

Bioeconomy in the EU and its Member States – some evidence on status and trends

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European Bioeconomy Scientific Forum 2023

Moving Towards the Transformation

Vienna, 6-8 September 2023

The need for evidence to inform policy

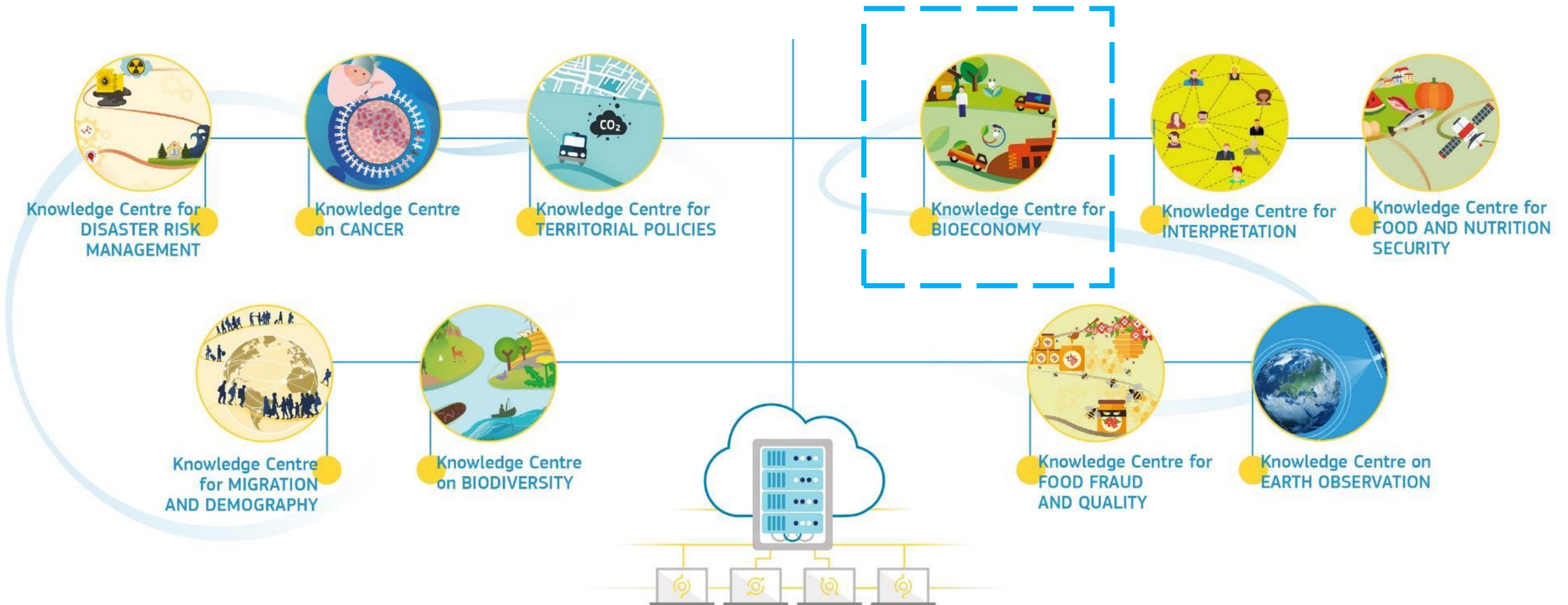


Our purpose

The Joint Research Centre provides independent, evidence-based knowledge and science, supporting EU policies to positively impact society.

EC Knowledge Centres

COM(2016)6626 introducing knowledge management



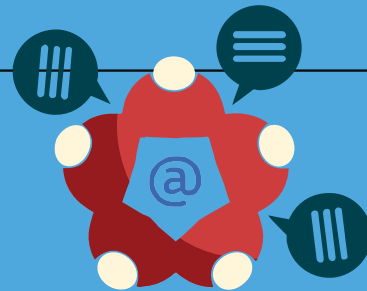
Knowledge Centre for Bioeconomy



Identifying and **filtering** relevant information and making it accessible:



Bringing together researchers, policymakers and other experts in the field.



Analysing, synthesising and communicating available evidence.



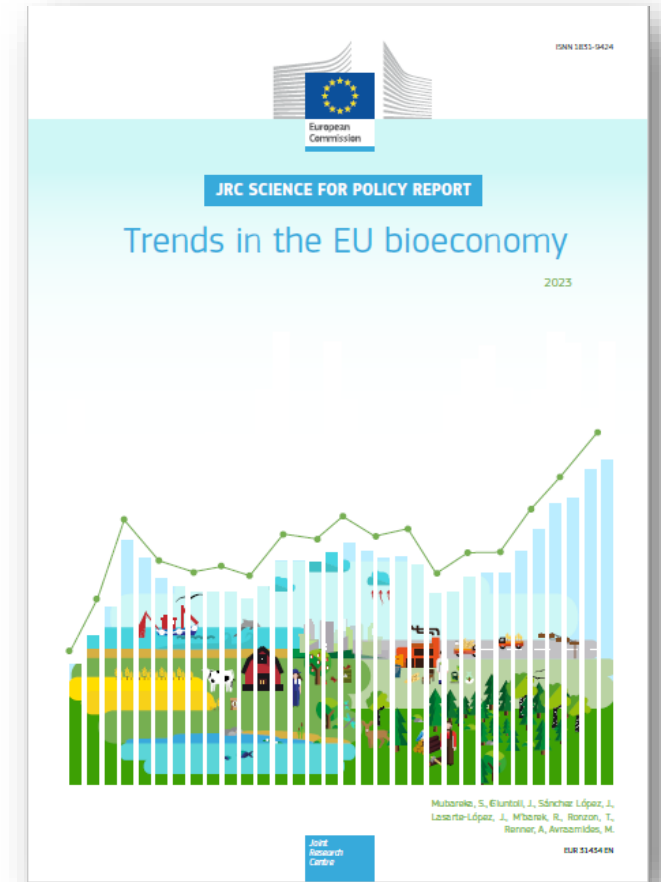
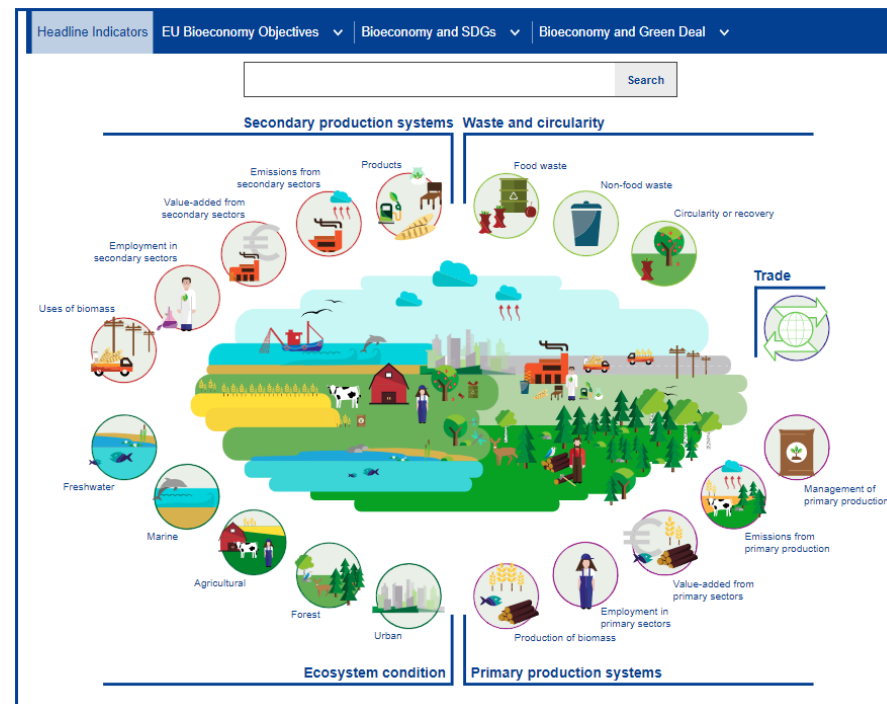
Enhancing the **knowledge** base for policymaking.



Enhancing the knowledge base - recent JRC output



EU Bioeconomy Monitoring System dashboard

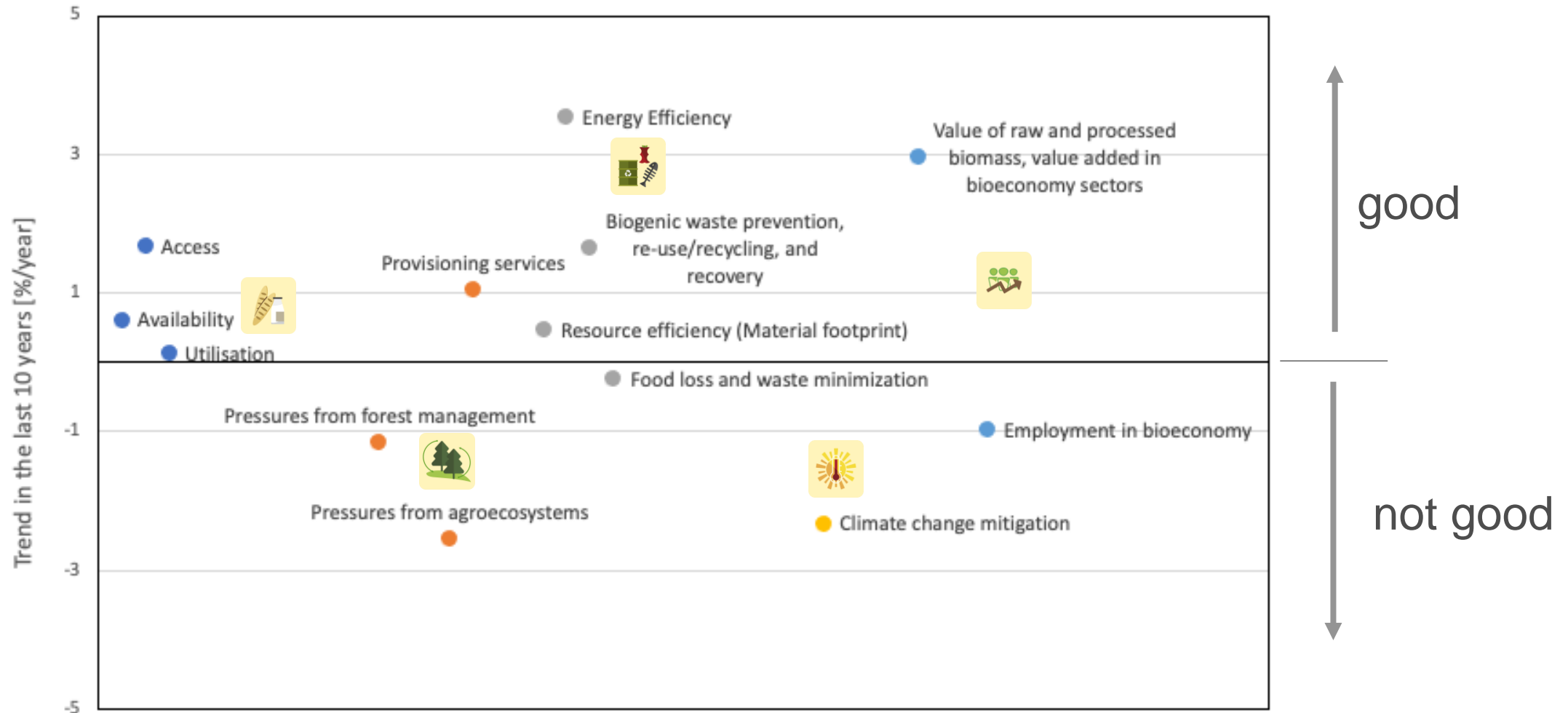


<https://publications.jrc.ec.europa.eu/repository/handle/JRC132358>

https://knowledge4policy.ec.europa.eu/bioeconomy/monitoring_en

<https://publications.jrc.ec.europa.eu/repository/handle/JRC132639>

Trends in the EU Bioeconomy objectives

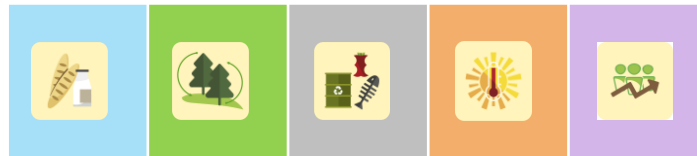


- Ensuring Food and Nutrition Security
- Mitigating and Adapting to Climate Change
- Managing Natural Resources Sustainably
- Strengthening European Competitiveness and Creating Jobs
- Reducing dependence on non-renewable, unsustainable resources

Trends in the EU bioeconomy

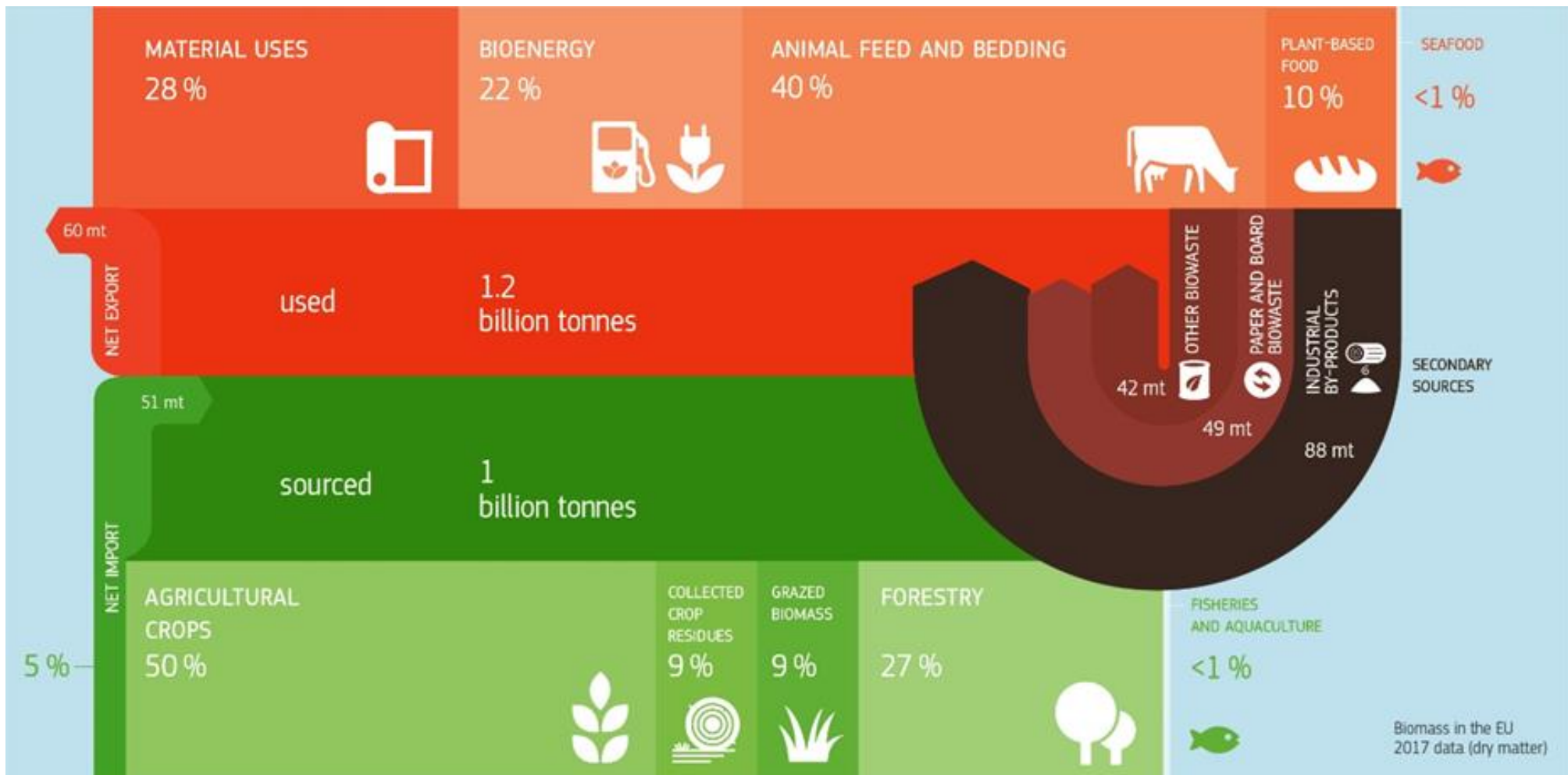


Access to food	↗	Re-use, recycling, recovery	↗
Availability of food	→	Minimisation food & waste loss	→
Food quality	→	Resource efficiency	→
Provisioning services	↗	Energy efficiency	↑
Pressures from forestry	↘	Employment in bioeconomy	→
Pressures from agriculture	↘	Value added of raw & processed biomass	↑
Climate change mitigation	↓		

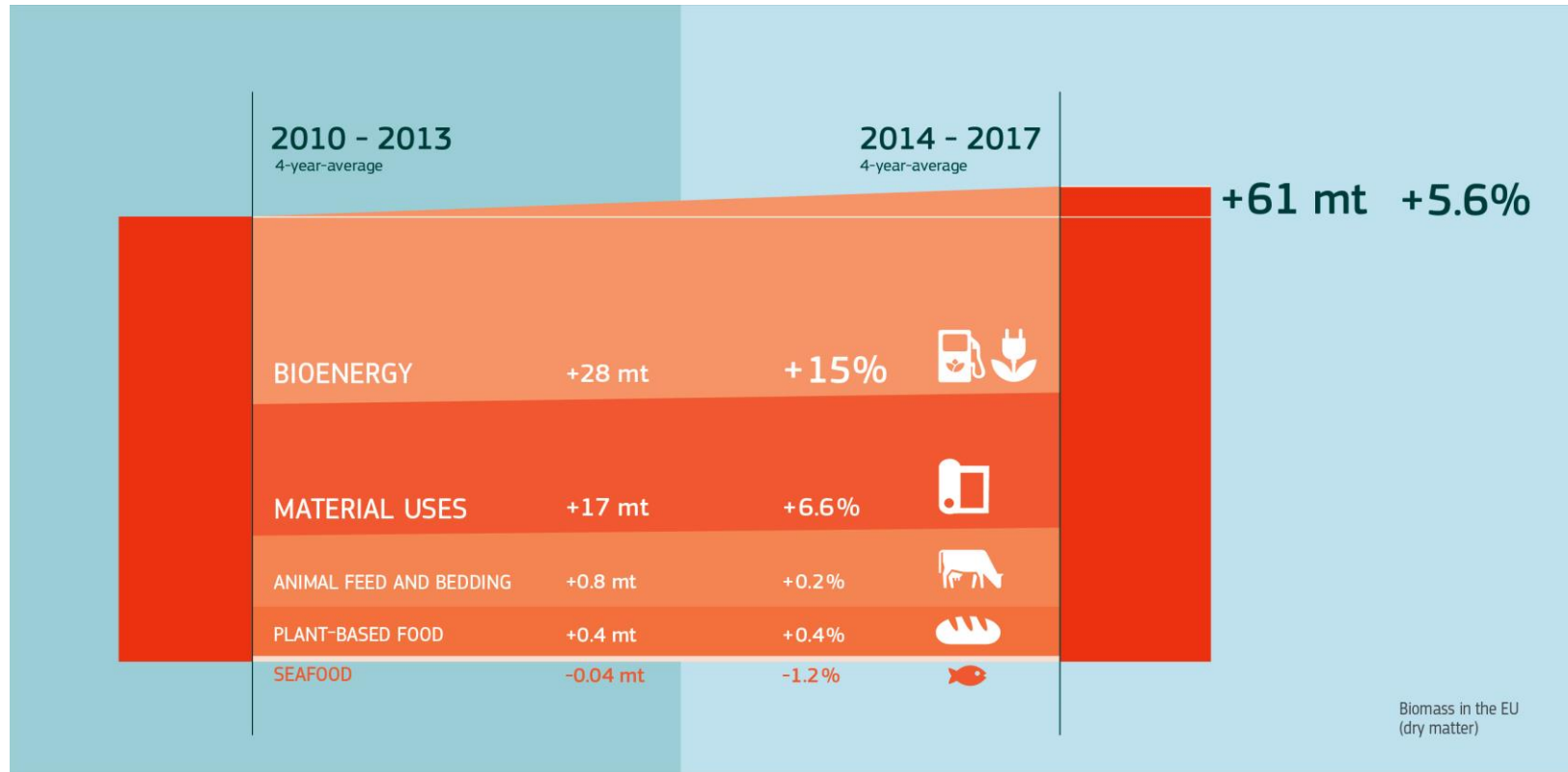


Europe is generally moving towards the objectives of the EU Bioeconomy Strategy, but environmental challenges persist, pointing to a need for policy coordination. There are multiple pressures on land, and while the drivers are not associated in this context, the increasing demand for material and energy is largely accountable. Thus, a lower overall consumption may alleviate some of these pressures, as could a transformation in work-force and innovation to be more resource efficient.

Biomass supply and uses in the EU



Biomass supply and uses in the EU



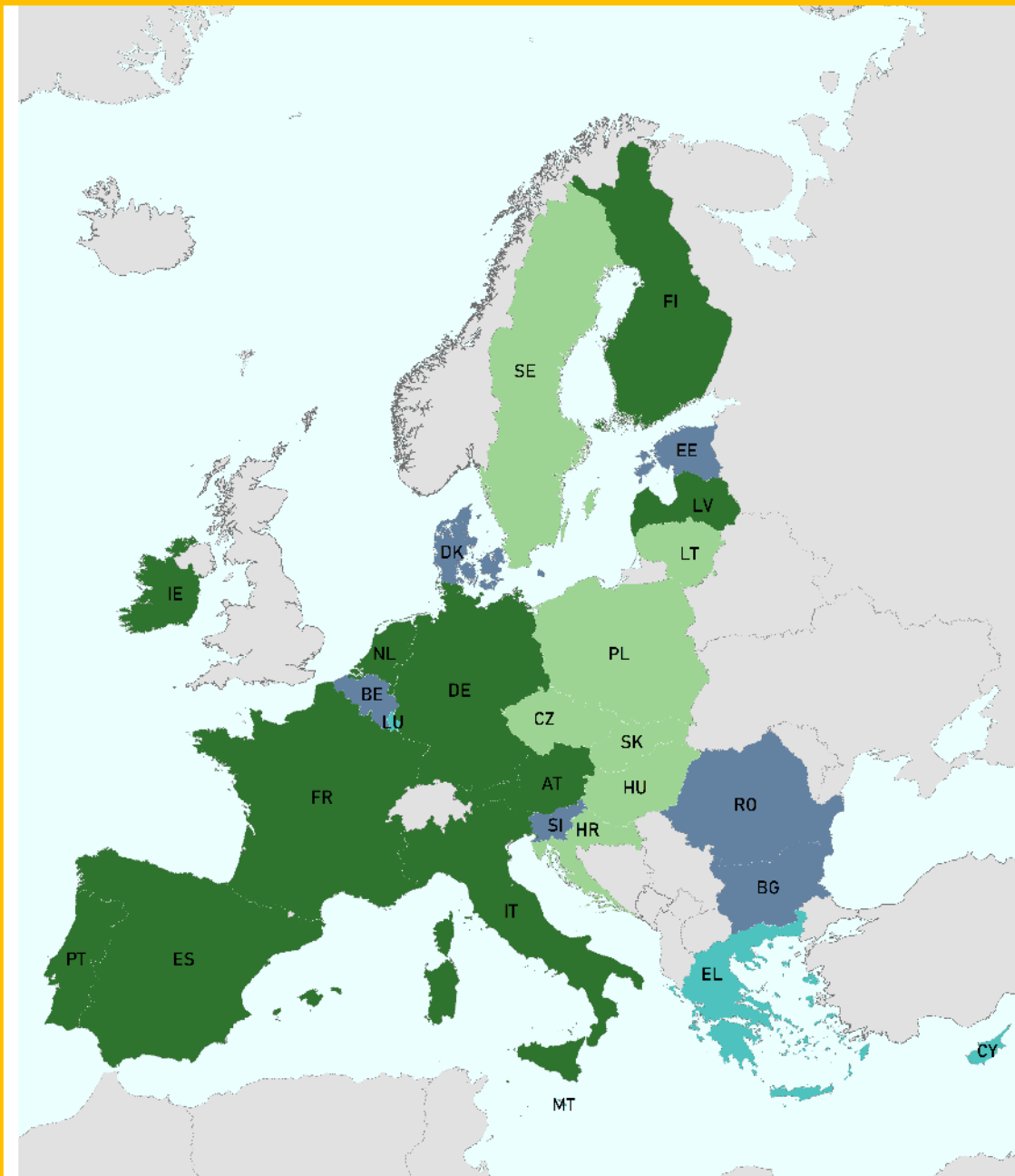
“Trend in the biomass uses is increasing from both primary and secondary sources and is most pronounced for biomass uses for bioenergy, followed by material uses, while food uses remain largely constant.”

<https://publications.jrc.ec.europa.eu/repository/handle/JRC132358>

Mapping national bioeconomy strategies

As of Apr 2022:

- **10 Member states** with national dedicated bioeconomy strategies (AT, DE, ES, FR, FI, IE, IT, LV, NL, PT)
- **7 MS** with a dedicated strategy under development (CZ, HR, HU, LT, PL, SE, SK)
- **6 MS** involved in other macro-regional or sub-national policy initiatives (BE, BG, DE, EE, RO, SI).
- **4 MS** with bioeconomy related strategies (CY, EL, LU, MT).



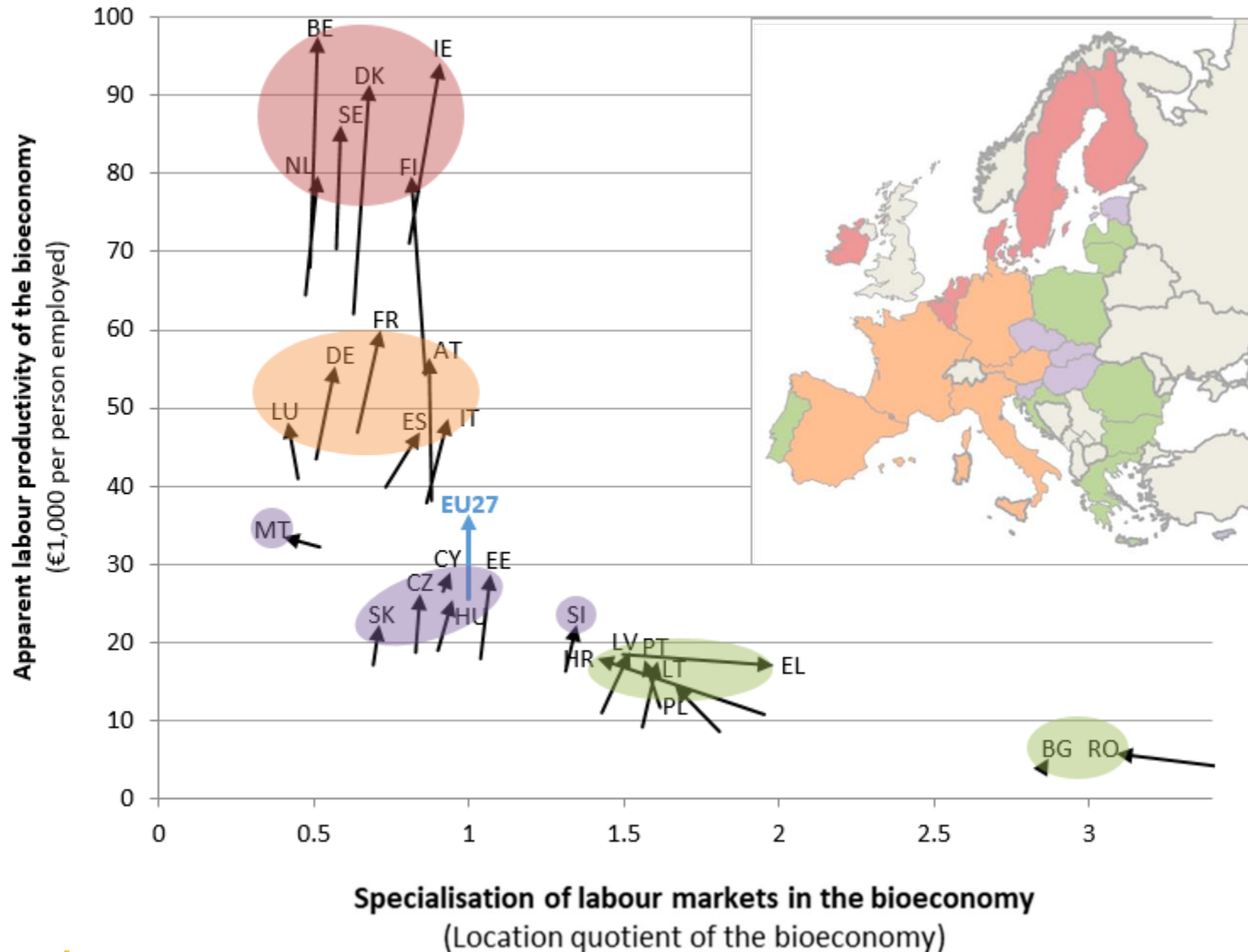
Status of national bioeconomy strategies:

- 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:
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https://knowledge4policy.ec.europa.eu/visualisation/bioeconomy-different-countries_en#ep_natstrat

Bioeconomy patterns and trajectories in EU-MS, transitions towards increased labour productivity



Evolution of the jobs (location quotient¹) and growth (apparent labour productivity²) in bioeconomy sectors in EU-27 (average in 2017–2019 vs. average in 2008-2010).

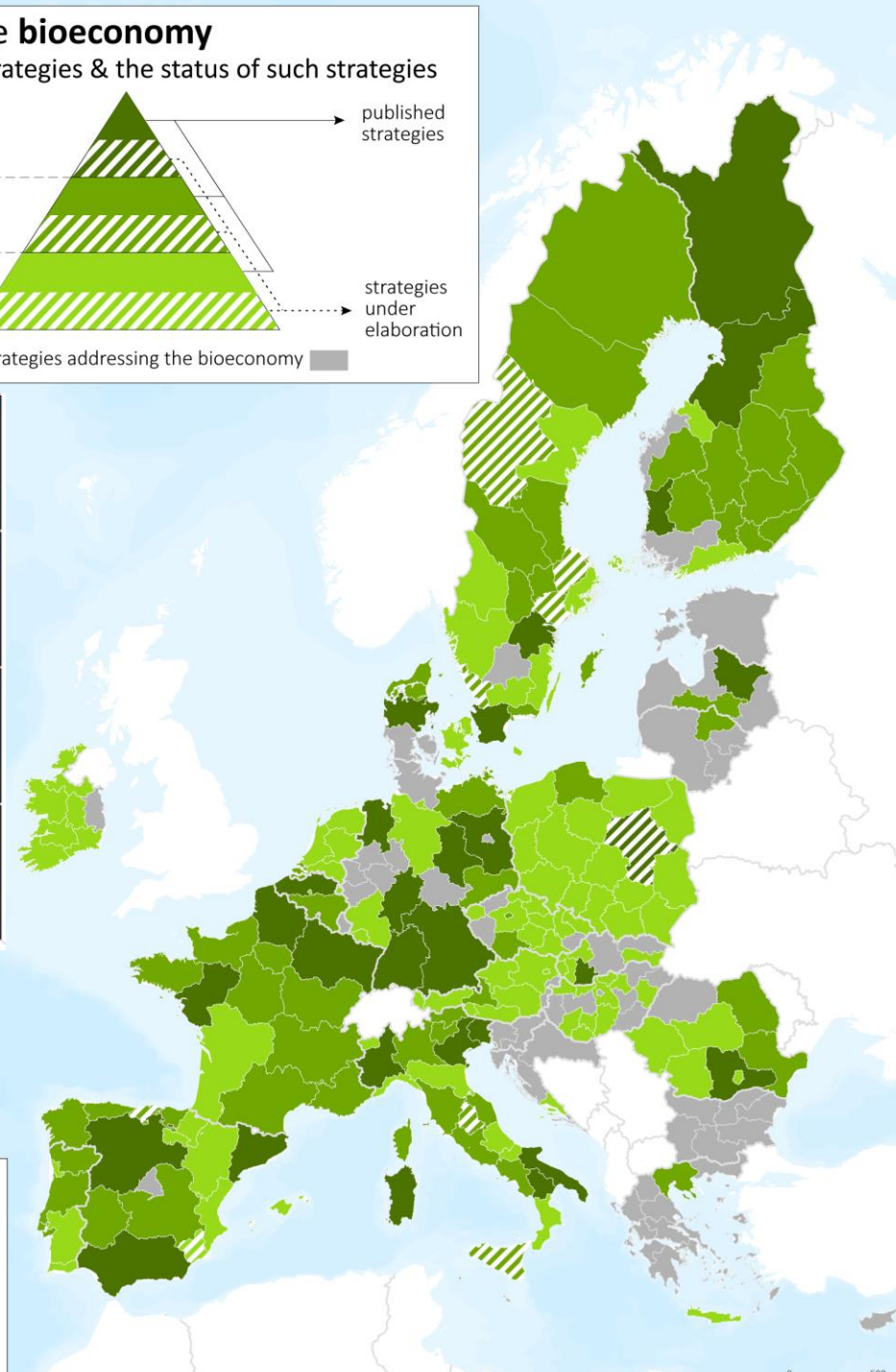
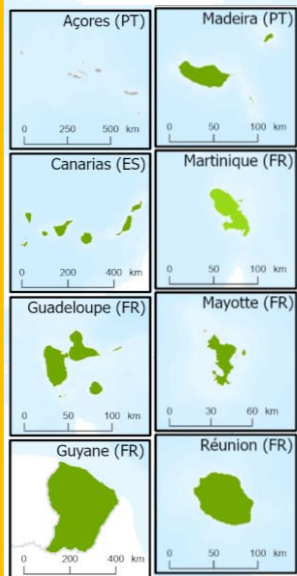
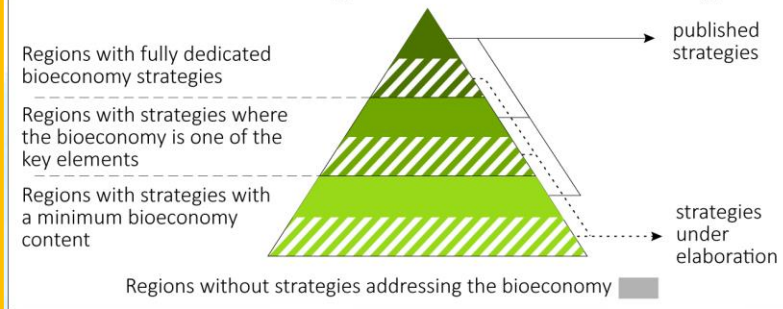
¹the location quotient (LQ) is the ratio of people employed in bioeconomy sectors to the total employment in a Member State, divided by the equivalent ratio in EU-27.

²Apparent labour productivity is an indicator of the economic growth potential, calculated as the value added at factor costs divided by the number of people employed.

[Ronzon, T.; Piotrowski, S.; Tamosiunas, S.; Dammer, L.; Carus, M.; M'barek, R. Developments of Economic Growth and Employment in Bioeconomy Sectors across the EU. Sustainability 2020](#)

Importance of the bioeconomy

within the identified strategies & the status of such strategies



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



Mapping regional bioeconomy strategies

As of Nov 2021

- 28 EU regions have dedicated strategies developed + 1 region under development
- 68 EU regions have adopted policies where bioeconomy is a key element + 7 regions under development.
- 94 EU regions have released strategies with a minimum bioeconomy + 2 regions under development.

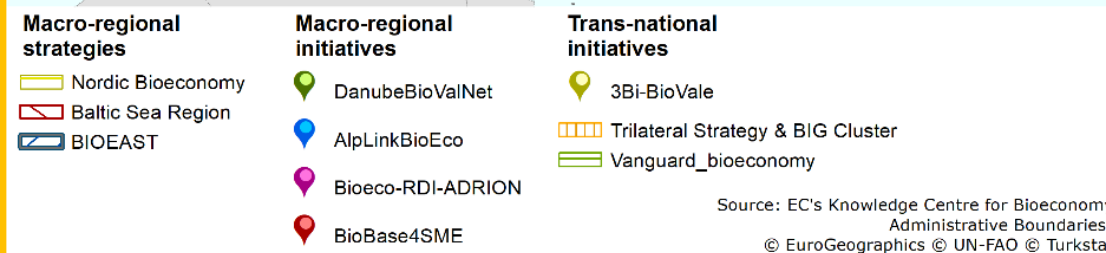
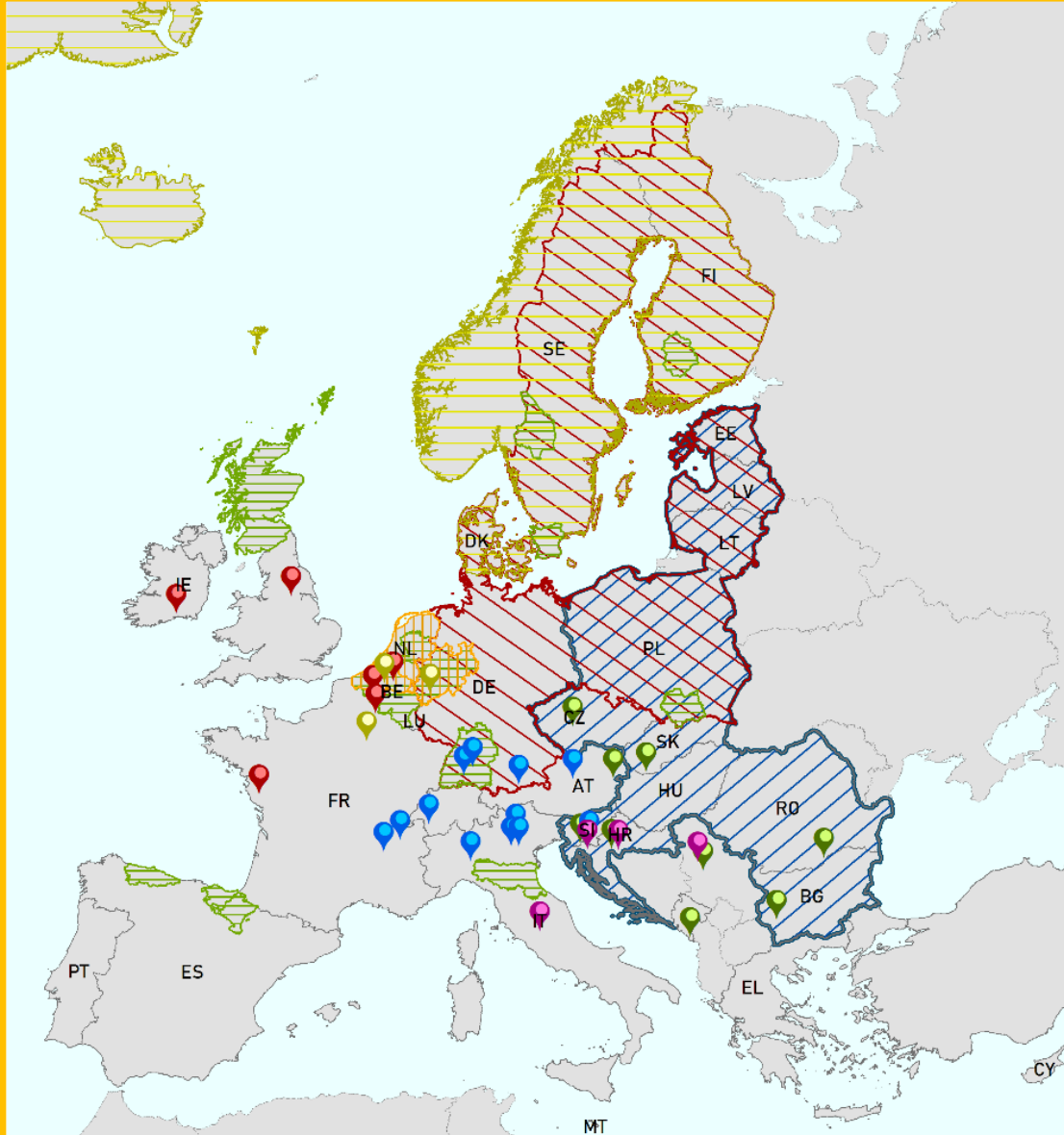
*Based on the “Study on mapping the deployment of regional bioeconomies in Europe” commissioned by KCB

https://knowledge4policy.ec.europa.eu/visualisation/bioeconomy-different-countries_en#regionalstrategies

Mapping macro-regional bioeconomy initiatives

As of Dec 2022

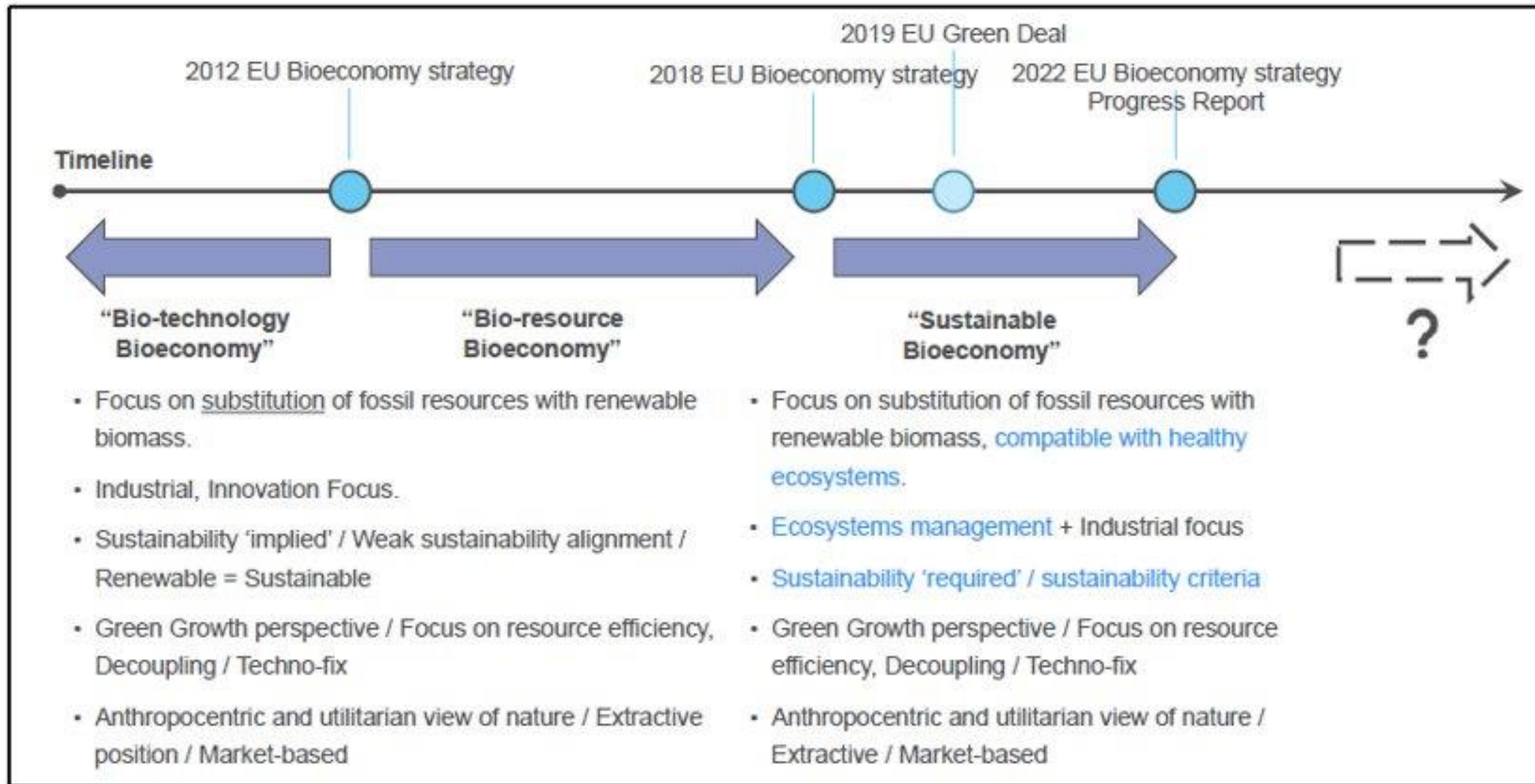
- 3 macro-regional strategies:
 - BIOEAST,
 - Nordic bioeconomy
 - Bioeconomy in the Baltic Sea Region
- 4 macro-regional initiatives driven by the Interreg programme:
 - Danube Region (DanubeBioValNet):
 - AlpLinkBioEco
 - BIO-ECONomy Research Driven
 - Bioeco-RDI-ADRION
 - BioBase4SME
- 4 transnational initiatives driven by private companies and industrial clusters:
 - The trilateral strategy for the chemical industry
 - BIG-Cluster
 - 3Bi-BioVale
 - Vanguard initiative³



Policy actions from the national bioeconomy strategies and action plans

Bioeconomy Strategies of Member States		AT	DE	ES	FR	FI	IE	IT	LV	NL	PT
Focus											
Policy actions	Embed the bioeconomy into new legislative frameworks				●			●			
	Revisit existing regulatory frameworks to include bioeconomy concepts/priorities	●	●		●	●	●	●	●	●	●
	Promote the establishment of intra-governmental groups to support policy coherence or collaboration amongst different bioeconomy stakeholders	●	●	●	●	●	●	●	●		●
	Promote labels and standards for bio-based products	●	●	●	●	●	●	●	●		●
	Promote public procurement of bio-based products	●	●	●	●	●	●	●	●		●
	Enhance land management for new production systems and ecosystem functions	●	●			●		●	●		●
	Promote specific bioeconomy sectors	●	●		●	●		●	●		●
	Promote the principles of "cascading use", "circularity" and "resource efficiency" for biomass	●	●	●	●	●	●	●	●	●	●
	Enhance the knowledge on bioeconomy by setting-up knowledge hubs, observatories, information systems, web portals, conferences, etc.			●	●	●	●	●			●
	Implement specific studies (feasibility, impact assessments, land use, territorial development analyses, market analyses, foresight studies etc).	●	●	●	●	●	●	●	●		●
	Develop monitoring systems for the bioeconomy		●			●	●	●		●	●
	Promote communication campaigns for awareness raising (e.g. bioeconomy awards, information systems, events, etc.)	●	●	●	●	●	●	●	●	●	●
	Promote educational/training programmes	●	●	●	●	●	●	●	●		●
	Promote investments in bioeconomy research, innovation, market development	●	●	●	●	●	●	●	●	●	●
	Market incentives for bio-based production/consumption (e.g. subsidies, taxes)	●	●		●	●	●	●	●	●	●

Evolution of bioeconomy in the EU



<https://publications.jrc.ec.europa.eu/repository/handle/JRC132650>

Take home messages

- Bioeconomy in the EU is evolving and large differences exist among Member States
- Regional and macro-regional initiatives are essential to account for local conditions, however coherence across scales should be maintained
- Pressure on natural resources persists as a major challenge while demand for material and energy is increasing
- JRC research on-going to improve our monitoring capacity and to keep supporting EU bioeconomy policies with scientific evidence
- Improve our collective knowledge through collaboration is essential

Thank you and keep in touch






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