WORLD BIOECONOMY ASSOCIATION

Uniting Global Bioeconomy Agendas:
Insights from the World Bioeconomy Association

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Chair at the World Bioeconomy Association

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16 October 2025 Vienna

Global trends

Landscape of the bioeconomy

Bioeconomy as a concept

G20 adopting bioeconomy on its agenda

COP30 embraces bioeconomy

Financing the bioeconomy

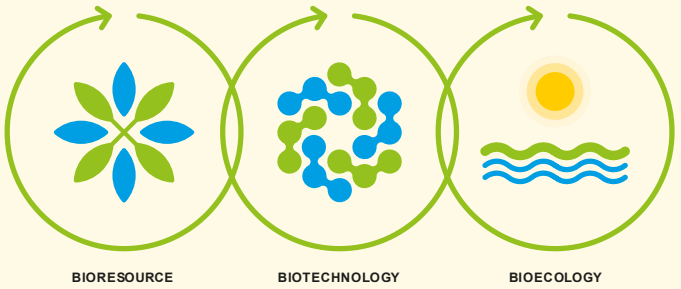
Competitiveness landscape

Takeaways

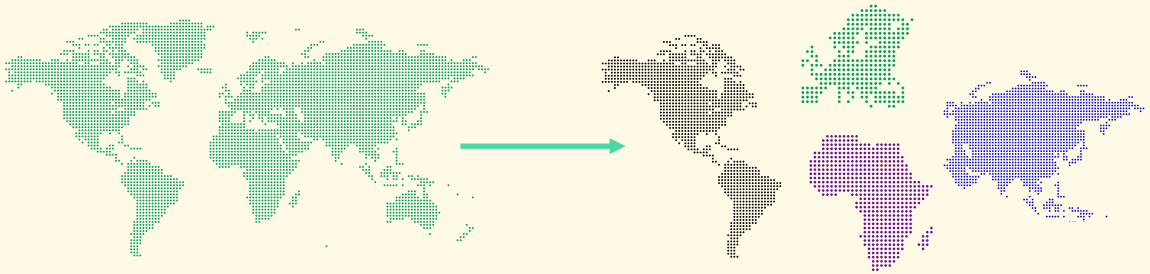
World BioEconomy Forum

- **Founded:** 2018
- **Mission:** A global platform to drive the circular bioeconomy, focusing on sustainable solutions for climate change and resource preservation.
- **Four-Pillar Structure:**
  - The Bioeconomy: People, Planet, Policies
  - Corporate Leaders and Financial World
  - Bioproducts Around Us
  - Looking to the Future
- **Activities:** Online roundtables, conferences, and the **Annual Declaration** to outline future directions.

- **Founded:** end of 2023
- **Mission:** A hub uniting stakeholders to grow the bioeconomy across sectors and regions.
- **Bioeconomy concept**:
  - **Bioresource Vision**: Enhancing research and technology for biomass conversion from agriculture, marine, and forestry sectors.
  - **Biotechnology Vision**: Promoting biotechnology and biomanufacturing research for diverse industrial applications.
  - **Bioecology Vision**: Optimizing ecological processes to promote biodiversity, strengthen crops, and protect soil quality.
- **Activities**: Engages in knowledge sharing, public outreach, advocacy, and collaborative research to promote responsible use of global resources

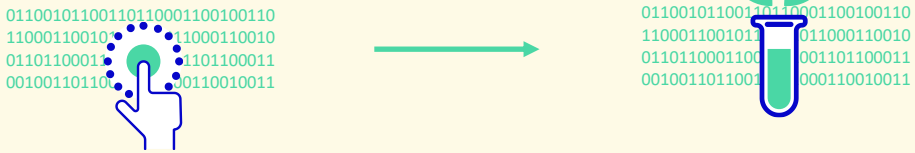


Global trends



Globalisation → Polarisation

Did you know? Today's global bioeconomy is estimated to be valued at US$4 trillion, with growth potential to US$30 trillion by 2050.



3rd Industrial Revolution
Digitalisation

4th Industrial Revolution
Biorevolution

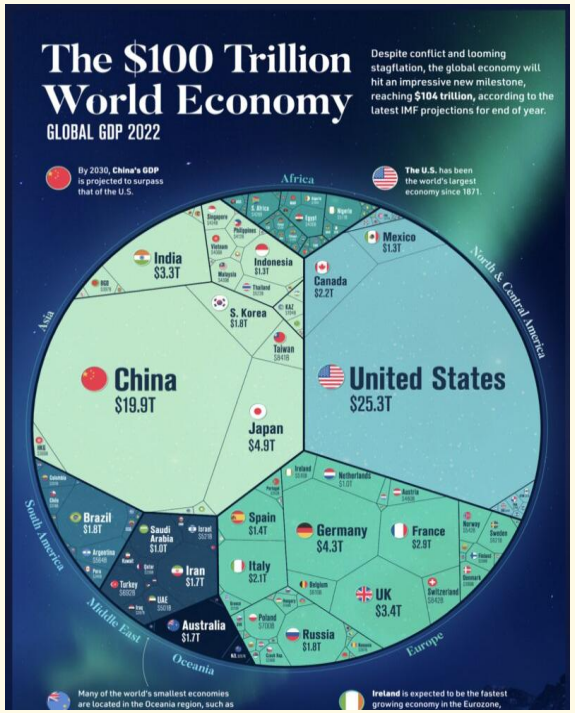
- The shift from ***globalisation to polarisation*** could fragment the bioeconomy, making international collaboration more difficult and leading to more regionally focused bioeconomic strategies.
- ***Rising divisions*** threaten international collaboration, slowing progress on global challenges like climate change and biodiversity.

Opportunities in the ***Bio Revolution***:

- **Biotechnology advancements**, like genetic engineering and synthetic biology, are driving new markets and business models.
- **Ethical and regulatory challenges** may arise in a polarised world.

Success and growth in the bioeconomy hinges on navigating these global dynamics.

Landscape of the bioeconomy



ARGENTINA
Bioeconomía

AUSTRIA
Bioeconomy Strategy for Austria

BRAZIL
Institui a Estratégia Nacional de Bioeconomia

CHINA
Bioeconomy Development Plan

COLUMBIA
Colombia BIO

COSTA RICA
Estrategia Nacional de Bioeconomía Costa Rica 2020-2030

ESTONIA
Circular Bioeconomy Roadmap for Estonia (2023)

FINLAND
The Finnish Bioeconomy Strategy. Sustainably towards higher value added

FRANCE
La stratégie nationale bioéconomie : remettre la photosynthèse au cœur de notre économie

GERMANY
Bioeconomy – Biogenic Resources and biological knowledge for a sustainable economy

INDIA
National biotechnology development strategy

IRELAND
Ireland's Bioeconomy Action Plan 2023–2025

ITALY
Bioeconomy in Italy

JAPAN
Outline of the bioeconomy strategy

LATVIA
Latvian Bioeconomy Strategy 2030

MALAYSIA
National Biotechnology Policy 2.0 (DBN 2.0)

NAMIBIA
The Namibia Sustainable Bioeconomy Strategy

NETHERLANDS
The position of the bioeconomy in the Netherlands

PORTUGAL
Bioeconomia

SOUTH AFRICA
The Bio-Economy Strategy

SPAIN
Bioeconomía

SWEDEN
En hållbar bioekonomistrategi – för ett välmående fossilfritt samhälle

THAILAND
BCG Economy Model

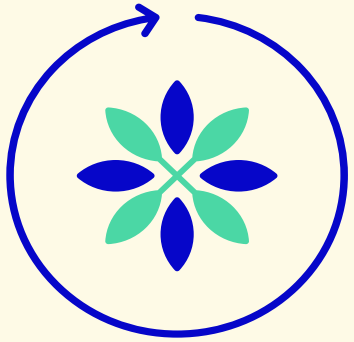
SAUDI ARABIA
The National Biotechnology Strategy

USA
Executive Order on Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy

- Current global economy is ≈ US$ 100 trillion
- Bioeconomy US$ 4 trillion to US$ 30 trillion
- Bio Revolution is under way
- Bioeconomy is everywhere, but nowhere (not known by big audience)
- Bioeconomy rises on global agendas
- Financing mechanisms under review

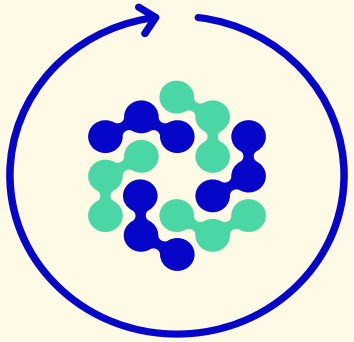
- 25 dedicated national bioeconomy strategies – some examples
  - *Japan Bioeconomy Strategy update (June 2024)*
  - *Namibia Bioeconomy Strategy (June 2024)*
  - *Ireland National Bioeconomy Action Plan 2023-2025 (October 2023)*
  - *Circular Bioeconomy Roadmap of Estonia (August 2023)*
  - *EU Bioeconomy progress report (June 2022) – 10th anniversary Bioeconomy Conference (October 2022)*
  - *The Bioeconomy Initiative from the USA (EO on National Biotechnology and Biomanufacturing September 2022)*
  - *The China Biostrategy launch (May 2022)*

The concept of the bioeconomy



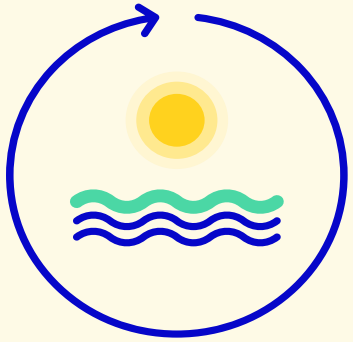
Bioresource vision

A bioresource vision, focusing on the role of research, technology development and upscaling, needed for conversion and value-chain-valorisation of biomass feed stocks, from agriculture, marine, and forestry sectors.



Biotechnology vision

A biotechnology vision, emphasising the importance of biotechnology and biomanufacturing research, for application and commercialisation in different sectors.



Bioecology vision

A bioecology vision, highlighting the importance of social and ecological processes, optimisation of land use, energy and nutrients; promoting biodiversity, strengthen crop plants by out-phasing pesticides and protect soil quality against degradation.

G20: From High-Level Principles to actions…

1. Towards establishing global **bioeconomy standards and metrics**
2. Examining the common needs, opportunities and challenges in **bioeconomy development in an African context**
3. The challenge and opportunities in **financing sustainable bioeconomies**
4. Framing an **international coordination and implementation platform** for growing the global bioeconomy

…and to COP30 Belém: Bioeconomy high on the agenda

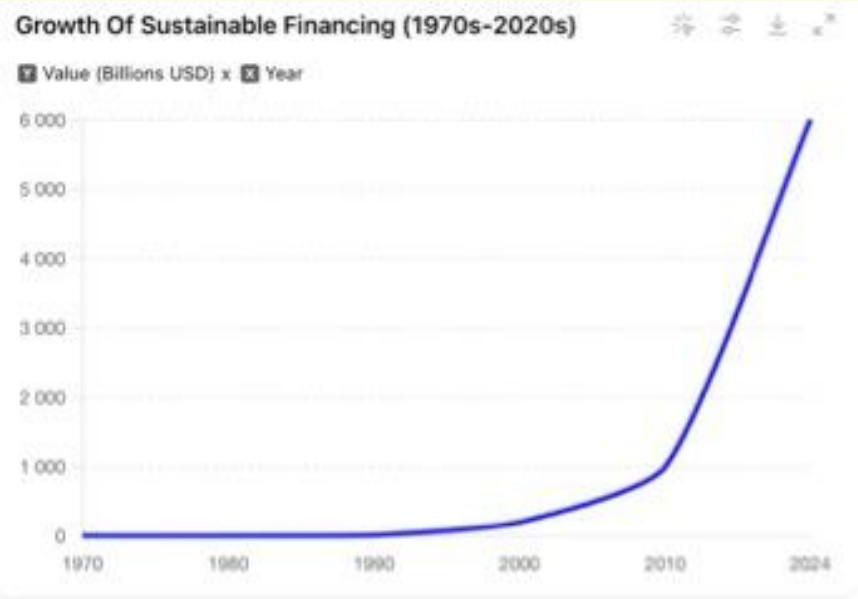
United Nations Climate Change

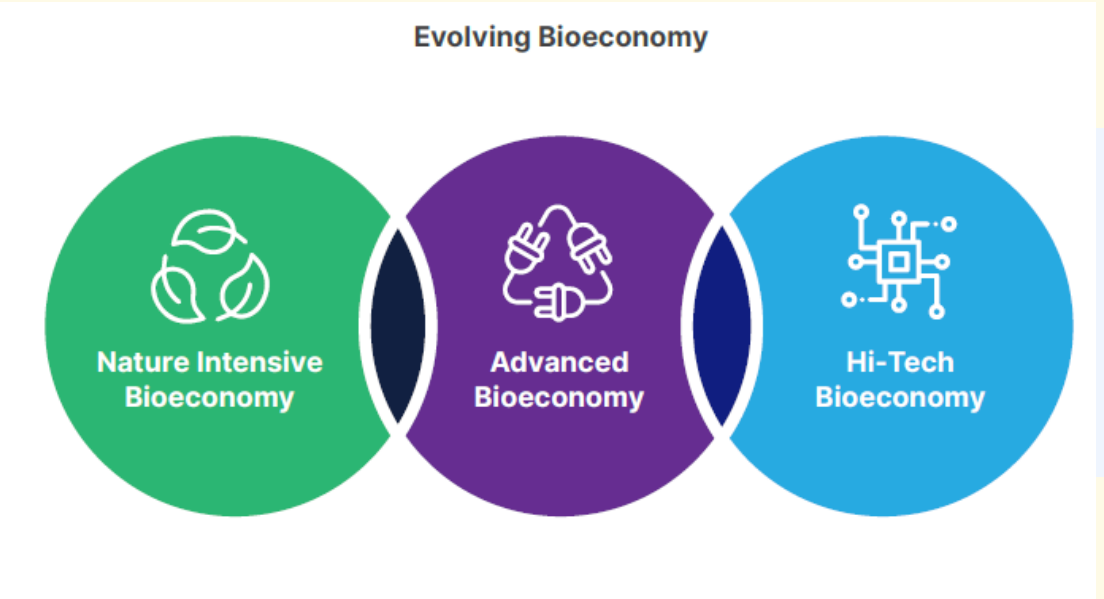
COP30 BRASIL AMAZÔNIA BELÉM 2025

Key Points

- COP30 will be the first COP held in the Amazon, **placing bioeconomy at the center of global climate dialogue**.
- Brazil positions bioeconomy as a bridge between **climate, biodiversity, and sustainable development**.
- Focus on **forest-based value chains, innovation, and inclusion of Indigenous and local communities**.
- Aim to mobilize **finance for nature-positive growth** and set **global sustainability standards for bioproducts**.
- Bioeconomy seen as a **solution for green growth, carbon reduction, and social equity** — a defining theme of COP30.

Sustainable Financing today





- Sustainable financing has developed since 1970s
- Primary focusing on Climate Change Mitigation and Biodiversity

The Bioeconomy concept is evolving

- No concrete global understanding
- Missing metrics and harmonised standards
- Financing on commercial terms

Competitiveness landscape

			
 **Bioresource vision**	Annual use ≈ 1 billion ton Sentiment is to constrain growing use of biomass. Scenario on **40– 70% biomass gap by 2050.**	Increasing sustainable use of biomass. Targeting ***1 Billion tons of biomass annual use***. (DOE 2023) BioPreferred Program (2002)	***Biomass capacity up 3,5 billion tons.*** China's annual biomass production will approach 3.8 billion tons by 2030 and surpass 5.3 billion tons by 2060.
 **Biotechnology vision**	A balanced approach, integrating biotechnology innovations to support sustainable bio-based industries. ***Stricter regulatory frameworks*** compared to the USA and China.	***The USA primarily adopts a biotechnology vision in its bioeconomy strategy***, prioritising technological innovation and industrial application in their bioeconomy strategies	***China predominantly embraces a biotechnology vision***, similar to the USA
 **Bioecology vision**	The EU emphasizes ***responsible resource management,*** aiming to stabilise sustainable biomass use and advocate for ***circular economy principles***.	Focus is minimal on ecological sustainability principles compared to the EU. However***, efforts are underway to promote sustainable practices*** for resource optimisation	***Beginning to incorporate ecological approaches***, but the focus remains less pronounced compared to technological innovation and resource-intensive strategies.

Key takeaways

- The bioeconomy is gaining momentum in global forums
- G20 High-Level Principles are aligning global understanding of the bioeconomy – G20 South Africa carried on the agenda
- Bioeconomy is elevated a core topic to the COP30
- Financing mechanism need get developed to accelerate developments of the bioeconomy

WORLD BIOECONOMY ASSOCIATION

Thank you!

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