

## How the research results can support the implementation of the CSRD and EU Taxonomy: the experience of the Star4bbs project

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## How economics and finance are linked with a sustainable development

Approved by the Union in 2016

**Paris Agreement** under  
the United Nations  
Framework Convention on  
Climate Change

**Article 2(1)(c)**  
Finance flows are  
consistent with a pathway  
towards low greenhouse  
gas emissions

Communicated by  
the Union in 2018

How **financial market** participants  
and advisers are to disclose  
sustainability information to end  
investors and owners

UN Convention on  
**Biological Diversity** and  
Union policies

Creation of the 2030 Agenda, the core of  
Sustainable Development Goals

**Action Plan on Financing  
Sustainable Growth**

Measures to reorient capital flows towards  
**sustainable investment** and **manage  
financial risks** stemming from climate  
change, resource depletion or  
environmental degradation

**Regulation (EU) 2019/2088**

The technical screening criteria  
should be based on the  
**sustainability indicators**



## How economics and finance are linked with a sustainable development

To enhance the availability, quality and consistency of ESG requirements across the entire value chain of financial market participants

### Financial market participants and advisers

#### **Sustainable Finance Disclosure Regulation (EU 2019/2088)**

How financial market participants integrate sustainability risks and factors into their investment processes.

### Companies and financial institutions

#### **Taxonomy Regulation (EU 2020/852)**

It establishes a common framework to determine which economic activities can be considered environmentally sustainable

### Large companies

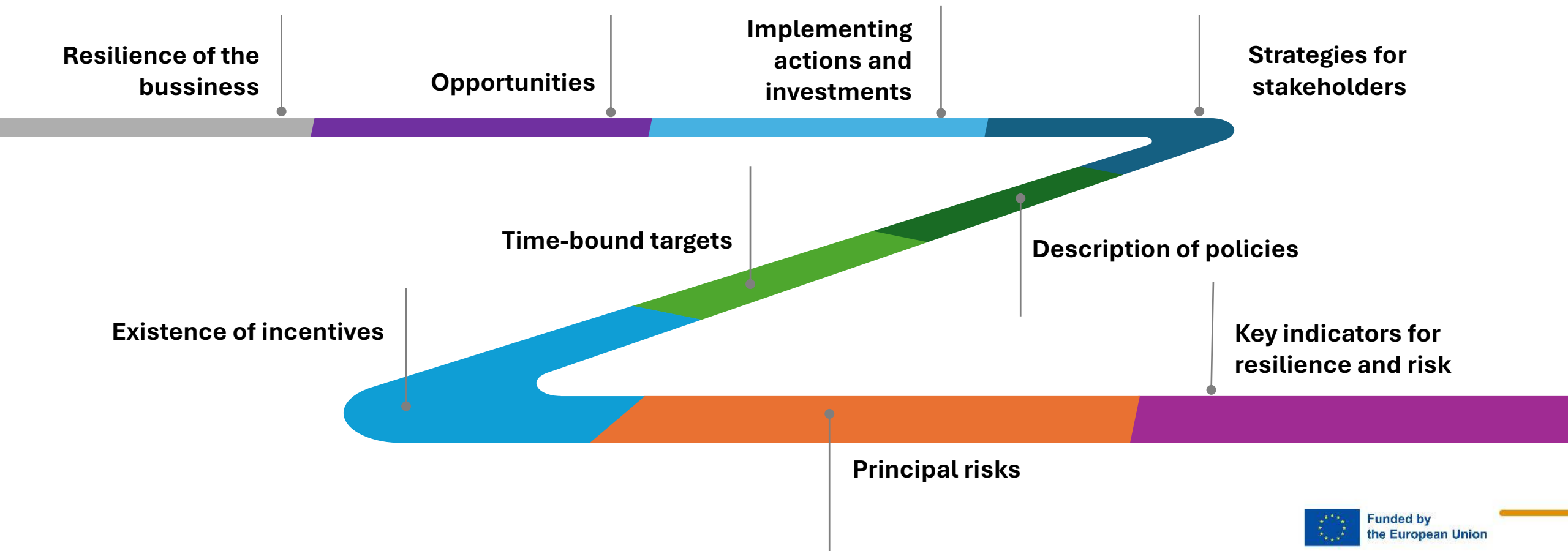
#### **Corporate Sustainability Due Diligence Directive (EU 2022/2464)**

It is focused on ensuring that large companies respect human rights and environmental standards throughout their supply chains



## Sustainability reporting for companies: Aspect to be included

Large, medium and small-sized companies shall include in the **management report information** all the necessary to understand the impacts on **sustainability matters** and how they affect development, performance and position of the company.





## Corporate Sustainability Reporting Directive (EU 2022/2464)

The Commission shall adopt delegated acts supplementing CSRD to provide for sustainability reporting standards able to provide information to be reported

### Global standard-setting initiatives for sustainability reporting

#### Commission Recommendation 2013/179/EU

Use of common methods to measure and communicate the life cycle environmental performance of products and organisations

#### Directive 2003/87/EC

Scheme for greenhouse gas emission allowance trading

#### Regulation (EU) 2021/1119

Framework for achieving climate neutrality

#### Regulation (EC) No 1221/2009

Voluntary participation by organisations in a Community eco-management and audit scheme

#### Directive (EU) 2019/1937

Protection of persons who report breaches of Union law

#### Regulation (EU) No 575/2013

Prudential requirements for credit institutions and investment firms

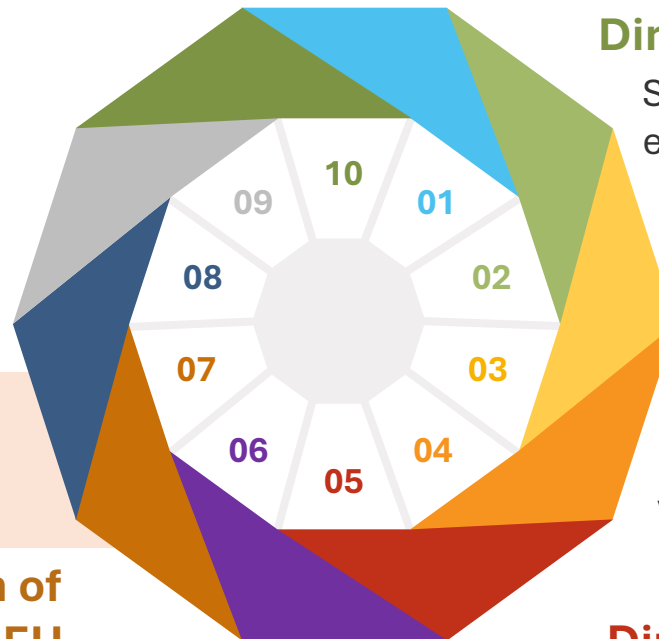
#### Regulation (EU) 2019/2088

Sustainability-related disclosures in the financial services sector

#### Regulation (EU) 2020/852

Framework to facilitate sustainable investment

### Minimum requirements for the construction of EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks





## CSRD Sustainability factors to be addressed

The sustainability reporting standards shall, take into account different matters

Undertakings are to disclose about **governance factors**





## CSRD Sustainability factors to be addressed

The sustainability reporting standards shall, take into account different matters

Undertakings are to disclose about **environmental factors**



Climate change mitigation

Climate change adaptation



Water and marine resources



Resource use and the circular economy



Pollution

Biodiversity and ecosystems

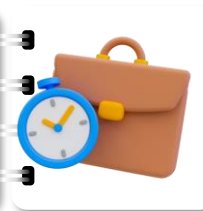


Undertakings are to disclose about **social and human rights factors**



Equal treatment and opportunities for all

Working conditions, health and safety



Respect for the human rights and fundamental freedoms





## The EU Taxonomy as delegate act supplementing the CSRD

Climate change mitigation

Climate change adaptation

Pollution



Resource use and the circular economy

Water and marine resources

Biodiversity and ecosystems

### The six objectives of the EU taxonomy on sustainability and circularity

#### Regulation (EU) 2020/852

##### Delegated Regulation (EU) 2021/2139

**Technical screening criteria** for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation

##### Delegated Regulation (EU) 2021/2178

Specifying the **content and presentation** of information to be disclosed by undertakings

##### Delegated Regulation (EU) 2022/1214

Specific **public disclosures** for economic activities in certain energy sectors

##### Delegated Regulation (EU) 2023/2486

Determining the conditions for a substantial contribution to the protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection and restoration of biodiversity and ecosystems





## The application of the EU Taxonomy

Which of the activities performed by the company are covered by the EU Taxonomy?

1



How can the company ensure compliance of its eligible activities with the minimum safeguards (DNSH)?

3



Are there any taxonomy non-eligible activities and how can the transition of the eligible activities to aligned been done?

5



How can the company assess if its activities are aligned with the EU Taxonomy?

2



What are the disclosure obligations related to the EU Taxonomy?

4





## Example for the climate change mitigation and forestry sector

**Objective:** Climate change

**Sector:**

- Forestry
- Construction and real state activities
- Energy, also gas and nuclear
- Environmental protection and restoration activities
- Information and communication
- Manufacturing
- Professional, scientific and technical activities
- Transport
- Water supply, sewerage, waste management and remediation

**Activity:**



Afforestation

Conservation  
forestry

Forest  
management

Rehabilitation and  
restoration of forests,  
including reforestation  
and natural forest  
regeneration after  
extreme event



### Activity: Forest management

#### Substantial contribution criteria:

##### 2. Climate benefit analysis

2.1. For areas that comply with the requirements at forest sourcing area level to ensure that **carbon stocks and sinks levels** in the forest are maintained or strengthened over the long term in accordance with Article 29(7), point (b), of Directive (EU) 2018/2001 the activity complies with the following criteria:

2.3. The calculation of climate benefit complies with all of the following criteria:  
a. the **analysis is consistent with the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.**





# Implementation of the EU Taxonomy

The six objectives of the Taxonomy



Economic activities	Absolute OPEX	Proportion of OPEX	Substantial contribution criteria						DNSH criteria ("Does not Significant Harm")						Taxonomy aligned proportion of OPEX
			Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems	
<b>A. Taxonomy eligible activities</b>															
A.1 Environmentally sustainable activities (Taxonomy aligned)															
Forest management			%	%	%	%	%	%	Y	Y	Y	Y	Y	Y	
Afforestation			%	%	%	%	%	%	Y	Y	Y	Y	Y	Y	
<b>A.2 Taxonomy eligible but not environmentally sustainable activities (not aligned activities)</b>															
Conservation forestry			%	%	%	%	%	%	Y	N	N	Y	Y	Y	
...															

Not aligned activity



## How to measure the criteria of the EU Taxonomy

### Incorporation of indicators to EU Taxonomy

**Solution:** Use of indicators from Star4bbs project to support the measurement of the technical criteria of the EU Taxonomy

#### EU Taxonomy

**Goal:** It includes technical criteria aiming to have a substantial contribution to one of the six objectives

**Gaps:** Related directives and delegated acts do not provide a methodology about how to measure the criteria.



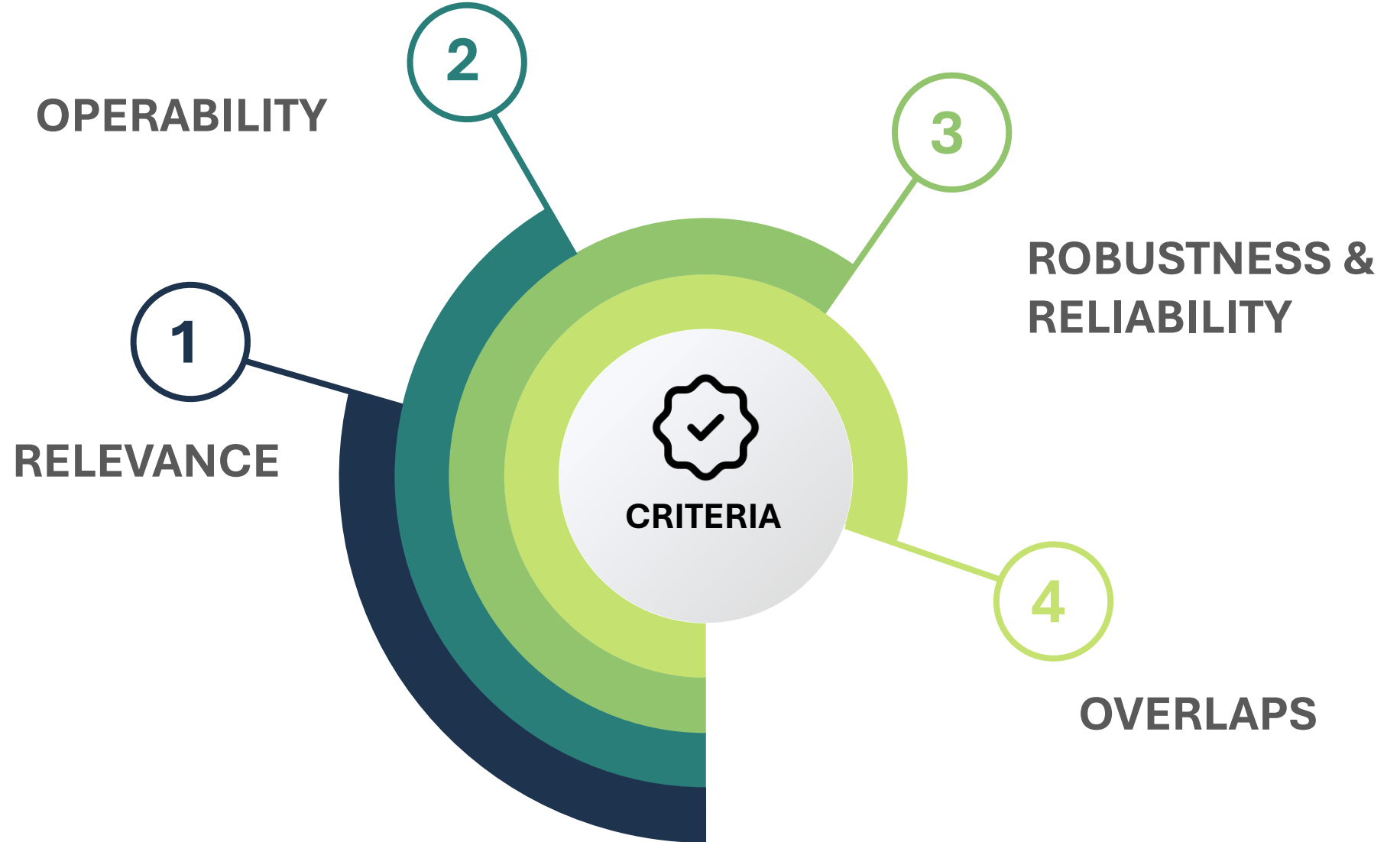
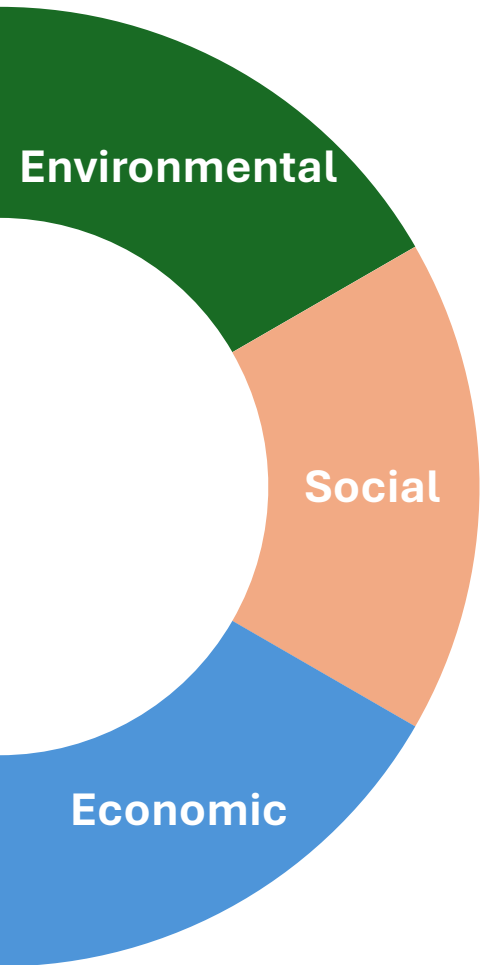
#### Star4bbs project

**Goal:** Transition to sustainable bio-based economy from the support of certification schemes and labels

**Key activity:** Analysis of LCA and non-LCA indicators for bio-based sectors.

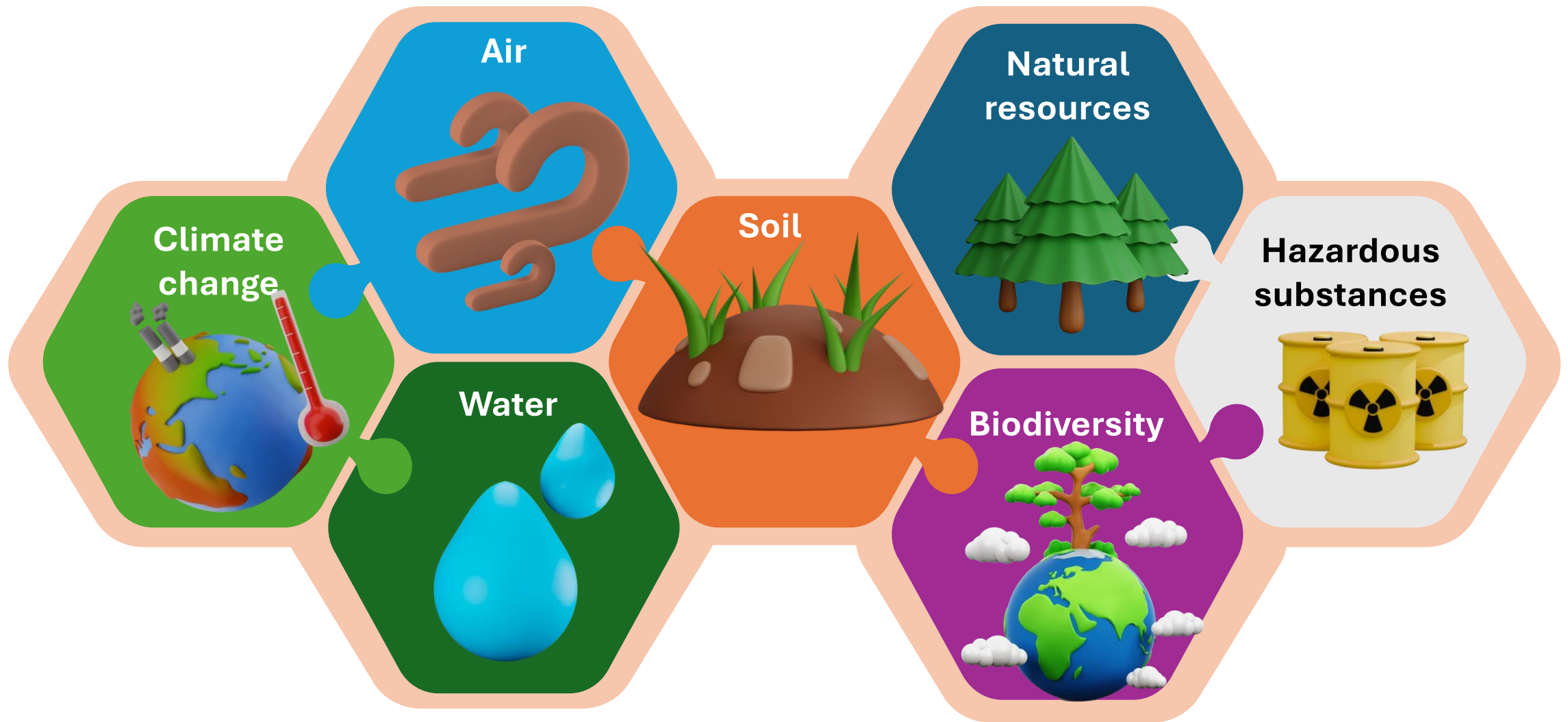


## Identification and selection of LCA indicators





## Classification of the environmental indicators in key areas





## Environmental LCA indicators

Key area	Subarea	Indicator	Impact category	Metrics/ Characterization model	Unit	Stage	Sector
Climate change	GHG emissions	Radiative forcing as global warming potential (GWP100)	Climate change	Baseline model of 100 years of the IPCC (based on IPCC 2013)	kg CO <sub>2</sub> eq	All	All
Air	Air quality	Ozone Depletion Potential (ODP)	Ozone depletion	Steady-state ODPs as in (WMO 2014 + integrations)	kg CFC-11 eq	All	All
Water	Water quality	Fraction of nutrients reaching marine end compartment (N)	Eutrophication, marine	EUTREND model (Struijs et al, 2009) as implemented in ReCiPe	kg N eq	All	All
Water	Water depletion	Weighted user deprivation potential	Water use	Available WATER REmaining (AWARE)	m <sup>3</sup> world eq	All	All
Natural resources	Abiotic resources	Abiotic resource depletion – ADP ultimate reserves	Resource use, minerals and metals	CML 2002 (Guinée et al., 2002) and van Oers et al. 2002	kg Sb eq	All	All
Hazardous substances	Human toxicity	Comparative Toxic Unit for humans (CTUh)	Human toxicity, cancer effects	USEtox model (Rosenbaum et al, 2008)	CTUh	All	All
Hazardous substances	Human toxicity	Human exposure efficiency relative to U <sup>235</sup>	Ionising radiation, human health	Human health effect model as developed by Dreicer et al. 1995 (Frischknecht et al, 2000)	kBq U <sup>235</sup> eq	All	All





# Identification and selection of non-LCA indicators

## Monitoring systems



## SCS & Labels



## Reports & papers





## Non-LCA criteria

Pillar

Environmental

Main definition

“Sustainable bioeconomy should ensure that natural resources are conserved, protected and enhanced”

### KEY AREAS

Climate change

Principle 1

Climate change mitigation and adaptation are pursued

Air

Principle 2

Promote good air quality

Water

Principle 3

Water quality and quantity are maintained and enhanced

Soil

Principle 4

The degradation of soil is prevented, stopped or reversed

Biodiversity

Principle 5

Biodiversity conservation is ensured

Natural resources

Principle 6

Natural resources are safe warded

Hazardous substances

Principle 7

Promote responsible use of high concerns substances

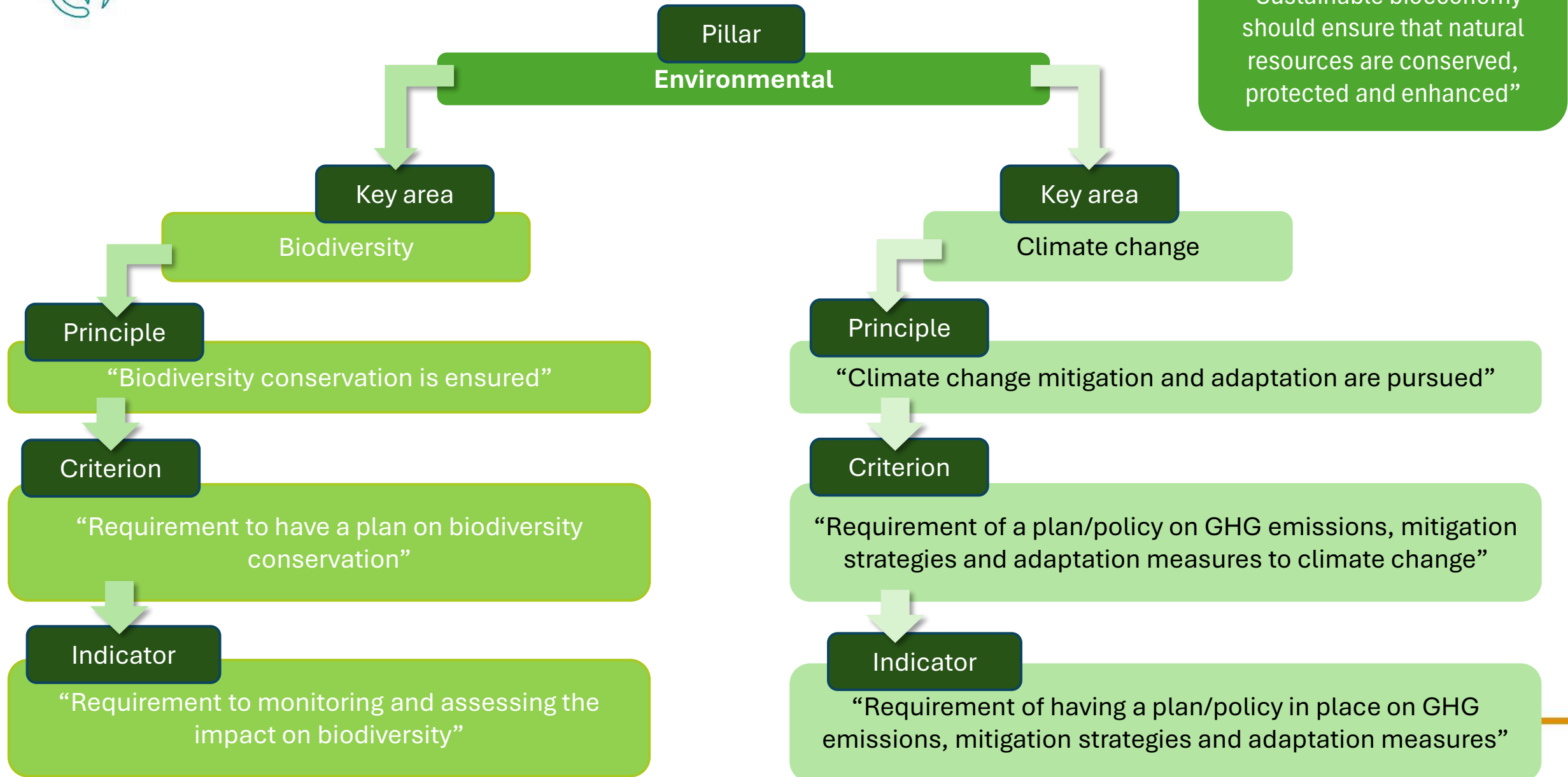
Human health

Principle 8

Minimize the impacts on human health



## Examples of non-LCA environmental based criterion and indicators





## Correlation between criteria and indicators

**Substantial contribution criteria:**

**Example of indicator**

**Activity:** Forest management

*Calculation of climate benefit in **consistence** with the 2019 Refinement to the 2006 IPCC*

Radiative forcing as global warming potential (GWP100)

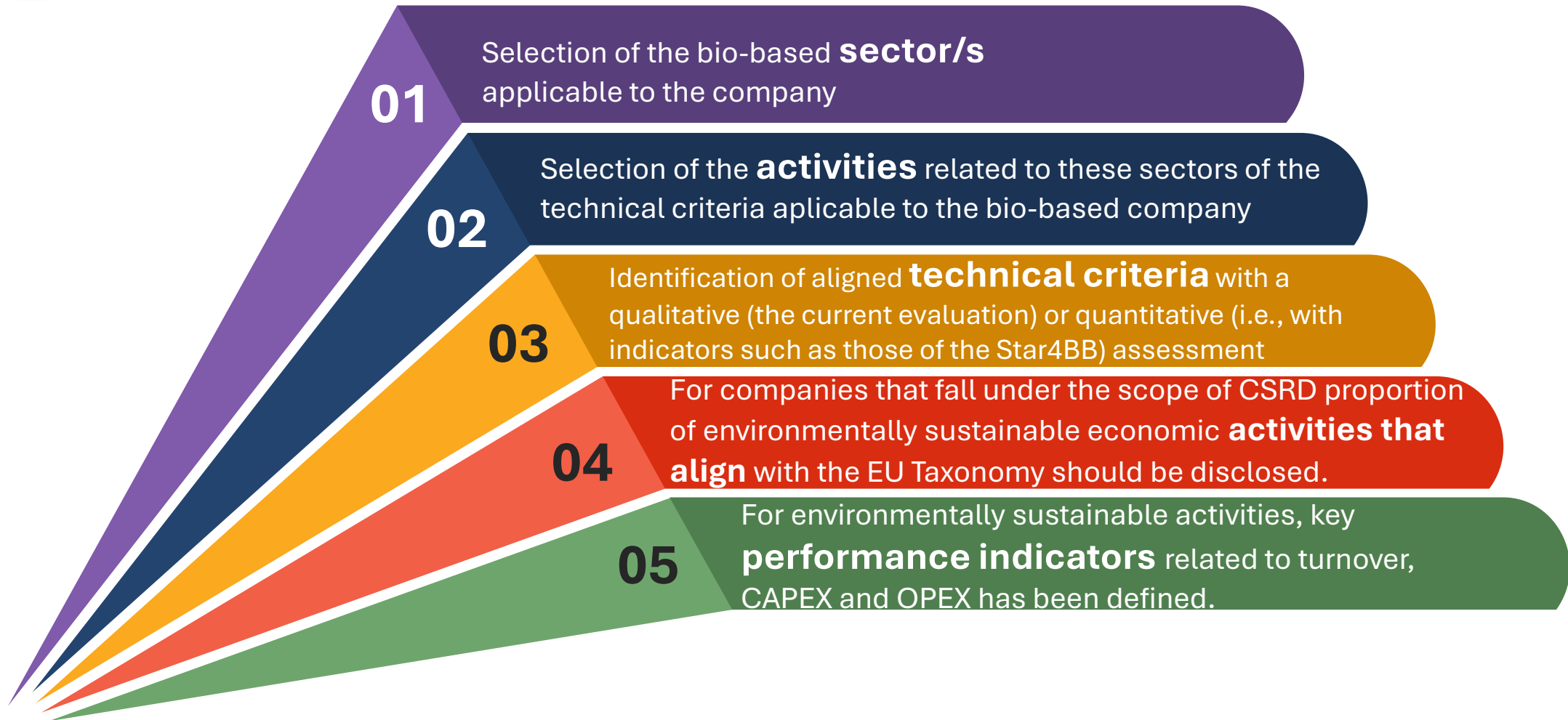
**LCA indicator**

“Requirement of having a plan/policy in place on GHG emissions, mitigation strategies and adaptation measures”

**Non-LCA indicator**



## How the bio-based sector can be reported using CRSD with the EU taxonomy?



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