SAFE AND SUSTAINABLE BY DESIGN:

FUNCTIONALITEIT, VEILIGHEID EN DUURZAAMHEID IN DE ONTWERPFASE

EEN KANS VOOR DE ARBEIDSHYGIËNIST?

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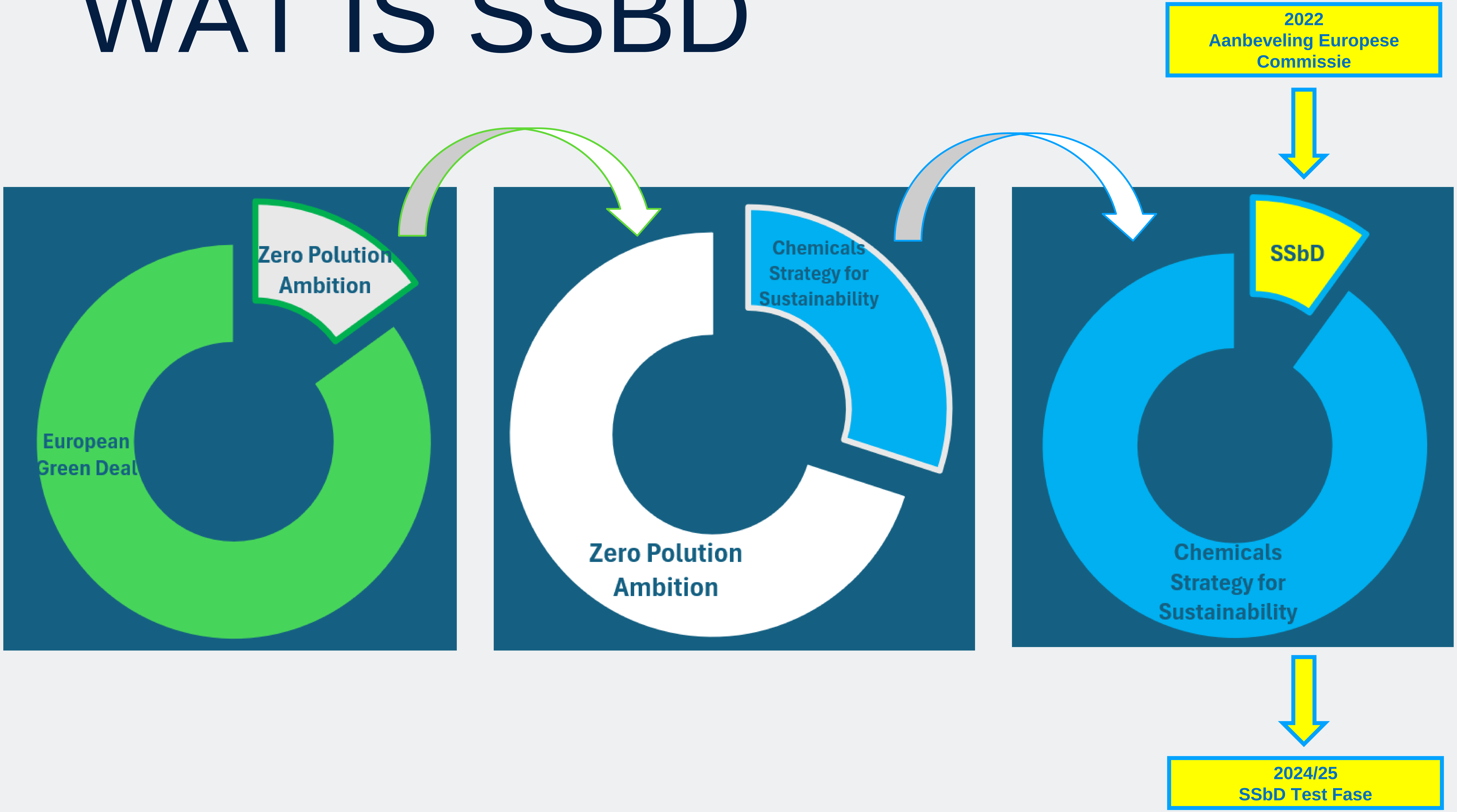
INHOUD

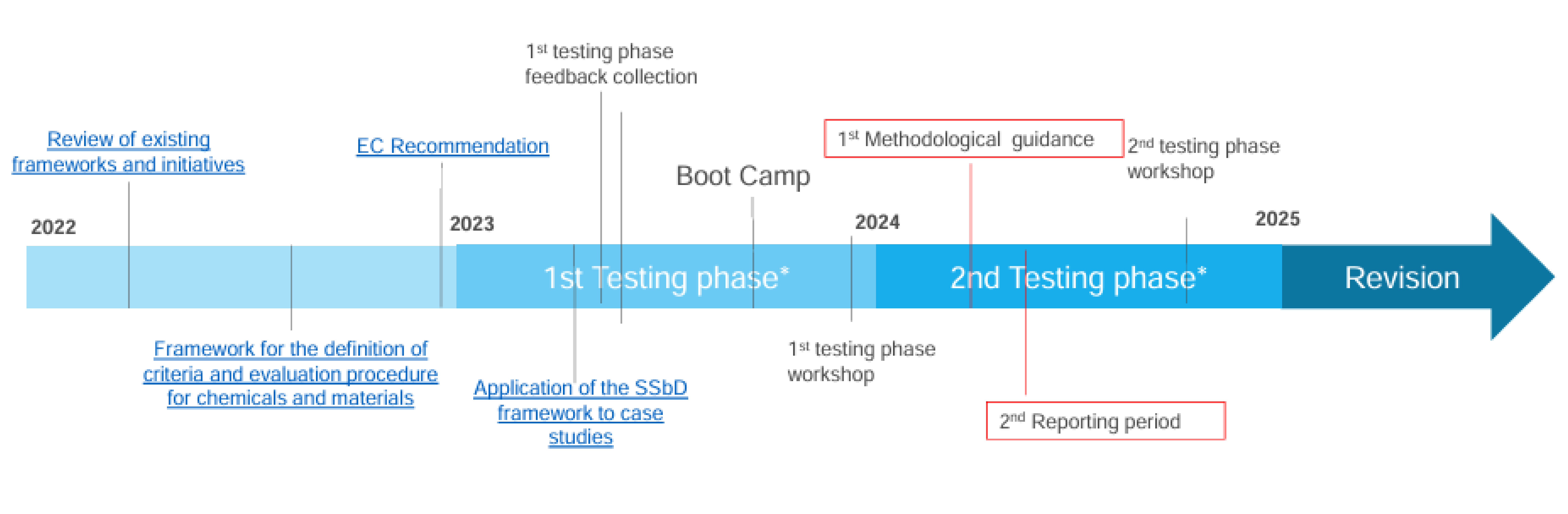
- ✓ Wat is Safe and Sustainable by Design?
- ✓ Safe and Sustainable by Design: kansen en uitdagingen
- ✓ Waarom is dit interessant voor de arbeidshygiënist?
- ✓ Safe and Sustainable by Design informatiekaart

WAT IS SSBD

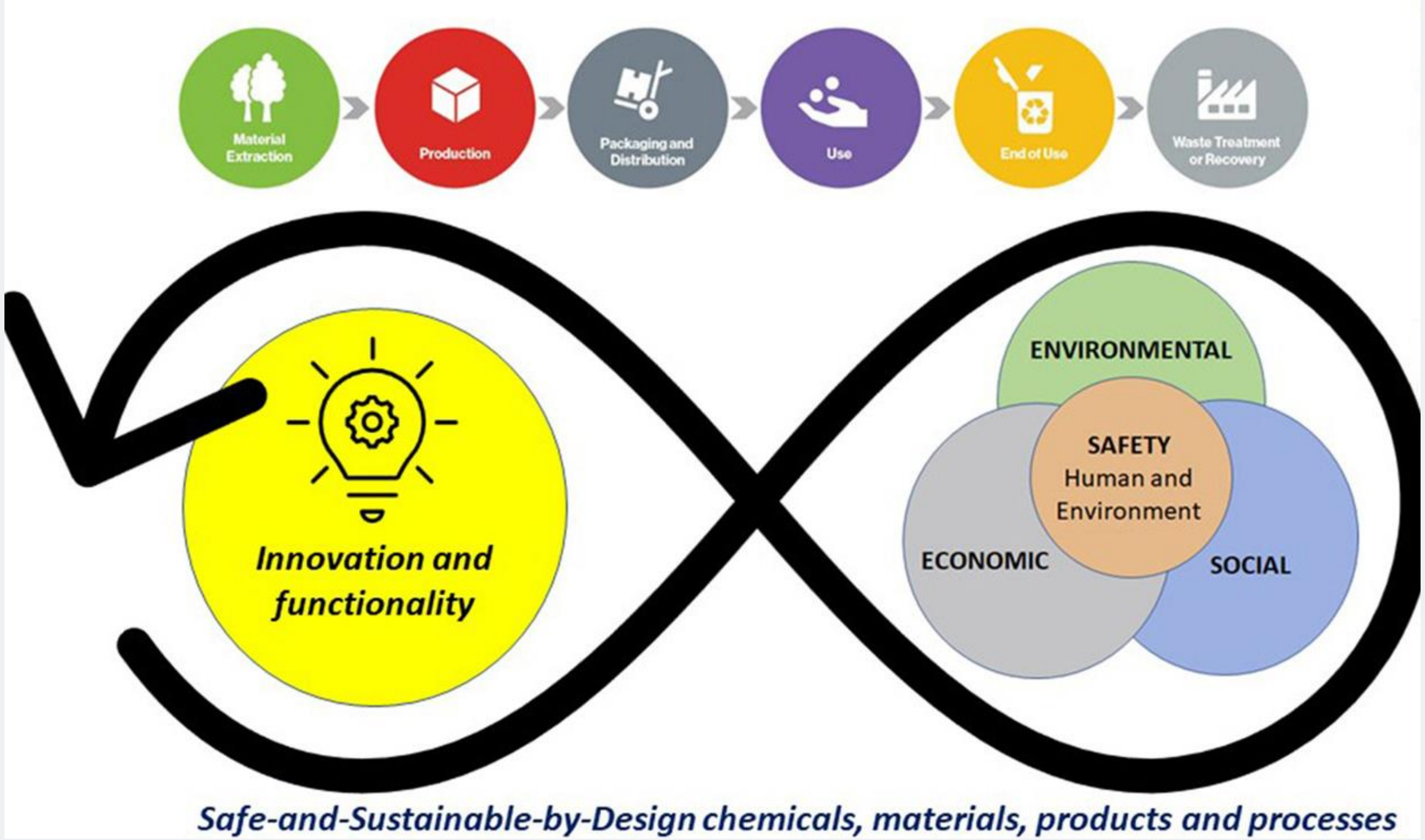


https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/chemicals-and-advanced-materials/safe-and-sustainable-design_en

WAT IS SSBD


1st testing phase feedback collection
Review of existing frameworks and initiatives
EC Recommendation
Boot Camp
1st Methodological guidance
2nd testing phase workshop
2022
2023
2024
2025
1st Testing phase*
2nd Testing phase*
Revision
Framework for the definition of criteria and evaluation procedure for chemicals and materials
Application of the SSbD framework to case studies
1st testing phase workshop
2nd Reporting period

WAT IS SSBD



- ✓ Pre-market
- ✓ Vrijwillig
- ✓ Holistisch

https://www.sciencedirect.com/science/article/pii/S2452223623001244

STEP I: (RE)DESIGN

❑ Goal(s) of the innovation

➢ Level(s) of the (re)design

Molecular: design of new chemicals and materials based on the atomic level description of the molecular system. This type of design effectively delivers new chemicals and materials.

Product: design of the product in which the chemical/material might be used with a specific function that will eventually be used by industrial workers, professionals or consumers.

Process: design of new or improved processes. Process design does not change the intrinsic properties (e.g. hazard properties) of the chemical or material, but it can make the production and processing (including the End of Life) safer and more sustainable (e.g., via more energy-efficient or resource-efficient production process, and/ or minimizing the use of hazardous substances in the process). The process design includes upstream steps, such as the selection of the feedstock.

➢ Implementation of design principles

SSbD1	Material efficiency
SSbD2	Minimise the use of hazardous chemicals/materials
SSbD3	Design for energy efficiency
SSbD4	Use renewable sources
SSbD5	Prevent and avoid hazardous emissions
SSbD6	Reduce exposure to hazardous substances
SSbD7	Design for end-of-life
SSbD8	Consider the whole life cycle
Others,	**based on specific sector under consideration and the particular application**

Selection of indicators and **actions** that describe the performance and implementation of the selected design principles.

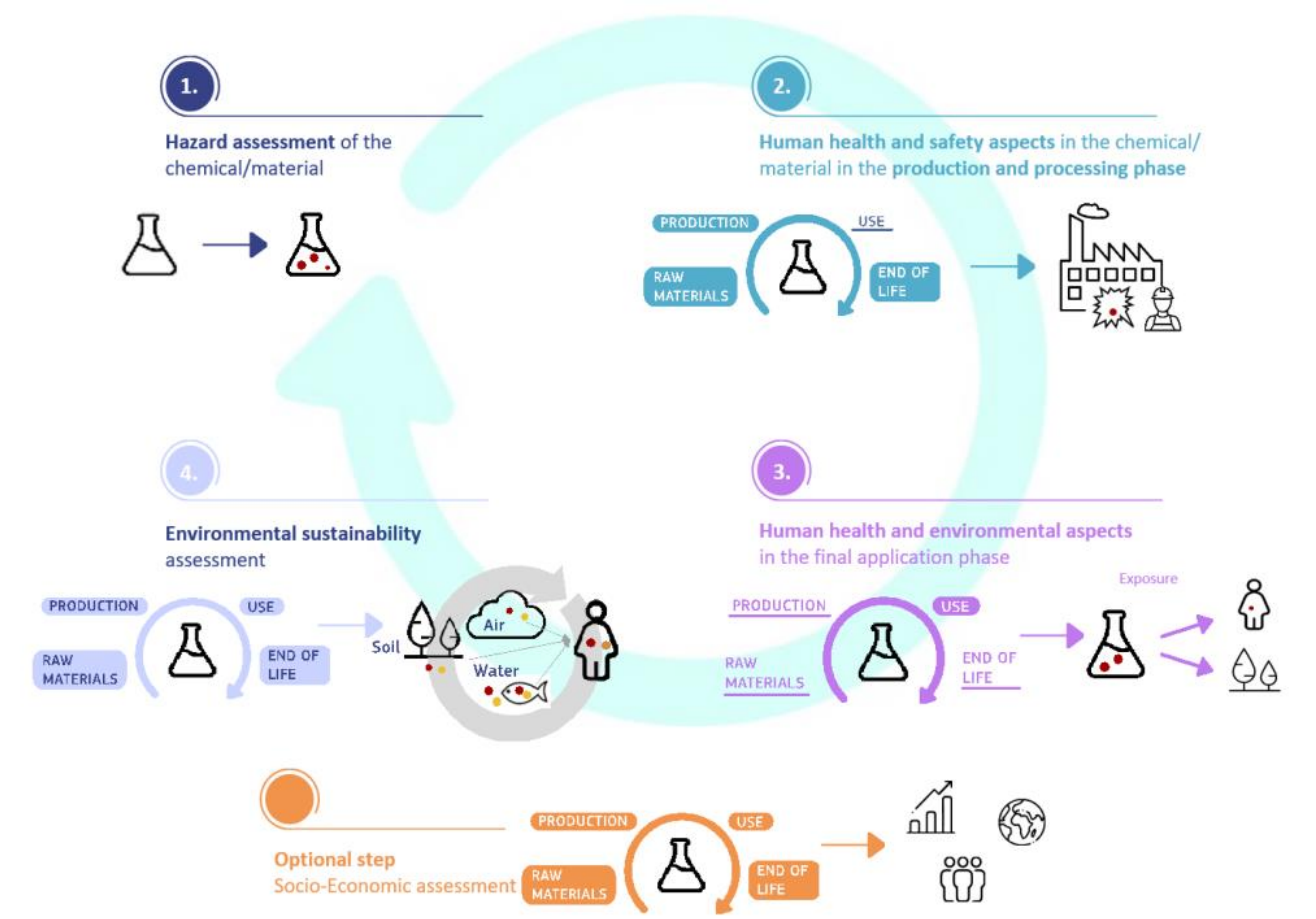
See Table 1 of the JRC SSbD framework for guidance.

❑ Preliminary identification of hotspots along the life cycle

- Expected life cycle stage(s) more affected by the innovation (either positively or negatively);
- Any variation compared to the initial system to fulfil the function (e.g. different amount of chemical/material/formulation/mixture/etc.);
- Etc.

https://publications.jrc.ec.europa.eu/repository/handle/JRC138035

STEP II: ASSESSMENT



https://publications.jrc.ec.europa.eu/repository/handle/JRC138035

KANSEN EN UITDAGINGEN

Kansen

- ✓ Invloed in ontwerpfase
- ✓ Samenwerking
- ✓ Van uitvoerend naar strategisch

Uitdagingen

- ✓ Complex en abstract concept
- ✓ (Nog) late betrokkenheid
- ✓ (Nog) geen heldere standaarden

https://www.government.nl/documents/reports/2024/09/30/redesigning-chemical-innovation---essays-on-safe-and-sustainable-by-design

WAAROM INTERESSANT

Systeemdenken binnen gezondheid en veiligheid
In lijn met SSbD's behoefte aan levenscyclusdenken.

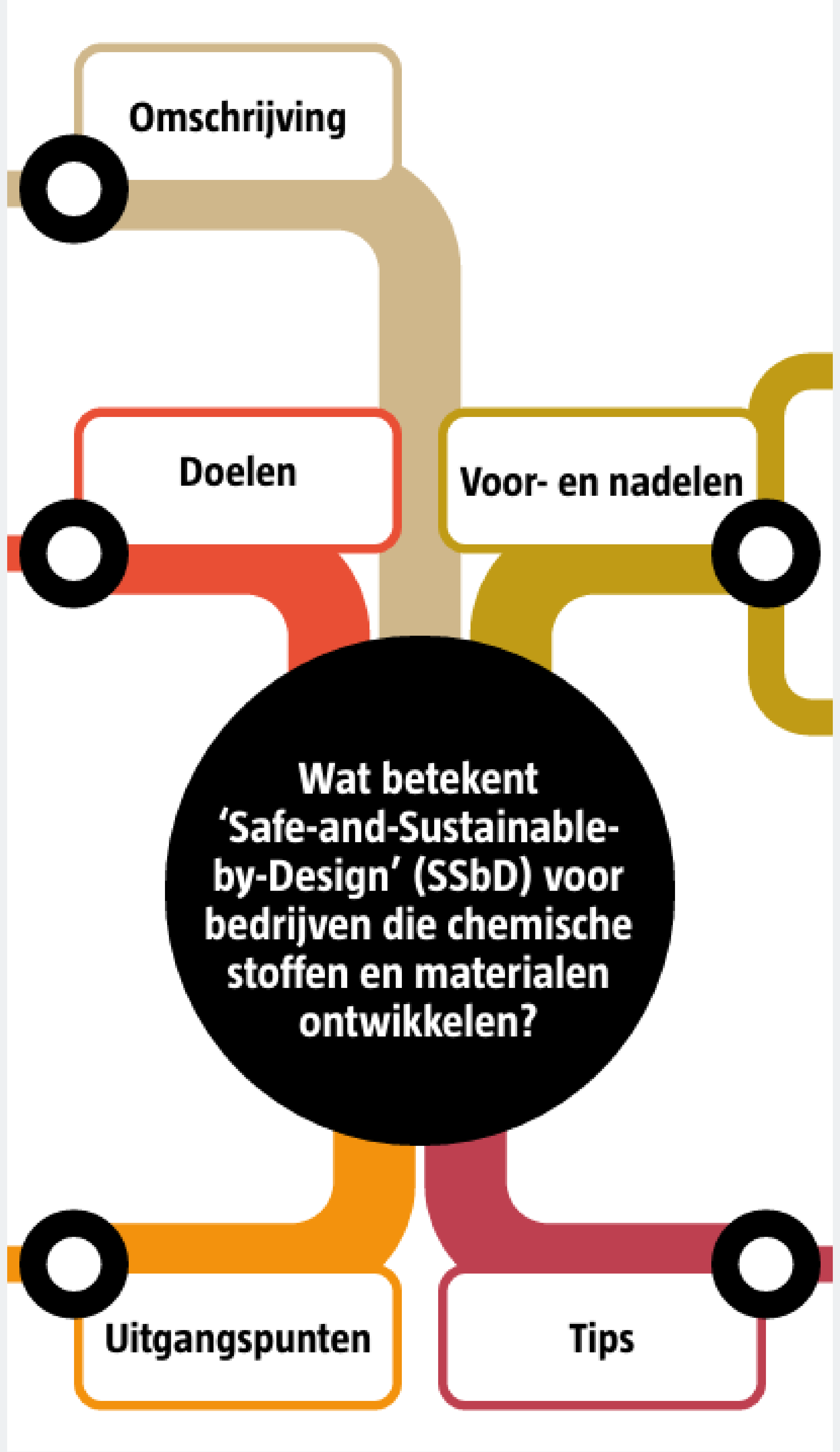
Risico- en gevaarbeoordeling
Een kerncompetentie van arbeidshygiënisten.

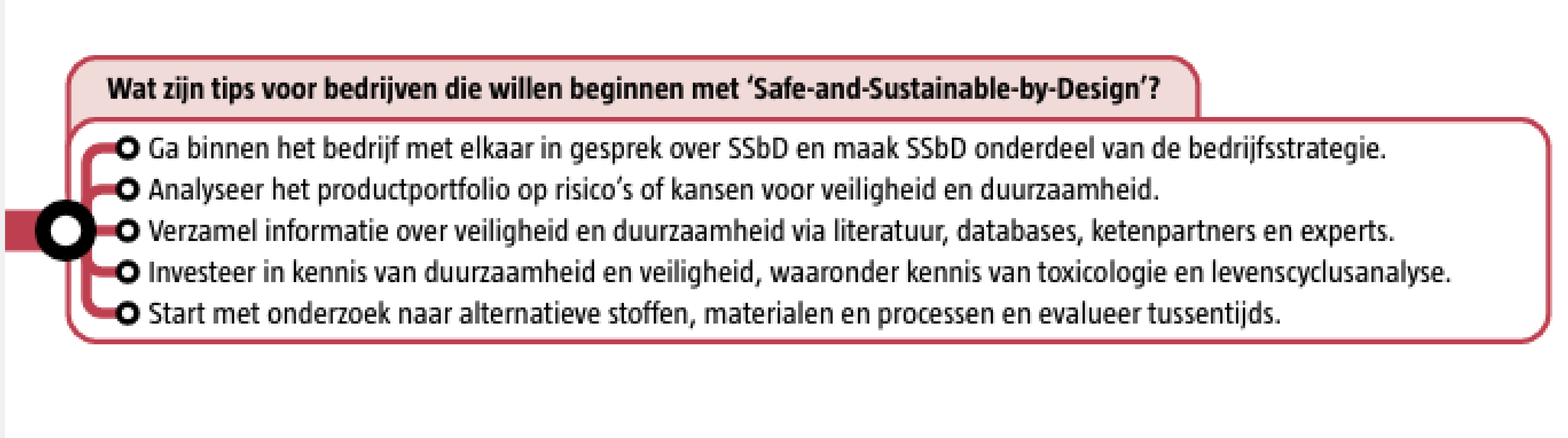
Kennis van blootstelling en beheersmaatregelen
Cruciaal voor SSbD’s hazard assessment en exposure assessment.

Interdisciplinaire samenwerking
Zeker bij grotere projecten zijn arbeidshygiënisten gewend samen te werken met toxicologen, milieukundigen, etc.

https://www.government.nl/documents/reports/2024/09/30/redesigning-chemical-innovation---essays-on-safe-and-sustainable-by-design, SSbD Mapping of skills: Full report (Cordis)

INFORMATIEKAART





https://www.safe-by-design-nl.nl/chemische+stoffen/informatiekaart++safe+and+sustainable+by+design/default.aspx

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