



Doing good: carbon handprints for assessing positive impacts of companies and the public sector

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Transnational Learning Journey 6
LCA4Regions

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Publications

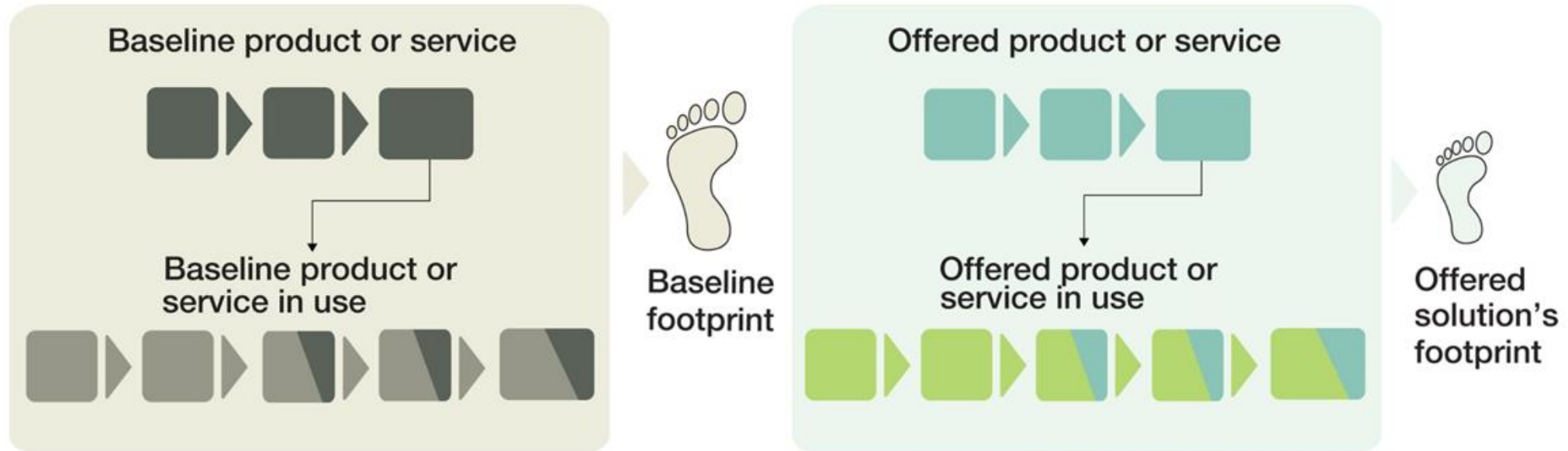
1. From footprint to handprint

- Footprints measure the environmental burden of offerings
→ Need to reveal the positive environmental impacts of products, services and organizations

A handprint refers to the beneficial environmental impacts that organizations can achieve and communicate by offering products and services that reduce the footprints of others.

- A carbon handprint is the reduction of the carbon footprint of others.

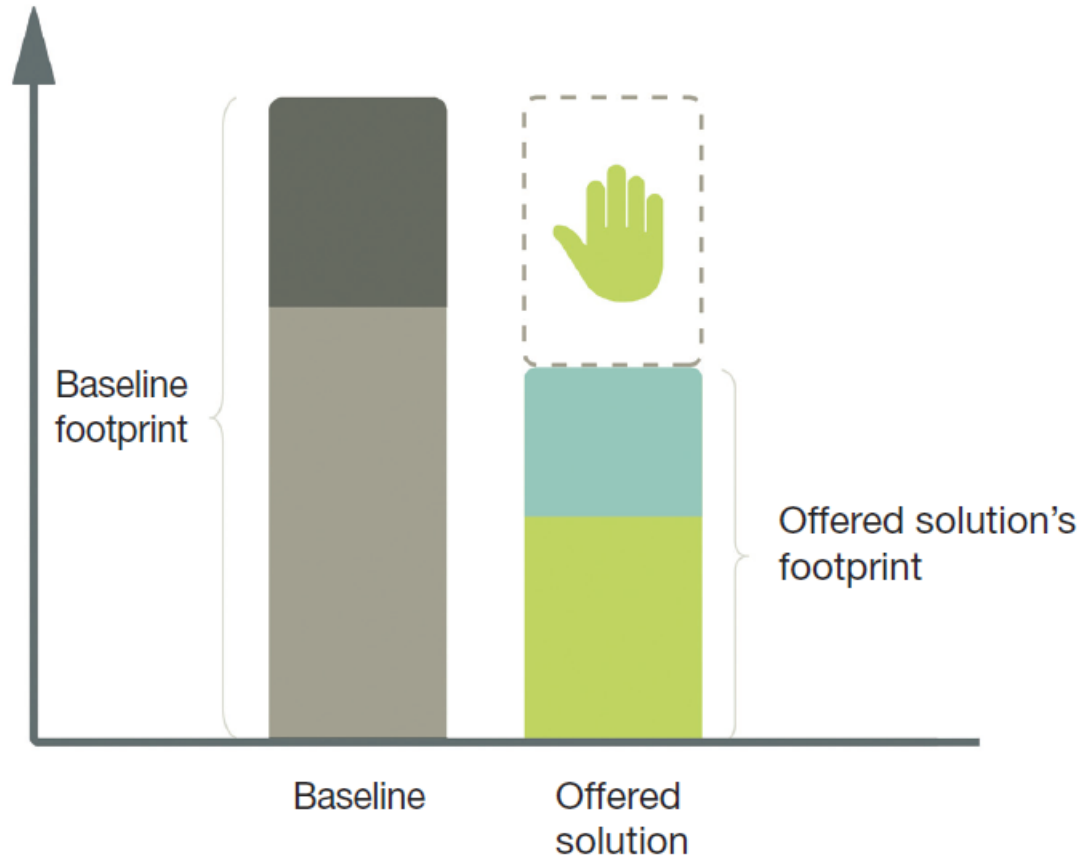
1. From footprint to handprint



Handprint = the difference between the footprints of these two solutions

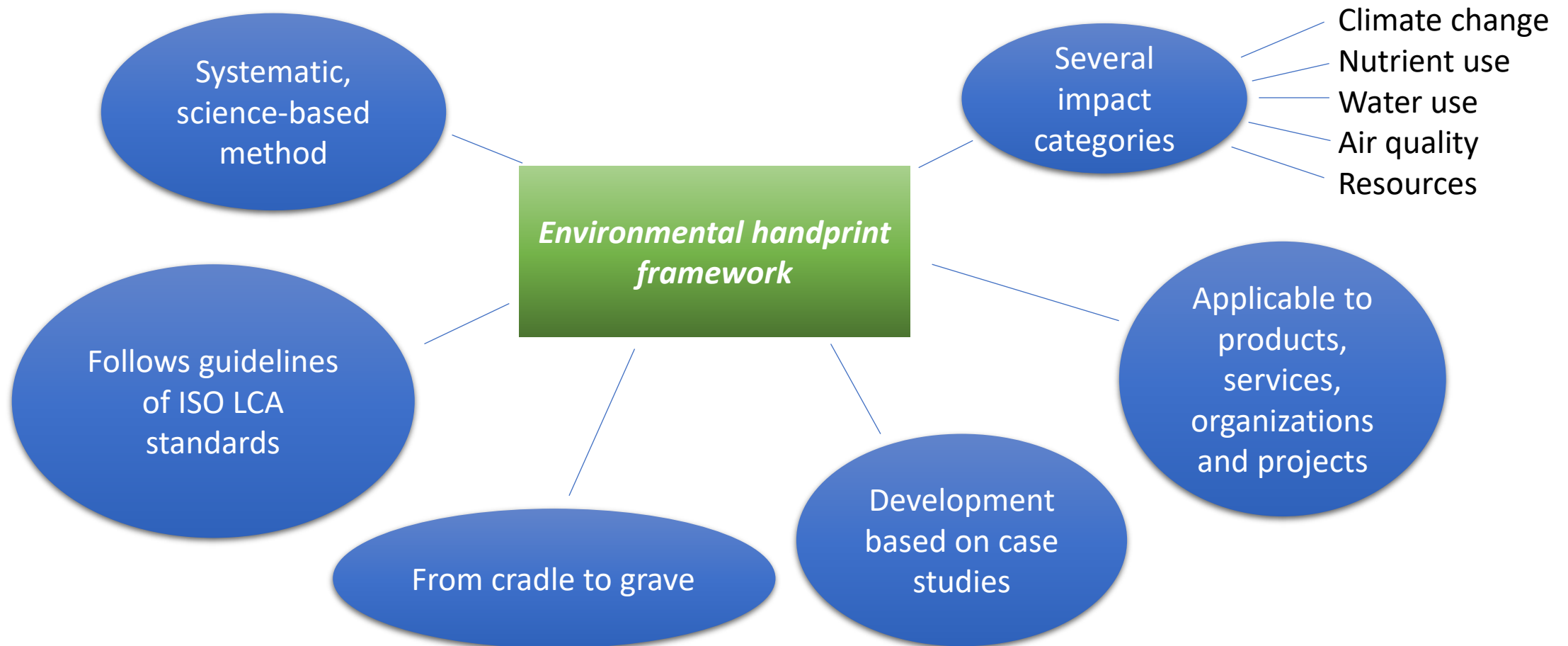
Every product has a footprint but not necessarily a handprint!

1. From footprint to handprint

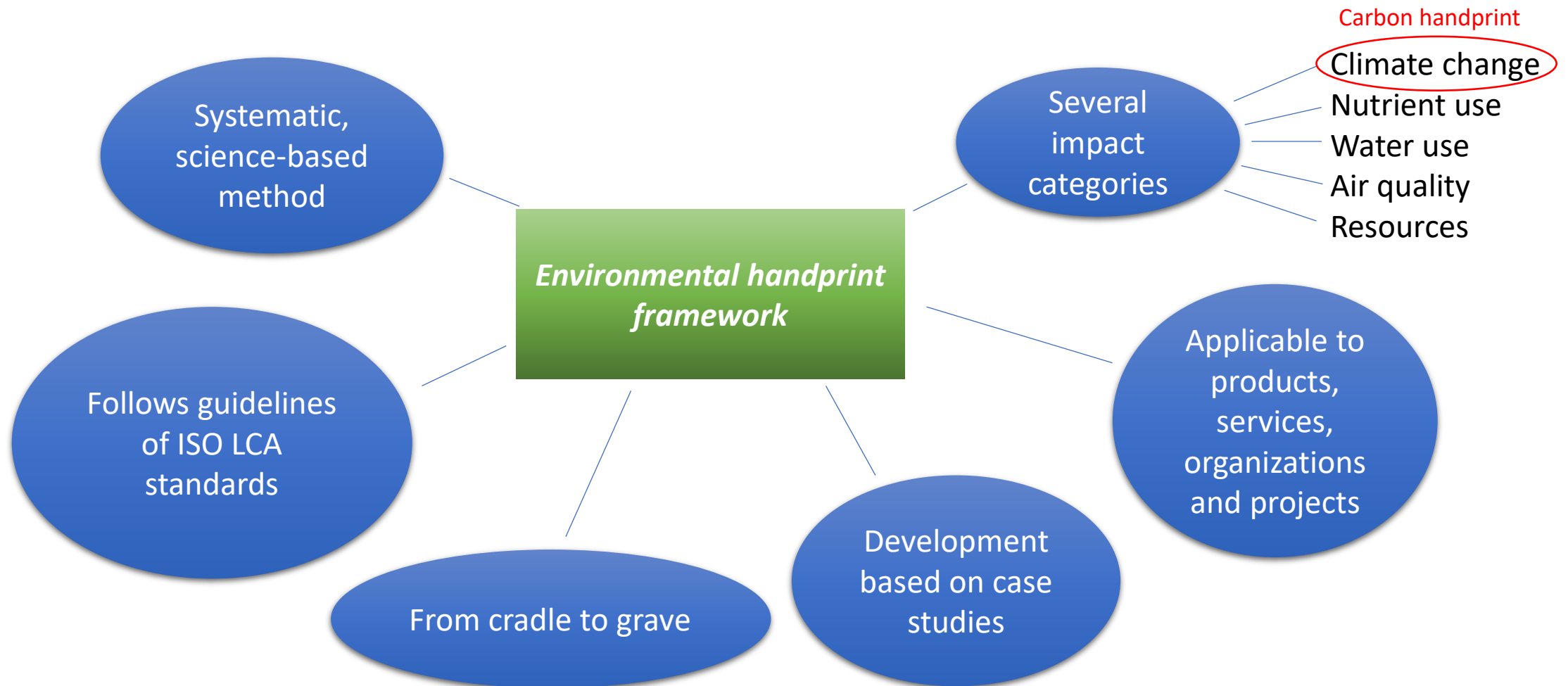


- A handprint can be created by:
 - 1) offering solutions with a lower footprint in comparison to the solutions used
 - 2) by helping the user to reduce the footprint of their processes
- Reduction in one's own footprint only doesn't create a handprint

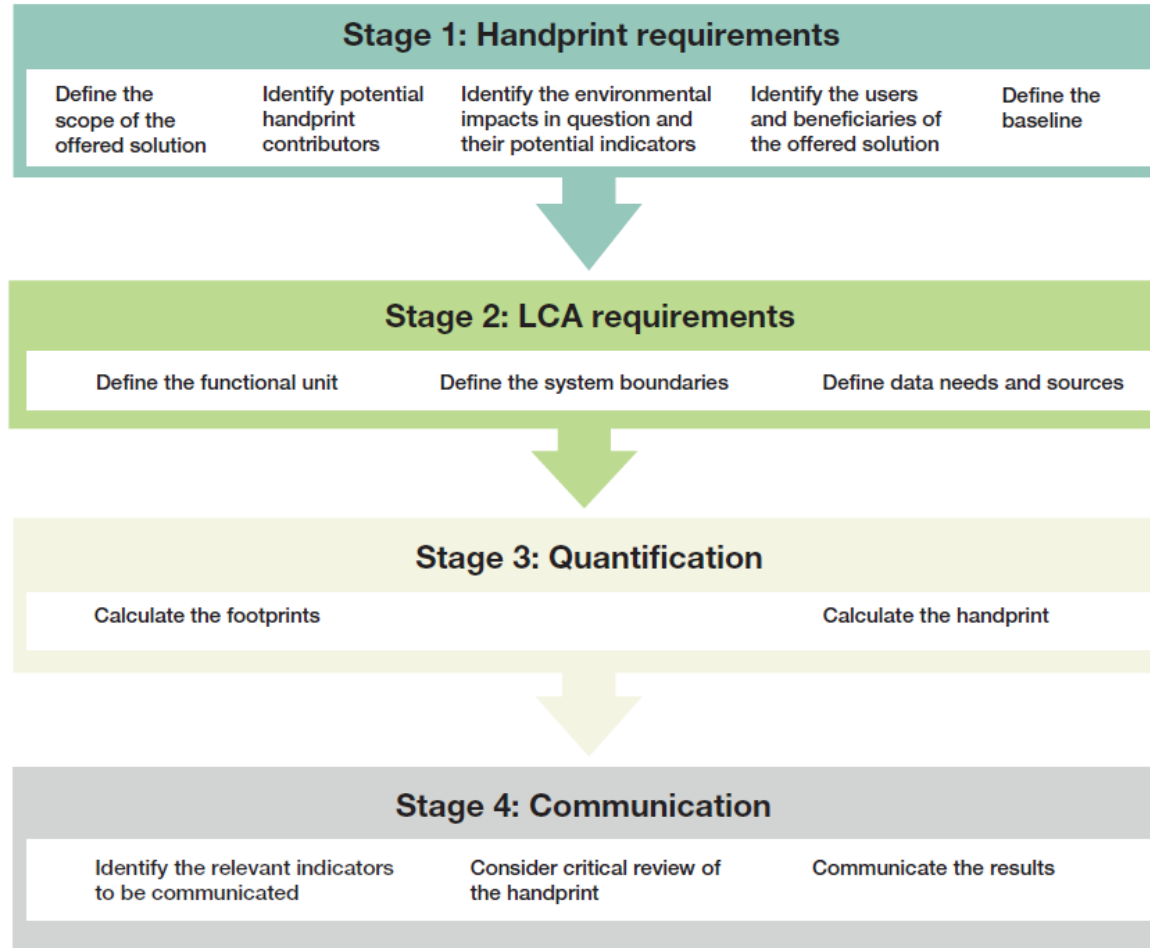
2. The framework for the environmental handprint



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2. The framework for the environmental handprint



The handprint calculation process consists of **four stages** and **13 steps** and is closely **based on the LCA** method.

2. The framework for the environmental handprint

Stage 1: Handprint requirements

Define the scope of the offered solution	Product (goods, service, material, component)	Organization (product or service portfolio)	Project (a non-recurrent activity to reach the preferred outcome in a defined time frame)		
Identify potential handprint contributors	Description, how the offered solution may achieve footprint reductions				
Stage 1 Identify the environmental impacts in question and their potential indicators	Climate change GHG emissions	Resources e.g. ADP (elements and fossil fuels), cumulative energy demand	Water e.g. scarcity, eutrophication, acidification, toxicity	Nutrients N/P/K balance and eutrophication, in addition e.g. toxicity, acidification	Air quality e.g. PM ₁₀ , PM _{2.5} , NO _x , SO ₂ , VOC, health impacts, POCP
Identify the users and beneficiaries of the offered solution	Identify potential or actual customers or other parties that may benefit from the offered solution				
Define the baseline	Reference case that best represents the conditions (most likely) to occur in the absence of the offered solution				

- The first stage is specific to a handprint assessment when compared to a traditional LCA assessment

3. Carbon handprint in organizations

- Can be used widely by companies and organizations to communicate the environmental benefits of their products, services and technologies
- A science-based approach for companies to show their environmental responsibility
- Identification of the potential for improvement in own product segment in different markets
- Development of product and production processes
- Comparison of alternatives (e.g., raw materials, technologies)
- Strong marketing and communication tool
- Preparedness for future legislation

4. Carbon handprint in a city/region

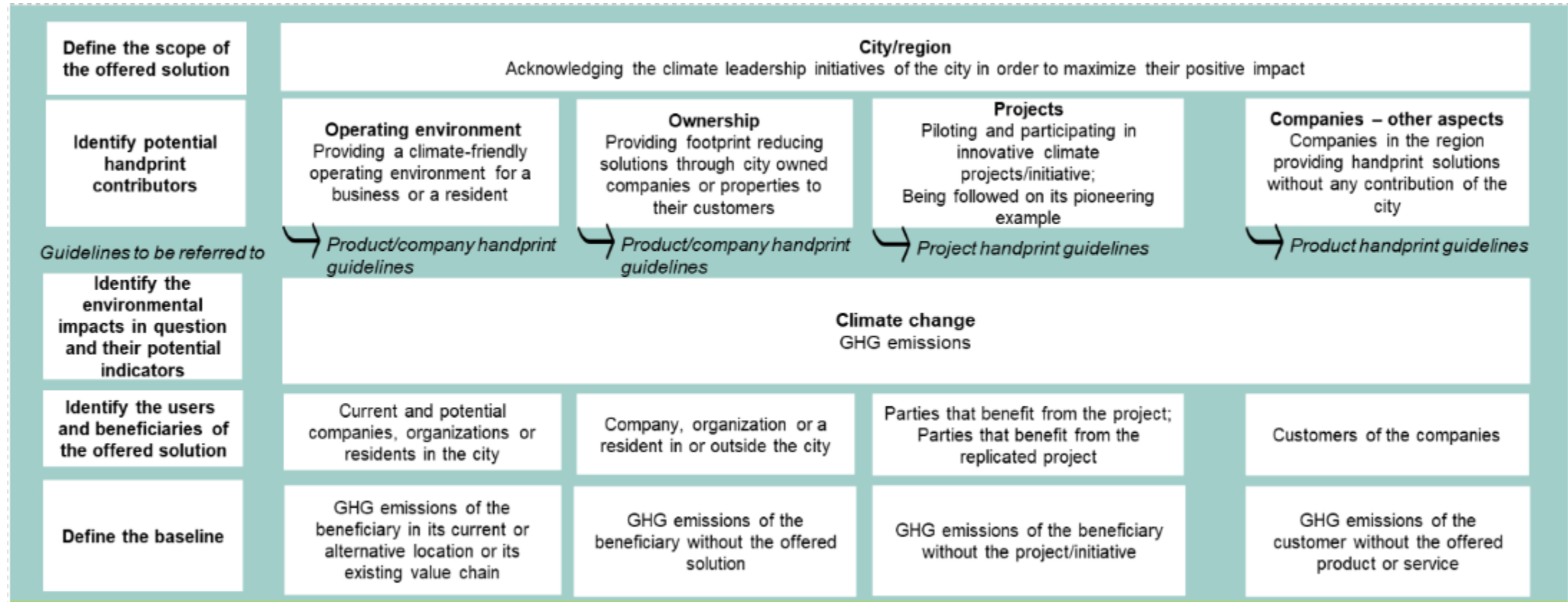
- Aims that the carbon handprint of a city entails:
 1. Turning the focus on climate issues on possibilities that a city environment can offer
 2. Revealing cities' huge potential as a solution provider for organizations and citizens
 3. Guiding a city to systematically grow its handprint to maximize benefits from the city's perspective

Carbon handprint of a city

Acknowledging the climate leadership initiatives of the city in order to maximize their positive impact both in and outside of the city

- A city should incorporate strategies to ensure systematic action towards increasing handprints

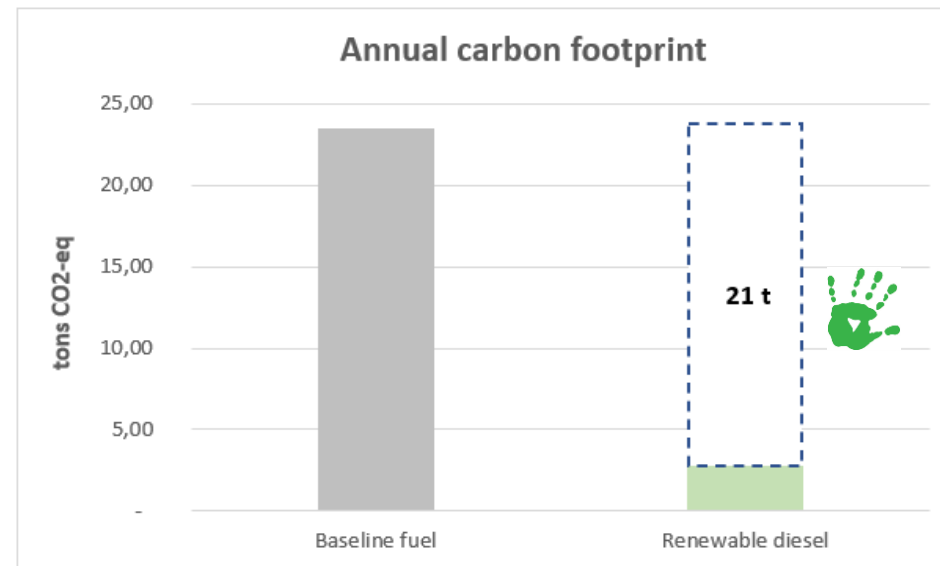
4. Carbon handprint in a city/region



5. Company case study: Carbon handprint of Neste renewable biodiesel

- Calculating the handprint of Neste renewable diesel produced from used cooking oil
- Examined vehicle consumes 6 L of diesel per 100 km, annual driven distance 130 000 km, operating in Helsinki
- Baseline fuel: average diesel used in Finland (containing 12 % biodiesel)
- In this study, the carbon handprint of the renewable diesel is **21 tons of CO₂-equivalent annually**

Customer: A logistics company operating in Helsinki, Finland





6. Regional case study: Carbon handprint in the city of Espoo

- Identifying handprint contributors in the city of Espoo
- How can the city reduce footprints of others through:
 - offering a climate friendly operating environment
 - city-owned property or companies
 - projects developing innovative solutions
 - other means

6. Regional case study: Carbon handprint in the city of Espoo

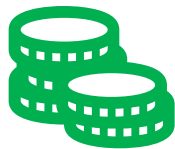
Operating environment



Providing low-carbon facilities



Cleaning up transportation

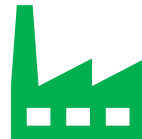


Creating green business ecosystems

Ownership



Handprints on city-owned land



Handprints from city-owned companies

Projects



Creating new ways to move



Searching for new sources of energy

Other aspects



Providing jobs that create handprint

7. Carbon handprint summarized

- Measure of the good climate impacts of a solution
- Useful tool for companies in decision making and communication
- Can help cities and municipalities to maximize their positive impacts



Publications

- Grönman et al. 2019. Carbon handprint – An approach to assess the positive climate impacts of products demonstrated via renewable diesel case. *J. Clean. Prod.* 206, 1059-1072. <https://doi.org/10.1016/j.jclepro.2018.09.233>
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Thank you!



More info about the
handprint
www.handprint.fi

