5% reduction in Haiti operations this year.

Reflections on automation – Existing Data Landscape

Existing Data Landscape

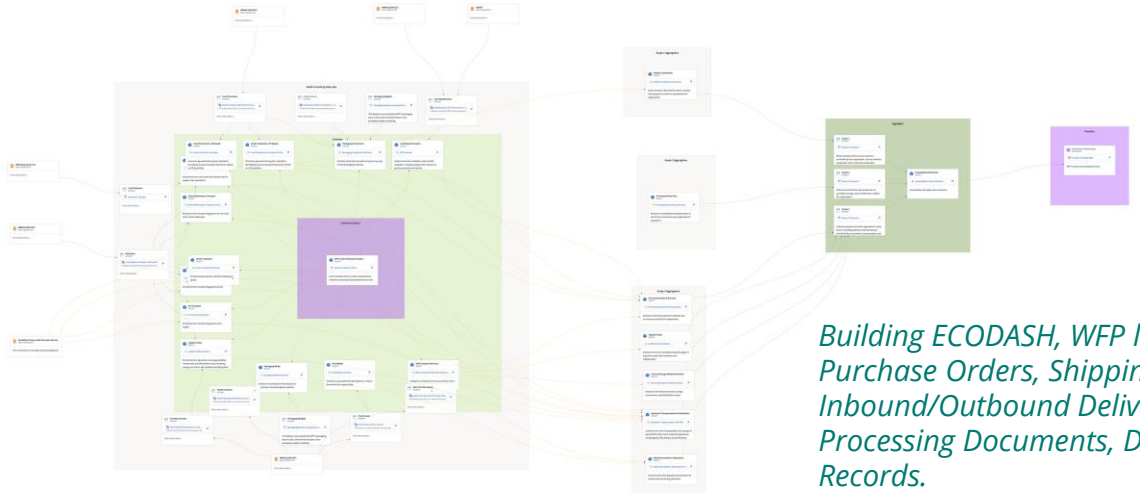
What activity data do you have? Where is it stored currently? What is required to analyse it in an automated way?

Centralised data storage ⟷ Separated systems or analog

Start automated ⟷ Start manual

ECODASH Perspective

- WFP fortunately had a data lake containing significant amounts of procurement and logistics data
- The challenges were:
  - Understanding how the data links together
  - Embedding emission factors



Building ECODASH, WFP linked together Purchase Orders, Shipping Consignment, Inbound/Outbound Deliveries, Food Processing Documents, Distribution Records.

Reflections on automation – Team Capacity / Skills

Team Capacity / Skills

How big is your team? Are there technical/IT development skills? Who will be using the final tool, and will automation save them time?

ECODASH Perspective

- ECODASH runs on a lean development team, but with good technical skills all-round.
- This makes development processes easier.
- Changes to teams over time can make maintenance and continuous improvement a challenge.

Reflections on automation – Quality and Consistency

Quality and Consistency

What is the quality level of your data? Are there significant gaps, inconsistencies or errors?

Accurate, complete, consistent data

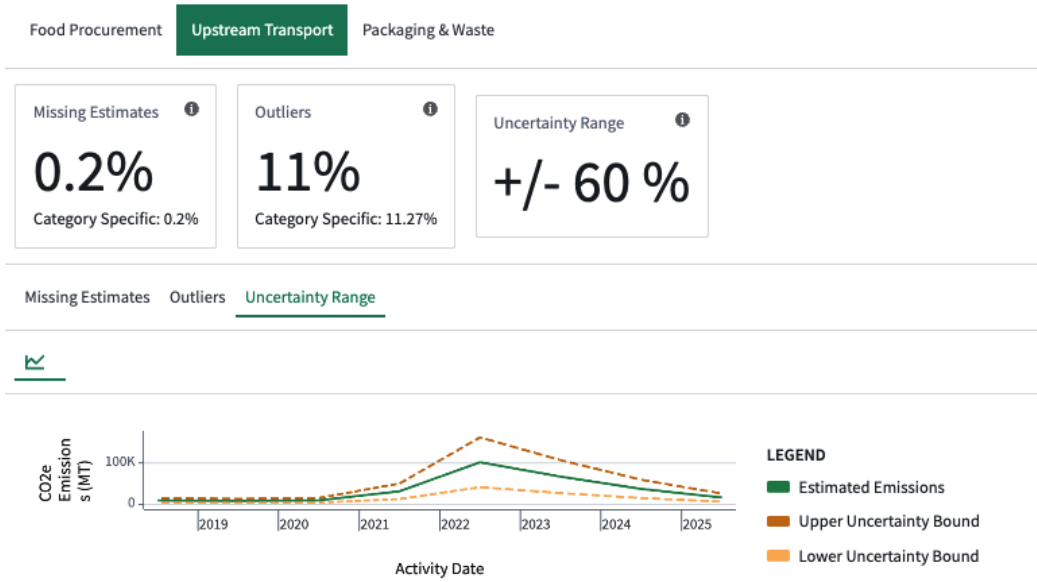
Significant inaccuracies, gaps, inconsistencies

Start automated

Start manual

ECODASH Perspective

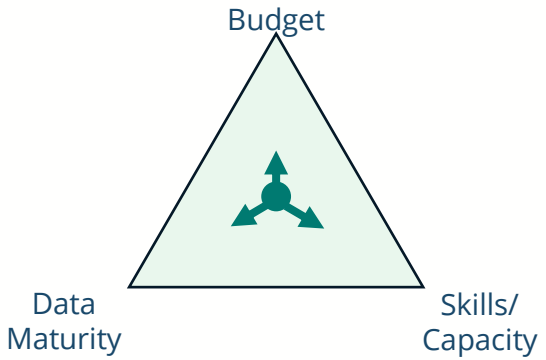
- WFP's supply chain data is mostly complete and accurate – though not without its challenges
- ECODASH implemented data sanitation and improvement measures as well as a quality management dashboard.
- Despite this, issues persist! It requires constant focus



ECODASH data quality management dashboard

Reflections on automation – choosing what's best for you at what time

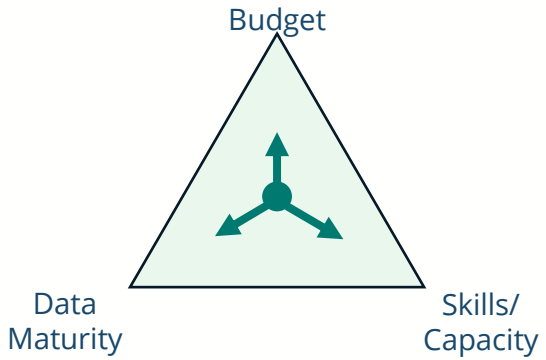
Learn & Grow



Hard spot to be in but don't fret!

- You'll probably stay excel-based for now
- Seek to expand your technical skills, e.g. explore Power Query, to standardize and automate operations in Excel
- Get under the hood of your data, map the systems, links and quality issues
- Try to define a consistent data structure so you can scale when the time comes!

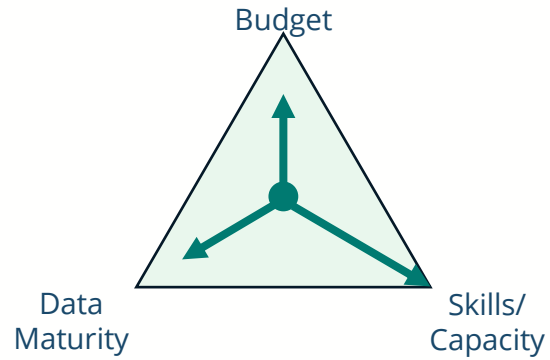
Experiment



Automate easier parts and simplify

- There are budget-friendly approaches for automating data collection.
- Power Automate is an example of a low/no-code tool that can automate data collection from forms and even connect systems.
- Power BI and Tableau help a lot on simple transforms and visualization, and even have some standard data connectors (e.g. SAP)
- Remember to keep consistency and quality in mind

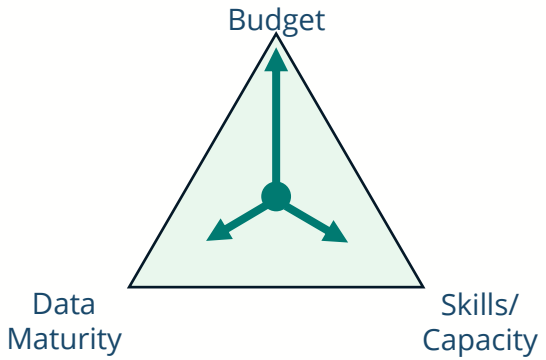
Build



Leverage in-house skills for flexibility

- Building your own tool is a significant undertaking but you can reap significant rewards
- If your data is already consolidated (e.g. data lake) then buying software can involve painstaking data transfer with little upside (paying for emission factors?)
- However, what is built must be maintained. You must be confident you can keep on top of building new features and fixing issues.

Buy



Buying can keep things simple

- If you have budget, and your data is disparate across systems then buying could be best.
- Companies specialize in connecting data across organizational landscapes.
- Many have good analytical features but can be limiting if you want to dive deep.
- Uncertainty over long-term budget can make keeping a provider precarious.
- Careful! Though some providers sync with EF databases, some need extra licenses (like Ecoinvent).

Power Query Power BI +ableau Power Automate

Lessons learned

1	**Start small** and **prioritise** automating what will provide the most value – whether to stakeholders or your own time/effort.
2	**Standardisation** and **consistency** are your friends, whether you are working in excel or building your own tool. This will keep transformations and automations focused and simple.
3	**Try not to solve too many data quality issues yourself**, for ease, but work with other teams (i.e the data owners) to resolve them at source. This will make things easier to automate and scale in the long-run.
4	**Leverage and experiment with what's free**. There are plenty of free, online data sources on emissions factors, distances, geographical datasets, and published experience of how to use it – this helps guide future approaches to build and buy.
5	**Get carbon accounting on the table for digital transformation projects.** If your organization is automating some part of your processes, see what might be relevant for you and try to get your requirements accepted. The earlier and more upstream in the data pipeline...the better!

How important is automating carbon calculation for you?

Discussion and Q&A

All

How ready is your organization to scale up carbon accounting efforts?

LOGISTICS CLUSTER

WREC
Environmental Sustainability in Humanitarian Supply Chain

THANK YOU!

Global.WREC@wfp.org

Feedback on the today's session:
https://forms.office.com/e/rNXXX3hb7U

LOGISTICS CLUSTER | DRC DANISH REFUGEE COUNCIL | IFRC | Save the Children | WFP