# A step forward towards to safe and sustainable by design chemicals and materials

*EMIRI GA 30 March 2023*

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# EU Chemicals Strategy for Sustainability

The Green Deal

*Climate neutrality*

*Zero pollution*

*Circular economy*

5 building blocks

Innovation, competitiveness, recovery

Knowledge and science

Boosting the investment and innovative capacity for safe and sustainable by design chemicals throughout their life cycle

Establish an EU research & innovation agenda for chemicals

Simplification & coherence

Strengthen legislation for better protection

Global

Chemicals Strategy for Sustainability

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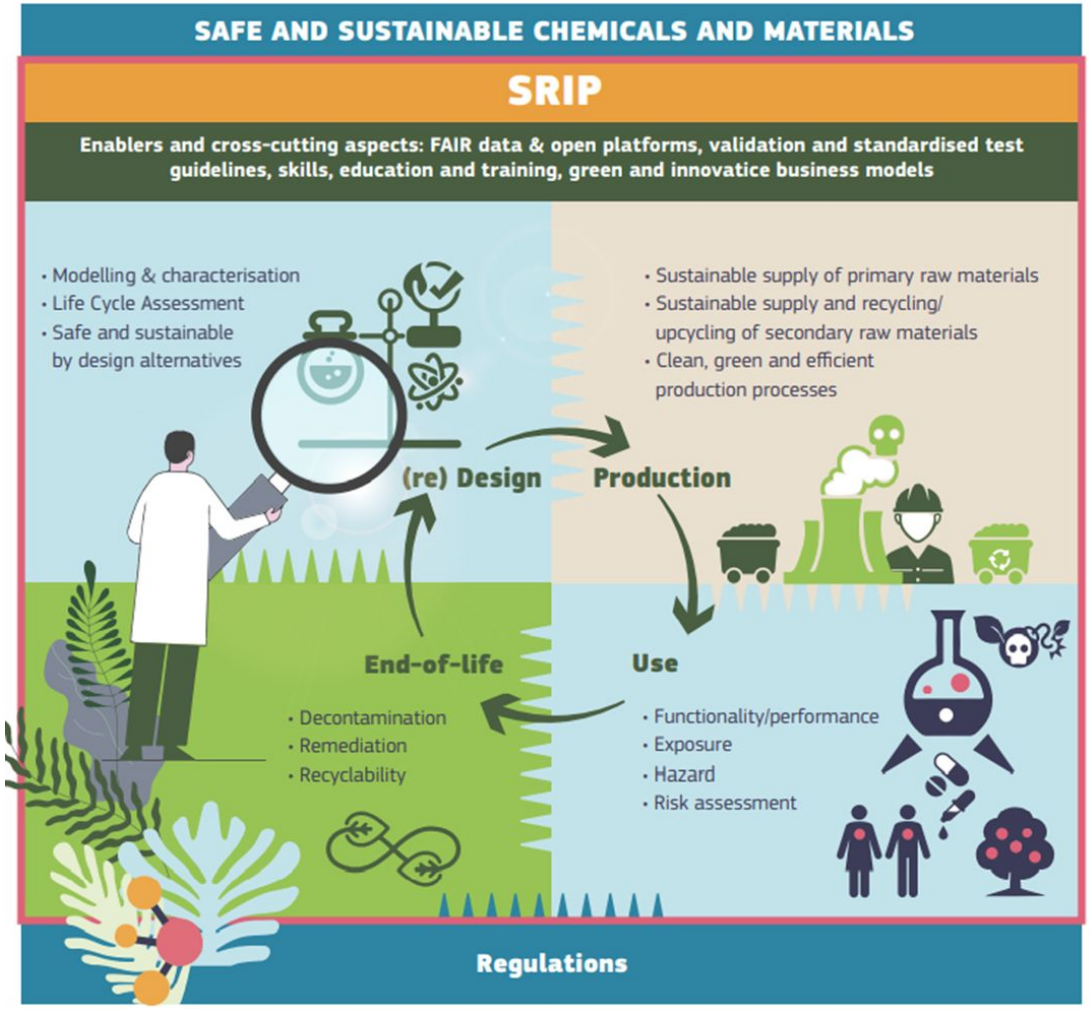
# Strategic R&I Plan for chemicals and materials




- Published in October 22: https://ec.europa.eu/assets/rtd/srip/2022/
- Contributes to the transition to climate neutrality and the zero-pollution ambition
- Highlights the R&I areas crucial for making chemicals and materials safe and sustainable
- Input for different funding programmes (EU, national or industrial)
- Based on extensive consultations with different stakeholder groups – thanks for the contributions!

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# SSbD Recommendation: Purpose and scope

- Proposes a European **framework for 'safe and sustainable by design'** chemicals and materials for **R&I activities on a voluntary basis**.
- Addressed to Member States, industry, academia and research and technology organisations (RTOs).
- The purpose of this Recommendation is to **test the assessment framework** and get feedback to be able to improve relevance, reliability and operability.
- Results obtained from applying the framework will make it possible to **define 'safe and sustainable by design' criteria** to guide the design process.

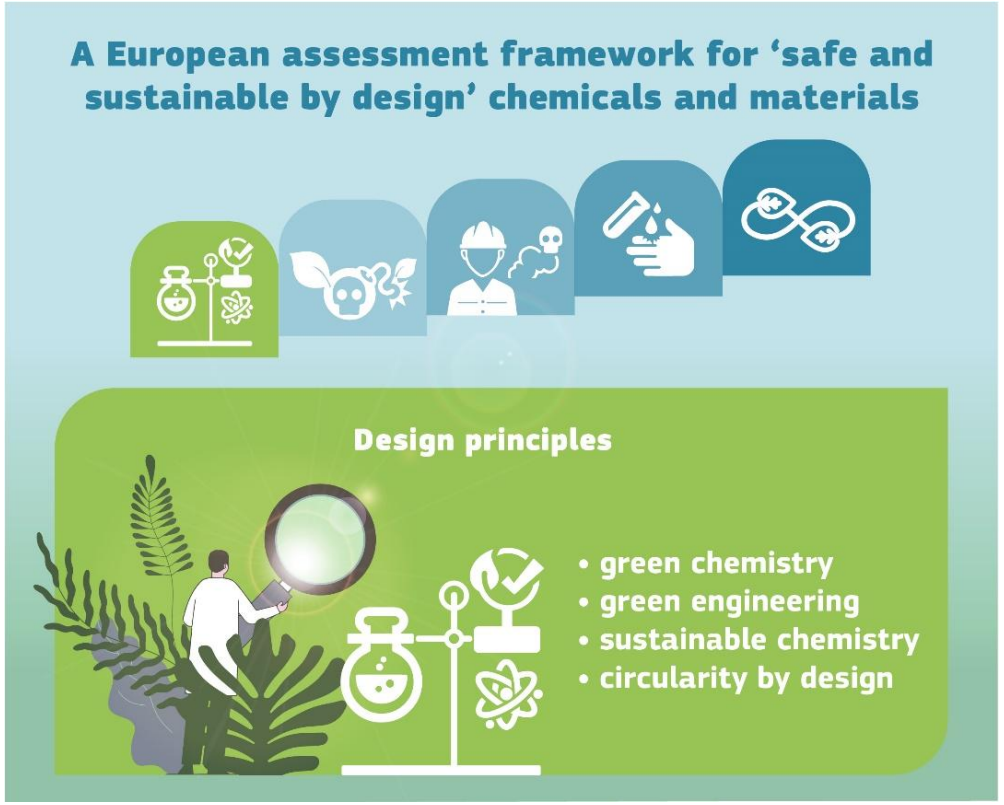
# SSbD framework

**Stage 1**: guiding (re)design principles

- Principles to be considered to maximise the possibilities of a successful safety and sustainability assessment outcome

**Stage 2**: safety and sustainability assessment

- Step 1 - Hazard assessment of the chemical/material
- Step 2 - Human health and safety aspects in the chemical/material production and processing phase
- Step 3 - Human health and environmental aspects in the final application phase
- Step 4 - Environmental sustainability assessment




- The steps can be performed in parallel, as information becomes available at various life cycle stages
- The SSbD framework can help with decision taking during the various stages of the innovation process (design, planning, experimental testing and prototyping).

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# Expected application and impact of SSbD

- **Steering innovation process** towards the green industrial transition
- **Substitute (as far as possible) or minimise the production and use of substances of concern**, in line with and beyond regulatory obligations (existing and upcoming)
- **Minimising the impact on health, climate and the environment** (air, water, soil) during sourcing, production, use and end-of-life of chemicals and materials

☞ **Enabling change through R&I**

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# Important information

- SSbD is an **R&I approach** to promote use of the latest scientific knowledge, **harmonize assessments** and to meet ambitious levels for **safety and sustainability in innovation**.
- SSbD is **voluntary** and promoted **within R&I actions** across EU research programmes, especially Horizon Europe. Member States, industry, academia and RTOs are invited to promote the use of SSbD in innovation.
- **SSbD is neither a regulation, nor mandatory**

# Engagement by Member States

Member States are encouraged to **promote ‘safe and sustainable by design’ related actions in their R&I programmes** and report to the Commission during the testing period.

- Promote the framework in national R&I programmes
- Increase the availability of FAIR data for ‘safe and sustainable by design’ assessment
- Support the improvement of assessment methods, models and tools
- Support the development of educational curricula on skills related to safety and sustainability of chemicals and materials

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# Engagement by industry, academia and RTOs

Industry, academia and RTOs are encouraged to **use the framework in their R&I processes** and report to the Commission during the testing period

- Use the framework when developing chemicals and materials
- Make available FAIR data for ‘safe and sustainable by design’ assessment
- Support the improvement of assessment methods, models and tools
- Support the development of professional training and educational curricula on skills related to safety and sustainability of chemicals and materials

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# EC support

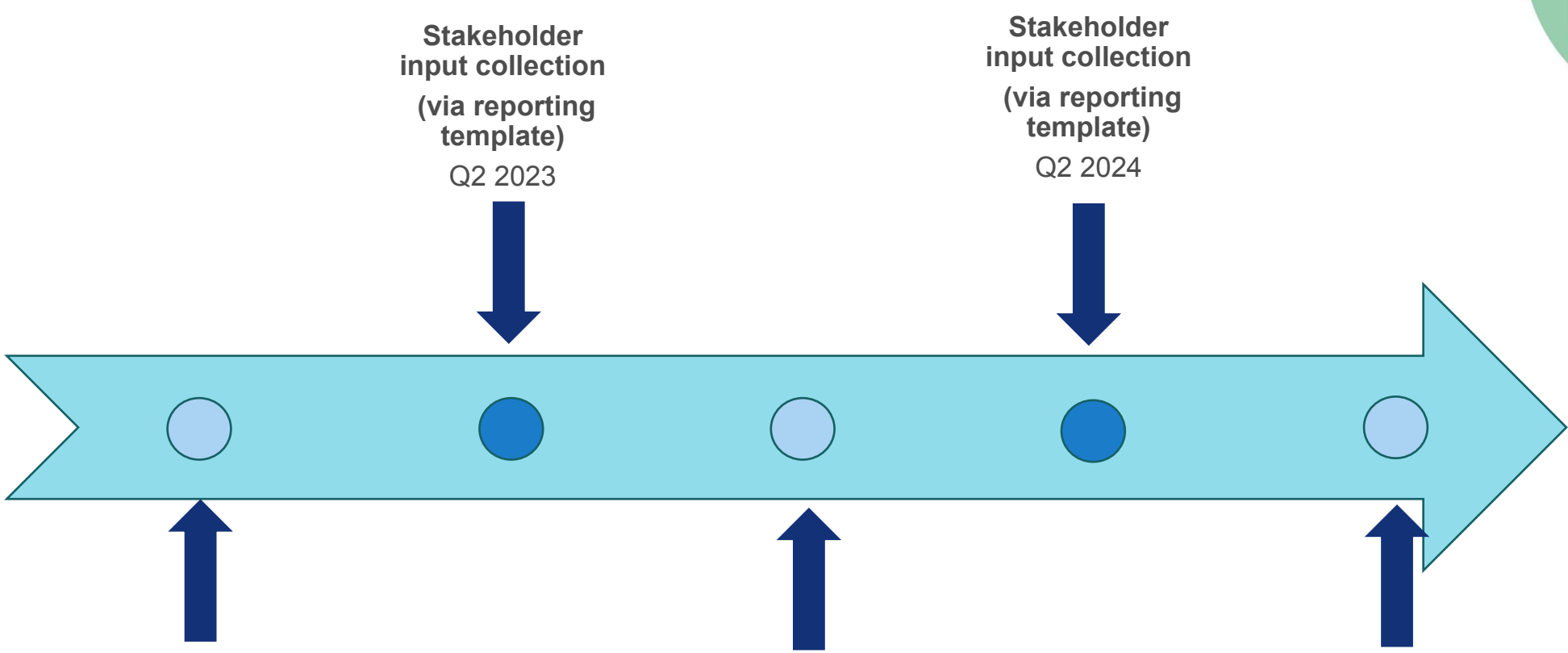
- Methodological guidance from JRC
- Horizon Europe WP 21-22
  - First projects on SSbD materials (EUR 58 million)
  - CSA topic (IRISS - network and roadmaps for value chains)
  - PARC toolbox
- Horizon Europe WP 23-24
  - Four SSbD dedicated topics in CL4 – methods, integrated impact, modelling and development of chemicals or materials. Deadline for 2023 topics: 20 April (EUR 132 million)
  - SSbD framework referred to in CL4 (EUR 130 million), CL5 (EUR 36 million) and CL6 (EUR 33 million) when 'safe and sustainable' chemicals or materials are mentioned
  - Discussions also with JUs Innovative Health Initiative, Circular Bio-based Europe

# Testing period

- A **two years** period to test the framework and collect feedback
- One **stakeholder workshop** per year - Q4 2023 and Q4 2024
- Defined periods to collect stakeholders input via the **reporting template** – Q2 2023 and Q2 2024

- Provide **methodological guidance** and collect input on new/updated assessment methods and data availability
- **2025 start the revision** of the framework and **definition of criteria** to guide the design process of chemicals and materials

# Timeline: 2-year testing period

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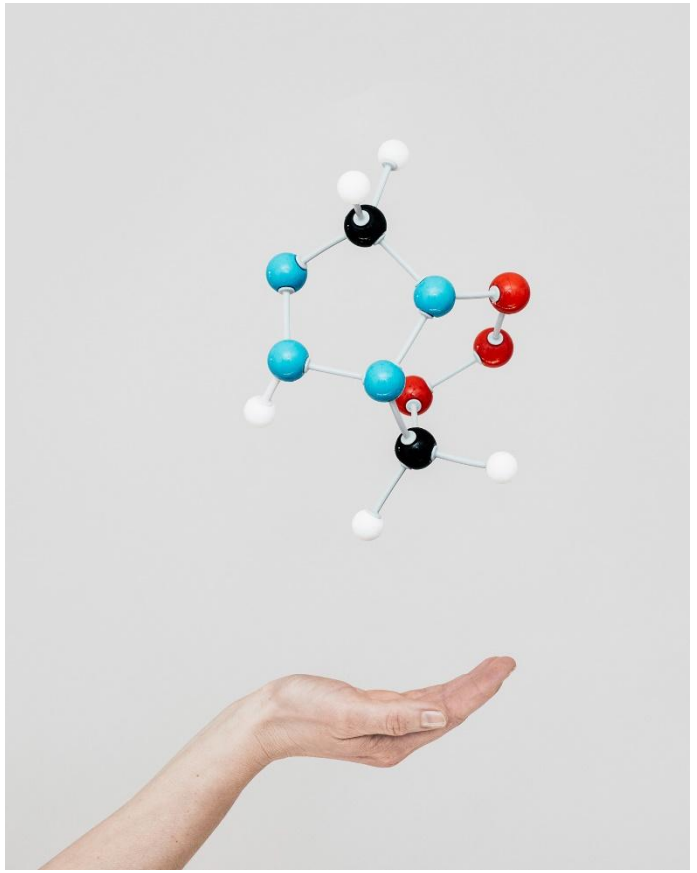
# Lessons learned from first case studies

- The assessment methods proposed in the **SSbD steps can be applied**!
- **Data is the main challenge**!
  - Continue working to make it available for robust assessments in all steps.
  - Commission and stakeholders have an important role in contributing to provide FAIR and quality data.
- **Adapt the assessment steps to each of the innovation stages**.
- **Develop guidance reports for decision making**
  - define SSbD criteria to guide the design process



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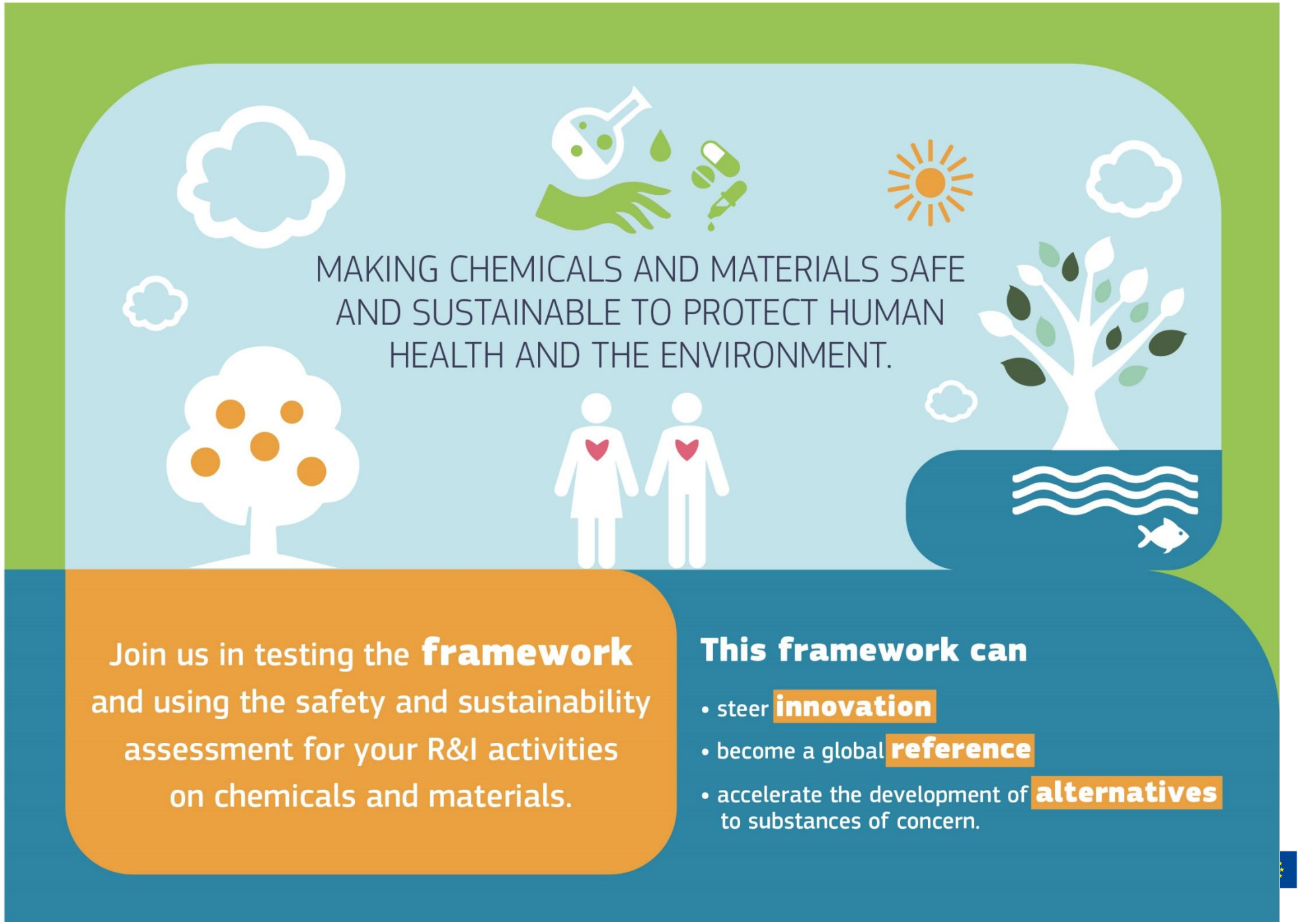
# Incentives

- A **common understanding** on what are sustainable chemicals and materials and how to assess them – a sound scientific base
- Assist in **process and life cycle improvement**
- **Alignment** with other Commission initiatives on sustainability and circularity
- Promote **innovative digital tools** for assessment and design
- Assist in **regulatory preparedness** of developed chemicals and materials

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# Thank you



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