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Climate Action
Accelerator

Reducing the environmental impact of humanitarian supply chains through life cycle analyses

Science and Technology for
Humanitarian Action Challenges (HAC)
– Accelerating Emission Reduction in
Humanitarian Action project

Agenda

- Background
- Project overview
- Questions to participants and discussion
- Next steps



In a nutshell

Designing methodologies and performing life cycle analyses of high-impact items to build a GHG emission factor and environmental impact database adapted to the humanitarian sector with the goal of identifying key strategies to reduce environmental impacts.

Engineering Humanitarian Action Partnership

Harnessing science and technology for humanitarian action



The goal of the Science and Technology for Humanitarian Action Challenges (HAC) is to support project-based research to develop effective solutions for a greater impact of humanitarian action. It is part of the Engineering for Humanitarian Action initiative (EHA).

More info about EHA [here](#).

More info about HAC [here](#).

Engineering **H**umanitarian **A**ction

**Scientific
expertise**

EPFL | **EssentialTech**
Centre

Harnessing science and technology to drive sustainable development, support humanitarian action and foster peace.

LEURE

Laboratory of Environmental and Urban Economics
– LEURE at EPFL conducts research on the public and private management of the natural and built environment.



Climate Action
Accelerator

Dr. Damien Friot, CAA associate expert; EPFL lecturer



ICRC – INTERNATIONAL COMMITTEE OF THE RED CROSS



ICRC

The International Committee of the Red Cross is an impartial, neutral and independent organization whose exclusively humanitarian mission is to **protect the lives and dignity of victims of armed conflict and other situations of violence and to provide them with assistance.**

The ICRC also endeavours to prevent suffering by promoting and strengthening humanitarian law and universal humanitarian principles.

THE ICRC AROUND THE WORLD

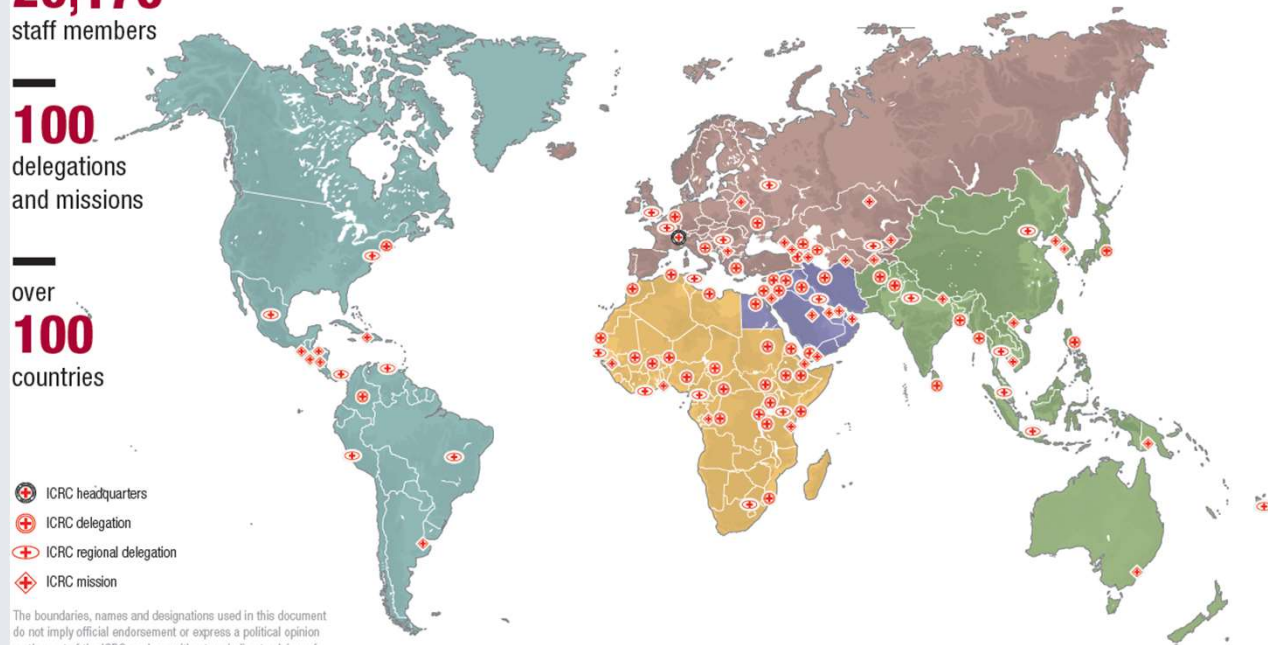
20,170
staff members

100
delegations
and missions

over
100
countries

-  ICRC headquarters
-  ICRC delegation
-  ICRC regional delegation
-  ICRC mission

The boundaries, names and designations used in this document do not imply official endorsement or express a political opinion on the part of the ICRC, and are without prejudice to claims of sovereignty over the territories mentioned.

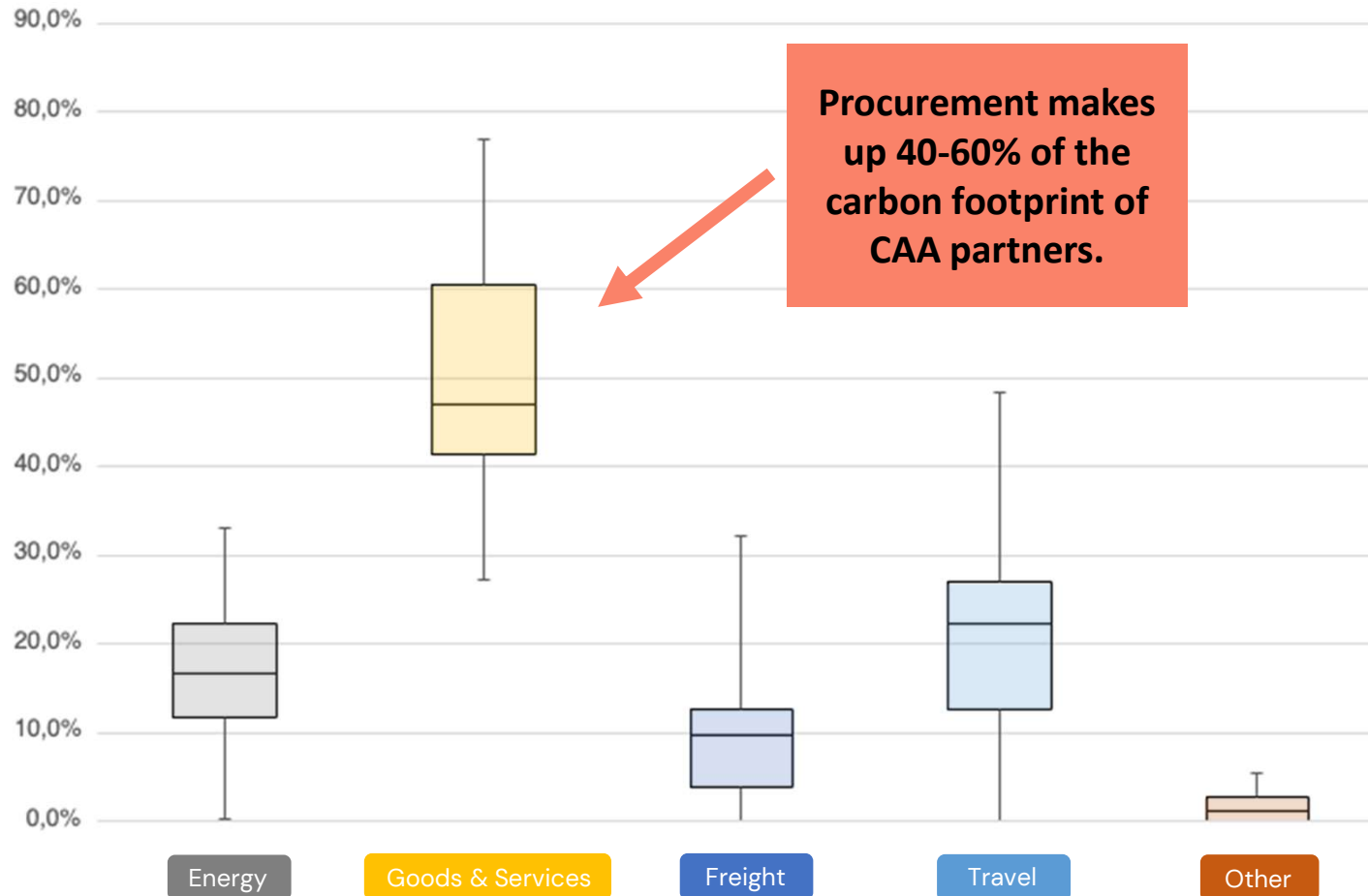


The Climate Action Accelerator

>20 international and local aid and health organisations have joined the initiative, committed to reducing by 50% their emissions and building climate resilience.



Carbon footprint: Example breakdown per nature (capitalization CAA)



Sources

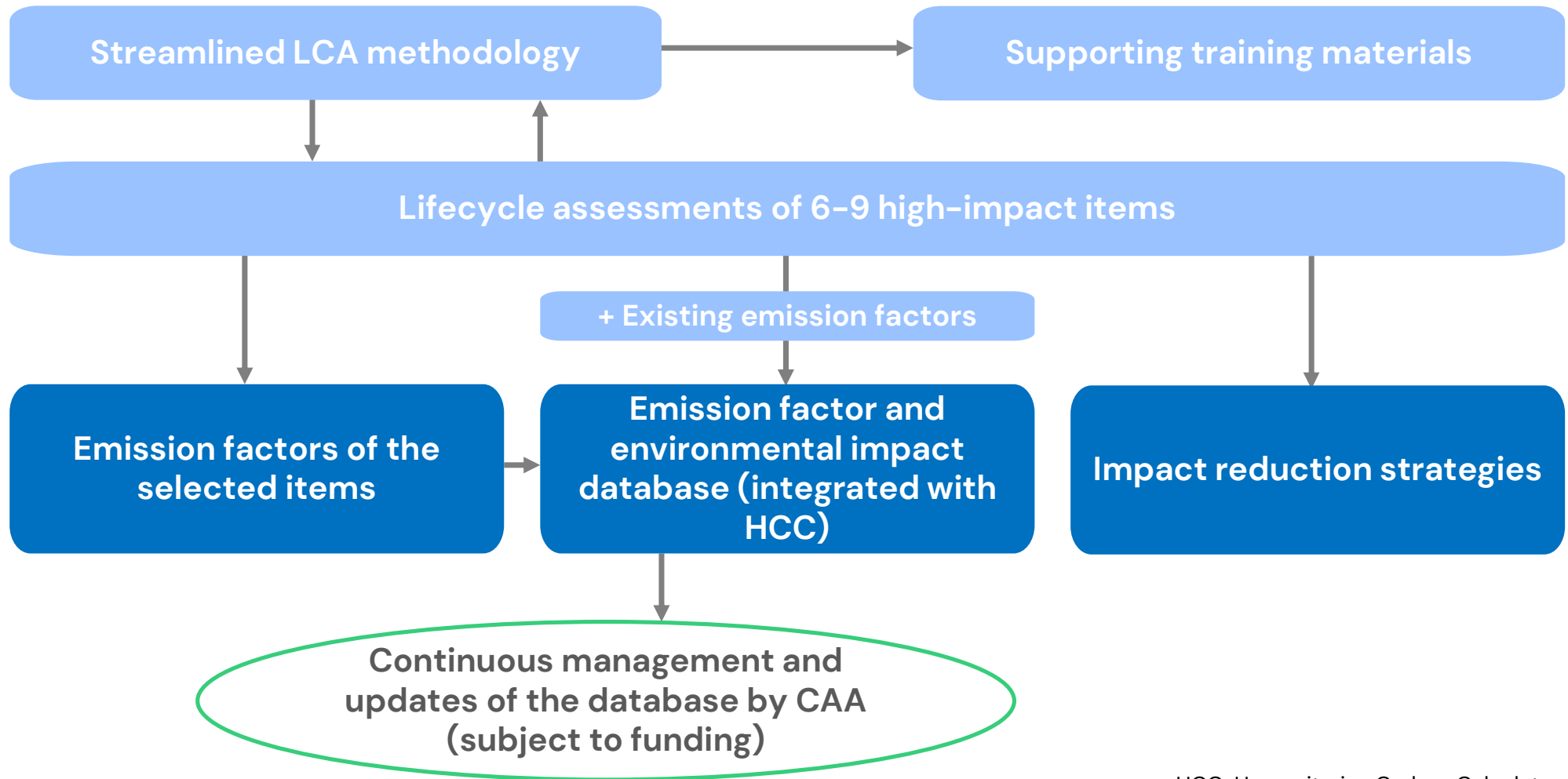
CAA humanitarian partners

- Multi-mandate (incl. Food aid): ICRC
- Health: MSF OCB, MSF OCP, MSF OCG, ALIMA, Epicentre MSF Logistique, MSF Supply
- Education: Terre des Hommes Suisse, Fondation, Schweiz
- Protection: Non Violent Peace Force



Approx. USD 3,5 bn.
11% of the sector in
2019





PROJECT OUTCOMES

- A **streamlined LCA methodology**, simplified and adapted to humanitarian contexts.
- **Life cycle assessments** and subsequent establishment of **emission factors** and other environmental impacts.
- **Implementation strategies** for the selected items with analysis on the potential reduction through optimisation of the product value chain or substitution of products.
- An **open-source database of emission factors**, which will integrate emission factors from existing databases, as well as the newly identified ones.
- **Training material** on the streamlined LCA methodology and environmental data formulation.



Challenges when addressing procurement impacts

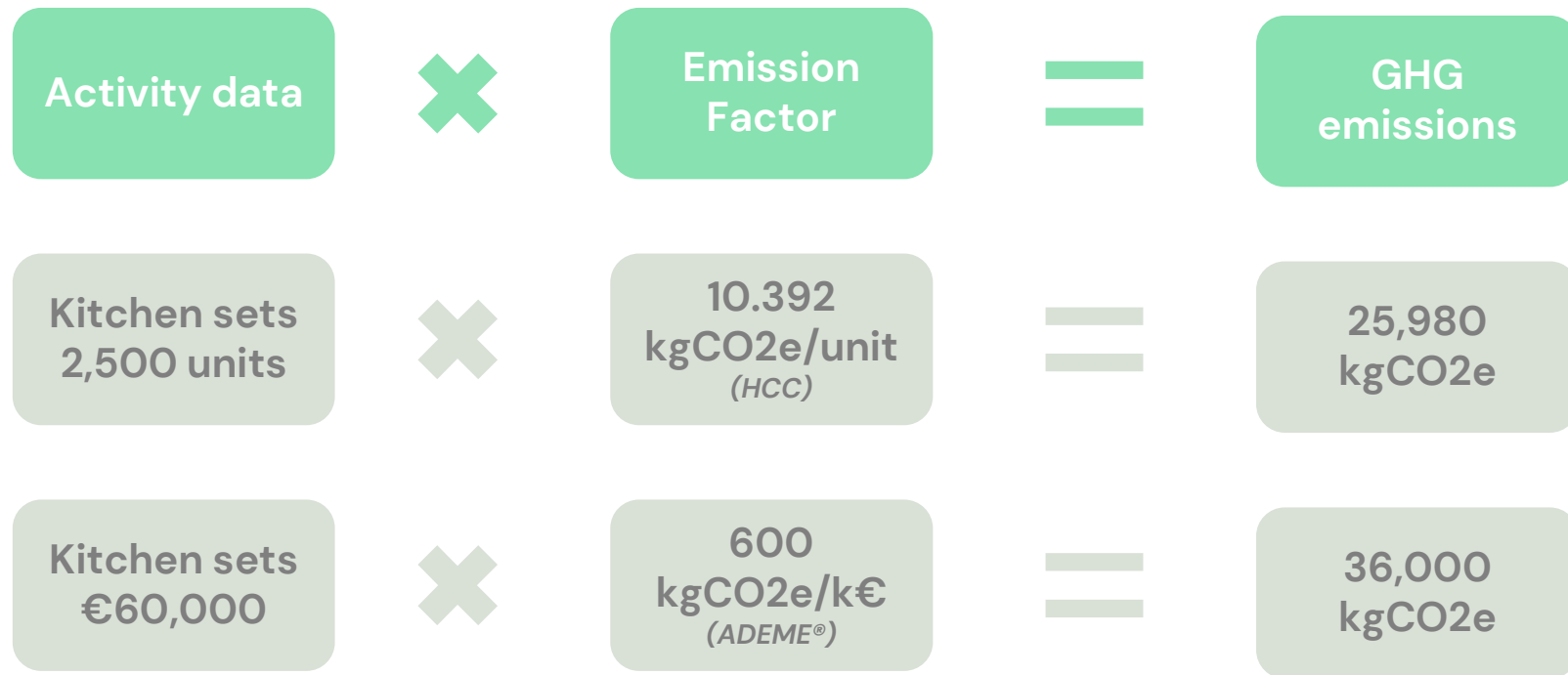
Measurement & Monitoring

- Data collection, incl. obtaining physical data
- Lack of emission factors adapted to the sector
- Lack of emission factors for “greener” items
- Striking the right balance between making informed estimations and achieving “perfect” data accuracy

Addressing the impacts

- Lack of knowledge about most effective strategies to reduce the carbon and environmental impact of items
- No commonly used methodology to conduct lifecycle analyses

Calculation



Available data is matched with available emission factors (EF)

Example LCA project tarpaulin

ICRC, IFRC and UNHCR launched a project in May 2021 to design a new tarpaulin with a reduced environmental impact.

A comparative LCA between the old and the new tarpaulin was performed.

The new tarpaulin incorporates 15% recycled plastic and weight is reduced by 14% while the tear and tensile strength were doubled.

Key outcomes

- The overall lifespan and what happens at the end-of-life stage are key factors to reduce the overall impact.

A recycled tarpaulin reduces the CO2 impact by half than if it was burnt.

- Using recycled materials and reducing the weight reduces impacts. (Designed such that longevity is not affected).
- With today's technologies, biodegradable plastic cannot be designed for applications where the expected service life covers a long period of time in many different types of usages and unpredictable biological and climatic conditions.
- A project is currently studied to facilitate recycling.
- The project allowed to establish a more adapted EF for the old and new version of the tarpaulin.

New tarpaulin: 16.8 kg CO2e/unit

Old tarpaulin: 20.5 kg CO2e/unit

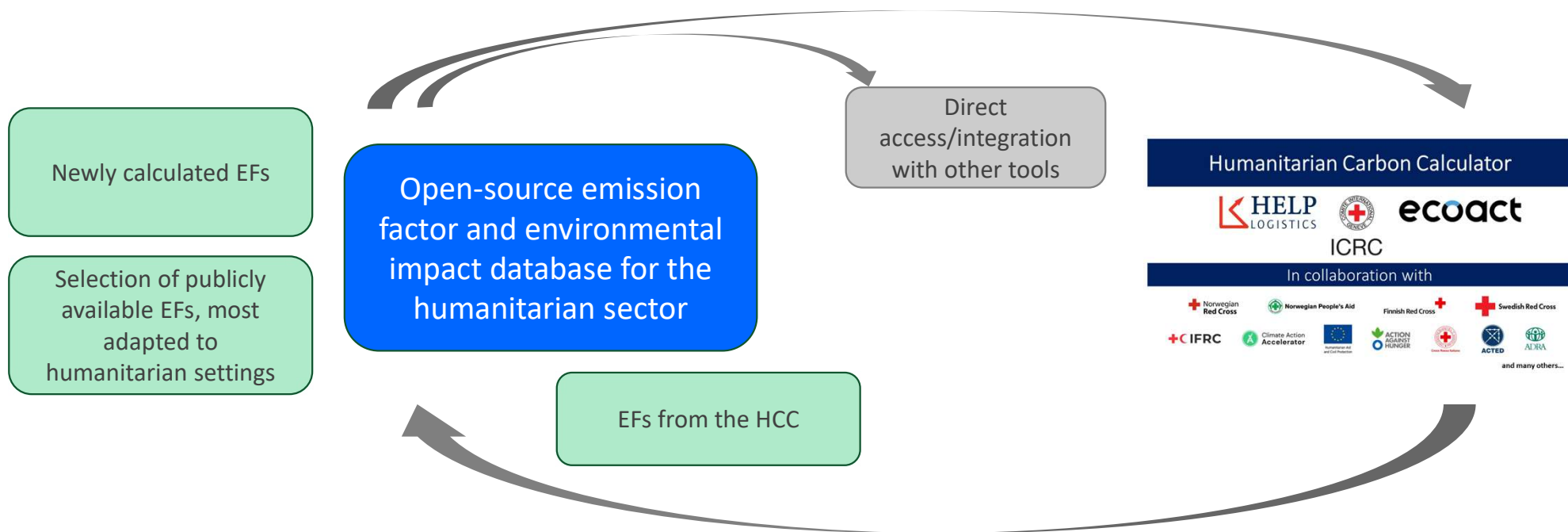


What are Lifecycle analyses (LCAs)?

- Life Cycle Assessments (LCAs) are a method of analysing the environmental impact of a product, service or process during its entire life-cycle (i.e., from the raw material stage to its end-of-life disposal or treatment)
- LCAs are used to **enhance decision making** when considering impact
 - They provide a way to **compare alternatives** with a fully structured perspective and elaborate data for each stage of the supply chain
 - They consider both the **direct and indirect emissions** of a subject to prevent the shifting of the impact reduction burden
 - LCAs also aggregate **multiple frameworks and criteria** of analysing environmental impact, from GHG emissions to biodiversity, human health, and beyond



Emission factor (EF) and environmental impact database



The Climate Action Accelerator will continue to perform LCAs on relevant items and integrate emission factors and impact data developed by other organizations consistent with the sector-wide methodology.



INITIAL SELECTION OF ITEMS

The below list constitutes a first selection of items that will be considered for the LCA project due to their high impact (in terms of carbon impact or quantity distributed) for ICRC and the sector.

The final list of items to be analysed will depend on further analysis undertaken by the project team (impact, feasibility, lack of impact data, etc.)

- Blankets
- Soap bar
- Plastic mat
- Mattresses
- Kitchen set
- Mosquito nets
- Plumpy'nut
- To be further evaluated: construction material, electricity generation, medical items (e.g. vaccination, rapid tests, examination gloves, etc)



QUESTIONS TO THE AUDIENCE

Please go to www.menti.com and use the code **6930 5480**

OR: <https://www.menti.com/alnrcw1g4cb8>

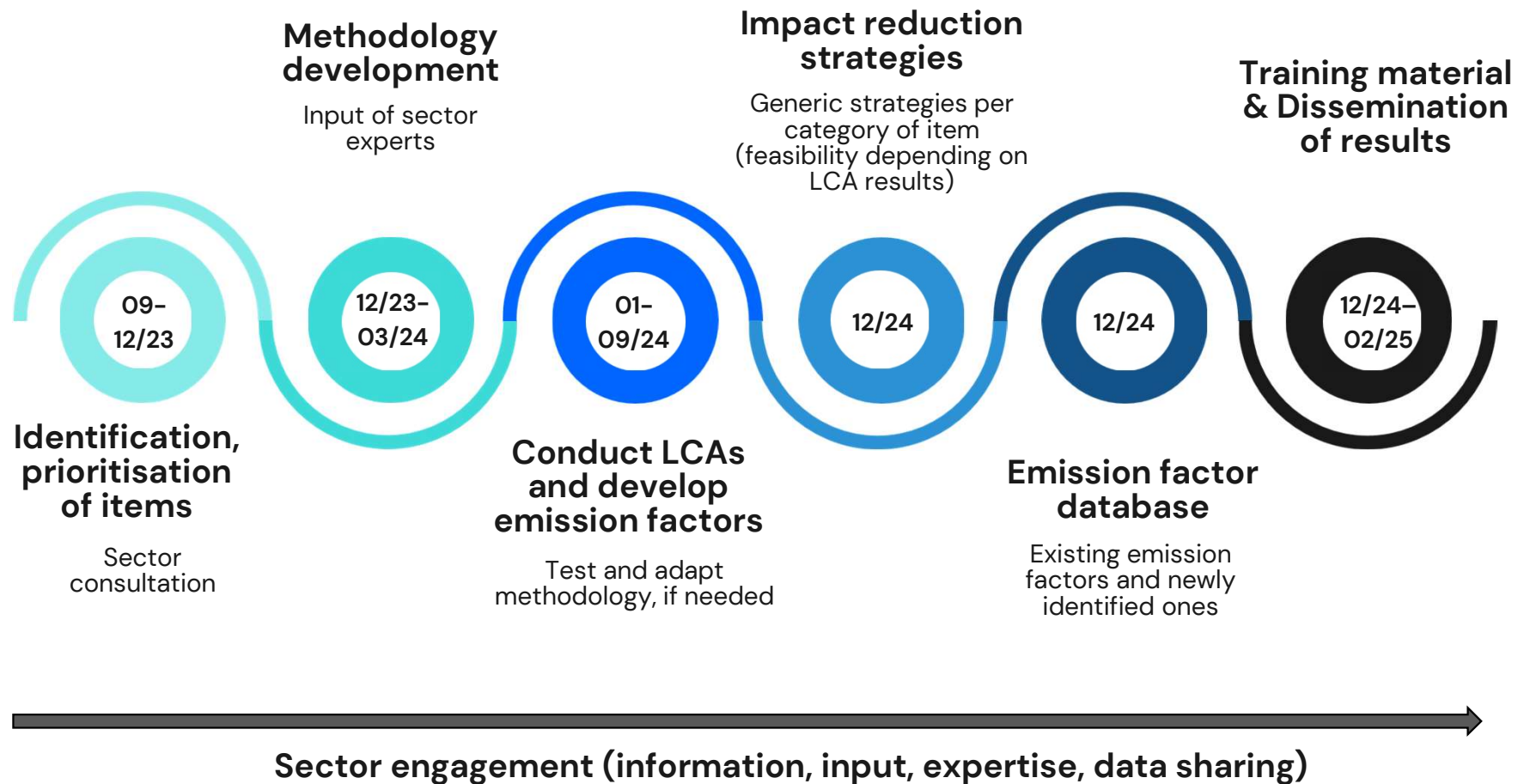
- How would you rate the overall value-added of the project for your organisation?
- How relevant are the pre-selected items for your organisation?
- Has your organisation already performed LCAs?

[Results](#)



TIMELINE

- Agile and iterative approach
- Timings are indicative and may change



Help us make the project a success

- Please participate in our short [survey](#).
- Join our mailing list!
- Have you already performed LCAs? Or are you planning to do so? Please get in touch to **share your experience**, methodology, etc.
- Would you like to **propose items** to be analysed? Please fill in the survey or send us a message.
- Do you or a team member have **specific expertise** and would like to contribute?



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