



# **Current Status of National and International Bioeconomy Initiatives**

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# Dynamic development of bioeconomy strategies worldwide

### Globally, dynamic changing policy landscape on positive trajectory

### When were bioeconomy-related policies/strategies last updated?



Figure: Last update to bioeconomy-related policies based on IACGB (2020), Dietz et al. (2024); partially updated, own depiction.

IACGB (2020) Global Bioeconomy policy report. Dietz et al. (2024) Bioeconomy globalization... IACGB.

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# USA without streamlined policy initiatives, but with ambitious plans especially with regard to bio-technology and bioenergy

- No single bioeconomy policy or strategy
- Biden administration launched executive order focusing on biotechnology, biomanufacturing and bio-resource use
- USDA published resilient biomass supply report, a roadmap for expanding biobased fuels, plastics and other products
- DOE estimated in 2023 that the US could triple it's biomass production to 1 billion tons in 2050, with this bioenergy could cover 15% of future energy needs
- Trump Administration revoked executive order.



# China applies encompassing definition, and shows high ambitions with regard to Bioeconomy in their 14th 5-Year-Plan and Bioeconomy strategy

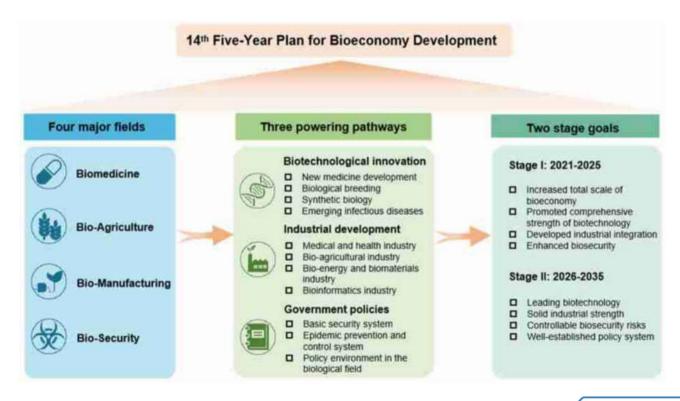
- 14<sup>th</sup> 5-year plan includes many references to bioeconomy and biotechnology
- In most pillars biotechnology, bioenergy, bio-based materials plays a major role
- CCP also released industry specific bioeconomy 5-year development plan, on i.e.
  - Focus on innovative biotechnology
  - Plant-breeding development
    - Development of high-yield oil crops for bioenergy



### **Market Figure**

Bioeconomy value by 2025: 3.3 trillion USD, 18% of GDP (Source: World Bioeconomy Forum (2022)

## China applies encompassing definition, and shows high ambitions with regard to Bioeconomy in their 14th 5-Year-Plan



### Brazil launches Bioeconomy strategy, establishes relevant policy bodies and aims to streamline national and local efforts

- Launched national Bioeconomy strategy policy in 06/2024 aims to...
- ... streamline efforts of ministries of environment, industry and finance
- ... establish bioeconomy commission to formulate bioeconomy development plan and establish monitoring system
- Objectives are the conservation of biodiversity, decarbonization and bioindustrialization.



### **Market Figure**

So far most BE related funding is spent on wood plantations and bioenergy (each approx. USD 1 billion/yr).

Brazil Restoration & Bioeconomy Finance Coalition (BRB Finance Coalition) aims to mobilize at least \$10 billion in public and private investment to fund restoration and bioeconomy projects.

### Finance Flows in the Bioeconomy in Brazil, 2021-2023

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Public - Domestic 815.40	BNDES 180.00	BNDES	- Government 180.00	Rural Credit	678.60	Biodiversity	295.20
Public - nternational 68.40	Fed. and State Governm. 595.80	Governmental	Bodies 255.60	Low Carbon Cre	edit 329.40	Family Farming	282.60
	Other 25.20	Other	59.40	Other	205.20	Other	253.80

### G20 agreed on high-level, non-binding principles on Bioeconomy

- First ever multi-national Bioeconomy agreement with global relevance
- Focusses on sustainable use of ecological resources, with high emphasis on biodiversity, climate and ecosystems, aswell as traditional knowledge
- Demands policy framework and sustainability assessment supporting this and delivering economic development
- Based on country-specific approaches

#### G20 Initiative on Bioeconomy (GIB)

#### G20 High-Level Principles on Bioeconomy

Recognizing the remainizable potential of bioleconcrys to contribute to building a sustainable future and Kelening accounts growth for all, the CGS installer on Bioleconcry (CBE) has indisted the infernational datebile on the innovative, complementary productive peradigm. Its members have accided on her violantary, man-bearing high-Level Principles on Bioleconcry, according to which bioleconcry subvivies are expected to

- Integrate and promote sustainable development across its occurrence social and sustainable dimensions, contribute to associating baseper and powerly and emproving health and wall-being, while ensuring pickel food security and matritise.
- 2 Be inclusive and equitable, uphold the rights of all persons, including Indigenous Proples and members of local communities, proteons gender equality and the participation of all interestings.
- Advance mitigation and adaptation offorts against global climate change, in line with approachie multisteed climate agreements.
- 4. Confribute to the conservation of bloodiversity, the scalarinative saw of its components and the fair and equitable sharing of benefits ensing from the utilization of genetic escularum and associated traditional knowledge, subject to national laws and in line with applicable international agreements and instruments.
- Attence sustainable consumption and production patients and the efficient and circular use of biological resources, which promoting the restoration and regeneration of degraded areas, and conventions.
- Be developed fresigh selfs, secure and responsible use of actence, technology, innovation and traditional knowledge, with potential benefits, risks and impacts assumed scientificate.
- Benefit from robust and coherent policy frameworks that foliar tride for blockomony products and services, merket conditions, scalarinate business modes, decent jobs, local value creation and private sector and call society participation.
- Utilize transperent, comparable, measurable, michaire, science-based and context-specific criterie and methodologies to assess their sustamebility throughout the value chains.
- 9. Be totered by international collaboration and cooperation that addresses global challenges, levelages complementary strengths, innovation and entrepreneurship and pronotos. financing capacity building and sharing of best practices.
- Be based on country-specific approaches and implemented in the with national priorities and regional and local circumstances.
- \* The applicable evolutional organization spectrum is shored to in Principle 2 include. Not one not forest to, the Park Appearant. The applicable international appearants and international referred to in Principle 2 consists, but are not forest to. the Comman Systems State Systems (AUSSET).





### **Changing Foci**

## The text share of Bioeconomy strategies dedicated to economic and environmental topics has been balanced out over time

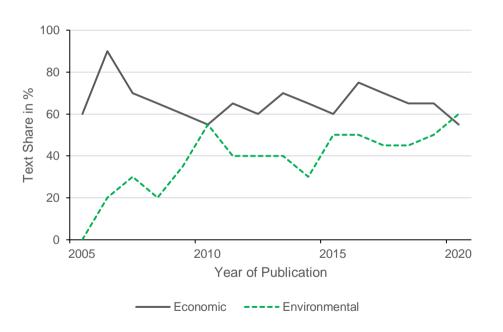




Figure: The relative text share of economic and environmental goals over time (in percent) from 78 bioeconomy policy documents from 50 countries

### **European Commission plans to update Bioeconomy Strategy**

- "We have to make a collective effort to build a thriving sustainable and circular bioeconomy." – Jessika Roswall, Commissioner for the Environment, Water Resilience and a Competitive Circular Economy
- Aims to align BE strategy with Competitiveness and Clean Industrial Deal
- Aims to align strategy with upcoming Biotech Act and Life Science Strategy

#### Timeline

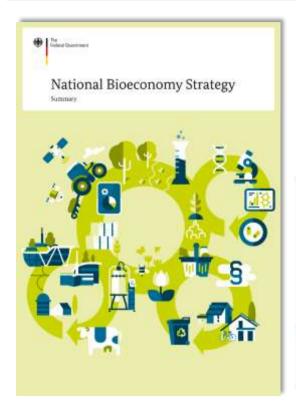
Until 23 June 2025: Call for evidence

Q4 2025: Release of new strategy



say/initiatives/14555

### The status of the German bioeconomy strategy







- Joint research and policy strategy from BMBF & BMEL
- Specification with an implementation plan was foreseen
- Sustainable biomass provision is key
- Fundamental discussions on sustainable biomass supply and innovation in several stakeholder groups



## Bioeconomy strategies tend to oscilliate between visions bio-technology and (environmentally cautious) resource use

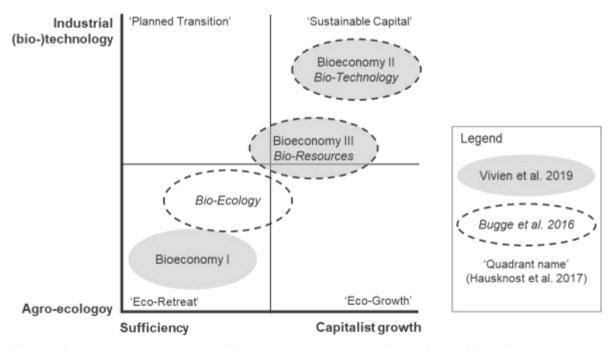


Figure: Bioeconomy techno-political option matrix combined with Vivien's historical Bioeconomy vision development (own graphical depiction).

### Among only German stakeholders, differences in perception persist, but tend to cluster around bio-resources

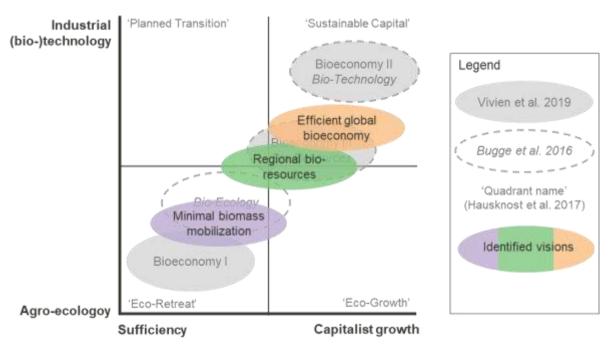


Figure: Mapping of identified vision to the previously presented visions.

Own research, unpublished.



### **Regional Bioeconomy Strategies**

# Regional strategies provide different aspects to the overall national bioeconomy

Which federate states have own bioeconomy strategy?

ves mo in progress

### North-Rhine Westfalia:

- Climate-neutral industrial region
- fusion of production, bio-tech and IT

### **Baden-Württemberg:**

- different rural/urban action fields
- further development of biogas plants

### **Brandenburg**:

- regional synergies
- regional bioplastics

#### Sachsen-Anhalt:

Bioeconomy Cluster, DiP etc.

#### **Bavaria:**

- core industries and industrial biotechnology
- wood-based construction

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### Many regional plans have specific foci with regard to the Bioeconomy

### Pará, Brazil:

- traditional indiginous knowledge
- financing from small scale credits to payment for ecosystem services
- Emphasis biocosmetics

### Queensland, Australia:

- Biochemicals, Biofuels, Bioplastics
- Further develop SAF



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Microsoft, Microsoft Crowdsourced Enrichments, OpenStreetMap, Overture Maps Fundation

Australian Bureau of Statistics, Geospatial Data Edit, Wikipedia

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### **Conclusion**

### Conclusion

- Overall more policies and strategies related to Bioeconomy are published and investments are increased
- G20 might be able to set focus topics currently they give high emphasis to sustainable resource use
- Diverging visions are a barrier for implementation
- Regional integration increase specificness and can reduce barriers
- Further development of European bioeconomy strategy is key –
   your input is welcome!
- Pará, Brazil, as conference host location, has potential to bring bioeconomy-related influence to COP30 agenda

#### **Public consultation:**



https://ec.europa.eu/info/law/betterregulation/have-your-say/initiatives/14555

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### Thank you for your attention!



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