

15th ICA Rectors and  
Deans Forum 2025



**Solidarity**

**Equality**

**Sustainability**

# Spotlight on G20 Initiative on Bioeconomy: Perspective from South Africa

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# Background

- Climate Change
- Biodiversity Loss
- Unsustainable Development/Pollution

Outstripping the ability of the planet to support us.

...human-induced climate change: 2024 the first year to be **more than 1.5°C** above the pre-industrial era.

WORLD METEOROLOGICAL ORGANIZATION

Massive tree mortality is increasing with climate change



Recent landscape level tree mortality events associated with biotic and abiotic stresses reported in peer reviewed publications  
(Teshome et al., 2020, Front. Plant Sci.)

Sea-level rise and ocean warming irreversible for hundreds of years

Developing countries more vulnerable to Climate Change



73% decline in wildlife populations in last 50yrs - LPR

# GIB Issue Note

## General Introduction

1. Economic opportunity.
2. Bioeconomy is not the silver bullet to climate change, biodiversity loss, unsustainable development/pollution – but a significant and powerful roleplayer.
3. Critical the world responds collectively to the global challenge / global opportunity.
4. Recognize climate change risks - which will also affect the productivity of bioeconomy.

## GIB Context

1. *GIB 2024 established High Level Principles on bioeconomy.*
2. *Now is the time to translate such vision, potential, and principles into action*

## ***Orchestrating an Equitable, Sustainable Global Bioeconomy***

1. *Global South - with a special focus on Africa - participates meaningfully and benefits from the potential development of the Global bioeconomy.*
2. *Business and market developments, infrastructure and technologies, equitable international financial arrangements, development of skills along the value chain, and strengthening regional and international cooperation.*

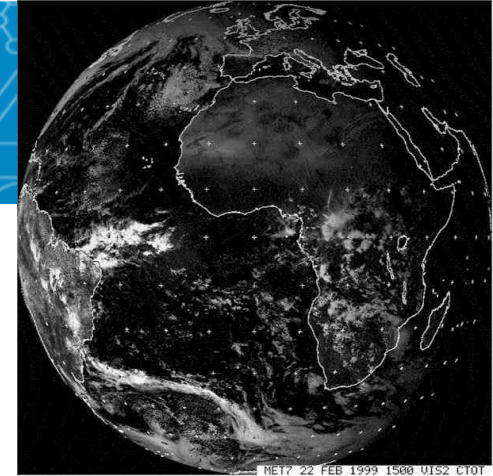
# G20 – Initiative on Bioeconomy

- African Context & Opportunity (agroprocessing +)
- Metrics & Standards (trade and bioeconomy +)
- Financing (Bioeconomy Financing Hub for Africa +)
- Idealized structure for Global Bioeconomy Implementation (fast, dynamic & flexible: coordination, leadership, targets, recommendations, implementation)

=> Chair's Summary Report

# African context

- ❑ Agriculture accounts for ~17% of GDP, but 50% of the workforce.
- ❑ Africa derives <10% of value of the biomass it produces.



## Why?

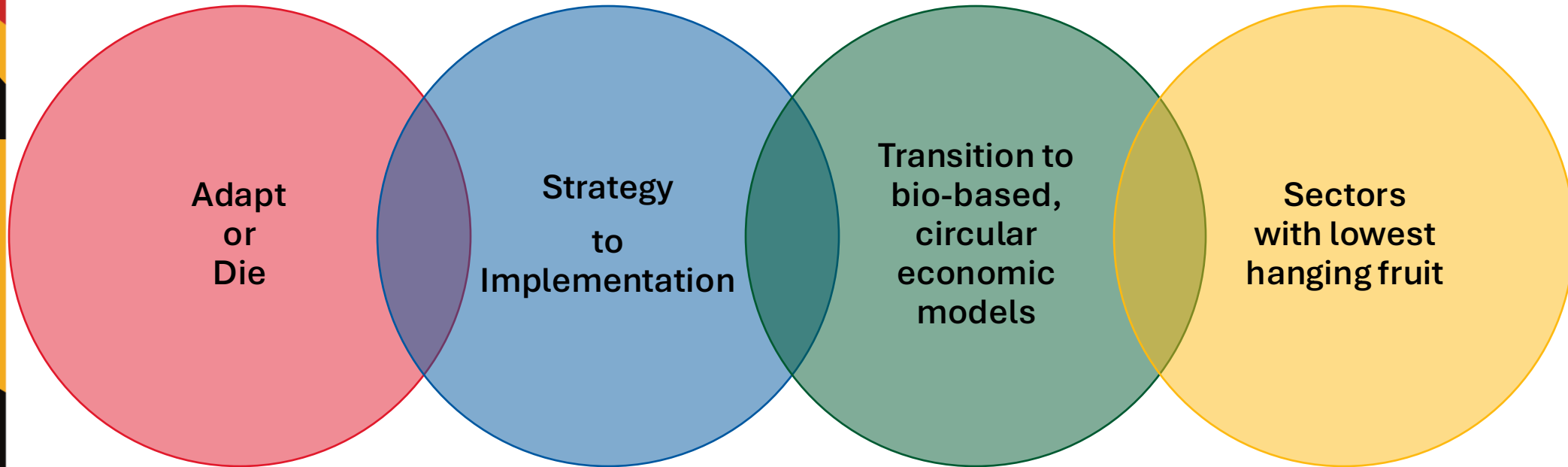
- **Infrastructure constraints:** Poor transport, storage, and processing facilities
  - **Regulatory and trade barriers:** Inconsistent standards and limited market access.
  - **Underinvestment in Science:** Limited investment in Skills, Science Infrastructure, Innovation on biomass conversion, and commercialization.
1. **Significant OPPORTUNITY - workforce capability plus existing trade**
  2. **Initially converting raw biomass into higher value products**
  3. **Greater revenues will/must benefit farmers, agroprocessing entrepreneurs + governments.**

**Opportunity**

# African context

- ❑ **Ghana** (3<sup>rd</sup> largest cashew nut exporter) attempted to ban the export of raw cashew nuts in 2016 to promote local processing and value addition, but the policy was quickly reversed due to strong backlash from farmers and traders.
- ❑ In August 2025, **Nigeria** imposed a six-month ban on the export of raw shea nuts to boost domestic processing and capture more value from the global shea industry (\$6.5 billion) — but the abrupt move triggered severe economic disruptions, especially for rural women who dominate the sector.
- ❑ **Ethiopia** banned raw hide and skin exports to develop its leather industry. The policy has had mixed results due to infrastructure and quality challenges. **Lesson:** Value addition requires parallel investment in quality control and logistics.
- ❑ **Uganda** is promoting local roasting and packaging of coffee, resisting raw export ban and instead focusing on incentivizing processors.

# PRIVATE SECTOR VIEW | **The market imperative**

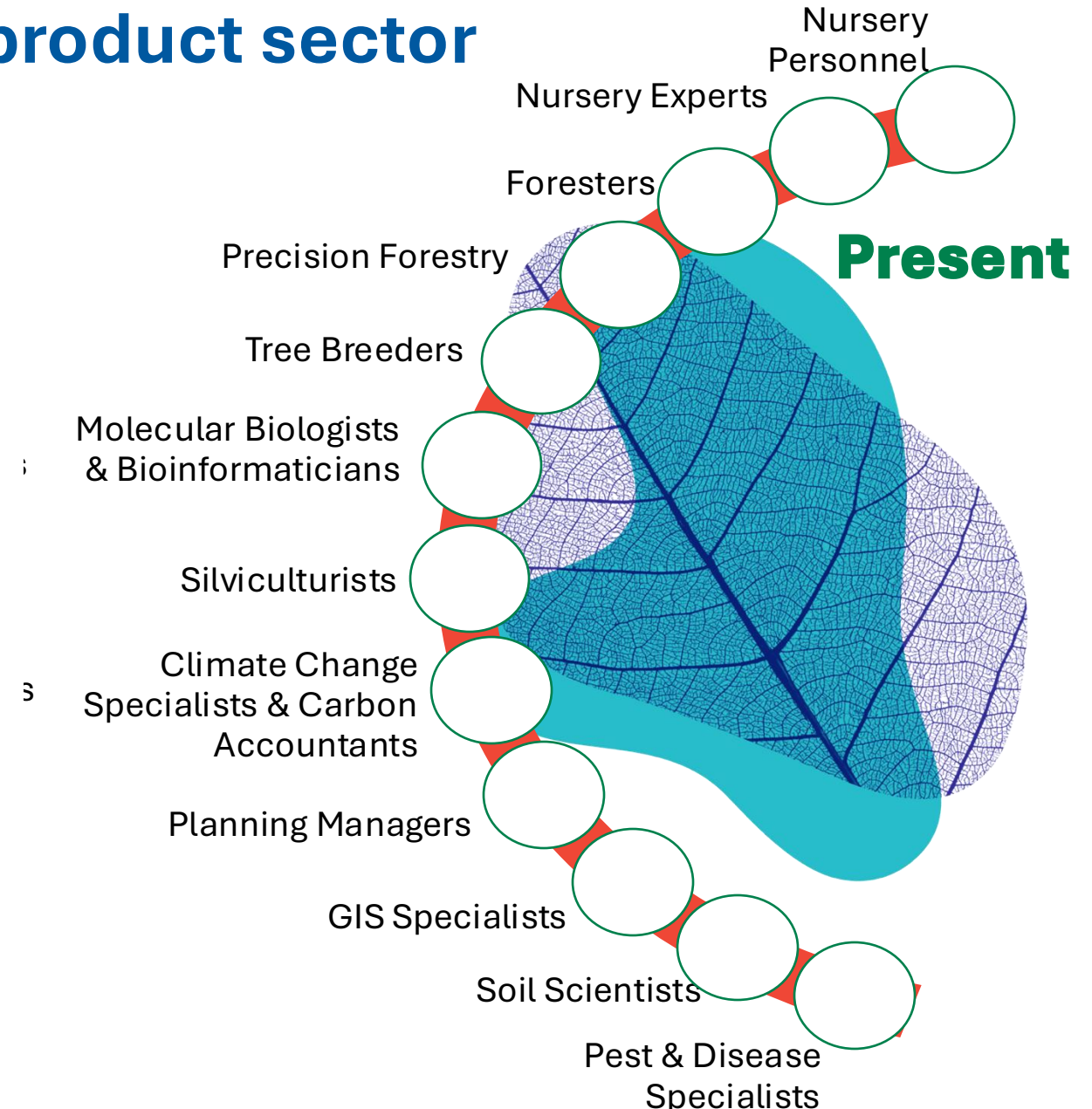


**PUBLIC SECTOR ROLE | Strategy & Enabling policy; coordination; geopolitics; bioeconomy premium; etc**

# Academia role example|

## Skills pivot in forest product sector

- Industry wants best-in-world solutions.
- Industry is interested – to some extent - in local/national human skills & capacities.
- Industry is very interested in investing in climate mitigating investments



# ISSUES OF RELEVANCE TO ACADEMIC SCIENCE

- **Biorefinery** knowledge, technologies, innovations for extracting value from biomass.
- Knowledge, technologies & innovations on sustainable **biomass-based products** (particularly to replace their fossil fuel equivalents, noting bioeconomy premium).
- **Carbon capture** (but...).
- **Scaling Bioeconomy in Africa & Dev.ing World** – IKS; agroprocessing; policy environment; bioprocessing (cosme- & neutraceuticals; etc).
- **Policy briefs** for local procurement (incl. timelines),
- **Policy briefs** for global procurement (incl. timelines),
- **Standards**, trade agreements, access to markets,
- **IP sharing strategies** (technologies to assist the planet).
- **AI** intersection with the bioeconomy. Tracking & tracing, screening, precision

*Global collaboration;  
capacity development;  
partnerships*

# LEADERSHIP & COORDINATED GLOBAL EFFORT

World has many current distractions: geopolitical & economic tensions; trade & physical wars; climate change impacts; gulf between Global N and S; etc.

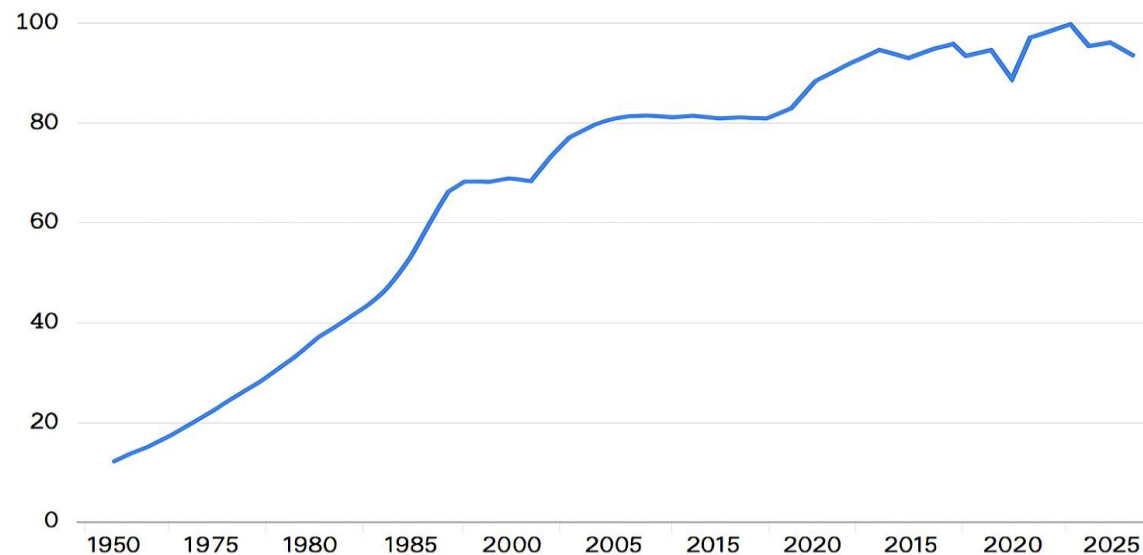
- We need renewed focus on **mitigating climate change impacts** – science & innovation for heat tolerance; resilience; carbon capture; biofuels + bio-based products...
- We need renewed focus on **developing sustainable economies: bioeconomies**. Not only for those that can, but for **ALL**.
- **Capital** doesn't reside with public sector.
- We need to move **beyond consumer & voter interests**.
- We need **coordinated and global effort** to stave off the worst of Climate Change.



# Turning the taps on fossil fuels

Source	Share of global electricity	Key trends
Renewables	34.3%	Now surpassed coal for first time. Solar 31% growth; wind 7.7%
Coal	33.1%	Still significant in Developing economies
Gas	23%	
Nuclear	<10%	New reactors in China, India, Korea, and recovery in France and Japan

Global oil production hit 80-95mb/day in recent years



Slight dip in 2025 may be an artifact



**G20**  
SOUTH AFRICA 2025



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**Equality**

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**Thank you**

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## G20 High-Level Principles on Bioeconomy

Recognizing the remarkable potential of the bioeconomy to contribute to building a sustainable future and fostering economic growth for all, the G20 Initiative on Bioeconomy (GIB) has initiated the international debate on this innovative, complementary productive paradigm. Its members have decided on ten voluntary, non-binding High-Level Principles on Bioeconomy, according to which bioeconomy activities are expected to:

1. **Integrate and promote sustainable development** across its economic, social, and environmental dimensions, contribute to eradicating hunger and poverty, and improve health and well-being, while 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 ensure 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, while 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.

*The applicable multilateral climate agreements referred to in Principle 3 include, but are not limited to, the Paris Agreement. The applicable international agreements and instruments referred to in Principle 4 include, but are not limited to, the Kunming-Montreal Global Biodiversity Framework (KMGBF).*