

Joint Research Centre

the European Commission's in-house science service

*Serving society
Stimulating innovation
Supporting legislation*

Life Cycle Assessments for a Circular Economy

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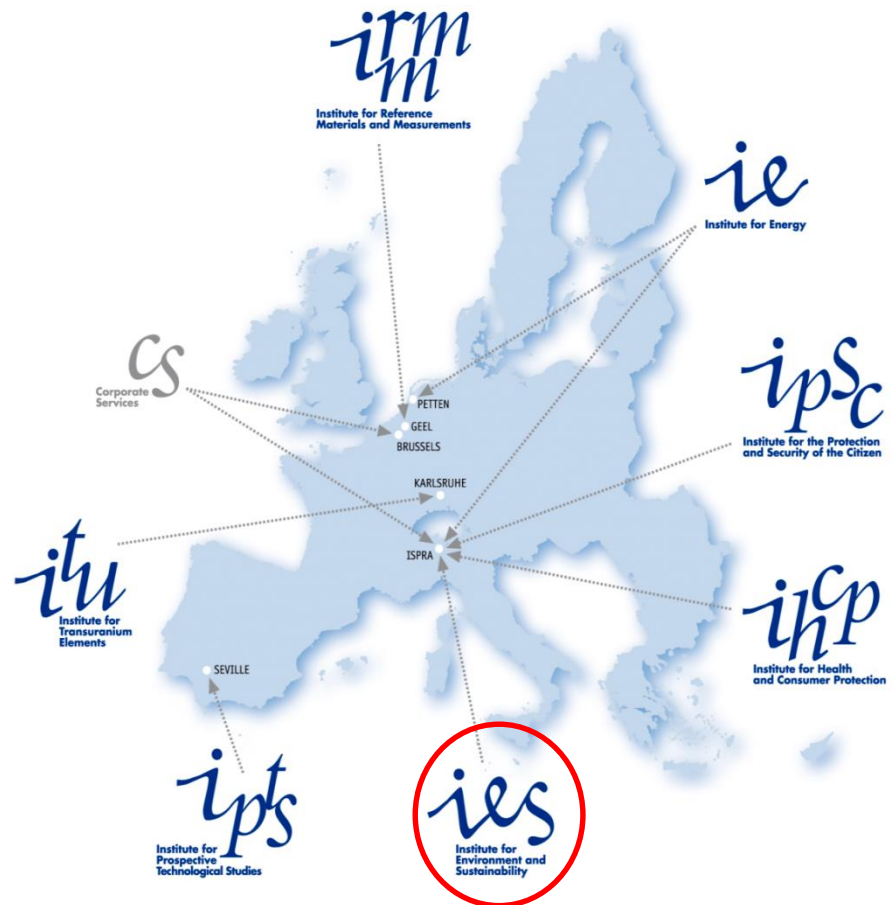
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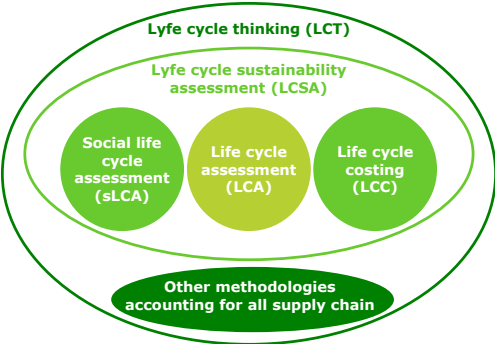


The JRC inside the European Commission

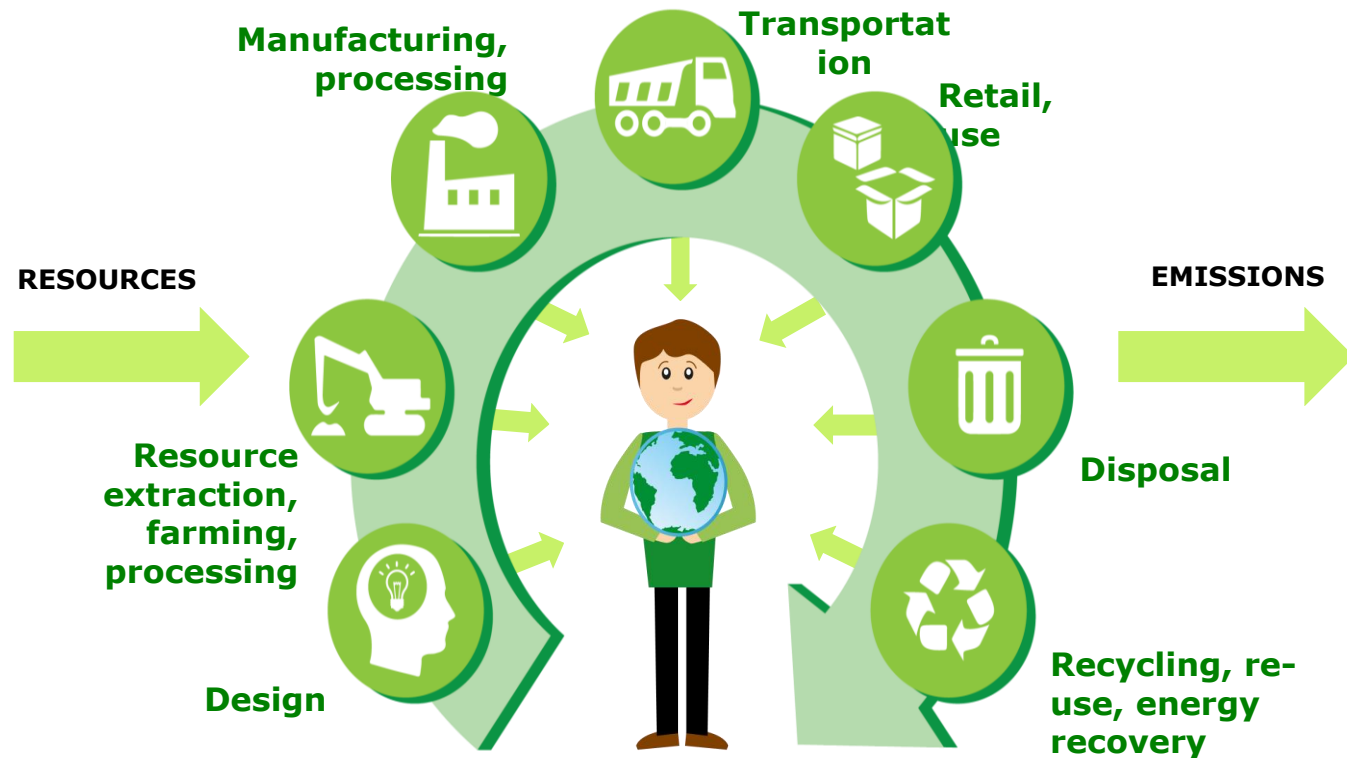
*The **Joint Research Centre** (JRC) is the European Commission's in-house science service. It provides the science evidence for policy decisions, with a view to ensuring that the EU achieves its goals for a productive and competitive economy as well as a fair, secure and sustainable future for its citizen.*



Life Cycle Assessment



- ❑ Core concept for sustainability assessment of goods, services, and organisations
- ❑ Life Cycle Analysis: Better Regulation Tool for EU Impact Assessments, drafted by JRC-IES

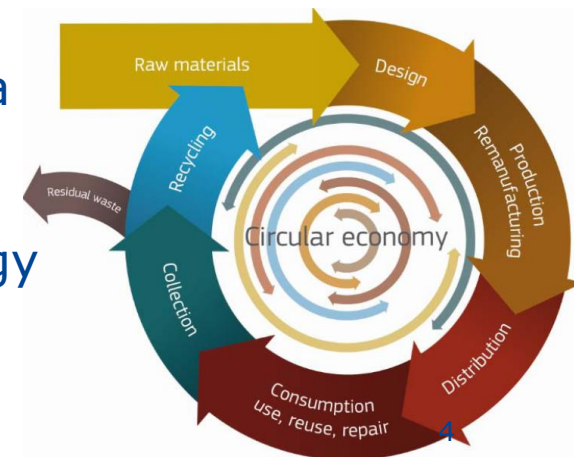


JRC Contributions to the Circular Economy

The concept of the Circular Economy is connected to the principles of life-cycle thinking and of LCA method

JRC is contributing to several initiatives including:

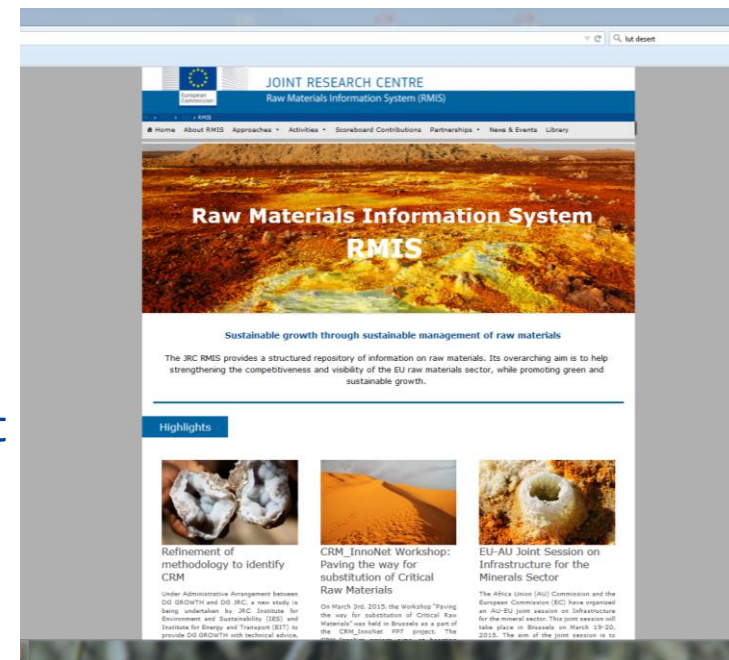
- Support to developing the market for **primary and secondary Raw Materials**, better management of the knowledge base
- Support to the **end-of-life requirements for Ecodesign** and product supply chains policies
- Support to the **management of waste**, seen as a resource for the economy
- Support to **promoting a non-toxic circular economy**, based on standardised LCA methodology applied to product policy - Product Environmental Footprint (PEF)



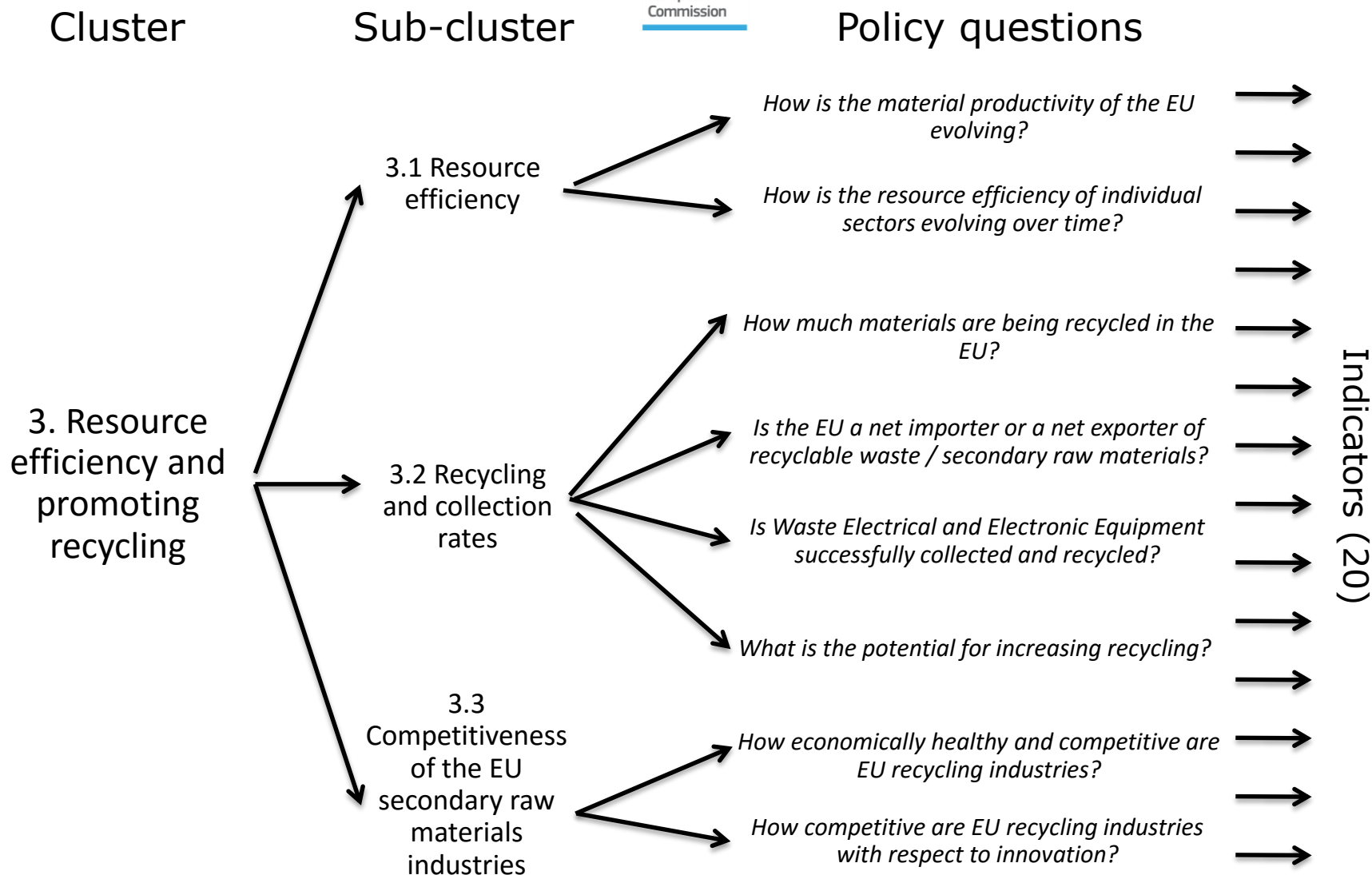
Raw Materials

Support to **EU Knowledge Management on Raw Materials**

- JRC Raw Materials Information System → EU RMKB (Raw Materials Knowledge Base)
- Developing the Raw Materials Scoreboard, as part of EIP RM action plan
- Sustainability Support and Information Centre, partnership with EIT Raw Materials, a European network of business and academia
- Assessment of Critical Raw Materials (CRMs)



Raw Materials EU Scoreboard



Ecodesign

Assessment of Products

Method development and tests in product policies

➤ Comprehensive REAPRo methodology developed since 2010

- Introduces new criteria in assessing end-of-life of products: Re-usability/recyclability/recoverability; durability
- Identifies weak points and increases opportunities

➤ Policy impacts

- ✓ Method partly integrated in 2013 in official EC method for Ecodesign



Results have been used in policy processes since 2012: Ecodesign, standardisation



Ensuring non-toxicity

Need for **policy innovation** and **new overarching methods** to foster **consistency between policies**

- **Substances-related or horizontal policies** (e.g. REACH)
- **Product-related or vertical policies** (e.g. Ecodesign, EU Ecolabel)
- **Waste-related policies** (e.g. End-of-life of Vehicles)

Improvements using the **Environmental Footprint**

- Ensure **consistency in the use of data** in different tools that support EU policies
- **Increase robustness of the underlying data** used in the assessment of chemicals for the Environmental Footprint
- **Create synergies between REACH and other policies** by making broader use of the data that is collected for REACH

Support to the Waste Management objective of Circular Economy

Adapt and apply Life Cycle Thinking (LCT) to various priority waste streams

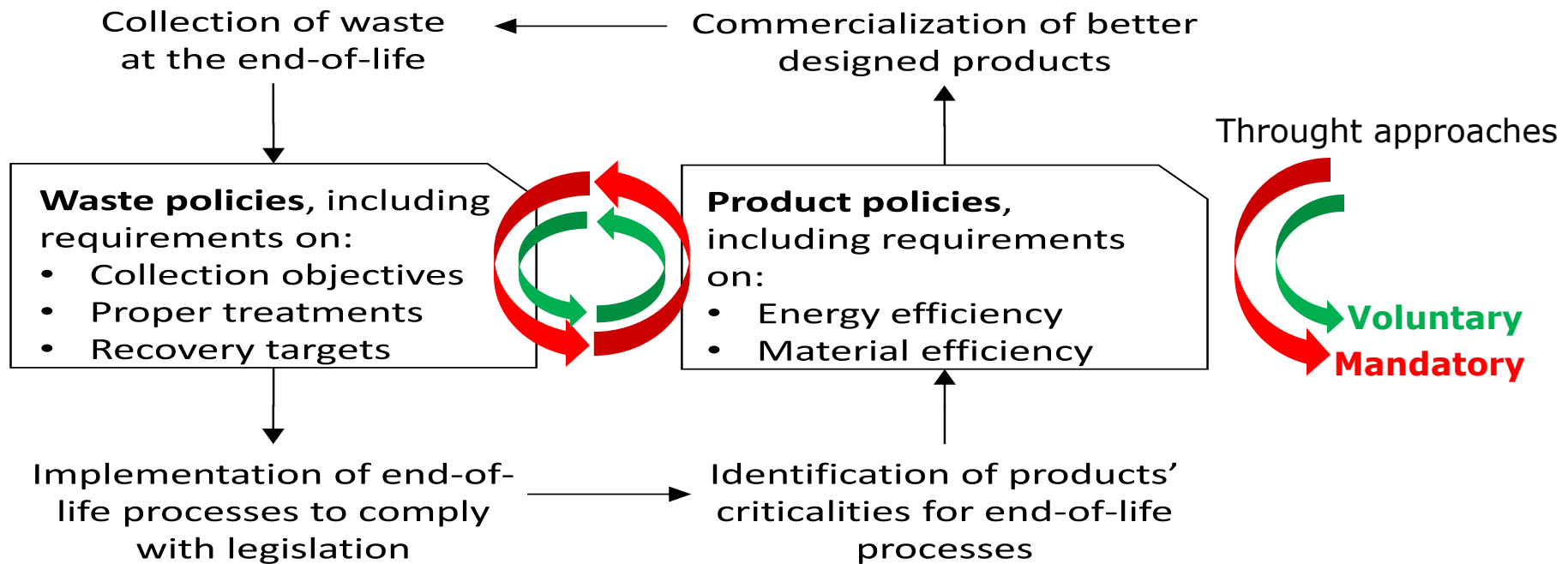
- Support the implementation of Life Cycle Assessment as decision making tool (Waste Framework Directive + CE package)
- LCA-based method to assess **sustainability performance** of food waste supply chains & improvement options
- LCA-based methods to identify sustainable **targets** for waste streams **prevention** & **recycling**



In EU, around 30% of food is lost along the whole supply chain ~ 200kg/year/capita

Implementation of resource efficiency & waste policies

The JRC research focuses on analysing coherence among product policies and searching for potential synergies among product and waste policies.



Approach potentially valid also for other policies (e.g. raw materials, hazards), to increase synergies

International Scientific Conference during EXPO



and



LCA for “feeding the planet and energy for life”

Save the dates **6-7-8 October 2015**

Life cycle assessment represents a reference methodology that may help analyse FOOD supply chains in order to achieve sustainability objectives, including those related to better agriculture and more efficient food production and consumption.



MILANO 2015

Thank you for your attention!

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