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SOUTH AFRICA 2025

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GROWING A SUSTAINABLE BIOECONOMY THROUGH TRADE AND INTERNATIONAL COOPERATION

3rd G20 Initiative on Bioeconomy (GIB) Meeting

18 September 2025

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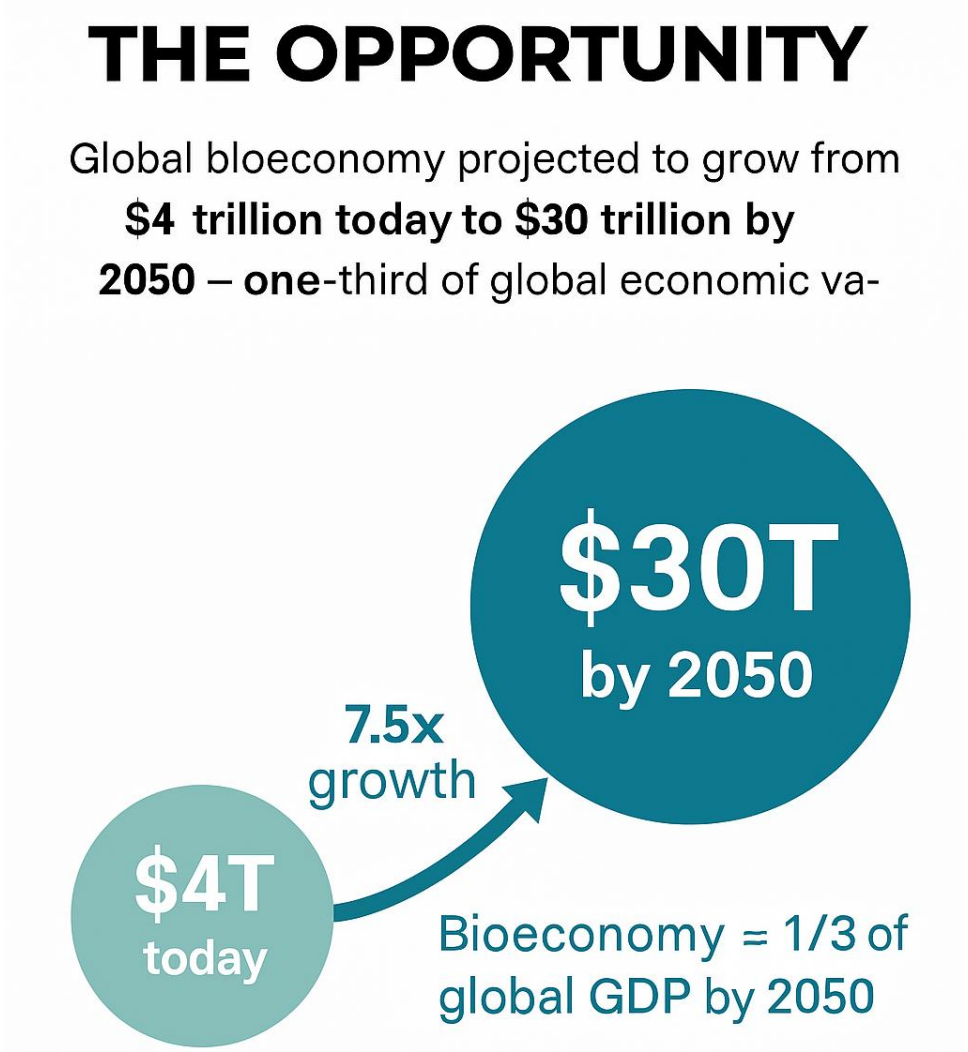
Setting the Context

Trade in biodiversity-based products represents:
15.7% of G20 trade = US$2.04 trillion = 5.12% of G20 GDP



- The Challenge: Many current trade patterns accelerate biodiversity loss rather than supporting sustainable development.
- International cooperation and trade can unlock the bioeconomy's potential for emerging economies

High Level Insights

The critical distinction: bioeconomy designed to be regenerative, circular, and inclusive vs. mimicking fossil-era models

Scale & Inevitability

Bio-based goods are often the only viable alternative to GHG-intensive products. The bioeconomy can contribute up to one-third of emissions reductions needed to limit warming to 1.5°C

Current Market Reality

Biodiversity-based trade already represents 17.16% of global trade (7.02% of GDP).

Current trade frameworks systematically disadvantage bio-based products by bundling them with fossil fuel counterparts.

Transformation Opportunity

Moving beyond niche markets to reach $8 trillion by 2030 - positioning the bioeconomy on par with today's digital economy as a mainstream driver of competitiveness and jobs

The Success Imperative

Coordinated action across national, regional, and international levels - with G20 leadership essential for creating policy precedents and market conditions for global scaling

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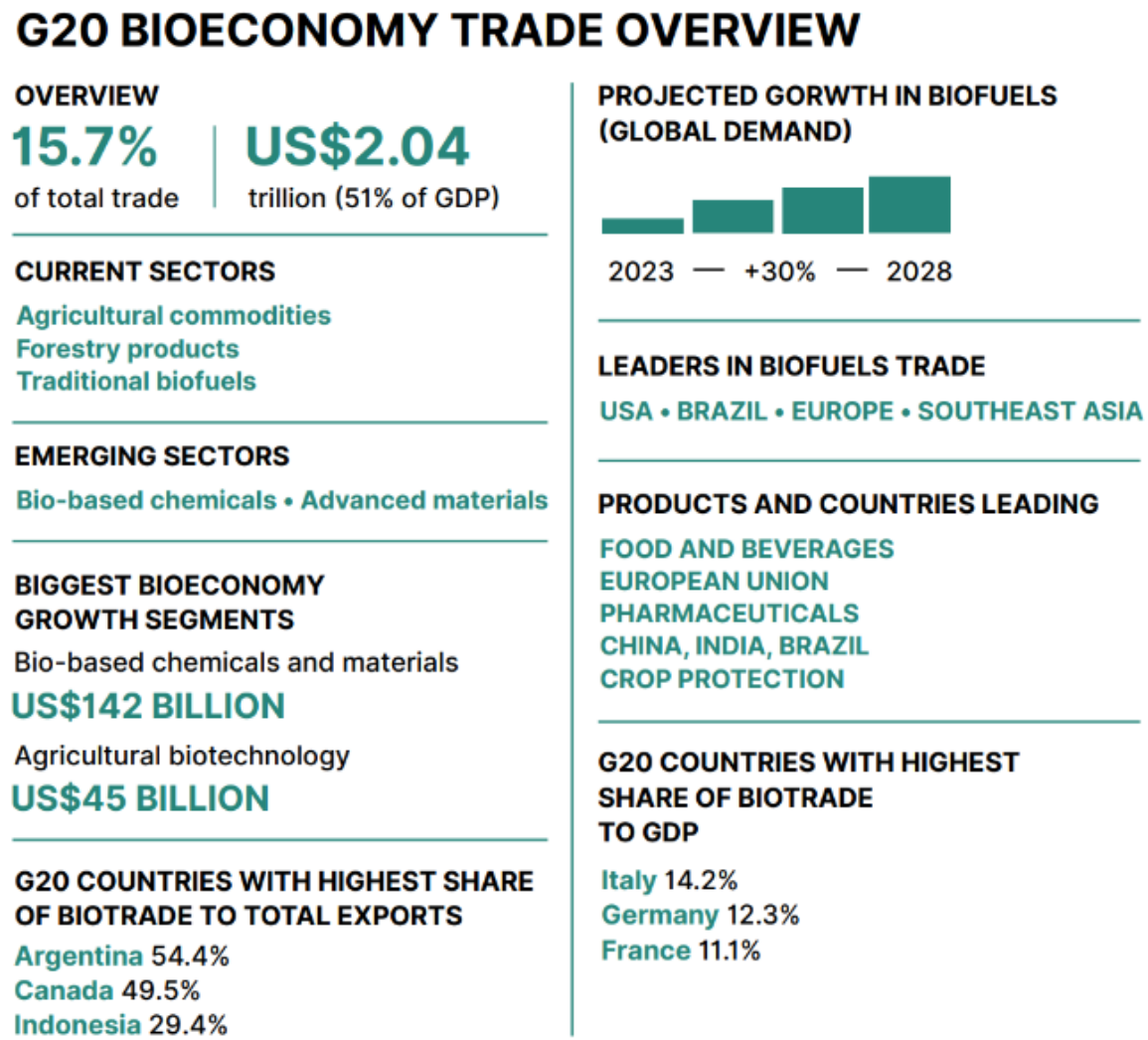
Global Landscape & Opportunity

The Bioeconomy is one of the fastest-growing sectors in the modern economy.

Figure 9 Overview of G20 Bioeconomy (2023)



Why the Bioeconomy Matters:

- Rapid Growth: One of the fastest-growing sectors in the global economy
- Foundational Role: Biodiversity underpins nearly all products and services we rely on
- Sustainability Driver: A rising pillar of inclusive, climate-resilient economic models

Global Landscape & Opportunity: A Snapshot of Select G20 Economies

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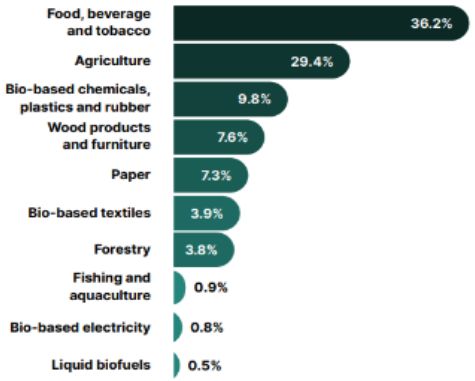
Figure 3 Overview of the EU Bioeconomy[23]

ANNUAL TURNOVER OF AROUND
€2.2 TRILLION

WITH AN ADDED VALUE OF
€657 BILLION

SECTORS IN THE EU BIOECONOMY



Source: https://open-research-europe.ec.europa.eu/articles/5-163/v1

Figure 4 Overview of the Brazilian Bioeconomy[24]

THE BIOECONOMY IN BRAZIL COULD GENERATE AN ANNUAL REVENUE OF
US$284 BILLION
BY 2050

AREAS OF HIGH POTENTIAL

- Bioenergy
- Biochemicals and biofuels
- Alternative proteins

≈57%
OF BRAZIL'S CURRENT INDUSTRIAL SECTOR BY 2050

Figure 5 Overview of the US Bioeconomy

IN THE UNITED STATES THE BIOECONOMY IS VALUED AT
US$959.2 BILLION

ACCOUNTING FOR

5.1%
OF GDP
$402.5B DIRECT

556.7
INDIRECT & INDUCED

KEY SUB-SECTORS

- Biomanufacturing
- Biofuels
- Bio-based chemicals
- Advanced materials
- Biotech-based food ingredients
- Algae-based materials

Source: World Bio Market Insights

Note: Due to the varying valuation methods and definitions of the bioeconomy, the 2016 figures represented above represent the most comprehensive valuation covering both direct and indirect aspects of the US Bioeconomy[25]

Figure 6 China's Nature Positive Transition Opportunities

MAKING CHINA'S ECONOMY 'NATURE-POSITIVE'
could create $1.9 trillion in additional annual revenue **and create 88 million jobs** by 2030

$1.9 TRILLION
additional annual revenue

88 MILLION
jobs by 2030

KEY INDUSTRIES

- **Biomedicine**
  including pharmaceuticals, vaccines, diagnostics, and precision medicine
- **Bio-agriculture**
  such as biological breeding, biofertilizers, biopesticides, and food safety
- **Environmental biotechnology**
  for pollution control, waste recycling, and ecosystem restoration
- **Bioinformatics and synthetic biology**
  enabling digital biology, gene editing, and industrial biomanufacturing

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Trade & Market Access

Trade Flows & High-Potential Categories

- **Current Reality**: **17.16%** of global trade is biodiversity-based, ranging from **29.4%** (Indonesia) to **94.5%** (Ethiopia) of national exports
- **High-Growth Products**: Bio-based materials, sustainable aviation/maritime fuels, organic fertilizers, bio-packaging, and advanced biotechnology applications.
- **Value Chain Gaps**: Biomass-rich countries often export raw materials & importing processed bio-products - massive value-addition opportunity.

Regulatory & Standards Challenges

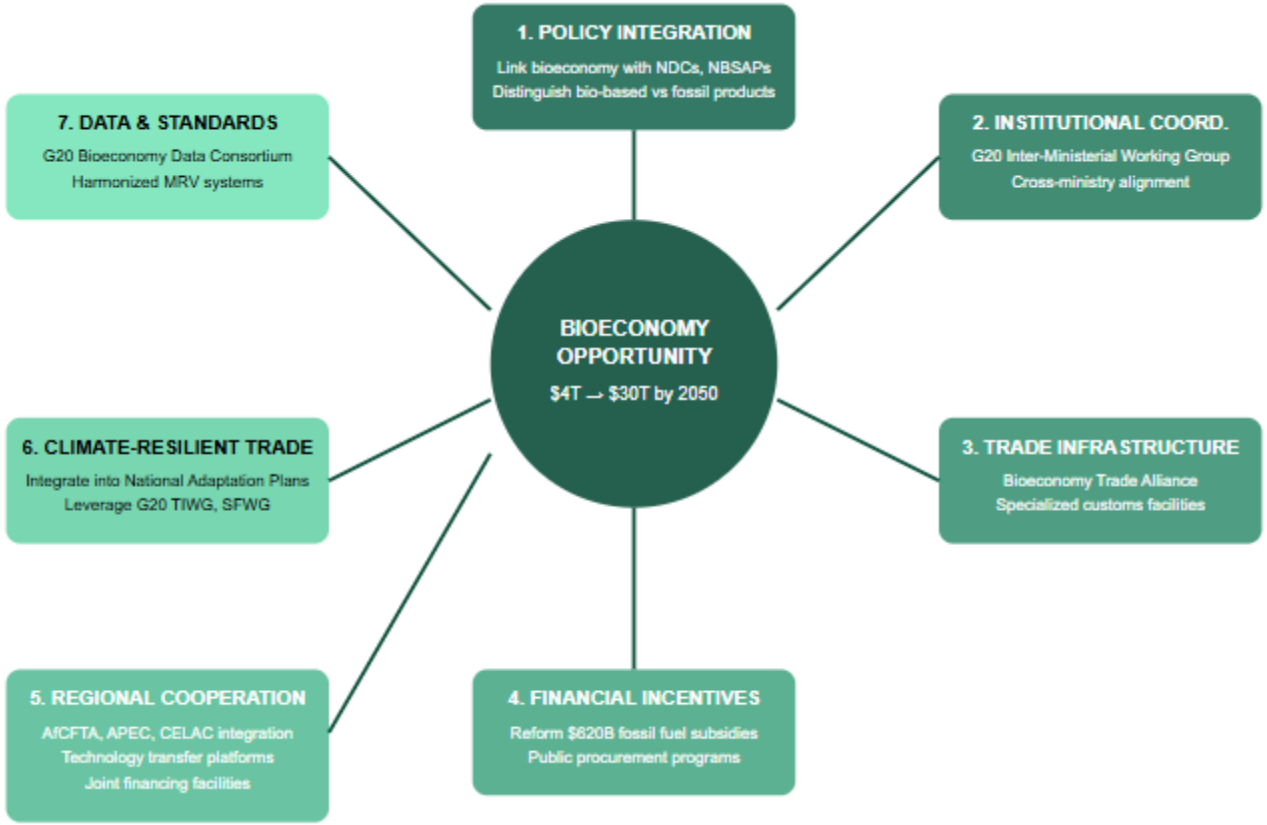
- **Systematic Disadvantage:** Bio-based products bundled with fossil fuel counterparts under conventional regulations without equivalent support.
- **Standards Fragmentation:** Absence of harmonized or interoperable international standards creates trade barriers and increases compliance costs.
- **Fossil Fuel Bias:** $1.1 trillion in fossil fuel subsidies

Infrastructure & Financing Needs

- **Specialized Trade Infrastructure:** Digital verification systems, specialized customs facilities for bio-based products.
- **Technology Transfer Mechanisms:** Connecting biomass-rich developing countries with advanced processing technologies.
- **Joint Financing Facilities:** Cross-border bioeconomy projects requiring coordinated regional investment (e.g., proposed African Bioeconomy Finance Hub).

$70 billion annual redirection (approx. 1% of agricultural output) develop and disseminate more emission-efficient technologies for crops and livestock could yield $2 trillion net benefit over 20 years (World Bank and International Food Policy Research Institute (IFPRI))

Strategic Levers & Policy Recommendations



The bioeconomy is not a future possibility. It is a present opportunity. The question isn't whether this transformation will happen, but whether the G20 will lead it or follow it

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Implementation Readiness - Existing Frameworks & Partners

Immediate Implementation Advantage:

- **Existing G20 Mechanisms Ready for Deployment include:**
  - G20 Sustainable Finance Working Group
  - G20 Trade and Investment Working Group
  - G20 Global Infrastructure and Investment (GII) framework
  - G20 Energy Transitions Working Group

Proven Partnership Models to Scale:

- Green Climate Fund's Amazon Bioeconomy Fund
- EU's Connecting Europe Facility (CEF)
- UNCTAD's BioTrade Programme
- AfCFTA trade integration mechanisms

The Implementation Gap We Must Close:

- Current Reality: Fragmented initiatives, divergent standards, misaligned policies
- Required Transformation: Coordinated action through existing frameworks

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Thank You!

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