

# EC Safe and Sustainable by Desing Framework

**Irantzu Garmendia Aguirre**, Joint Research Centre

## **13th Venice Training School**

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# The JRC: Science for policy

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# Content

1. **PAST:** Where we come from
2. **PRESENT:** Where we are
3. **FUTURE:** Where we go to



- Green Deal and CSS
- 2022 EC SSbD Framework
- Application to case studies
- The EC Recommendation
- The 1st Methodological Guidance

# SSbD: The policy context

## The EU Green Deal



Zero pollution



Climate neutrality



Circular economy

## Chemicals Strategy for Sustainability (CSS)



*Strengthen the protection of human health and the environment*

driving innovation to design and develop safe and sustainable chemicals and materials

phase out the **most harmful substances** and

substitute, as far as possible, **substances of concern**, and otherwise minimise their use and track them

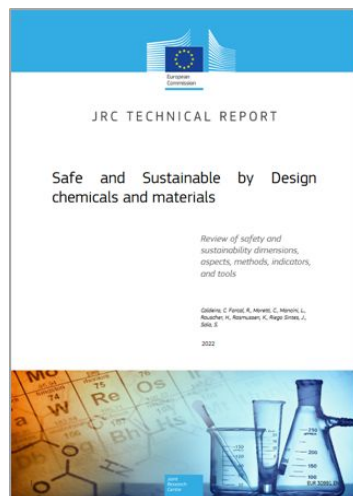
## CSS Action Plan

**Develop safe and sustainable by design (SSbD) Framework**

**JRC**



# SSbD: The Framework



## The Review:

<https://data.europa.eu/doi/10.2760/879069>

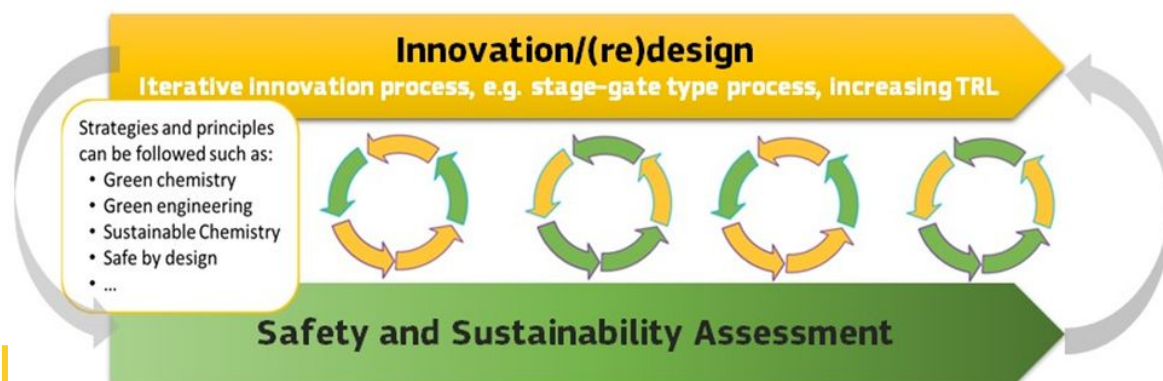
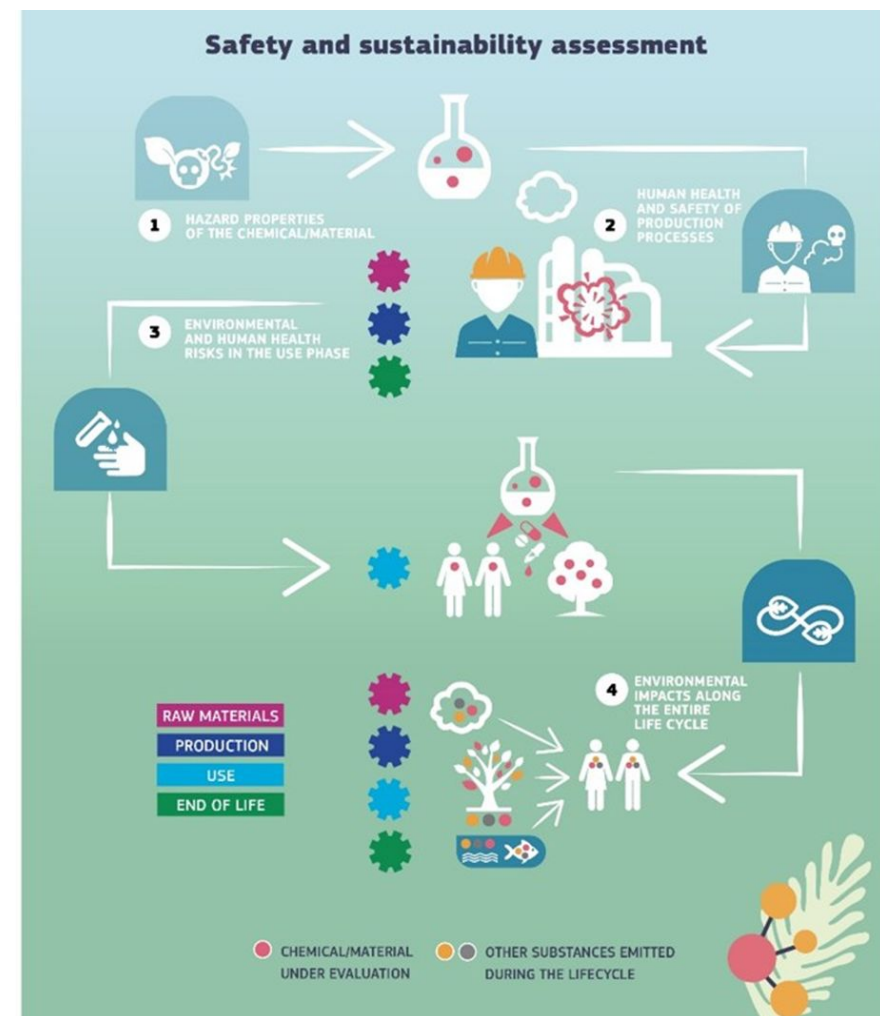


## The Framework:

<https://data.europa.eu/doi/10.2760/487955>

**Safe and sustainable by design can be defined as a pre-market approach to chemicals and materials design.**

*adopting a lifecycle perspective.*



Aspects and indicators

Methodology and tools

Proposal for the definition of criteria

Evaluation procedure



European Commission

# SSbD Framework: Case studies



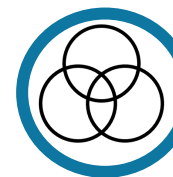
## The case studies:

<https://data.europa.eu/doi/10.2760/329423>

- Case studies to test the framework:
  - Assess the SSbD feasibility
  - Identify the data availability, gaps and needs
  - Methodology/tools
  - Identify overlaps between the steps
  - Provide additional knowledge



Data



Integration



Methodologies  
and tools

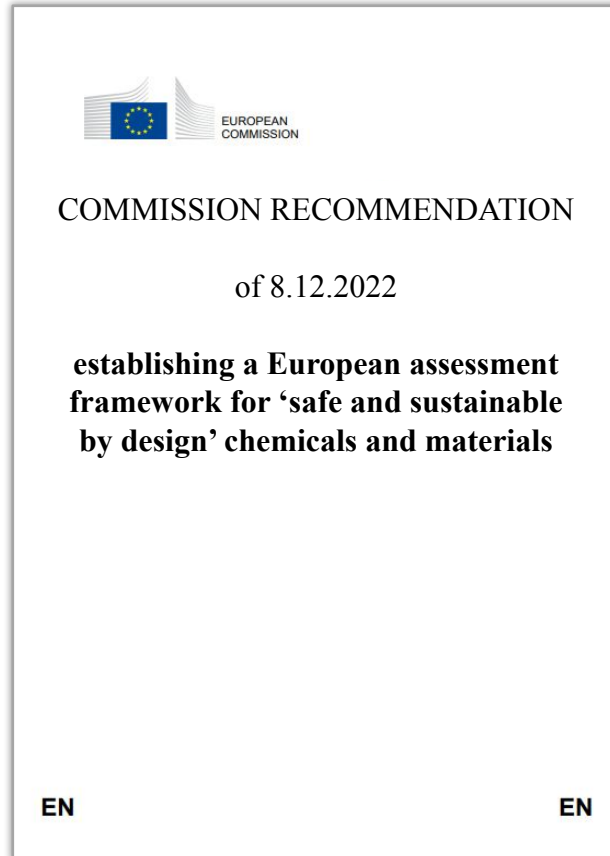


Expertise

SSbD

Definition of the  
SSbD system

# The EC 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).

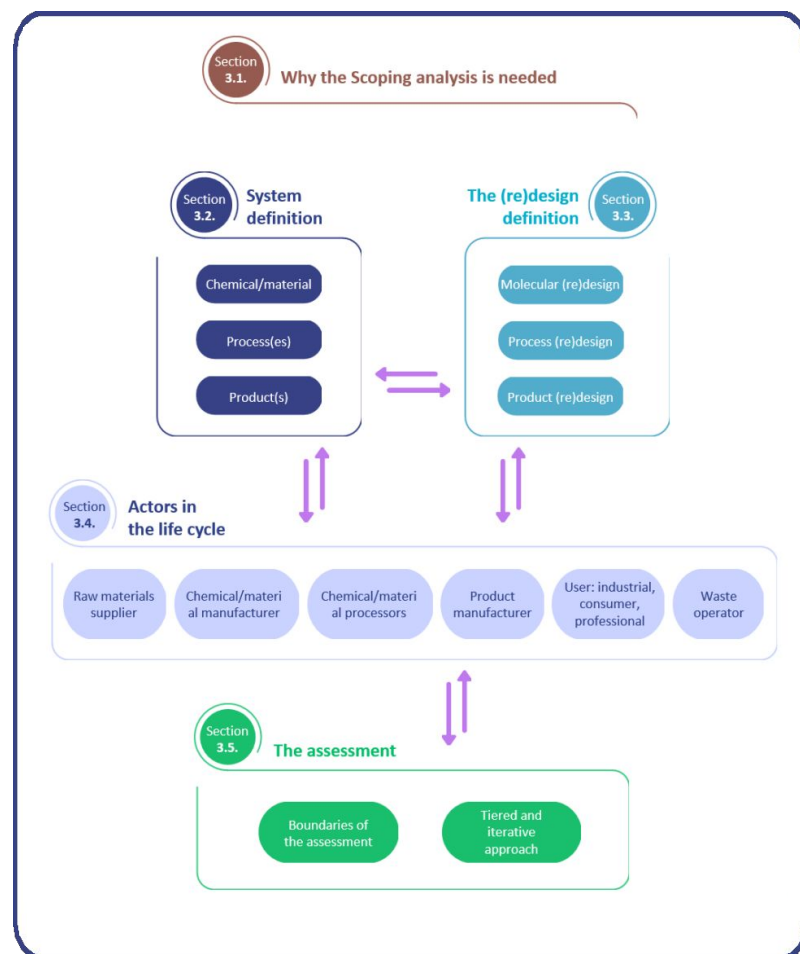
- A **two years** period to test the framework and collect feedback
- Collect input on new/updated assessment methods and data availability
- Provide methodological guidance
- To define 'safe and sustainable by design' criteria.
- 2025 start the revision of the framework to **improve relevance, reliability and operability**.

## The Recommendation:

<https://research-and-innovation.ec.europa.eu/system/files/2022-12/Commission%20recommendation%20-%20establishing%20a%20European%20assessment%20framework%20for%20safe%20and%20sustainable%20by%20design.PDF>



# SSbD: Scoping analysis



It guides in the implementation of the SSbD by answering to:

- System definition: **Why**
- The (re)design definition: **What**
- Actors in the life cycle: **Who**
- The assessment: **How**

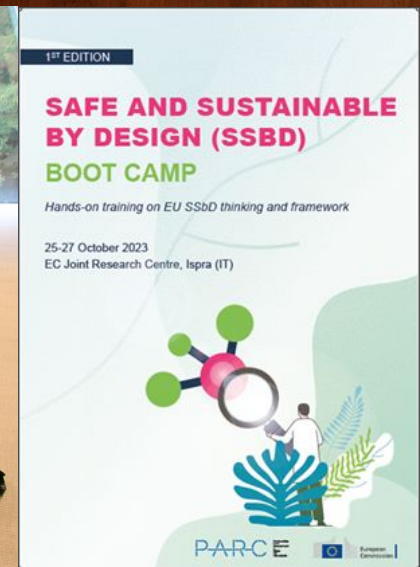
Strengthens the fundamentals:

- With a **life cycle** (value chain) thinking orientation
- **Holistic** approach: Integrating safety and sustainability
- From the beginning to the end of **innovation**

# SSbD: Developments











The Competitiveness Compass

Strengthening Innovation

Revision of the SSbD  
Framework

Closing the loop

# COMPETITIVENESS COMPASS



*Europe must be the place where tomorrow's technologies, services, and clean products are invented, manufactured and marketed, as we stay the course to climate neutrality. A Europe that remains home to cutting-edge scientific and research innovation.*





# Strengthening innovation

Integration of SSbD in innovation

Safety and Sustainability in innovation

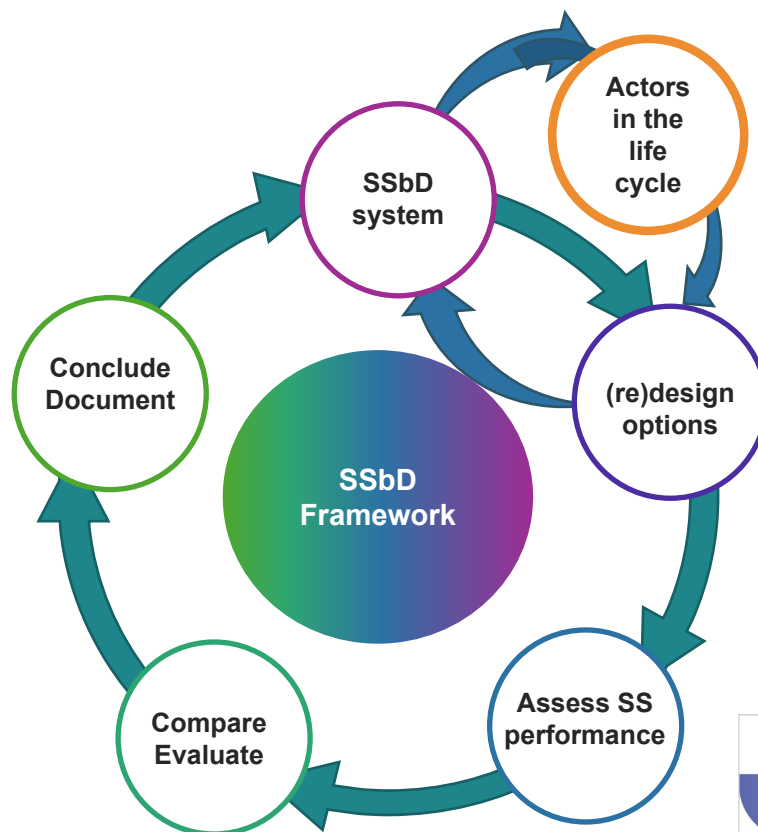
Nature of innovations and approaches to SSbD

# SSbD Framework: Benefits and opportunities

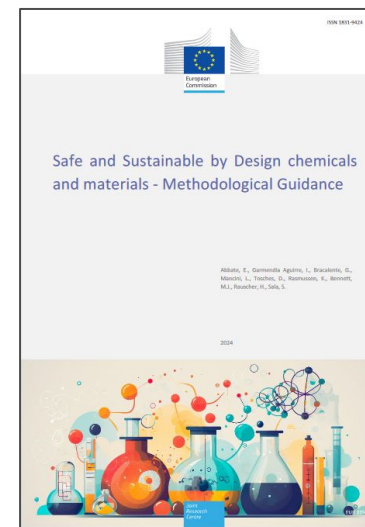
<b>Holistic approach</b>	Provides a broader view on safety and sustainability aspects	Supports the identification of gaps/needs, areas for improvement and potential trade-offs	Support informed decision making	Continuous improvement
<b>Life cycle/Value chain approach</b>	Encourages value chain engagement	Can support early identification of important aspects to be considered along the value chain	Value chain uptake	Strengthens value chain collaboration
<b>Pre-market/R&amp;I approach</b>	Provides a safe space for a trusted environment	Facilitates the dialogue and exchange	Regulatory readiness	Be prepared to tackle future needs

# SSbD Framework: Closing the loop

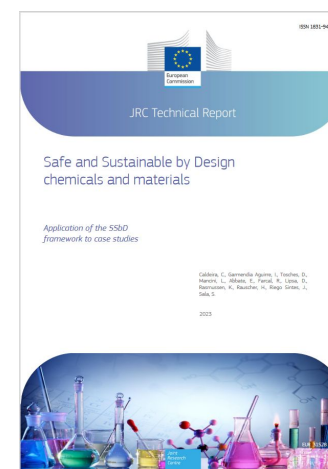
## Scoping analysis



The case studies:  
<https://data.europa.eu/doi/10.2760/329423>



The Methodological guidance:  
<https://data.europa.eu/doi/10.2760/28450>



The Framework:  
<https://data.europa.eu/doi/10.2760/487955>

# SSbD: Fundamentals

- SSbD is a **R&I** approach
- SSbD is a **life cycle** approach
- SSbD is an entire **value chain (life cycle)** effort and responsibility.
- SSbD is an **approach to support the (re)design** of chemicals and materials, processes and products.
- SSbD is an **integrative/holistic** approach.
- SSbD is an **iterative** process.
- SSbD is a **tiered** Process
- SSbD is implemented in a **transparent and traceable** manner.
- The SSbD is an approach for **continuous improvement**.



- Consultation
- 3<sup>rd</sup> Edition of the SSbD Bootcamp
- 6<sup>th</sup> SSbD Stakeholder workshop
- New Recommendation
- Methodological Guidance
- And more



# Safe and Sustainable by Design (SSbD)

A paradigm shift in the way innovation is done



For more information about SSbD: [Safe and sustainable by design \(europa.eu\)](https://europa.eu)

For updates on SSbD: [RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu](mailto:RTD-SUSTAINABLE-BY-DESIGN@ec.europa.eu)

Information about the testing period/reporting template:

Information/applications to the Boot Camp:



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