



# Transformation to Bioeconomy – work in Progress!

Permanent representation of Austria to the EU

26<sup>th</sup> April 2022

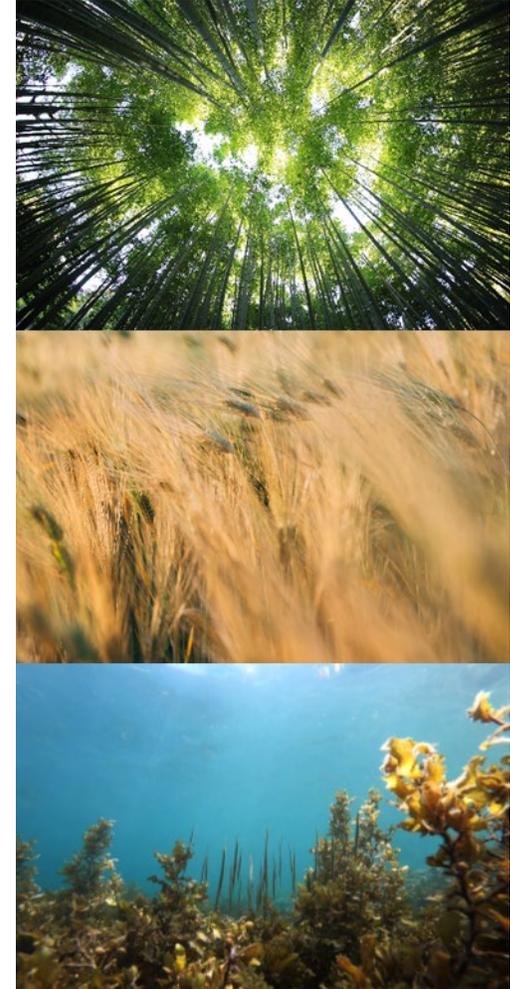
*Peter Wehrheim – Head of unit RTD.B2 Bioeconomy and food system,  
European Commission*

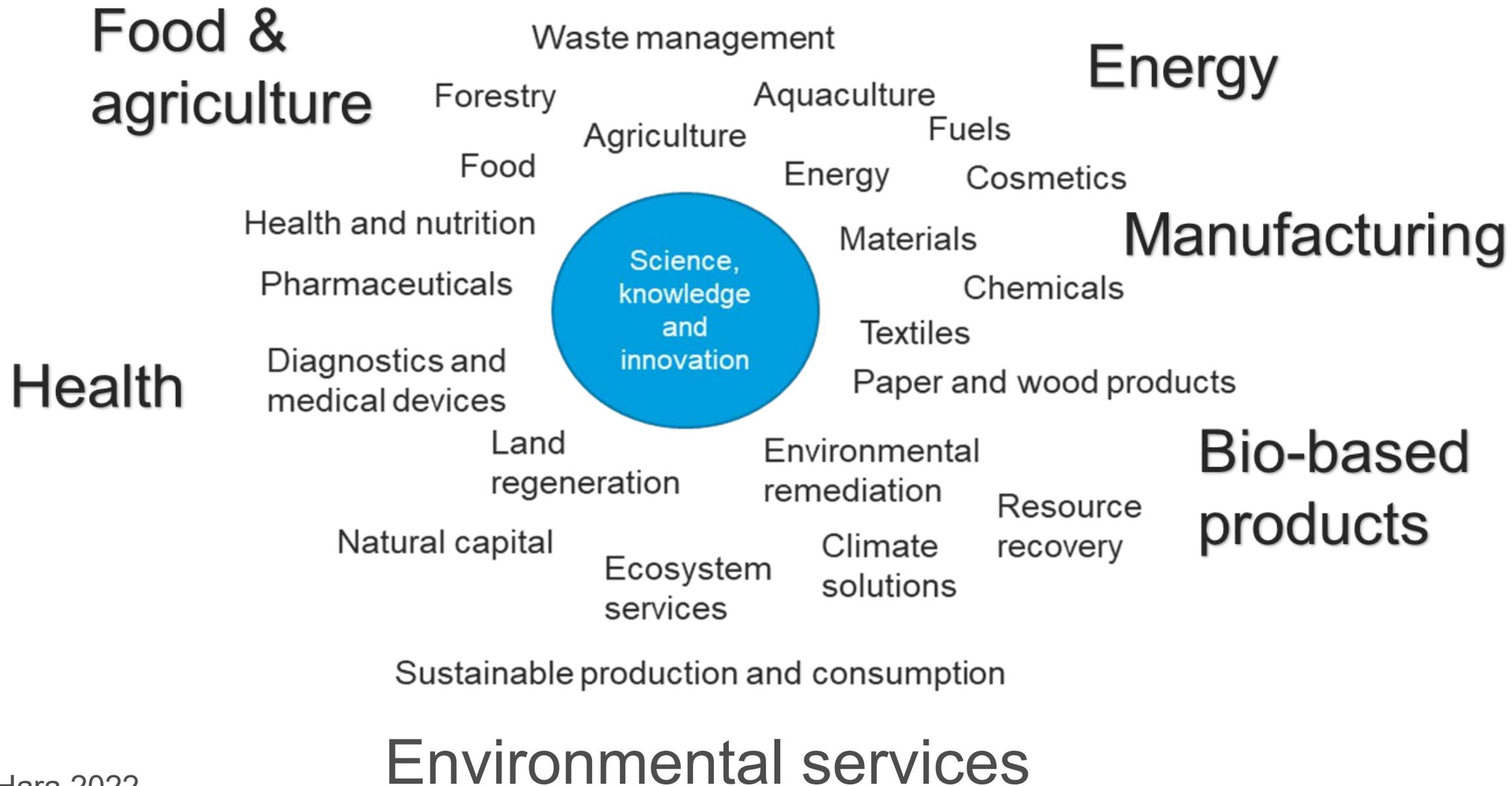
# What is the bioeconomy?

# EU's understanding of the Bioeconomy

**All sectors and associated services and investments that produce, use, process, distribute or consume biological resources, including ecosystem services.**

- Primary production systems - agriculture, forestry, aquaculture / fisheries – incl. waste/side streams
- Ecosystems services on land and sea: e.g. Biodiversity and Carbon farming
- Food, feed, fibre, bio-based industry (fuels and bio-energy, biochemicals, biocosmetics, etc.)





# Examples of innovative bioeconomy products

- [Woodio](#): combination of wood (80%) and resin based adhesives
- Use of woodchips to make long-lived wood products
- Produced from wood chips usually used for pulp, energy
- Lower carbon footprint on the lifecycle than for similar traditional ceramic bathroom fixtures
- Received acceleration funding (7,5 million euros) in 2021 from the [European Innovation Council](#)



# Examples of innovative bioeconomy products

- [Timbeco](#): produces tailor-made energy efficient timber frame elements, elemental houses and modules
- Timber frames made from Nordic pine certified by the Forest Stewardship Council
- Production less energy intensive than other building materials such as concrete
- Part of the [Enterprise Europe Network](#)





# EU BIOECONOMY

European Commission's Knowledge Centre for Bioeconomy

EMPLOYMENT  
(MILLION JOBS)  
**17.5**

VALUE ADDED  
(BILLION EUR)  
**614**

	EMPLOYMENT (MILLION JOBS)	VALUE ADDED (BILLION EUR)	VALUE ADDED (SHARE TOT)
AGRICULTURE	9.3	189	31%
FORESTRY	0.5	25	4%
FISHING AND AQUACULTURE	0.2	7	1%
FOOD, BEVERAGES AND OTHER AGRO-MANUFACTURING	4.4	215	35%
BIO-BASED TEXTILES	0.7	21	3%
WOOD PRODUCTS AND FURNITURE	1.4	47	8%
PAPER	0.6	42	7%
BIO-BASED CHEMICALS AND PHARMA- CEUTICALS, PLASTICS AND RUBBER	0.4	60	10%
LIQUID BIOFUELS	0.02	3	1%
BIOELECTRICITY	0.02	4	1%

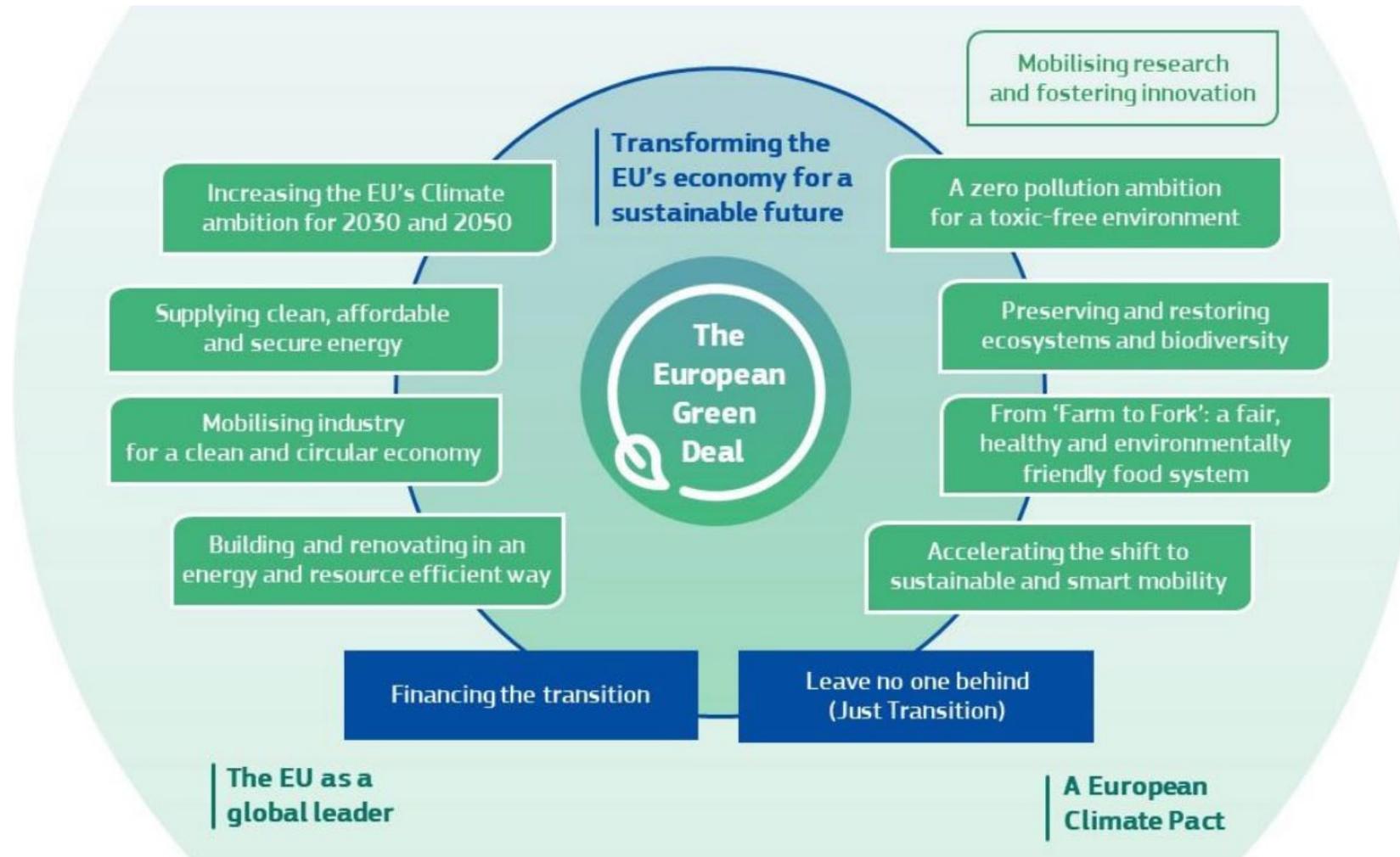
## A key sector of the EU's economy

- ~8.9% of the EU's workforce
- ~75% employed in agriculture, food and drink industry
- 4.7% of GDP
- High job creation potential, in rural, coastal and urban areas, through the growing participation of primary producers and deployment of bio-based solutions

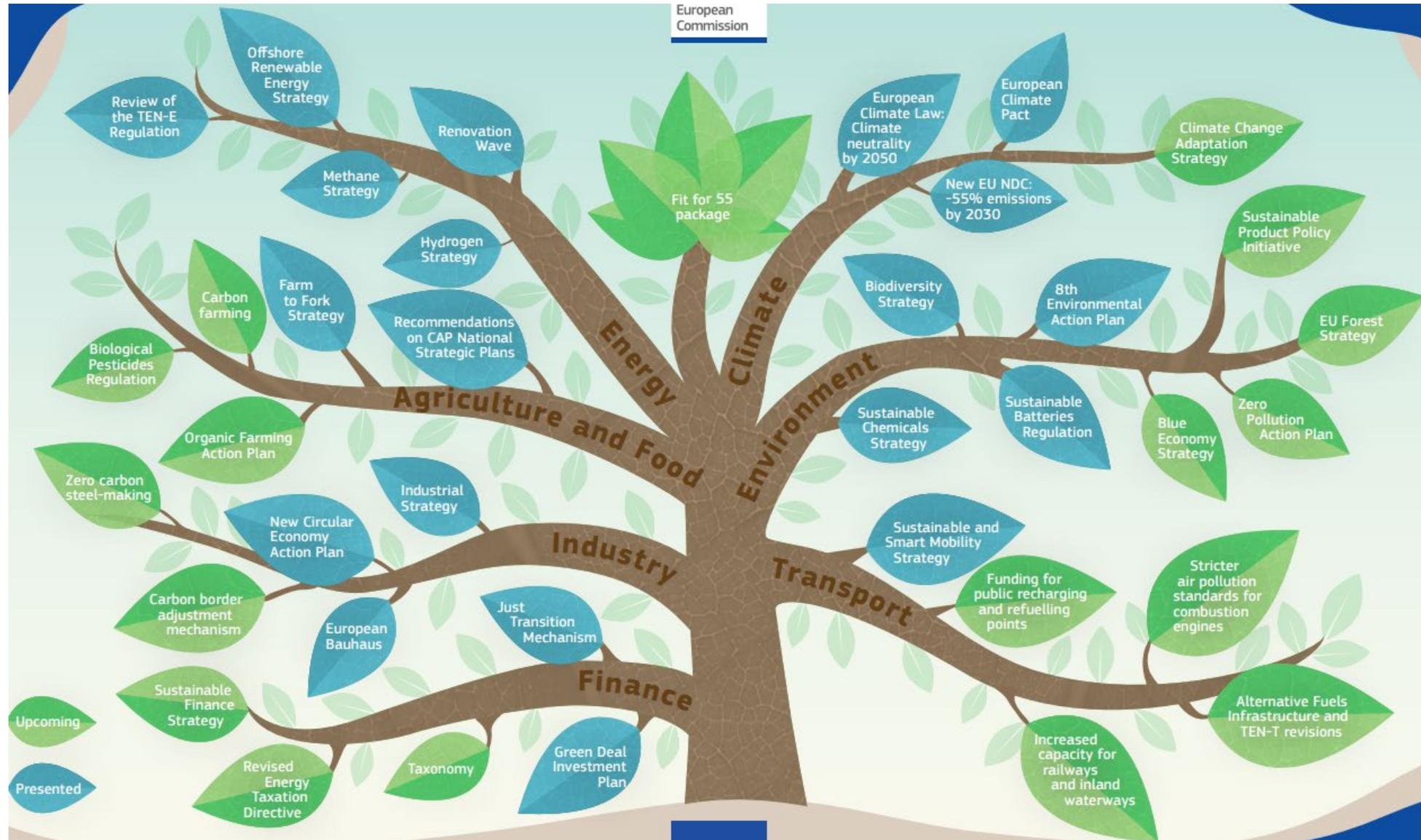
# Recent EU policy developments

# The EU Green Deal

« It is a new growth strategy that aims to transform the EU into a **fair and prosperous society**, with a modern, **resource-efficient and competitive** economy, where there are no **net emissions of greenhouse gases in 2050** and where **economic growth is decoupled from resource use.** »



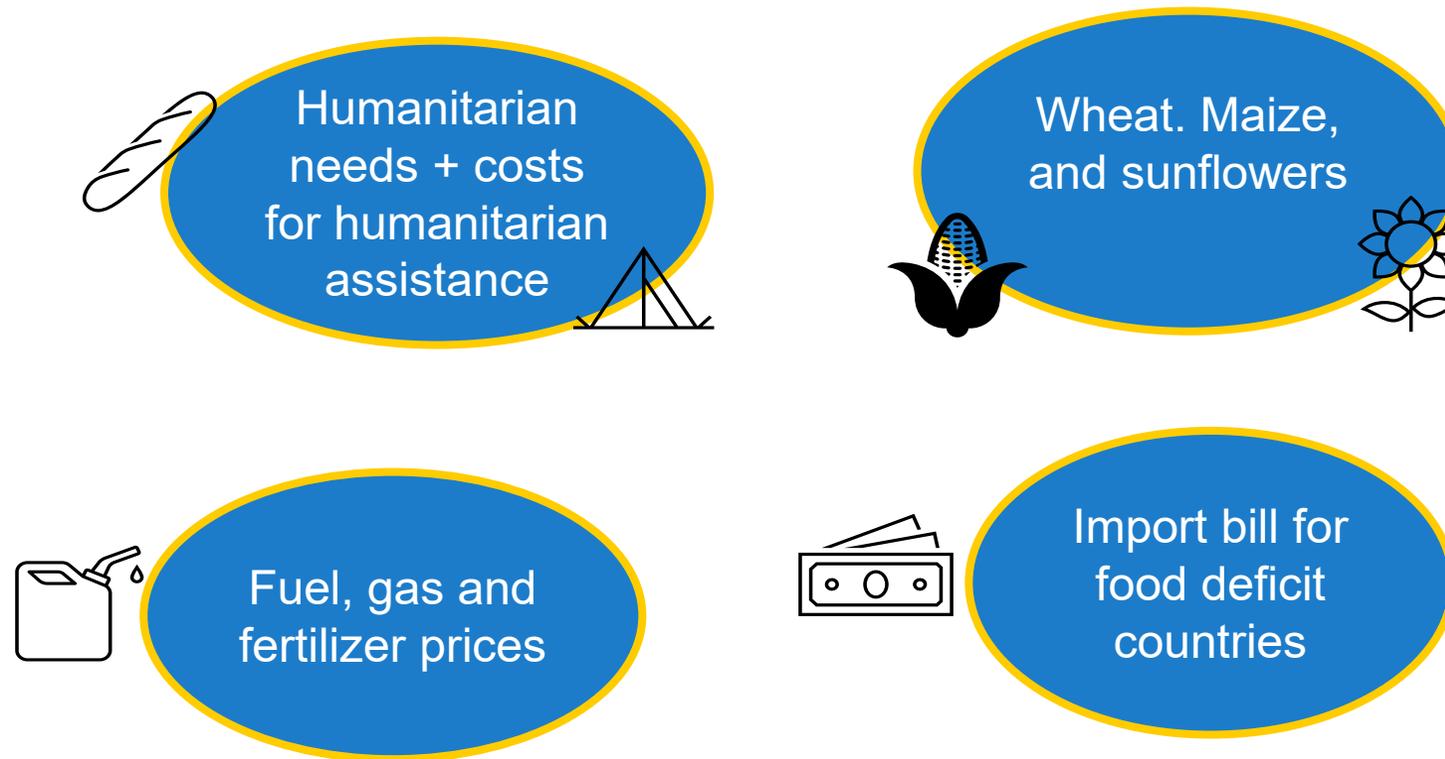
# The EU Green Deal



# Food Security Communication (March 2022)

## Safeguarding food security and supporting EU farmers and consumers

### Direct and indirect food security impact of the war in Ukraine



# Food Security Communication (March 2022)

**Safeguarding food security  
and supporting EU farmers  
and consumers**

## **Food systems resilience**

- Ensure food sustainability
- Innovation
- Safeguard soil fertility
- Reduce dependence on feed imports and review of protein policy
- Accelerate renewable energy (REPowerEU)

# EU Bioeconomy policy

# European bioeconomy policy development

2012



Communication on Bioeconomy

2017



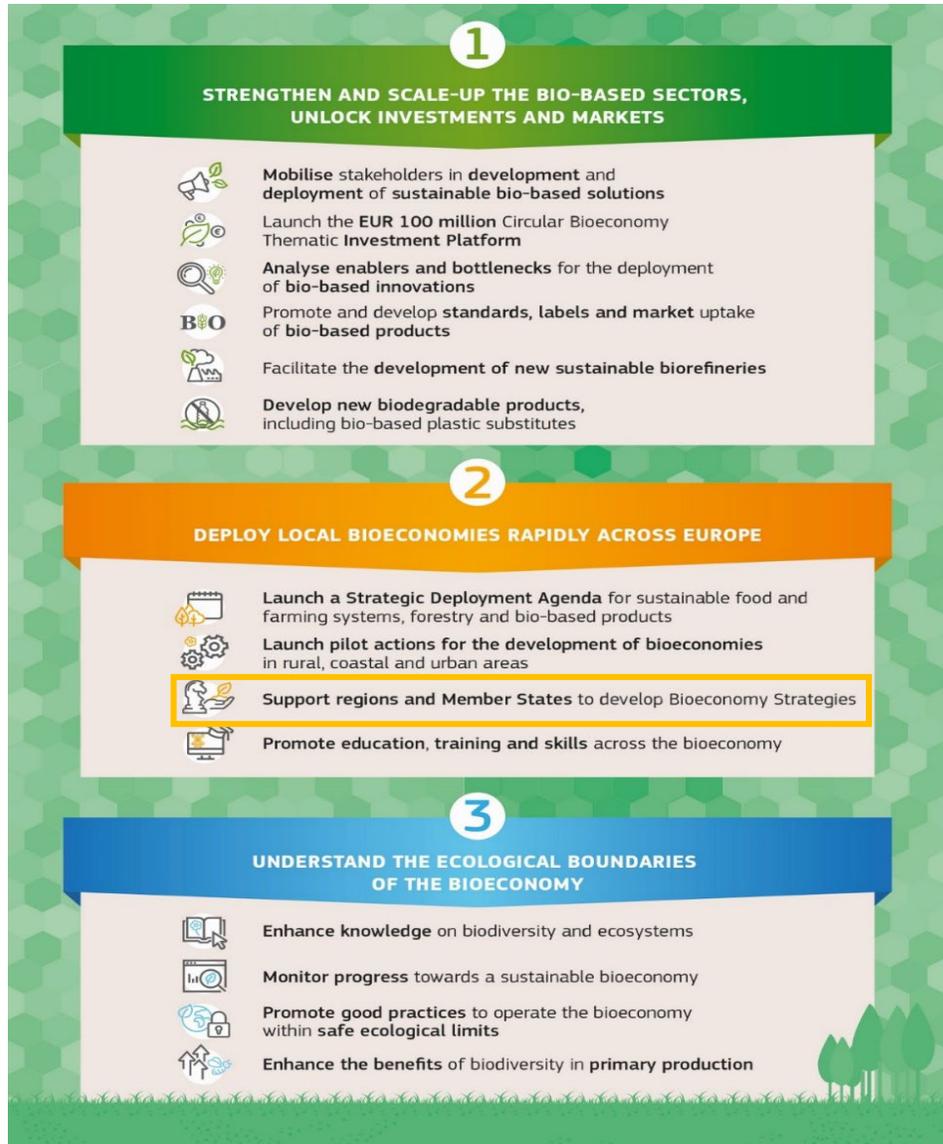
Review of Bioeconomy Strategy

2018



Updated Bioeconomy Strategy

# The EU Bioeconomy Strategy and Action Plan



- **SUSTAINABILITY** and **CIRCULARITY** at its core
- **SYSTEM-wide** approach
- Policies across sectors, addressing trade-offs, co-benefits
- More than research & innovation
- Delivering for the citizens, in particular in rural areas
- A set of 14 well-defined actions including a monitoring system with clear indicators



“ *With its potential to connect and implement transformative policies holistically, the bioeconomy will contribute to all dimensions and objectives of the European Green Deal. Research and innovation will enable Europe to lead the green and digital transition.* ”

*Mariya Gabriel, EU Commissioner for Innovation, Research, Culture, Education and Youth*

*Research and  
Innovation*

### **Bioeconomy - a blueprint for green growth which:**

- Holistically addresses the economic, social and environmental aspects
- Contributes to a climate-neutral future
- Promotes resource efficiency and circularity
- Reduces dependence on non-renewable resources
- Safeguards biodiversity and ecosystems
- Provides opportunities for fair and just transition
- Green business opportunities for SMEs

See Factsheet on **How the bioeconomy contributes to the Green Deal** (<https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/66722c8d-2e03-11eb-b27b-01aa75ed71a1>)

# Progress report

“

To ensure the effective delivery of the proposed policy goals, **the Commission will report regularly on the progress of the Action Plan** and is committed to adapting or discontinuing activities that do not contribute to the objectives of the Strategy in a satisfactory manner.

”

2018 EU Bioeconomy Strategy

“

INVITES the Commission to analyse the state of the operational policy, economic and social environment. **RECOGNISES** the need to assess the progress of the updated European Bioeconomy Strategy as one essential enabler for achieving a climate neutral economy and sustainable growth; **CALLS upon the incoming Commission to deliver a progress report and if appropriate with update of the action plan and/or the Strategy at the latest by 2022.**

”

Council Conclusions on  
2018 BioE Strategy

# Progress report

## Objectives

- 1. Reporting on the progress of the implementation of the 2018 EU Bioeconomy Strategy, as well as the general progress of the bioeconomy in Europe.**
- 2. Framing the bioeconomy within the new policy context, e.g. the European Green Deal and the new geopolitical situation.**

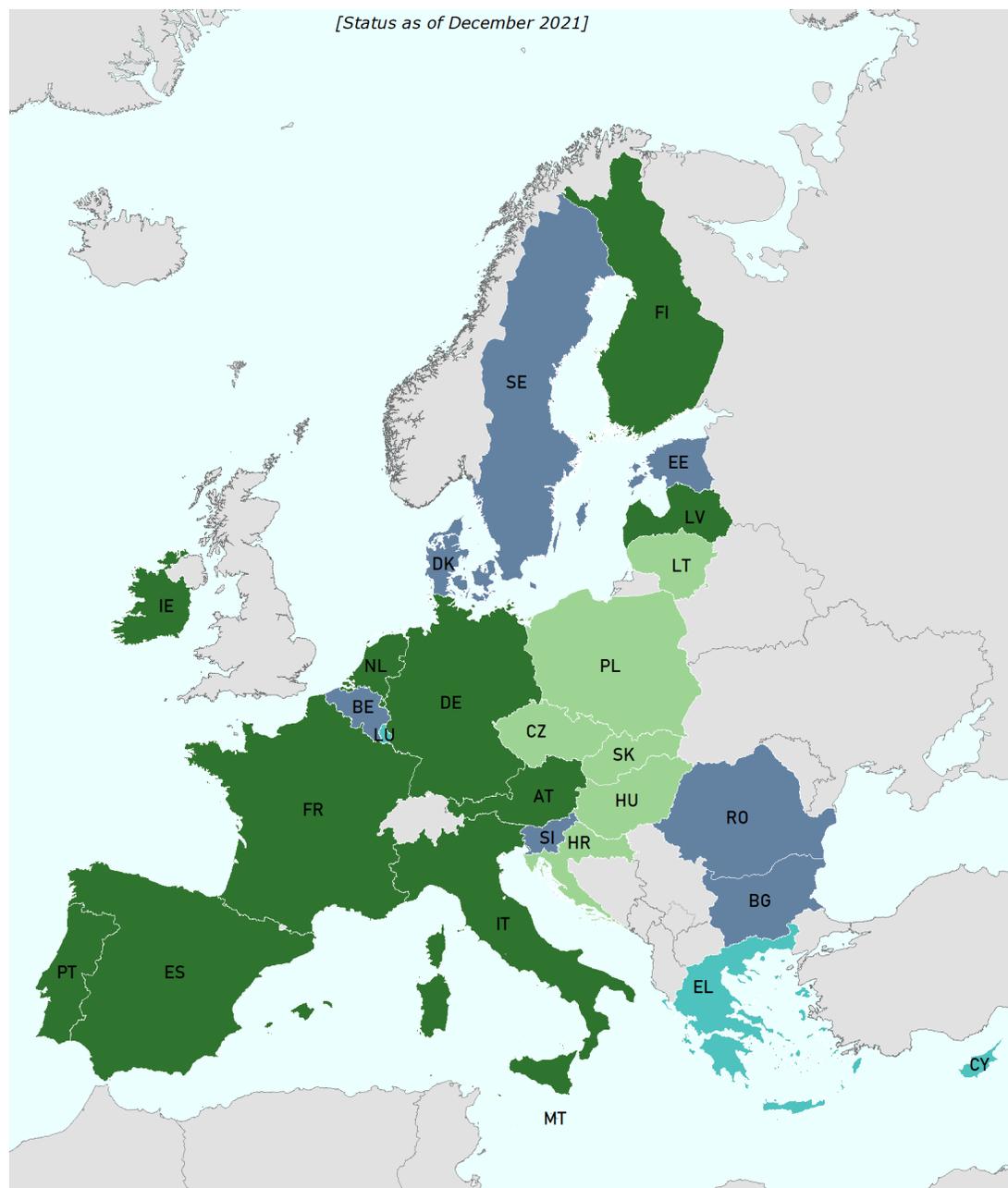
# National and regional bioeconomy initiatives

[Status as of December 2021]

# Status of the national bioeconomy policies in the EU-27

(as of Dec 2021)

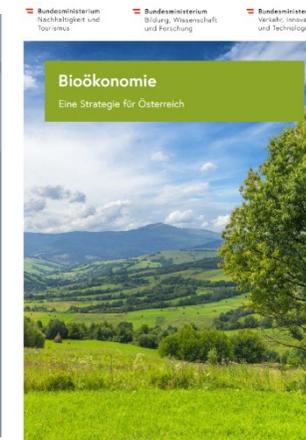
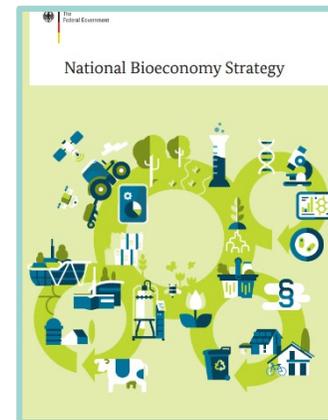
- 10 Member states with dedicated bioeconomy strategies at national level (AT, DE, ES, FI, FR, IE, IT, LV, NL, PT)



**Status of national bioeconomy strategies:**

- Dedicated bioeconomy strategy at national level
- Dedicated bioeconomy strategy at national level under development
- Other policy initiatives dedicated to the bioeconomy
- Other related strategies at national level

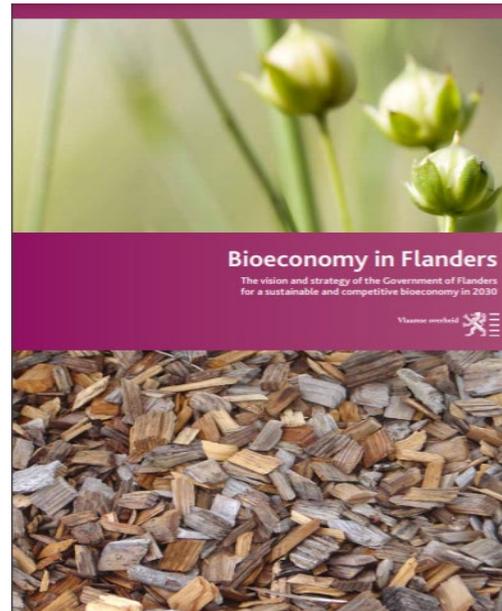
Source: EC's Knowledge centre for Bioeconomy  
 Administrative Boundaries:  
 © EuroGeographics © UN-FAO © Turkstat



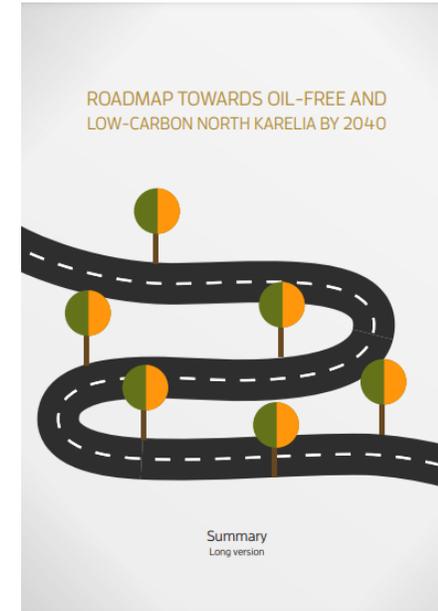
# Regional Bioeconomy Strategies



Bayern Bioeconomy Strategy



Flanders Bioeconomy Strategy



North Karelia 2040 Strategy



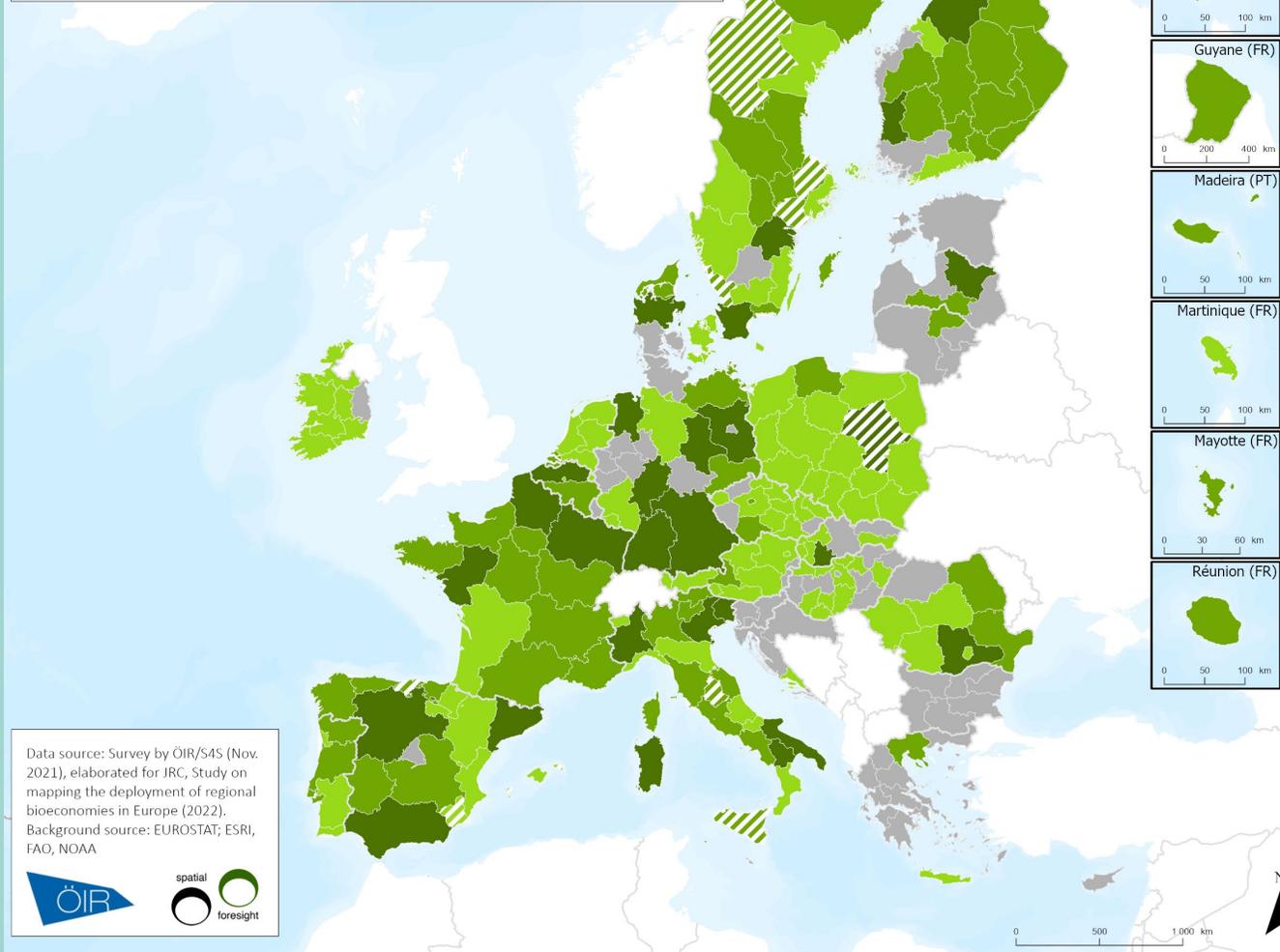
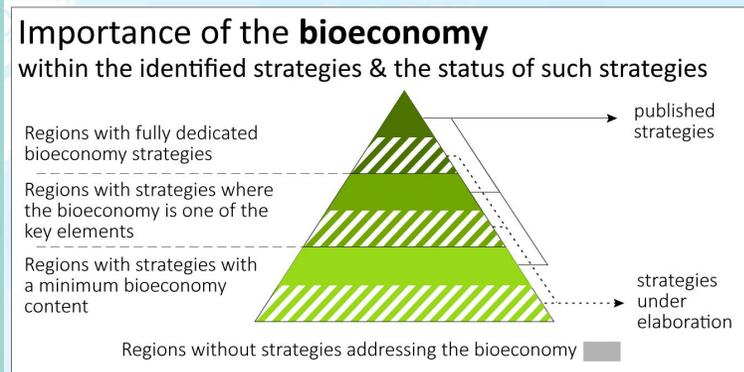
## European Forest Institute - Bioregions Facility

The Bioregions Facility promotes Trans-regional cooperation for a sustainable and integrative forest-based circular bioeconomy.

# Status of the regional bioeconomy policies in the EU-27 (as of Nov 2021)\*

- 28 EU regions have dedicated strategies developed and 1 region under development.
- 68 EU regions have adopted policies where bioeconomy is a key element while in 7 additional regions such strategy is under development.
- 94 EU regions have released strategies with a minimum bioeconomy content and in 2 regions are still under development.

\*Based on the “Study on mapping the deployment of regional bioeconomies in Europe” commissioned by KCB



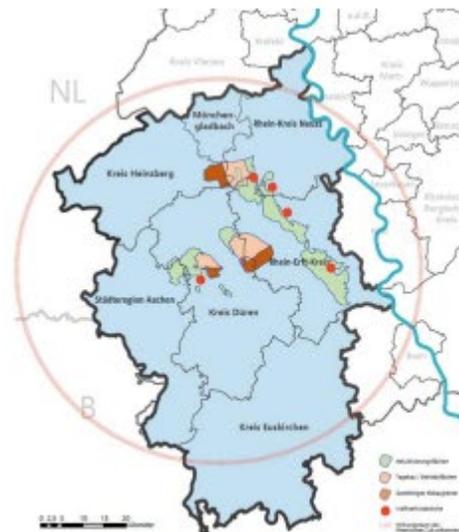
Data source: Survey by ÖIR/S4S (Nov. 2021), elaborated for JRC, Study on mapping the deployment of regional bioeconomies in Europe (2022).  
Background source: EUROSTAT; ESRI, FAO, NOAA



# A regional example: Bioökonomie REVIER

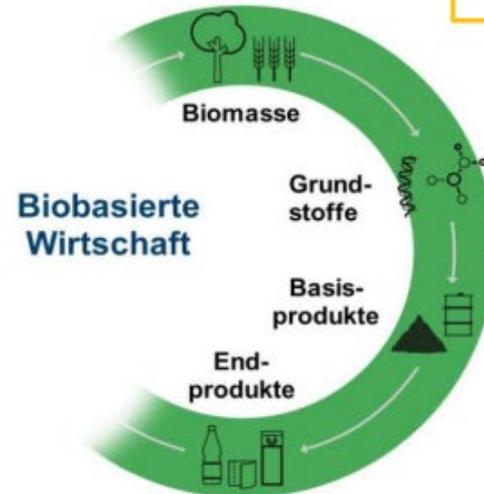
## From coal to sustainable bioeconomy in the Rheinische Revier

- Lignite mining will expire by 2038 at the latest
- 9,000 jobs directly, 93,000 affected in associated industries
- Regional business model ends
- Transformation to... What ???
- 



# A regional example: Bioökonomie REVIER

Development of a model region for a sustainable bioeconomy...



Replacement of fossil resources

Innovative food and feed

Circular economy

**Model Region BioeconomyREVIER**  
Climate protection and value creation/ employment inclusive

New products, processes and services

Using existing strengths

Developing key technologies

# A regional example: Bioökonomie REVIER

## Practical implementation

- Coordination of regional transformation
- Involvement of all relevant actors
- Cross-sectoral networking and integration
- Start-up ecosystem
- Regional/Local Bioeconomy Profiles
- Knowledge transfer and society participation
- Future perspective and regional identity



# Funding opportunities: Horizon Europe



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#HorizonEU

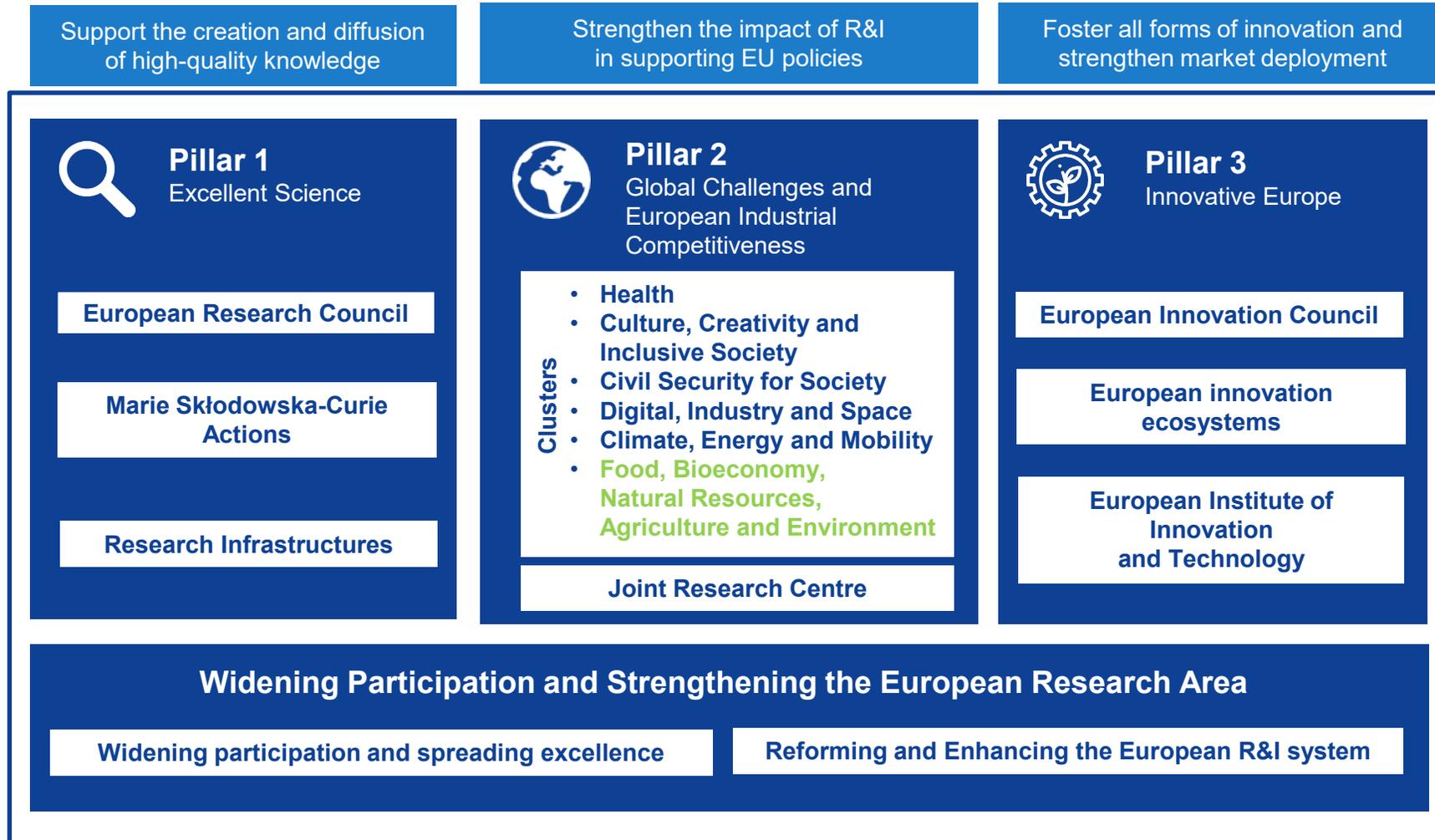
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2021 - 2027

THE EU RESEARCH & INNOVATION PROGRAMME

# Structure & resources



**EUR 8,952 billion** under Horizon Europe  
for Cluster 6 “Food, Bioeconomy, Natural Resources, Agriculture and Environment”

# Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment



Climate neutrality and adaptation to climate change



Sustainable and circular management and use of natural resources as well as prevention and removal of pollution



Food and nutrition security for all within planetary boundaries



Preservation and restoration of biodiversity and ecosystems



Rural, coastal, peri-urban and urban areas developed in a sustainable, balanced and inclusive manner



Governance models enabling sustainability

# Cluster 6 partnerships

## Co-funded partnership (in WP)

Rescuing biodiversity to safeguard life on Earth

Water Security for the Planet (Water4All)

A climate neutral, sustainable and productive Blue Economy

Accelerating farming systems transition: agroecology  
living labs and research infrastructures

Animal health: fighting infectious diseases

Agriculture of data

Safe and sustainable food systems for people, planet and climate

**Circular Bio-based Europe (CBE): €1bln; outside the WP (institutional partnership)**

# EU Missions: A Soil Deal for Europe



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# EU MISSIONS



**Concrete solutions for our greatest challenges**

**A Soil Deal for Europe:  
100 living labs and lighthouses to lead the transition  
towards healthy soils by 2030**

**#EUmissions #HorizonEU**

**Peter Wehrheim, Head of Unit Food Systems and Bioeconomy, RTD unit B2  
Deputy Mission Manager for the Soil Mission**

## Why a mission on soil health?



### LIFE ON EARTH DEPENDS ON **HEALTHY SOILS**

- They are the foundation of our food systems  
**No soil, no food!!**
- They provide clean water (purification)
- They are habitats for biodiversity
- They contribute to climate resilience, key for food system resilience
- Soil is a **scarce, non-renewable resource.**
- **Soils are threatened:** 60-70% of soils in Europe are considered to be unhealthy





## We need to act now

### Soils need our attention! EU Examples:

- 2.8 million potential **contaminated sites** (only 24% inventoried) posing major **health risks**
- 65-75% of agricultural soils with nutrient inputs at levels risking **eutrophication of soils and water** and **affecting biodiversity**
- Cropland soils **losing carbon** at a rate of 0.5% per year; 50% of peatlands drained and losing carbon – this is contributing to **the climate crisis**
- 24% of land with **unsustainable water erosion rates**
- 25% of land at High or Very High risk to **desertification** in Southern, Central and Eastern Europe
- The **costs associated with soil degradation** in the EU exceed **50 billion € per year**

The effects of climate change put further pressure on soils and accelerate land degradation!



# Goal of mission “A Soil Deal for Europe”: 100 living labs and lighthouses to lead the transition towards healthy soils by 2030

## Specific objectives



1. Reduce desertification

2. Conserve soil organic carbon stocks

3. Stop soil sealing and increase re-use of urban soils

4. Reduce soil pollution and enhance restoration

5. Prevent erosion

6. Improve soil structure to enhance soil biodiversity

7. Reduce the EU global footprint on soils

8. Improve soil literacy in society

Each specific objective is backed by **one or more quantified targets** and **measurable indicators**. Objectives apply to **all types of land use**.



# How will the Mission be implemented?

Communication, training and advice targeted to different target groups; specialised “soil advisors”



4. Soil literacy, communication citizen engagement

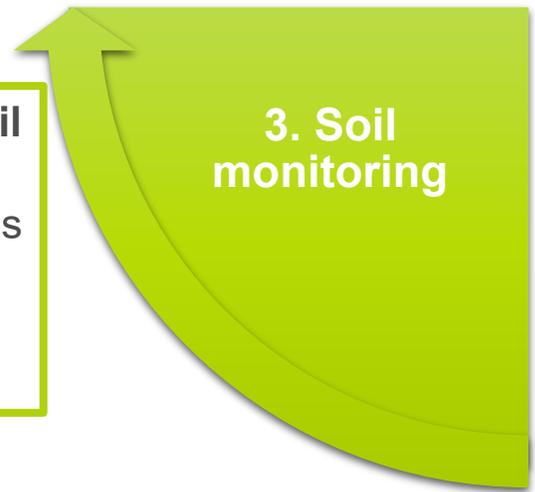
Knowledge, data, technologies and infrastructures to support practices and business models for soil health



1. R&I programme

Co-implementation of mission by: researchers, land managers, regions, businesses, policy makers, citizens and international partners

Harmonization of soil health monitoring and reporting across Europe; contribution to European Soil Observatory



3. Soil monitoring

A comprehensive network of real-life sites for co-creating, testing, demonstrating and upscaling of solutions



2. Living labs and lighthouses



Activities under the **four building blocks** to address **soil health** and the **drivers of soil health**

# Conclusions

- The **bioeconomy concept is holistic**, allows to address the different dimensions of sustainability
- The knowledge-based bioeconomy offers **multiple opportunities for green growth and innovation (products and business models)**
- **Horizon Europe supports** research and innovation related to **the bioeconomy** through Cluster 6, partnerships and missions
- Collaboration with Universities like BoKU is essential to progress on the research/innovation and on the education agenda related to the Bioeconomy



# Last but not least...

## Bioeconomy Conference

- High-level **Bioeconomy Conference** in Brussels to present the Progress Report
- **6<sup>th</sup> and 7<sup>th</sup> October 2022**

# Thank you

**The EU's Bioeconomy strategy:**

[https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/bioeconomy-strategy\\_en](https://ec.europa.eu/info/research-and-innovation/research-area/environment/bioeconomy/bioeconomy-strategy_en)

**The Knowledge Centre for Bioeconomy:**

[https://knowledge4policy.ec.europa.eu/bioeconomy\\_en](https://knowledge4policy.ec.europa.eu/bioeconomy_en)

**Horizon Europe portal:**

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon>

**CBE JU:**

<https://www.cbe.europa.eu>

**Circular Bioeconomy Cluster: Pitch Event for Bioeconomy Innovators - Circular Bioeconomy Cluster South West (cbcsw.ie)**

#HorizonEU #EUScience&Innovation #EU\_ScienceHub



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# Circular Bio-based Europe



+



= CBE JU

- > Build on the success of BBI JU
- > Step up the contribution to the EU's climate targets



Find out more about CBE JU

# Circular Bio-based Europe



... will contribute significantly to the 2030 climate targets, paving the way for climate neutrality by 2050



... will increase the sustainability and circularity of production and consumption systems



... will aim to develop and expand the sustainable sourcing and conversion of biomass into bio-based products



... will support the deployment of bio-based innovation at regional level, with a view to reviving rural and coastal regions

# Circular Bio-based Europe

## General objectives:



Accelerate the **innovation** process and development of bio-based innovative solutions



Accelerate **market deployment** of the existing mature bio-based innovative solutions



Ensure a high level of **environmental performance** of bio-based industrial systems

# A regional example: Bioökonomie REVIER

## ...building on strengths

- Favorable natural conditions and resources (soils, climate, etc.) for agriculture – productive and innovative
- Industry: strong (energy-intensive) food industry and regional and supra-regional markets (paper, chemicals, energy,...)
- Jobs: high and low qualifications
- Activation in society/population
- Science and Training Region Bioeconomy

# 2023 — 27 CAP Strategic Plans



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## EU MISSIONS

SOIL DEAL FOR EUROPE

