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Sustainability and circularity assessment – progress in the methodology

WP6 coordinator

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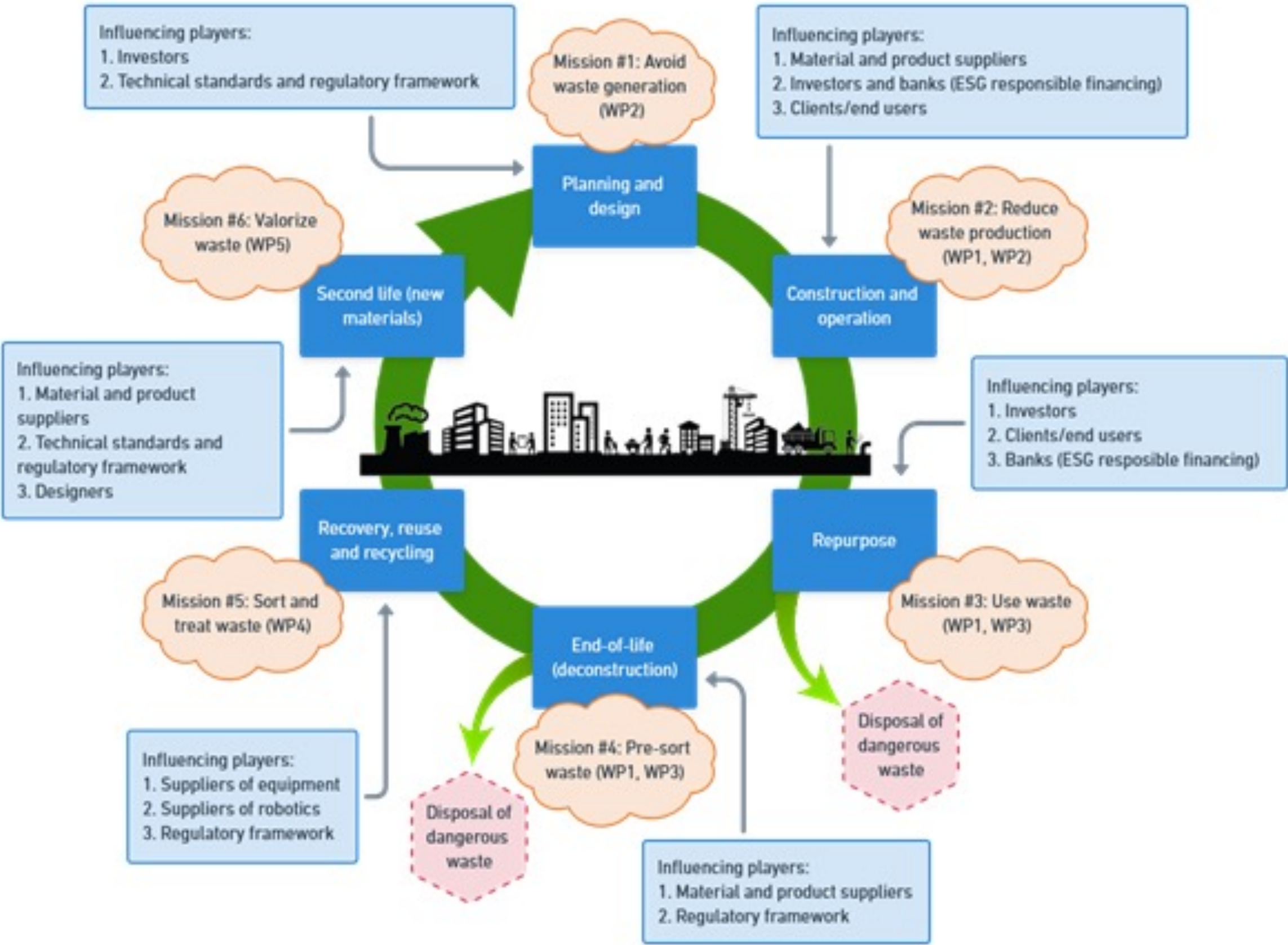
ITC-AICE. Ceramic Industry Research Association

Project coordinator

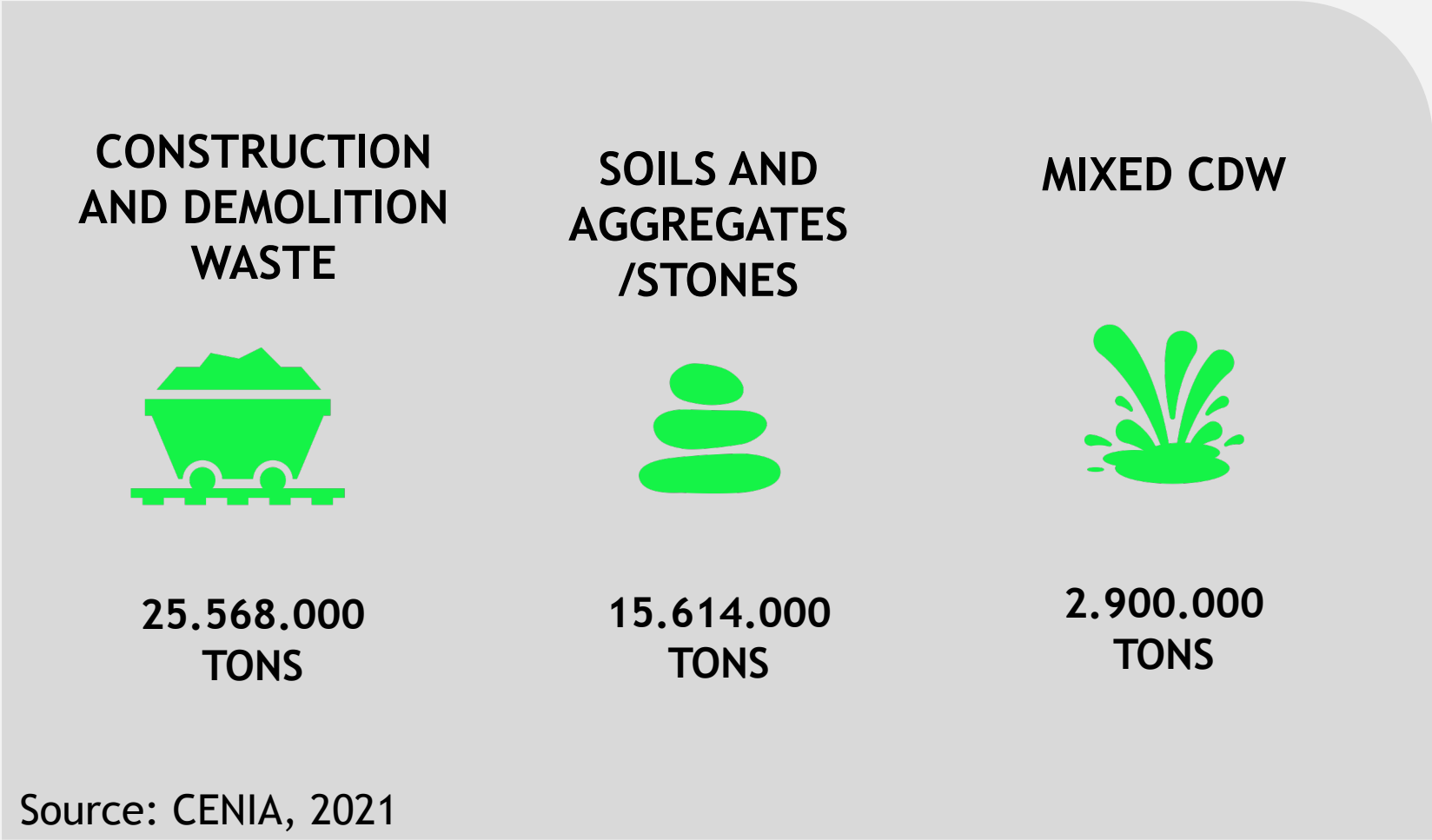
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Open Day China | How is the assessment integrated in the RECONMATIC focus ?



Example on data from Czech Republic:



DEVELOPMENT OF LEGISLATION IN THE CZECH REPUBLIC
Circular Czech Republic 2040 strategic framework
Amendment to the Public Procurement Act (166/2023 Coll.)
New Waste Act (541/2020 Coll.)
Implementing decrees to the Waste Act
Translation of the guidelines on green public procurement

- THE AMOUNT OF HAZARDOUS WASTE GENERATED IN THE CONSTRUCTION AND DEMOLITION WASTE SECTOR REMAINS VERY LOW (1.7%)
- THE LARGEST WASTE STREAM ARE SOILS AND STONES - 61% OF THE TOTAL AMOUNT OF WASTE GENERATED
- APPROXIMATELY 26 MILLION TONNES OF CONSTRUCTION AND DEMOLITION WASTE WAS GENERATED IN 2021.
- THE EUROPEAN TARGET OF 70% PREPARATION FOR RE-USE, RECYCLING AND OTHER MATERIAL RECOVERY BY 2020 HAS NOT BEEN ACHIEVED WHEN NOT INCLUDING BACKFILLING.
- THE MAIN FORM OF RECOVERY OF CONSTRUCTION AND DEMOLITION WASTE IS THE PROCESSING INTO RECYCLED AGGREGATES OR BULK MATERIAL AND USE FOR BACKFILLING

- **Consolidate methodological evaluation criteria** through the views of academics and practitioners
- **Identify the specific needs of different stakeholders** with regard to circular economy criteria
- **Verify the possible integration of the tool** into stakeholder activities
- **Identify gaps and potential of the tool** in terms of sustainability and circular economy
- **Transfer the expected results of the tool** by stakeholders into the life cycles of buildings or construction solutions
- **Consolidate a network of stakeholders on the topic of circular economy** for further action and research activities

14 Sustainable assessment and certification schemes in construction

9 Standards related to LCA and sustainability in buildings

10 Existing tools and DDBB for CE and sustainability

2 guidelines for pre-demolition audits

17 Policies regulations

6 Indicators of sustainability or circularity

T6.1.2 List of documents to be reviewed

1. Sustainable construction assessment and certification schemes

- 1.1 LEVEL(s) (ICAT) ✓
- 1.2 LEED
- 1.3 BREEAM, (ICAT) ✓
- 1.4 HQE(High Quality Environmental)
- 1.5 [Circular transition Indicators 4.0](#) CVUT - Jan) ✓
- 1.6 ENVISION Protocol (Italferr)
- 1.7 Other national schemes:
 - Czech Republic
 - Spain
 - UK
 - Cyprus
 - Italy
 - Greece
 - China

2. Standards related to LCA and sustainability in buildings and civil engineering works,

- 2.1 CEN TC 350 (Mahmoud)
- 2.2 ISO 14040-44,
- 2.3 ISO 21930,
- 2.4. ISO 21928-2:2023
- 2.5. ISO 21929-1:2011
- 2.4 ISO 15804 (ICAT) ✓
- 2.5 ISO 15978 (ICAT) ✓
- 2.6 ISO 29887 (ICAT) ✓
- 2.7. ISO/PWI 7016 (ITC) ✓
- 2.8 ISO/DIS 59020 Circular economy Measuring and assessing circularity (Italferr)
- 2.9 EN 15643:2021 Sustainability of construction works - Framework for assessment of buildings and civil engineering works

3. Existing tools and databases for Circular Economy and Social Assessment (ITC)

- 3.1 [Katche project tool](#) (ITC) ✓
- 3.2 Social LCA [Hypobrick](#) (ITC) ✓
- 3.3 [Symbinet](#) (ITC) ✓
- 3.4 Circular Start (ITC) ✓
- 3.5 [Circularity Assessment tool](#)
- 3.6 [Circular benchmark tool](#) (CVUT - Jan) ✓
- 3.7 [Measuring the circular economy](#) (Tools shared by EU)
- 3.8 [Circularity](#) <https://ellenmacarthurfoundation.org/resources/circulytics/resources>

3.9 <https://www.altruistiq.com> , <https://www.carbontool.com/home> (Tools/organisation available in the market)

3.10 Circular Building [Toolkit](#)

4. Guidelines for pre-demolition audits and renovation etc.

- 4.1 EU Construction and demolition waste management protocol
- 4.2 Guidelines for the waste audit before demolition and renovation works of buildings

5. Policies, regulations

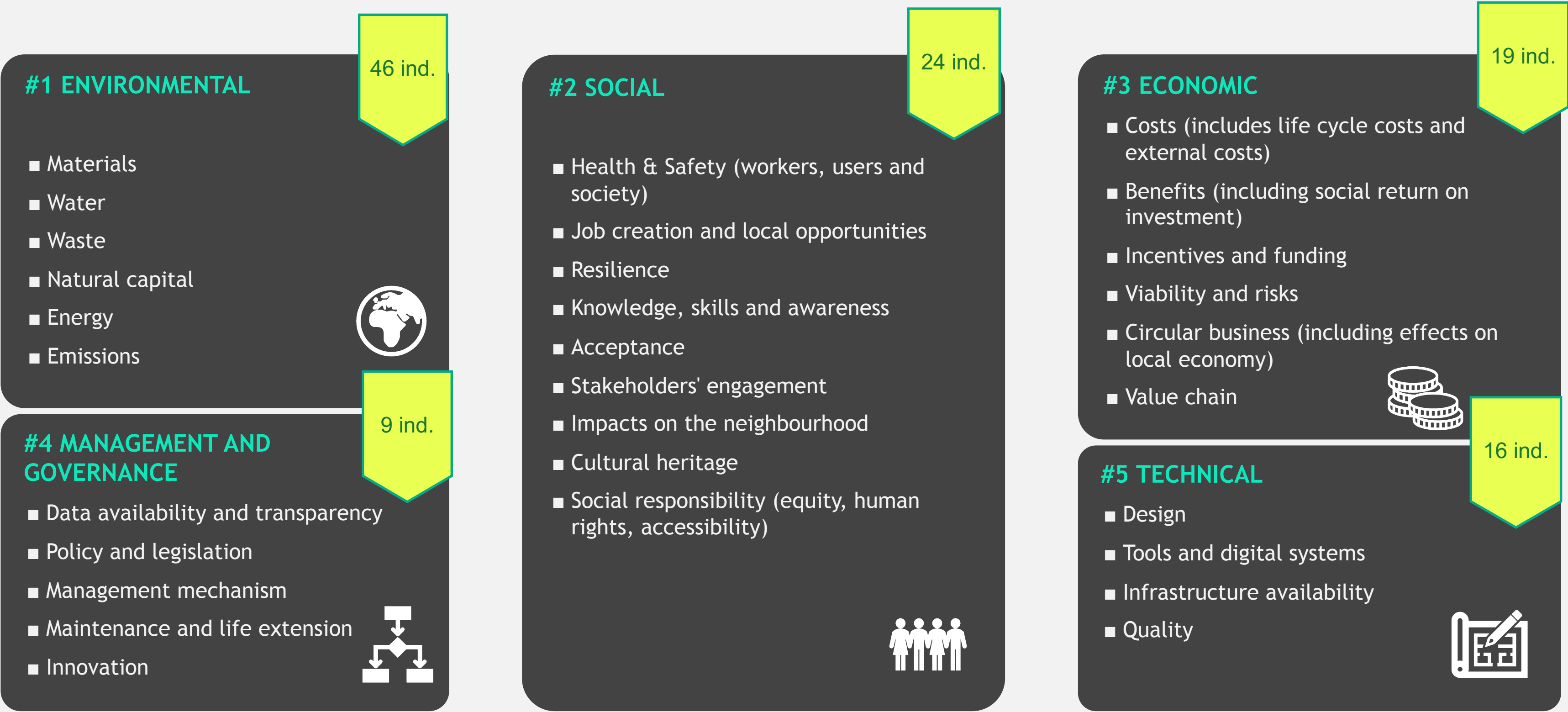
- 5.1 [European waste framework](#) (Mahmoud)
- 5.2 [CE proposal Ecodesign for Sustainable Products and Construction Products Regulation?](#)
- 5.3 EU Circular Economy Action Plan
- 5.4 Circular Economy Monitoring Framework
- 5.5 European Circular Economy Stakeholder Platform
- 5.6 Ecodesign [Directive](#)
- 5.7 European taxonomy (Italferr)
- 5.8 European Green Deal
- 5.9 Product Environmental Footprint (PEF/DAP)
- 5.10 [Waste Framework Directive](#)
- 5.11 Other national schemes:
 - Czech Republic
 - Spain
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6. Best practices

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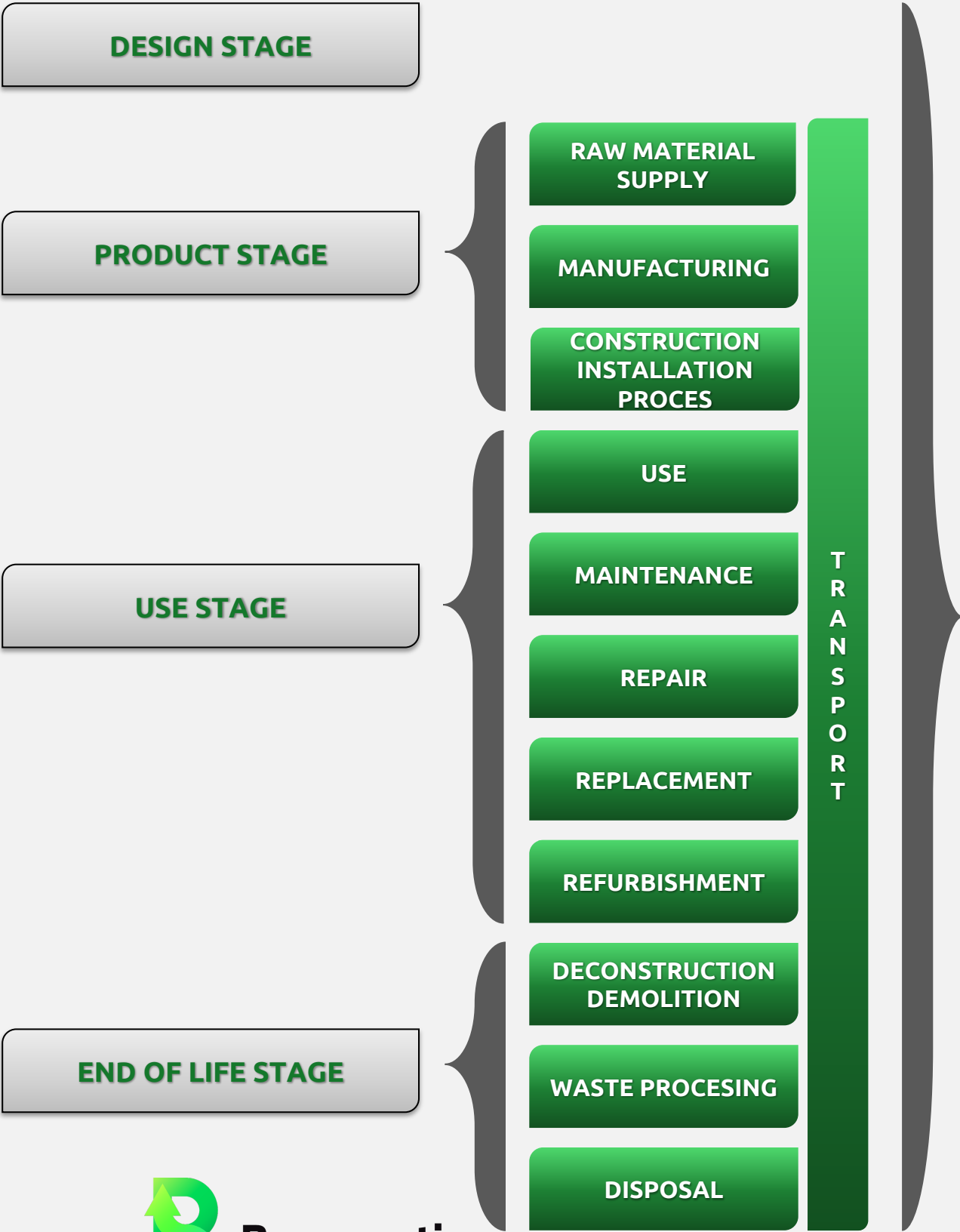
7. Indicators of sustainability or circularity

- 7.1 [Circularity Indicators](#) (Ellen McArthur Foundation and Granta)- (ICAT)¹
- 7.2 How to Assess Product Performance in the Circular Economy? Proposed Requirements for the Design of a Circularity Measurement Framework (Saidani et al., 2017) (ICAT)
- 7.3 Circular economy indicators for buildings and housing (ICAT)
- 7.4 A framework for circular buildings indicators for possible inclusion in BREEAM (ICAT)
- 7.5 The circular built environment playbook (W-GBC) (ICAT)
- 7.6 [Circular Economy Indicators Coalition](#)



Open Day China | Sustainability and circularity assessment | Methodology

Where do I operate?



What do I want to evaluate?

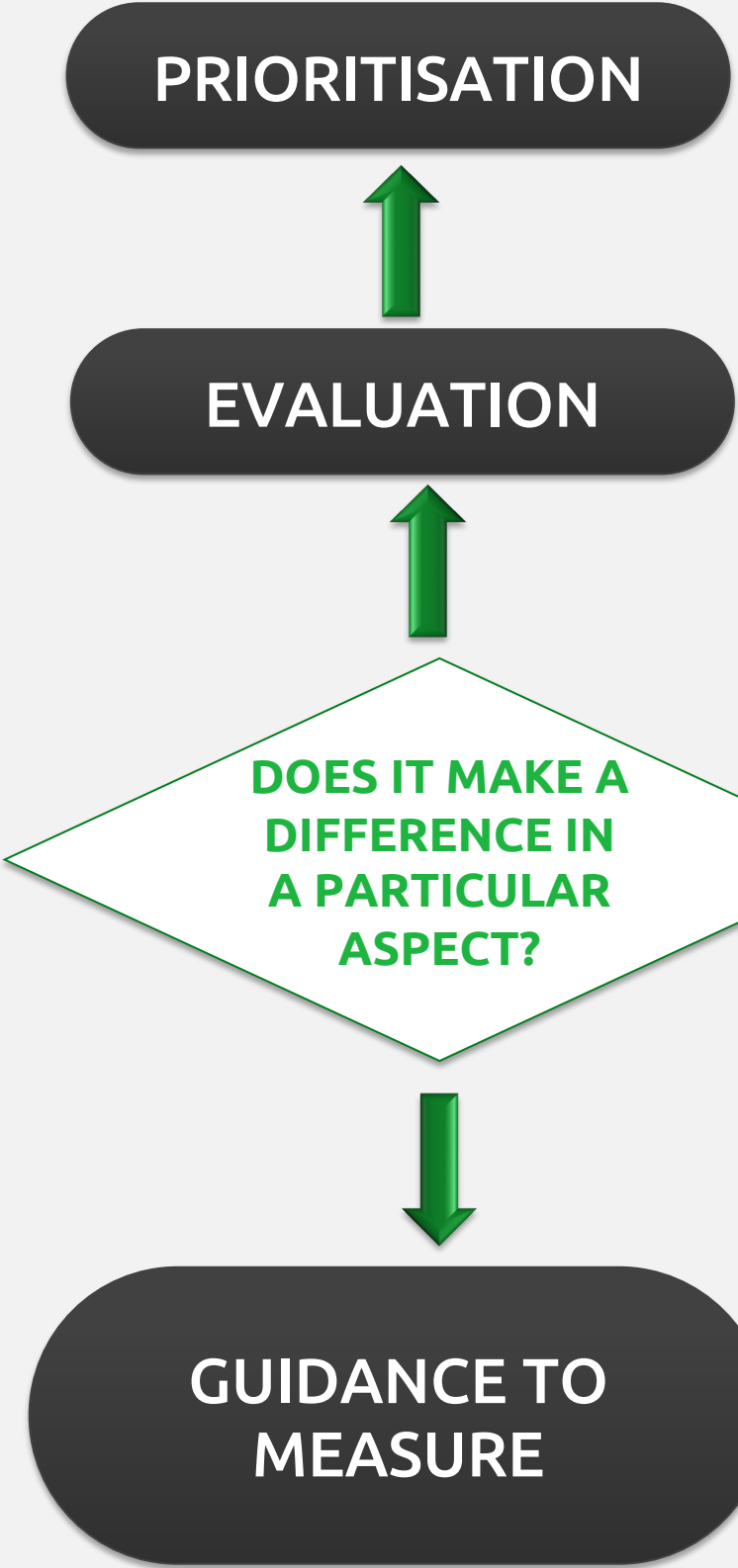
PROCESS /
PRODUCT /
SERVICE /
DEMONSTRATOR

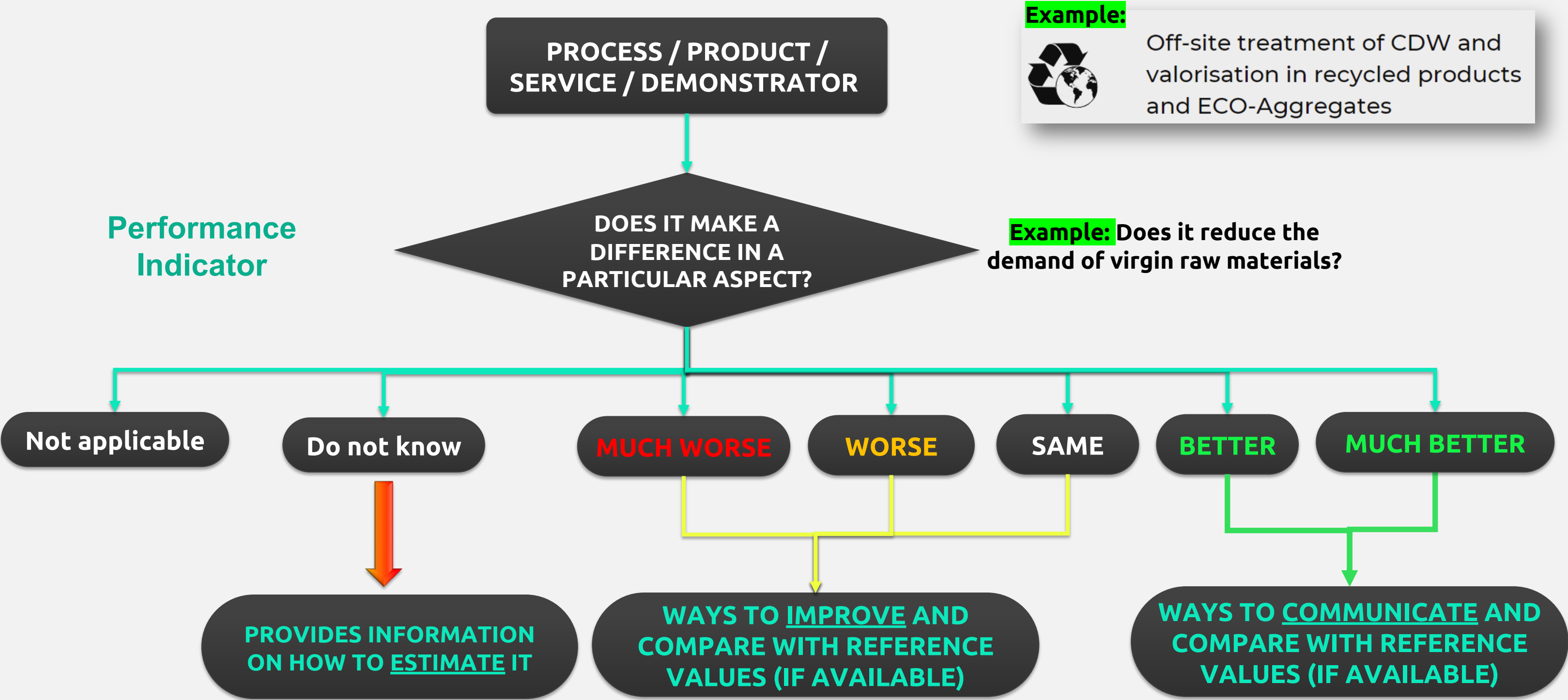
Which are the indicators?

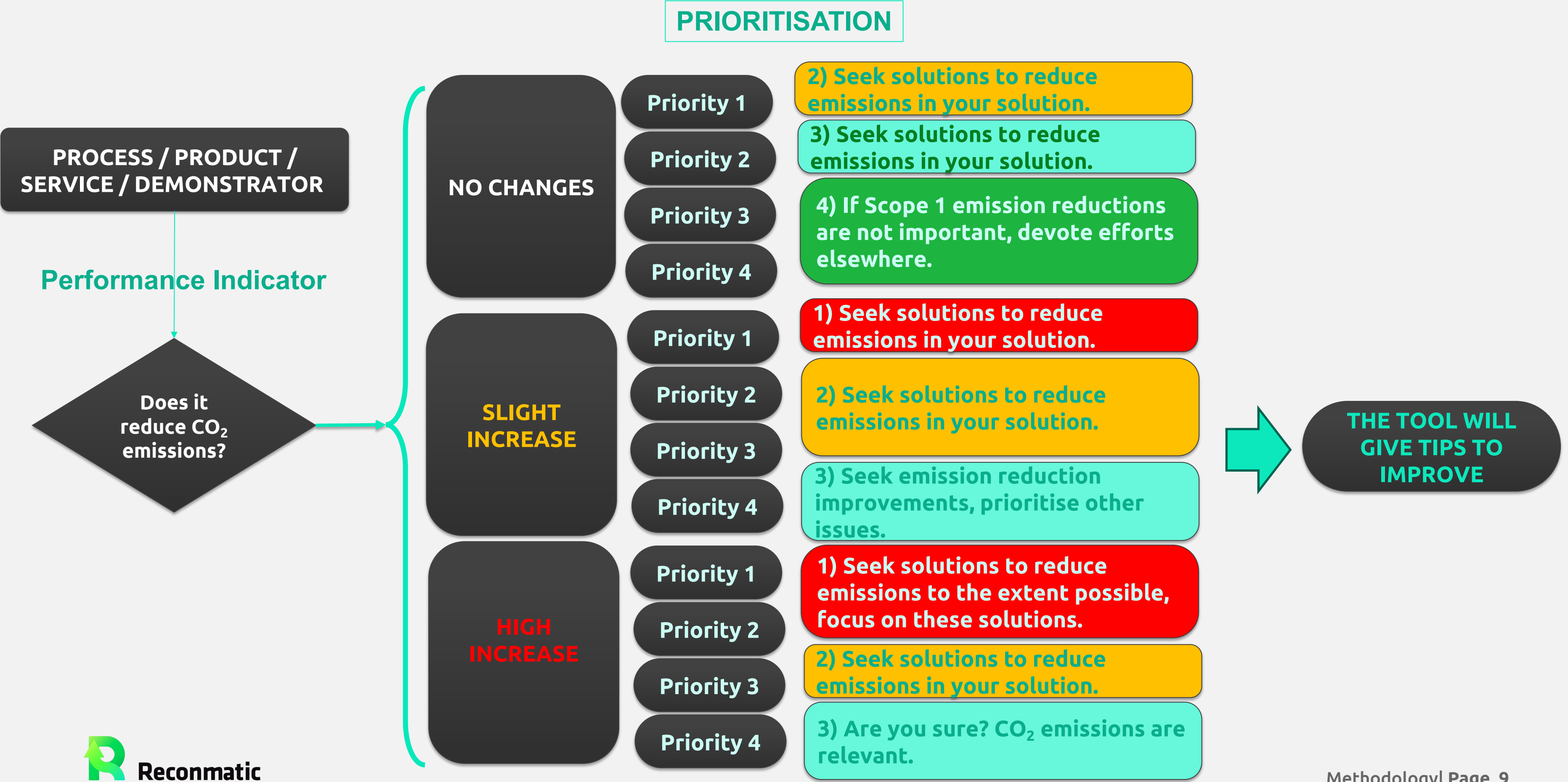
List of applicable indicators
Linked to SDG targets



How to deal with?







Open Day China | National workshops and feedbacks received

Indicators

Add transport-related indicators

Leave room to add customised indicators relevant to user, sustainability and circularity

Need to have benchmarks for indicators - benchmark derived from a reference solution could in many cases be problematic as subjective

Have a small number of indicators

Distinguish indicators that are mandated from those that are not

How is biodiversity considered and assessed in the tool and what indicators are expected in this respect? Do indicators for this already exist?

Can there be a clear link to policy and legislation?

Indicators with specific questions for each stakeholder or leave the same question and a detailed definition per stakeholder?

Include a short and detailed definition of the indicators

Establish recommendations for improvement

Link to policies and legislation

Add consultants as another target group

Adapt tool also for researchers

National Workshop Dates

Country	Date
Spain	16-03-2024
Italy	20-03-2024
Greece / Cyprus	21-03-2024
United Kingdom	16-04-2024
Czech Republic	26-04-2023

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Tool or Methodology

- Define basic training
- Include a glossary of terms
- Define validation criteria
- Connect the tool to other management systems
- Save the assessment so that it can be carried out over several days
- Reduce complexity
- Have a qualitative and descriptive report as a final output
- Test the tool on pilot cases before launching the final version
- Create a communication platform to share results
- Record all evaluations to compare improvements
- Create reports for dissemination
- Develop in languages other than English
- Establish recommendations for improvement
- Link to policies and legislation
- Add consultants as another target group
- Adapt tool also for researchers



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THANK YOU FOR YOUR ATTENTION

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Reconmatic



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