



Life Cycle Initiative



## CPR Brief

# A policymakers' guide to Life Cycle Assessment

<https://www.unep.org/events/webinar/launch-guide-using-life-cycle-assessment-policymaking>

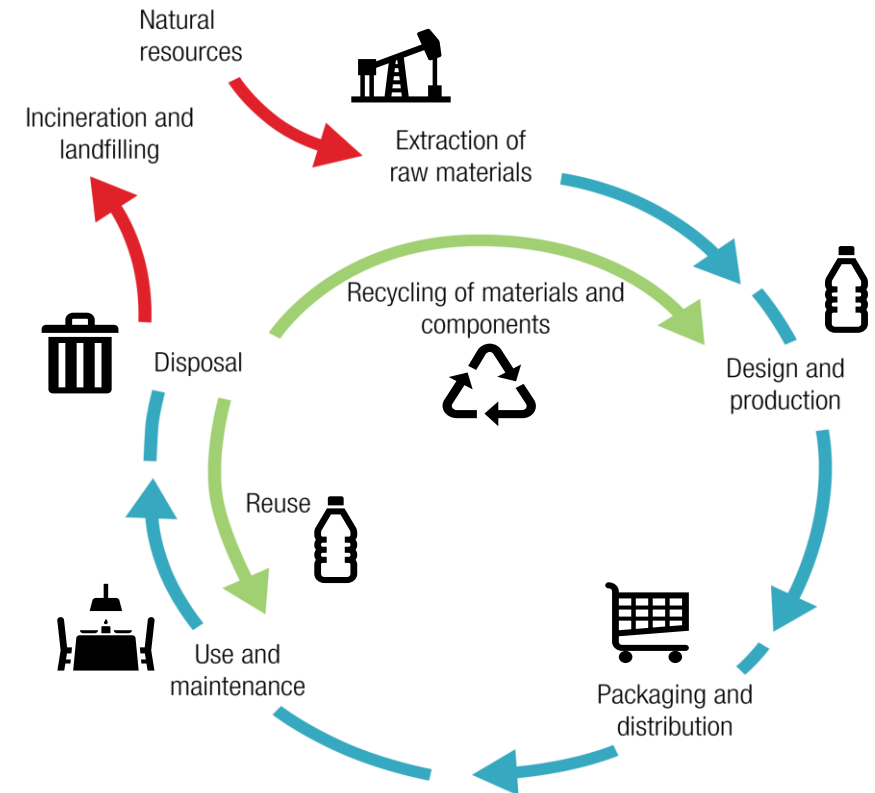
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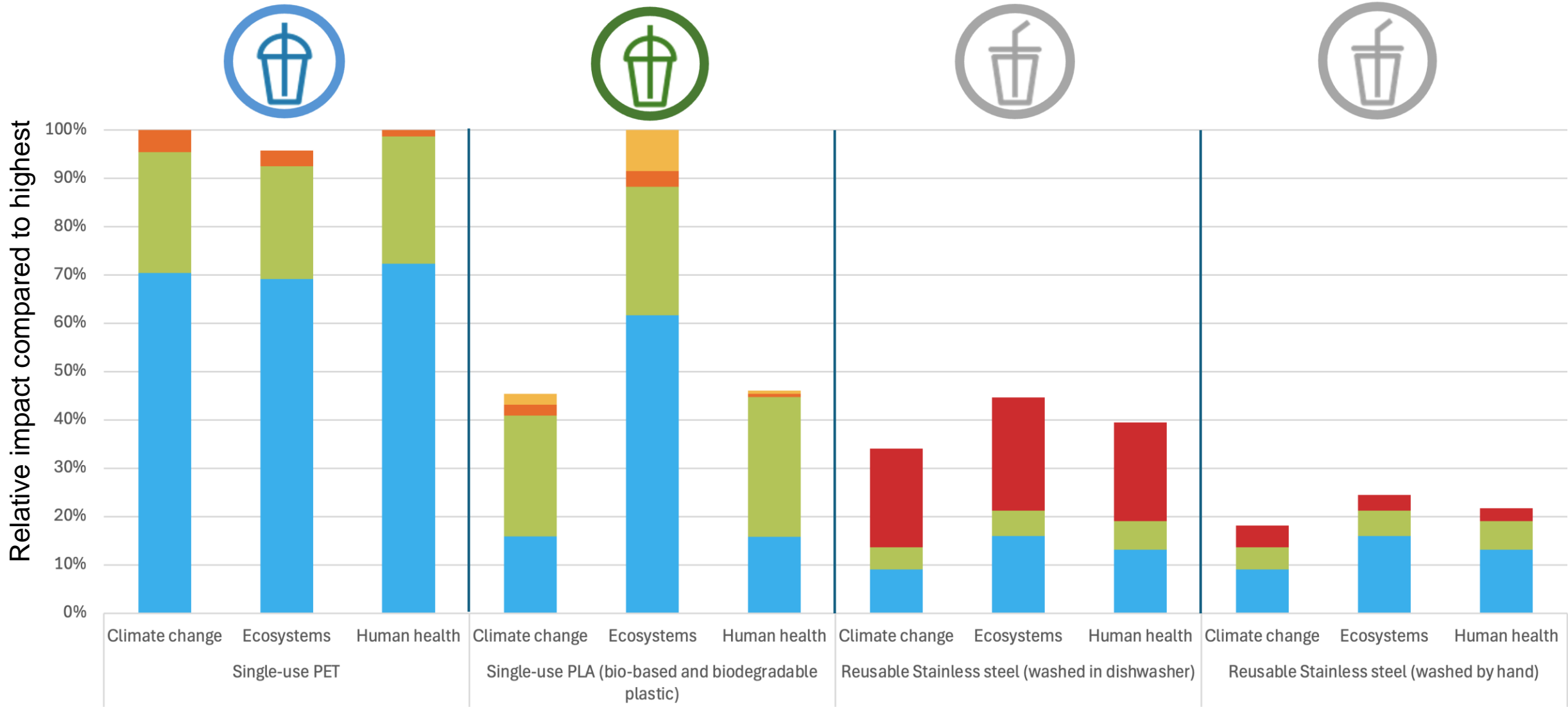
23 January 2025

# Life cycle assessment (LCA)

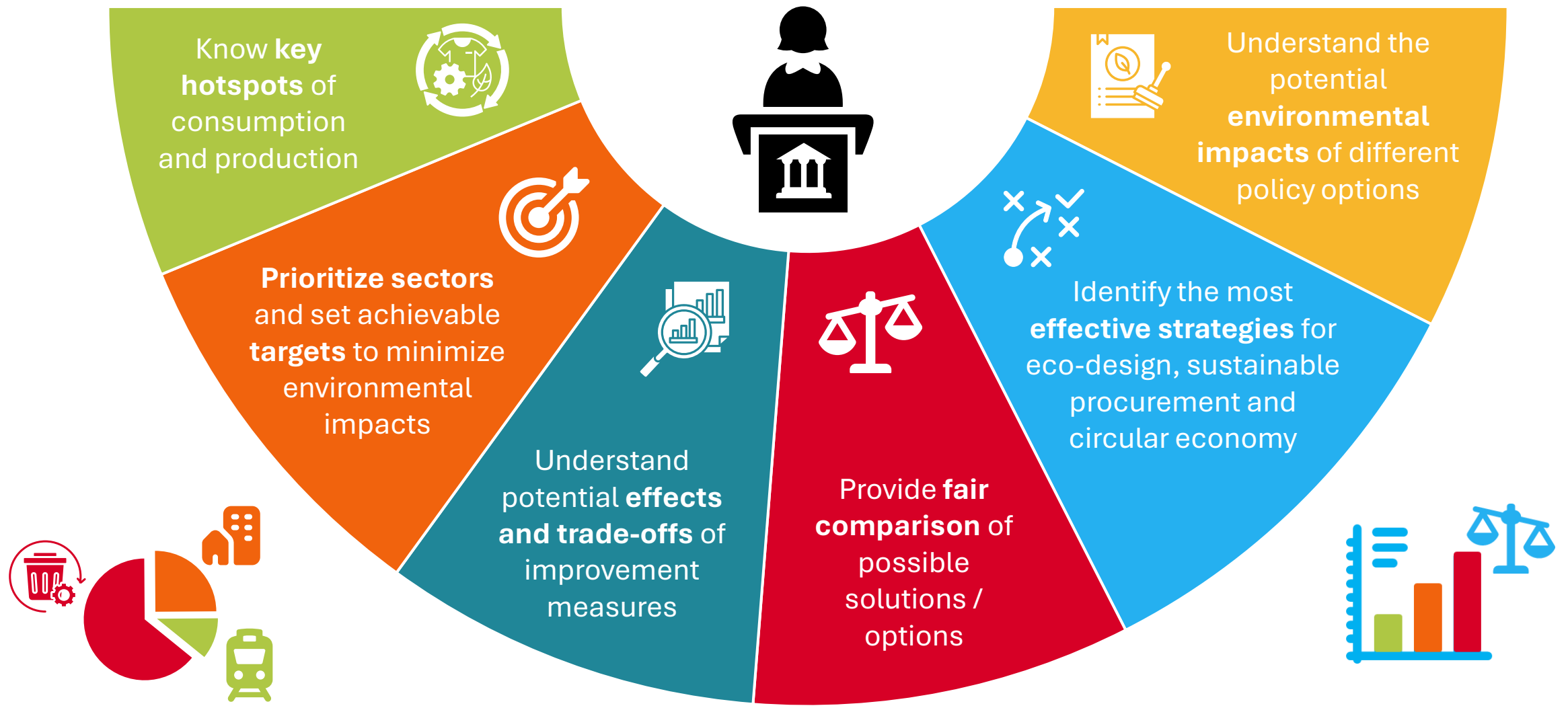
- A **life cycle** is the **consecutive** and **interlinked stages** of a **product system**, from raw material acquisition or generation from natural resources to final disposal (ISO 14040:2006)
- **Life cycle assessment = quantification of impacts = environmental footprints per functional unit**
  - Standardized methodology (ISO 14040 ff)



# LCA is used to compare alternatives, identify hotspots and potential trade-offs



# LCA provides insightful information to policy makers



# Policymakers' teams need capacity to distinguish robust science-based LCAs

See: <https://www.lifecycleinitiative.org/criteria-good-LCA-practice/>



	GOOD PRACTICE	BAD PRACTICE
1 <b>Adherence to recognized standards and methods</b>	Follows recognized standards: ISO 14040 – 14044; PEF/OEF Properly documented	Claims ISO compliance but omits key requirements (e.g. ignores end-of-life stage while comparing SUP vs cloth bag)
2 <b>Goal and scope alignment</b>	Aligned with the intended policy or decision-making context; Compares relevant alternatives	Misaligned scope, leading to inappropriate conclusions (e.g., only comparing single-use products without considering reusable alternatives)
3 <b>Comprehensive-ness of LCA</b>	Covers all relevant life cycle stages and environmental indicators	Only reports carbon footprint, ignoring trade-offs; durable vs. less durable products ignoring differences in use
4 <b>Critical review and transparency</b>	Critical review by an independent third party publicly available Assumptions clearly explained	No review statement, or lack of qualified reviewers Data not shared; assumptions not justified

# Guidance for policy makers to distinguish robust science-based LCAs

1



Adherence to  
recognized  
standards  
and methods

- Check if the study adheres to **recognized standards and methods**, e.g.:
  - ISO standards 14040-14044
  - Environmental Footprint methods
- Adherence to standards enables assessing suitability, but **does not guarantee** the suitability of the LCA study to support a specific policy question

# Guidance for policy makers to distinguish robust science-based LCAs

2



Goal and  
scope  
alignment

- Alignment of the **goal, scope** and **functional unit** of the study with the policy you need to inform
- **Technical, regional** and **temporal context** of the LCA study must fit the policy context
- The **origin of the underlying data** is important to ensure relevance of results

# Guidance for policy makers to distinguish robust science-based LCAs

3



Comprehensive-  
ness of LCA

- Study must include all relevant
  - **life-cycle stages** (e.g., resource extraction, processing and manufacturing, use and end-of-life)
  - **impact categories** (e.g., climate change, human health, resource depletion, ecosystem health etc.)
- Ensure the study does **not overlook important stages** or focus solely on **single scores** which could lead to oversimplified or misleading conclusions



# Guidance for policy makers to distinguish robust science-based LCAs

4



**Critical review  
and transparency**

- Study must be transparent on
  - underlying **methods, assumptions** and **uncertainty**
  - **data sources, data quality requirements** and software
  - alignment with goal and scope
- Have undergone a **critical review process**
  - pay attention to the commissioner of the study
  - look for the **reviewers' statement**
  - include relevant **stakeholders, LCA experts, policymakers** and **sector-product experts**

# How LCA helps / can help further UNEP's delivery

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**Support Policymaking:** Inform Member States of potential environmental impacts of new policies; connect with local LCA experts



**Focus on Key Areas:** Helps identify most impactful sectors / hotspots / drivers / actors to prioritise environmental improvements



**Evaluate Trade-offs:** Appraise benefits / potential trade-offs of solutions (products; systems; technologies; chemicals in products)



**Provide quantitative estimates of benefits from projects:** strengthening project proposals with “environmental return on investment”



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# Thank you!



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