



Life Cycle Initiative



# Welcome to the **8<sup>th</sup> General Assembly** of the Life Cycle Initiative

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2 October 2024

# Agenda (CEST/GMT+2)

2

- 12:30 Introduction and Opening Remarks  
Advancing Sustainable Consumption and Production with Life Cycle Approaches
- 12:45 Session 1:**  
**Panel Discussion on Leveraging LCA to Drive the Transition to a Sustainable Economy**
- 13:30 Interactive: Initiative's members**
- 13:35 Session 2: Update on Life Cycle Initiative Projects**  
(GLAM, Biogenic Carbon, DPP, GLAD, Buildings and Construction)
- 14:35 Interactive: Networking moment**
- 14:45 Session 3: New Steering Committee members**  
Voting Rules and Presentation of Candidates
- 15:00 Q&A and Closure

# Our Funding Partners

3

## Platinum Sponsors



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
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Swiss Confederation



MINISTÈRE  
DE LA TRANSITION  
ÉCOLOGIQUE  
ET SOLIDAIRE

## Gold Sponsors



Federal Ministry for the  
Environment, Nature Conservation,  
Building and Nuclear Safety



# Advancing Sustainable Consumption and Production with Life Cycle Approaches

4



**Elisa Tonda**

Chief

**Resources and Markets Branch, UNEP**

# Leveraging LCA to Drive the Transition to a Sustainable Economy

5

## PANEL DISCUSSION



**Zubeida Zwavel**  
Center for African  
Resource Efficiency &  
Sustainability (CARES)



**Jitti Mungkalasiri**  
Thailand's National  
Science and  
Technology  
Development Agency



**Nydia Suppen**  
Center for Life Cycle  
Analysis and  
Sustainable Design



**MODERATOR**  
**Asad Naqvi**  
(Head, Economic and Trade  
Policy Unit, UNEP)



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# INTERACTIVE SESSION

**We want to find out:**

- the representation of the constituencies (governments, businesses, science/civil society, Individual members)
- and the regional presence.



Life Cycle Initiative

# Session 2

## Project Updates



**MODERATOR**  
**Sonia Valdivia**  
(Scientific Director, World  
Resources Forum)

# Global LCIA guidance (GLAM) Phase 3

Creation of a Global Life Cycle

Impact Assessment Method

Outcome of consensus workshop



**SPEAKER**

**Olivier Jolliet**



Life Cycle Initiative

**Olivier Jolliet**

*Olivier Jolliet (chair), Peter Fantke & Francesca Verones (co-chairs) & task force chairs*

# LCIA guidance and work within the Life Cycle initiative

- 2002 – 2012 LCIA programme of the Life Cycle Initiative: LCIA Midpoint-Damage Framework, USEtox, WULCA
- 2012-2019 GLAM Phase 1 & 2: Consensus finding in multiple impact categories → 2 Pellston workshop™ but limited implementation. 2<sup>nd</sup> workshop provided a roadmap.



## 2019-2024 Creation of the Global Life Cycle Impact Assessment Method – GLAM

Establish a comprehensive, consistent and global Environmental Life Cycle Impact Assessment Method, covering classification, characterization, normalization and weighting to assess the life cycle impacts of products and services on human health, ecosystem and natural resources.

# GLAM – Consensus and Intensive evaluation and testing

**230 experts incl. impact category specific experts**

**2019 Scoping phase and consultation**

**2020-2023 GLAM Development**

**2023-2024 GLAM testing**

**8 May 2024 Launch of GLAM-beta version,**

**including all GLAM factors with documentation**

**28 August – 30 September 2024**

**Stakeholder consultation**

**21-23 October 2024 Launch of GLAM 1.0**

**version at the LCA case study symposium**

**in Göteborg,**

**March 2025 onwards**

**GLAM available in LCA software**

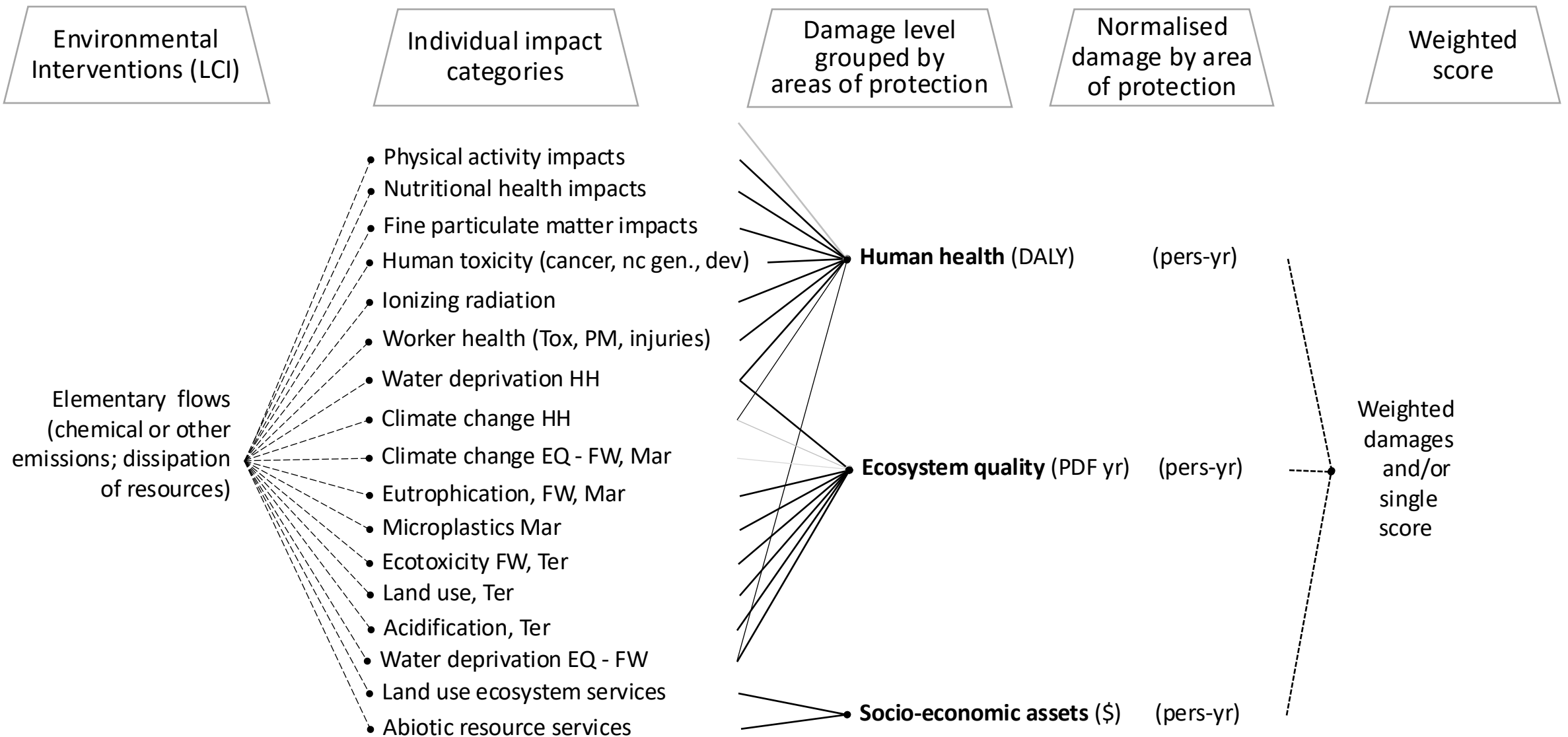
**2025 ff Dissemination, stewardship and guidance for interpretation**

**- 11 half-day virtual consensus workshops 22-26 May 2023**

**- In-person consensus workshop – Copenhagen 30 May-1<sup>st</sup> June 2023 & Virtual workshop 21-22 May 2024**



# GLAM framework



Key

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-----• Links elementary flows to impact categories

————• Aggregates impact categories at damage level into areas of protection

.....• Weighs and aggregates damages on areas of protection

## GLAM – Consensus and innovation!



**Ecosystem quality:** Vulnerability & Global Extinction  
Probability, microplastics, terrestrial ecotoxicity, land use



**Human health:** fine particulate & human tox, incl.  
chemicals in product and workers, accidents, nutrition  
impacts, physical exercise



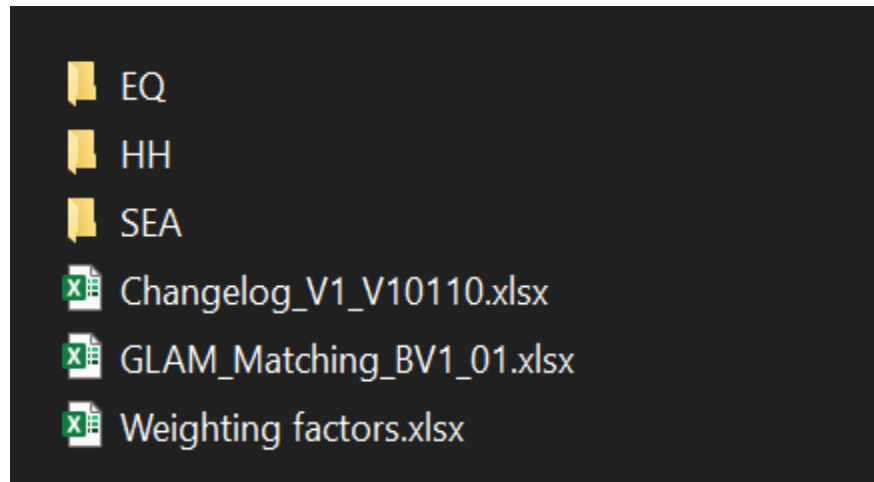
**Natural resources & ecosystem services:** Dissipation-based  
framework for mineral resources, 6 ecosyst. services



**Normalisation, Weighting & Cross-cutting Issues :** Global  
weighting factor, incl. low, middle & high income countries

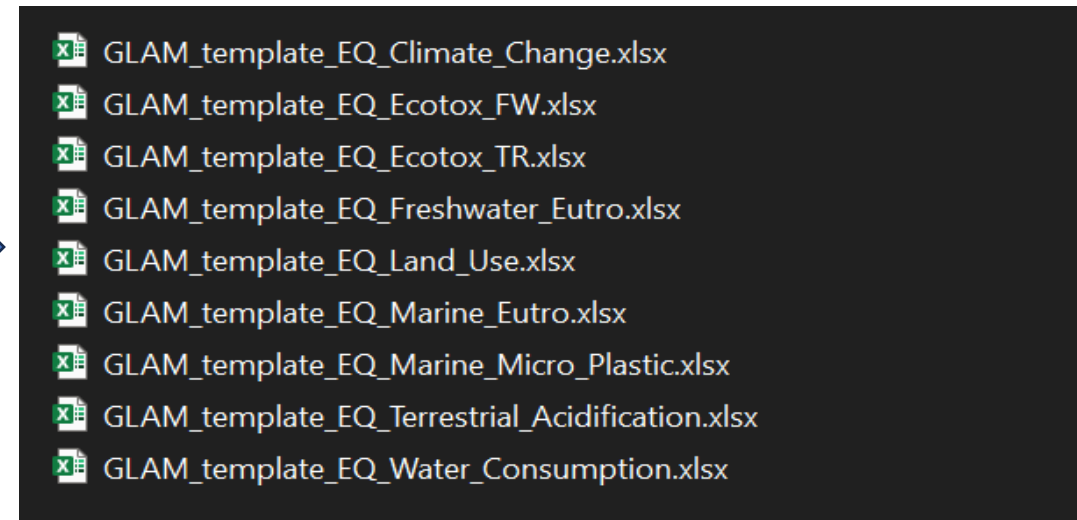
## GLAM Beta Version 1.01.10

- <https://ntnu.box.com/s/3p0ua87ookd2to2pbcx4gk8wh0qvxqkq>



Inside each AoP

One file per  
impact category



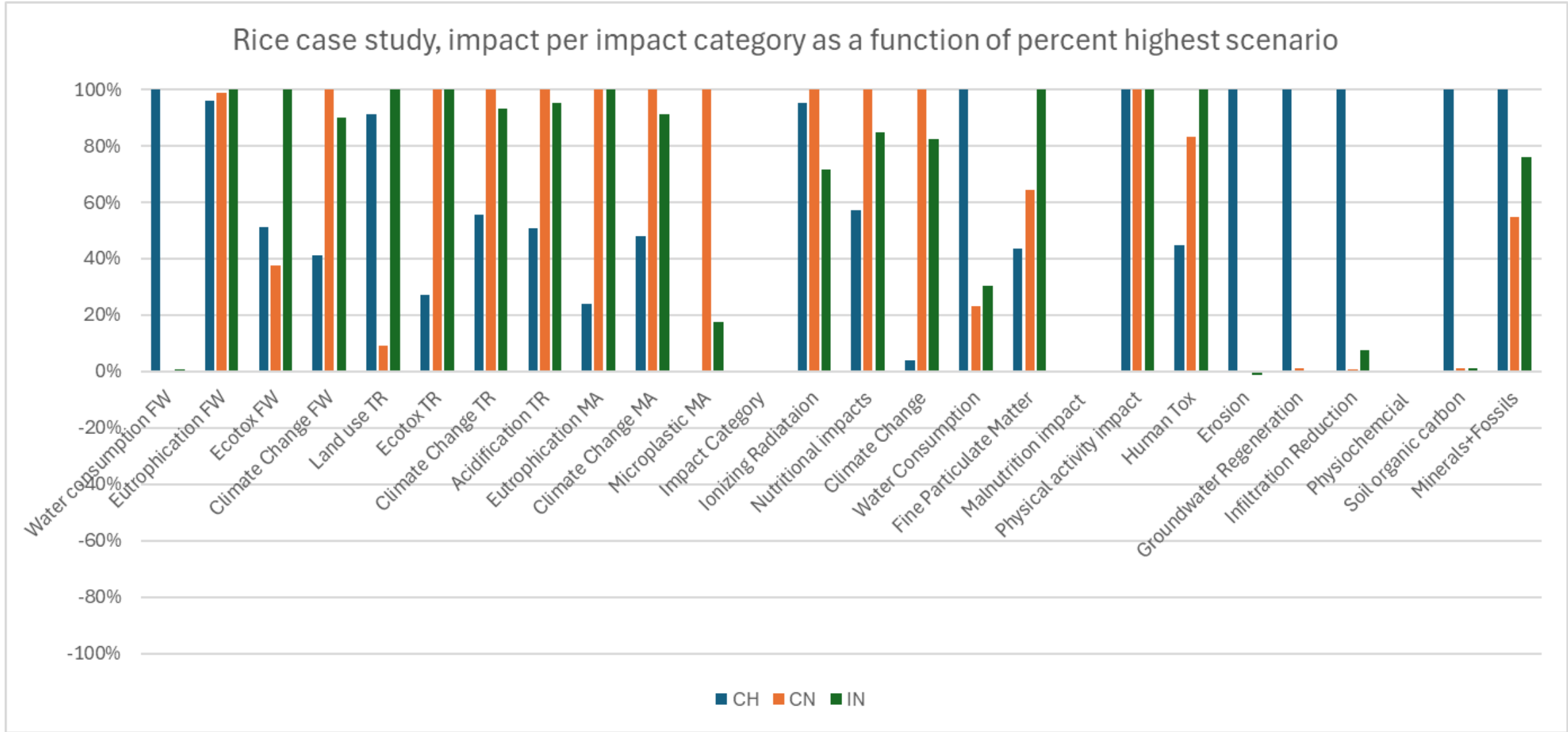
# Coverage of flows and characterization factors

| <b>Ecosystem Quality - Damage level (Country+ Global scale)</b> | Originally submitted |       | GLAM Practitioner Version |        |       |
|-----------------------------------------------------------------|----------------------|-------|---------------------------|--------|-------|
| Impact Category                                                 | CFs                  | Flows | New Flows                 | CFs    | Flows |
| Climate Change                                                  | 1443                 | 207   | 11                        | 636    | 210   |
| Freshwater Ecotoxicity                                          | 309690               | 5749  | 1685                      | 355908 | 5745  |
| Terrestrial Ecotoxicity                                         | 20952                | 388   | 94                        | 24056  | 388   |
| Freshwater Eutrophication                                       | 15696                | 4     | 0                         | 7103   | 33    |
| Land use                                                        | 178048               | 19    | 9                         | 34145  | 165   |
| Marine Eutrophication                                           | 2316                 | 3     | 0                         | 9495   | 14    |
| MicroPlastic                                                    | 1108                 | 292   | 282                       | 1602   | 282   |
| Terrestrial acidification                                       | 7398                 | 4     | 1                         | 1442   | 7     |
| Water consumption                                               | 1656                 | 1     | 0                         | 2028   | 11    |
|                                                                 |                      |       |                           |        |       |
| <b>Human Health - Damage level (Country + Global scale)</b>     | Originally submitted |       | GLAM Practitioner Version |        |       |
| Impact Category                                                 | CFs                  | Flows | New Flows                 | CFs    | Flows |
| Climate Change                                                  | 836                  | 209   | 11                        | 424    | 211   |
| Fine Particulate Matter                                         | 243947               | 5     | 0                         | 14689  | 9     |
| Humantoxicity                                                   | 632598               | 5021  | 2293                      | 276110 | 5018  |
| Ionising Radiation                                              | 1840                 | 115   | 68                        | 2280   | 114   |
| Nutritional impacts                                             | 30876                | 22    | 22                        | 4158   | 22    |
| Physical activity                                               | 9571                 | 832   | 832                       | 4582   | 832   |
| Work environment impacts                                        | 420                  | 420   | 420                       | 21840  | 420   |
| Water consumption                                               | 188                  | 1     | 0                         | 2085   | 11    |

# Coverage of flows and characterization factors

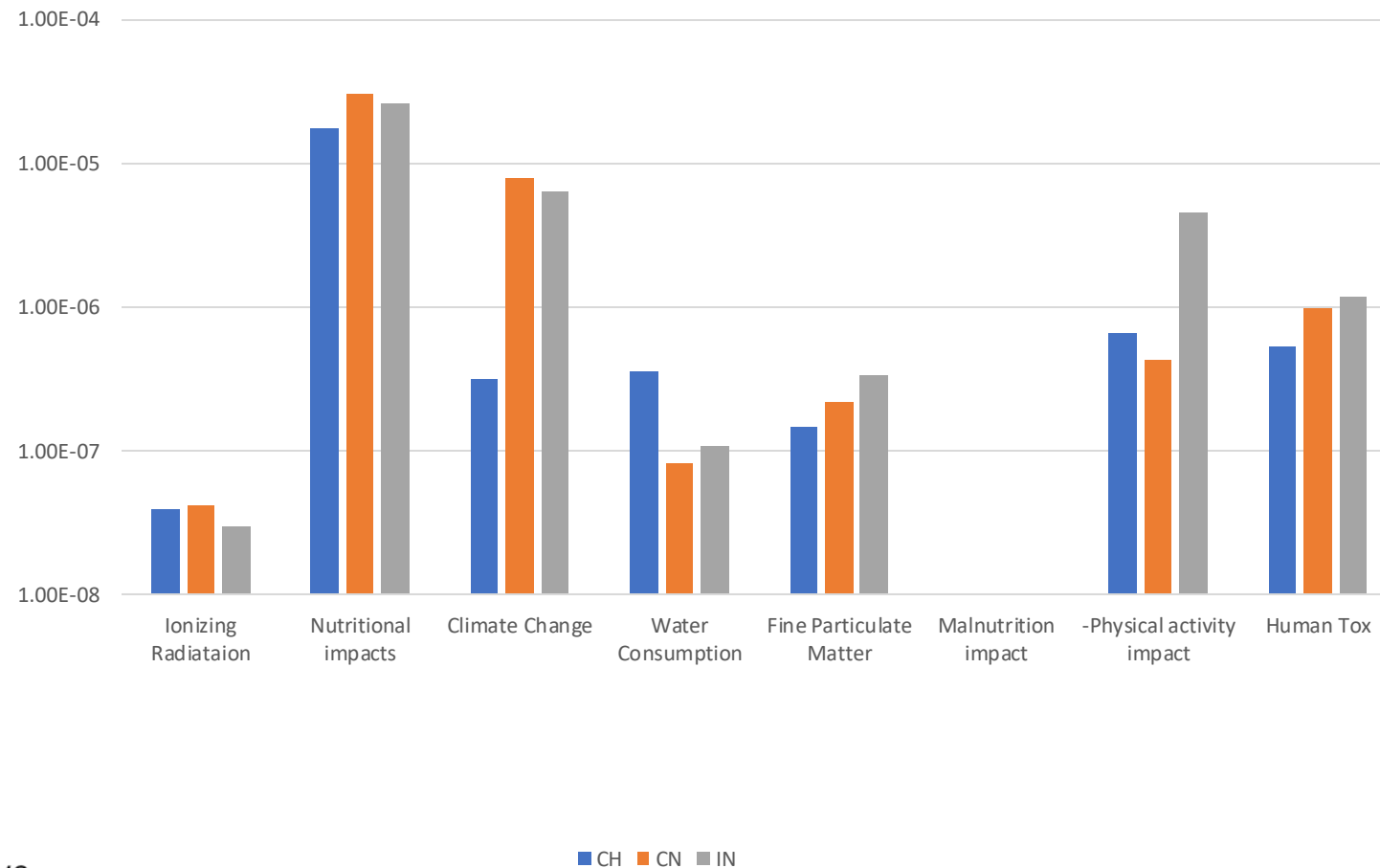
| Socio economic assets - Damage level (Country + Global scale) | Originally submitted |       | GLAM Practitioner Version |       |       |
|---------------------------------------------------------------|----------------------|-------|---------------------------|-------|-------|
|                                                               | CFs                  | Flows | New Flows                 | CFs   | Flows |
| Erosion Potential                                             | 42224                | 58    | 0                         | 37874 | 116   |
| Groundwater Regeneration Reduction Potential                  | 42224                | 62    | 0                         | 40354 | 116   |
| Infiltration Reduction Potential                              | 42224                | 58    | 0                         | 41202 | 116   |
| Physicochemical Filtration Reduction Potential                | 31668                | 58    | 0                         | 20770 | 116   |
| Minerals+Fossils                                              | 86                   | 86    | 25                        | 87    | 87    |
| Soil Organic Carbon Reduction Potential                       | 42224                | 58    | 0                         | 38118 | 116   |

# Rice case study – individual category results in % highest scenario, all categories



# Rice case study – individual category results at damage level HH – DALY/kg rice

Rice case study: impacts on Human health DALYs



## 4. The weights

|                                          | HH          | Range |      | EQ          | Range |      | NR&ES       | Range |      |
|------------------------------------------|-------------|-------|------|-------------|-------|------|-------------|-------|------|
| Econometric models                       | Weight      | Low   | High | Weight      | Low   | High | Weight      | Low   | High |
| All responses equal                      | <b>0.42</b> | 0.41  | 0.43 | <b>0.31</b> | 0.30  | 0.32 | <b>0.26</b> | 0.25  | 0.28 |
| Population share adjusted global weights | <b>0.37</b> | 0.36  | 0.39 | <b>0.34</b> | 0.33  | 0.35 | <b>0.29</b> | 0.27  | 0.30 |
| MCDAs models                             | Weight      | Low   | High | Weight      | Low   | High | Weight      | Low   | High |
| All responses equal                      | <b>0.41</b> | 0.40  | 0.42 | <b>0.32</b> | 0.32  | 0.33 | <b>0.27</b> | 0.26  | 0.27 |
| Population share adjusted global weights | <b>0.39</b> | 0.38  | 0.40 | <b>0.33</b> | 0.31  | 0.34 | <b>0.29</b> | 0.27  | 0.30 |

# GLAM – Consensus and Intensive evaluation and testing

230 experts incl. impact category specific experts

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2020-2023 GLAM Development

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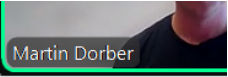
**21 October 2024 Launch of GLAM 1.0 version at  
the LCA case study symposium in Göteborg,**

**March 2025 onwards**

**GLAM available in LCA software**

**2025 ff Dissemination, stewardship  
and guidance for interpretation**

## GLAM 28-08-2024 Stakeholder Consultation Feedback Form



The beta version of the Global Guidance for Life Cycle Impact Assessment Indicators and Methods (GLAM) was introduced on May 8th during the SETAC Symposium in Seville. Following this significant event, two workshops were conducted to finalize the recommendations, and the revised characterization factors were provided to select industries in early July, initiating the testing phase.

**This Feedback Form offers stakeholders the opportunity to provide input on the GLAM method and the updated characterization factors. Please submit your feedback no later than 22th of September 2024.** The form is divided into four main sections, each with relevant subcategories:

1. Impact Methodology
2. Characterization Factors (CFs) and their implementation
3. Development and Consultation Process
4. Additional Comments

# Biogenic Carbon Project



**SPEAKER**

**Sam  
Cooper**



Life Cycle Initiative

**Sam Cooper**  
*University of Bath*

# Funding Partners of the Biogenic Carbon Project: **Thank you!**



AMERICAN WOOD COUNCIL



storaenso



Netherlands Enterprise Agency



Canadian Wood Council  
Conseil canadien du bois



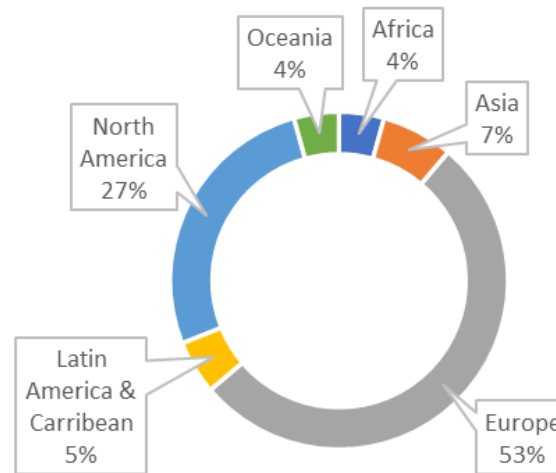
FPAC.ca  
APFC.ca

# What each Working Group covers

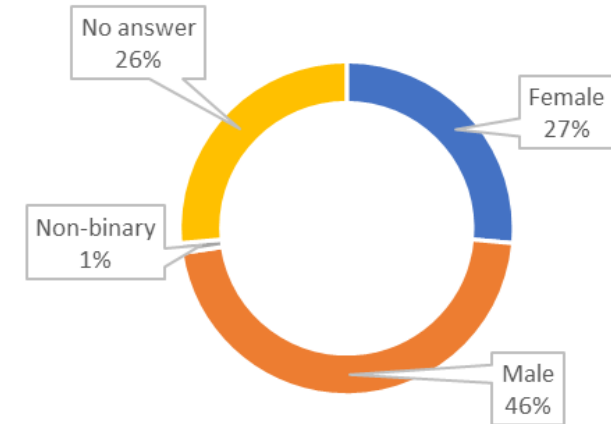
| WG1 – Temporal Aspects                                       | WG2 – EoL, Reuse and Recycling                                                                               | WG3 – System Boundaries                                                                                    | WG4 – Standards and Adoption Barriers                                                               |
|--------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Time element in inventories                                  | Handling of biogenic carbon through multiple life cycles and within circular systems                         | Appropriate allocation procedures for products containing biogenic carbon                                  | Rationale for using one standard over another                                                       |
| Timing of removals/emissions due to perennial biomass growth | End of life modelling approaches. E.g., Cut-off, closed loop approximation, circular footprint formula, etc. | Additional uptake and release processes within system boundaries. E.g., Soil carbon, forest residues, etc. | LCA standards and non-LCA standardised approaches that can be applied to biogenic carbon LCA        |
| Static and dynamic climate change impact methods             | Attributional and consequential modelling relative to wastes, EoL, and reuse                                 | System expansion relating to counterfactual scenarios such as avoided methane                              | Gaps in internationally recommended approaches that lead to inconsistent and incompatible reporting |
|                                                              |                                                                                                              | Opportunity costs – the avoided burden/benefit of an alternative, foregone, scenario                       |                                                                                                     |

# Working Group composition

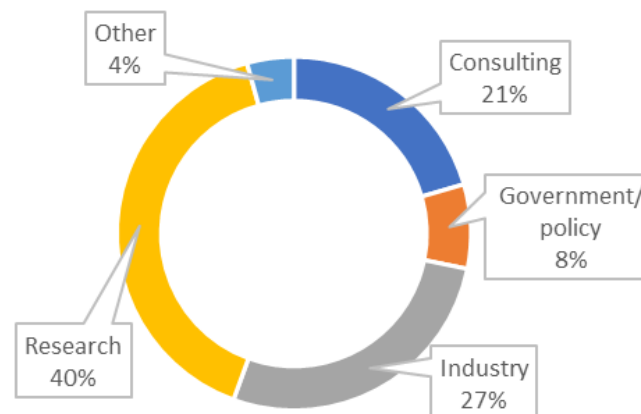
The majority of WG members are from Europe and North America, but there is global representation:



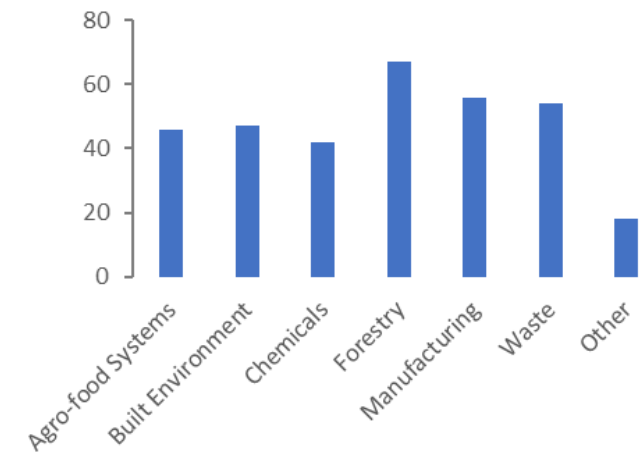
Almost half of WG members identified as male, just over a quarter as female:



WG members represent a range of stakeholder groups:



WG members have experience of a wide range of sectors:



(NB participants could select more than one)

# Desirable qualities for guidance

| Quality | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Impact assessment should have a consistent and justified approach to valuation of future climate change impacts relative to present impacts. Neither short-term, nor long-term impacts should be overlooked                                                                                                                                                                                                                                                                                                   |
| 2       | Guidance should focus solely on climate change. Options should therefore not try to adjust GHG scores to account for other impacts that are covered by other metrics. Focus should be on mid-point indicators and the nature of impact categories should be intuitive. Inventory and impact categories should be separate to the extent practical.                                                                                                                                                            |
| 3       | Concepts should be consistent across different activities, sectors, and products. Recommended guidance should not favour one sector over another. If the need for applying concepts differently arises in different situations, substantial justification is required.                                                                                                                                                                                                                                        |
| 4       | Approaches should be consistent along life cycle stages and enable a life cycle perspective for the entire system model to avoid double counting. They should also be consistent with the framing (attributional or consequential) of the study.                                                                                                                                                                                                                                                              |
| 5       | LCA is intended as a tool to help make appropriate decisions and should enable meaningful comparison between comparable product-systems. Impact metrics should be quantitative and comparable when reported with the same units (e.g., the impact of 1 kg CO <sub>2</sub> -equivalent carbon should be the same whether referring to fossil or biogenic carbon). This should relate to balance of carbon flows across the system boundaries with restoration of carbon pools included within said boundaries. |
| 6       | Options should not be easy to manipulate for best results. Transparency and reproducibility are essential in approaches. This includes the use of appropriate/realistic/justified counterfactuals.                                                                                                                                                                                                                                                                                                            |
| 7       | Approaches should be practical to implement, balancing the level of detail to an extent that is appropriate to the LCA tools (software, databases, etc.) available and the significance of the subject being discussed. Simplicity of implementation should not be the goal of guidance, rather it should be straightforward and comprehensible.                                                                                                                                                              |
| 8       | LCA is a generic method and there are inevitably questions relating to products/systems that we haven't envisaged. Guidance should be sufficiently flexible that practitioners can ensure that their approach is appropriate to the goal & scope of their study (rather than being over constrained)                                                                                                                                                                                                          |

# SETAC workshop - Gothenburg

- Wednesday 23<sup>rd</sup> of October
- 13:30 – 18:30 CEST
- Hybrid: online and in person attendance possible
  - Parallel session to the SETAC 26<sup>th</sup> LCA Symposium\* in Gothenburg, Sweden
  - Online link distributed on 16<sup>th</sup> July, email me ([ljm222@bath.ac.uk](mailto:ljm222@bath.ac.uk)) if you don't have it in your calendar
  - Let us know how you will be attending by 4<sup>th</sup> of October - <https://forms.office.com/e/vAAB6GgnMd>
- Agenda available soon
- \*Note that the main conference program is sold out

UNEP/LCI Biogenic Carbon Project  
- Gothenburg workshop



# White paper – skeleton structure

- **Introduction**
  - Framing of the issues [emphasise issues further for future reflection in phase 2]
  - Existing standards and literature
- **WG methodology [minimise section on WG sessions in white paper]**
  - Process for the WG formation
  - WG themes
  - Session and workshop planning
- **Results & Discussion**
  - Options and descriptions
  - Problems and observations relating to the options – i.e. against the qualities / criteria, based on current rounds of WG meetings
  - Possible solutions – [decision tree approach]
  - Examples of options in practice (case studies) – e.g. how would they affect these assessments [more contrasting case studies, agriculture and long rotation forestry at minimum to capture the full spectrum]
  - Perspectives from different sectors
- **Reflective questions**

# Phase 2 plan (2025)

- **January to end March**
  - Invite comments & feedback on “possible recommendations based on white paper” document.
  - Possibly a quick pilot round before sending out specific questions to guide feedback.
  - Webinar (mid Feb) to launch
- **April to end May**
  - Develop draft guidance document pulling on work from white paper and feedback
- **June to end July**
  - ISO-like review of draft guidance document – invite general and technical comments of main topics of guidance document
  - Focussed meetings (week long [or staggered across multiple weeks], online) to agree revisions based on submitted comments
- **August to September**
  - Non-technical amendments to draft guidance
- **October to November**
  - Preparation of final guidance document

# Digital Product Sustainability Information System



**SPEAKER**  
**Holger  
Berg**



Life Cycle Initiative

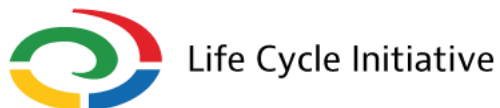
**Holger Berg**  
*Wuppertal Institute*

# Blueprint for a Global Information System Framework - Overview

Lead Partners:



Conducted by:



SESSION 2  
Digital Product Sustainability Information

Hosted by  UN environment programme

# Blueprint for a Global Information System Framework - Overview

## Goals of an Information System

- Provide **structured data of** products or materials.
- The scope and content of the data are predefined, as are the **access rights**.
- Contain circular economy-related **master** and **life cycle data** as well as data on other **areas of sustainability**
- Key target groups: Companies/value chains, end customers, authorities/policymakers



# Blueprint for a Global Information System Framework - Overview

---

## Goal and Purpose

### **The Blueprint**

- **will outline the Global Framework**
- **serve as a guide for development,**
- **outlining the specifications, features,**
- **to benefit all relevant stakeholders.**

### **The purpose of this preliminary phase is to ensure**

- **consideration of all variables**
- **engagement of key stakeholders**
- **to create a robust foundation,**
- **setting the stage for a comprehensive system by 2025 that has global applicability.**

# Blueprint for a Global Information System Framework - Overview

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## Activities

### **1. Gaps Analysis**

- 1. Data**
- 2. Technology**
- 3. Barriers/Opportunities**

### **2. Regional Consultations of rolling out digital product sustainability information system on a global level**

### **3. Develop a blueprint that outlines the essential components, processes, and goals for developing a Global Framework**

# Global LCA Data Access Network (GLAD)

## Blueprint Project



**SPEAKER**  
**Tiago**  
**Braga**



**SPEAKER**  
**Thiago**  
**Rodrigues**



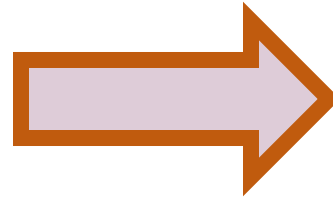
Life Cycle Initiative

Tiago Braga; Thiago Rodrigues  
IBICT

# Global Life Cycle Assessment Data Access Network

23 **Databases** linked

101,639 **Datasets**



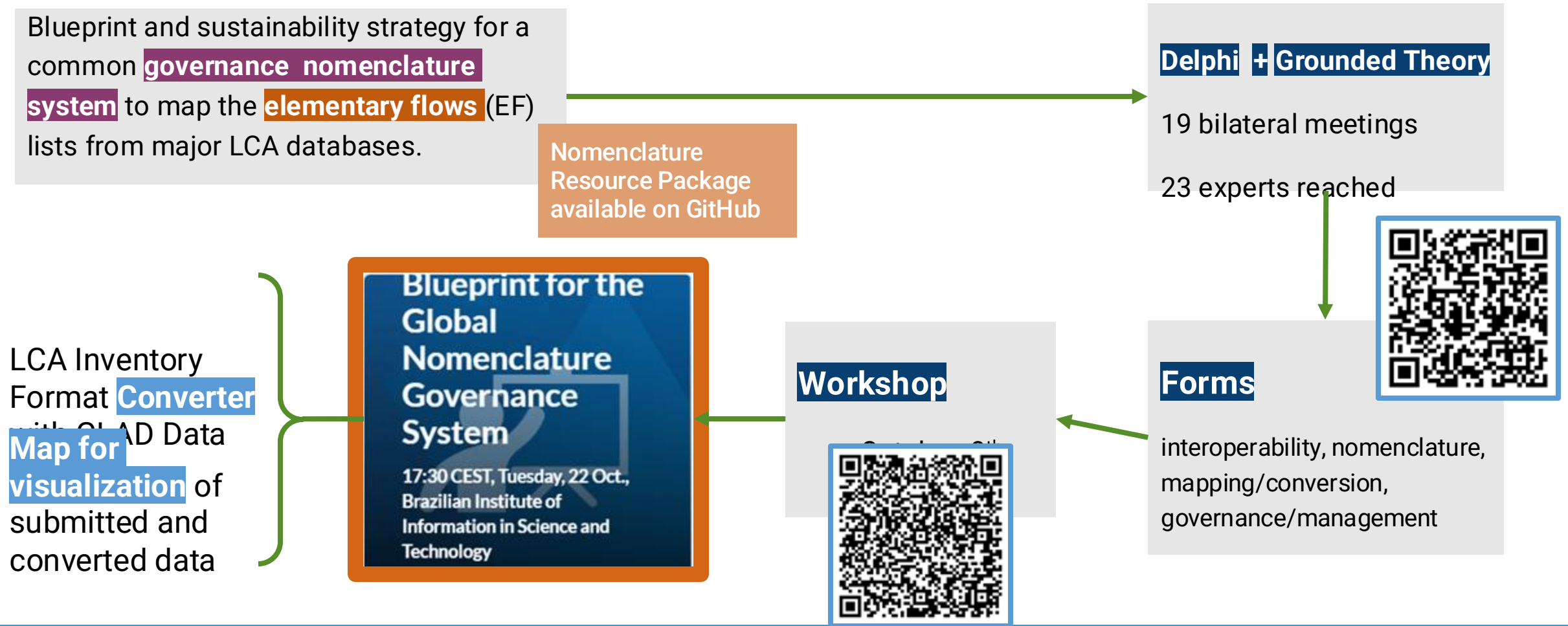
GLAD enables  
**interoperability** of LCA data



*Nomenclature!*

GLAD supports LCA data  
**accessibility**

# Global Life Cycle Assessment Data Access Network



SESSION 2  
SESSION GLAD

# Global Life Cycle Assessment Data Access Network

## Interoperability

Refinement of mapping  
and conversion  
frameworks

Flexible, central,  
harmonized list

## Nomenclature

Rigorous metadata  
standards

Separating compartments  
from flows

## Governance

Bidirectional mapping  
Accurate and reliable  
conversions

Governance under  
UNEP and LCI

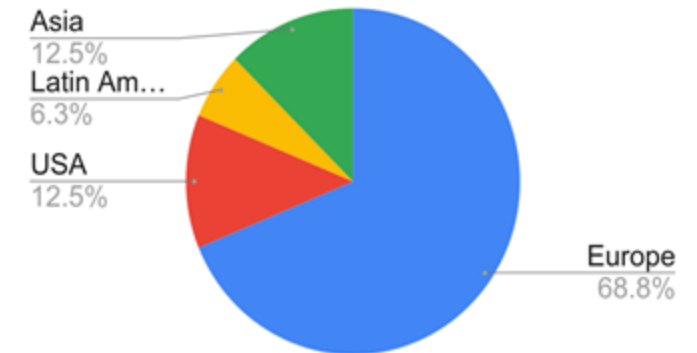
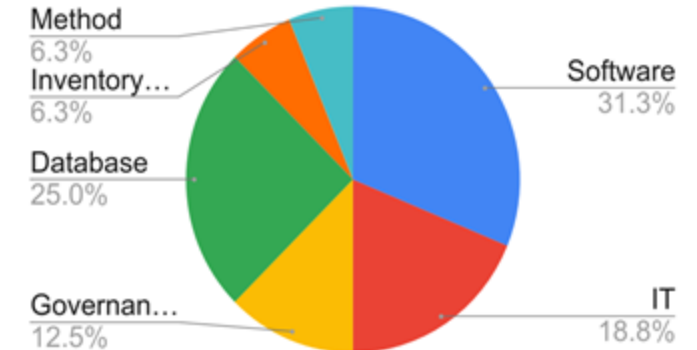
Updates and maintenance, with  
support from a **technical  
discussion group**

Robust reporting and  
community feedback  
structure

Secure funding

Products and services to  
implement the central list

Multi-tiered  
governance structure



# Global Life Cycle Assessment Data Access Network

*Thanks!*

Workshop



Forms



[https://us06web.zoom.us/meeting/register/tZcrf-uvrDkiE9HwKbJFDAh\\_FR8TH5XFC8Or#/registration](https://us06web.zoom.us/meeting/register/tZcrf-uvrDkiE9HwKbJFDAh_FR8TH5XFC8Or#/registration)

In addition to in  
kind contributions  
by all stakeholders involved  
Ibict received  
financial support from:



Project  
commissioned  
by:



# Buildings and Construction



**SPEAKER**

**Mona  
Mohammed**



Life Cycle Initiative

**Mona Mohammed**  
UNEP

# About the Global Alliance for Buildings and Construction (GlobalABC)



Founded at COP21, hosted by UNEP and **with 280 members** the GlobalABC is the leading global platform for ALL buildings stakeholders committed to a common vision: **A zero-emission, efficient and resilient buildings and construction sector.**

## Aims

- Global advocate and a catalyst to action
- Trusted platform to set targets and track progress
- Supporting governments (countries & cities) in setting priorities and measures based on their situation
- Supporting the private sector with priorities and strategies towards building decarbonizing and resilience.



**39 countries (+2 ministries)**



**11 public agencies**



**93 private sector enterprises/networks**



**62 civil society & foundations**



**41 research/think tanks**



**18 cities/networks**

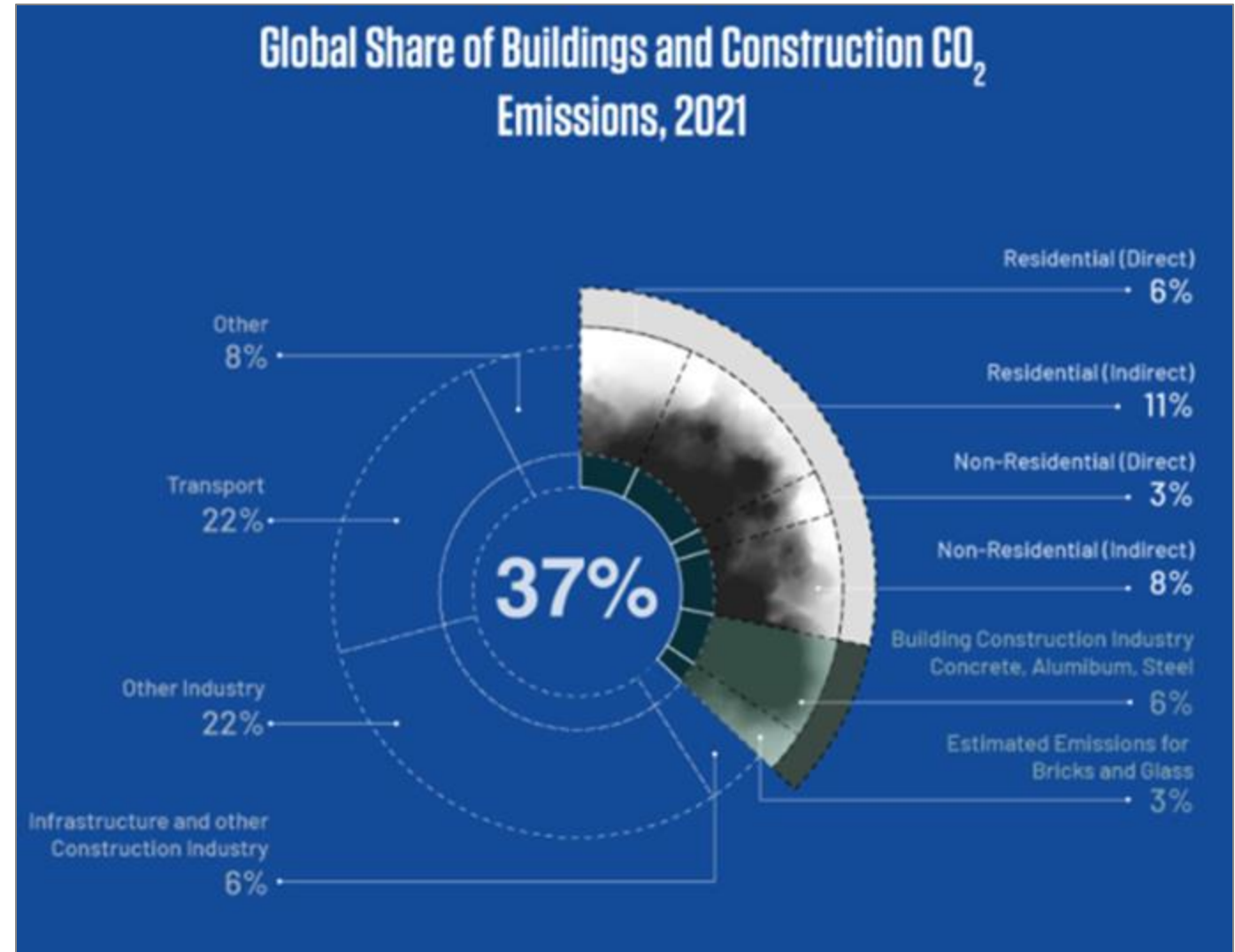


**16 Intergovernmental organizations**

# Welcome

## Why building materials?

- The buildings and construction sector is already the **largest contributor** to global carbon emissions at 37% (operational and embodied).
- Construction materials represent an estimated 9% of overall energy-related CO<sub>2</sub> emissions.
- Construction materials are set to dominate resource consumption in fast-growing developing economies, with associated greenhouse gas emissions expected to **double by 2060**.
- In G7 countries, **material efficiency strategies** could reduce greenhouse gas emissions in the material cycle of residential buildings by 80–100% in 2050.



# Embodied Carbon

## HOW TO REDUCE EMBODIED CARBON?



### AVOID

**DESIGN BETTER  
BUILD (WITH) LESS**

- Life-cycle analysis
- Resource-efficiency
- Circular approaches
- Durability and recycling
- Local value chains



### SHIFT

**USE ALTERNATIVE  
BUILDING MATERIALS**

- Develop supply chains
- Standardise and certify products
- Mainstream alternative materials in conventional construction



### IMPROVE

**DECARBONISE  
CONVENTIONAL  
MATERIALS**

- Energy-efficiency
- Decarbonised energy
- Process innovation
- Substitute with materials and natural fibres

# Materials Hub: Mission Statement

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*“The Materials Hub leads and supports diverse actors across the circular value chain of the built environment in knowledge generation, dissemination, and implementation to apply the avoid-shift-improve framework to construction materials.*

*The Hub aims to support the just transition to healthy, sustainable, net zero buildings<sup>1</sup> along their life cycle by 2050, contributing to local job creation and business opportunities; while preserving the integrity of biodiversity”.*

1. A new or renovated net-zero building is highly energy efficient, does not cause any on-site GHG emissions from fossil fuels and reduces embodied carbon to a significant extent. It uses renewable energy, preferably generated on-site, if technically feasible, and/or off-site to fully cover its remaining, very low energy use (Source PCAF, 2022).



One planet  
handle with care



# Three Main Working Groups

| Working Group 1                                                                                                                                                                                                                                                                 | Working Group 2                                                                                                                                                                                                                                                                        | Working Group 3                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Circular Built Environment</b></p> <p>Promote awareness, capacity building, and development in the circular built environment to combat climate change, biodiversity loss, and resource depletion, while fostering inclusive employment and boosting local economies.</p> | <p><b>Whole Life-Cycle Policy Coalition (WLCP.Co)</b></p> <p>Brings together top organizations to measure and reduce Whole Life Cycle impacts in the built environment, from material production to end-of-life recovery, addressing biodiversity, pollution, and climate effects.</p> | <p><b>Bio-based Materials</b></p> <p>Supports the shift to sustainable building materials by offering a global platform for sharing research, avoiding harmful materials, and promoting bio-based, locally sourced, cost-effective, and healthier alternatives.</p> |
|                                                                                                                                                                                               |                                                                                                                                                                                                     |                                                                                                                                                                                 |

# 10 WLC Recommendations for the Buildings Breakthrough



**1: Definition of Near Zero Emissions and Resilient Buildings**



**2: Alignment of Whole Life Carbon Standards**



**3: Accessible and High Quality Data**



**4: Benchmarks for Building Emissions**



**5: Interoperable product standards**



**6: Common language and Diverse Contexts**



**7: Drive investment**



**8: Prioritise Retrofitting**



**9: Material Circularity**



**10: Design for Circularity**



# Materials Hub Ongoing Activities

- **Submit resources to the 10 Whole Life Cycle Recommendations for the Buildings Breakthrough case study platform:** Launched at the Buildings and Climate Global Forum, providing guidance to policymakers on circularity and emissions reduction.

SCAN to submit your  
resources to the  
10 WLC Recs case  
study platform →



- **Compendium on Bio-based Materials:** To provide a global platform for knowledge creation, sharing and dissemination to accelerate a just transition to bio- and earth-based, locally-sourced, cost-effective, healthier, and innovative building materials in alignment with the avoid-shift-improve approach. **Launched and open for submission.**

SCAN QR Code to  
submit your  
resources to the  
Bio/Earth- based  
Materials  
compendium →



Join [here](#) the Materials Hub!

- Any other business
- Q&A  
Please submit your questions  
in the **chat box**





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# Thank you!



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**Thank you!**



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- Please share with us your experience with the key assets of Life Cycle Initiative. Write to us at:

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