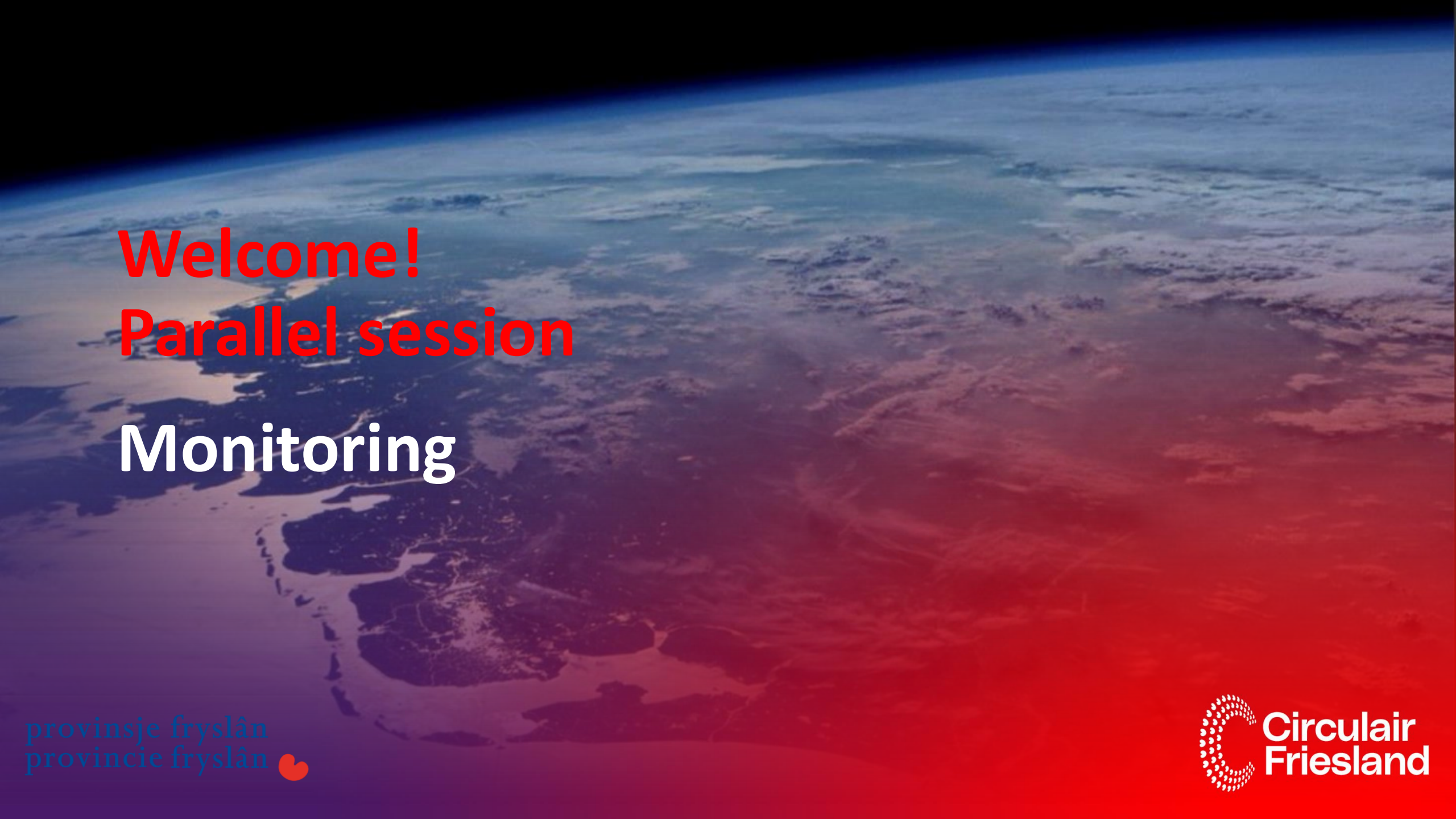
circularsummit
fryslân2025



Welcome!
Parallel session

Monitoring

provinsje fryslân
provincie fryslân

Circulair Friesland

EU perspective on Monitoring the Circular economy

Jean-Benoît BEL
ACR+

MONITORING FRAMEWORK FOR THE CIRCULAR ECONOMY – FIRST VERSION

- First published in 2018:
  - Connection wiht the EU industrial policy strategy
  - And the 2030 Agenda for Sustainable Development

- Initial objectives:
  - Understand how the various elements of CE
  - Identify success factors in Member States
  - Setting new priorities
  - Support the development of the Circular Economy Action Plan: "*the need for a monitoring framework to strengthen and assess the progress towards circular economy, while minimising the administrative burden*"

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MONITORING FRAMEWORK FOR THE CIRCULAR ECONOMY – FIRST VERSION

Circular economy monitoring framework

1 EU self-sufficiency for raw materials
The share of a selection of key materials (including critical raw materials) used in the EU that are produced within the EU

2 Green public procurement
The share of major public procurements in the EU that include environmental requirements

3a-c Waste generation
Generation of municipal waste per capita; total waste generation (excluding major mineral waste) per GDP unit and in relation to domestic material consumption

4 Food waste
Amount of food waste generated

5a-b Overall recycling rates
Recycling rate of municipal waste and of all waste except major mineral waste

6a-f Recycling rates for specific waste streams
Recycling rate of overall packaging waste, plastic packaging, wood packaging, waste electrical and electronic equipment, recycled biowaste per capita and recovery rate of construction and demolition waste

7a-b Contribution of recycled materials to raw materials demand
Secondary raw materials' share of overall materials demand - for specific materials and for the whole economy

8 Trade in recyclable raw materials
Imports and exports of selected recyclable raw materials

9a-c Private investments, jobs and gross value added
Private investments, number of persons employed and gross value added in the circular economy sectors

10 Patents
Number of patents related to waste management and recycling

First findings:

- Establishing the baseline
- Important gaps for circular production and consumption across materials and MS
- Improvements but high potential for waste management
- Low contribution of recycled material to material demand
- Strong impact of CE on innovation, investments, jobs

MONITORING FRAMEWORK FOR THE CIRCULAR ECONOMY – 2023 REVISION

- Main **objectives** of the revision
  - Reflect new priorities of CE within the Green Deal
  - **Put more emphasis on production** rather than waste and consumption indicators
  - Better connection **with overarching topics**: climate change, resilience

- Main **changes**:
  - **5th dimensions**: “global sustainability and resilience”
  - **New indicators**: material footprint, resource productivity, consumption footprint, greenhouse gas emissions from production activities and material dependency

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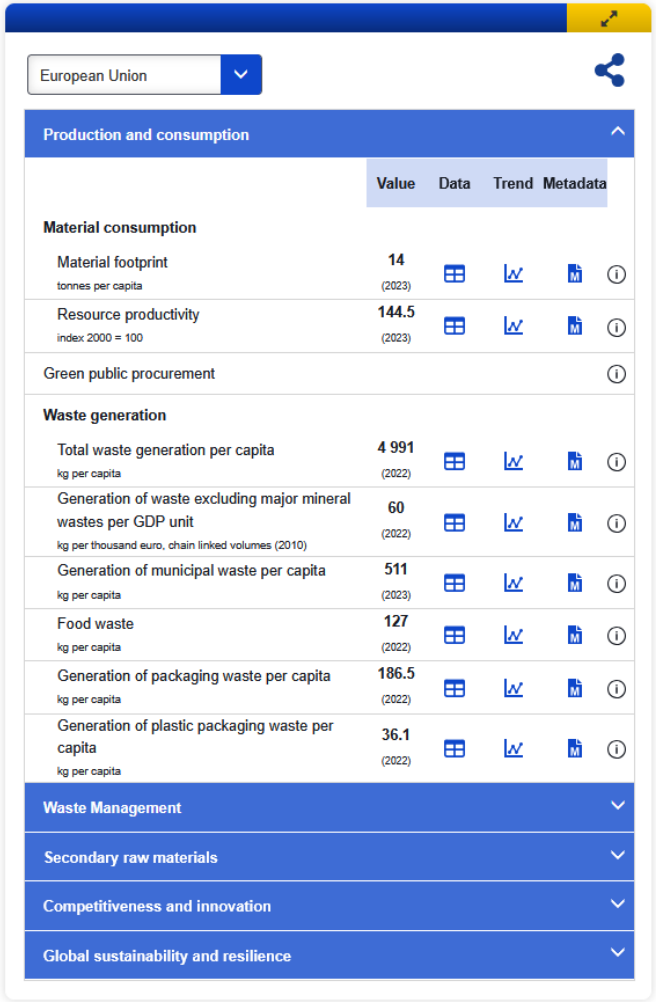
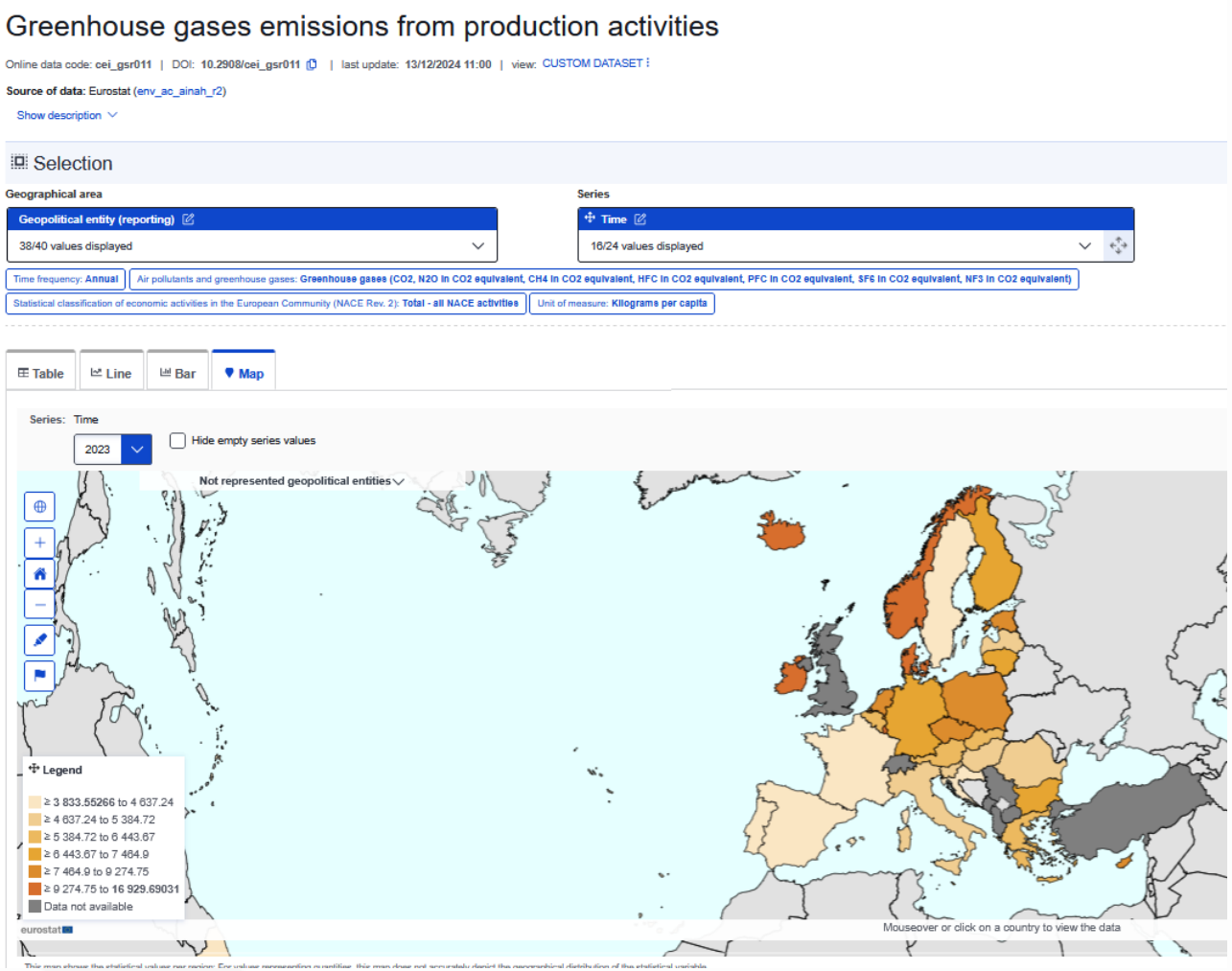
MONITORING FRAMEWORK FOR THE CIRCULAR ECONOMY – 2023 REVISION





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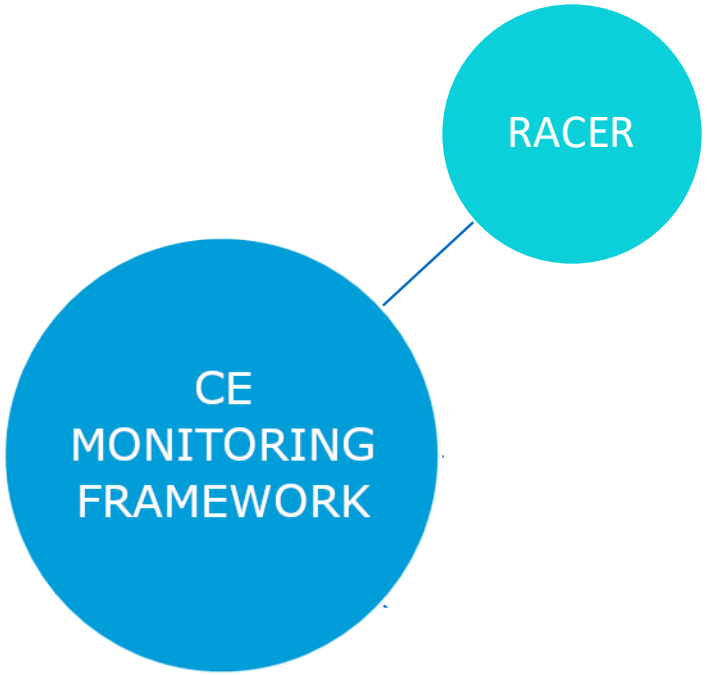
MONITORING FRAMEWORK: SOURCES OF DATA, SELECTION OF INDICATORS



- Relevance, acceptance, credibility, ease of use and robustness
- Existing data

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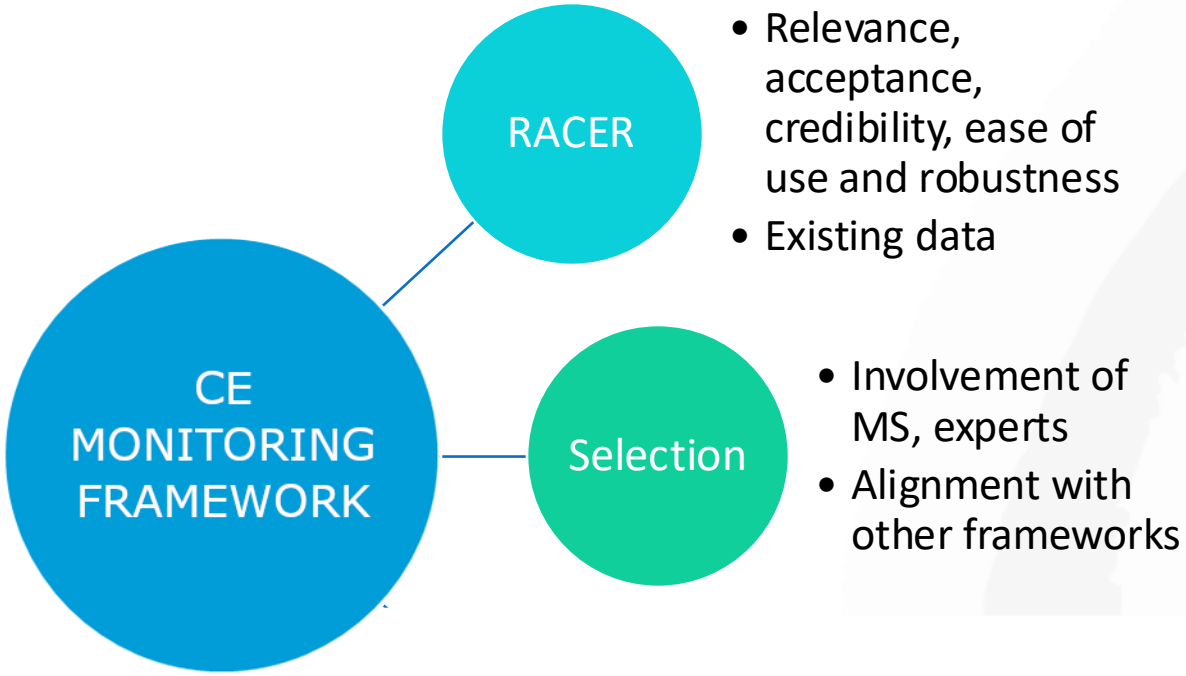
MONITORING FRAMEWORK: SOURCES OF DATA, SELECTION OF INDICATORS



- 8th Environment Action Programme
- Zero-pollution monitoring and outlooks
- EU indicators for SDGs
- Resilience dashboard

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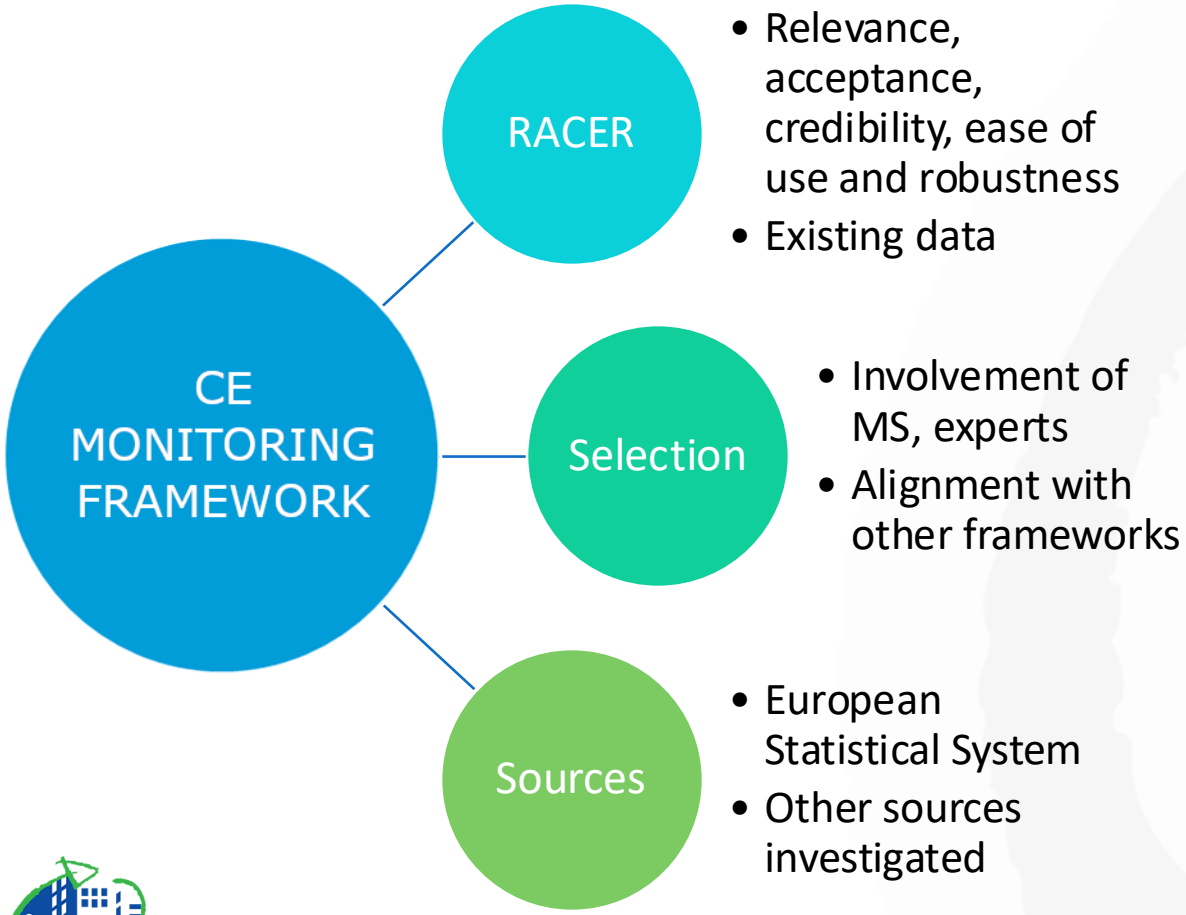
MONITORING FRAMEWORK: SOURCES OF DATA, SELECTION OF INDICATORS



Other sources in use:

- European Commission services
- JRC (elaboration on European statistics…)

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MONITORING FRAMEWORK: WHAT USE BY THE COMMISSION?

Keep track of transition beyond legal targets

- Resource efficiency
- Climate change
- Resilience

Guiding future actions

- Establishing early warning reports and Environmental Implementation Reviews
- Defining the agenda of annual CE stakeholder conferences

Assessing current policies

- Assess the impact of CE-related policies
- Identify best practices

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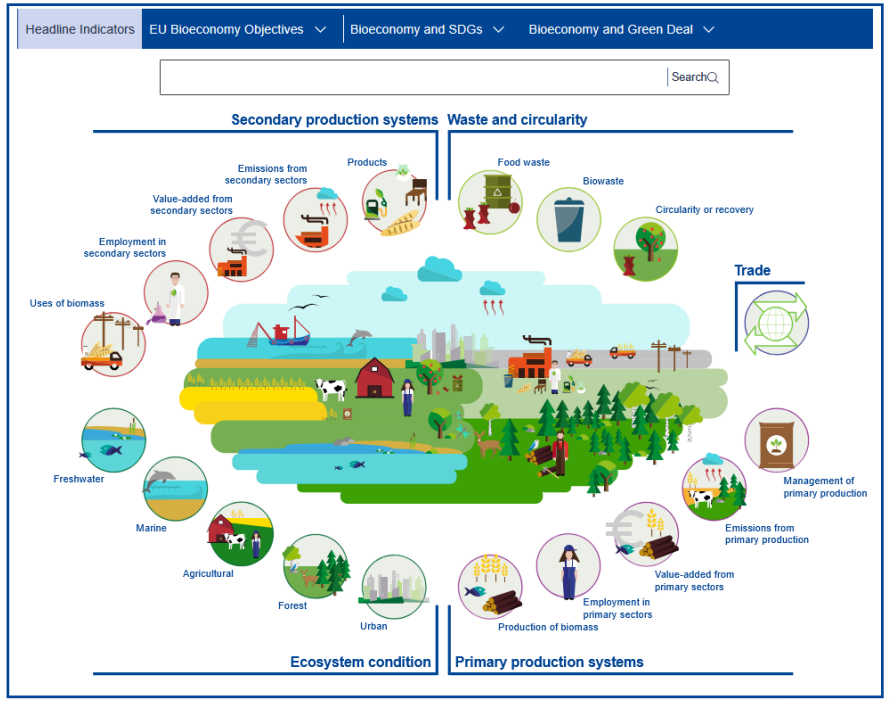
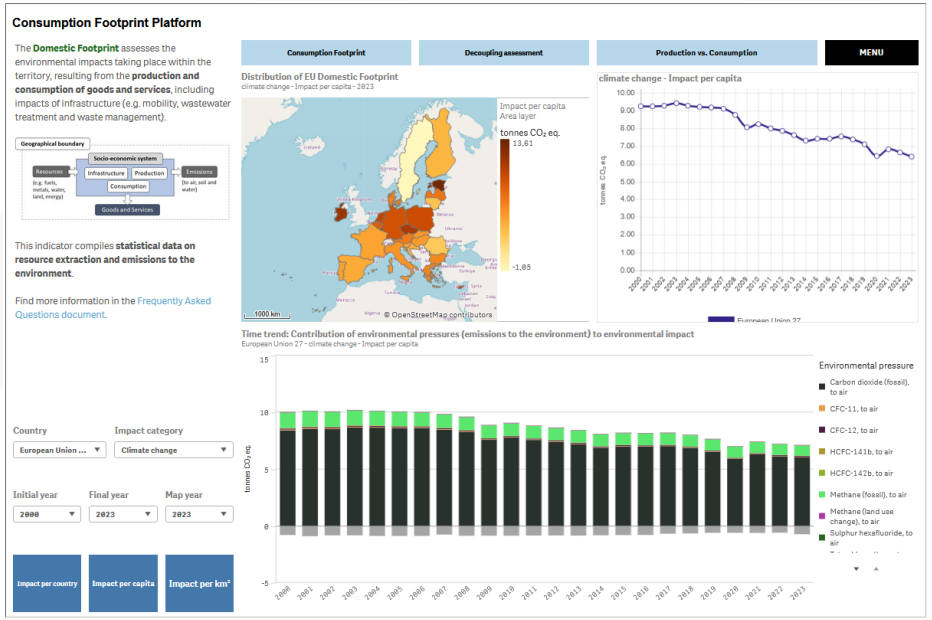
OTHER EUROPEAN MONITORING FRAMEWORKS

EU Bioeconomy Monitoring System dashboard



Consumption Footprint



Circularity Metrics Lab

The **circularity metrics** are grouped in four categories as shown below:

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WHAT TRENDS?

- Harmonisation
- Waste prevention monitoring
- Product passports
- Filling gaps with web-scraping/AI tools (policy and corporate documents)
- Sectorial policies (plastics, textiles)
- Connection with resource security and competitiveness…

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WHAT TRENDS?

Table 2.2 Classification of CE targets and objectives in EU legislation and policy, 2020-2050

CE Category	CE Goals identified (total)	Non-binding Objectives	Binding Targets
Resource efficiency	2	2	0
Product making	6	2	4
Consumption	1	1	0
Waste generation	2	2	0
Waste collection	4	0	4
Waste Reuse, Recycling, Recovery	12	3	9
Waste disposal	4	3	1
Other	1	1	0

Note: based on EU legislation in force, as of 31 January 2023

European Topic Centre on Circular economy and resource use, 2023

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Thank you for your attention!

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Jean-Benoît Bel
jbb@acrplus.org


Circularity
Gap Report
Friesland
CIRCLE ECONOMY
Circulair Friesland

CIRCLE ECONOMY

We are a global impact organisation with an international team of passionate experts based in Amsterdam.

We empower industries, cities and nations with practical and scalable solutions to put the circular economy into action.

CGRi

Our Circularity Gap Reporting initiative programme reports on the state of circularity (CGR®) and its impacts at all levels, from global through to national, city and industry level.

Our aim is to enable **policy and pilot project implementations** that transforms the economy to operate within planetary boundaries and ensure wellbeing for all.

A SEVEN YEAR LEGACY

8 Global reports

1 Multinational report

13 National reports

2 Regional reports

3 City reports

OUR METHODOLOGICAL APPROACH IS GROUNDED IN INDUSTRIAL ECOLOGY…

Economy-Wide Material Flow Accounting

Multi-Regional Input-Output Analysis

Socio-Economic Metabolism analysis

Sankey Diagram

Circularity Metric

Employment data

Circular Jobs Analysis

Circular Jobs

CIRCULARITY GAP REPORT FRIESLAND

- Vereniging Circulair Friesland have been working together for ten years on the ambition to make Fryslân one of the most circular regions in Europe by 2025.
- CGR Friesland aims to:
    - Showcase this progress through both quantitative indicators and qualitative information
    - Offer a blueprint for other regions to see where they stand and to compare
- Holistic approach covering environmental, economic and social aspects

CIRCULARITY GAP REPORT FRIESLAND

1 ENVIRONMENTAL

- MATERIAL FOOTPRINT
- CIRCULARITY METRIC
- CARBON FOOTPRINT
- RENEWABLE ENERGY CONSUMPTION
- WASTE MANAGEMENT
- WATER

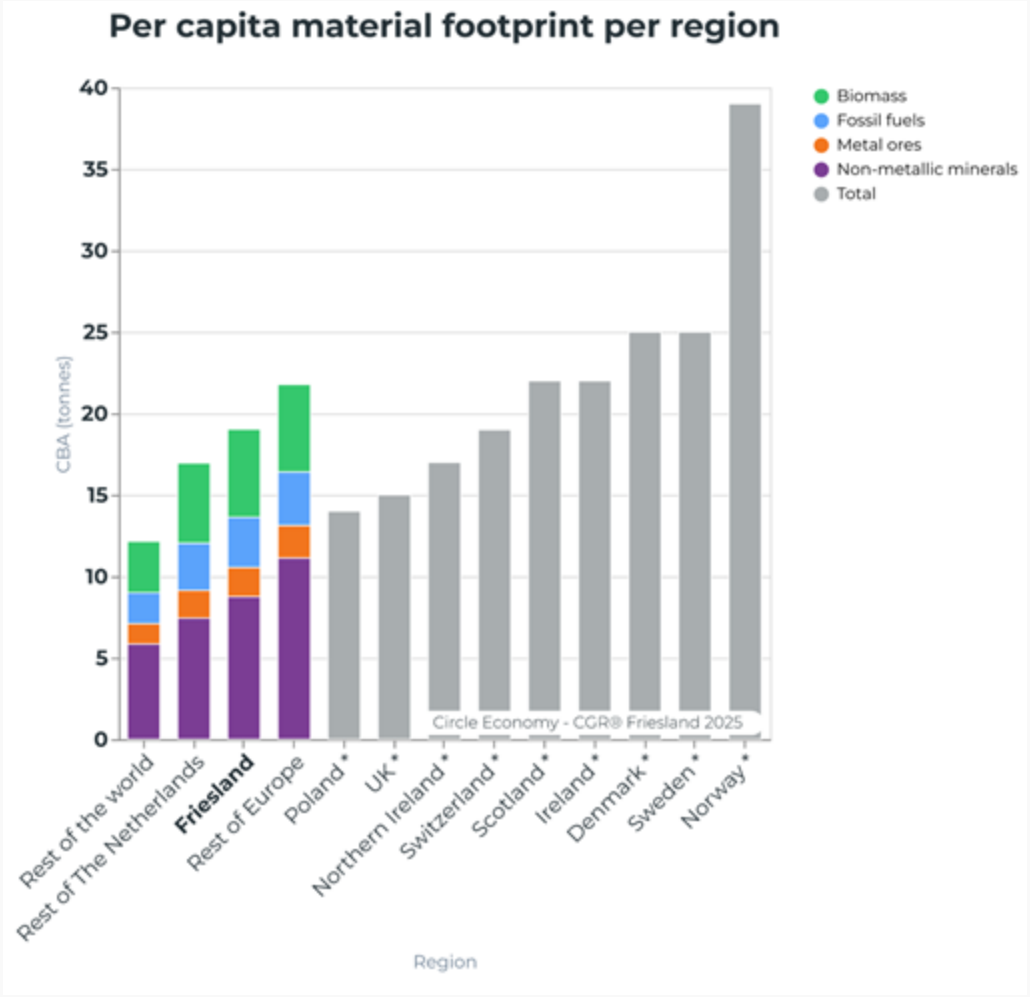
2 ECONOMIC

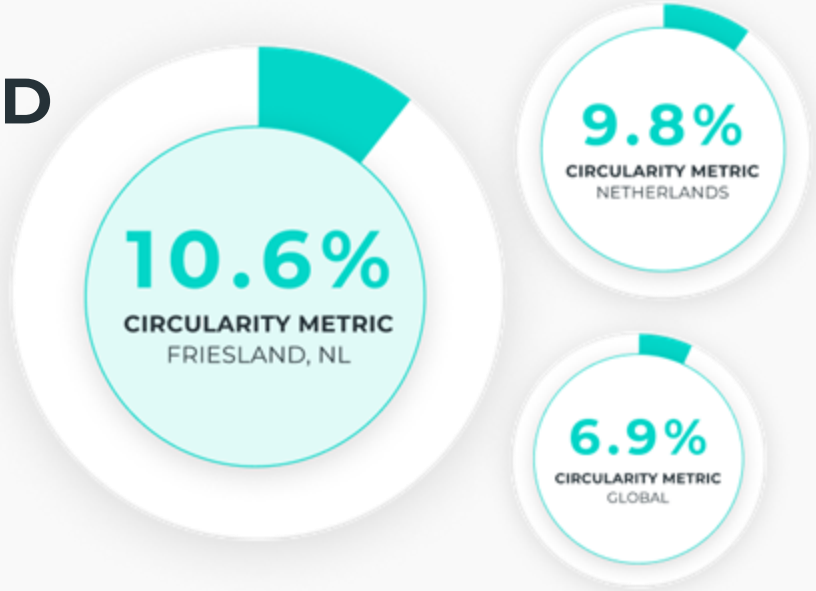
- COMPETITIVENESS
- INNOVATION
- SUSTAINABLE BUSINESSES
- CIRCULAR JOBS
- CIRCULAR PROCUREMENT

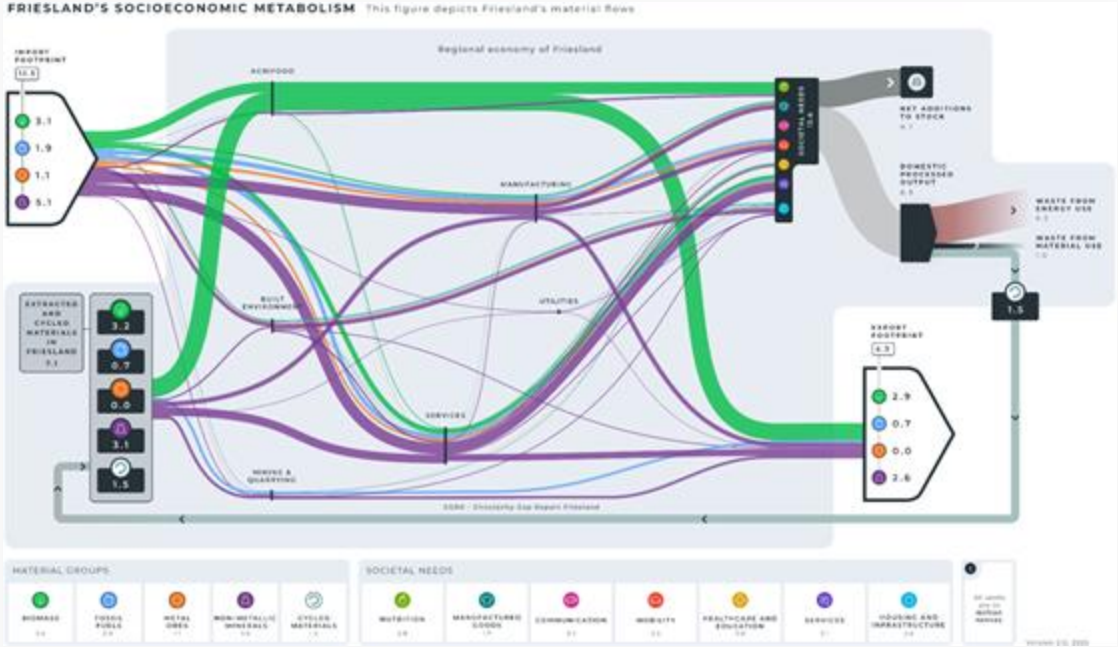
3 SOCIAL

- LIFE SATISFACTION
- COMMUNITY
- INCLUSIVE LABOUR MARKET
- EDUCATION
- HEALTH

CIRCULARITY GAP REPORT FRIESLAND







REFLECTION ON PROCESS

- Obstacles faced
  - Data limitations (outdated MRIO, lacking environmental extension of MRIO, data gaps for some desired indicators)
  - Benchmarking
  - Difficult to quantify ‘organisation efforts’
- Lessons learned
  - ‘Leading’ indicators can be a useful way to measure ‘organisation efforts’

NEXT STEPS

- Develop multi-year monitoring system with targets
- Create plan(s) to fill data gaps and improve data limitations
- Improving benchmark to other regions
- Continue building out case study collection


THANK YOU!
friesland.circularity-gap.world
CIRCLE ECONOMY
Circulair Friesland

Circular economy monitoring

Developing Scotland's Circular Economy Monitoring Framework

ZERO WASTE SCOTLAND

Zero Waste Scotland: Rewiring the economy

We're Scotland's circular economy public body, working with government, business, and communities to rewire the economy from our current "take, make, waste" model to one where we make the most of the materials we have.

A zero waste, circular economy is the right choice - for people, planet and prosperity.

What we do

Help people care

We encourage and advocate for change, by informing why we must reduce overconsumption of natural resources and demonstrating how we can do it.

Make circularity easier

We identify and implement the conditions required to enable circular economies to flourish across Scotland.

Do more where it matters most

We inform and support accelerated change in key sectors that require high levels of raw materials.

Improve infrastructure

We evidence and demonstrate the right infrastructure to keep materials in constant use in Scotland's economy.

Circular Economy Monitoring Framework

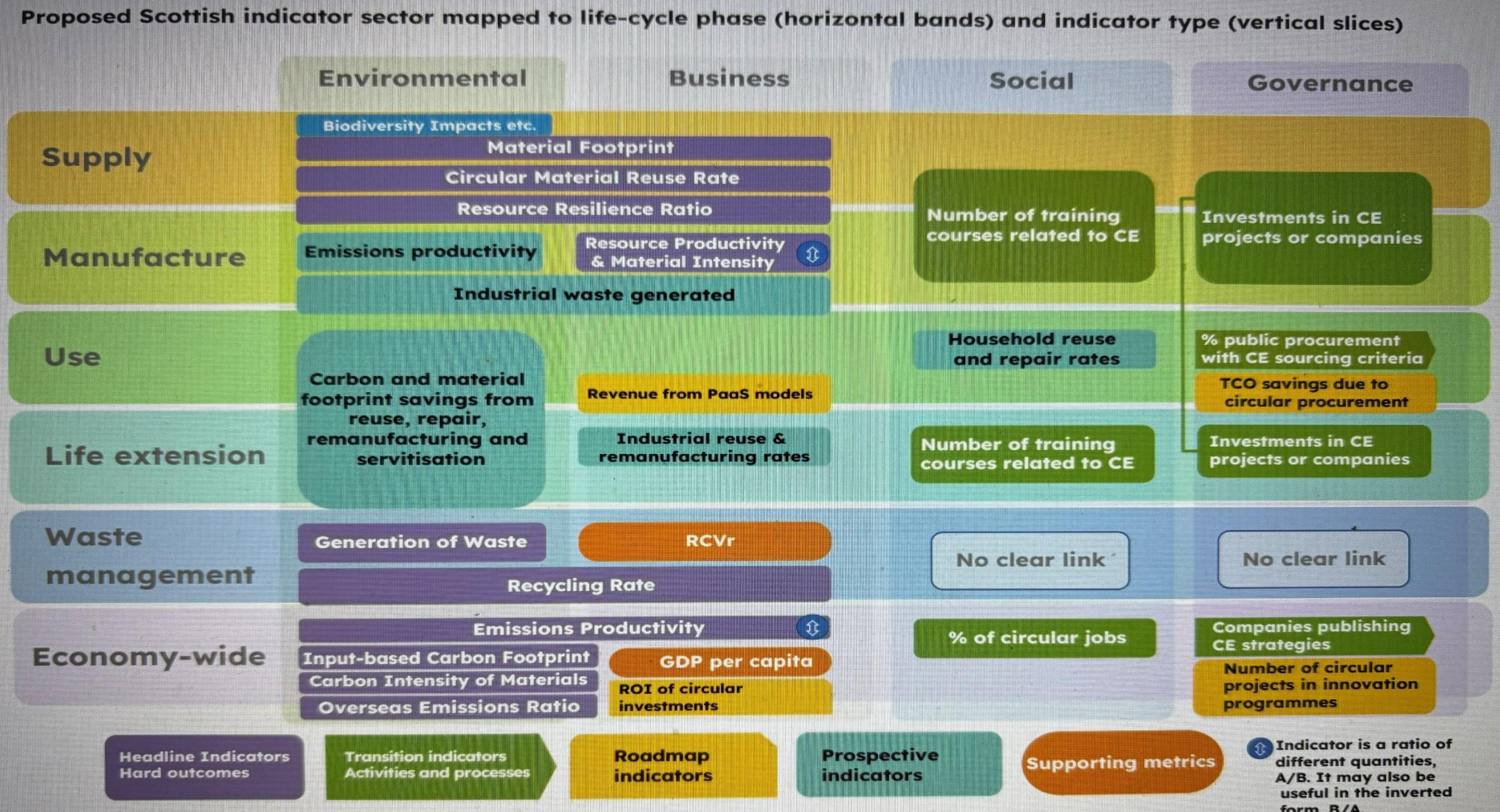
The framework will track progress against defined outcomes that demonstrate sustainable economic, environmental, and social success.

Environment and resources

Economy and supply chains

Governance/International

Social


Proposed Scottish indicator sector mapped to life-cycle phase (horizontal bands) and indicator type (vertical slices)
Environmental
Business
Social
Governance
Supply
Biodiversity Impacts etc.
Material Footprint
Circular Material Reuse Rate
Resource Resilience Ratio
Manufacture
Emissions productivity
Resource Productivity & Material Intensity
Industrial waste generated
Number of training courses related to CE
Investments in CE projects or companies
Use
Carbon and material footprint savings from reuse, repair, remanufacturing and servitisation
Revenue from PaaS models
Household reuse and repair rates
% public procurement with CE sourcing criteria
TCO savings due to circular procurement
Life extension
Industrial reuse & remanufacturing rates
Number of training courses related to CE
Investments in CE projects or companies
Waste management
Generation of Waste
RCVr
Recycling Rate
No clear link
No clear link
Economy-wide
Emissions Productivity
Input-based Carbon Footprint
Carbon Intensity of Materials
Overseas Emissions Ratio
GDP per capita
ROI of circular investments
% of circular jobs
Companies publishing CE strategies
Number of circular projects in innovation programmes
Headline Indicators Hard outcomes
Transition indicators Activities and processes
Roadmap indicators
Prospective indicators
Supporting metrics
Indicator is a ratio of different quantities, A/B. It may also be useful in the inverted form, B/A.

Challenges and opportunities

Thank you

zerowastescotland.org.uk

@ZeroWasteScot

@HowToWasteLess

@ZeroWasteScotland

ZERO WASTE SCOTLAND

Regional and local monitoring of circular economy

Jean-Benoît BEL
ACR+

STUDY SUPPORTING A REGION FOR CIRCULAR ECONOMY MONITORING

- Define a set of indicators to monitor the evolution of CE in the region
- Follow the strategic objectives of the Regional CE plan
- Assess the environmental, social, and economic impact and dimensions of the Regional CE
- Monitor the knowledge and behaviours of private companies regarding CE
- Potentially benchmark with other territories

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STUDY SUPPORTING A REGION FOR CIRCULAR ECONOMY MONITORING

1. Listing possibilities

- Mapping the different dimensions covered by circular economy
- Taking stock of existing regional indicators
- Mapping exisiting indicators at EU, national, regional levels

2. Promising indicators

- Aligning the indicators with regional policies, priorities
- Co-creation exercise between administration and CE monitoring experts

3. Exploring solutions

- Identifying key priorities for the region, and in general
- Understanding how the regional policy can impact the transition

4. Prioritising

- Assessing the feasibility of selected indicators (data availability, calculation methods, etc.)
- Recommendations to fill the gaps

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INITIAL MAPPING

- Approach
  - Cross-analysis of key resources on the extent of CE
  - Regrouping the different dimensions in three matrixes
- Selected matrixes:
  - Overview of CE X Key stakeholders
  - Material consumption x Products
  - Private sectors X CE application (innovation, production, consumption, waste)

		Global economy	Private sector - Industry	Private sector - Tertiary (except public authorities)	Households	Public authorities
(1) Consumption and demand for circular goods and services	Responsible consumption					
	Collaborative consumption					
(2) Supply of circular goods and services	Circular resources for society					
(3) Mobilization of stakeholders	Support / Assistance and action implementation					
	Training					
	Awareness-raising					
(4) Waste management	Waste generation					
	Waste reuse (by-products and waste end-of-life criteria)					
	Recycling rate					
(5) Environmental impact	Resource use					
	Avoided CO2 eq					
	Avoided waste					
	Avoided waste					
	Water emissions					
	Water emissions					

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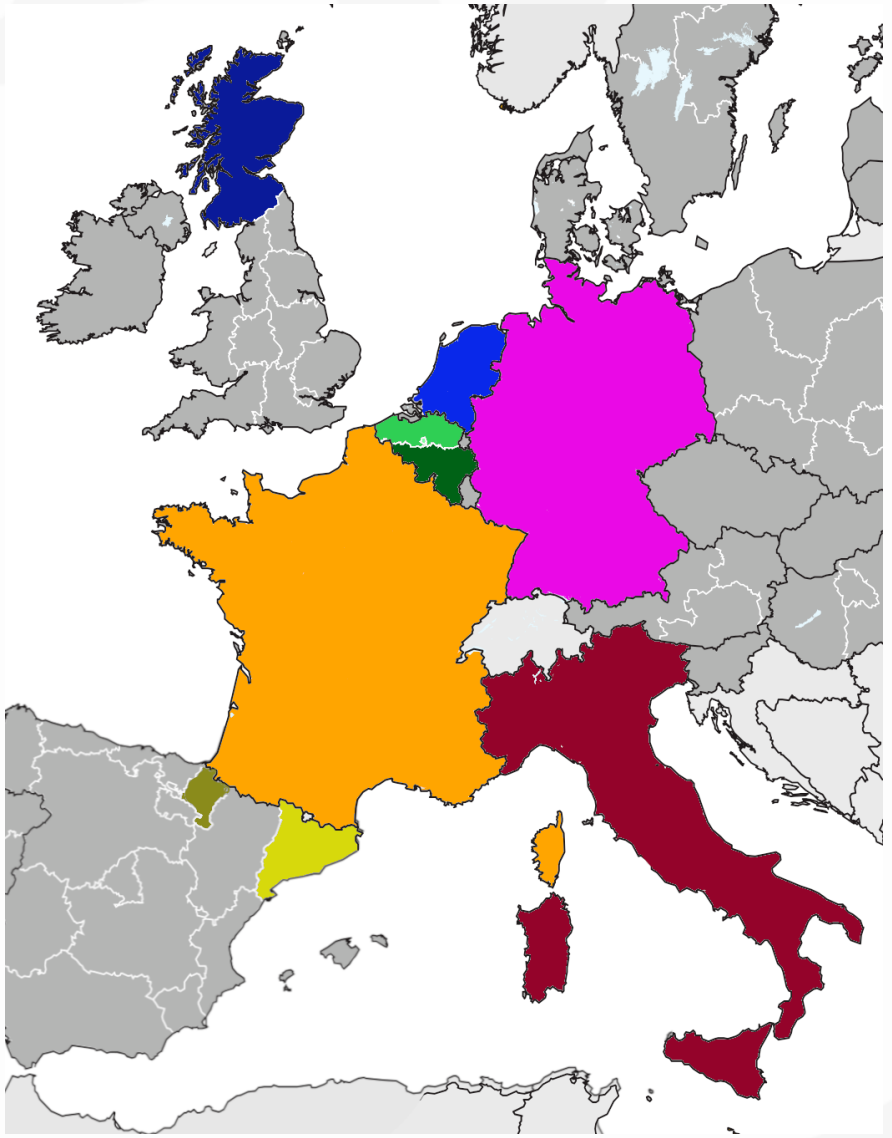
EXISTING MONITORING SYSTEMS?

- From 8 to 120 indicators
  - **Common topics: waste,** material input, material footprint, actions (GPP, existing incentives, ecolabels, industrial symbioses initiatives).
  - **Impact indicators:** employment, added-value, carbon impact, land-use
- Some more specific ones:
  - Biodiversity, energy, water, social aspects (exposure to pollution)…
  - Sectorial indicators: agriculture, mobility, housing.
- Different levels of maturity



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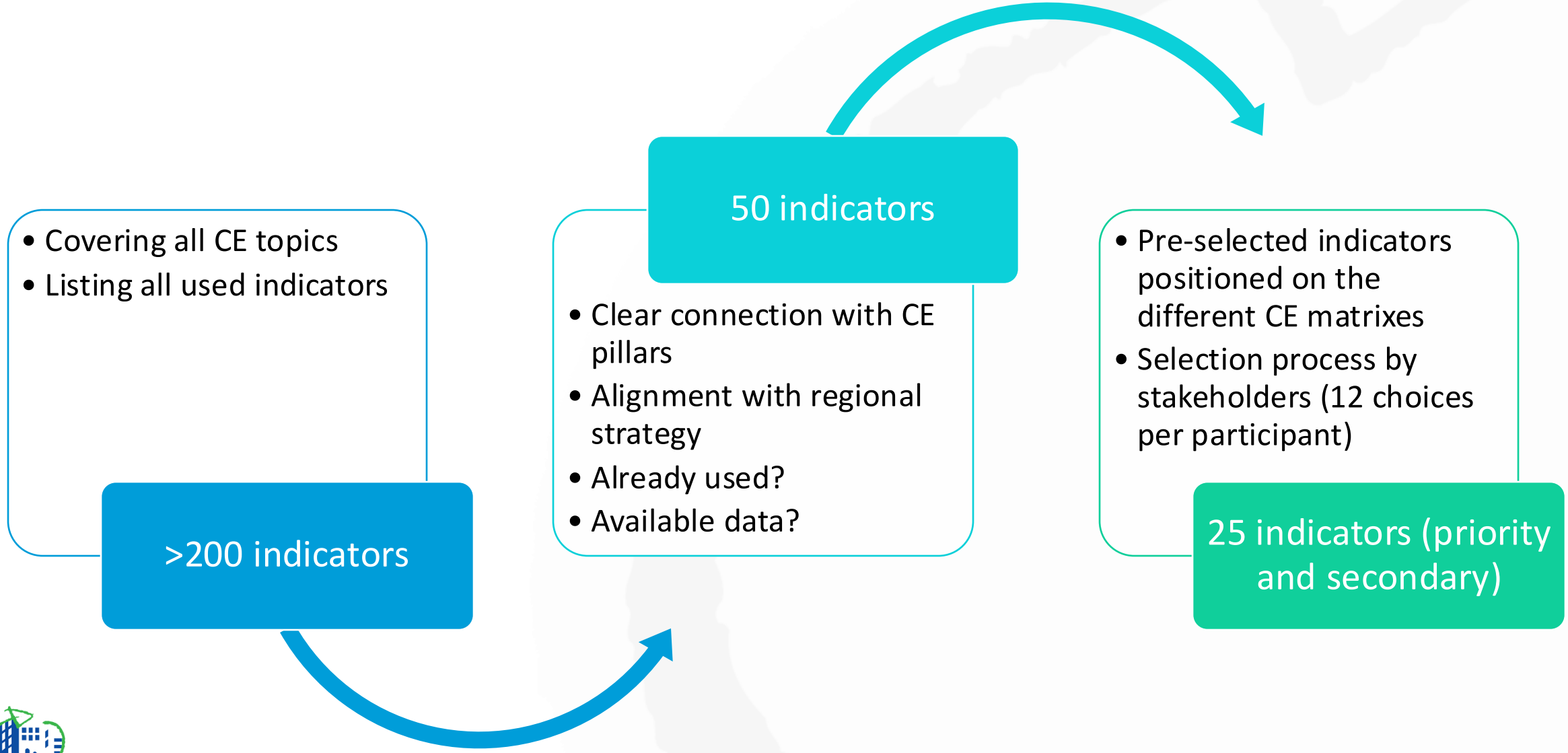
FILTERING THE MOST RELEVANT INDICATORS



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IDENTIFYING KEY INDICATORS

Regional actions	Circular consumption	Circular production	Impact
• Nb of players supported by regional activities • Allocated budget • Support to innovation • Professional training • Number of projects…	• Public and private demand • Waste • Use of sharing economy and re-use • GPP	• Knowledge and actions of the private sectors • Use of secondary raw materials • Private investments • Recycling rates	• Raw material consumption/input • Domestic material consumption/input • Sectorial GHG emissions • Dependency to material import • Number of jobs, added value

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ASSESSING THE FEASIBILITY

- Some indicators already monitored
- Some indicators with existing data and identified calculation method (alignment with EUROSTAT approach)
- Some indicators missing data at regional level
- Recommendations to fill gaps and focus monitoring efforts

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CONCLUSIONS: GAPS

Circular consumption

- Incomplete vision on the different « R » (repair, remanufacture…)
- Incomplete overview of re-use
- Incomplete data on « product as a service » schemes

Waste data

- Gaps with imports for recycling and exports
- Impact of CE on waste prevention
- Difficulty to assess the associated carbon impact

Regional data

- Material flows usually available at national level, specific calculation required

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THE MORE CIRCULARITY LESS CARBON - PRESENTATION

MORE CIRCULARITY
LESS CARBON
-25% BY 2025

- Supporting 7 ACR+ Members
  - “Translating” household waste data in carbon footprint
  - Identifying most promising reduction potential

- Approach
  - Documenting streams, composition, and final destination
  - Assessing the impact of waste management…
  - … but also the “embodied” impact of waste

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THE MORE CIRCULARITY LESS CARBON - CONCLUSIONS

RESULTS

- Some differences
  - Linked with composition and performances
  - But also contextual elements and specific re-use/recycling routes
- But many similarities
  - The dominating impact of embodied impact
  - The same impactful fractions
  - The limited potential of recycling compared to re-use and recycling

IMPACT?

- Reconsider the weight-based approach
- Priority actions:
  - Apply the waste hierarchy
  - Waste management within a circular economy
- Challenges:
  - What is within the reach of the local organisation?
  - Priority given to existing targets?

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Thank you for your attention!

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jbb@acrplus.org

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Break

Coffee and Lunch

Welcome back!
Parallel session

Monitoring

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Circulair Friesland

Group session – Block 1 (40min)

- Four Tables, each covering one topic of Monitoring (including guiding questions)
- 6-7 people per Table
- 10mins per table, then rotate
- Goal: learn from each other and find cross-regional commonalities

Group session – Block 1 (ca. 40min)

- **Table 1: What do you want to measure?**

  Focus: Priorities and indicators

- **Table 2: Data**

  Focus: Sources and access

- **Table 3: Obstacles and solutions**

  Focus: Barriers and workarounds

- **Table 4: Purpose and impact**

  Focus: Why measure?

Group session – Wrap-up

- What are some essential building blocks for monitoring the Circular Economy?
- How can we foster collaboration at the EU level and help one another?

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14.40 - 15.00
Closing of CSF25 (A0.63)

15.00 - 17.00
EWWR 2024 Award Show