

Dialogue 1: Strengthening Global Coordination, Building Partnerships, and Financing for a Sustainable Bioeconomy

Date | Time | Platform: 09 May 2025 | 15:00 – 16:30 CEST | MS Teams

Summary

Background

The **bioeconomy** refers to the production, utilization, conservation, and regeneration of biological resources to provide sustainable solutions within and across economic sectors. The bioeconomy involves agriculture, technology, industry, and human rights, and therefore serves as a bridge between Sustainable Development Goals (SDGs) and a pathway towards global priorities, from tackling climate change and biodiversity loss to improving food security, development, and social inclusion. Sustainable bioeconomy is gaining growing recognition as a vital pathway to addressing interconnected global challenges and driving transformative change across sectors.

The last ten years have seen a significant rise in bioeconomy-related activities and engagement across global bodies. Within the UN system, the [Food and Agriculture Organization of the United Nations](#) (FAO) was given an official mandate in 2015 to work on bioeconomic development and has since led the development of policies, knowledge, innovation, and coordination around a sustainable bioeconomy. The FAO has overseen the establishment of the International Sustainable Bioeconomy Working Group (ISBWG), a multi-stakeholder expert group dedicated to global knowledge sharing and supporting bioeconomy development at the country level. Outside of the UN system, there are a diversity of stakeholders and international fora working the on bioeconomy, including the G20 Bioeconomy Initiative and the Global Bioeconomy Summit, which bring together government, research institutes, foundations, and private companies to promote relevant policy and innovation.

Against this backdrop, the [UN Environment Management Group](#) (EMG) in collaboration with FAO organized a Nexus Dialogue Series on **Sustainable Bioeconomy: Advancing Global Coordination and Inclusivity**. The first dialogue in the series, held on Friday 9 May 2025, focused on strengthening global coordination, building partnerships, and securing financing for a sustainable bioeconomy. It aimed to emphasize the need for a more unified approach across UN agencies and other stakeholders, highlighting gaps and synergies in current initiatives.

The Dialogue convened representatives from FAO, the Economic Commission for Latin America and the Caribbean (ECLAC), the UN International Development Organization (UNIDO), the Office of the High Commissioner for Human Rights (OHCHR), who presented their experiences in bioeconomy. Following these presentations, the floor was opened for broader engagement, inviting all

participating UN entities to respond to a series of discussion questions focused on advancing a sustainable bioeconomy.

Key messages noted on global policy, partnerships and coordination:

Representatives from the UN System highlighted progress in policy development, partnerships, and global coordination to support a sustainable bioeconomy:

- The G20 established **10 High-Level Principles on the Bioeconomy** in 2024 to serve as a basis for global discussions and agenda-setting around the bioeconomy.
- The 35 members of the FAO's **International Sustainable Bioeconomy Working Group (ISBWG)** bring perspectives from policy, research, civil society, and the private sector to exchange knowledge, inform national and regional strategies, and monitor progress of bio-innovations.
- Dedicated **bioeconomy strategies** have been developed in at least **24 countries and 3 regions**, with 15 additional strategies in development; the FAO's **Global Bioeconomy Dashboard** tracks and analyzes this policy development.
- ECLAC is currently working under a productive development approach to **measure the size and scope of the bioeconomy in different sectors**, such as industry, agriculture, and services. ECLAC frames the bioeconomy around 10 activities: policy and regulatory agendas; science, technology, and innovation; technological extension services; infrastructure and other public goods; human capital; digital transformation; entrepreneurship; financing and incentives; investment; internationalization.
- UNCTAD developed the [BioTrade Principles and Criteria \(P&C\)](#) that cover the three dimensions of sustainable development and guide the activities of governments, businesses, and civil society. These criteria have formed the basis for implementation of UNCTAD's BioTrade Initiative and BioTrade programmes.

Despite progress made, the key speakers and UN agencies participating in the Dialogue highlighted that challenges to bioeconomy development also exist:

- The FAO's [global stocktaking study](#) identified the following gaps in bioeconomy development: **limited understanding of bioeconomy benefits and trade-offs, inadequate data and sustainability indicators, lack of policy coherence across economic sectors, public private misalignment, low consumer awareness and engagement, and inadequate global coordination.**
- **There is no universally agreed definition of bioeconomy.**
 - The [FAO's 2020 Global Bioeconomy Summit Communiqué](#) definition: the production, utilization, conservation and regeneration of biological resources, including related knowledge, science, technology and innovation to provide sustainable solutions within and across all economic sectors.
 - From a human rights perspective, a sustainable bioeconomy must focus on the conservation of ecosystems and biodiversity by prioritizing circular production systems over monoculture, diversifying production methods, avoiding deforestation and environmental degradation, and recognizing and promoting the knowledge and ecological techniques of indigenous and local peoples.
- **Critical questions remain unanswered** around human rights and social environmental protections in the context of bioeconomy development: Whose bioeconomy is being built? Whose knowledge is valued? Whose profit is prioritized?

- While individual sectors like agrifood, biotech, pharma, and bioenergy have regulatory frameworks in place, **the bioeconomy still lacks a dedicated and comprehensive legal structure**. It should be considered as more than the sum of its parts, with specific safeguards addressing systemic risks like human rights.
- **Bioeconomy development can follow multiple pathways, each with distinct implications for sustainability and equity**. For example:
 - *Biotechnology-driven*, which promotes economic growth through high-tech applications
 - *Bio-resources-based*, which emphasizes substituting fossil resources with renewable bio-based alternatives to promote sustainable industrialization
 - *Biological / social bioeconomy*, which highlights innovations that serve systemic benefits, integrating sectors such as agriculture, forestry, fisheries, genetic resources, and tourism.

While biotechnology-driven and bio-resources-based models may promote economic growth and industrial innovation, they tend to be resource-intensive and may inadvertently exacerbate land dispossession, socio-economic marginalization, and ecological degradation. In contrast, **a biological/social bioeconomy** anchored in biodiversity conservation, circular production systems, and the valorization of local knowledge—presents a more inclusive and sustainable alternative. It is therefore essential to design **rights-based and participatory policy frameworks** that align with global commitments and ensure bioeconomy transitions benefit communities while protecting ecosystems.

The progress and challenges around the bioeconomy to date provide lessons learned to carry forward as a growing cohort of stakeholders pursue opportunities to support bioeconomy development going forward:

- **Global momentum around the bioeconomy is growing**, however, there is an outstanding need for a global bioeconomy partnership that can catalyze policies and plans, build capacity, and create incentives for bioeconomy development at all levels.
 - The FAO's ongoing effort to establish a **Global Partnership on Bioeconomy for Sustainable Food and Agriculture** provides an opportunity for UN entities to support a unified, coordinated approach to the bioeconomy.
- The bioeconomy must **build on global and national frameworks** (e.g., [UAE Global Framework on Global Climate Resilience](#), National Action Plans) to leverage existing efforts and reduce the additional burden placed on countries
- Platforms like the UNFCCC COP21 [Local Communities and Indigenous Peoples Platform](#), UNCCD [Indigenous Peoples Forum](#), and the FAO [Global Hub on Indigenous Peoples' Food Systems](#) can help to protect human rights by supporting the inclusivity of communities who are regarded as the stewards of biological resources.
- **Social safeguards are essential for an equitable bioeconomy**.
 - **Indigenous rights & knowledge protection**: recognize and uphold Indigenous rights to self-determination, territories, and traditional knowledge systems; ensure bioeconomy strategies that prioritize health, equitable benefit-sharing, and ecological balance.
 - **Inclusive participation**: engage local communities as equal partners in the planning, implementation, and management of bioeconomy strategies—not just providers of raw materials.

- **Support for local autonomy:** build capacity for communities to produce, market and own the outcomes of their innovations and labor.
- **Gender and intersectionality:** incorporate gender and anti-discrimination analysis into policy to ensure equitable outcomes across social groups.
- **South-South and Triangular Cooperation** may be particularly effective for sharing practical, low-cost, high-impact circular bioeconomy practices rooted in local materials.

Key messages noted on finance, innovation and monitoring:

UN agencies highlighted the progress made in bioeconomy finance innovation and monitoring:

- UNIDO's Accelerate-to-Demonstrate (A2D) Facility is helping to **de-risk bioeconomy innovations** through the provision of technical assistance and grants to industries, institutions, small and medium sized enterprises (SMEs), and start-ups working on bio-based technologies, such as critical minerals and green hydrogen
- In Southeast Asia, UNIDO and the Swiss State Secretariat for Economic Affairs (SECO) are providing pyrolysis technology to coffee producers to enable the **transformation of coffee husks into organic fertilizer**, in the form of biochar, which can either be used or sold, reducing waste, boosting self-sufficiency, and providing an additional source of income to farmers
- The FAO is supporting various bioeconomy **innovations** including the use of **banana fiber for textiles** in Pakistan and the **conversion of organic waste by black soldier fly larvae** in Cote D'Ivoire
- Relevant ongoing projects and initiatives were spotlighted by the participating UN organizations:
 - The FAO initiative, "BioDAF – Circular bioeconomy in Abidjan: From food waste to fork", transforms food waste into high-quality agricultural inputs through Black Soldier Fly farming, this innovative project reduces greenhouse gas emissions, supports local food security, and creates sustainable livelihoods for women and youth. It is a scalable model for circular economy success in urban settings.
 - The UNCTAD BioTrade Initiative aims to contribute to the conservation and sustainable use of biodiversity through the promotion of trade and investment in BioTrade products and services. At the core of which sit UNCTAD's BioTrade Principles and Criteria (P&C) that cover the three dimension on sustainable development and guide the activities of governments, businesses and civil society.
 - UNCTAD's Trade and Biodiversity (TraBio) database, which contains information on global trade flows of biodiversity-based products, for over 193 economies, provides access for all to consistent and complete data on imports and exports of biodiversity-based products and other relevant indicators. It aims to contribute to establish a harmonized and internationally accepted statistical framework for biodiversity-related trade.

In regard to monitoring and reporting, there is a general lack of information and measurement tools on many parts of the bioeconomy, which makes taxonomy, classification, and valuation a challenge.

- **Data Limitations:** There are significant limitations in data on bioeconomy investments, especially regarding intellectual property and green infrastructure, which are difficult to capture in national accounts.

- **Lack of Granularity:** Current product and activity classifications (e.g., CPC and ISIC) lack sufficient detail, particularly for high value-added and emerging bio-based products like biochemicals and biopharmaceuticals., intellectual property and lack of information.
- **Product-Sector Complexity:** Traditional sector-based approaches to classification are limiting because sectors produce multiple products and products may involve inputs from multiple sectors. A product-based approach offers a wider range of macroeconomic estimates in addition to value added by import export, net taxes, consumption but adds complexity in data analysis and integration.
- **Value Added Estimation:** Refining value-added estimates using intermediate consumption, import-output characteristics, and input-output matrices remains methodologically demanding.

Lastly, the UN entities drew attention to the opportunities and lessons learned in sustainable bioeconomy finance, innovation and monitoring:

- **Blended finance can play a critical role in both de-risking and scaling up bioeconomy innovations.** It includes the recourse to green bonds, blended fund guarantees and grants that could incentivize private investments to lower the cost of capital and lending-in nature-based bio economy ventures. Other fiscal incentives include payments for ecosystems services, tax, credits and subsidies, but require proper framing and technical assistance to prevent misuse.

Some innovative financing models were mentioned, notably:

- **Macro-Level Facility** that guarantees access to credit and investment rates in the bioeconomy sector.
- **Investment Facility with Blended Finance** that directly channels funding to SMEs, combining public and private capital to reduce investment risks and support sustainable business development.
- **Micro-Level Programmes** focused on small and medium sized enterprises (SMEs), especially women-led businesses and youth entrepreneurs, offering targeted financial and technical support.
- The **GEF** serves as a strategic platform to advance bioeconomy development while fostering synergies among the **Rio Conventions (UNFCCC, CBD, and UNCCD)**. By promoting integrated investments in sustainable resource management, technological innovation, and inclusive local value chains, the GEF can support countries in simultaneously meeting their commitments to climate mitigation, biodiversity conservation, and land degradation neutrality.
- **ECLAC highlighted the need to establish a baseline measurement for bioeconomy's economic contribution using national accounts** is essential to assess whether the investments and policies are achieving their intended impact, to ensures comparability over time and across countries, and to foster coherence with international agreed macroeconomic accounting frameworks,
- **The WIPO Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge, adopted in 2024, holds significant potential for recognizing traditional knowledge and preventing the unauthorized use of indigenous genetic resources.** It requires patent applicants to disclose the origin of genetic resources and associated knowledge,

helping to ensure that indigenous and local communities are not exploited and are acknowledged as rightful holders of their knowledge.

- UNIDO underlined the **necessary shift from linear to circular models**: Most industries currently operate under linear production models ("take, make, dispose") but UNIDO promotes a circular approach based on ecosystem principles, resilient agri-food systems, and renewable energy. This shift supports more sustainable use of biological resources and provides a strategic pathway to decouple economic growth from environmental degradation.
- **Resource nexus perspective**: Interconnections between resource systems (water, land, and energy) must be considered in bioeconomy.
 - For example, transforming seagrass waste into high-value biomaterials (e.g., for space tech) provides environmental benefits while creating additional streams of revenue in the sector
- Scaling the bioeconomy **requires adaptive business models**: profit-driven investments for viable cases and public subsidies for non-commercial but critical uses, while addressing resource competition (e.g., agriculture vs. forests).

Annex

Agenda

15:00 - 15:10: Opening remarks and introductions

15:10 - 16:00: Presentations: FAO, ECLAC, UNIDO, OHCHR

16:00 - 16:25: Open Discussion between UN Entities

16:25 - 16:30: Closing Remarks

List of Speakers

We would like to thank the following speakers for their valuable contributions to the Dialogue:

- **Mr. Hossein Fadaei**, Head of the EMG Secretariat
- **Ms. Jyotsna (Jo) Puri**, Director, Policy and Programme Division, UNEP
- **Mr. Lev Neretin**, Team Lead for the Environment, FAO
- **Ms. Alashiya Gordes**, Natural Resources Officer (Environmental Sustainability), FAO
- **Mr. Adrian Gerardo Rodriguez Vargas**, Chief of the Agricultural Development and Biodiversity Unit, ECLAC
- **Mr. Yvonne Lokko**, Team Lead - Unit on Agro-Innovation and Bioeconomy, UNIDO
- **Ms. Ana Paula Souza**, Human Rights Officer in the Environment and Climate Change Unit, OHCHR
- We would also like to thank the **UN entities** who contributed to the discussion.

Guiding Questions for the Discussion:

1. How can we develop a coherent, system-wide UN approach to sustainable bioeconomy that maps and connects existing initiatives, addresses gaps, and leverages complementary strengths across agencies while ensuring alignment with the G20 High Level Principles and other global sustainability frameworks? What existing mechanisms would best support this coordination?

2. What innovative financing mechanisms and policy instruments can UN agencies collectively promote to overcome current barriers to bioeconomy investment, particularly in low and middle-income countries?
3. How can we ensure that bioeconomy development benefits communities that are most dependent on biological resources, particularly indigenous peoples, traditional communities, and other marginalized groups? What UN mechanisms can promote equitable access to resources, knowledge sharing, and fair distribution of benefits across regions and sectors?

Polls

FAO developed a set of questions to gauge participants' understanding of the bioeconomy. Questions were shared throughout the session and responses were collected via the chat function.

1. How familiar are you with the concept of the sustainable bioeconomy?	
a. Very familiar	38%
b. Somewhat familiar	53%
c. Not familiar	9%

2. What are the most critical systemic barriers hindering bioeconomy advancement?	
a. Limited understanding of bioeconomy benefits and trade-offs, complicating decision-making and stakeholder engagement	17%
b. Inadequate data and sustainability indicators, making it difficult to monitor bioeconomy progress and assess impacts	13%
c. Lack of policy coherence across economic sectors at the national level, leading to conflicting regulations and priorities	25%
d. Systemic risks in bioeconomy value chains, arising from complex interdependencies among sectors and stakeholders, which can trigger widespread disruptions and failures across the system	4%
e. Inadequate financial and regulatory incentives and complexities, discouraging private investment and innovation in the bioeconomy	8%
f. Public-private investment misalignment, with public funds often focused on long-term R&D and private investors prioritizing short-term returns	4%
g. Insufficient funding and investment, particularly in scaling up bioeconomy projects from pilot to commercial stages	4%
h. Low consumer awareness and engagement, limiting demand for bio-based products and services	13%
i. Inadequate global coordination and multilateral cooperation, hindering the alignment of bioeconomy strategies across countries	13%

3. What should the main objectives of a global bioeconomy partnership for agrifood systems transformation be? (select 2)		
a.	Promoting climate action, biodiversity conservation, equitable economic outcomes, social equity, and sustainable development in bioeconomy development	20%
b.	Establishing common definitions, metrics, and accounting frameworks for the bioeconomy	20%
c.	Supporting countries in developing and implementing coherent bioeconomy policies and strategies that align with sustainable development frameworks	28%
d.	Enabling research, development, and innovation in biotechnology and bio-based industries	5%
e.	Facilitating trade and market access for bioproducts	5%
f.	Fostering investments by developing financial mechanisms and sustainable finance options in the bioeconomy sector	8%
g.	Empowering stakeholders through awareness, knowledge exchange, education, and capacity-building initiatives to foster a global bioeconomy movement	15%

Resources Shared

ECLAC :

- Guidance and strategic framework : [Towards a sustainable bioeconomy in Latin America and the Caribbean: Elements for a regional vision](#)
- Report: [Nature-based solutions and the bioeconomy: Contributing to a sustainable and inclusive transformation of agriculture and to the post-COVID-19 recovery](#)

FAO :

- Overview: [Sustainable bioeconomy for agrifood systems transformation](#)
- Project: [BioDAF – Circular bioeconomy in Abidjan: From food waste to fork](#)
- Global stocktaking study: [Bioeconomy for food and agriculture: A global stocktaking study](#)
- Repository of bioeconomy strategies: [Dashboard on bioeconomy strategies and related actions for sustainable development](#)
- News article: [Launch of online survey towards the development of a multistakeholder global partnership on bioeconomy for sustainable food and agriculture](#)

UNCTAD:

- Side-Event of UNCTAD: [UNCTAD and Chatham House side event of the World Circular Economy Forum](#)
- SMEP Projects repository: [List of SMEP \(Sustainable Manufacturing and Environmental Pollution Programme\) projects](#)
- Contact of SMEP Project Management Officer: maria.durleva@un.org
- News article: [New data tracks global trade in non-plastic substitutes](#)

- BioTrade Initiative: [BioTrade | UN Trade and Development \(UNCTAD\)](#)
- BioTrade Exploration Tool: [Trade in biodiversity-based products | UNCTAD Data Hub](#)

G20 Initiative on Bioeconomy (GIB):

- Principles: [High-Level principles on Bioeconomy](#)

OECD:

- Policy paper: [Innovation ecosystems in the bioeconomy](#)

UNU-FLORES :

- Article: [Advancing the resource nexus concept for research and practice](#)

UNFCCC:

- Facilitative Working Group: [Local Communities and Indigenous Peoples Platform Web Portal](#)
- Adopted decision: [Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3](#)