



BIOECONOMY FOR SUSTAINABLE FOOD AND AGRICULTURE

FAO'S PERSPECTIVE ON HOW TRADE ENABLES TRANSFORMATION

Lev Neretin

Environment Lead, FAO Office of Climate Change, Biodiversity and Environment



Food and Agriculture
Organization of the
United Nations

*WTO Trade and Environmental Sustainability Structures Discussions (TESSD) Working Group
on Environmental Goods and Services (EGS)*

29 October 2025

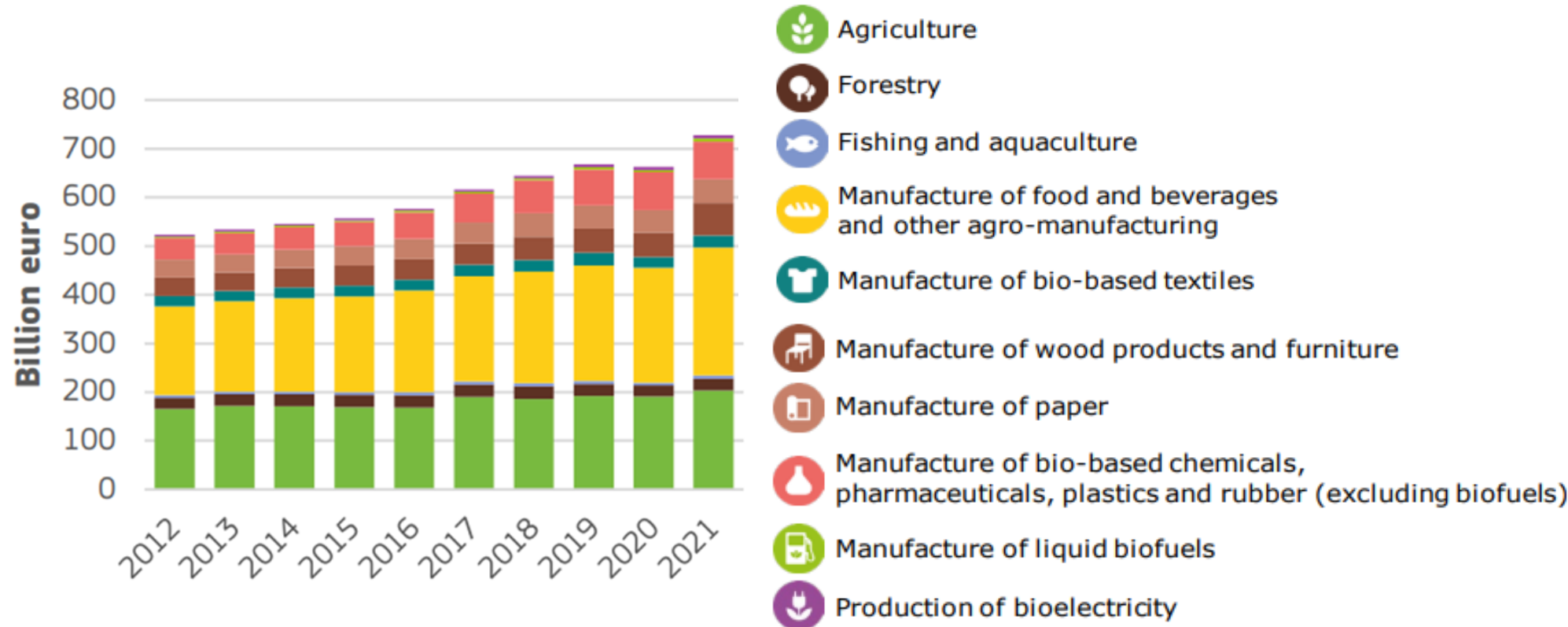
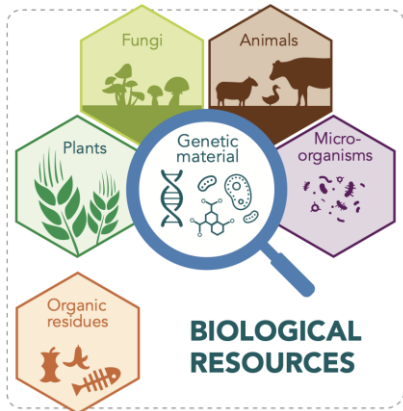
“Bioeconomy is the production, utilization, conservation, and regeneration of biological resources, including related knowledge, science, technology, and innovation, to provide sustainable solutions (information, products, processes and services) within and across all economic sectors and enable a transformation to a sustainable economy”.

Global Bioeconomy Summit Communiqué, 2024



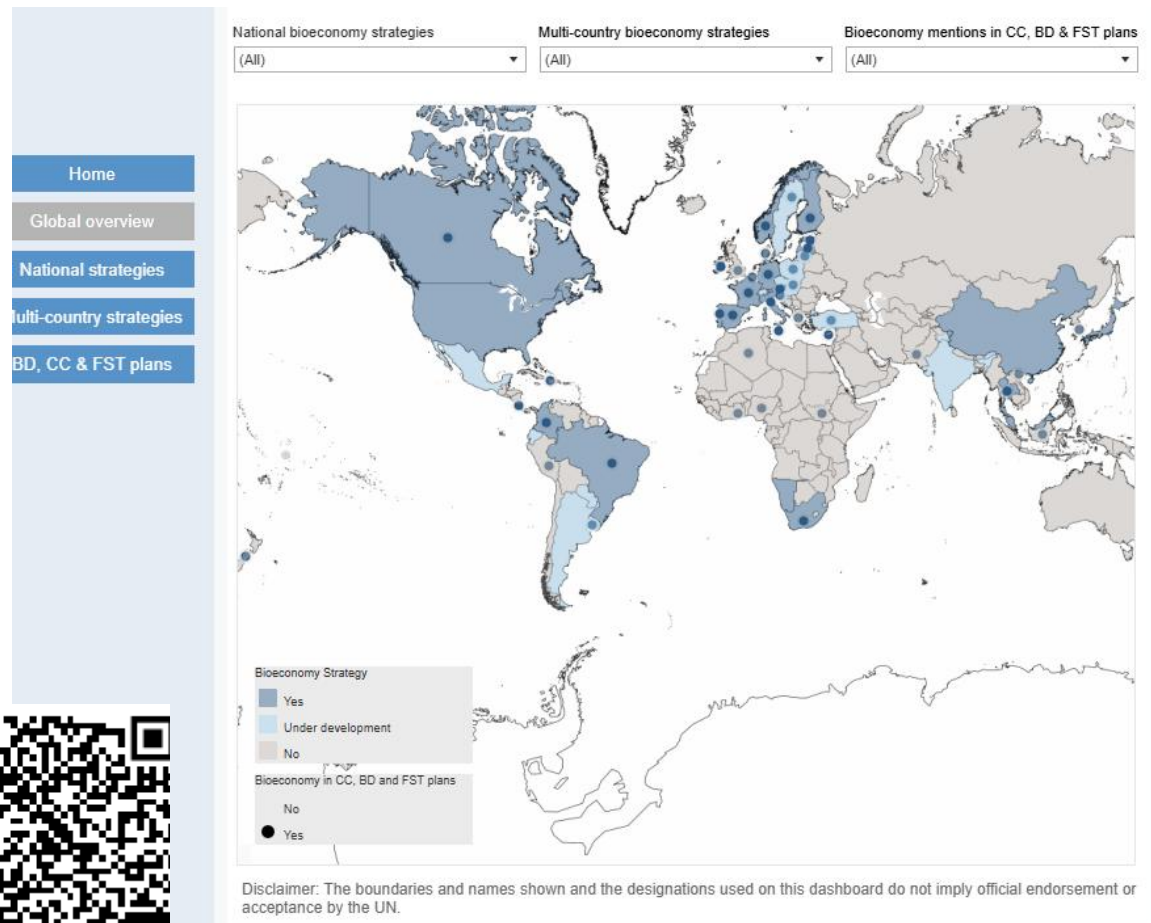
AGRIFOOD SYSTEMS AND BIOECONOMY

- The bioeconomy covers **all economic sectors that rely on biological resources**, mainly agrifood (~ 70%)
- Bioeconomy harnesses the power of **traditional knowledge** alongside **biosciences and innovations**



AT A GLANCE: THE GLOBAL BIOECONOMY LANDSCAPE

Bioeconomy policies around the world



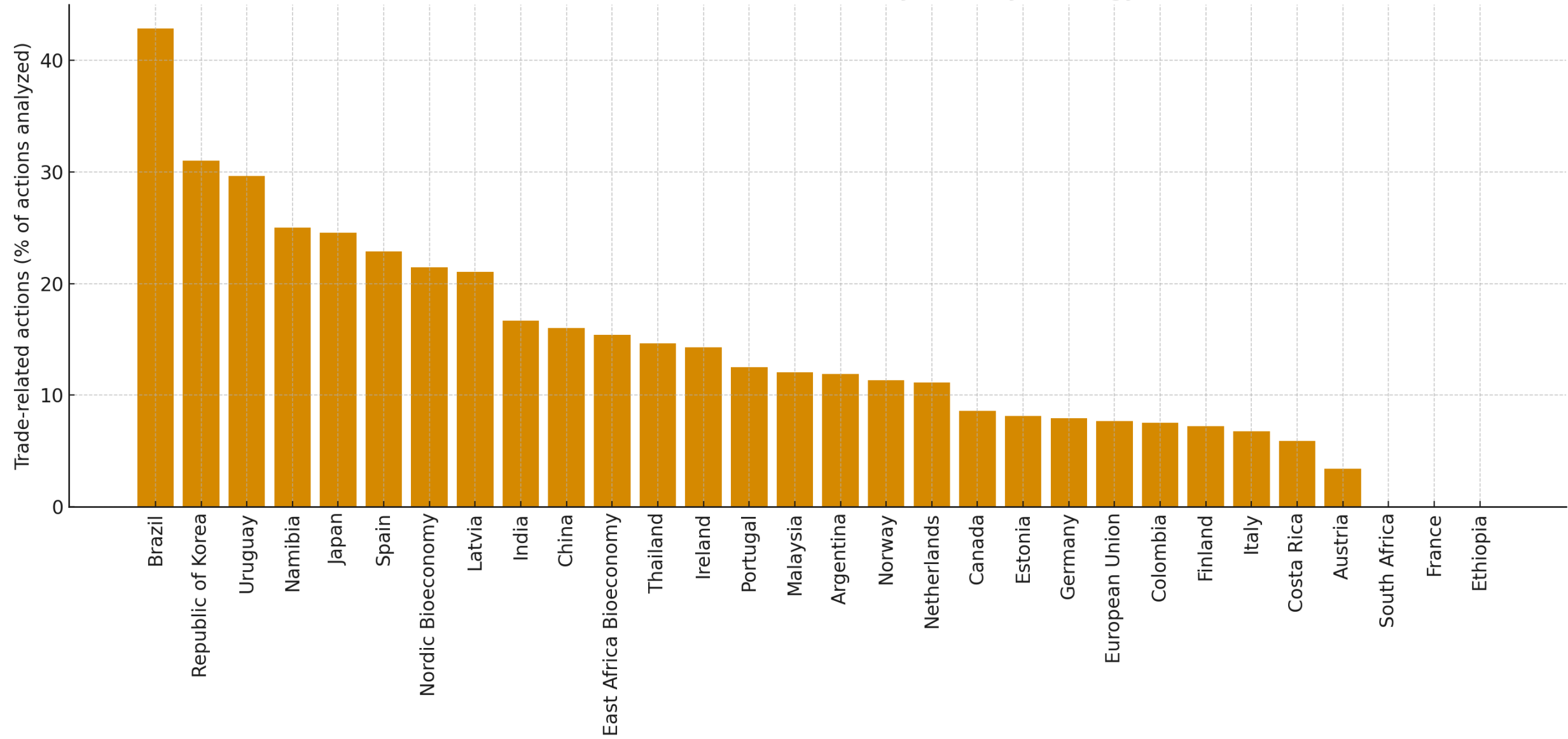
Opportunities:

- Bioeconomy is growing
 - FAO has analysed 24 national and 3 regional dedicated bioeconomy strategies. Around 15 are under development. Around 60 are related.
- Several bioeconomy networks, partnerships, and initiatives exist
- Agreement regarding the need for more global cooperation (G20, GBS, FAO mandate), especially at intergovernmental level

Mandates at FAO:

- Bioeconomy for sustainable food and agriculture part of the FAO Technical Committees (COFO, COAG), Regional Conferences (RLC, REU), Subcommittees...

Share of Trade-related Actions by Country/Strategy



An action was considered trade-related when the text of the action itself **explicitly referred** to: International or regional markets and value chains; Exports or imports Trade access and market placement; Standards or labels; Export promotion or marketing abroad; Customs or tariff placement Cross-border movement or controls

Most relevant trade-related actions in Bioeconomy Strategies (examples):

International Cooperation and Trade Alliances

- [Republic of Korea](#) Action 5.5.7: Promote the Bioeconomy Partnership Agreement (BEPA) to strengthen international bio-trade cooperation.

Export

- [Namibia](#) Action 4.4.1: Create a platform to market indigenous innovations and their widespread benefits.

Standards, labeling, and certification

- [Austria](#) Action 1.2.1: Further development and adaptation of existing national and European quality seals and labels for the identification of bio-based products.

Public procurement

- [Uruguay](#) Action 1.1.3: Promote sustainable public procurement mechanisms favoring bio-based and environmentally responsible products.

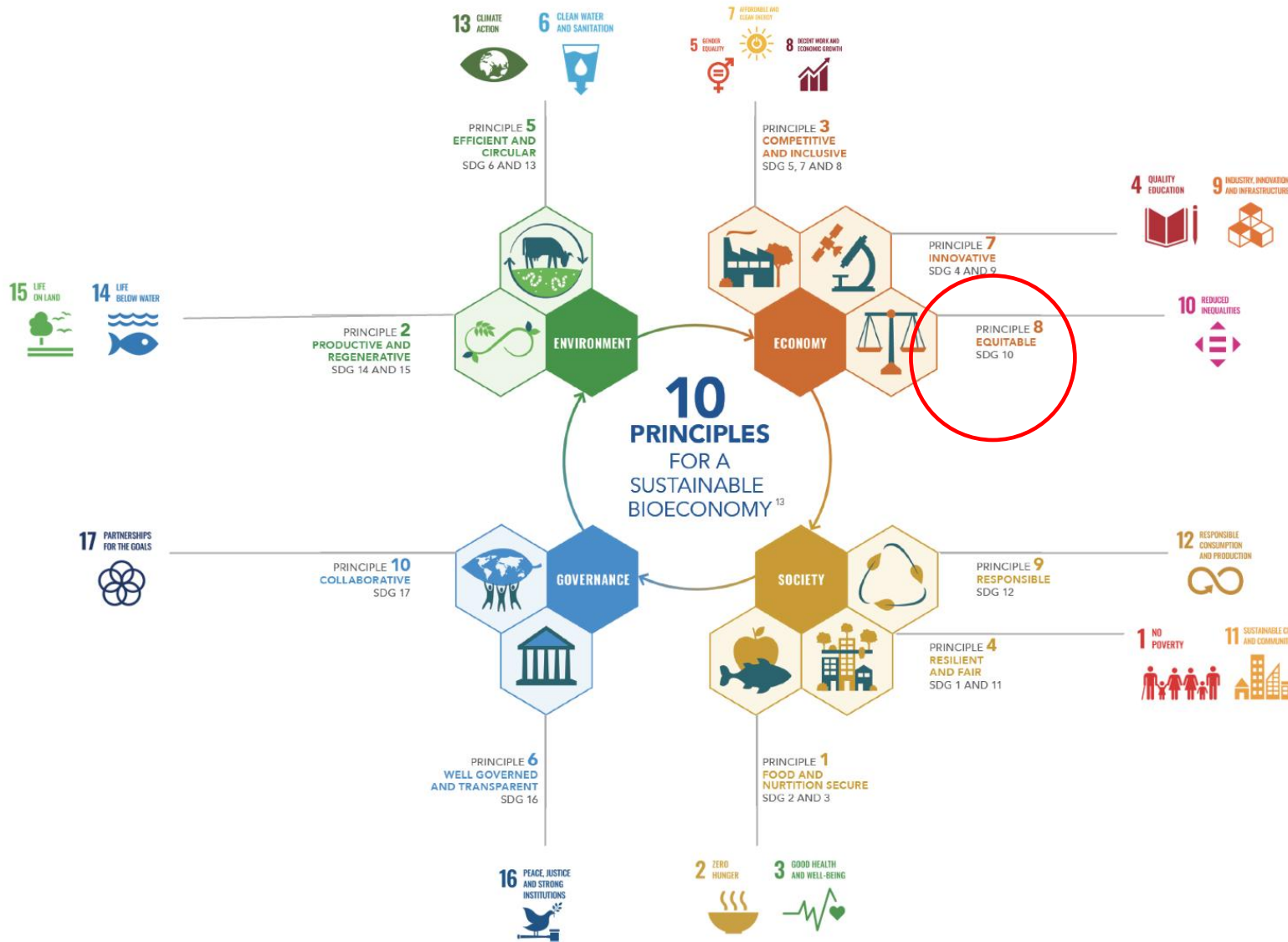
Regulation of cross-border movement

- [China](#) Action 1.6.3: (...) strengthening intellectual property protection, raising the level of control and control of invasive species

Value chains and international markets

- [Brazil](#) Action 1.7.1: To expand the insertion of bioeconomy products into national markets and global value chains.

A *SUSTAINABLE* BIOECONOMY: BENEFITS, TRADE-OFFS, AND SDGs



Bioeconomy covers all SDGs, thus holistic cross-sectoral policies should be a central part of implementing Agenda 2030

G20 reaches consensus and establishes High-Level principles on Bioeconomy

1. Integrate and promote sustainable development across its economic, social and environmental dimensions, contribute to eradicating hunger and poverty and improving health and well-being, whilst ensuring global food security and nutrition.

2. Be inclusive and equitable, uphold the rights of all persons, including Indigenous Peoples and members of local communities, promote gender equality and the participation of all stakeholders.

3. Advance mitigation and adaptation efforts against global climate change, in line with applicable multilateral climate agreements.

4. Contribute to the conservation of biodiversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, subject to national laws and in line with applicable international agreements and instruments.

5. Advance sustainable consumption and production patterns and the efficient and circular use of biological resources, whilst promoting the restoration and regeneration of degraded areas and ecosystems.

6. Be developed through safe, secure and responsible use of science, technology, innovation and traditional knowledge, with potential benefits, risks and impacts assessed scientifically.

7. Benefit from robust and coherent policy frameworks that foster trade for bioeconomy products and services, market conditions, sustainable business models, decent jobs, local value creation and private sector and civil society participation.

8. Utilize transparent, comparable, measurable, inclusive, science-based and context-specific criteria and methodologies to assess their sustainability throughout the value chains.

9. Be fostered by international collaboration and cooperation that addresses global challenges, leverages complementary strengths, innovation and entrepreneurship and promotes financing, capacity building and sharing of best practices.

10. Be based on country-specific approaches and implemented in line with national priorities and regional and local circumstances.

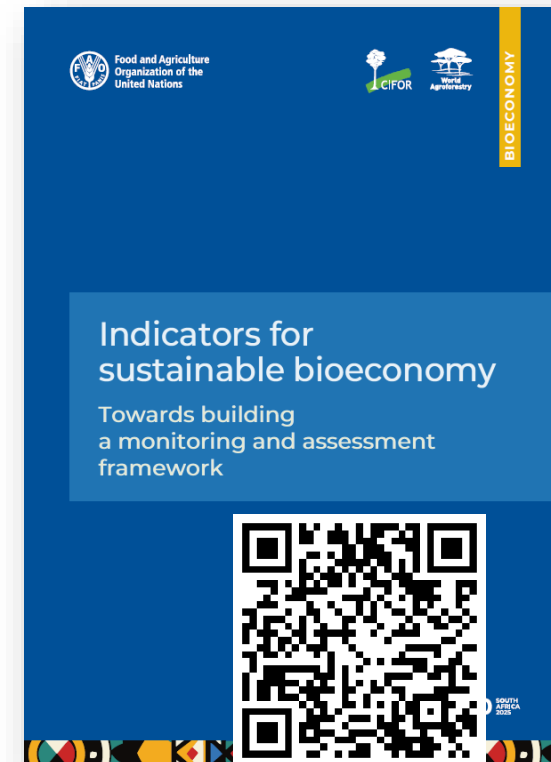
INDICATORS FOR SUSTAINABLE BIOECONOMY: TOWARDS BUILDING A MONITORING AND ASSESSMENT FRAMEWORK

Challenges:

- No global definition or framework
- Difficult to measure social–economic–environmental linkages
- Limited data on biomass supply and demand, trade and sustainability
- Diverse national strategies hinder global comparability
- Region-specific challenges, e.g. lack of standards

How the publication contributes:

- Introduces a **prioritization approach** and **carefully categorized database of over 4,000 indicators**, identifying synergies in methodologies e.g. SDG indicators, GBF indicators, FAOStat...
- Aligns indicators with **SDGs, G20 High-Level Principles on Bioeconomy, FAO Aspirational principles and criteria for sustainable bioeconomy**
- Covers three broad categories of indicators: **territorial, product/value chain, and business/sectoral**
- Incorporates **new ESG disclosure frameworks**



TRADE-RELATED INDICATORS FOUND IN SOURCES

Examples of trade-related indicators found in the excel database accompanying the paper:

- **SDG indicator 15.7.1 : Proportion of traded wildlife that was poached or illicitly trafficked**
- **Intellectual property rights (IPRs) (patent, trademark, design) applications in bioeconomy subsectors (number of application per 1 000 employees)**
- Terms-of-Trade of biomass (export/import)
- Change in wood net trade
- Change in cropland-based biomass product net trade
- Illegal logging and associated trade
- FAOstat Detailed trade matrix (fertilizers) - Import value
- **FAOstat Forestry Production and Trade - Export Value**
- **Namibia strategy: Number of bioproducts trade agreements active**
- Namibia strategy: Number of business trade fairs and conventions involving bio-resource producers organised
- Namibia strategy: Number of entrepreneurs and business owners who attended the business trade fairs and conventions
- **KMGBF: Forestry Production & Trade (Wood Fuel)**
- **KMGBF: Trends in the legal trade of medicinal plants**
- KMGBF: Number of countries incorporating trade in their national biodiversity policy
- KMGBF: Trends of trade and commercialization in biodiversity-based products that is sustainable and legal (in line 10 with BioTrade Principles and/or CITES requirements)

INTERNATIONAL COLLABORATION IS KEY FOR TRADE

Examples of international collaboration and agreements that support trade in the bioeconomy:

1. Efforts to align IP rights with ABS commitments, e.g.:
 - In May 2024, WIPO member states adopted the first WIPO Treaty to address the interface between intellectual property, genetic resources and traditional knowledge. It is also the first WIPO Treaty to include provisions specifically for Indigenous Peoples as well as local communities, and integrates IP with the commitments of the CBD and other environmental agreements.
2. Trade deals as Voluntary Partnership Agreements (VPAs), e.g.:
 - Bilateral agreements between EU and a number of countries on FLEGT Action Plan (Forest Law Enforcement, Governance and Trade) aims to combat illegal logging.

KEY GAPS AND OPPORTUNITIES FOR GLOBAL BIOECONOMY



**Global advocacy
and
partnerships**



**Policy dialogue
and integration
into
international
agenda**



**On-the ground
innovations and
access to
finance**



**Knowledge
creation and
capacity
development**

RECOMMENDATIONS FOR THE TESSD WG

- **Definitions & Standards:** Clear concepts (e.g., bioeconomy, biowaste) and global standards can spur investment and advance SDGs and climate goals.
- **Inclusive Access:** Equitable access to biotech innovation ensures sustainable and inclusive bioeconomic growth.
- **Policy Foundations:** Success depends on coherent public policies supporting biotrade, investment facilitation, cost competitiveness, and innovation.
- **Global Governance:** Need for coherence across G20, FAO, WTO, UNCTAD, and MEAs to align bioeconomy, biodiversity, and trade frameworks.
- **Capacity development:** Technical assistance to stakeholders to build an enabling environment including through trade policy actions is key to realizing the potential of the global bioeconomy instead

THANK YOU

ADDITIONAL INFORMATION

Bioeconomy@fao.org

www.fao.org/in-action/sustainable-and-circular-bioeconomy/en

