GLOBAL BIOECONOMY POLICY REPORT 2026

Adapting Strategies for a Shifting Bioeconomy Landscape

A report from the International Advisory Council on Global Bioeconomy

International Advisory Council on Global Bioeconomy

zef Center for Development Research University of Bonn

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Preface

Since the first Global Bioeconomy Summit in 2015, the International Advisory Council on Global Bioeconomy (IACGB) has tracked how governments around the world set out to shape the bioeconomy. This report continues that series. It builds on the past Global Bioeconomy Policy Reports published by the IACGB, and it covers developments up to mid-October 2026.

The period since the last report in 2024 has been one of remarkable dynamism, reflecting a rapidly shifting bioeconomy landscape across the world. Under Brazil's G20 presidency, the bioeconomy became the subject of a multilateral global agreement for the first time with the G20 High Level Principles, and South Africa carried this agenda forward. At COP30 in Belém, the forest bioeconomy was placed at the centre of the climate agenda. At the same time, the political environment has become more challenging. Geopolitical tensions, a backlash from the fossil industry, strained public budgets and pressure on multilateral institutions all shape how governments view the bioeconomy. While a few governments are quietly withdrawing from rapid solutions, the focus for many has shifted to resilience, competitiveness and strategic autonomy.

This report provides a robust evidence base for this changing landscape. For the first time in the series, all policy documents were analysed with a single, systematic framework. This makes strategies comparable across countries, regions and time, and it highlights the diverse visions, objectives and means of implementation as the global bioeconomy matures and evolves.

The timing of this report is significant. As the international community begins to prepare the multilateral frameworks that will shape the post-SDG era from 2030 onwards, the bioeconomy needs a shared understanding and a common voice to position itself as a vital component of a just and sustainable transition that serves people and the planet. This report illustrates the wide range of visions and approaches to achieving these goals - a diversity that we see as a strength on which a common position can be built.

We sincerely thank all authors for their contributions.

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Co-chairs of IACGB

19.10.2026, Dublin, Ireland

Core Messages

This year's report concludes with six core messages based on a comprehensive review of regional, national and sub-national policies and major trends in different world regions

1. Proliferation continues.

The last three years were the most active years on record. By late-2026, 49 dedicated and 121 related strategies had been adopted in 65 countries and macro-regions. This trend is likely to continue and to be complemented by the revision of first-generation strategies as technology advances and a shifting global political economy call for updated policies.

2. New key players among low- and middle-income countries.

Latin America and Africa have seen the most dynamic policy development of recent years, from new national strategies in Brazil, Ecuador, Uruguay, Ethiopia, Kenya and Namibia to the Global Bioeconomy Summit in Nairobi, the G20 presidencies of Brazil and South Africa, and COP30 in Belém.

3. More granularity through sub-national strategies.

Sub-national strategies add a layer of bioeconomy governance. Strategies and visions in North Rhine-Westphalia, Baden-Württemberg, Catalonia, Amazonas and Tamil Nadu tailor bioeconomy objectives to regional resource endowments and industrial profiles. Sub-national strategies can help exploit territorial differences in comparative advantage, although much of what they set out is still at the level of strategic ambition.

4. Crossroads ahead.

Competitiveness, strategic autonomy and biomanufacturing dominate the policy debate in Europe, the United States and Asia, yet they are hardly reflected in the strategies adopted so far. Rather, inclusiveness and equity and bio-social visions gained most relevance.

5. Public funding and private engagement remain a challenge.

Public budgets face mounting pressure and development finance is declining, yet strategies still rely primarily on public funding: 92% cite public R&D, but only 47% commit a dedicated budget. Public funding remains indispensable, focusing on public goods innovation, while private capital must carry the scale-up. Recent, fossil price shocks strengthen the business case for bio-based alternatives.

6. Towards one choir with many voices.

Countries envision the bioeconomy differently, reflecting diverse settings, and recent strategies have widened this gap. However, a diversifying policy landscape can only keep the sustainable bioeconomy on the global agenda—particularly in post-2030 SDG frameworks—if it develops a strong common narrative and language.

KEY TRENDS IN BIOECONOMY POLICIES OF THE LAST 20 YEARS

Global Policy Map and Key Indicators

Regional distribution and development of bioeconomy strategies, 2006–2026

49
dedicated strategies adopted (2 of which were withdrawn), plus 18 in preparation

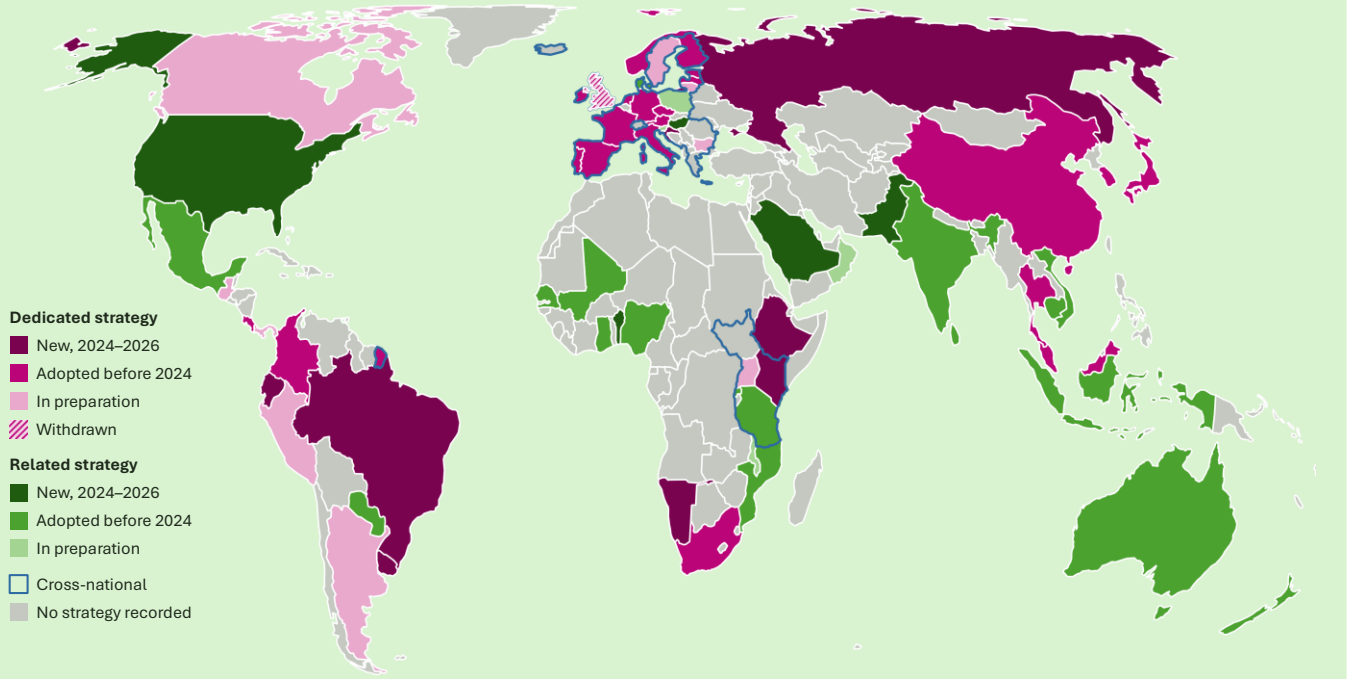
121
bioeconomy-related strategies adopted, plus 29 in preparation

32 2023: 25
countries and macro-regions with an adopted dedicated strategy

65 2023: 57
countries and macro-regions with an adopted dedicated or related strategy

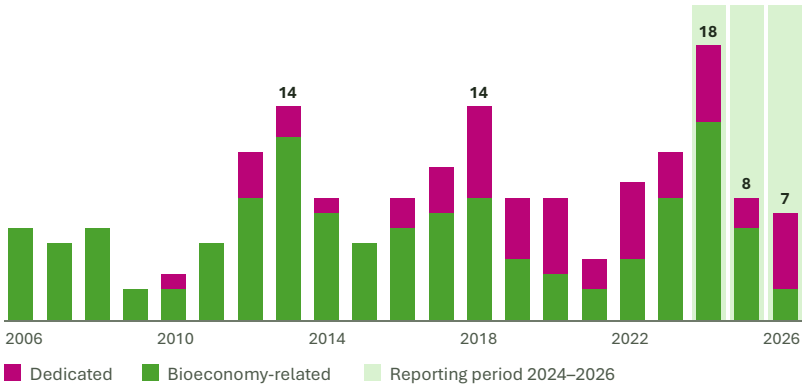
Bioeconomy strategy status, 2026

Countries and macro-regions; sub-national strategies not included



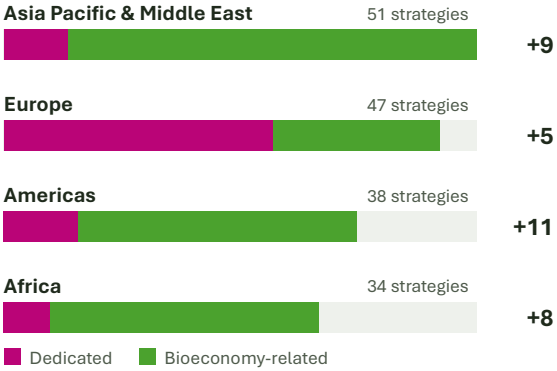
Strategies adopted per year

By year of adoption; 33 strategies adopted since January 2024



Adopted strategies by region

Dedicated and bioeconomy-related



Key Messages

Record activity in 2024

2024 was the most active year in the database, with 18 strategies adopted. In total, 33 strategies have been adopted since January 2024.

New dedicated strategies

Brazil, Croatia, Ecuador, Ethiopia, Kenya, Namibia, Russia and Uruguay adopted their first dedicated strategy in 2024–2026; nine more countries are preparing one.

Activity beyond Europe

Since 2024, most new strategies came from the Americas (11), Asia Pacific & the Middle East (9) and Africa (8); Europe added 5.

Source: IACGB database of global bioeconomy policies, closed 15 October 2026 (2026 is a partial year). National and macro-regional strategies; sub-national and out-of-scope entries excluded. Adopted = not in preparation, incl. the withdrawn UK and US strategies.

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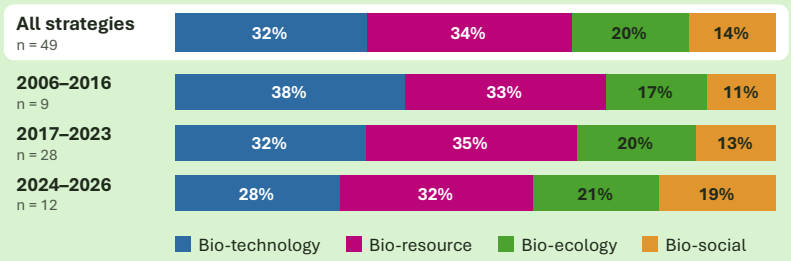
KEY TRENDS IN BIOECONOMY POLICIES OF THE LAST 20 YEARS

Goals and Priorities

Content analysis of the 49 adopted dedicated bioeconomy strategies, 2006–2026

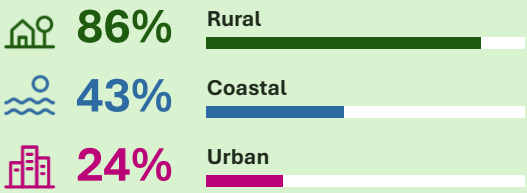
Bioeconomy visions

Average weight of each vision per strategy, by year of publication



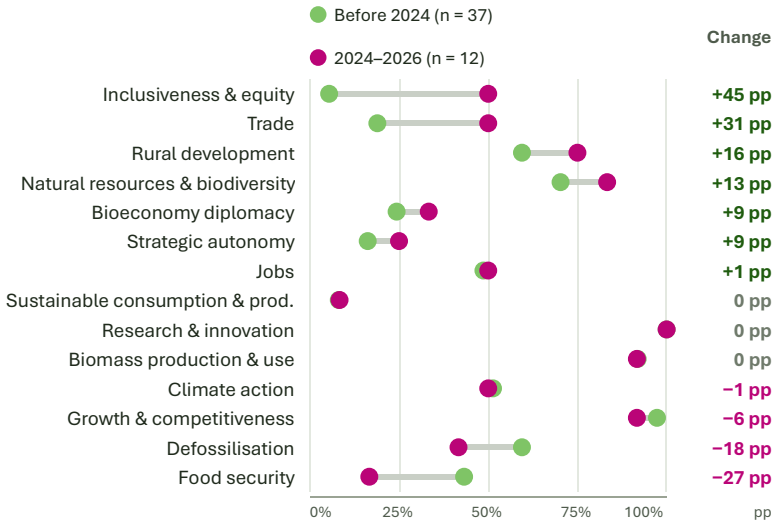
Territorial focus

Share of strategies targeting each territory



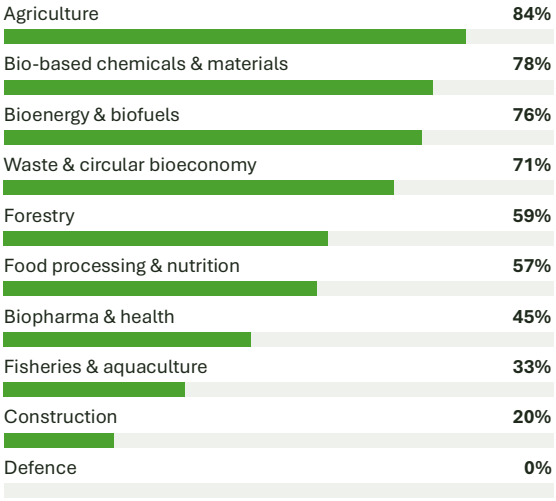
Strategic objectives

Share of strategies rating the objective high, before and since 2024



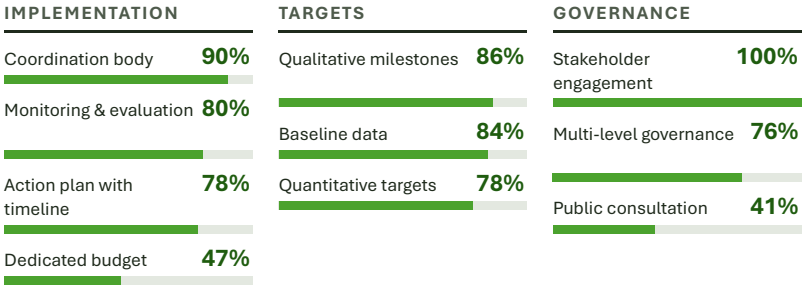
Priority sectors

Share of strategies rating the sector high



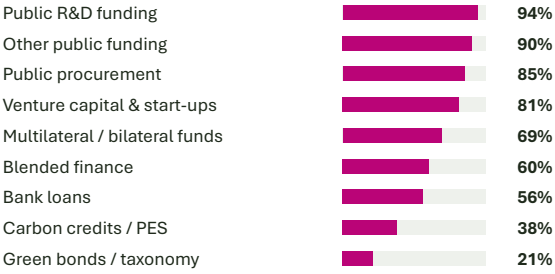
Implementation and governance

Share of strategies containing each element



Financing instruments

Share of strategies naming the instrument (n = 48)



Key Messages

Visions and territories

Bio-resource and bio-technology visions dominate; the bio-social share rose from 11% (2006–2016) to 19% (2024–2026). Rural areas lead (86%).

Objectives and sectors

Since 2024, inclusiveness (+45 pp) and trade (+31 pp) gained weight, while food security lost (−27 pp). Agriculture is the top sector (84%).

Implementation and finance

90% name a coordination body, but only 47% a dedicated budget. Funding relies on public R&D (94%); green bonds or taxonomy feature in 21%.

Source: Bioeconomy Policy Analysis Framework (BPAF), LLM-assisted coding with expert review, n = 49 strategies. "High" = dedicated section, concrete targets or 7+ specific passages. pp = percentage points; the 2024–2026 sample is small (n = 12).

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Executive Summary: Key Trends for the Future of the Global Bioeconomy Transition

This report reviews bioeconomy policy development worldwide from 2024 to 2026. It draws on the IACGB database of global bioeconomy policies, which covers 217 documents from 74 countries and macro-regions, and on a systematic content analysis of 49 dedicated bioeconomy strategies. The last Global Bioeconomy Policy Report (2024) identified a set of emerging trends: the bioeconomy as a solution provider for global challenges, the growing weight of supply-chain resilience, and the convergence of artificial intelligence and biology. Two years later, some of these trends have moved from the margins to the centre of the policy debate, although they are not yet equally reflected in adopted strategies. At the same time, the political environment in which this policy is made has changed considerably.

Key Trends in Global Bioeconomy Policies

Policy dynamics: continued growth, uneven progress

Bioeconomy policy uptake has grown steadily over two decades. The IACGB database records 217 national and macro-regional documents: 67 dedicated bioeconomy strategies (49 adopted, two of them since withdrawn, and 18 in preparation) and 150 bioeconomy-related strategies. 2024 was the most active year on record, with 18 adopted strategies, and 33 strategies have been adopted since January 2024. New dedicated strategies have emerged above all in regions where there were few before. Namibia adopted its Sustainable Bioeconomy Strategy 2024–2029 in 2024, making it one of the first African countries after South Africa to do so. Ethiopia followed in 2025 with a strategy that envisages the country among the nations with a robust bio-based economy by 2030, and Kenya launched its National Bioeconomy Strategy 2026–2036 in August 2026. In Latin America, Brazil moved from scattered instruments to a National Bioeconomy Strategy in June 2024, Uruguay adopted its National Sustainable Bioeconomy Strategy in December 2024 and Ecuador its National Bioeconomy Strategy 2026–2036 in October 2026. In Europe, the Croatian Parliament adopted the country's first dedicated strategy in July 2026, and Russia approved its Strategy for the Development of the Bioeconomy to 2036 in October 2026.

Established frameworks are being revised at the same time. Japan updated its strategy for the second time in 2024, renamed it the Bioeconomy Strategy and consolidated nine market areas into five, each with a market-size target for 2030. The European Union replaced its 2018 strategy with a new strategic framework in November 2025, Italy updated its national action plan, and Austria is revising its 2022 action plan. Much of the recent activity, however, takes place through

bioeconomy-related strategies rather than dedicated strategies. Examples include India's BioE3 Policy (2024), South Korea's Green-Bio Industry Promotion Act (2024) and Synthetic Biology Promotion Act (2025), Saudi Arabia's first National Biotechnology Strategy (2024), Mozambique's Blue Economy Development Strategy (2024), and circular-economy roadmaps in Benin, Cameroon, Chad, Ethiopia and Peru.

Progress in bioeconomy policy adoption is not linear, and setbacks can be observed. In Argentina, a Secretariat of Bioeconomy created in 2024 was folded into the Secretariat of Agriculture, Livestock and Fisheries later that year, and no national strategy has been adopted. In the United States, the administration rescinded the 2022 executive order on advancing biotechnology and biomanufacturing in March 2025, and momentum shifted from the executive branch to Congress. At the same time, dedicated strategies were still in preparation in several countries at the time of publication, among them Uganda, Bulgaria, Ireland, Sweden, Panama and Peru.

One development identified in the 2024 report is only beginning to appear in strategies: the convergence of artificial intelligence (AI) and biotechnology. A few recent instruments link the two fields explicitly, among them India's Bio-AI hubs and the US Department of Defense's sandbox for AI and biotechnology, but in most strategies of the reporting period AI plays at most a marginal role. This is likely to change markedly in the coming years. AI opens new opportunities, from protein design to strain engineering and process control, but it also raises new risks, including biosecurity risks where AI-assisted tools lower the barriers to designing or modifying harmful biological agents. Future strategies will need to address both.

New key players among low- and middle-income countries

Some of the most notable developments of the past two and a half years have taken place in low- and middle-income countries. Since January 2024, most newly adopted strategies have come from the Americas (11), Asia-Pacific and the Middle East (9) and Africa (8), while Europe added five. In Africa, dedicated national strategies have emerged beyond South Africa for the first time. The East African Community's regional strategy has been a key catalyst: Ethiopia's strategy draws directly on it, and Uganda, Rwanda, Tanzania and Burundi have begun processes of their own. The new instruments are also broader than before. Where African bioeconomy-related policy used to address single sectors such as biofuels or biotechnology, the new strategies and roadmaps cover three to six priority sectors each.

In Latin America, Brazil has combined a national strategy with a dense body of implementing legislation, from the Fuel of the Future Law to a legal framework for bioinputs, and launched a National Bioeconomy Development Plan 2026–2035 in April 2026. Brazilian states such as Amazonas and Amapá have adopted bioeconomy strategies and plans of their own. In Asia, India has begun to

implement its BioE3 Policy, with several hundred proposals submitted for new biomanufacturing and Bio-AI hubs.

Low- and middle-income countries have also become central venues for international bioeconomy debates. The Global Bioeconomy Summit 2024 in Nairobi was the first to be held in Africa. Under its G20 presidency, Brazil launched the G20 Initiative on Bioeconomy and secured agreement on ten High-Level Principles, the first multilateral document devoted to the bioeconomy. South Africa carried this agenda forward under its G20 presidency, and COP30 in Belém placed the forest bioeconomy at the centre of the climate agenda. This broadening of the policy landscape indicates that the bioeconomy is no longer primarily an agenda of high-income countries.

Diverse visions and adjacent frames

Countries understand the bioeconomy in markedly different ways. Technology-oriented visions centred on biotechnology and biomanufacturing prevail in parts of Asia and North America, as India's BioE3 Policy and South Korea's Advanced Biotechnology Initiative illustrate. Europe emphasizes industrial scale-up and resource efficiency, and the new EU framework defines the bioeconomy as activities that deliver sustainable solutions based on biological resources to create added value. In Latin America, and increasingly in Africa, bio-social perspectives place communities, traditional knowledge, socio-biodiversity and benefit-sharing at the centre. Brazil's national strategy, for instance, defines the bioeconomy as a model of production grounded in justice, ethics and inclusion. The content analysis confirms these patterns. Across all 49 strategies, bio-resource (34%) and bio-technology visions (32%) dominate, followed by bio-ecology (20%) and bio-social visions (14%). Biotechnology accounts for 45% in Asia-Pacific and the Middle East, while the bio-social vision reaches 21% in Africa and 20% in the Americas. Over time, the bio-social share has risen from 12% in strategies of 2011–2017 to 20% in those adopted since 2024.

Bioeconomy-relevant objectives and sectors are also increasingly addressed through policy frameworks that are not labelled as bioeconomy policy. In Africa, nearly every new multi-sector instrument since 2024 is framed as a circular-economy roadmap, although the sectors it covers – agri-food, waste, construction and packaging – overlap substantially with those of bioeconomy strategies. Peru's National Circular Economy Roadmap follows the same pattern and even includes a formal definition of the bioeconomy. Counting dedicated strategies alone therefore understates the extent to which bioeconomy objectives are pursued. The broad hierarchy of visions has remained stable over time, but the bio-social dimension has gained ground, and visions are explained and differentiated by regional context. Any common international position must take this diversity of visions and frames into account.

Crossroads: A geoeconomic turn?

The 2024 report described supply-chain resilience as an emerging trend with ambivalent effects: it can strengthen

domestic bio-based value chains, but it can also encourage protectionism and intensify competition for biomass. Since then, geoeconomic considerations have moved to the centre of the bioeconomy debate in the major economies. Two logics need to be distinguished. Competitiveness concerns the ability of domestic bio-based industries to scale up and gain market shares. Resilience concerns, first, the robustness of the bioeconomy's own supply chains and, second, the contribution of bio-based substitutes to reducing a wider economy's dependence on critical fossil-based inputs or scarce raw materials. The new EU framework operationalizes the competitiveness agenda set out in the 2024 Draghi report. It shifts the emphasis from research to industrial deployment, targets the two "valleys of death" that bio-based start-ups face on their way to market, and links the bioeconomy to the reduction of strategic dependencies. In the United States, the bioeconomy is increasingly framed as a matter of national security and competition with China. The National Security Commission on Emerging Biotechnology presented 49 recommendations in April 2025, and in December 2025 Congress passed the BIOSECURE Act, which restricts federal contracts with biotechnology companies of concern.

In Asia and the Middle East, biomanufacturing has become a leading industrial-policy priority. After its Five-Year Plan for Bioeconomy Development, China is preparing a dedicated biomanufacturing plan, and its 15th Five-Year Plan lists biomanufacturing among the future industries. Japan has made economic security one of the pillars of its updated strategy, South Korea has placed a National Bio Committee under the chairmanship of its President, and Saudi Arabia has made biomanufacturing and localization pillars of its biotechnology strategy. These measures primarily aim at industrial competitiveness and technological leadership; whether they also make bioeconomies more resilient, or reduce dependence on fossil-based inputs, remains to be seen.

So far, however, the geoeconomic turn is far more visible in policy discourse than in adopted strategies. Among the twelve strategies of 2024–2026 covered by the content analysis, the share rating strategic autonomy as a high-priority objective rose by nine percentage points compared with earlier strategies, while the share prioritizing growth and competitiveness fell by five points. Trade (+31 points) gained more ground, and the largest increase was recorded for inclusiveness and equity (+45 points), while food security (−26 points) and defossilisation (−17 points) lost weight. This partly reflects the fact that most new strategies come from low- and middle-income countries, and the small number of recent strategies calls for caution. Geoeconomic priorities are therefore likely to feature more prominently as strategies in the major economies are revised; the new EU framework already points in this direction.

Bioeconomy policy is thus at a crossroads. The geoeconomic turn can accelerate the bio-based transition, particularly by strengthening regional

production systems and supply chains, but it can also crowd out the sustainability and inclusion goals that have shaped bioeconomy policy so far. Synergies are most likely where bio-based substitutes replace imported fossil inputs and value creation is anchored locally. Conflicts are likely where strategic objectives drive demand for biomass beyond sustainable supply, and in contrast to the G20 High Level Principles, or where industrial support concentrates on a few high-technology segments at the expense of rural development and inclusion.

More granularity through sub-national strategies

In several countries with national strategies, regions and states are adding a further layer of bioeconomy governance. This is best understood as an extension of bioeconomy policy across governance levels rather than a shift away from the national level. As sub-national strategies were not collected systematically for this report, the following observations are illustrative. In Europe, the regional chapter records 23 sub-national strategies, and the new EU framework itself notes that many bio-based solutions scale through local value chains and municipal procurement. In Germany, no new national strategy has appeared since 2020, and the federal High-Tech Agenda of 2025 addresses biotechnology without framing it as bioeconomy. At the same time, Baden-Württemberg adopted an updated Sustainable Bioeconomy Strategy 2025–2029 in 2024, and North Rhine-Westphalia presented its first dedicated strategy in June 2026, which positions the bioeconomy as a lever of industrial renewal. In Spain, Catalonia issued its second action plan in 2025. Its shift from energy to material use of biomass mirrors a broader European move toward residues and secondary raw materials.

In the Americas, Brazil has the most extensive sub-national layer, with state-level strategies, plans and framework laws. Amazonas adopted a State Bioeconomy Strategy in 2025 and a State Bioeconomy Plan in 2026, which links local production chains and traditional knowledge to social inclusion and forest conservation. Amapá and other states have followed with plans of their own, while São Paulo is still moving toward formal adoption, and jurisdictional REDD+ has become an important source of financing for the standing-forest economy. Elsewhere in the region, sub-national bioeconomy activity remains largely a matter of projects rather than published strategies. In India, several states have adopted biotechnology-related policies, and Tamil Nadu published its BioVision 2026 as a step toward a dedicated strategy, building on a state bioeconomy that grew from an estimated USD 7.7 billion in 2023 to USD 12.4 billion in 2025. Across these cases, sub-national strategies reflect their territorial context: industrial renewal in North Rhine-Westphalia, circular use of residues in Baden-Württemberg and Catalonia, and inclusion and forest conservation in the Amazon. They can thus help to exploit territorial differences in comparative advantage. Most of them are recent, however, and it is too early to assess how far their ambitions are being implemented.

Implementation and financing

Bioeconomy strategies devote considerable attention to implementation and financing, and they put a wide range of public funding instruments at the forefront. Of the 49 strategies analysed, 90% name a coordination body, 80% provide for monitoring and evaluation and 78% for an action plan with a timeline, but only 47% commit a dedicated budget. Public R&D funding (92%), other public funding (90%) and public procurement (84%) are the most frequently named financing instruments. Venture capital and start-up support (82%) and blended finance (59%) are also widespread, whereas carbon credits and payments for ecosystem services (37%) and green bonds or taxonomies (20%) remain rare. Brazil's National Bioeconomy Development Plan is organized around eight missions and 21 targets and started with an initial R$350 million (approximately USD 68 million) from the Amazon Fund. Japan is preparing public-private investment roadmaps that foresee cumulative investment of ¥33.6 trillion in synthetic biology and biotechnology through fiscal year 2040. The EU relies on instruments such as the Circular Bio-based Europe Joint Undertaking and the European Circular Bioeconomy Fund.

This reliance on public funding is becoming a constraint, because the fiscal conditions for the transition are deteriorating. What is new is not that a dedicated international funding stream for the bioeconomy has dried up, since such funding was never available at scale, but that several pressures now coincide. Public budgets are under growing strain, not least from rising defence spending, and industrial policy increasingly channels scarce public money toward strategic technologies such as Artificial Intelligence. At the same time, development finance, on which many low- and middle-income countries rely for research, infrastructure and pilot projects, is declining sharply: according to preliminary OECD data, official development assistance fell by 23.1% in 2025, the largest annual contraction on record, after a decline of 6.1% in 2024.[1] Investment in global public goods is increasingly under pressure as well. The *Compromiso de Sevilla*, adopted at the Fourth International Conference on Financing for Development in 2025, responds to this situation by calling for investment to be catalysed at scale, for multilateral development banks to play a stronger role and for more private finance to be mobilized for sustainable development.[2]

For the bioeconomy, this raises new questions about how strategies can be implemented and financed. Public funding remains indispensable, particularly for research, infrastructure and early-stage scale-up, but it will increasingly need to concentrate on innovation for public goods, where private returns are

[1] OECD. (2026). Preliminary official development assistance levels in 2025.

[2] United Nations. (2025). Compromiso de Sevilla: Outcome document of the Fourth International Conference on Financing for Development, Sevilla, 30 June–3 July 2025.

insufficient. The private sector will have to play a much greater role in scaling the bioeconomy quickly and broadly. Market conditions can support this in some areas. Recurrent fossil price shocks – in 2022 and again in 2026, when the World Bank projected energy prices to rise by 24% and fertilizer prices by 31% in the wake of the conflict in the Middle East[3] – expose the costs of dependence on fossil-based inputs and strengthen the business case for bio-based alternatives, for instance in agricultural inputs. Even if prices ease again, as the World Bank expects for 2027, this volatility is itself an argument for diversification. Several developments point toward greater private engagement. The Africa Bioeconomy Finance Hub, launched during South Africa's G20 presidency, aims to channel capital toward bio-based growth. South Africa's Biodiversity Sector Investment Portal matches biodiversity-economy ventures with investors. In Namibia, companies such as Namibia Breweries, Ohorongo Cement and NamPower have invested in the use of bush biomass. And in India, around 40% of the selected Bio-AI hub proposals are led by start-ups or private industry.

Looking ahead: Bioeconomy policies for a Shifting Global Landscape

The developments described in this report point beyond the period it covers. We therefore conclude with three hypotheses on how bioeconomy policy is likely to evolve in the coming years.

Beyond proliferation: a second generation of strategies

After two decades of steady policy uptake, the next phase is likely to be shaped as much by the revision of existing strategies as by the adoption of new ones. Many first-generation strategies from the 2010s will need to be realigned with a context that has changed markedly since they were written. Early signs are already visible: Japan has revised its strategy twice since 2019, the EU has replaced its 2018 strategy, and Italy and Austria are updating their action plans. Revised policies are expected to be informed not least by the new EU framework and the G20 High-Level Principles.

Technological change, and artificial intelligence in particular, will be a major driver of this revision. AI is transforming biotechnology, from protein design to strain engineering and process control. Several recent instruments already link the two fields, among them India's Bio-AI hubs, the AI applications foreseen in China's forthcoming biomanufacturing plan and the US Department of Defense's sandbox for AI and biotechnology. Future strategies will need to address not only AI's potential as a driver of innovation and efficiency, but also its role as a new source of demand for bio-based resources, for instance where bioenergy is used to power data centres, and the biosecurity risks that arise where AI-assisted tools

[3]World Bank. (2026). Commodity Markets Outlook, April 2026. Washington, DC: World Bank.

lower the barriers to designing or modifying harmful biological agents. Regulatory change points in the same direction. Under the EU regulation on plants obtained by new genomic techniques, adopted in June 2026 and applicable from 2028, gene-edited plants that are equivalent to conventionally bred varieties will follow a simplified regulatory pathway. Strategies, particularly in Europe, can be expected to take up these opportunities more explicitly, while also engaging with the debates on patents, labelling and organic production that accompanied the regulation.

Geoeconomics and sustainability: an open tension

Strategic autonomy and resilience are now among the most discussed drivers of bioeconomy policy, even if they are not yet strongly reflected in adopted strategies. They can accelerate the transition, for instance by reducing dependence on imported fossil inputs and anchoring value creation locally. The new EU framework, which presents the bioeconomy as a tool to reduce strategic dependencies and gives considerable attention to strategic autonomy in biomass supply, illustrates this logic at scale. Smaller economies show its more immediate, input-related dimension: Uruguay's National Bioinputs Plan aims to reduce dependence on imported agricultural inputs such as fertilizers, whose prices are highly exposed to geopolitical shocks. But strategic autonomy and resilience can equally displace the sustainability and inclusion goals, as well as the guiding principles, on which the bioeconomy was built, intensify competition for biomass, and fragment markets and standards. Which of these trajectories prevails is not predetermined; it is a matter of policy design and implementation.

New geographies of cooperation: below and beyond the multilateral

The rapid proliferation of bioeconomy policies has been strongly shaped by multilateral cooperation and national commitment. With growing multipolarity and, not least, the rollback of some sustainability agendas, new forms of momentum for the bioeconomy transition are likely to emerge. International cooperation has not disappeared, but it increasingly takes place outside traditional multilateral frameworks, through regional and plurilateral arrangements. BRICS members have been instrumental in shaping the international bioeconomy agenda through successive G20 presidencies, from Brazil's G20 Initiative on Bioeconomy to its continuation under South Africa. Mercosur is gaining importance as a framework for regional bioeconomy integration, and new forms of cooperation, for instance between the EU and Canada or across Latin America, Africa and Europe, may follow. At the same time, sub-national regions with strong bioeconomy endowments add momentum of their own, as the strategies of Baden-Württemberg, North Rhine-Westphalia, Catalonia, Amazonas and Tamil Nadu, the biomanufacturing support measures of more than 20 Chinese provinces and Japan's nine certified biocommunities indicate.

These developments coincide with preparations for the global development framework that will follow the Sustainable Development Goals after 2030. Whether the bioeconomy finds its place in that framework will depend on whether its diverse national and regional approaches can be brought together in a strong common narrative – one choir with many voices.

Data and Methods

Understanding of Bioeconomy Strategies

The term bioeconomy has become established in policy documents worldwide, yet there is still no single agreed definition of the political concept. The bioeconomy is not a static notion, and its meaning continues to evolve with the sectors, technologies and societal expectations attached to it. For the purpose of this report, the bioeconomy is understood as the production, utilisation and conservation of biological resources — including related knowledge, science, technology and innovation — to provide sustainable solutions in the form of information, products, processes and services within and across all economic sectors, enabling a transformation to a sustainable economy.[4]

So understood, the bioeconomy encompasses the primary production sectors of agriculture, forestry, fisheries and aquaculture, the processing and service industries built on biological resources — food, feed, paper, textiles, construction, chemicals, and bio-pharmaceuticals — and the enabling and converging technologies, notably biotechnology, digital technologies and, increasingly, artificial intelligence, on which a knowledge-based bioeconomy depends.

What counts as a policy strategy

There is no universally agreed definition of a policy strategy either. Following the approach established in the previous reports of this series, a document is treated as a policy strategy where it displays four defining elements: it has long-term consequences; it bears a significant relationship to a given mission or central purpose; it has a defined acting subject; and it concerns actual choices and prioritisation.[5] Documents that describe a situation without committing governments to a course of action — analytical studies, position papers, monitoring reports — therefore fall outside the scope of the analysis, even where their subject matter is squarely the bioeconomy.

The report covers documents issued or commissioned by public authorities: governments, ministries, government agencies, affiliated councils, and supranational and macro-regional bodies. This includes strategies, action plans, roadmaps, policy frameworks, national plans and, in a small number of cases, legislation.

Dedicated and bioeconomy-related strategies

Bioeconomy policies are divided into two major types.

Dedicated bioeconomy strategies are documents that carry the term bioeconomy in their title *or* identify themselves as a strategy for the bioeconomy. Broad economic or environmental strategies

[4] Global Bioeconomy Summit 2018. *(2018). Communiqué: Innovation in the Global Bioeconomy for Sustainable and Inclusive Transformation and Wellbeing. Berlin, 20 April 2018.*

[5] The four elements follow the understanding of policy strategy adopted in Global Bioeconomy Policy Report (IV).

that treat the bioeconomy as one chapter among many are not included.

Bioeconomy-related strategies are documents with a strong substantive link to bioeconomy development — in biotechnology, bioenergy, biomass, or the bio-based economy and industry — that do not meet the criteria for a dedicated strategy. They are distinguished by the perspective from which they approach the bioeconomy:

Table 1: Types of bioeconomy-related strategies included in the database.

Perspective	Characterisation
High-tech	Strategies focusing on biotechnology or converging technologies
Research and innovation	Research and innovation strategies with a bioeconomy focus
Bioenergy	Strategies focusing on "traditional" and "modern" bioenergy
Blue economy	Strategies relating to the ocean economy, or to marine biotechnology and innovation
Green economy	Strategies focusing on bio-based innovations in particular, such as nature-based solutions
Bio-based economy	Strategies specifically naming the bio-based economy, or targeting economic development in particular bioeconomy sectors
Circular bioeconomy	Strategies focusing strongly on the circular use of bio-based or biological resources, or referring directly to the circular bioeconomy
Forest bioeconomy	Strategies focusing on converting renewable forest-based resources into value-added products and services

The distinction matters for interpretation. Dedicated strategies indicate that a government has adopted the bioeconomy as an organising frame for policy; related strategies indicate that bioeconomy-relevant activity is being governed, but through sectoral or thematic instruments. A country may move from the second category to the first over time, and several did so during the reporting period.

Boundaries of the analysis

Three boundary rules apply throughout.

Status. Documents are recorded as new, as updates of an earlier strategy or as in preparation; withdrawn documents are flagged as such. Strategies in preparation are included in the descriptive overview, because they signal the direction of policy development, but they are excluded from the content analysis: a document that has not been adopted cannot be coded for its content.

Administrative level. National and macro-regional strategies were collected systematically and form the basis of the

quantitative analysis. Sub-national strategies were not collected systematically and are not part of the analysed corpus; the field is too large and too unevenly documented for comprehensive coverage. Where a sub-national strategy adopted in the reporting period is of particular interest, it is discussed qualitatively in the relevant regional chapter.

Implementation. The analysis addresses what strategies state, not what has been achieved. It can establish whether a document sets targets, names a coordinating body, or commits a budget; it cannot establish whether these commitments were honoured. The study accordingly judges neither the degree of implementation of the strategies and measures it describes nor their effectiveness.

Data

The empirical basis of this report is the IACGB database of global bioeconomy policies, maintained across the successive reports in this series. For the present edition the database was compiled in three steps. First, the database underlying the 2024 report was carried forward and each existing entry re-checked for updates, replacements and changes of status. Second, systematic desk-based research was conducted for all countries, covering officially published government documents — publications of ministries, government agencies, affiliated councils and research institutions — supplemented by secondary literature from international organisations and networks used to cross-check and complete the record. Third, the resulting seed list was reviewed by the expert panel described in the section Expert review, which added documents that desk research had missed and corrected classifications.

The database was closed on 15 October 2026. Documents adopted after that date are not included.

For each entry the database records the region and country, the administrative level, the year of publication, the classification as a dedicated or bioeconomy-related strategy, the document title, the document type, the status, the issuing or commissioning body, the language of the original, and the source link.

Coverage

The database contains 217 national and macro-regional policy documents from 74 countries and macro-regions. Of these, 67 are dedicated bioeconomy strategies – 49 adopted (including two since withdrawn) and 18 in preparation – and 150 are bioeconomy-related strategies. By region, the database covers 59 documents from Asia-Pacific and the Middle East, 58 from Europe, 55 from the Americas and 45 from Africa. Publication years range from 2006 to 2026; 44 documents were published since January 2024, 33 of them adopted strategies. The content analysis described in the chapter Analysis of Key Trends in Bioeconomy Policies of the Last 20 Years covers 49 dedicated national and macro-regional strategies.

Document preparation

Documents were obtained as published, predominantly as PDF files. Machine-

readable text was extracted from each file; scanned documents were processed with optical character recognition before extraction.

The corpus is multilingual, with more than twenty languages of publication represented. To allow a single analytical framework to be applied consistently across the whole corpus, documents not published in English were machine-translated into English as a data-cleaning step prior to analysis. Where a document was published bilingually and one of the languages was English, the English original was used and no translation was performed. The implications of this step are discussed in the limitations section.

Forewords, glossaries and lists of abbreviations were excluded from the analysis, since they are conventionally formulaic and may not represent the substantive intentions of the policy.

Methods

The analysis combines two strands: a structured content analysis of the policy documents, carried out with the assistance of a large language model (Claude, Opus 5), and a review by members of the IACGB and selected regional experts. The first strand produces a comparable dataset across the corpus; the second validates that dataset and supplies the contextual and qualitative reading on which the regional chapters and the identification of most recent policy trends rest.

The analytical framework

Content analysis follows a fixed, deductive category system: the Bioeconomy Policy Analysis Framework (BPAF). Every document is assessed against the same twelve analytical blocks, listed in Table 2. The framework draws on established scholarship — the vision typology of Bugge, Hansen and Klitkou,[6] the governance means identified by Dietz and colleagues,[7] and the territorial typology of Skondras and colleagues[8] — and extends these where the global scope of the report requires it.

[6] Bugge, M. M., Hansen, T., & Klitkou, A. (2016). What Is the Bioeconomy? A Review of the Literature. *Sustainability*, 8(7), 691.
[7] Dietz, T., Börner, J., Förster, J. J., & von Braun, J. (2018). Governance of the Bioeconomy: A Global Comparative Study of National Bioeconomy Strategies. *Sustainability*, 10(9), 3190.
[8] Skondras, A., et al. (2024). Governance Strategies for Sustainable Circular Bioeconomy Development in Europe: Insights and Typologies. *Sustainability*, 16(12), 5140.

Table 2: Analytical blocks of the Bioeconomy Policy Analysis Framework.

Block	Content	Fields
Metadata	Country or region, title, publication year, policy period, issuing body, document type	8
A. Vision dimensions	Relative weight of the bio-technology, bio-resource, bio-ecology and bio-social visions, as a percentage allocation summing to 100	4
B. Strategic objectives	Prominence of 14 objectives, from food security and rural development to strategic autonomy and bioeconomy diplomacy	14
C. Bioeconomy sectors	Prominence of 10 sectors, from agriculture and forestry to construction and defence	10
D. Core approaches	Prominence of 10 approaches, including circularity, cascading use, sufficiency, one health and just transition	10
E. Policy and framework references	Explicit reference to 34 global, macro-regional, national and sub-national frameworks	34
F. Implementation architecture	Coordination body, action plan with timeline, monitoring and evaluation, dedicated budget	4
G. Targets and metrics	Quantitative targets, qualitative milestones, baseline data	3
H. Stakeholder and governance	Stakeholder engagement, public consultation, multi-level governance	3
I. Financing instruments	9 instrument types, from public R&D funding to carbon credits and multilateral funding	9
J. Knowledge and capacity infrastructure	Education and skills, technology transfer, digital infrastructure, pilot and demonstration facilities, international exchange	5
K. Means for enabling governance	7 governance means, including fiscal support, industrial location policy and regulation of the fossil-based economy	7
L. Territorial aspects	Rural, urban, and coastal territories of implementation	3

Two features of the framework warrant comment.

The vision dimensions in Block A extend the three-vision typology of Bugge and colleagues — a bio-technology vision centred on biotechnology research and its commercialisation, a bio-resource vision centred on biological raw materials and the upgrading of value chains, and a bio-ecology vision centred on ecological processes and regionally integrated systems — with a fourth, bio-social vision. This addition responds to a body of policy, particularly in Latin America, that places communities, traditional and ancestral knowledge, socio-biodiversity,

benefit-sharing and resource rights at the centre of the bioeconomy. Formulated generically, it applies wherever the bioeconomy intersects with the rights, knowledge and livelihoods of the people who depend on biological resources, and its inclusion prevents such policies from being misread as thin versions of the three original visions.

Block E (Policy and framework references) deliberately covers frameworks that are salient in some world regions and absent from others — the African Union's Agenda 2063 and CAADP alongside the Amazon Cooperation Treaty Organization, the ASEAN Bio-Circular-Green model and the 2050 Strategy for the Blue Pacific Continent. Recording their presence and absence, rather than only the global agreements, makes it possible to see how strategies anchor themselves in their own regional policy environment.

Coding procedure

Each document was analysed in a single pass by a large language model (Claude Opus 5), applied through a fixed system prompt containing the full framework. The batch of 47 documents was processed in September 2026; two further documents, from Russia and Ecuador, were added in October 2026. The model returned, for each document, one structured record with a value for every field, which was written unaltered to a machine-readable dataset; the analysis was scripted, so that the same prompt was applied to every document without variation.

Three design features carry the burden of consistency.

Operationalised rating criteria. Where a field is rated on the ordinal scale high / medium / low / not mentioned, the thresholds are defined in terms of observable properties of the document rather than left to impression. A topic is rated high where it has a dedicated section or appears in the title, where the document sets concrete targets or actions for it, or where it is discussed with specificity in seven or more distinct passages; medium where it appears in three to six such passages or as a substantive sub-point of a broader section; low where it is mentioned twice or less, appears only in a list, or is merely implied. Where two adjacent ratings are defensible, the framework prescribes the lower one and requires the ambiguity to be noted. This conservative tie-breaking rule means the results understate rather than overstate prominence.

Evidence grounding. For each block, the analysis records the textual evidence on which the ratings rest — short excerpts or close paraphrases with their location in the document — including explicit statements of absence where a field is rated not mentioned. Every rating in the dataset can therefore be traced back to the passage that produced it.

Reasoning and confidence. For each block, the analysis records a short statement of how the ratings were arrived at, flagging judgement calls and notable absences, and a confidence rating of high, medium or low. Confidence is high where

the document is explicit and the ratings are unlikely to change on re-analysis, medium where interpretation was required, and low where the document is vague, contradictory, or uses unfamiliar terminology. Low-confidence blocks were prioritised in the expert review.

Framework development and quality assurance

The framework was developed iteratively. Draft versions were applied to sample documents and the results cross-checked against human coding of the same strategies; discrepancies were used to sharpen category definitions, tighten the rating criteria, and add or split fields where the original categories proved unable to capture what the documents contained. The operationalised thresholds and the conservative tie-breaking rule described above are direct outcomes of this process.

Expert review

The dataset was reviewed by members of the IACGB and by selected regional experts in two rounds.

The **first round** addressed the database: the completeness of the country coverage, the classification of documents as dedicated or bioeconomy-related, and the status assigned to each entry. Reviewers with regional expertise were best placed to identify documents that desk research had missed — particularly those published in languages other than English, or on national portals that are poorly indexed — and to correct classifications that had been made from the document alone without knowledge of the surrounding policy landscape.

The **second round** addressed the regional chapters and the qualitative analysis: whether the patterns extracted from the documents corresponded to what the experts observed in their regions, whether the developments identified as significant were in fact the significant ones, and whether anything material was missing from the account.

Identification of policy trends, 2024–2026

The report's account of recent policy development covers the period since the previous report in this series,[9] that is, from 2024 to the closing date of the database on 15 October 2026. Trends were identified from two sources in combination. From the database and the coded dataset: which countries adopted or updated strategies in the period; movements between the dedicated and related categories; and shifts in the distribution of visions, objectives, sectors, approaches, financing instruments and framework references between the documents of this period and those preceding it. From the expert review: the interpretation of those shifts, the developments not yet visible in adopted documents, and the regional context that gives the numbers their meaning.

[9] Dietz, T., Bogdanski, A., Boldt, C., Börner, J., von Braun, J., et al. (2024). Bioeconomy globalization: Recent trends and drivers of national programs and policies. A report by the International Advisory Council on Global Bioeconomy (IACGB). April 2024.

Where the documentary record and the expert assessment diverge, both are reported.

Limitations

Model-inherent variation. Large language models are stochastic: an identical request may yield somewhat different output on repetition, most plausibly at the boundary between adjacent ordinal ratings. The operationalised thresholds, the conservative tie-breaking rule and the recorded evidence constrain this variation but do not eliminate it. Ratings should be read as a well-documented and consistently applied assessment, not as a measurement with an exact error term.

Inclusion and participatory criteria. The BPAF does not disaggregate inclusiveness or stakeholder engagement by social group, so the analysis cannot establish whether strategies target, or were developed with, groups such as youth, women, Indigenous peoples or rural communities. An earlier FAO review found no evidence of youth involvement in the development of 34 bioeconomy strategies[10]; future editions could add this dimension.

Prompt dependence. The results are conditional on the framework as specified. A differently worded category, or a different threshold, would produce a somewhat different distribution. This is a property of content analysis generally rather than of its automation, but automation makes it systematic across the whole corpus rather than variable across coders.

[10] Dietershagen, J. & Bammann, H. (2023). FAO Agricultural Development Economics Technical Study No. 30.

Analysis of Key Trends in Bioeconomy Policies of the Last 20 Years

This section describes the results from the in-depth analysis of 49 dedicated strategies, including two since withdrawn (US, UK). The results presented here mainly refer to the graphs and statistics presented in the Core Message section.

Global bioeconomy strategy adoption

A large and diverse policy landscape

The bioeconomy is governed through a wide range of instruments. Of the 217 documents in the database, 67 are dedicated bioeconomy strategies, of which 49 have been adopted (including two since withdrawn, in the US and the UK) and 18 are in preparation. The remaining 150 documents are bioeconomy-related strategies, which address the bioeconomy from the perspective of biotechnology, bioenergy, the blue, green or circular economy or individual bioeconomy sectors. Bioeconomy-related strategies thus outnumber dedicated strategies by more than two to one. For most countries, they remain the main way in which bioeconomy objectives enter public policy, and a dedicated strategy is the exception rather than the rule. The database additionally records 36 sub-national documents, which were not collected systematically and are not included in the figures presented.

Development over time: from related to dedicated strategies

The number of documents published per year shows continuous activity since 2006 with a clear shift in the type of policy. The figures in this section count adopted strategies by year of publication. Until 2010, bioeconomy-relevant policy was almost exclusively formulated in bioeconomy-related strategies (21 documents, against a single dedicated strategy), many of them bioenergy and biotechnology strategies. Between 2011 and 2015, related strategies continued to dominate, and the first dedicated strategies appeared. The period 2016–2020 marks the main wave of dedicated strategies, with 20 documents. In 2021–2023, overall activity was lower than in the preceding years (10 dedicated and 14 related strategies); related strategies outnumber dedicated ones in every period.

The reporting period 2024–2026 stands out as the most active in the database. 2024 was the year with the highest number of adopted strategies on record (18), and a total of 33 strategies have been adopted since January 2024 – 15% of the database, although 2026 is only partially covered. Notably, this new peak is carried by both types of policy: related strategies have regained momentum alongside a continued flow of dedicated strategies. Bioeconomy policy-making has therefore not slowed down after the wave of dedicated strategies of the late 2010s; it has broadened again.

Policy status in 2026

The policy map shows the status reached by countries and macro-regions in 2026. The number of countries and macro-regions with an adopted dedicated strategy rose from 25 in 2023 to 32 in 2026, and the number preparing a dedicated strategy from 6 to 9. Counting dedicated and related strategies together, 65 countries

and macro-regions have adopted at least one bioeconomy-relevant strategy, up from 57 in 2023. Coverage is now broad in Europe, the Americas, East and South-East Asia and Oceania, and it has expanded in Eastern and Southern Africa. Large parts of Central Asia, North Africa and the Middle East, by contrast, still have no strategy recorded. Updates are an established part of the policy cycle: 40 of the 217 documents are recorded as updates of earlier strategies, and updates are particularly frequent among the bioeconomy-related strategies of Asia-Pacific (18 of 51).

Regional patterns

The four world regions differ markedly in the volume, type and timing of their bioeconomy policies. In volume, they are of similar size: Asia-Pacific and the Middle East account for 59 documents, Europe for 58, the Americas for 55 and Africa for 45. Their composition, however, differs fundamentally. Europe is the only region in which dedicated strategies outnumber related ones (36 against 22), and it holds more than half of all dedicated strategies worldwide (36 of 67, 29 of them adopted). In the Americas, dedicated strategies account for more than a quarter of all documents (15 of 55). In Asia-Pacific and the Middle East (8 of 59) and in Africa (8 of 45), the bioeconomy is governed overwhelmingly through related strategies, mostly sectoral and technology-specific instruments.

The regions also followed different trajectories. Africa saw an early phase of bioenergy-related policy-making in 2006–2010, followed by a long period of low activity and a marked revival since 2024. Asia-Pacific was most active in the early 2010s and has since shown a steady flow of related strategies and their updates. Europe and the Americas both experienced their peak in 2016–2020, the period of the main wave of dedicated strategies. Since January 2024, the regional balance has shifted: most newly adopted strategies have come from the Americas (11), Asia-Pacific and the Middle East (9) and Africa (8), while Europe added five. Of the 12 dedicated strategies adopted in this period, eight originate in Europe and the Americas, whereas new activity in Africa and Asia-Pacific runs mainly through related strategies – in Africa increasingly in the form of multi-sector circular-economy frameworks, in Asia-Pacific through biotechnology, research and blue-economy strategies.

Visions and objectives in dedicated bioeconomy strategies

Bioeconomy visions

The content analysis assigns each strategy a percentage weight for four visions of the bioeconomy. Across all 49 documents, the bio-resource vision (34%) and the bio-technology vision (32%) together account for two thirds of strategy content, while the bio-ecology (20%) and bio-social visions (14%) play a smaller role. The dominance of the first two is even clearer at the level of individual strategies: the bio-resource vision is the leading vision in 28 documents and the bio-technology vision in 19, while the bio-social vision leads in only two and the bio-ecology vision in none. Bioeconomy strategies thus combine different

visions rather than following one, but they are anchored in resource- and technology-based understandings of the bioeconomy.

Over time, this hierarchy has remained stable, but the weights have shifted. The weight of the bio-technology vision has declined continuously, from 36% in documents published in 2011–2017 to 32% in 2018–2023 and 28% in 2024–2026. The bio-social vision, which centres on communities, traditional knowledge, benefit-sharing and resource rights, has gained most, from 11% to 13% and then 19%, and is now close to the bio-ecology vision (21%). The regional dashboards show that this shift has a clear geography. The bio-technology vision is strongest in Asia-Pacific and the Middle East (45%), the bio-resource and bio-ecology visions are strongest in Europe (37% and 21%), and the bio-social vision is strongest in Africa and the Americas (both 21%), against 13% in Europe and 9% in Asia-Pacific and the Middle East. At the same time, the range within regions is wide: in the Americas, for instance, the weight of the bio-technology vision ranges from 15% to 55%.

Strategic objectives

Three objectives form a common core of almost all strategies: research and innovation, which every strategy rates high, growth and competitiveness (96%) and the production and use of biomass (92%). They are followed by objectives related to natural resources and biodiversity (73%), rural development (63%), defossilisation (55%) and climate action (51%). Jobs (49%) and food security (37%) are prioritized in a minority of strategies, and international and social objectives even less: bioeconomy diplomacy and trade (both 27%), strategic autonomy (18%) and inclusiveness and equity (16%) are rated high only occasionally, and sustainable consumption and production (8%) is the least prioritized objective. Bioeconomy strategies are, in short, primarily innovation and growth strategies with a strong environmental component.

Comparing documents published before 2024 with those published in 2024–2026 reveals a shift in emphasis. Inclusiveness and equity recorded by far the largest increase (+45 percentage points, from 5% to 50%), followed by trade (+31), rural development (+16), natural resources and biodiversity (+13), bioeconomy diplomacy (+9) and strategic autonomy (+9). Climate action remained unchanged (−1). Food security lost most (−26), followed by defossilisation (−17) and growth and competitiveness (−5), although the latter remains a near-universal objective. The recent strategies are therefore more socially and internationally oriented than earlier ones. The geoeconomic considerations that dominate the current policy debate, by contrast, are only weakly reflected in them so far. Since seven of the twelve recent documents come from Africa and Latin America, these shifts reflect both changing priorities and a changing composition of the countries adopting strategies.

The regional dashboards show distinct objective profiles. In African strategies, jobs and natural resources and

biodiversity are rated high throughout, and food security is more prominent than elsewhere, while defossilisation plays a minor role. Strategies in the Americas stand out for inclusiveness and equity (62%), whereas none of them rates food security high. In Asia-Pacific and the Middle East, strategic autonomy is rated high in 71% of strategies – far more than in any other region – while natural resources and biodiversity (29%) and defossilisation (14%) are much less prominent than the global average. European strategies place the strongest emphasis on defossilisation (72%), rural development (76%) and climate action (66%), but none rates inclusiveness and equity high, and strategic autonomy is rated high in only 10% of them.

Priority sectors and approaches

Agriculture is the sector most frequently rated high (84%), followed by bio-based chemicals and materials (78%), bioenergy and biofuels (76%) and waste and the circular bioeconomy (71%). Forestry (59%) and food processing (57%) form a second group, while biopharma and health (45%), fisheries and aquaculture (33%) and construction (20%) are prioritized less often. Defence is not rated high in any strategy and is not mentioned at all in 44 of the 49 documents. The near parity of materials, energy and circular uses shows that bioeconomy strategies have moved well beyond the energy focus of early bioeconomy-related policy, while remaining firmly anchored in agriculture.

Regional sector profiles diverge considerably. Biopharma and health is rated high in all African and Asia-Pacific strategies and in 62% of those in the Americas, but in only 17% of European strategies. Forestry, conversely, is a high priority in 79% of European strategies but in none of the African ones. Bioenergy remains a universal priority in Africa but is rated high in only half of the strategies in the Americas. Since 2024, bioenergy (+22 percentage points) and biopharma and health (+17) have gained in importance.

The approaches through which strategies seek to realize their objectives follow a similar pattern. Biotechnology and high-technology approaches (88%), circularity and value addition (both 76%) are the most widespread. Resource efficiency (51%) and cascading use (33%) are concentrated in Europe – cascading use is rated high in 55% of European strategies and in none elsewhere – and both have lost weight in the recent strategies (−12 and −33 percentage points). Regeneration and nature-based solutions, by contrast, gained most (+45). Sufficiency, one health and just transition are rated high in only one strategy each and remain marginal approaches in bioeconomy policy.

Territorial focus and policy references

The bioeconomy is predominantly conceived as a rural agenda, although biomass-based value chains also offer potential for urban and peri-urban areas. Rural areas are explicitly targeted in 86% of strategies, coastal areas in 43% and urban areas in only 24%, a share that has not increased in recent strategies. Asia-Pacific and the Middle East is the exception, with rural areas addressed in only

43% of strategies and other types of territory in 86%.

Strategies anchor themselves above all in their national policy environment, which every strategy references. Among global frameworks, the 2030 Agenda and the Paris Agreement are each referenced in about half of the strategies (53%), the Convention on Biological Diversity in 33%, and the G20 in 16%. References to global frameworks have become more frequent in recent strategies, most clearly for the Sustainable Development Goals (from 49% to 67%) and the Convention on Biological Diversity (from 24% to 58%). The EU bioeconomy strategy is the most widely referenced bioeconomy-specific framework, cited not only by 83% of European strategies but also by 60% of African and 57% of Asia-Pacific strategies. Regional frameworks outside Europe play a smaller but visible role: the African Continental Free Trade Area is referenced in four of the five African strategies, and Mercosur or Amazon-related frameworks (including the Amazon Cooperation Treaty Organization) in four of the eight strategies from the Americas.

Means of implementation in bioeconomy strategies

Implementation architecture, targets and governance

Most strategies set out an expansive implementation architecture. 90% name a coordination body, 80% provide for monitoring and evaluation and 78% include an action plan with a timeline. Only 47%, however, commit a dedicated budget, and only 35% contain all four elements. Recent strategies are considerably more complete: in 2024–2026, all strategies name a coordination body and include an action plan with a timeline, 58% commit a dedicated budget (up from 43%), and 58% contain all four elements, compared with 27% of earlier strategies.

Targets are widespread as well. 86% of strategies set qualitative milestones, 84% provide baseline data and 78% define quantitative targets, all with increasing frequency in recent strategies. Stakeholder engagement is foreseen in every strategy and multi-level governance in 76%, but public consultation in only 41%, a share that has not changed over time. The participatory dimension of bioeconomy governance thus relies mainly on the involvement of selected stakeholders rather than open consultation processes.

Regionally, African strategies show the most complete implementation architecture: all of them name a coordination body, provide for monitoring and evaluation and commit a dedicated budget, and four of the five include an action plan with a timeline. Strategies in the Americas less often commit a dedicated budget (25%), provide for monitoring and evaluation (62%) or include baseline data (50%). Public consultation is most common in Europe (52%) and absent from the strategies of Asia-Pacific and the Middle East.

Financing instruments

Bioeconomy strategies rely predominantly on public finance. Public R&D funding is named in 92% of strategies,

other public funding in 90% and public procurement in 84%. Support for venture capital and start-ups (82%) and multilateral or bilateral funding (69%) are also widespread, while blended finance (59%) and bank loans (55%) are named in more than half of the strategies. Market-based and sustainable-finance instruments remain the exception: carbon credits and payments for ecosystem services are named in 37% of strategies, and green bonds and taxonomies in 20%.

Recent strategies show a broader financing mix. Carbon credits and payments for ecosystem services (from 27% to 67%), multilateral and bilateral funding (from 65% to 83%), green bonds and taxonomies (from 14% to 42%) and bank loans (from 51% to 67%) are named considerably more often in 2024–2026 than before, whereas venture capital and start-up support has declined (from 84% to 75%). Regional differences reflect different financing contexts: multilateral and bilateral funding is named in all African strategies but in only 29% of strategies in Asia-Pacific and the Middle East, and no African strategy refers to green bonds or taxonomies.

Knowledge, capacity and enabling governance

Among measures to build knowledge and capacity, education and skills are rated high most often (80%), followed by pilot and demonstration facilities (59%), technology transfer (59%) and international exchange (51%). Digital infrastructure is rated high in only 31% of strategies overall, but in 71% of those in Asia-Pacific and the Middle East and in half of the recent strategies, pointing to the growing convergence of digital and biological technologies.

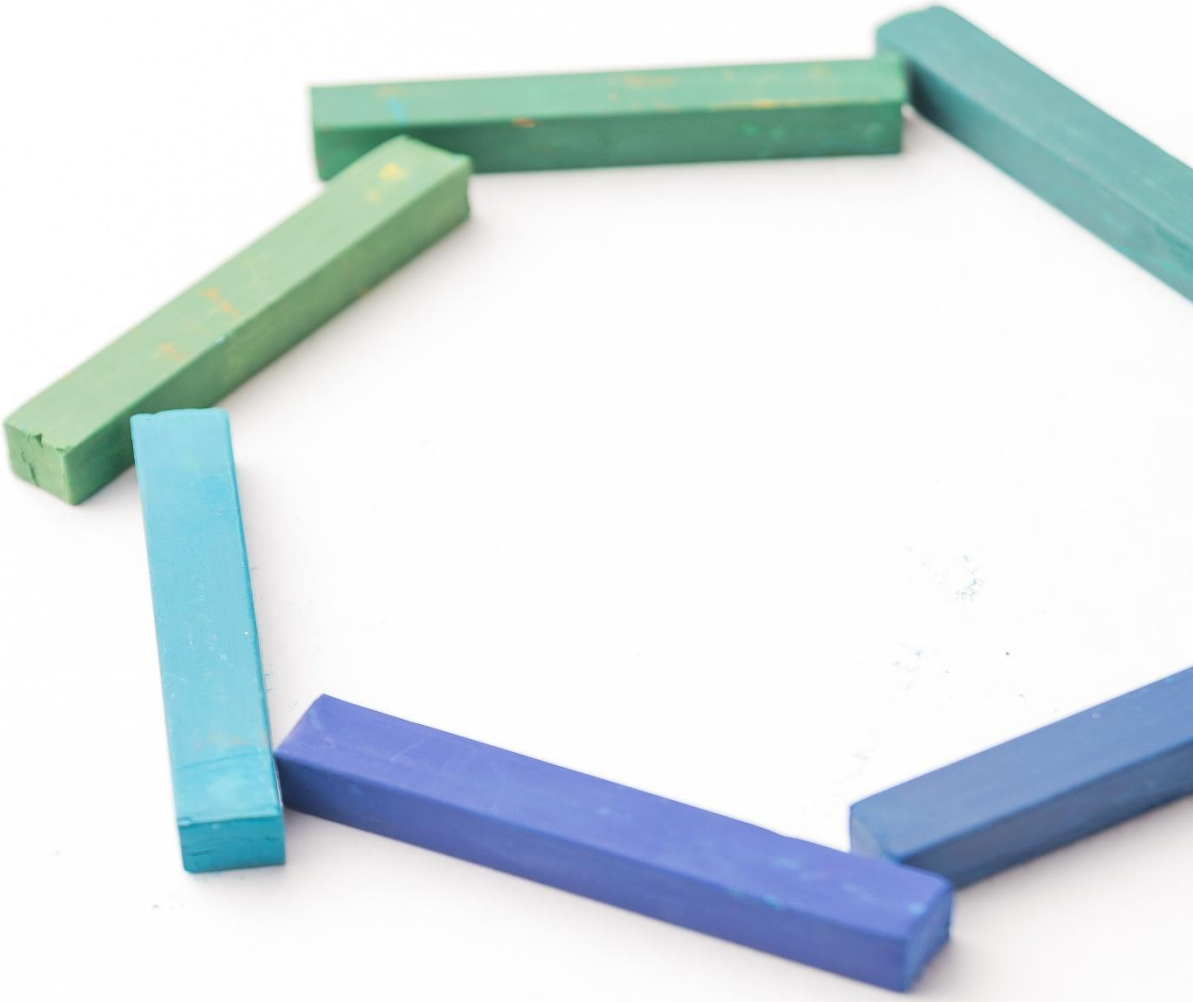
The governance means through which strategies seek to steer the transition show a clear asymmetry. Support for research and development (96%) and policy coordination and coherence (94%) are rated high in almost all strategies, followed by international cooperation and trade (57%) and subsidies and fiscal support (53%). Industrial location policy is rated high in 33% of strategies overall, but in 71% of those in Asia-Pacific and the Middle East and 60% of those in Africa. The regulation and taxation of the fossil-based economy, by contrast, is not rated high in any strategy; it is mentioned only in passing in 43% and not at all in 18% of them. Bioeconomy strategies thus seek to promote bio-based alternatives almost exclusively through supply-side support rather than by changing the relative prices of fossil-based products.

Summary

Taken together, the analysis shows a policy field that has expanded continuously for two decades and reached a new peak of activity in 2024–2026, carried increasingly by regions outside Europe and by bioeconomy-related as well as dedicated strategies. The content of dedicated strategies is anchored in research, growth and biomass use and remains heavily shaped by European strategies, but recent strategies place more emphasis on inclusion, international cooperation and global sustainability frameworks. Their implementation architecture has become more complete and

their financing mix broader, yet funding continues to rely mainly on public sources, and the regulation of the fossil-based economy remains largely absent from the policy mix. The regional chapters that follow examine these developments in their regional context.

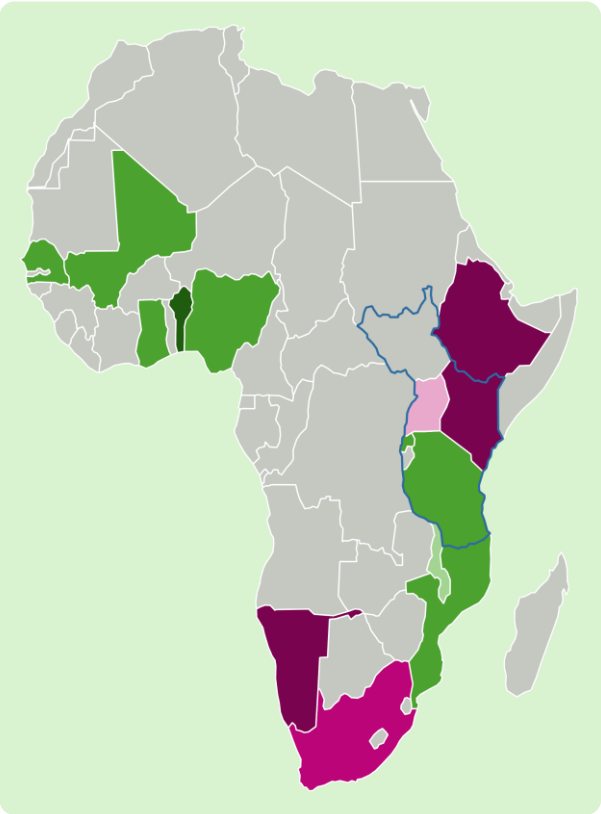
Regional Bioeconomy Policies and Updates



REGIONAL BIOECONOMY POLICIES AND UPDATES (2024–2026)

State of Regional Bioeconomy Policies of

Africa



5

dedicated strategies adopted, plus 3 in preparation

29

bioeconomy-related strategies adopted, plus 8 in preparation

5 2023: 2

countries and macro-regions with an adopted dedicated strategy

17 2023: 14

countries and macro-regions with an adopted dedicated or related strategy

Strategy status 2026

DEDICATED STRATEGY

- **New, 2024–2026 (3):** Ethiopia, Kenya, Namibia
- **Adopted before 2024 (2):** East African Community, South Africa
- **In preparation (3):** East African Community, Kenya, Uganda

BIOECONOMY-RELATED STRATEGY

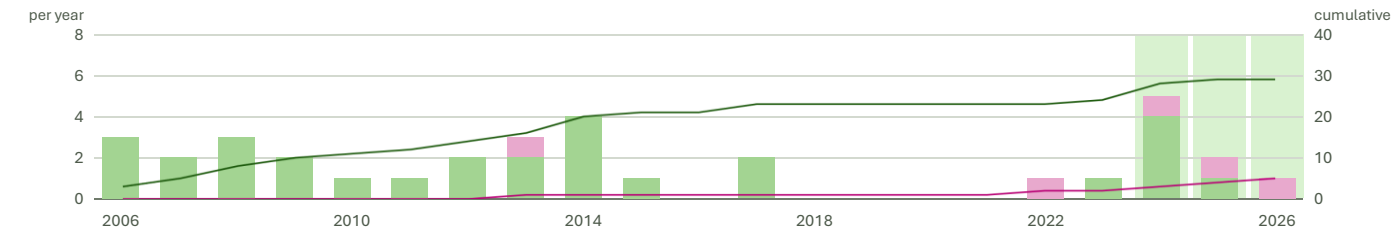
- **New, 2024–2026 (5):** African Union, Benin, Eswatini, Ethiopia, Mozambique
- **Adopted before 2024 (12):** Ethiopia, Ghana, Kenya, Mali, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Tanzania, Uganda
- **In preparation (8):** Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Rwanda, South Africa

OTHER

- **Cross-national strategy:** East African Community
- **No strategy recorded**

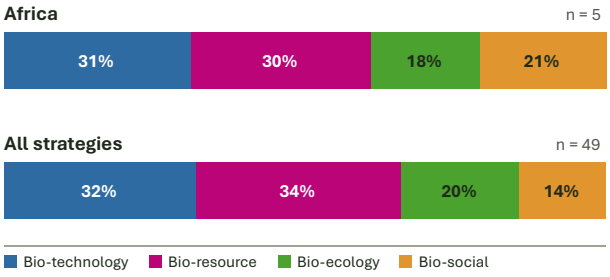
Strategies adopted over time

By year of adoption; 8 strategies adopted since January 2024 (shaded)



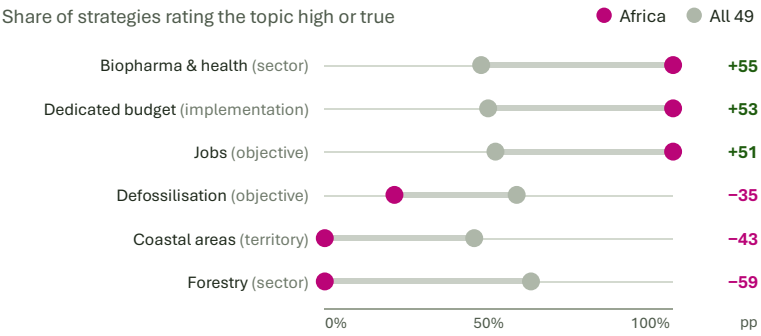
Bioeconomy visions

Average weight of each vision per strategy



Largest differences from all strategies

Share of strategies rating the topic high or true



Key Takeaways

From single-sector to multi-sector.

The circular economy as directive frame.

Agriculture as the anchor, waste and plastics as the frontier.

Regional engagement is visibly asymmetric.

Sources: IACGB database of global bioeconomy policies (closed 15 October 2026; 2026 is a partial year); BPAF content analysis (5 of 49 strategies from this region). National and macro-regional strategies; sub-national and out-of-scope entries excluded. pp = percentage points.

International Advisory Council on Global Bioeconomy

zef Center for Development Research University of Bonn

Africa

Regional developments up to 2024. Africa's engagement with the bioeconomy moved quickly in the years before 2024, though it remained uneven and, for the most part, indirect. South Africa was the continental pioneer, adopting a dedicated bioeconomy strategy as early as 2013. Most other countries advanced the agenda through *bioeconomy-related* instruments: bioenergy and biofuel strategies, biotechnology and biosafety policies, bioprospecting frameworks and ocean-economy roadmaps. The decisive regional milestone was the Eastern African Regional Bioeconomy Strategy 2021/22–2031/32, the first of its kind on the continent, developed by the East African Science and Technology Commission (EASTECO) with the BioInnovate Africa programme hosted at the International Centre of Insect Physiology and Ecology (icipe) in Nairobi.[11] Innovation networks such as BioInnovate Africa, BiomassWeb and BioInnovation Africa connected research and enterprise across borders, and by the end of 2023 forty-two African states had prepared UN Food Systems Summit "National Pathways" of relevance to the bioeconomy agenda.[12]

Regional developments since 2024. October 2024 marked the turning point, when the Global Bioeconomy Summit met in Nairobi, the first time it had convened in Africa.[13] Holding it on the continent gave both the African Union (AU) and individual governments fresh political reason to move the bioeconomy up their agendas, and it provided the stage for the second "State of the Bioeconomy in Eastern Africa" report. In the months that followed, new national strategies and action plans appeared at a noticeably faster pace.

Much of that momentum rests on the experience of the East African Community (EAC), whose regional strategy is widely regarded as the continent's most successful. It was deliberately designed to catalyze national strategies, and that ambition is now bearing fruit: several national strategies in Eastern Africa, Ethiopia's among them, draw directly on it, and the biennial "State of the Bioeconomy in Eastern Africa" reports track how the regional framework is being translated into national strategies and action plans.[14] In concrete terms this has produced a wave of national processes across the region. Ethiopia and Kenya have adopted dedicated strategies,

[11] East African Community (2022), Eastern African Regional Bioeconomy Strategy 2021/22–2031/32, developed by EASTECO with BioInnovate Africa (icipe, Nairobi). https://www.eac.int

[12] Based on the 2020 Global Bioeconomy Policy Report and subsequent updates of the International Advisory Council on Global Bioeconomy (IACGB).

[13] Global Bioeconomy Summit 2024, Nairobi, 23–24 October 2024, the first GBS held in Africa; venue for the launch of "The State of the Bioeconomy in Eastern Africa: 2024" (SEI, EASTECO, BioInnovate Africa). https://www.sei.org; https://www.fao.org/family-farming/detail/en/c/1731935/

[14] East African Community (2022), Eastern African Regional Bioeconomy Strategy 2021/22–2031/32, developed by EASTECO with BioInnovate Africa (icipe, Nairobi). https://www.eac.int

Uganda's process is well advanced, and Rwanda, Tanzania and Burundi have begun work on strategies of their own. The third "State of the Bioeconomy in Eastern Africa" report, published in August 2026 by EASTECO, SEI and BioInnovate Africa, confirms this catalytic effect, recording Ethiopia's adopted strategy, Kenya at an advanced drafting stage at the time of writing, and Uganda, Rwanda, Tanzania and Burundi in preparatory processes, and it reframes the bioeconomy from a research and environmental agenda into an industrial development strategy built on bio-based industries, sustainable bioenergy and locally adapted biorefineries.[15] Its ten priority actions for the period to 2028 call on Kenya, Uganda, Rwanda, Burundi and Tanzania to finalize and operationalize their national strategies, on EASTECO to set up a harmonized regional monitoring framework, and on governments to help bio-based MSMEs across the two "valleys of death" between proof of concept, bankable pilot and commercial scale. West Africa is starting down a similar path. The Economic Community of West African States (ECOWAS) has advanced regional action on the circular economy and plastics alongside a science, technology and innovation agenda, and regional analyses increasingly treat the bioeconomy as a transition pathway, which points towards preparations for a possible regional strategy.[16] A dedicated West Africa Bioeconomy Workshop met in Dakar in September 2025, organized by AKADEMIYA2063, the Center for Development Research (ZEF) at the University of Bonn, the Centre de Suivi Écologique (CSE) and icipe. It called for a coherent bioeconomy strategy at national, regional and continental level, identified ECOWAS as the natural convenor of a shared regional vision, and proposed a regional policy brief built on homegrown priorities as a first step towards a coordinated West African strategy.[17]

A second driver came from outside the region's own institutions. South Africa held the presidency of the Group of Twenty (G20) from December 2024 to November 2025, the first ever on African soil, which gave African bioeconomy interests a prominent global platform. Building on the G20 Initiative on Bioeconomy launched under Brazil in 2024 and its ten High-Level Principles, South Africa hosted a sequence of bioeconomy

[15]EASTECO with BioInnovate Africa: the Eastern African Regional Bioeconomy Strategy 2021/22–2031/32 has catalysed national bioeconomy strategy processes across the region: Ethiopia (adopted), Uganda (advanced) and Kenya, Rwanda and Tanzania (under development). The next "State of the Bioeconomy in Eastern Africa" status report is expected in August 2026.

[16]In West Africa, ECOWAS has advanced regional circular-economy and plastics action and a science, technology and innovation agenda (ECOPOST), and regional analyses increasingly frame the bioeconomy as a transition pathway. See ReSAKSS (2024), Annual Trends and Outlook Report, chapter "Climate Action and Bioeconomy Transition".

[17]Badiane, O., B. Durham, J. Ecuru, K. Glatzel, C. Mbow, J. von Braun and F. Schilling (2025), "Towards a West African Regional Bioeconomy: The Contribution of Policy, Science, and Technology Innovations", Conference Proceedings of the West Africa Bioeconomy Workshop, jointly organised by AKADEMIYA2063, the Center for Development Research (ZEF)/University of Bonn, the Centre de Suivi Écologique (CSE) and icipe, Dakar, 4 September 2025.

meetings that culminated in Tshwane in September 2025, and worked with the Food and Agriculture Organization (FAO) on internationally comparable ways of measuring sustainable bioeconomies.[18] One tangible legacy was the launch of an Africa Bioeconomy Finance Hub, intended to channel capital towards nature-positive, bio-based growth and to strengthen African perspectives and interests in the global debate.[19]

A further enabler emerged at continental level in January 2025, when the African Union's Extraordinary Summit in Kampala adopted the Kampala Declaration and a new ten-year Strategy and Action Plan (2026–2035) under the Comprehensive Africa Agriculture Development Programme (CAADP).[20] It is not framed in explicit bioeconomy terms. Its systemic approach to agri-food systems nonetheless leaves considerable room for bioeconomy approaches, covering production, processing and value addition as well as nature-positive production and ecosystem restoration, with headline targets such as a 45% increase in agrifood output and a tripling of intra-African agri-food trade by 2035.

In parallel, a continental circular-economy architecture has taken shape that underpins several of the instruments adopted since 2024. The African Union's Continental Circular Economy Action Plan (CEAP) 2024–2034 is co-financed with the European Union (EU) as part of Agenda 2063 and was formally adopted in July 2025, when the AU and the EU launched it jointly at the twentieth session of the African Ministerial Conference on the Environment (AMCEN-20) in Nairobi. It provides the continental anchor that had until then been missing.[21] Alongside it, the African Development Bank (AfDB) runs a coordinated National Circular Economy Roadmaps programme through its Africa Circular Economy Facility (ACEF) and the Africa Circular Economy Alliance (ACEA). The roadmaps prepared under that programme in Benin, Cameroon, Chad and Ethiopia, and the one in preparation in Uganda, are designed to feed into the continental plan.[22]

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[18]Department of Science, Technology and Innovation (DSTI), South Africa: under South Africa's G20 Presidency (December 2024 – November 2025, the first held in Africa), the G20 Initiative on Bioeconomy (GIB), launched under Brazil in 2024 with ten High-Level Principles, was carried forward through meetings in Bloemfontein, Mpumalanga and Tshwane (2025), with FAO support on bioeconomy measurement. https://www.dsti.gov.za

[19]Africa Bioeconomy Finance Hub, co-created by the African Natural Capital Alliance (ANCA), FSD Africa and NatureFinance with input from the G20 Initiative on Bioeconomy, launched at the GIB meeting in Tshwane, September 2025.

[20]African Union (2025), Kampala CAADP Declaration on Building Resilient and Sustainable Agrifood Systems in Africa and the CAADP Strategy and Action Plan 2026–2035, adopted at the AU Extraordinary Summit on the Post-Malabo CAADP Agenda, Kampala, 9–11 January 2025. https://au.int

[21]African Union & European Union (2025), Continental Circular Economy Action Plan (CEAP) for Africa 2024–2034, launched 17 July 2025 in Nairobi as part of Agenda 2063, with GIZ technical support. https://au.int; https://www.eeas.europa.eu

[22]African Development Bank, Africa Circular Economy Facility (ACEF) and Africa Circular Economy Alliance (ACEA); National Circular Economy Roadmaps

Several instruments from this wave are noted here only in passing, since they make no direct reference to the bioeconomy and sit at the outer edge of the field. Cameroon's National Roadmap for the 2025–2035 Circular Economy turns a vision of continental circular-economy leadership by 2035 into 32 objectives and 102 actions across agro-industry, plastics, waste, and forest and wood.[23] Chad's National Roadmap for the Circular Economy 2025–2035, published in July 2025, prioritizes agri-food, waste, plastics, construction, water and energy, and aims for a 40% reduction in non-recycled waste and more than 25,000 green jobs by 2035, drawing on Benin's Songhaï "circular farm" model.[24] Ethiopia's National Circular Economy Roadmap, touched on briefly below, belongs to the same group. In North Africa, Egypt's Law No. 2 of 2024 on incentives for green-hydrogen and derivatives production projects, together with a National Low-Carbon Hydrogen Strategy adopted the same year, follows the same pattern of a field-specific instrument whose relevance to the bioeconomy is indirect.[25]

Across these national and continental moves, the chapter distinguishes *dedicated* bioeconomy strategies, which have emerged for the first time beyond South Africa in Namibia (2024), Ethiopia (2025) and Kenya (2026), from the wider set of *bioeconomy-related* strategies adopted in the same period, among them circular-economy roadmaps and blue-economy, biodiversity-economy and bioenergy instruments. Common features run through both. External facilitation has been strong throughout, from FAO, the EU, GIZ, the AfDB, UNDP, UNIDO, RSB and ICAT;[26] the instruments align with Nationally Determined Contributions (NDCs), Agenda 2063, the Sustainable Development Goals (SDGs) and national "Vision 2030" plans; and value addition, job creation, waste valorization and food security recur as the central justifications.

Key regional dynamics

From single-sector to multi-sector. Before 2024, African bioeconomy-related instruments were almost entirely single-domain: biofuel strategies, biotechnology policies, bioenergy policies. Since 2024 that pattern has broken. The new instruments are cross-sectoral, covering six priority areas in Ethiopia and in Chad, five in Benin, four in Cameroon and three in Namibia, and the move from single-issue to multi-sector design amounts to a

[23]Republic of Cameroon, Ministry of the Economy, Planning and Regional Development (2025), Cameroon National Roadmap for the 2025–2035 Circular Economy.

[24]Ministry of Environment, Fisheries and Sustainable Development (2025), National Roadmap for the Circular Economy of Chad 2025–2035, published 9 July 2025; backed by the AfDB Africa Circular Economy Facility.

[25]Arab Republic of Egypt, Law No. 2 of 2024 concerns incentives for green hydrogen and derivatives production projects, but no bioeconomy activity.

[26]FAO global project "Towards Sustainable Bioeconomy Guidelines" (GCP/GLO/724/GER), which supported several African strategy processes, including Namibia.

structural change in how the bioeconomy is governed.

The circular economy as directive frame. Most new multi-sector instruments since 2024 that this chapter discusses (in Benin, Cameroon, Chad, Ethiopia and soon Uganda) are framed as circular-economy roadmaps rather than bioeconomy strategies, even though the sectors listed beneath it (agri-food, waste, construction, packaging) are substantively the bioeconomy agenda. This suggests that circular-economy language increasingly frames multi-sector bioeconomy thinking on the continent.

Agriculture as the anchor, waste and plastics as the frontier. Across the new wave of instruments, agriculture and food remain the universal anchor sector while waste and plastics are the clear emerging ones. Those emerging sectors reflect a wider shift away from over-reliance on first-generation agricultural biomass towards secondary streams such as organic waste and reclaimed plastic. More high-tech instruments such as biotechnology remain rather scarce.

Regional engagement is visibly asymmetric. Engagement by regional economic communities now varies sharply across the continent. East Africa, through the EAC, and increasingly Southern Africa, through SADC, have dedicated regional instruments. West Africa shows growing momentum through national roadmaps and the Dakar workshop, despite lacking a regional strategy of its own. North Africa's gap is the most pronounced: there is no region-wide strategy and, aside from Egypt, no dedicated national instrument, an absence that stands out more starkly as the East and Southern African architecture matures around it. Given how directly the EAC's regional strategy catalyzed national strategies across East Africa, there is a reasonable case that SADC's strategy, once validated, could play a similar role for Southern Africa in the coming years, though that is a hypothesis worth testing against actual national developments rather than treating as a settled trend.

Strategies in preparation

Beyond the instruments already adopted, several further processes are under way. All of them are provisional, and their status should be confirmed with the responsible authority before they are treated as settled entries.

Mauritius. Mauritius's Circular Economy Action Plan remains in preparation. A validation workshop was held in Port Louis in January 2025, followed in March 2025 by a national workshop on trade policy and lithium-ion battery waste management, at which preliminary findings were presented to industry and government stakeholders. Feedback from that workshop was still being incorporated into the final report, so the plan is best logged as in preparation until a publication date is confirmed.[27]

[27] Expertise France, Circular Economy Mauritius project: validation workshop, Port Louis, January 2025; national workshop on trade policy and lithium-ion battery waste management, March 2025, at which preliminary findings were presented; workshop feedback

Rwanda. Rwanda appears to have a National Circular Economy Action Plan and Roadmap dated 2022, which would make it earlier and more authoritative than other entries currently associated with the country. The original issuing authority has yet to be traced, and doing so would confirm that the document is genuine, complete and correctly dated.

Policy changes at national level

Benin

State up to 2024. Benin had little formal bioeconomy policy before 2024, but a strong practical foundation in circular and agro-ecological work. The clearest example is the Songhaï Centre, whose "nothing is lost, everything is transformed" model has become a regional reference. Alongside it came a plastic-bag ban, structured waste collection in Greater Cotonou and circularity features in the Glo-Djigbé Industrial Zone. Politically, the agenda was carried by the Government Action Programme (PAG).

New policy since 2024. Benin's **National Action Plan for the Circular Economy 2025–2035** (related; 2025, formally launched in early 2026) was prepared under the Ministry responsible for the living environment and sustainable development.[28] It was developed within the African Development Bank's Africa Circular Economy Facility and the Africa Circular Economy Alliance, the same National Circular Economy Roadmaps programme as Cameroon, Chad, Ethiopia and Uganda, and it sets out a structured framework for circularity across priority sectors such as waste, plastics, agriculture and construction. The plan is linked to Benin's Nationally Determined Contribution, including a targeted 7.8% reduction in greenhouse-gas emissions by 2045 and a renewables share of 20–30% of the energy mix.

Further trends. The African Development Bank has continued to support Benin's circular transformation into 2026, and the Songhaï "circular farm" model has been adopted as a template in other roadmaps, notably Chad's. A varied base of local initiatives gives the new plan an unusually concrete implementation pipeline: water-hyacinth valorization by Green Keeper Africa and others, Eco Bénin and biogas ventures, and circular infrastructure in the Glo-Djigbé Industrial Zone.

Eswatini

State up to 2024. Eswatini had limited dedicated bioeconomy policy before 2024, but a substantial biomass base in its sugar industry (molasses and ethanol) and in its wattle and timber sectors, together with an overarching National Energy Policy (2018) that framed subsequent bioenergy regulation.

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was still being incorporated into the final report at that point. https://www.expertisefrance.fr/en/projects/circular-economy-mauritius

[28] Ministry of Living Environment and Transport / Sustainable Development (2025), Benin's National Action Plan for the Circular Economy 2025–2035; developed under the ACEF/ACEA National Circular Economy Roadmaps programme. https://www.aceaafrica.org

New policy since 2024. The **National Bioenergy Policy Implementation and Monitoring Plan** (related; 2024) puts the country's Bioenergy Policy into practice, which in turn sits under the 2018 National Energy Policy.[29] Prepared by the University of Eswatini (UNESWA) Centre for Sustainable Energy Research with support from the Initiative for Climate Action Transparency (ICAT) and led by the Ministry of Natural Resources and Energy, the plan concentrates on three areas: bioenergy electricity generation, biofuels through the blending of ethanol into petrol, and clean and efficient cooking technologies. Underpinning them is a diversified feedstock strategy drawing on agricultural residues, industrial by-products and organic waste. The plan aims to strengthen national energy security through the sustainable integration of bioenergy, and it is designed for annual updating and five-yearly revision, with a detailed action plan and monitoring framework.

Further trends. Developing the plan under the ICAT umbrella ties Eswatini's bioenergy ambitions to its climate-transparency and NDC commitments, while the established sugar and forestry value chains provide both a ready feedstock base and an industry constituency for implementation, including the wattle growers' association.

Ethiopia

State up to 2024. Ethiopia approached the bioeconomy through a long sequence of related instruments: the Climate-Resilient Green Economy strategy (2011), a Biomass Energy Strategy (2013), a pharmaceutical-manufacturing strategy (2015) and a biotechnology investment strategy (2017). Behind them stood a comparatively strong biotechnology base around the Bio and Emerging Technology Institute (BETin, established 2016) and the Ethiopian Institute of Agricultural Research (EIAR). Regional reporting consistently listed Ethiopia, alongside Uganda, as being well advanced towards a dedicated strategy.

New policies since 2024. Ethiopia moved from preparation to adoption with three documents. The flagship is the **Ethiopian Bioeconomy Strategy** (dedicated; validated in December 2024 and launched in 2025), led by BETin and Addis Ababa University with the Ministry of Innovation and Technology and the United Nations Industrial Development Organization (UNIDO).[30] It envisages Ethiopia counting among the nations with a robust bio-based economy by 2030 and is organized around four strategic focus areas, namely agriculture, health, bio-based industries and sustainable environment, together with five strategic objectives covering high-value

[29]UNESWA Centre for Sustainable Energy Research (2024), Kingdom of Eswatini National Bioenergy Policy Implementation and Monitoring Plan, developed with support from the Initiative for Climate Action Transparency (ICAT); subtended on the National Energy Policy (2018).

[30]Bio and Emerging Technology Institute (BETin) & Ministry of Innovation and Technology (2025), Ethiopian Bioeconomy Strategy (2025–2030); validated 20 December 2024 and subsequently launched. https://www.betin.gov.et

bio-based exports, import substitution, circular waste valorisation, biotechnology capacity and cross-sectoral awareness. It is Ethiopia's first dedicated strategy and is aligned with the Ten-Year Development Plan (2021–2030).[31] Second, and only loosely connected to the bioeconomy, the **National Circular Economy Roadmap of Ethiopia** (related; 2025), prepared by the Environmental Protection Authority, spans waste and water alongside vertical sectors ranging from textiles and leather to agriculture, food and forestry.[32] Third, the **Revision of the Biofuel Development Strategy** (related, update; October 2024), prepared for the Roundtable on Sustainable Biomaterials (RSB), reviews three decades of molasses-based ethanol at the Metehara and Finchaa distilleries, whose output could exceed 300 million litres a year once new sugar factories come online, as well as the stalled biodiesel programme. It proposes indicative blending mandates of 3% biodiesel and 5% sustainable aviation fuel by 2030, rising to 7% and 20% by 2035.[33]

Further trends. BETin, which marks a decade of operation in 2026, has translated the strategy into concrete projects. They include a Shea Butter Development Project in Gambella (2025), organic-fertiliser production sites and the "BioBoost" bioinoculant project (2024), run by the International Centre for Genetic Engineering and Biotechnology (ICGEB) with EIAR and targeting dairy and Enset-based staple foods. The strategy also signals ambitions in agricultural biotechnology, including a goal to commercialize at least one genome-edited plant variety each year from 2028, following the commercial approval of TELA maize in 2025. Taken together, these instruments make Ethiopia one of the most comprehensive bioeconomy policy cases on the continent, combining a dedicated strategy with circular-economy and bioenergy components.

Kenya

State up to 2024. Kenya built an early base of bioeconomy-related policy: a National Biotechnology Development Policy (2006), a bio-diesel strategy (2008), a National Bioprospecting Strategy (2011), the Green Economy Strategy and Implementation Plan 2016–2030 and the Kenya Bioenergy Strategy 2020–2027. These sat on a broad legislative foundation ranging from the Science, Technology and Innovation Act (2013) and the Biosafety Act (2009) to the Climate Change Act (2016) and the Sustainable Waste Management Act (2022). Kenya was also one of the seven East African countries engaged in BioInnovate Africa, hosts the

[31] Shega (2024), "Ethiopia Unveils First-Ever National Bioeconomy Strategy"; developed by BETin and Addis Ababa University with the Ministry of Innovation and Technology and UNIDO. https://shega.co/news/ethiopia-unveils-first-ever-national-bioeconomy-strategy

[32] Environmental Protection Authority of Ethiopia (2025), National Circular Economy Roadmap of Ethiopia, developed under the ACEF/ACEA National Circular Economy Roadmaps programme.

[33] Roundtable on Sustainable Biomaterials / EXERGIA S.A. (2024), Revision of the Biofuel Development Strategy in Ethiopia, Final Report, October 2024.

icipe-based BioInnovate Africa hub in Nairobi and, as a member of the East African Community (EAC), is covered by the regional bioeconomy strategy. What the country lacked was an overarching national framework connecting these sectoral instruments. Its convening role became visible when it hosted the Global Bioeconomy Summit 2024 in Nairobi, the first time the summit met in Africa, and the second "State of the Bioeconomy in Eastern Africa" report was launched on that occasion.

New policy since 2024. Kenya's headline development is the Kenya National Bioeconomy Strategy 2026–2036 (dedicated; launched in August 2026). Less than two years after hosting the summit, Kenya thus moved from host to strategy holder, becoming the fourth African country with a dedicated bioeconomy strategy after South Africa, Namibia and Ethiopia, and, according to the database, the first EAC member state with a national strategy. The strategy was coordinated by the State Department for Science, Research and Innovation in the Office of the Prime Cabinet Secretary, with the National Commission for Science, Technology and Innovation (NACOSTI) as secretariat of the technical working group and with the Stockholm Environment Institute (SEI), Pwani University, the Alliance of Bioversity International and CIAT, and NatureFinance among its members. It draws explicitly on the EAC Regional Bioeconomy Strategy as well as on Agenda 2063, the Science, Technology and Innovation Strategy for Africa (STISA 2034) and the Fourth Medium Term Plan of Kenya Vision 2030.

The strategy's vision is a sustainable, innovative and globally competitive bioeconomy by 2036 that drives inclusive growth, environmental sustainability and improved livelihoods. Its diagnosis notes that agriculture alone accounts for around 24% of gross domestic product (GDP) and supports about 72% of the population, yet biological resources are mostly traded in primary or low-value forms, research rarely reaches the market, and policy remains fragmented across agriculture, forestry, fisheries, environment, energy, industry and science. Rather than adopting an aggregate bioeconomy estimate as its baseline, it commissions a national bioeconomy mapping and value-chain assessment as a first task. The strategy is organized around seven pillars: policy, governance and institutional coordination; sustainable resource management and circular bioeconomy; research, innovation, cluster development and commercialization; bio-based industrial development around priority value chains; investment, competitiveness and markets; human capital, inclusion and public awareness; and partnerships, regional integration and international cooperation. It distinguishes near-term opportunities that can build on existing capabilities, such as biofertilizers and biopesticides, natural products and essential oils, agro-processing and circular products from agricultural residues, from higher-value fields that require further investment, including industrial and health biotechnology, biomanufacturing, biomaterials, engineering biology and genomics. A place-based approach runs through the

document: the 47 counties are to develop County Bioeconomy Action Plans within two years, aligned with their integrated development plans, and to host County Bioeconomy Innovation and Resource Centres.

The implementation framework is detailed. It provides for a National Bioeconomy Steering Committee chaired by the Cabinet Secretary responsible for science, research and innovation, an Executive Committee of Principal Secretaries and the Council of Governors, a multi-stakeholder National Bioeconomy Working Group, a Technical Secretariat in the State Department, and a National Bioeconomy Institute as centre of excellence that will also run a National Bioeconomy Observatory. An annual "State of the Bioeconomy in Kenya" report, a National Bioeconomy Financing and Investment Framework and a national risk register are all to be established within the first year, and a mid-term review is scheduled for 2031. The indicative resource requirement is about KES 100 billion over ten years, to be mobilized from the exchequer, county budgets, private capital, development finance and climate and nature finance.

Alongside the strategy, the **Bio-KE National Bioeconomy Education and Policy Framework**[34] (related; 2025), a 48-month EU-funded initiative, continues to build the skills side of the agenda. Bio-KE supports education agencies in co-creating a national bioeconomy education framework, helps universities develop competency-based bioeconomy curricula and establishes bioeconomy "living labs" for bio-entrepreneurship, including at Pwani University. Originally positioned as a precursor to a national roadmap, it now feeds directly into the human-capital pillar of the new strategy.

Further trends. Kenya's trajectory since October 2024 shows how hosting the summit was followed by domestic policy uptake. The evidence base for the strategy was assembled in the intervening period, notably through the Advancing Bioeconomy Development in Kenya initiative run by SEI with the Kenya Private Sector Alliance, which mapped enterprises and value chains and identified policy fragmentation, weak commercialization capacity and gaps in bioprocessing infrastructure as the binding constraints. The strategy responds to each of these directly. Whether it delivers will depend on the early institutional milestones it has set for itself, in particular the funding framework, the National Bioeconomy Institute and the first county action plans, and on the first annual status report, which will provide the earliest test of implementation.

Mozambique

State up to 2024. Mozambique's bioeconomy-related history runs through energy and marine policy, from a biofuels policy and strategy (2009) and a Green

[34]Bio-KE Project (2025), The National Bioeconomy Education and Policy Framework in Kenya (Bio-KE), a 48-month EU-funded project (Newsletter, Issue 1).

Economy Action Plan (2012–14) to a Biomass Energy Strategy. Since the creation of the Ministry of the Sea, Inland Waters and Fisheries (MIMAIP) in 2015, a marine-governance framework has grown up around the Sea Policy and Strategy (2017), the Law of the Sea (2019) and the Coral Reef Management and Conservation Strategy 2022–2032.

New policy since 2024. The **Blue Economy Development Strategy (EDEA) 2024–2033** (related; 2024) was approved by the Council of Ministers and published in July 2024.[35] It is structured around six strategic pillars: fisheries and aquaculture; renewable energy and the marine extractive industry; natural capital, environment and circular economy; tourism and culture; maritime transport, ports and logistics; and maritime safety. Four cross-cutting axes run through them, covering governance, knowledge and innovation, climate change, and communities. The EDEA gives institutional form to SDG 14 and aligns with Agenda 2063 and the national development strategy ENDE. Its governance model combines a National Blue Economy Council, a National Secretariat and a Technical Committee, and it provides for a Blue Economy Satellite Account to measure the sector's contribution to gross domestic product (GDP). The strategy targets potential that is currently under-used: an estimated fishing potential of about 938,000 tonnes, under half of which is caught, and an aquaculture potential of some four million tonnes against current production of only a few thousand.

Further trends. Implementation is anchored by ProAzul, the Blue Economy Development Fund, which oversees structural programmes such as MaisPeixe Sustentável for artisanal fishers and small and medium-sized enterprises (SMEs) and has signalled a need for around USD 900 million to launch new projects.[36] A Blue Economy Satellite Account was introduced in 2025 to improve transparency and attract investment, and the Blue Economy Council held its first ordinary sessions, reinforcing the shift from a sectoral to a system-wide approach to oceans, rivers and inland waters.

Namibia

State up to 2024. Namibia's trajectory before 2024 combined a National Programme on Research, Science, Technology and Innovation (2014) with a fast-growing bush-biomass value chain built around the Namibia Biomass Industry Group (N-BiG) and a National Strategy on the Sustainable Management of Bush Resources (2022–2027). The dedicated bioeconomy strategy itself grew out of a national stocktaking exercise in 2021 and a draft submitted to the responsible Minister in 2023, coordinated by the National

[35]Ministry of the Sea, Inland Waters and Fisheries (2024), Blue Economy Development Strategy (EDEA) 2024–2033, approved by the Council of Ministers, Maputo, July 2024. https://www.proazul.gov.mz

[36]ProAzul (Blue Economy Development Fund): reported need of about USD 900 million for new projects and the MaisPeixe Sustentável programme; launch of a Blue Economy Satellite Account (2025) to attract investment. https://www.ecofinagency.com

Commission on Research, Science and Technology (NCRST) with FAO support.

New policy since 2024. The **Namibia Sustainable Bioeconomy Strategy 2024–2029** (dedicated; 2024) makes Namibia one of the first African countries after South Africa to adopt a dedicated strategy.[37] Developed by the NCRST under the Ministry of Higher Education, Technology and Innovation and supported by FAO's global Sustainable Bioeconomy Guidelines project, it sets out a vision of a vibrant bioeconomy driving innovation, conservation and the sustainable use of biological resources. Four strategic objectives give it shape: value addition and employment creation, environmental sustainability, research, development and innovation, and awareness creation. These run across focus areas in agriculture, health and natural-resource management as well as cross-cutting issues, and are implemented through a Bioeconomy Multisectoral Working Group. The strategy is anchored in Vision 2030 and the National Development Plans.

Further trends. The most tangible bioeconomy activity remains the encroacher-bush sector. Bush encroachment affects up to 45 million hectares, and harvesting and processing into biochar, wood chips and building materials had created around 11,000 jobs by the time the "Bush Control and Biomass Utilisation III" project (2022–2024) of the German development agency GIZ concluded with the Ministry of Environment, Forestry and Tourism.[38] Private-sector uptake, from Namibia Breweries' biomass boiler and Ohorongo Cement to a NamPower biomass power plant, and engagement by partners such as the EU, the United States Agency for International Development (USAID), the World Bank and Nedbank point to a maturing investment landscape, including exploratory biomass-export partnerships with Europe. The new strategy provides the cross-sectoral framework these scattered initiatives previously lacked.

South Africa

State up to 2024. South Africa remains the continental frontrunner. Its 2013 Bio-Economy Strategy spanned health, agriculture, industry, environment and indigenous knowledge, and a first National Biodiversity Economy Strategy (NBES) followed in 2016, focused on the wildlife economy and bioprospecting and implemented through Operation Phakisa. The COVID-19 period accelerated genomic-surveillance capability and brought the World Health Organization (WHO) mRNA technology-transfer hub to Cape Town, while sector "master plans" for sugar, cannabis and hemp, forestry and agro-processing, together with a High-Level Panel review in 2020 and 2021, reshaped the policy landscape.

New policy since 2024. The **Reviewed National Biodiversity Economy**

[37] National Commission on Research, Science and Technology (2024), The Namibia Sustainable Bioeconomy Strategy 2024–2029, developed with FAO support (GCP/GLO/724/GER).

[38] GIZ, "Bush Control and Biomass Utilisation III" (2022–2024), with the Ministry of Environment, Forestry and Tourism; the bush-biomass industry is reported to have created around 11,000 jobs.

Strategy (NBES) (related, update) was gazetted on 8 March 2024 by the Department of Forestry, Fisheries and the Environment (DFFE).[39] It broadens the original strategy considerably, moving from two elements, the wildlife economy and equitable access and benefit-sharing or biotrade, to cover ecotourism and all ecosystems, whether terrestrial, freshwater, estuarine or marine. The revision responds to the White Paper on the Conservation and Sustainable Use of South Africa's Biodiversity and to the Kunming-Montreal Global Biodiversity Framework, and it incorporates the outcomes of the Operation Phakisa Oceans and Biodiversity Labs, providing ten-year strategic direction for the biodiversity economy as a whole. Headline ambitions include roughly 162,000 jobs and R47 billion (about USD 3.19 billion) by 2030, alongside expanded cultivation of indigenous plants and growth of "virtual" bioprospecting and biotrade institutions.[40]

Further trends. Implementation runs through an elevated Biodiversity Delivery Lab and a Biodiversity Sector Investment Portal, operated by the DFFE, the South African National Biodiversity Institute (SANBI) and Operation Phakisa with support from the United Nations Development Programme (UNDP) and its Biodiversity Finance Initiative (BIOFIN), and designed to match biodiversity-economy ventures with investors.[41] Complementary financing, such as a Global Environment Facility (GEF-7) project with the World Bank and the United Nations Environment Programme (UNEP) on biodiversity and illegal wildlife trade, and active civil-society engagement, including extensive public comment from the Endangered Wildlife Trust in April 2024, reflect a mature, contested and investment-oriented biodiversity-economy ecosystem.

Uganda

State up to 2024. Uganda has long been identified, alongside Ethiopia, as an East African frontrunner in bioeconomy strategy development, building on a substantial agricultural-research and biosciences base and an active role in the East African Community's regional bioeconomy agenda.

New developments since 2024. Two processes are advancing in parallel. Uganda's dedicated national bioeconomy strategy is reported to be well advanced, drawing directly on the EAC regional strategy. Separately, a **National Circular Economy Roadmap** is under development on the same African Development Bank-financed model, through the Africa Circular Economy Facility, that produced the roadmaps already launched in Cameroon, Chad and Ethiopia. That process was formally launched

[39]Department of Forestry, Fisheries and the Environment (2024), Reviewed National Biodiversity Economy Strategy (NBES), Government Gazette No. 50279, 8 March 2024.

[40]DFFE / Operation Phakisa Biodiversity Economy: targets of approximately 162,000 jobs and R47 billion (about USD 3.19 billion) by 2030. https://www.dffe.gov.za

[41]Biodiversity Sector Investment Portal, enabled by DFFE, SANBI and Operation Phakisa with support from UNDP BIOFIN. https://biodiversityinvestment.environment.gov.za

in Kampala in January 2024, which puts the roadmap well over two years into development and, if it is tracking its peer countries, plausibly in its final stages. No publication date or finalized document could be confirmed, however, so it is treated here as being in late-stage development rather than released.

Further trends. Uganda therefore sits at the intersection of the two currents shaping the continent: a dedicated bioeconomy strategy catalyzed by the East African regional framework, and a circular-economy roadmap designed to feed into the African Union's continental action plan. Confirming the status of both documents is the obvious next step for the record.

Zambia

State up to 2024. Zambia's bioeconomy-relevant foundations were largely sectoral and environmental, most notably the National Forest Policy adopted in 2014. They gained institutional weight with the creation of a dedicated Ministry of Green Economy and Environment, which consolidated climate and environmental functions previously spread across government.

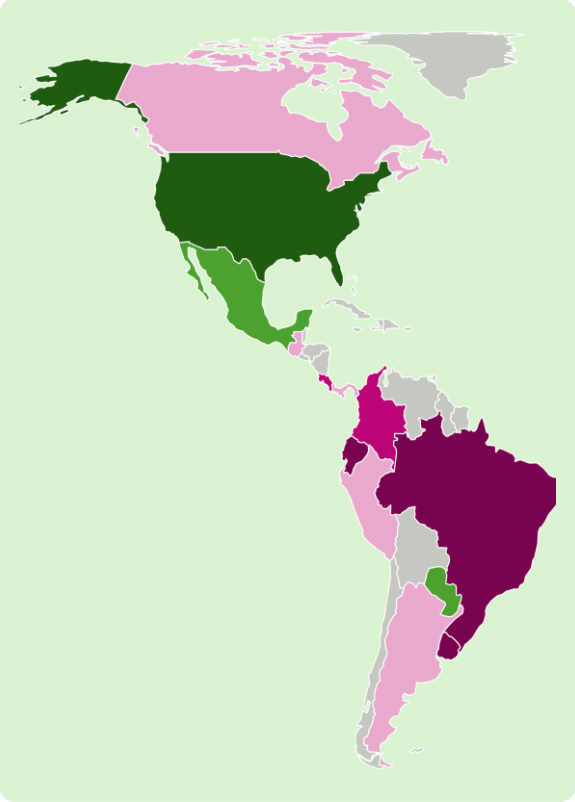
New policy since 2024. In 2024 the government launched the **National Green Growth Strategy 2024–2030** (related), authored and commissioned by the Ministry of Green Economy and Environment.[42] It is framed as a green-growth rather than an explicitly bioeconomy instrument, yet its content is strongly bioeconomy-related. It spans agriculture, forestry, energy, tourism and water, and combines climate-resilient and low-carbon growth with resource efficiency, the enhancement of natural capital and inclusive participation. The strategy provides an operational roadmap for Zambia's Vision 2030 and the Eighth National Development Plan and aligns with the Paris Agreement, the SDGs and the Convention on Biological Diversity.

[42] Government of the Republic of Zambia, Ministry of Green Economy and Environment (2024), National Green Growth Strategy 2024–2030. https://www.cabinet.gov.zm/newsite/wp-content/uploads/2024/04/2NATIONAL-GREEN-GROWTH-STRATEGY-2024-2030-6.pdf. See also the National Forest Policy (2014).

REGIONAL BIOECONOMY POLICIES AND UPDATES (2024–2026)

State of Regional Bioeconomy Policies of

The Americas



8

dedicated strategies adopted, plus 7 in preparation

30

bioeconomy-related strategies adopted, plus 10 in preparation

5 2023: 3

countries and macro-regions with an adopted dedicated strategy

11 2023: 10

countries and macro-regions with an adopted dedicated or related strategy

Strategy status 2026

DEDICATED STRATEGY

- **New, 2024–2026 (3):** Brazil, Ecuador, Uruguay
- **Adopted before 2024 (2):** Colombia, Costa Rica
- **In preparation (7):** Argentina, Canada, Ecuador, Guatemala, Panama, Peru, United States
- **Withdrawn (1):** United States

BIOECONOMY-RELATED STRATEGY

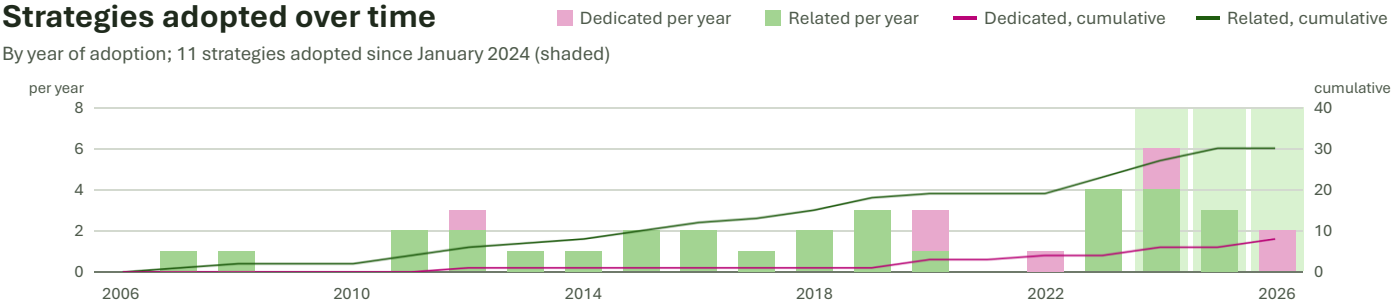
- **New, 2024–2026 (4):** Brazil, Peru, United States, Uruguay
- **Adopted before 2024 (8):** Argentina, Brazil, Canada, Colombia, Ecuador, Mexico, Paraguay, Uruguay
- **In preparation (6):** Argentina, Brazil, Canada, Colombia, Mexico, Uruguay

OTHER

- **No strategy recorded**

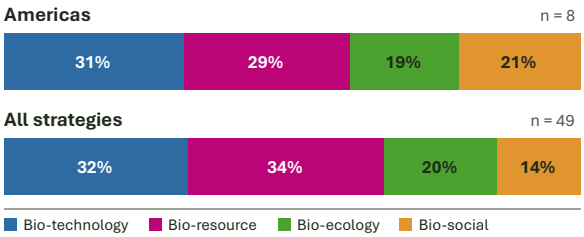
Strategies adopted over time

By year of adoption; 11 strategies adopted since January 2024 (shaded)



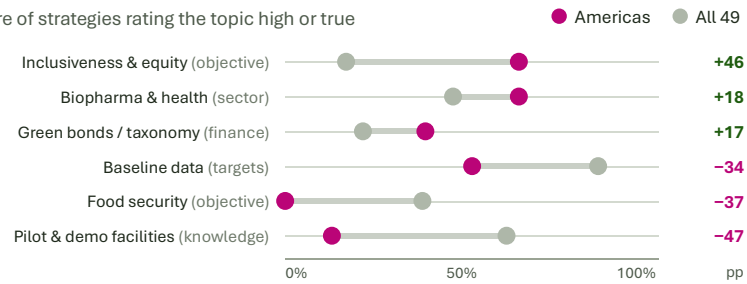
Bioeconomy visions

Average weight of each vision per strategy



Largest differences from all strategies

Share of strategies rating the topic high or true



Key Takeaways

Since 2024 the center of gravity has moved toward Latin America.

Brazil (June 2024), Uruguay (December 2024) and Ecuador (2026) adopted dedicated national bioeconomy strategies.

Under Brazil's 2024 G20 presidency, ten voluntary High-Level Principles on Bioeconomy were agreed.

The United States withdrew its 2022 dedicated strategy in 2025; a new bioeconomy-related strategy was also published in 2025.

Sources: IACGB database of global bioeconomy policies (closed 15 October 2026; 2026 is a partial year); BPAF content analysis (8 of 49 strategies from this region). National and macro-regional strategies; sub-national and out-of-scope entries excluded. pp = percentage points.

International Advisory Council on Global Bioeconomy

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The Americas

Regional developments up to 2024. The Americas were among the first world regions to embrace the bioeconomy, and they did so along two distinct lines. In North America the agenda grew out of biotechnology and biomanufacturing. The United States set an early marker with its National Bioeconomy Blueprint in 2012 and broadened the field in 2022 through an executive order on biotechnology and biomanufacturing. Canada worked mainly through forest-based and innovation policy, with a Forest Bioeconomy Framework adopted by its forest ministers in 2017 and an industry-led national Bioeconomy Strategy in 2019. Latin America started from a different place. There the bioeconomy was tied to biodiversity, agriculture and rural development. Costa Rica became a regional pioneer with its National Bioeconomy Strategy 2020–2030 in 2020. Colombia followed in the same year with a dedicated strategy built on its standing as a megadiverse country, and added a Bioeconomy and Territory Mission in 2023. Argentina, Brazil, Mexico, Paraguay and Uruguay advanced the agenda through bioeconomy-related instruments, among them biotechnology plans, science and innovation strategies, biofuel programs and long-term development visions. The UN Economic Commission for Latin America and the Caribbean (ECLAC) helped shape this early agenda, offering the conceptual groundwork and technical assistance that several national processes drew on. A first generation of subnational strategies also appeared, most visibly in the Argentine province of Buenos Aires in 2016 and the Brazilian state of Pará in 2022. The clearest sign of a regional turn came in July 2023, when the Inter-American Institute for Cooperation on Agriculture (IICA) relaunched the Latin American Bioeconomy Network in Buenos Aires and took on its technical and executive secretariat.

Regional developments since 2024. Since 2024 the center of gravity has moved toward Latin America, and the region has entered a second phase in which it builds the means to deliver its strategies. Under its 2024 G20 presidency, Brazil launched the G20 Initiative on Bioeconomy and secured agreement on ten voluntary High-Level Principles, the first time the bioeconomy was the subject of a multilateral document.[43] Four countries adopted new national instruments in the same period. Brazil established its National Bioeconomy Strategy in June 2024, Uruguay approved a National Sustainable Bioeconomy Strategy in December 2024, Peru adopted a National Circular Economy Roadmap to 2030 in early 2025, and Ecuador adopted the National Bioeconomy Strategy 2026–

[43] G20 Initiative on Bioeconomy. (2024). *G20 Reaches Consensus and Establishes High-Level Principles on Bioeconomy*. Available at https://www.gov.br/g20/en/news/g20-reaches-consensus-and-establishes-high-level-principles-on-bioeconomy [29.07.26]. Ten voluntary, non-binding principles agreed under the Brazilian G20 presidency, Rio de Janeiro, September 2024.

2036. Dedicated processes are under way in Panama and Peru, while Guatemala's 2023 strategy proposal has yet to advance to formal adoption. In August 2025 the eight member countries of the Amazon Cooperation Treaty Organization (ACTO) approved a regional Strategy for a Sustainable Development Economy in the Amazon and agreed a mechanism to implement it, which makes it a first regional attempt to govern a bioeconomy at the scale of a biome and across national borders. Implementation is supported by the IDB, with IICA providing specialised technical and methodological cooperation for policy instruments, action plans, value-chain analysis, project pipelines and financing mechanisms.[44] In November 2025, Brazil hosted COP30 in Belém, the first climate conference held in the Amazon, and placed the forest bioeconomy at the center of its agenda. The presidency used the occasion to launch the Bioeconomy Challenge, a three-year initiative that aims to turn the G20 High-Level Principles into measurable action by 2028. In the United States the picture changed in character rather than pace. The executive order that had framed the field was rescinded in March 2025, and momentum passed to a bipartisan, security-driven agenda in Congress. Argentina established a Secretariat of Bioeconomy in 2024 and reorganized it later that year, and it has not adopted a national strategy.

Key regional dynamics

From strategies to delivery. The first generation of Latin American work produced strategies. The current one is building what it takes to run them, namely action plans, institutional mandates, indicators, project pipelines and financing mechanisms. Brazil backed its strategy with a mission-oriented development plan and a dense body of law and finance, Uruguay followed its strategy within months with an action plan and a national bioinputs plan, and Ecuador built a bioeconomy satellite account into its strategy process from the outset. A common model runs through these cases. National governments and intergovernmental bodies keep political ownership, strategies are built through broad multi-actor consultation, specialized regional cooperation supplies the method, and development finance is involved from the start rather than at the end. The main constraint is translation rather than scientific potential, that is, turning knowledge into firms, pilot and demonstration facilities, and industrial scale. A young but increasingly organized venture ecosystem still lacks the incubation, certification, patient capital and buyer links it needs to reach commercial scale, which makes market creation a policy function in its own right.

[44] Inter-American Institute for Cooperation on Agriculture (IICA). (2025). *The IDB and IICA announce technical cooperation to support implementation of the ACTO-led strategy for sustainable economies for the Amazon*. Available at https://iica.int/en/press/news/the-idb-and-iica-announce-technical-cooperation-to-support-implementation-of-the-acto-led-strategy-for-sustainable-economies-for-the-amazon

Biodiversity and people at the core. Strategies in the region give inclusiveness and equity, and with them the bio-social vision of the bioeconomy, far more weight than strategies elsewhere. Brazil's concept of sociobioeconomy places Indigenous peoples, traditional communities and family farmers at the heart of its strategy, and Peru builds on bio-businesses that use native biodiversity sustainably and include local communities. The Amazon has become the main arena for this agenda, from the ACTO strategy to COP30. Food security and bioenergy, by contrast, feature less prominently in the region's strategies than elsewhere, even though parts of the regional bioeconomy already operate at scale. In 2025 the Americas produced about two thirds of global liquid biofuels, including 79 percent of bioethanol, and eleven countries in the hemisphere operated blending mandates.[45] Agricultural biotechnology has a long record of adoption, and Argentina, Brazil and several other countries have built science-based, case-by-case regulation for genome editing. Biological inputs have moved from niche use into mainstream practice.

Regional cooperation as a common method. Regional cooperation has become more institutionalized. The Latin American Bioeconomy Network grew from an initial thirty members to more than one hundred institutions from eighteen countries, with IICA serving as its technical and executive secretariat. Its role now reaches beyond convening. The network runs thematic working groups and capacity-building activities such as BioSinergia and has begun to produce regional public goods. These include the Guiding Principles for the Bioeconomy in Latin America, agreed in 2024 by more than sixty institutions from ten countries, and a first report on the status and outlook of the bioeconomy in the region.[46] In parallel, IICA's Agrobiobusiness and Investment Center supports the identification, incubation and acceleration of bio-based ventures across the region.[47] Two further networks were created in the same period, the Pan-Amazon Network for Bioeconomy and the Bioamazonia Network. ECLAC continued to support national processes with technical studies and diagnostics, and partners such as FAO, the European Union, the United Kingdom, the Spanish development

[45] Instituto Interamericano de Cooperación para la Agricultura (IICA). (2026). *Estado de los biocombustibles líquidos en las Américas 2025*. Summary available at https://iica.int/en/press/news/the-americas-consolidate-their-position-as-the-worlds-largest-producer-of-liquid-biofuels-over-the-last-decade-according-to-new-iica-report/ [10.09.26].

[46] Red Latinoamericana de Bioeconomía & IICA. (2024). *Principios Rectores de la Bioeconomía de LATAM*. Available at https://hdl.handle.net/11324/22677 [10.09.26]. See also IICA. (2024). *Informe de situación y perspectivas de la bioeconomía en América Latina y el Caribe*. Available at https://hdl.handle.net/11324/22104 [10.09.26].

[47] Red Latinoamericana de Bioeconomía & IICA. (2024). *Principios Rectores de la Bioeconomía de LATAM*. Available at https://hdl.handle.net/11324/22677 [10.09.26]. See also IICA. (2024). *Informe de situación y perspectivas de la bioeconomía en América Latina y el Caribe*. Available at https://hdl.handle.net/11324/22104 [10.09.26].

agency AECID, the Inter-American Development Bank, CAF and the World Bank supported strategy design and finance.

Security and competition reshape the US agenda. In the United States the bioeconomy has moved from a whole-of-government executive strategy to a congressional agenda framed by national and economic security. With the 2022 executive order rescinded, this report records the dedicated US strategy as withdrawn. The work nevertheless continues through the National Security Commission on Emerging Biotechnology, the BIOSECURE Act and proposals for new investment and scale-up infrastructure, with biomanufacturing capacity and competition with China as the recurring themes.

Strategies in preparation

Several countries are preparing dedicated strategies that had not been formally adopted by the closing date of the database, among them Panama, Peru and Guatemala. Argentina and Canada, which are discussed first, have no national strategy process under way.

Argentina. Argentina has one of the deepest bioeconomy research records in the region and no national strategy to match it. The Ministry of Science, Technology and Innovation promoted the agenda for years and published a substantial assessment in 2023, and work commissioned in the same year by the Federal Investment Council (CFI) with IICA set out proposals for a federal approach to the bioeconomy. The study argues that a federal country of this size needs a standing coordination mechanism between national, provincial and municipal policy, since natural resources fall under provincial responsibility. An interministerial group was created to coordinate the work, but it did not reach agreement on a national strategy. Institutional recognition had come early on the agricultural side, with a Secretariat of Food and Bioeconomy created within the Ministry of Agriculture in 2018. In 2024, the government established a Secretariat of Bioeconomy within the Ministry of Economy. Later that year, the institutional structure was reorganized and the area was renamed the Secretariat of Agriculture, Livestock and Fisheries, while bioeconomy-related functions continued within the new structure. The working substance sits a level below. The National Directorate of Bioeconomy proposes plans, programs and policies for the bioenergy and biotechnology sectors in coordination with the provinces, and three technical bodies operate under its authority, namely the National Advisory Commission on Agricultural Biotechnology (CONABIA), the National Advisory Commission on Biomaterials (COBIOMAT) and the Advisory Committee on Agricultural Bioinputs (CABUA). The Argentine Bioproduct Seal was introduced to promote biomaterials, bioproducts and bioinputs.

Canada. Canada's first national Bioeconomy Strategy, released in 2019, was developed by industry through Bioindustrial Innovation Canada with federal funding. It has not been adopted as government policy. Public policy for the field runs mainly through forest-sector and

innovation instruments, notably the Forest Bioeconomy Framework adopted by the Canadian Council of Forest Ministers in 2017.

Panama. Panama is preparing a National Bioeconomy Strategy 2026–2040 and an implementation roadmap under the leadership of the National Secretariat for Science, Technology and Innovation (SENACYT) and the National Research System (SNI). The development bank CAF supports the process and IICA coordinates the technical and methodological work. The cooperation is organized around four linked products, namely a strategic diagnosis, a participatory national vision, the strategy itself, and a roadmap that covers governance, regulation, financing, indicators, priority territories and a set of early actions chosen for their catalytic effect. A National Bioeconomy Forum held in July 2026 marked the move from diagnosis to design, with participation from government, research bodies, business, producers, Indigenous representatives, civil society and international cooperation.[48] Anchoring the strategy in the science secretariat rather than in an agriculture or environment ministry distinguishes the Panamanian process from most others in the region and shapes the weight it gives to research capacity and innovation. Panama has also become a meeting point for regional bioeconomy work. In February 2026 it hosted a regional bioeconomy mission and community of practice led by the United Kingdom together with IICA and SENACYT.

Policy changes at national level

Brazil

State up to 2024. Brazil holds close to a fifth of the world's biodiversity and has a long record of bio-based production, yet before 2024 it had no single bioeconomy strategy. The agenda advanced through bioeconomy-related instruments. A National Science, Technology and Innovation Strategy for 2016–2022 and a dedicated Action Plan for Science, Technology and Innovation in the Bioeconomy, both from 2018, gave the field an early framework. Energy policy added a second track through the ethanol and biodiesel programs and the ten-year energy expansion plans. At the subnational level, the state of Pará approved a State Bioeconomy Plan (PlanBio) in 2022, which became a reference for territorial approaches in the Amazon and which the chapter on Subnational Policy Trends revisits. Embrapa and a strong agricultural research system underpinned much of this work.

New policies since 2024. Brazil moved from scattered instruments to a coherent state policy in two steps. First, Decree 12,044 of 5 June 2024 instituted the **National Bioeconomy Strategy** (dedicated;

[48] Secretaría Nacional de Ciencia, Tecnología e Innovación (SENACYT). (2026). *Panamá impulsa su futuro sostenible: la Senacyt y el SNI lideran el II Foro Nacional de Bioeconomía 2026*. Available at https://www.senacyt.gob.pa/en/panama-impulsa-su-futuro-sostenible-la-senacyt-y-el-sni-lideran-el-ii-foro-nacional-de-bioeconomia-2026/ [10.09.26].

2024).[49] The decree defines the bioeconomy as a model of production grounded in justice, ethics and inclusion, based on the sustainable use, regeneration and conservation of biodiversity, and guided by both scientific and traditional knowledge. It sets out thirteen guidelines and a group of objectives that range from strengthening the competitiveness of bio-based production to developing the forest and sociobiodiversity economies. The decree also created the National Bioeconomy Commission (CNBio), the governance body of the strategy, whose presidency rotates among the Ministries of Environment, of Development and Industry, and of Finance, and it named a national development plan as the main tool for delivery. Second, the government launched the **National Bioeconomy Development Plan 2026–2035** (PNDBio; dedicated; 2026) in Brasília on 1 April 2026, with an initial R$350 million (approximately USD 68.4 million) from the Amazon Fund.[50] The plan follows a mission-oriented design. It is built around a central goal, namely to transform the country's productive model through innovation, industry and biodiversity while conserving nature. It contains eight missions, twenty-one targets and 185 strategic actions, organized in three axes that cover the sociobioeconomy and environmental assets, competitive bioindustrialization, and sustainable biomass production. A distinctive feature is the concept of sociobioeconomy, which places Indigenous peoples, traditional communities and family farmers at the heart of the strategy. Headline targets include support for 6,000 community enterprises, a rise in the gross value of annual sociobiodiversity production to R$12 billion (USD 2.34 billion) from R$4.9 billion in 2025, and 300,000 beneficiaries of payments for environmental services by 2035. The plan is aligned with the Ecological Transformation Plan and with the Nova Indústria Brasil reindustrialization agenda, whose fifth mission on bioeconomy, decarbonization and energy transition places bio-based production at the center of Brazilian industrial policy.

Further trends. Since 2024 Brazil has built a dense body of law and finance around the strategy. The **Fuel of the Future Law** (Law 14,993/2024) turned voluntary biofuel blends into legal mandates for ethanol, biodiesel, biomethane, sustainable aviation fuel and green diesel, and a companion **Low-Carbon Hydrogen Law** (Law 14,948/2024) framed the emerging hydrogen sector. Agriculture gained a **Bioinputs Legal Framework** (Law 15,070/2024) that regulates the production and use of biological inputs, and climate policy gained the **Brazilian Emissions Trading System** (Law 15,042/2024), a regulated carbon market with a forestry and REDD+ component. A new financial architecture took shape alongside these laws, including

[49] Presidência da República. (2024). *Decreto nº 12.044, de 5 de junho de 2024: Institui a Estratégia Nacional de Bioeconomia*. Available at https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/decreto/d12044.htm [29.07.26].

[50] Ministério do Meio Ambiente e Mudança do Clima. (2026). *Plano Nacional de Desenvolvimento da Bioeconomia 2026–2035 (PNDBio): Resumo executivo*. Available at https://www.gov.br/mma/pt-br/centrais-de-conteudo/publicacoes/bioeconomia/pndbio-resumo-executivo.pdf [13.10.26].

the Brazilian Sustainable Taxonomy (Decree 12,705/2025), the Ecological Transformation Plan led by the Ministry of Finance, and the regulation of the federal Payments for Environmental Services program (Decree 13,018/2026). The science and energy tracks were renewed in parallel, with a successor National Science, Technology and Innovation Strategy for 2024–2034 consolidated in December 2025 and the ten-year energy expansion plan updated to the PDE 2034. A bill for a permanent National Bioeconomy Policy (PL 1,855/2022), which would give the strategy statutory status, advanced through Senate committees in late 2025. Brazil has paired this domestic agenda with visible international leadership, from the G20 Initiative on Bioeconomy to COP30 in Belém. There the presidency launched the Tropical Forests Forever Facility, a mechanism designed to reward tropical-forest conservation at scale, which drew initial pledges of more than USD 5.5 billion and the endorsement of more than fifty countries at its launch. It sat alongside the Bioeconomy Challenge and the Belém 4x Pledge on sustainable fuels. Finance is also being mobilized through the Eco Invest Brasil program, whose fourth auction, opened during COP30, is directed at bioeconomy and sustainable-tourism projects in the Amazon.

Ecuador

State up to 2024. Ecuador came to the bioeconomy through biodiversity policy and a national White Paper that set out a first orientation for the field, with early analytical support from ECLAC. A more focused process for formulating a strategy has only started after 2024.

New policies since 2024. Between 2025 and April 2026, the national environmental authority (led by the Ministry of Environment and Energy) spearheaded a process to consolidate, territorialize, and validate a National Sustainable Bioeconomy Strategy alongside a Ten-Year Agenda (2026–2036). The framework combines five bioeconomy pathways with four implementation lines covering governance, science, technology and innovation (STI), production, markets, finance, and territorial inclusion. More than six hundred actors participated in regional consultations ensuring perspectives from the Coast, Highlands, Amazon, and Galápagos were integrated. The French development agency AFD financed the technical assistance mechanism, administered by the Sustainable Environmental Investment Fund (FIAS), while IICA provided technical and methodological execution. When the technical assistance fund closed in April 2026, FIAS delivered the strategy, territorial coordination mechanisms, and Ecuador's first Bioeconomy Satellite Account—providing a measurement instrument at adoption rather than years later, which is the sequence most regional countries have followed.[51] Building on these foundations and the regional

[51] Fondo de Inversión Ambiental Sostenible (FIAS). (2026). *Cierre del Fondo de Asistencia Técnica en Bioeconomía*, 13 April 2026. Available at https://fias.org.ec/bioeconomiaec/ [10.09.26].

Amazon strategy of 2025 as a cross-border reference point, Ecuador formally adopted the National Bioeconomy Strategy 2026–2036 via a Ministerial Agreement signed on 13 October 2026. The strategy establishes bioeconomy as an inclusive, sustainable, and regenerative development model, linking biodiversity conservation with STI, productive transformation, bioentrepreneurship, territorial development, and participatory governance.

Peru

State up to 2024. Peru is one of the world's megadiverse countries, yet before 2024 it approached the bioeconomy indirectly. Its main instrument was the National Biotrade Strategy, coordinated by the Ministry of Foreign Trade and Tourism together with the environment ministry and PROMPERÚ, which promoted trade in products derived from native biodiversity. Work on the circular economy advanced first in the industrial sector. The Amazon has been the focus of much of this activity, and in 2024 the government set up a Bioeconomy Working Group to design development plans for eco-businesses and bio-businesses in the Peruvian Amazon. Research bodies and the regional governments of the Amazon supported these early efforts.

New policies since 2024. The instrument in force is the **National Circular Economy Roadmap to 2030** (related; 2025), approved by Supreme Decree 003-2025-MINAM and published in the official gazette on 25 February 2025, with the first edition of the document released by the Ministry of the Environment in May.[52] The roadmap was prepared with support from AECID and the European Union. It sets out a vision for a circular economy to 2030 and organizes its work around four strategic objectives, namely governance and circular policies, innovation and circular business, sustainable consumption and circular culture, and circular territories and cities. Although it is framed as a circular-economy instrument rather than a bioeconomy strategy, the roadmap carries an explicit bioeconomy dimension. It adopts a formal definition of the bioeconomy as an economic system based on the production, trade and consumption of goods and services derived from renewable biological resources, including the transformation of biomass and waste streams into food, feed, bio-based products and bioenergy. Its second strategic objective, on innovation and circular business, is built in part around eco-businesses and bio-businesses. Bio-businesses are defined, following an earlier 2020 ministerial resolution, as enterprises that rest on the sustainable use of biodiversity and that build in the costs of conserving natural resources, the inclusion of local communities and traditional knowledge, and the revitalization of local economies. The

[52] Ministerio del Ambiente del Perú (MINAM). (2025). *Hoja de Ruta Nacional de Economía Circular al 2030* (Decreto Supremo nº 003-2025-MINAM). Available at https://sinia.minam.gob.pe/sites/default/files/archivos/public/docs/6507211-hoja-de-ruta-nacional-de-economia-circular-al-2030.pdf [29.07.26].

roadmap ties these business models to concrete tools. It draws on a public catalog and virtual platform for eco-businesses and bio-businesses, and it connects to a Program for Bio-businesses backed by a fund of USD 20 million that channels loans and guarantees to enterprises making sustainable use of Amazonian biodiversity in fields such as ecotourism, non-livestock agroforestry and non-timber forest products. This treatment of biomass, biodiversity and bio-businesses places the roadmap close to the bioeconomy agenda.

A dedicated instrument is now moving toward formal adoption. The Ministry of the Environment led a policy process whose diagnosis identified 74 national instruments spread across 23 responsible institutions, which located the central problem in fragmentation rather than in an absence of policy. A public-private technical committee consultation involved 139 participants. The resulting **Bioeconomy Roadmap** (dedicated; 2026, in preparation) combines a vision to 2050 with a programmatic horizon to 2030, and it sets out strategic pathways, an action plan, multisectoral governance and a monitoring framework. On 11 June 2026 the ministry published the draft Supreme Decree approving the roadmap, together with the roadmap itself and its explanatory memorandum, for public consultation.[53] IICA provided the technical and methodological cooperation, enabled by support from the Inter-American Development Bank. Peru is therefore likely to hold both a circular-economy and a bioeconomy framework, and the fragmentation its own diagnosis identified is the first thing the two will have to resolve between them.

Further trends. Peru's bioeconomy activity is increasingly organized around Amazon finance. The environment ministry has been consolidating economic and financial instruments to support sustainable projects in the Amazon, and it presented this work at the regional bioeconomy mission held in Panama in February 2026. IICA continues to support Peru as part of its regional network. A range of donor-funded projects, several backed by the European Union and by Conservation International, are building biotrade value chains for Amazonian fruits and other products in regions such as Loreto, San Martín, Ucayali and Huánuco. Peru is also one of the eight ACTO members covered by the regional Amazon strategy of 2025, which gives its national work a cross-border frame.

United States

State up to 2024. The United States has one of the oldest bioeconomy policy records in the region. It began with the National Bioeconomy Blueprint in 2012 and gained fresh momentum in September

[53] Ministerio del Ambiente del Perú (MINAM). (2026). *Resolución Ministerial nº D000192-2026-MINAM*, 11 June 2026, publishing for consultation the draft Supreme Decree approving the Bioeconomy Roadmap for Peru. Available at https://www.gob.pe/institucion/minam/normas-legales/8259661-d000192-2026-minam [10.09.26].

2022, when President Biden signed an executive order on advancing biotechnology and biomanufacturing innovation for a sustainable, safe and secure American bioeconomy.[54] That order created the National Biotechnology and Biomanufacturing Initiative and set in motion a whole-of-government effort spanning health, energy, agriculture, industry and supply-chain resilience, with the aim of ensuring equitable and ethical development of the bioeconomy. A 2023 report, Bold Goals for U.S. Biotechnology, translated the order into research and development targets. By the end of 2023 the country framed the bioeconomy mainly as a driver of innovation, jobs and competitiveness, supported by agencies across the executive branch rather than by a single statute.

New policies since 2024. Since 2024 the American bioeconomy agenda has shifted in character and moved beyond the executive branch into congressional action. The last major executive product of the previous administration was the report **Building a Vibrant Domestic Biomanufacturing Ecosystem**, issued by an interagency working group in November 2024.[55] It set out eleven recommended actions to close gaps in biomanufacturing capacity, from federal procurement and right-sized incentives to a distributed network of scale-up infrastructure, though it came with no new funding. The bioeconomy executive order was rescinded in March 2025 and leadership passed to Congress, where the field is increasingly framed as a matter of national and economic security and of competition with China. In April 2025 the bipartisan National Security Commission on Emerging Biotechnology published its final report, which set out six pillars and forty-nine recommendations and warned that the United States risks falling behind China.[56] The commission's central proposal was a National Biotechnology Coordination Office within the White House, and its members introduced the National Biotechnology Initiative Act in both chambers to give effect to that idea. Two further measures show how the agenda has moved. In December 2025 Congress passed the **BIOSECURE Act** as part of the annual defense authorization. It restricts federal agencies from contracting with named biotechnology companies of concern, most of them Chinese. In the same month members of the House introduced the **Independence Investment Fund Act**,

[54] The White House. (2022). *Executive Order 14081: Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy*. Federal Register, 87, 56849. Available at https://www.federalregister.gov/documents/2022/09/15/2022-20167/advancing-biotechnology-and-biomanufacturing-innovation-for-a-sustainable-safe-and-secure-american [29.07.26]. The order was rescinded in March 2025.

[55] Biomanufacturing Interagency Working Group. (2024). *Building a Vibrant Domestic Biomanufacturing Ecosystem*. Available at https://bidenwhitehouse.archives.gov/wp-content/uploads/2024/11/BUILDING-A-VIBRANT-DOMESTIC-BIOMANUFACTURING-ECOSYSTEM.pdf [29.07.26].

[56] National Security Commission on Emerging Biotechnology (NSCEB). (2025). *Charting the Future of Biotechnology* (final report). Available at https://www.biotech.senate.gov/final-report [29.07.26]. Implementation is tracked at https://www.biotech.senate.gov/recommendation-tracker/ [10.09.26].

which takes up a commission recommendation and would create a government-backed but privately run investment fund in the Treasury to help companies cross the commercialization valley of death, with biotechnology named as a priority.

Implementation has been rapid by the standards of a report to Congress. By the end of August 2026, forty of the forty-nine recommendations had seen legislative action and nine had been taken up in White House executive actions. The Departments of Agriculture, Commerce, Defense and Energy have emerged as the key executive agencies delivering what Congress has legislated.

Further trends. Although the bioeconomy executive order was rescinded in 2025, the work it started continues as a quiet priority across many executive agencies, and congressional action is set to reinforce much of it. The Department of Defense has a central role, with an annual biotechnology roadmap and a public-private sandbox for the convergence of artificial intelligence and biotechnology. Work on measurement is also under way, and the Bureau of Economic Analysis, under the Department of Commerce, has been revising economic codes so that the size of the bioeconomy can be estimated more accurately. Biomanufacturing scale-up remains the recurring concern across these initiatives, from the Defense Bioindustrial Manufacturing Program to the proposed investment fund and to the establishment of at least two new precommercial bioindustrial technology maturation facilities by the Department of Energy. Venture investors and industry associations have lined up behind these moves, which they see as necessary to keep American biomanufacturing competitive.

A further development sits alongside the commission's work rather than under it. In June 2025 members of Congress established the **BIOtech Caucus**, a bipartisan forum created to advance policy solutions by engaging sector leaders, building bioliteracy among members and exploring legislation that supports the domestic bioeconomy, with an emphasis on biosecurity, innovation and nationwide economic opportunity. It was designed to outlast the commission, which is required by law to conclude in December 2026, and a year after its announcement its membership stood at 66, evenly split between the two parties. Because only Congress can appropriate funds, a standing bipartisan caucus gives companies, associations and researchers a single point of access for legislative solutions and offers the clearest route yet to new appropriations for bioeconomy research, infrastructure and incentives.

Uruguay

State up to 2024. Uruguay approached the bioeconomy through agriculture, biotechnology and long-term planning. A Biotechnology Sector Plan for 2011–2020 gave the field an early base, and the National Development Strategy Uruguay 2050, published in 2019, identified the bioeconomy as a pillar of the country's productive transformation. From 2017 Uruguay took part in a FAO-supported process and was selected as a pilot

country for a national bioeconomy strategy. Its strong agri-food base in livestock and forestry, together with an active biotechnology and research community, gave it the raw material for a strategy well before one was formally adopted.

New policy since 2024. Uruguay adopted its **National Sustainable Bioeconomy Strategy** (ENBS; dedicated; 2024), published by the Ministry of Livestock, Agriculture and Fisheries in December 2024.[57] The strategy sets a horizon to 2050. Its vision is for the country to consolidate a diversified productive base through the sustainable, efficient and innovative use of its biological and natural resources, and to strengthen its position in international markets. The ENBS is built around four strategic axes, namely sustainable production and consumption, international insertion based on environmental value added, science, technology and innovation for the bioeconomy, and inclusive territorial development. It was prepared with support from FAO and through a broad inter-institutional working group that brought together several ministries, the university system and research agencies. The strategy sits within a wider agricultural planning framework known as SENDA, and it identifies six productive complexes, namely food and beverages, forest resources, chemistry and pharmaceuticals, aquatic biological resources, the valorization of waste and by-products, and bioinputs.

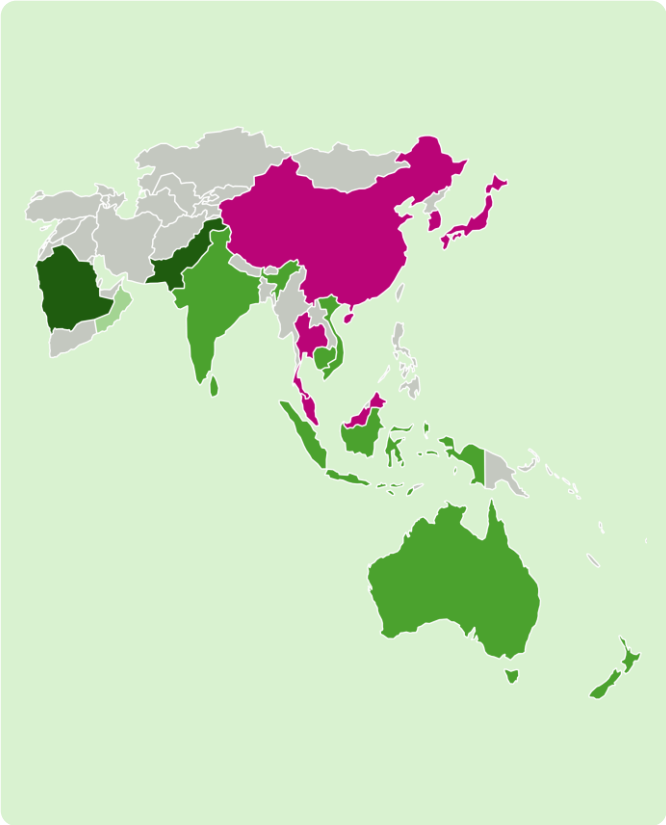
Further trends. Uruguay has moved quickly from strategy to implementation. The ministry prepared an Action Plan for the Sustainable Bioeconomy for 2024–2026, again with FAO support, which sets out twelve priority actions. In February 2025 the government approved the **National Bioinputs Plan** by decree, giving effect to a 2023 law that declared the use of bioinputs in agriculture to be of national interest.[58] The plan runs to 2029 and is organized around four strategic axes that cover research and innovation, regulatory capacity, information and knowledge management, and financing tools. It aims to expand the supply and use of biological inputs, to strengthen local research and registration, and to reduce dependence on imported inputs, and it was developed with FAO, the Inter-American Development Bank and the Uruguayan-German Agricultural Dialogue. Uruguay also continues to serve as a pilot case for FAO work on measuring the sustainability of the bioeconomy. Together these steps give the strategy an unusually concrete implementation base for a country of Uruguay's size.

[57] Ministerio de Ganadería, Agricultura y Pesca (MGAP). (2024). *Estrategia Nacional de Bioeconomía Sostenible (ENBS)*. Available at https://www.gub.uy/ministerio-ganaderia-agricultura-pesca/comunicacion/publicaciones/estrategia-nacional-bioeconomia-sostenible [29.07.26].

[58] Poder Ejecutivo del Uruguay. (2025). *Decreto nº 042/025: Plan Nacional de Bioinsumos 2025–2029*. Available at https://www.gub.uy/presidencia/institucional/normativa/decreto-n-42025-se-aprueba-plan-nacional-bioinsumos-del-mgap [29.07.26].

State of Regional Bioeconomy Policies of

Asia Pacific & the Middle East



7
dedicated strategies adopted, plus 1 in preparation

44
bioeconomy-related strategies adopted, plus 7 in preparation

5 2023: 5
countries and macro-regions with an adopted dedicated strategy

16 2023: 13
countries and macro-regions with an adopted dedicated or related strategy

Strategy status 2026

DEDICATED STRATEGY

- **Adopted before 2024 (5):** China, Japan, Malaysia, South Korea, Thailand
- **In preparation (1):** Thailand

BIOECONOMY-RELATED STRATEGY

- **New, 2024–2026 (6):** Australia, India, Pakistan, Saudi Arabia, Singapore, South Korea
- **Adopted before 2024 (13):** ASEAN, Australia, Cambodia, China, India, Indonesia, Japan, Malaysia, New Zealand, South Korea, Sri Lanka, Thailand, Vietnam
- **In preparation (4):** Australia, New Zealand, Oman, Pacific Community (SPC)

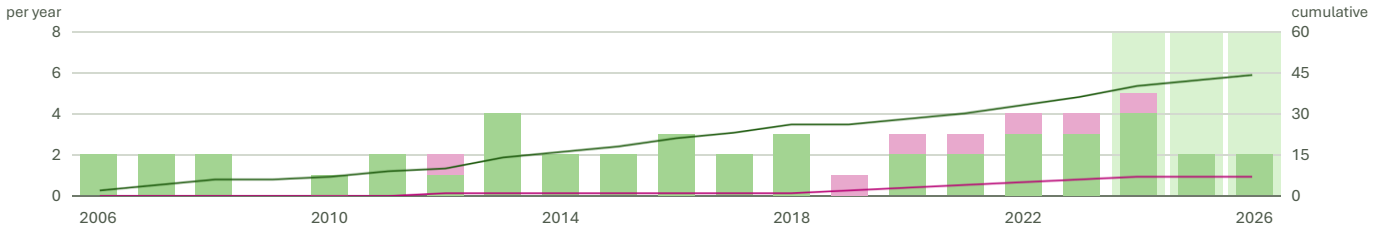
OTHER

- **No strategy recorded**

Strategies adopted over time

Dedicated per year · Related per year · Dedicated, cumulative · Related, cumulative

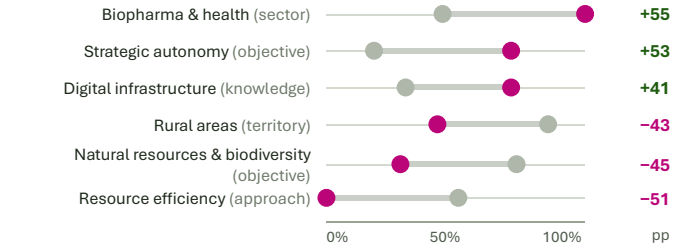
By year of adoption; 9 strategies adopted since January 2024 (shaded)



Largest differences from all strategies

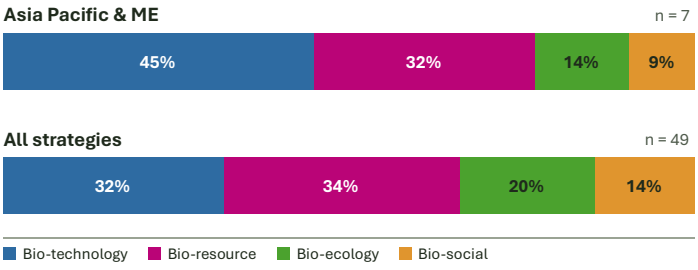
Share of strategies rating the topic high or true

Asia Pacific & ME · All 49



Bioeconomy visions

Average weight of each vision per strategy



Key Takeaways

Biotechnology dominates the region's bioeconomy policies.

Biomanufacturing emerged as a main policy focus in multiple countries.

The region saw unusually developed bioeconomy strategies at the subnational level.

Sources: IACGB database of global bioeconomy policies (closed 15 October 2026; 2026 is a partial year); BPAF content analysis (7 of 49 strategies from this region). National and macro-regional strategies; sub-national and out-of-scope entries excluded. pp = percentage points.

Asia-Pacific and the Middle East

Regional developments up to 2024. The Asia-Pacific region was an early adopter of bioeconomy policy, primarily focusing on bioeconomy-related strategies while a few countries introduced dedicated bioeconomy strategies. Conversely, the Middle East exhibited minimal policy activity in this domain.

Prior to 2024, **China, Japan, Malaysia, South Korea** and **Thailand** officially adopted dedicated bioeconomy policies at the national level, whereas **Australia** saw various dedicated strategies emerge at the subnational level for Queensland and South Australia.

Bioeconomy-related strategies were widely pursued across all levels—regional, national and subnational. At the regional level, the Association of Southeast Asian Nations (ASEAN) published a framework for circular economy for the ASEAN Economic Community in 2021, supporting green transformation and bioeconomy development among the member states.[59] At the national level, **Australia, Cambodia, China, India, Indonesia, Japan, Malaysia, New Zealand, South Korea, Sri Lanka** and **Thailand** had either prepared or implemented bioeconomy-related strategies. **India** was active at the subnational level, where at least four states, Karnataka, Maharashtra, Tamil Nadu and Andhra Pradesh, adopted biotechnology policies of their own.

Science and technology were the primary focus of the bioeconomy policies in the region. Additionally, bioenergy played an important role in the strategies of India, Indonesia, New Zealand and Australia's Queensland. Other related aspects were reflected in the blue economy and agriculture policies in Indonesia, agritech and primary sector strategies in New Zealand, bioindustry strategy in South Korea and green growth plan in Cambodia.

Regional developments since 2024. Most of the policies in the region since 2024 have been bioeconomy-related strategies. Building on the momentum of the previous period, biotechnology continues to be the focus of these policies, with additional highlights in agricultural technology, blue economy, and bioenergy. Biomanufacturing has emerged as a new policy focus across several countries, including China, Japan, South Korea, Singapore and Saudi Arabia.

Regarding dedicated bioeconomy policies, two countries advanced their frameworks and a regional initiative marked a promising step forward. Five years after launching its Bio-Strategy in 2019, **Japan** updated this national strategy in 2024 and renamed it the Bioeconomy Strategy. **India's Tamil Nadu** published a vision for a dedicated subnational strategy in 2026. The Food and

[59] Association of Southeast Asian Nations (ASEAN). (2021). Framework for Circular Economy for the ASEAN Economic Community. Available at https://asean.org/wp-content/uploads/2021/10/Framework-for-Circular-Economy-for-the-AEC_Final.pdf [12.08.26]

Agriculture Organization of the United Nations (FAO) held the first Bioeconomy Innovations and Investments Forum in Bangkok in November 2025, attracting nearly 600 participants. The FAO treats bioeconomy as a Programme Priority Area under its Strategic Framework 2022 to 2031.[60] The forum called for establishing an Asia-Pacific node of the FAO-led Bioeconomy for Sustainable Transformation (BEST) partnership, for stronger vertical and horizontal integration and for shared evidence of commercial viability.

In contrast to positive regional trends, **New Zealand** saw a retreat from its bioeconomy commitments. Following the 2023 general election, the newly formed National-led coalition government officially defunded the programmes developing the national circular economy and bioeconomy strategy. The original strategy was abandoned as part of a wider political pivot away from environmental regulations and state-funded sustainability mandates. Concurrently, as part of broader science-sector reforms, the government merged four Crown Research Institutes (AgResearch, Landcare Research, Plant & Food Research, Scion) into a new Bioeconomy Science Institute in July 2025. However, the newly established institute subsequently cut 134 jobs shortly after its formation.

Among bioeconomy-related strategies, new initiatives continue to emerge across all geographical levels. **South Korea** passed two acts, one on the green bio industry in 2024 and one on synthetic biology in 2025, and adopted its Advanced Biotechnology Initiative in 2024. **India** approved the BioE3 (Biotechnology for Economy, Environment and Employment) Policy in August 2024 and began establishing biofoundries under its framework. In June 2026, **Pakistan** formally approved its National Agricultural Biotechnology Policy (NABP) 2025. In August 2026, **Australia** adopted the National Bioenergy Feedstock Strategy. **Saudi Arabia** launched its National Biotechnology Strategy in 2024, seeking to become a global leader in biotechnology by 2040. Alongside these major policies, strategic initiatives in Indonesia and Vietnam emphasised the need to expand biofuels to ensure energy security and replace fossil fuels. Additionally, Singapore focused on biomanufacturing in its Research, Innovation and Enterprise 2030 Plan (RIE2030). At the subnational level, **Indian state of Telangana** developed the Telangana Life Sciences Vision 2030 in 2024.

Regional cooperation also deepened during this period. At the 52nd Pacific Islands Forum in 2023, the **Pacific Community (SPC)** formally endorsed the voluntary regional commitment "Unlocking

[60] FAO. (2025). Strengthening bioeconomy momentum through innovation and investment in Asia and the Pacific. Available at https://www.fao.org/asiapacific/news/news-detail/strengthening-bioeconomy-momentum-through-innovation-and-investment-in-asia-and-the-pacific/en [20.08.26]

Blue Pacific Prosperity," aiming to sustainably manage and protect the region's ocean territory.[61] In October 2024, a consultation version of the strategy was published, highlighting its goals, operating framework and timeline. Additionally, a ministerial meeting at the High-Level 12th Regional 3R and Circular Economy Forum in Jaipur in March 2025 adopted the Jaipur Declaration on 3R and Circular Economy for 2025 to 2035. Under the declaration's second goal, the bioeconomy is highlighted as a mechanism to maximise the utilisation of biomass, including agricultural waste.[62] Furthermore, the tenth goal incorporates nature-based solutions to strengthen regional resilience.

Key regional dynamics

Biomanufacturing as a main policy focus in multiple countries. China's elevation of biomanufacturing within its bioeconomy policy system is the clearest case: building on the previous Five Year Plan for Bioeconomy Development, a separate specialised Five Year Plan for Biomanufacturing is under preparation. China is competing directly with the US in biomanufacturing, and its bio-fermentation products account for over 70% of global output. Japan designated biomanufacturing as a key market area in its latest bioeconomy policy. Its scope spans biochemicals, textiles, fragrances and cosmetics, biofuels, agricultural chemicals and fertilisers, food, novel enzymes, biofoundries, organic waste and wastewater treatment, and measuring and analytical instruments. India and South Korea are establishing biomanufacturing facilities to create an enabling environment for biotechnology research and development, and startups. Meanwhile, Singapore aims to become a global biomanufacturing hub within the healthcare sector according to its RIE2030 plan. Similarly, Saudi Arabia focuses biomanufacturing on the end-to-end medical production of biologics and biosimilars. Although national approaches and scopes vary, biomanufacturing has emerged as a central theme across recent regional policy updates.

A developed subnational layer. Territorial instruments are more advanced than in any other region outside Europe. Japan certifies biocommunities through an open application program managed by the Cabinet Office, having designated two global and seven regional biocommunities. South Korea plans to pursue a similar strategy with the concept of green bio industry promotion districts. In China, more than 20 provincial-level administrations have launched their own biomanufacturing support measures,

[61] SPREP. (2025, June 10). Available at https://www.sprep.org/news/pacific-countries-lament-bitter-paradox-in-ocean-action-financing-at-unoc3 [18.08.26]

[62] United Nations Centre for Regional Development. (2025). Jaipur Declaration on 3R and Circular Economy: Sustainable 3R and Circular Economy Goals for Achieving Resource Efficient, Clean, Resilient, Sound Material Cycle and Low-Carbon Society in Asia and the Pacific (2025-2035). Available at https://uncrd.un.org/sites/default/files/jaipur-3r-ce-declaration-2025-2035_final.pdf [20.08.26]

including research funding and dedicated industrial parks. In India, the state of Tamil Nadu is preparing a bioeconomy vision featuring its own targets and governance architecture, supplementing existing biotechnology policies in at least five states as of 2024. Finally, Queensland has refocused its policy to support biofuels industry development.

Strategies in preparation

China. The Ministry of Industry and Information Technology (MIIT) in China announced in December 2025 that it will formulate and release a 15th Five-Year biomanufacturing development plan.[63] By 2025, China's biomanufacturing sector had reached the scale of 1.1 trillion yuan (approx. USD 163.6 billion), with bio-fermentation products accounting for over 70% of the global output.

As reported by domestic media based on statements from MIIT officials, the upcoming plan is expected to cover priorities including flagship products, typical AI application cases, pilot platforms for biomanufacturing, and high-performance bioreactor demonstrations. These stated priorities aim to drive biomanufacturing into a new development phase, including strengthening scientific research and innovation breakthroughs, advancing coordinated development of industry, academia, research institutes, end-users, and finance, consolidating the industrial foundation and expanding applied product portfolios. MIIT has indicated it will cooperate with the Chinese Academy of Sciences and other departments on R&D of high-performance bioreactors to improve key-equipment integration and production efficiency. Moreover, biomanufacturing was listed as one of the future industries that foster economic growth in the 15th Five-Year Plan for National Economic and Social Development, published in March 2026.

Oman. According to domestic media, the government of Oman is developing a National Biotechnology Strategy. In July 2026, the responsible committee convened an expanded ministerial meeting with stakeholders across the biotechnology sector to discuss the final draft of the strategy. Upon completion, it will be submitted to the Council of Ministers for approval. The strategy prioritises several pillars of the biotechnology sector—namely red, green, and white biotechnology. Furthermore, an action plan for the next phase was formulated. The preliminary feasibility studies for 12 short-term investment opportunities in biotechnology are in preparation. The government wants to implement these projects within the 11th Five-Year Development Plan.

[63] Qian, G. (2025). 工信部将编制发布“十五五”生物制造发展规划 [The Ministry of Industry and Information Technology will formulate and release the "15th Five-Year" biomanufacturing development plan]. Xinhua News Agency. Available at https://www.news.cn/tech/20251219/55ec48807c39490087bfbf65da5a19cc/c.html [25.08.26]

Pacific Community (SPC). Following a conceptual endorsement in 2023, the Pacific Islands Countries have been working on the Unlocking Blue Pacific Prosperity (UBPP) strategy to mobilise financial resources to protect, restore and rejuvenate the region's ecosystems, foster Pacific peoples' prosperity, and empower communities. UBPP aims to establish sustainable ocean management across 100% of the Blue Pacific Continent and protect 30% of the region's ocean. Among the three goals of its implementation framework, Goal 2 emphasises nature-based solutions as a means to achieve a secured and resilient food production. UBPP will be anchored on ecosystem-based approaches to fisheries and agriculture. The promotion of habitat restoration, non-destructive fishing practices, traditional forms of fisheries effort management, organic and regenerative farming practices are among the activities that UBPP will prioritise. Value chain stakeholders for fisheries and farming will be consulted for further input to determine the scope and level of prioritisation.[64]

Policy changes at national level

Japan

State up to 2024. According to the Global Bioeconomy Policy Report IV (2020)[65], Japan developed its bioeconomy policy gradually through biomass and biotechnology strategies before adopting the term "bioeconomy." The Biomass Nippon Strategy (launched in 2002, revised in 2006) promoted efficient biomass use, bioenergy, and "Biomass Towns" (comprehensive biomass-utilising communities), a scheme joined by 318 municipalities between 2005 and 2011. The country's biotechnology policy advanced via the Biotechnology Strategy Council (2002) and the "Dream BT Japan" strategy (2008), with genome-editing rules following in 2019. The Basic Act for the Promotion of Biomass Utilization (2009) and the National Plan for the Promotion of Biomass Utilization (2010) set overarching principles, stakeholder responsibilities, core measures, and quantitative targets. The "Biomass Towns" concept later evolved into the Biomass Commercialization and Industrialization Strategy (2012) and the Biomass Industrial City scheme (2013), expanding to 90 cities by 2020.

Other supporting measures included science and technology innovation strategies, legislation, eco-labelling, financial incentives, green public procurement, and the 2012–2020 National Biodiversity Strategy, which

[64] Pacific Community. (2024). Unlocking Blue Pacific Prosperity. Pacific Community. Available at https://www.spc.int/DigitalLibrary/Doc/SPC/Publications/UBPP_DRAFT_DESIGN_DOC_Discussion_document.pdf [19.08.26]

[65] The International Advisory Council on Global Bioeconomy. (2020). Global Bioeconomy Policy Report (IV): A decade of bioeconomy policy development around the world. Available at https://www.iacgb.net/lw_resource/datapool/systemfiles/elements/files/ba1c20e8-ed5d-11f0-be1d-dead53a91d31/current/document/GBS-2020_Global-Bioeconomy-Policy-Report_IV_web.pdf [20.08.26]

emphasised traditionally managed regions. Private industry also contributed, notably through the Japan Bioindustry Association's 2016 Vision Document.

Additionally, Japan has taken an active role in addressing marine plastic waste. At the 2019 G20 summit, Japan proposed the "Osaka Blue Ocean Vision"[66]—which aims to reduce additional pollution from marine plastic waste to zero by 2050—and announced the "MARINE Initiative"[67] to call on other nations to join the initiative. In addition, Japan formulated a "Roadmap for the Introduction of Bioplastics"[68] and further strengthened its "3R" (Reduce, Reuse, Recycle) initiatives.

In June 2019, Japan adopted its first dedicated bioeconomy strategy—the Bio-Strategy. This comprehensive framework places strong emphasis on high-tech sectors and links the bioeconomy with digitalisation, AI, and robotics, making it one of the most integrated national strategies of its kind globally. Furthermore, in 2020, the strategy was revised to incorporate key measures that required urgent actions, considering the impact of the infectious disease outbreak (COVID-19).

New policies since 2024. Following multiple revisions, the Bio-Strategy was ultimately updated and renamed the “Bioeconomy Strategy” in June 2024, consolidating the earlier nine market areas into the following five:

- Biomanufacturing and bio-derived products
- Sustainable primary production systems
- Large-scale buildings utilising wood and smart forestry
- Industries related to biopharmaceuticals, regenerative medicine, and cell and gene therapies
- Lifestyle improvement, healthcare and digital health

Each area carries a 2030 market-size target, a set of related indicators and directions for future efforts. Japan aims to achieve these targets through the following measures:

- **Enhance research capabilities in basic life sciences:** Building talent pipelines, revitalizing fundamental organismal research, and upgrading core infrastructure (databases, bioresources, and biobanks).
- **Empower biocommunities:** Connecting regional communities together in a network by using international hubs as cores; combining world-class research environments and commercialisation support systems; promoting international cooperation, fusion of different

[66] Ministry of Foreign Affairs of Japan. (n.d.). Available at https://www.mofa.go.jp/policy/economy/g20_summit/osaka19/en/summit/theme/ [01.10.26]

[67] Ministry of Foreign Affairs of Japan. (n.d.). Available at https://www.mofa.go.jp/ic/ge/page25e_000317.html [01.10.26]

[68] Ministry of the Environment, Government of Japan. (n.d.). Available at https://www.env.go.jp/recycle/roadmap_for_bioplastics_introduction.html [01.10.26]

fields, and open innovation as key values; and developing systems that can invite human resources and investments from within and outside Japan.

- **Develop data infrastructures:** Commercialisation of area-specific services based on microorganism/cell design platform technologies, integration and analysis of genome and health data, and scientific evidence; and leveraging the existing research data infrastructure, related policy frameworks, and national project initiatives.
- **Promote economic security:** Securing appropriate biological risk control systems; exploring cooperative areas with like-minded countries; promoting inter-business cooperation; visualizing important technologies and their players and supply chains; and promoting R&D serving both public and private use.

The strategy is promoted in coordination with efforts in AI, quantum, and other fields under the command of the Secretariat of Science, Technology and Innovation Policy, Cabinet Office.[69]

To translate policies into action, support is being provided to establish both global and regional biocommunities. While the global biocommunities lead the world in biotechnology, the regional ones work in this field by taking advantage of their regional characteristics. With the recent certification of the Tokai Bio-community in 2026, a total of seven regional biocommunities and two global ones have now been established. Efforts are underway to promote the bioeconomy by fostering global collaboration and leveraging the unique characteristics of each region.

Further trends. In July 2026, following deliberations by the Council for Japan's Growth Strategy, the Cabinet under Prime Minister Takaichi adopted Japan's Growth Strategy, covering 17 strategic fields, including those relevant to the bioeconomy. On the same day, public-private investment roadmaps for major products and technologies across the 17 fields were adopted by the Headquarters for Japan's Growth Strategy.[70] Three of these 17 fields are related to the bioeconomy, with accumulative public

[69] Japan's Cabinet Office. (2024). Bioeconomy Strategy. Available at https://www8.cao.go.jp/cstp/bio/bio_economy_en.pdf [20.08.26]

[70] Council for Japan's Growth Strategy. (2026). 戦略17分野における「主要な製品・技術等」の官民投資ロードマップ [Public-Private Investment Roadmap for "Key Products, Technologies, etc." in 17 Strategic Fields]. Available at https://www.cas.go.jp/jp/seisaku/nipponseichosenryaku/pdf/rm2026.pdf [01.10.26]

and private investment targets through fiscal year 2040 as follows:[71]

- Synthetic biology and biotechnology: ¥33.6 trillion (USD 211.6 billion)
- Drug discovery and advanced medical care: ¥64.1 trillion (USD 403.7 billion)
- Food tech: ¥9.7 trillion (USD 61.1 billion)

South Korea

State up to 2024. South Korea has implemented biotechnology promotion plans since the 1990s. Notable policies include the second Framework Plan and Bio-Vision 2016 in 2006, the 2020 Vision and Strategy for the Bio-Industry in 2007, the Blue-Bio plan in 2008 and the successive Basic Plans for Science and Technology, most recently the fifth for 2023 to 2027. The country is considered a leader in marine biotechnology policy in the Asia-Pacific region. Advanced biotechnology was designated one of the game-changing technologies alongside artificial intelligence chips and quantum science. Synthetic biology was named a national strategic technology in December 2023. What the country lacked was a legal framework to promote it. Apart from those bioeconomy-related strategies, South Korea officially announced the “Bioeconomy 2.0 Promotion Direction” to overcome slow growth and climate change in 2023, marking the country’s first step into a bioeconomy-dedicated strategy. At the same time, it launched a public-private "Bio Economy Alliance".

New policies since 2024. Three key instruments established the legislative foundation needed to implement the nation's biotechnology development vision.

First, the Green-Bio Industry Promotion Act (Act No. 19874) was promulgated on January 2, 2024, and entered into force on January 3, 2025. The Act facilitates the application of biotechnology to agricultural bioresources and covers, among other sectors, seeds, agricultural microorganisms, insects, natural substances, and processed food ingredients.[72]

The key policy mechanisms are as follows:

- **Master and action plans:** The Minister of Agriculture, Food and Rural Affairs (MAFRA) will formulate five-year master plans and annual action plans, covering R&D, venture/startup support, data utilisation, expert training, and industry-agriculture linkages, in consultation with relevant ministries.
- **Enterprise registration:** Businesses must register as "green-

[71] Council for Japan's Growth Strategy. (2026). 戦略17分野の「主要な製品・技術等」における官民投資額 [Public and private investment amounts in "key products, technologies, etc." across the 17 strategic fields]. Available at https://www.cas.go.jp/jp/seisaku/nipponseichosenryaku/kaigi/dai5/shiryou1.pdf [20.08.26]

[72] Ministry of Agriculture, Food and Rural Affairs. (2024). 그린바이오산업 육성에 관한 법률 [The Green-Bio Industry Promotion Act]. Available at https://perma.cc/T2Q6-PZ6X [25.08.26]

bio enterprises" (renewable every three years) to access government support.

- **Implementation bodies:** MAFRA will designate dedicated institutions to implement the Act and build human resource capacity.
- **Technology promotion:** Government bodies will actively advance R&D and green-bio technology development.
- **Startup support:** Funding, facility leasing, product demonstration, sales-channel assistance, and consulting services are provided for green-bio startups and ventures
- **Data infrastructure:** Projects will be implemented to facilitate the generation and utilisation of data related to the green-bio industry, such as genetic information on agricultural bio-resources
- **Preferential procurement:** The State and local governments shall endeavour to preferentially purchase green-bioproducts
- **Promotion districts:** Upon application by provincial governors or city mayors, MAFRA can designate green bio industry promotion districts, support advanced facilities within them and spread it on a subnational basis

Second, the Advanced Biotechnology Initiative was formally adopted in April 2024 and organises the field around the fusion of biotechnology with digital technology, biomanufacturing innovation and a pre-emptive legal and regulatory base. It seeks to position South Korea as a global leader in biotechnology by 2035. The policy identifies four technological innovation missions:[73]

- Leading the bio transformation by fostering digital bio as a core sector, leveraging AI and data technologies to overcome traditional R&D limitations.
- Enhancing the competitiveness of bio-based materials and manufacturing industries, addressing supply chain and security issues.
- Ensuring a healthy life for citizens through advanced bio-medical technologies, including precision medicine and digital healthcare solutions.
- Contributing to solving global challenges such as climate change, food security, and infectious diseases through advanced biotechnology.

Finally, the Synthetic Biology Promotion Act was passed during the National Assembly's plenary session in April 2025 and came into force one year after the

[73] Government of the Republic of Korea, relevant ministries. (2024). 첨단바이오 이니셔티브(안): 2035 글로벌 바이오 강국 도약 [Advanced Bio Initiative (Draft): Leap to Become a Global Bio Powerhouse by 2035]. Available at https://pacst.go.kr/jsp/initiative/bio_initiative_intro.pdf [25.08.26]

approval. The Act was developed through expert consultations and public feedback beginning in 2022. It aims to promote research and development in synthetic biology at a national level, establish a legal framework for responsible technology development, enhance societal understanding, and build consensus through four key provisions as follows:[74]

- **Establishing a national framework for synthetic biology development:** A Synthetic Biology Promotion Basic Plan is formulated every five years by the Ministry of Science and ICT (MSIT) and specialised institutions.
- **Promoting research and development:** R&D hub institutions are designated to drive innovation, facilitate technological adoption, and strengthen collaboration among academia, industry, and research institutes.
- **Building research infrastructure:** The government may establish and operate core infrastructure for synthetic biology R&D and application, such as biomanufacturing facilities ("biofoundries"), and establish enabling policies to promote international cooperation and human resource capacity.
- **Responsible management:** MSIT will formulate guidelines, operate a safety management system and enhance public engagement to address the uncertainties that may arise from advances in synthetic biology.

Further trends. Governance was elevated to the highest level with the launch of the National Bio Committee in January 2025. Chaired by the President, the committee is mandated to integrate policies previously managed separately across health, food, resources, energy, and the environment, aiming for global bio leadership by 2035. This central body is intended to reduce redundancy, streamline decision-making, and accelerate biotechnology innovation. The initiative seeks to unify national efforts behind a shift toward a bioeconomy, ultimately strengthening Korea's standing in the global market.

India

State up to 2024. India built its position through a long series of bioeconomy-related instruments rather than a dedicated strategy. The National Biotechnology Development Strategy first appeared in 2007 and was renewed twice, in 2015 and 2021, setting out the vision for India to be recognised as a Global Biomanufacturing Hub by 2025, with the sector growing exponentially to reach a growth

[74] Ministry of Science and ICT. (2025). Establishing a Foundation to Lead the Bioeconomy: Enactment of the "Synthetic Biology Promotion Act". Available at https://www.msit.go.kr/eng/bbs/view.do?sCode=eng&mId=4&mPid=2&pageIndex=&bbsSeqNo=42&nttSeqNo=1099&searchOpt=ALL&searchTxt= [25.08.26]

of USD 150 billion. The National Policy on Biofuels was adopted for the first time in 2009 and later amended in 2018 and 2022. Together, they set the ethanol blending trajectory of the country. The policies aim to utilise, develop, and promote domestic feedstock for biofuel production, substituting fossil fuels while contributing to national energy security and climate change mitigation. By 2024, India's bioeconomy had expanded roughly sixteen-fold from USD 10 billion in 2014.

New policy since 2024. The BioE3 Policy was approved by the Union Cabinet in August 2024. It is a framework rather than a sectoral plan, and sets out to knit fragmented activity together under the single heading of biomanufacturing.

Six thematic verticals carry the substance, covering bio-based chemicals and enzymes, functional foods and smart proteins, precision biotherapeutics, climate-resilient agriculture, carbon capture and utilisation, and marine and space research. Beneath them sit the cross-cutting Bio-Enablers, in two forms. Bio-AI hubs bring computational and biological disciplines together for discovery research, and biomanufacturing hubs provide shared pilot and pre-commercial facilities for start-ups, small firms, industry and academia. Two further components address the conditions rather than the science, namely regulatory reform harmonised with global standards and a data governance framework intended to keep discoveries openly available while protecting intellectual property. Implementation runs through a public-private co-creation model that combines expertise in academia, startups, and industry, supported by inter-ministerial coordination.[75]

Further trends. BioE3 has moved quickly from a paper framework to measurable activities. A first call for biofoundry and biomanufacturing hub proposals was released in October 2024 and drew 253 submissions. A second call ran from May to July 2025 and attracted 213 proposals, of which 24 were recommended for further consideration. A separate call for Bio-AI hubs in April 2025 attracted 284 letters of intent, 16 of which were shortlisted, and a rolling call opened from November 2025 to June 2026. Roughly 40% of the selected Bio-AI proposals are led by start-ups or private industry. The first national biofoundry network was launched in August 2025, together with a BioE3 Challenge for Youth, and a High-Performance Biomanufacturing Platform followed in September 2025. Twenty-one advanced bio-enabler facilities have been established.

Broader data provides context for the policy. India's bioeconomy reached USD 165.7 billion in 2024, about 4.25% of gross domestic product, and USD 195.3 billion in 2025, an annual growth rate of roughly 18%, against a stated target of

[75] Department of Biotechnology, Ministry of Science and Technology, Government of India. (2024). BioE3 Policy. Available at https://bmi.dbt.gov.in/pdf/folder.pdf [25.08.26]

USD 300 billion by 2030. The bio-industrial segment accounts for close to half of the total. India also reached 20% ethanol blending in 2025, five years ahead of its own target.

Pakistan

Pakistan is a newcomer to bioeconomy policy. In June 2026, the federal government approved implementation of the National Agricultural Biotechnology Policy (NABP-2025), marking the country's first step toward a bioeconomy agenda. Although earlier policies mentioned agricultural biotechnology in general terms, NABP-2025 represents the first consensus-driven effort to establish a national roadmap for harnessing modern biotechnology. It sets out a mission to make Pakistan self-sufficient, protected against the risks of biotech products, and globally competitive in agricultural biotechnology research, innovation, entrepreneurship, and industrial growth. Despite lacking a detailed implementation plan, the policy demonstrates Pakistan's unified direction toward advanced biotechnology development.

The policy covers seven key areas: plant tissue culture, biofertilisers and biopesticides, genetically modified crops, gene editing, plant genomics, import and export of genetically modified products, and animal biotechnology. Each area includes a set of target policy measures. Additionally, a socioeconomic impact assessment framework is in place to ensure that technological advancements yield tangible, inclusive, and measurable benefits for society while promoting environmental sustainability, economic viability, and public accountability.[76]

Australia

Before 2024, Australia had either prepared or adopted several bioeconomy-related strategies, primarily in R&D and marine science. In August 2026, the Australian Government released the National Bioenergy Feedstock Strategy[77]. It establishes a collaborative, national framework for governments, industry and supply chains to build a competitive, scalable, sustainable, and internationally connected Australian feedstock industry.

The strategy focuses on the following five key priority areas:

- **Data to underpin investment**: Improve the quality, consistency and accessibility of feedstock data to move from theoretical potential to investment ready intelligence.
- **Innovation**: Accelerate research, development and demonstration to improve productivity and bring feedstocks to commercial readiness.
- **Regional supply chain development**: Support regionally tailored

[76] Ministry of National Food Security and Research, Government of Pakistan. (2025). National Agricultural Biotechnology Policy (NABP)-2025. Available at https://mnfsr.gov.pk/SiteImage/Publication/NA%20BiotechPolicy2025.pdf [25.08.26]

[77] Australian Government, Department of Agriculture, Fisheries and Forestry. (n.d.). National Bioenergy Feedstock Strategy. Available at https://www.agriculture.gov.au/agriculture-land/farm-food-drought/climatechange/bioenergy-feedstocks [01.10.26]

approaches aligning production with infrastructure, logistics and community priorities.

- **Sustainability & certification**: Strengthen emissions accounting and certification frameworks to ensure international credibility and market confidence.
- **Capacity building**: Enhance coordination, skills, workforce planning and policy alignment across the supply chain to enable confident participation in new markets.

Saudi Arabia

Before 2024, there were no notable policies relating to bioeconomy in Saudi Arabia. In January 2024, the country launched a policy titled "The National Biotechnology Strategy", marking its first bioeconomy-related instrument. The strategy focuses on enhancing health and well-being, stimulating economic growth, creating skilled job opportunities, and attracting investments to foster new industries while promoting a sustainable environment and contributing to the country's 2030 vision.[78]

The country aspires to become the leading biotech hub in the Middle East and North Africa (MENA) region by 2030 and globally by 2040. Additionally, biotech is expected to contribute over USD 34.6 billion to the non-oil GDP by 2040, representing 3% of the total. The plan targets to create 11,000 job opportunities by 2030 and 55,000 by 2040.

Four pillars of the strategy are vaccines (both R&D and manufacturing), biomanufacturing and localisation, genomics and plant optimisation. While the first three pillars strongly promote healthcare and medicine development, the fourth pillar aims to establish and secure a sustainable food supply, enhance self-sufficiency in food production and empower the Saudi Green Initiative.

Following the launch of the strategy, the country actively participated in the BIO International Convention 2025, held in Boston, USA, the world's largest biotechnology gathering. At that same event, Saudi Arabia strengthened its global partnerships and manufacturing by signing more than 17 memoranda of understanding and cooperation agreements with international entities, covering CRISPR, gene therapies, and biologics.

[78] Kingdom of Saudi Arabia. (2024). The National Biotechnology Strategy. Available at https://www.vision2030.gov.sa/media/5hqj4m1t/national-biotech-strategy-en.pdf [19.08.26]

State of Regional Bioeconomy Policies of

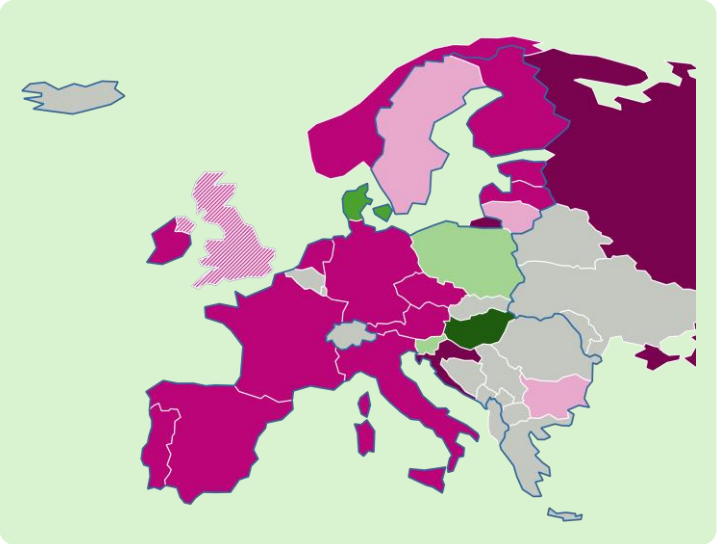
Europe

29
dedicated strategies adopted, plus 7 in preparation

18
bioeconomy-related strategies adopted, plus 4 in preparation

17 2023: 15
countries and macro-regions with an adopted dedicated strategy

21 2023: 20
countries and macro-regions with an adopted dedicated or related strategy



Strategy status 2026

DEDICATED STRATEGY

- **New, 2024–2026 (4):** Croatia, European Union, Italy, Russia
- **Adopted before 2024 (15):** Austria, Czechia, Estonia, European Union, Finland, France, Germany, Ireland, Italy, Latvia, Netherlands, Nordic Countries, Norway, Portugal, Spain
- **In preparation (6):** Bulgaria, Croatia, Estonia, Ireland, Lithuania, Sweden
- **Withdrawn (1):** United Kingdom

BIOECONOMY-RELATED STRATEGY

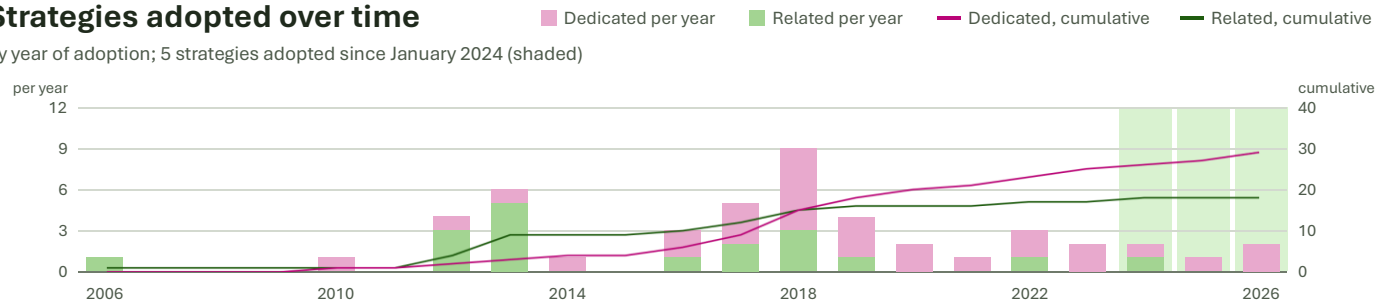
- **New, 2024–2026 (1):** Hungary
- **Adopted before 2024 (9):** Croatia, Czechia, Denmark, European Union, Lithuania, Netherlands, Portugal, Russia, Sweden
- **In preparation (4):** Netherlands, Poland, Slovenia, Sweden

OTHER

- **Cross-national strategy:** European Union
- **No strategy recorded**

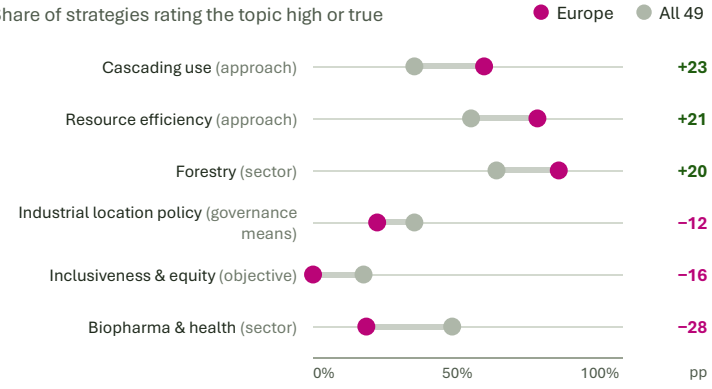
Strategies adopted over time

By year of adoption; 5 strategies adopted since January 2024 (shaded)



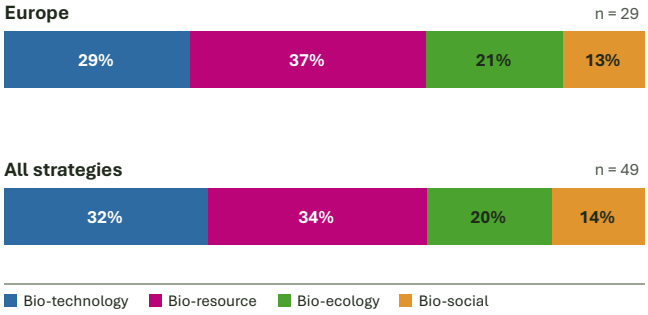
Largest differences from all strategies

Share of strategies rating the topic high or true



Bioeconomy visions

Average weight of each vision per strategy



Key Takeaways

Europe holds 29 of the 49 adopted dedicated strategies.

Croatia adopted its first dedicated strategy in July 2026, Russia a new one in 2026; Ireland is preparing a new national strategy.

The sub-national layer is growing: 17 regional strategies adopted, most recently North Rhine-Westphalia (2026) and Catalonia (2025).

Sources: IACGB database of global bioeconomy policies (closed 15 October 2026; 2026 is a partial year); BPAF content analysis (29 of 49 strategies from this region). National and macro-regional strategies; sub-national and out-of-scope entries excluded. pp = percentage points.

Europe

Regional developments up to 2024. Europe entered the 2020s with the world's densest layer of bioeconomy policy, and the European Union set the direction early. The Commission put the Knowledge-Based Bio-Economy on the European agenda in 2005, at a Brussels conference held with the United Kingdom's Council Presidency that drew about 400 participants from 40 countries. That agenda gave the field its first European label and, through the Seventh Framework Programme, its first dedicated funding line, and the developments that followed in Europe and beyond would be hard to imagine without it. The 2012 strategy *Innovating for Sustainable Growth: A Bioeconomy for Europe* was research-centered and framed around five societal objectives, namely ensuring food security, managing natural resources sustainably, reducing dependence on non-renewable resources, mitigating and adapting to climate change, and strengthening European competitiveness and jobs. The 2018 update *A Sustainable Bioeconomy for Europe* placed sustainability, circularity, and systems thinking at the core, and a 2022 stocktaking report already pointed toward a stronger focus on competitiveness.[79] The 2018 update also led to the European Bioeconomy Policy Forum, launched in November 2020, which connected national administrations and promoted cooperation on bioeconomy priorities across the 27 Member States until the end of 2025. Germany was an early mover, with a national research strategy in 2010, a policy strategy in 2013, and a national strategy in 2020. Finland followed in 2014 and updated its strategy in 2022, and further strategies came from Spain (2016), Norway (2016), Italy (BIT 2017, BIT II 2019), Latvia (2017), France (2017/2018), Ireland (2018 policy statement, 2023–2025 action plan), Austria (2019), Portugal (2021), and Estonia (2023). Macro-regional coordination advanced through BIOEAST in Central and Eastern Europe and the Nordic Bioeconomy Programme (2018). An increasingly active sub-national layer also emerged, including Flanders (2013), Andalusia (2018), Baden-Württemberg (2019), Castilla y León (2019), Grand Est (2019), Pays

[79] European Commission. (2012). *Innovating for Sustainable Growth: A Bioeconomy for Europe* (COM(2012) 60). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52012DC0060 [29.07.26]. European Commission. (2018). *A Sustainable Bioeconomy for Europe: Strengthening the Connection between Economy, Society and the Environment* (COM(2018) 673). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018DC0673 [29.07.26]. European Commission. (2022). *European Bioeconomy Policy: Stocktaking and Future Developments* (COM(2022) 283). Available at https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022DC0283 [29.07.26].

de la Loire (2019), Bavaria (2020), Catalonia (2021), and North Rhine-Westphalia (2023/2026).

National framings varied, though less than the debate on competing bioeconomy visions suggests. Purely sectoral definitions, which carry no sustainability qualifier, are now a minority and survive mainly in Croatia and in earlier Dutch and German documents. Most strategies define the bioeconomy either as a source of sustainable solutions, as in Germany's 2020 strategy and in Estonia, Finland, France, Ireland, Italy, Latvia, and Spain, or as a new economic paradigm, as in Austria and Portugal. A comparative assessment of the objectives set out in these strategies points the same way. A broad common core is shared across almost all of them and spans governance, natural resources and biodiversity, defossilisation and climate action, and jobs and competitiveness. What differs is what each country adds to that core. European strategies place markedly more weight on biomass management, circularity, and sustainable consumption and production than strategies elsewhere in the world, while inclusiveness and equity appear as explicit aims in only a handful of them, notably in Germany, Portugal, and Spain.[80]

Regional developments since 2024. The defining event was the adoption of the new EU Bioeconomy Strategy, *A Strategic Framework for a Competitive and Sustainable EU Bioeconomy*, on November 27, 2025. It is the flagship bioeconomy deliverable of the second von der Leyen Commission, and it mainstreams the bioeconomy further into core EU industrial, competitiveness, and sustainability policy. In doing so it operationalizes for the bio-based economy the competitiveness turn set out in the 2024 Draghi report on European competitiveness, which the Commission's Competitiveness Compass carried forward and which explicitly flagged the forthcoming bioeconomy strategy and Biotech Act as tools to reduce strategic dependencies. The EU bioeconomy is large, but the Commission argues that its competitive potential remains largely untapped. Europe is strong in bioeconomy research and patents, yet it lags in scaling up production and bringing bio-based products to market. The strategy shifts the emphasis from research toward industrial deployment, market scale-up, and the challenge of closing a looming "biomass

[80] Based on a comparative assessment of the definitions and objectives of dedicated bioeconomy strategies covering 13 EU countries including the EU itself, 9 EU regions, and 20 non-EU countries, coded against 17 focus areas. Leip, A., et al. (in preparation). *The Reconciliation of the Bioeconomy* (draft manuscript, version of 14.08.2026). See also Leip, A., & Wehrheim, P. (in preparation). *The EU Bioeconomy Strategy* (book chapter); and Wehrheim, P., Leip, A., Bell, J., & Balzi, E. (in preparation). *From Life Sciences to Bioeconomy: Conceptual Foundations of EU Bioeconomy Policy*.

gap."[81] National and sub-national activity accelerated around this EU-level reset. Croatia adopted its first dedicated strategy in July 2026. Italy updated its national action plan, the Netherlands set out a long-term biotechnology vision, and Hungary adopted a biogas and biomethane action plan. Russia launched a dedicated national bioeconomy project at the end of 2025 and has since approved a long-term bioeconomy strategy. Ireland put a draft national strategy out for public consultation, and Austria, Bulgaria, Czechia, Estonia, and Sweden are preparing new or revised instruments. Sub-national activity was equally striking, with new or updated regional strategies in Baden-Württemberg, North Rhine-Westphalia, and Catalonia.

Key regional dynamics

Renewal rather than expansion. No other world region has as many dedicated bioeconomy strategies. According to the Bioeconomy Country Dashboard of the European Commission's Joint Research Centre (JRC), twelve European countries, eleven of them in the EU-27, had a dedicated national bioeconomy strategy in September 2026, two more were developing one, and 28 further countries addressed the bioeconomy through related strategies.[82] Since 2024, however, only Croatia and Russia have adopted their first dedicated national strategies. Most activity now goes into updating, implementing, and monitoring existing frameworks. The new EU framework, Italy's updated action plan, Ireland's draft strategy, and the revision of Austria's action plan all build on earlier instruments rather than starting anew.

Competitiveness and biotechnology move to the center. The 2025 EU framework is the clearest expression of a broader turn from research toward industrial deployment, lead markets, and biomanufacturing, backed by the planned Biotech Acts. National policies point the same way. The Netherlands has set out a government-wide vision on biotechnology to 2040. Germany adopted no new bioeconomy strategy, but its *Hightech Agenda Deutschland* of July 2025 names biotechnology among six key technologies, with a focus on health and industrial applications, and no longer frames these priorities as "bioeconomy." Ireland's draft strategy links the

[81] European Commission. (2025). *A Strategic Framework for a Competitive and Sustainable EU Bioeconomy* (COM(2025) 960). Available at https://environment.ec.europa.eu/document/download/dbf8d2ba-9332-4f7a-b336-f356fa4b7236_en?filename=COM_2025_960_1_EN_ACT_part1_v10_0.pdf [29.07.26]. On the competitiveness agenda see European Commission. (2024). *The Future of European Competitiveness* (Draghi report). Available at https://commission.europa.eu/topics/competitiveness/draghi-report_en [29.07.26]; and European Commission. (2025). *A Competitiveness Compass for the EU*. Available at https://commission.europa.eu/topics/competitiveness/competitiveness-compass_en [29.07.26].

[82] European Commission, Joint Research Centre. (2026). *The Bioeconomy in Different Countries* (Bioeconomy Country Dashboard, status September 2026). Knowledge Centre for Bioeconomy. Available at https://knowledge-for-policy.ec.europa.eu/visualisation/bioeconomy-different-countries_en [13.10.26]. The dashboard counts only strategies issued or adopted by a national government.

bioeconomy to its emerging life-sciences and industrial-biotechnology agenda, and Russia's national project is built around technological sovereignty. Across these cases the bioeconomy is increasingly argued for in terms of competitiveness, security of supply, and strategic autonomy.

Biomass supply as the binding constraint. The more bio-based production is scaled up, the more pressing the question of available biomass becomes. The EU framework expects a growing "biomass gap" between rising demand and sustainably available supply, set against weakening land carbon sinks and continued biodiversity pressure. National debates mirror that tension. In Sweden and Austria, forest policy has to balance industrial wood use with carbon storage, biodiversity, and restoration requirements. Hungary's biogas plan names a sustainable feedstock base as one of its hardest questions, and Ireland's draft proposes a National Biomass Flow Account to make competing uses transparent. Strategies increasingly respond by giving material uses precedence over energy uses and by turning to residues and secondary streams.

A growing sub-national layer. Regions are increasingly where bioeconomy strategies are turned into value chains and projects. North Rhine-Westphalia adopted its first full strategy in 2026, Baden-Württemberg updated its strategy for the period 2025 to 2029, and Catalonia issued a second action plan in 2025. Estonia is preparing regional roadmaps to implement its national circular-bioeconomy vision. The chapter on Subnational Policy Trends discusses these developments in more detail.

Strategies in preparation

Several further processes are under way that had not led to an adopted instrument by the closing date of the database. Austria and Estonia are revising or implementing existing instruments, and Ireland's draft strategy is discussed under Ireland below.

Austria. Austria adopted *Bioeconomy: A Strategy for Austria* in 2019 and an *Aktionsplan für Bioökonomie* (Action Plan for the Bioeconomy) in 2022, which embedded bioeconomy research and innovation in the national RTI Strategy 2030.[83] The action plan is now under revision, and responsibility sits with the reorganized Federal Ministry of Agriculture, Forestry, Climate and Environmental Protection, Regions and Water Management (BMLUK). The revision reflects the growing strategic weight of the forest-based bioeconomy, which has become central to debates on replacing fossil-based materials through wood construction, advanced biomaterials, pulp, textiles, and biochemicals. How to balance industrial wood use with biodiversity, carbon storage, and sustainable forest management was also the central theme of a global summit on the forest-based bioeconomy that Austria hosted in

[83] Republic of Austria. (2019). *Bioeconomy: A Strategy for Austria*; and (2022). *Aktionsplan für Bioökonomie*. Available at https://www.bioeco.at/ [29.07.26].

Vienna in February 2026 in support of the United Nations Forum on Forests and the FAO.

Bulgaria. Bulgaria has no adopted national bioeconomy strategy. It has addressed the field through related instruments, among them a strategy for strengthening the role of the agricultural sector in the bioeconomy and a strategy and action plan for the transition to a circular economy for 2022 to 2027, as well as through a regional strategy for Stara Zagora. In 2025 a Bioeconomy Working Group established by the Minister of Agriculture and Food prepared a *Roadmap for the Development of the Bioeconomy in Bulgaria* within the EU-funded CEE2ACT project.[84] The roadmap is not a national strategy but a working-group perspective intended to support one. It sets a vision to 2040, identifies six priority areas that range from food and agriculture to biowaste and bio-based energy, and proposes 22 actions financed mainly through EU operational programs. It is frank about the obstacles, from political instability with several caretaker governments between 2021 and 2024 to weak interest among small and medium-sized enterprises and under-used rural biomass.

Czechia. The Czech Bioeconomy Concept for the period 2019 to 2024 has run its course. In 2025 the Ministry of Agriculture approved an evaluation report on its implementation, and according to the JRC a dedicated national bioeconomy strategy is now under development.

Estonia. Estonia adopted a national *Circular Bioeconomy Roadmap* (*Ringbiomajanduse teekaart*) in 2023, with the goal of becoming a leader in regional circular bioeconomy and progressively replacing fossil raw materials with renewable biomass. It is now preparing regional roadmaps to put this ambition into practice. A methodological framework developed in 2024 by Tallinn University for the Ministry of Regional Affairs and Agriculture guides county development centers, businesses, local governments, and community initiatives in mapping local bioresources and building such roadmaps.[85] It rests on principles of food-first resource security, self-sufficiency, local resource use, and environmental justice, and it focuses on food and organic-waste value chains and on the built environment.

Sweden. Sweden's bioeconomy is heavily forest-based and has long been supported by the National Forest Programme (2018) and a research and innovation strategy for a bio-based economy (2012). A government inquiry delivered its final report, SOU 2023:84 *En hållbar*

[84] Ministry of Agriculture and Food, Bioeconomy Working Group. (2025). *Roadmap for the Development of the Bioeconomy in Bulgaria*, prepared within the EU-funded CEE2ACT project. Available at https://www.cee2act.eu/wp-content/uploads/2026/01/Roadmap-Bulgaria-final-29.08.25.pdf [29.07.26] (in Bulgarian); English summary available at https://www.cee2act.eu/wp-content/uploads/2026/01/CEE2ACT_T6_3_English-version_Summary-30.09.pdf [29.07.26].

[85] Tallinn University & Ministry of Regional Affairs and Agriculture. (2024). *Methodological Framework for Developing a Regional Circular Bioeconomy Roadmap*; building on the national *Circular Bioeconomy Roadmap* (*Ringbiomajanduse teekaart*, 2023). Both available at https://www.agri.ee/en/objectives-and-activities/bioeconomy [29.07.26].

bioekonomistrategi (A Sustainable Bioeconomy Strategy), in 2023 and proposed a strategy for a sustainable, competitive, and growing Swedish bioeconomy.[86] Unlike the Commission in 2018, it saw no reason to exclude biomedicine and health-related biotechnology from the bioeconomy. The proposal was developed further in 2024, but the government has not formally adopted a strategy. Meanwhile the debate has moved toward a competitive, circular, and industrial bioeconomy built on high-value products such as advanced biorefineries, engineered wood, biochemicals, textile fibers, and sustainable aviation fuels. Conflicts have sharpened over how much biomass Swedish forests should deliver, since they are also expected to increase carbon sinks toward a national target of 47 $MtCO_2e$ net removals per year by 2030, support biodiversity, and meet EU restoration requirements. An emerging use hierarchy therefore prioritizes long-lived, high-value, and climate-efficient uses and reserves residues for energy. Investment and commercialization have slowed since 2023, reflecting a more cautious investment climate, uncertainty over biomass supply linked to LULUCF targets, RED III, and the EU Nature Restoration Regulation, and the difficulty of scaling technologies such as lignin valorization from pilot to profitable production.

Policy changes at national and regional level

European Union

State up to 2024. Over roughly two decades the EU bioeconomy evolved from a research and innovation program into a normative framework embedded across European economic, environmental, and industrial policy. The 2012 strategy was research-centered. The 2018 update emphasized sustainability, systems thinking, and the combined economic, ecological, and social dimensions, and the 2022 progress report took stock and pointed toward future development. The EU also built dedicated delivery instruments, first the Bio-based Industries Joint Undertaking (BBI JU) and then its successor, the Circular Bio-based Europe Joint Undertaking (CBE JU), together with the European Circular Bioeconomy Fund (ECBF). Its evidence base rests on the European Commission's Knowledge Centre for Bioeconomy and its country dashboard.

New policy since 2024. The **Strategic Framework for a Competitive and Sustainable EU Bioeconomy** (dedicated; 2025), COM(2025) 960, was adopted on November 27, 2025. It updates the definition of the bioeconomy as "the activities that deliver sustainable solutions based on biological resources to create added value." The wording signals that

[86] SOU 2023:84. (2023). *En hållbar bioekonomistrategi* (A Sustainable Bioeconomy Strategy), final report of the Swedish Bioeconomy Inquiry (*Bioekonomiutredningen*). Available at https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2023/12/sou-202384/ [29.07.26].

the concept carries a purpose rather than serving as a descriptive label for bio-based sectors, which are not sustainable in themselves. It steers policy toward activities considered beneficial across the ecological and economic dimensions. The scope also widens. The strategy names health among the fields that bio-based products, services, science, and technologies serve, alongside food, energy, industry, and ecosystem services. That is a change from 2018, when the Commission expressly left biomedicine and health-related biotechnology outside the definition. The Commission sizes EU bioeconomy sectors at up to EUR 2.7 trillion in 2023, with biomass-producing and converting activities employing 17.1 million people, some 8 percent of EU jobs, and generating EUR 863 billion in value added, about 5 percent of EU GDP. It argues that a large untapped potential remains, held back above all by financing gaps that keep promising innovations from reaching the market.

The framework rests on four pillars, with a fifth chapter on delivery and governance. The first scales up innovation and investment from lab to deployment. It targets the two "valleys of death" that bio-based start-ups and scale-ups face, between demonstration and first commercial production and again at the move to industrial scale, by simplifying regulation through the forthcoming Biotech Acts, coordinating risk assessments across EU agencies, and mobilizing blended finance. A European Bioeconomy Regulators and Innovators' Forum, launched in early 2026, is to speed authorizations for novel bio-based products. The second pillar builds new lead markets. On the materials side it names bio-based plastics and polymers, textiles from bio-based fibers, bio-based chemicals, construction products, and fertilizers and plant-protection products. On the technology side it names biorefineries, advanced fermentation, and the permanent storage of biogenic carbon. A voluntary Bio-based Europe Alliance is to bring together companies committed to purchasing bio-based materials and products worth EUR 10 billion by 2030. The third pillar secures a sustainable biomass supply across value chains. The EU is around 90 percent self-sufficient in biomass, and the strategy leans on circularity, secondary feedstocks, and the efficient, cascading use of biomass to keep it that way. In 2022 biomass in Europe went mainly to animal feed (38 percent), energy (29 percent), materials (24 percent), and food (9 percent). The fourth pillar harnesses global partnerships, linking to the Global Gateway and, from 2027, to a Bioeconomy Policy Support Hub, with explicit openings toward selected African countries and toward BIO-EAST countries, Moldova, Ukraine, and the Western Balkans. The accompanying vision, *The European Bioeconomy in 2040*, foresees the wide deployment of bio-based construction materials, biochemicals, textiles, fertilizers, plant-protection products, and plastics, produced by integrated biorefineries and advanced-fermentation facilities. Biotechnology, boosted by the Biotech Acts, is cast as the engine that makes bio-based solutions cost-competitive and scalable.

Further trends. Many objectives of the earlier strategies are retained, but the emphasis shifts. The 2025 framework moves implementation and competitiveness to the center and reads less as a research and innovation strategy than as a program for upscaling, with research and innovation remaining one of its key elements. It places a much stronger focus on biotechnology and biomanufacturing, which is now written into the definition itself and named among the lead markets, with advanced and precision fermentation appearing alongside bio-based textiles, plastics, chemicals, construction materials, fertilizers, and plant-protection products. Much of the text is devoted to removing the barriers that keep bio-based solutions from scaling, with more attention than before to start-ups and scale-ups, and it leans on de-risking instruments such as the CBE JU and the ECBF alongside the European Competitiveness Fund, Horizon Europe, and the next Multiannual Financial Framework for 2028–2034. Food security, a core objective in 2012 and 2018, is not an explicit focus in 2025, although food is recognized as a key part of the bioeconomy and several actions support food innovation and the transformation of food systems. Climate action is framed mainly as a co-benefit. Considerable attention goes instead to the sustainable supply of biomass and to strategic autonomy in that supply. Successful upscaling will sharpen the "biomass gap," the growing discrepancy between rising, biomanufacturing-driven demand and sustainably available supply, set against weakening EU land carbon sinks and continued biodiversity pressure. The strategy addresses it through resource-efficiency, circularity, and strategic-autonomy measures and through the global-partnerships pillar, though closing the gap is likely to require demand-side change and not technological substitution alone. Delivery is backed by a rollout of Biotech Acts, further delegated acts to 2028, and continued monitoring through the EU Bioeconomy Monitoring System, with the Commission due to report on delivery by 2028. Environmental organizations have criticized the framework for prioritizing growth and competitiveness over climate and nature protection, and that debate will shape its delivery.

Croatia

State up to 2024. Croatia had significant bioeconomy potential, drawing on biomass from agriculture, forestry, fisheries, and aquaculture. Several sectoral strategic plans in agriculture, research and innovation, energy, low-carbon development, and climate adaptation pointed to the bioeconomy, but no overarching strategy connected and aligned them. An expert working group established by the Minister of Agriculture met from November 2022 to April 2023. It presented a first draft in April 2023 and refined it through strategic environmental assessment and ex-ante evaluation.

New policy since 2024. The **Bioeconomy Strategy until 2035** (*Strategija biogospodarstva do 2035.*; dedicated; adopted July 2026) is Croatia's first dedicated bioeconomy strategy. The Government submitted it on the basis of the Agriculture Act (NN 152/24), coordinated by

the Ministry of Agriculture, Forestry and Fisheries, and the Croatian Parliament adopted it on July 3, 2026. Its vision is that by 2035 the bioeconomy develops rapidly as a dynamic and diversified activity that contributes significantly to the national economy and its sustainability, reduces dependence on non-renewable raw materials, and strengthens climate resilience. That resilience matters in particular for rural and coastal areas. The strategy pursues two strategic objectives. The first is to develop sustainable production and markets for bioeconomy raw materials. The second is to increase added value in the Croatian bioeconomy. It sets a target of EUR 15 billion in turnover in the biomass production and conversion sectors by 2035.[87]

Further trends. The strategy draws on the EU's 2018 definition and a NACE-based sectoral delineation, and it aligns with the National Development Strategy 2030, the National Energy and Climate Plan 2021–2030, the new EU bioeconomy strategy, and the BIOEAST initiative. During the parliamentary debate, most opposition members supported the document but warned that it is not ambitious enough and says too little about the social dimension of the green transition, while the governing party stressed that implementation would create jobs and raise competitiveness. Opposition speakers noted, for example, that added value per employee in the Croatian bioeconomy stands at around EUR 21,000, roughly half the EU average, against a strategy target of EUR 25,000 by 2035. The strategy's practical impact will now depend on the implementing measures, incentives, and financing that follow.

Hungary

State up to 2024. Hungary lacked a dedicated bioeconomy strategy, and its bioeconomy agenda ran largely through agricultural and energy policy. Domestic biogas production lagged well behind comparable countries, despite a favorable and largely agricultural feedstock potential.

New policy since 2024. The **Biogas and Biomethane Action Plan** (*Biogáz és biometán akcióterv*; related; 2024), prepared under the Ministry of Energy, aims to trigger coordinated market development on the supply side. It responds to EU signals such as raised renewable-energy targets, an advanced-biofuels obligation in transport, and corporate ESG requirements. Its cautious baseline sets a 2030 target of tripling biogas output to about 600 million m^3, of which some 184 million m^3 would be upgraded to grid-injectable biomethane. Reaching that

[87] Government of the Republic of Croatia. (2026). *Strategija biogospodarstva do 2035.* (Bioeconomy Strategy until 2035), adopted by the Croatian Parliament on July 3, 2026. Available at https://poljoprivreda.gov.hr/UserDocsImages/dokumenti/Biogospodarstvo/PRIJ_STRATEGIJA_BIOGOSPODARSTVA_2035.pdf [29.07.26]. On the parliamentary debate see tportal (June 24, 2026), available at https://www.tportal.hr/vijesti/clanak/sabor-podrzao-strategiju-biogospodarstva-oporba-upozorava-na-nedostatak-ambicije-20260624 [29.07.26].

target would require around 25 new plants and yield roughly 27 TWh above self-consumption. The plan also analyzes production economics. Biogas is estimated at EUR 40 to 55 per MWh and biomethane at EUR 60 to 95 per MWh, with strong economies of scale, and the plan reviews plant-size structure and the evolution of the Hungarian (KÁT, METÁR) and European support schemes.[88]

Further trends. The plan identifies two especially difficult questions. One is how to secure an agriculturally and energetically sustainable feedstock base. The other is how to shape the target market structure, with the largest plants specializing in biomethane and smaller units serving local uses. By framing biomethane as a domestically produced green molecule for hard-to-electrify sectors, the plan connects Hungary's bioeconomy-related agenda to energy security and to the substitution of imported natural gas.

Ireland

State up to 2024. Ireland treats the bioeconomy as a national priority and has built its policy in stages. The 2018 *National Policy Statement on the Bioeconomy* set out a vision for Ireland to become a global leader in the field. The first *Bioeconomy Action Plan 2023–2025* followed, with 33 actions to mobilize institutions and support piloting and demonstration, jointly led by the Department of Agriculture, Food and the Marine and the Department of the Environment, Climate and Communications. Bioeconomy objectives are also embedded in wider frameworks such as Food Vision 2030, the Climate Action Plan, the Whole of Government Circular Economy Strategy, and Project Ireland 2040. The biomass-producing and converting sectors contributed an estimated EUR 24 billion to the Irish economy in 2023 and employed more than 200,000 people, at a value added per person of about EUR 118,000 against an EU average of about EUR 51,000. Ireland has no dedicated sub-national bioeconomy strategies. Regional bioeconomy objectives have been addressed to date within Regional Spatial and Economic Strategies.

New developments since 2024. In July 2026 the Government opened a public consultation on the **draft National Bioeconomy Strategy 2026–2030** (dedicated; 2026, in preparation), presented under the working title *BioScale 2030: Advancing a Sustainable Bioeconomy for Ireland*. The draft is led jointly by the Department of Climate, Energy and the Environment and the Department of Agriculture, Food and the Marine. Its vision is that by 2030 Ireland's bioeconomy is a core driver of economic prosperity, climate action, and rural regeneration, marked by the sustainable and circular

[88] Ministry of Energy. (2024). *Biogáz és biometán akcióterv* (Biogas and Biomethane Action Plan). Available at https://bioeconomyforum.geonardo.com/assets/content/attachments/Biog%C3%A1z%20%C3%A9s%20Biomet%C3%A1n%20akci%C3%B3terv%20-%20Energia%C3%BCgyi%20Miniszt%C3%A9rium.pdf [29.07.26].

use of biological resources, innovative high-value industries, and thriving local communities. The definition it adopts follows the 2025 EU strategy. The bioeconomy means the activities that use biological resources to deliver sustainable, nature-positive value through products, services, science, and technology, spanning primary production and management through to processing, biomanufacturing, and biotechnology. Five guiding principles frame the draft, namely sustainability and circularity, the efficient and cascading use of biomass, food first, place-based local and regional development, and whole-of-government coherence with responsible innovation. Five strategic objectives follow, covering investment in infrastructure and technology, market demand for bio-based products, innovation and skills, the bioeconomy's contribution to climate action and circularity, and governance and partnerships. These are applied to five key sectors, namely agri-bioeconomy and circular nutrients, biobased construction from forest and crop biomass, the blue bioeconomy, biomanufacturing and biobased materials for industry, and the circular use of food and other organic wastes. The consultation ran until August 17, 2026, and a consultation report is to be published before the strategy is finalized. Its publication will also conclude the 2023–2025 Action Plan, whose Action 1.7 had called for a national strategy.[89]

Further trends. The draft marks a clear shift in Ireland's bioeconomy policy. The trajectory runs from early vision-setting in 2018, through institutional mobilization and pilot implementation under the 2023–2025 Action Plan, toward strategic scaling, industrialization, and delivery. Building on recent investment in innovation, piloting, and demonstration, the draft turns to wider deployment, market development, and implementation at scale. It places greater emphasis than before on competitiveness, energy and resource security, and European strategic autonomy, and it aligns closely with the updated EU Bioeconomy Strategy. A notable new element is the stronger link drawn between the bioeconomy and Ireland's emerging life-sciences and industrial-biotechnology agenda. Delivery would rest on an upgraded interdepartmental and interagency Bioeconomy Development Group, successor to the current Bioeconomy Implementation and Development Group, which would coordinate departments, agencies, and regional actors and report on progress at mid-term in 2028 and after 2030. The draft also proposes a Bioeconomy Statistics and Evidence Partnership and a

[89] Government of Ireland, Department of Climate, Energy and the Environment & Department of Agriculture, Food and the Marine. (2026). *Draft Bioeconomy Strategy 2026–2030. BioScale 2030: Advancing a Sustainable Bioeconomy for Ireland*. Public consultation from July 16 to August 17, 2026. Available at https://www.gov.ie/en/department-of-climate-energy-and-the-environment/consultations/public-consultation-on-draft-bioeconomy-strategy-2026-2030/ [10.09.26].

National Biomass Flow Account to improve transparency on biomass supply, use, and competing uses. Taken together, the draft takes a pronounced systems approach and frames the bioeconomy as an instrument for strategic resilience across food, material, and energy supply chains, and across ecosystems and regions.

Italy

State up to 2024. The bioeconomy is a core pillar of the Italian economy. It generated around EUR 437.5 billion in annual turnover and employed two million people in 2023, which makes Italy the third-largest bioeconomy in Europe after Germany and France. Italy adopted its first strategy (BIT) in 2017, an updated BIT II in 2019, and an Implementation Action Plan (IAP) for 2020 to 2025 in 2021. At the same time it formalized a National Bioeconomy Coordination Board (NBCB) at the Presidency of the Council of Ministers.

New policy since 2024. The **Updated BIT II Implementation Action Plan 2025–2027** (dedicated, update; December 2024) was drafted by the NBCB to sharpen implementation across the whole country. It endorses four strategic orientations. The first is to interconnect all circular-bioeconomy sectors across rural, hilly, mountainous, and coastal areas. The second is to overcome legislative barriers and build a stable and harmonized framework for bio-based markets. The third is to implement circular and regenerative approaches in line with the EU Nature Restoration Law, and the fourth is to integrate sectors both vertically, along supply chains, and horizontally, across territories. Five Actions translate these orientations into practice. They cover territorial pilots, market-based incentives, biodiversity and soil monitoring and restoration, territorial reconnaissance for local value chains, and awareness and skills. Two large-scale Flagship investments complete the plan, one in multi-input, multi-product biorefineries and one in biorefineries tailored to locally available renewable carbon.[90]

Further trends. Since December 2024 the NBCB has worked on implementing these priorities. Its focus includes improving circularity in territorially specific value chains, deploying bio-based, digital, and AI-based technologies, revising legislative barriers, and engaging primary producers and citizens. Governance is notably broad. The Board brings together high-level representatives of seven ministries and of the Department for Cohesion Policies at the Presidency of the Council of Ministers. Italy's twenty regions and autonomous provinces are represented through the regional commissions on economic development and on agricultural policies and through the Conference of Regions and Autonomous Provinces. The Italian Institute for

[90] National Bioeconomy Coordination Board, Presidency of the Council of Ministers. (2024). *The Updated BIT II Implementation Action Plan 2025–2027 for the Italian Bioeconomy Strategy*. Available at https://cnbbsv.palazzochigi.it/en/bioeconomy/ [29.07.26].

Environmental Protection and Research (ISPRA) and the Association for the Development of Industry in Southern Italy (SVIMEZ) also take part, as do four National Technology Clusters, namely Agri-Food (CL.A.N.), Circular Bioeconomy (SPRING), Blue Growth (BIG), and Forestry and Wood (Italia Foresta Legno), each a public-private partnership with more than a hundred partners. A distinctive external dimension is the emphasis on cooperation with Mediterranean and African countries under Italy's "Mattei Plan."

Netherlands

State up to 2024. The Netherlands has a strong life-sciences and agri-food base and a long-standing biomass-to-business tradition. Its bioeconomy agenda has run mainly through circular-economy and biotechnology policy, notably the National Circular Economy Programme 2023–2030, rather than through a single dedicated strategy.

New policy since 2024. The **Government's Vision on Biotechnology 2025–2040** (related; 2025) sets out a long-term, government-wide approach to steering biotechnology for the Dutch economy and society. It formulates four ambitions for 2040. Biotechnology should contribute more to a thriving, future-ready economy. It should help people live more years in good health. It should support a livable climate and a circular economy. And it should strengthen food security, sustainable agriculture, food production systems, and animal welfare. The vision estimates that biotechnology could add on the order of EUR 30 billion per year to the Dutch economy by 2040, once health and sustainability gains are included. It also calls for a forward-looking and resilient regulatory framework, both nationally and within the EU, that balances opportunity with human, animal, and environmental safety and security.[91]

Further trends. Implementation stresses informing and involving the public, steering and monitoring, and several preconditions. These include talent and human capital, capital flows for start-ups and scale-ups, and competitiveness in an intensifying global race. That framing echoes the EU debate on competitiveness and on the modernization of biotechnology regulation, including New Genomic Techniques. The vision complements the EU's 2025 strategy and its planned Biotech Acts, and it places Dutch biotechnology policy within a wider European push on biomanufacturing.

Russia

State up to 2024. Russia's engagement with the bioeconomy ran through earlier biotechnology instruments, notably the BIO2020 program in 2012 and a government roadmap for biotechnology development in 2013. Presidential Decree No. 529 of June 18, 2024 then elevated the field. It listed bioeconomy-related areas

[91] Government of the Netherlands. (2025). *Government's Vision on Biotechnology 2025–2040*. Available at https://www.government.nl/documents/2025/04/11/dutch-vision-on-biotechnology-2025-2040 [29.07.26].

among the country's priority scientific and technological, critical, and enabling technologies, including synthetic biology, genetic engineering, and industrial biotechnology.

New policies since 2024. Russia has moved quickly to build a dedicated framework. The National Project of Technological Leadership "Technological Support for the Bioeconomy" (dedicated; 2025) was approved in December 2025 by the presidium of the Presidential Council for Strategic Development and National Projects. It runs to 2030, with a horizon to 2036, and comprises three federal projects. They cover the organization of production and sale of bioeconomy products, scientific and technological support, and analytical, methodological, and workforce support, all aimed at technological sovereignty. The Kurchatov Institute National Research Centre acts as the project's main R&D coordinator. In February 2026, following the Future Technologies Forum, the President directed the government to prepare a long-term strategy. On 5 October 2026, the government approved the Strategy for the Development of the Bioeconomy to 2036 with an outlook to 2050 (dedicated; adopted October 2026). It covers applications in health, agriculture, energy, and industry, from new materials to fuels and fertilizers. It aims to roughly double the domestic bioeconomy market to about 1 trillion rubles by 2036 and to reach 40% technological independence in bioeconomy products by 2030.[92]

Further trends. The Ministry of Industry and Trade is to prepare an implementation plan within six months, together with the Kurchatov Institute and the Russian Academy of Sciences. Public financing for the national project started in 2026. Much of the documentation is available only in Russian, and the program sits within a broader suite of national technology-leadership projects, so its trajectory should be read against that domestic industrial-sovereignty context.

[92] Government of the Russian Federation. (2026). *Strategy for the Development of the Bioeconomy in the Russian Federation to 2036 with an Outlook to 2050*, approved by Government Order No. 2777-r of October 5, 2026. Available at http://government.ru/news/60094/ [13.10.26]. Targets as reported by Kommersant (October 6, 2026), available at https://www.kommersant.ru/doc/9006779 [13.10.26]. On the national project see https://национальныепроекты.рф/new-projects/bioekonomika/ [10.09.26]. All sources in Russian.

Subnational Policy Trends

Bioeconomy policy is not made at the national level alone. Regions, states, provinces and municipalities are often where strategies are turned into concrete value chains, investments and projects. It is also where the bioeconomy takes on a distinct territorial profile shaped by local resources, industrial structures and actors. This chapter addresses major subnational developments since 2024 in the Americas, Asia-Pacific and the Middle East, and Europe. It does not claim to present a complete picture. Sub-national policies are numerous and diverse, many are published only in local languages, and much sub-national bioeconomy activity takes place through programs and projects rather than formal strategies. The chapter therefore focuses on selected cases that illustrate wider trends: the wave of state-level instruments in Brazil, the territorialisation of policies in India, and the growing density of regional strategies in Europe, particularly in Germany and Spain.

Subnational Policy Trends in the Americas

In most of the Americas, subnational bioeconomy policy remains informal. **Argentina** is a clear case. Its provinces host many bioeconomy initiatives, from biofuel projects to circular ventures led by cooperatives and local governments, yet none has published a dedicated subnational strategy since the province of Buenos Aires did so in 2016. The first generation of subnational strategies appeared there and in the Brazilian state of Pará in 2022. Since then **Brazil** has become the regional exception, with a wave of state-level strategies, plans and framework laws that no other country in the Americas matches.

Several Brazilian states now have dedicated bioeconomy strategies or plans. Amazonas adopted the most complete set of state instruments. A State Bioeconomy Strategy was established by decree in March 2025 and backed by a State Bioeconomy Policy enacted in the same year, and the State Bioeconomy Plan followed on 1 April 2026.[93] The plan integrates forestry, science and culture, and it works through local production chains, technological innovation and the valorization of traditional knowledge in the service of social inclusion and environmental conservation. It spans five axes that cover governance, decarbonization and renewable energy, people and culture, the business ecosystem, and cultural and genetic heritage. Amapá approved a State Plan to Support the Socio-bioeconomy in 2024, which was showcased at COP30. Mato Grosso runs its long-standing Produce, Conserve and Include strategy, the largest subnational sustainable-

[93] Governo do Amazonas. (2025). Estratégia Estadual de Bioeconomia (Decreto nº 51.353/2025). Available at https://legisla.imprensaoficial.am.gov.br/diario_am/41534/2025/3/15146 [29.07.26]. Complemented by the State Bioeconomy Policy, Lei nº 7.303/2025. The State Bioeconomy Plan was approved by Decreto nº 53.901 of 1 April 2026, https://legisla.imprensaoficial.am.gov.br/diario_am/41534/2026/4/18589. See also https://fas-amazonia.org/sociobioecon-am/plano-estadual-de-bioeconomia-do-amazonas/

development effort in the country, and Mato Grosso do Sul made the bioeconomy an explicit strategic area of its state science and innovation program in 2026. São Paulo presented a State Bioeconomy Strategy in September 2025 that is still moving toward formal adoption, and Roraima and Acre have state bioeconomy plans in preparation. Pará, the territorial pioneer, gave its low-carbon and REDD+ agenda statutory force through the Plano Amazônia Agora in 2024.

A second group of states anchors its bioeconomy in framework laws on environmental services rather than in a dedicated strategy. Acre's pioneering System of Incentives for Environmental Services, in place since 2010, remains a global reference for jurisdictional payments for environmental services and REDD+. Tocantins, Maranhão and Espírito Santo have since built comparable legal systems that underpin their bioeconomies, and jurisdictional REDD+ has become the main financing engine for the standing-forest economy in the Amazon.[94] Above the state level, two interstate consortia act as umbrellas. The Amazônia Legal Consortium promotes a standing-forest economy through its Green Recovery Plan, and the Northeast Consortium launched a Brazil Northeast Ecological Transformation Plan at COP30. Brazil's territorial turn rests on a combination of dedicated strategies, environmental-services law and forest finance, while elsewhere in the region the subnational level remains a space of projects and programs rather than published strategies.

Subnational Policy Trends in Asia-Pacific and the Middle East

India. India remains one of the most active countries in the region regarding subnational bioeconomy policy. Prior to 2026, at least five states in India, Karnataka, Maharashtra, Telangana, Tamil Nadu and Andhra Pradesh, had either adopted or prepared policies related to the bioeconomy. Most of these initiatives focused specifically on biotechnology and life sciences, while a comprehensive bioeconomy policy was absent.

In 2026, Tamil Nadu took a further preparatory step toward a dedicated bioeconomy strategy by publishing Tamil Nadu BioVision 2026, presenting the bioeconomy as a pathway toward long-term economic transformation. Tamil Nadu's bioeconomy consists of four areas: Bio-industrial (biofuels, use of industrial enzymes, fermentation products, and bio-based materials), bio-pharma, bio-services (IT, analytics, and digital biology), and bio-agriculture. The vision was built on the accelerated expansion of the state's bioeconomy from USD 7.7 billion in 2023 to an estimated USD 12.4 billion in 2025, one of India's fastest-growing bioeconomy systems. The state plans to execute a strategic roadmap in three

[94] State environmental-services and REDD+ frameworks that underpin subnational bioeconomies include Acre's SISA (Lei nº 2.308/2010), Tocantins's PEPSA (Lei nº 4.111/2023), Maranhão's Lei nº 12.301/2024 and Espírito Santo's Lei nº 12.387/2025. The full set of Brazilian subnational instruments is documented in the report's policy database, with official gazette links for each entry.

phases from 2025 to 2035, ultimately positioning Tamil Nadu as a globally visible bioeconomy hub. It aims to achieve this outcome through coordinated governance, combination of public and private investment, and continuous monitoring, evaluation and adaptive governance.[95]

Subnational Policy Trends in Europe

The rise of territorial strategies. The sub-national layer of European bioeconomy policy has grown markedly since 2024. Regions and municipalities are increasingly where bioeconomy strategies are turned into projects, a point the 2025 EU strategy itself underscores when it notes that many bio-based solutions scale through local value chains and municipal procurement. The layer is dense and varied. In Germany it includes North Rhine-Westphalia, Bavaria, Saxony-Anhalt, and the Rhineland and Central German coal-phase-out regions alongside Baden-Württemberg. In Spain it spans Catalonia, Andalusia, Castilla y León, Extremadura, and the Basque Country. Further regional strategies exist in France (Grand Est, Hauts-de-France), the Nordic countries, and beyond. Estonia's methodological framework, discussed above, points the same way by translating a national circular-bioeconomy vision into locally owned roadmaps. The most active recent developments are in Germany and Spain.

Germany. Germany remains a European frontrunner at the national level, with a research strategy in 2010, a policy strategy in 2013, and a National Bioeconomy Strategy in 2020. No new dedicated national bioeconomy strategy has appeared since 2024. The federal government's High-Tech Agenda (*Hightech Agenda Deutschland*), adopted in July 2025, sets research and innovation priorities around six key technologies, one of which is biotechnology. Its focus, however, is distinctly on biotechnology, especially for health and for industrial applications, and it no longer frames these efforts as "bioeconomy."[96] Much of the German bioeconomy momentum therefore now sits at the level of the Länder. Bavaria has had its own strategy since November 2020. *Zukunft.Bioökonomie.Bayern* bundles fifty measures under the Ministry of Economic Affairs, Regional Development and Energy and was

[95] Government of Tamil Nadu. (2026). Tamil Nadu Bio-Vision 2026. Retrieved August 26, 2026, from https://ableindia.in/manage/images/resourceuploads/_Tamil%20Nadu%20Bio-Vision%202026_compressed.pdf

[96] Federal Government of Germany. (2025). *Hightech Agenda Deutschland* (adopted July 2025). Available at https://www.bundesregierung.de/breg-de/aktuelles/hightech-agenda-deutschland-2366912 [29.07.26]. The agenda names six key technologies, including biotechnology, with a distinct focus on health-related and industrial biotechnology; it does not frame these priorities as "bioeconomy."

reviewed in a progress report in 2023.[97] The two most active regions since 2024 are Baden-Württemberg and North Rhine-Westphalia.

Baden-Württemberg has developed into a leading region. It decided in 2012 to build a research strategy, launched that strategy in 2014, and adopted a cross-departmental Sustainable Bioeconomy Strategy in 2019. On June 25, 2024 the state government adopted the *Updated Sustainable Bioeconomy Strategy 2025–2029* (dedicated, update), jointly led by the Ministry for the Environment, Climate and Energy and the Ministry for Food, Rural Affairs and Consumer Protection. It organizes measures into three action areas: a supporting framework for the bioeconomy, covering cross-sector cooperation, governance, networking, skills, and communication; the sustainable bioeconomy as a driver of innovation for rural development, based on primary biomass and side streams from agriculture and forestry; and the sustainable bioeconomy in industrial and urban zones, drawing on secondary biomass from waste, wastewater, waste gas, and CO_2. Its guiding principles include the priority of food production in land use, the precedence of material over energy use, cascading and circular carbon concepts, and a cross-departmental system approach. The update reflects a maturing regional ecosystem oriented toward value creation, future-proof jobs, and a circular carbon economy, and its turn toward secondary raw materials from urban and industrial sources signals the broader European shift from first-generation biomass toward residues and secondary streams.[98]

North Rhine-Westphalia has moved from preparation to a full strategy, alongside a large body of research and implementation activity. After setting out cornerstones (*Eckpunkte*) in 2023, the state government presented its *Bioeconomy Strategy 2026: Towards a Resilient Future* (*Bioökonomie-Strategie Nordrhein-Westfalen 2026: Auf dem Weg in eine resiliente Zukunft*; dedicated) on June 22, 2026. Six ministries coordinated it under the lead of the Ministry for Economic Affairs, Industry, Climate Action and Energy, supported by the North Rhine-

[97] Bayerisches Staatsministerium für Wirtschaft, Landesentwicklung und Energie. (2020). *Zukunft.Bioökonomie.Bayern*, presented in November 2020 with 50 measures, followed by the progress report *50x Fortschritt* (2023). Available at https://www.stmwi.bayern.de/wirtschaft/wirtschaftspolitik/biooekonomie/ [10.09.26].

[98] State of Baden-Württemberg, Ministry for the Environment, Climate and Energy & Ministry for Food, Rural Affairs and Consumer Protection. (2024). *Fortschreibung der Landesstrategie Nachhaltige Bioökonomie Baden-Württemberg 2025–2029* (Updated Sustainable Bioeconomy Strategy 2025–2029), adopted June 25, 2024 and building on the 2019 strategy. Available at https://um.baden-wuerttemberg.de/de/umwelt-natur/umwelt-wirtschaft/biooekonomie/landesstrategie-nachhaltige-biooekonomie [29.07.26].

Westphalia Bioeconomy Council.[99] The strategy positions the bioeconomy as a lever of industrial renewal and aims for North Rhine-Westphalia to become an internationally leading location for sustainable bioeconomy by 2045 and Europe's first climate-neutral industrial region. It centers on building sovereign, regionally anchored, bio-based value chains, replacing fossil raw materials, and developing new materials and products, and it sets systemic goals that tie the bioeconomy to ecological, health, and circular-economy targets. The guidelines and fields of action it defines form the basis for concrete action plans now being developed. An online consultation on those plans ran until the end of July 2026, and further engagement with stakeholder groups is planned through the end of 2026. As Germany's most populous and most industrial state, North Rhine-Westphalia frames the bioeconomy both as industrial policy and as a route to systemic transformation. It is also diversifying into smaller territorial units, where sub-regional strategies and implementation pathways are already emerging, as in the Rhineland model region for the bioeconomy.

Spain (Catalonia). Spain adopted a national bioeconomic strategy, Horizon 2030, in 2016, and it hosts several regional strategies, including Andalusia (2018), Castilla y León (2019), Extremadura (2017), and the Basque Country, whose Strategic Plan for the Circular Economy and Bioeconomy was approved in 2021.[100] Catalonia adopted its *2030 Catalan Bioeconomy Strategy* (EBC2030) in 2021 and a first Action Plan for 2022 to 2024. The region's bioeconomy is economically substantial, accounting for about 16.5 percent of production, 9.8 percent of gross value added, and close to 650,000 direct and indirect jobs. In October 2025 the Department of Agriculture, Livestock, Fisheries and Food issued the *2nd Action Plan 2025–2027* (*II Pla d'Acció 2025–2027*; dedicated, update), which continues the rollout of the EBC2030. It retains the four prioritized value chains of the first plan: improved forest management and use of forest resources, the valorization of livestock manure and organic waste, the valorization of food-chain coproducts and by-products, and resilient agroforestry landscapes with sustainable ecosystem services. The plan groups 44 actions into ten transformative

[99] Landesregierung Nordrhein-Westfalen. (2026). *Bioökonomie-Strategie Nordrhein-Westfalen 2026: Auf dem Weg in eine resiliente Zukunft* (Bioeconomy Strategy 2026: Towards a Resilient Future), presented June 22, 2026, coordinated across six ministries under the lead of the Ministry for Economic Affairs, Industry, Climate Action and Energy (MWIKE). Available at https://www.wirtschaft.nrw/system/files/media/document/file/260619_biookonomie_strategie_2026_web.pdf [29.07.26]. Builds on the 2023 *Eckpunkte für eine Bioökonomie-Strategie Nordrhein-Westfalen*.

[100] Gobierno Vasco / Eusko Jaurlaritza. (2021). *Plan Estratégico de Economía Circular y Bioeconomía de Euskadi 2024*, approved in October 2021 and led by the Department of Economic Development, Sustainability and Environment, with 11 action lines and 53 actions. Available at https://www.euskadi.eus/contenidos/plan_gubernamental/08_planest_xii-leg/es_def/adjuntos/Economia-Circular-y-Bioeconomia-WEB.pdf [10.09.26].

actions. A notable shift moves the focus from an energy use of resources to a material use, which supports a more circular model, and it broadens attention from biomass supply to demand by engaging new user sectors and emphasizing economic opportunity and job creation. Catalonia frames its second plan within the wider European moment, including the European Green Deal, the Clean Industrial Deal, the Biotech Act, and the new EU bioeconomy strategy, positioning the region as an example of the rising territorial bioeconomy in Europe.[101]

[101] Generalitat de Catalunya, Departament d'Agricultura, Ramaderia, Pesca i Alimentació. (2025). *II Pla d'Acció 2025–2027* of the 2030 Catalan Bioeconomy Strategy (EBC2030). Available at https://agricultura.gencat.cat/web/.content/01-departament/plans-programes-def/estrategia-bioeconomia/pla-accio-25-27.pdf [29.07.26].

Appendix

Region	Geographical Scope	Scale	Year of Publication	Strategy Type	Strategy Title	Type of Document	Status	Author/Commissioner	Analysis inclusion	URL
Africa	Africa	Regional	2024	Bioeconomy-related Strategy	Continental Circular Economy Action Plan for Africa	Regional Strategy	Adopted	African Union	included	
Africa	Benin	National	2025	Bioeconomy-related Strategy	Benin's National Action Plan for the Circular Economy 2025–2035 Plan d'Action National pour l'Economie Circulaire du Bénin 2025 - 2035	Action Plan	Adopted	Ministry of Living Environment and Transport	included	Link 1, Link 2
Africa	Cameroon	National	2025	Bioeconomy-related Strategy	Cameroon National Roadmap for the 2025-2035 Circular Economy	Roadmap	Adopted	Republic of Cameroon (Ministry of the Economy, Planning and Regional Development)	excluded	Link 1, Link 2
Africa	Chad	National	2025	Bioeconomy-related Strategy	National road map for the circular economy of Chad 2025-2035	Roadmap	Adopted	Ministry of environment, fisheries, and sustainable development	excluded	Link 1, Link 2
Africa	East Africa	Regional	2022	Dedicated Bioeconomy Strategy	The East African Regional Bioeconomy Strategy 2021/22 - 2031/32	Policy strategy	Adopted	East African Science and Technology Commission (EASTEC)	included	
Africa	East Africa	Regional	2021	Dedicated Bioeconomy Strategy	The Eastern African Regional Bioeconomy Strategy: A summary	Policy strategy (summary)	Preparation	East African Science and Technology Commission (EASTEC)	included	
Africa	Egypt	National	2024	Bioeconomy-related Strategy	Law No. 2 of 2024 Concerning Incentives for Green Hydrogen and Derivatives Production Projects	Law	Adopted	President of the Republic The House of Representatives	excluded	Link
Africa	Eswatini	National	2024	Bioeconomy-related Strategy	National Bioenergy Policy Implementation and Monitoring Plan	Policy Implementation and Monitoring Plan	Adopted	Vuyolwethu Mahlalela, Dr N T Zwane, Dr G Mavimbela Affiliation: UNESWA-Centre for Sustainable Energy Research	included	Link
Africa	Ethiopia	National	2025	Bioeconomy-related Strategy	National Circular Economy Roadmap of Ethiopia	Roadmap	Adopted	The Ethiopian Environment Protection Authority	excluded	Link 1, Link 2
Africa	Ethiopia	National	2025	Dedicated Bioeconomy Strategy	Ethiopian Bioeconomy Strategy	National Strategy	Adopted	Bio and Emerging Technology Institute (BETin)	included	
Africa	Ethiopia	National	2024	Bioeconomy-related Strategy	Revision of the biofuel development strategy in Ethiopia	Report	Adopted Update	Roundtable on Sustainable Biomaterials (RSB)	included	
Africa	Ethiopia	National	2017	Bioeconomy-related Strategy	Biotechnology Investment and Marketing Strategy	Policy strategy	Adopted	Ethiopian Biotechnology Institute (BETin)	included	
Africa	Ethiopia	National	2015	Bioeconomy-related Strategy	National strategy and plan of action for pharmaceutical manufacturing development in Ethiopia (2015 – 2025)	Policy Strategy and Action Plan	Adopted	Ministry of Health and Ministry of Industry	included	
Africa	Ethiopia	National	2013	Bioeconomy-related Strategy	Ethiopia Biomass Energy Strategy (BEST)	Policy Strategy	Adopted	Ministry of Water and Energy	included	

Region	Geographical Scope	Scale	Year of Publication	Strategy Type	Strategy Title	Type of Document	Status	Author/Commissioner	Analysis inclusion	URL
Africa	Ethiopia	National	2011	Bioeconomy-related Strategy	Ethiopia's Climate Resilient Green Economy Strategy	Report	Preparation	Government of the Federal Democratic Republic of Ethiopia; Climate-Resilient Green Economy (CRGE)	included	
Africa	Ethiopia	National	2009	Bioeconomy-related Strategy	National Biotechnology Research and Development Goal		Adopted	Ministry of Science and Technology	included	
Africa	Ghana	National	2017	Bioeconomy-related Strategy	Green Economy Strategy and Implementation Plan 2016 – 2030	Strategy and Implementation Plan	Adopted		included	
Africa	Ghana	National	2016	Bioeconomy-related Strategy	National Climate Change and Green Economy Learning Strategy	National Strategy	Adopted	Ministry of Environment, Science, Technology, and Innovation	excluded	
Africa	Ghana	National	2014	Bioeconomy-related Strategy	National Bioenergy Strategy in Ghana	National Strategy	Adopted		included	
Africa	Ghana	National	2010	Bioeconomy-related Strategy	Draft: Bioenergy Policy for Ghana	Policy	Preparation	Energy Commission	included	
Africa	Kenya	National	2026	Dedicated Bioeconomy Strategy	Kenya National Bioeconomy Strategy 2026-2036	National Strategy	Adopted	Office of the Prime Cabinet Secretary and Ministry of Foreign and Diaspora Affairs	included	
Africa	Kenya	National	2025	Dedicated Bioeconomy Strategy	The National Bioeconomy Education and Policy Framework in Kenya (Bio-KE)	Policy Framework	Preparation	Project of Bio-KE; collaboration with government institutions, universities, industry, and communities	included	Link 1, Link 2
Africa	Kenya	National	2016	Bioeconomy-related Strategy	Green Economy Strategy and Implementation Plan 2016 – 2030	National Strategy and Implementation Plan	Adopted	Governmen of Kenya	excluded	
Africa	Kenya	National	2011	Bioeconomy-related Strategy	National Bioprospecting Strategy	Policy Framework	Preparation	Kenya Wildlife Service	included	
Africa	Kenya	National	2008	Bioeconomy-related Strategy	Strategy for developing the Bio-Diesel Industry in Kenya	Policy Strategy	Adopted	Ministry of Energy; Renewable Energy Department	included	
Africa	Kenya	National	2006	Bioeconomy-related Strategy	A National Biotechnology Development Policy	Policy	Adopted	Ministry of Science and Technology	included	
Africa	Malawi	National	2008	Bioeconomy-related Strategy	Malawi Biomass Energy Strategy	National Strategy	Preparation	Government of Malawi	included	
Africa	Mali	National	2009	Bioeconomy-related Strategy	Strategie Nationale de Développement des Biocarburants en Mali	Policy strategy	Preparation	Ministère de l'Énergie et de l'Eau; Agence Nationale de Développement des Biocarburants	included	
Africa	Mali	National	2006	Bioeconomy-related Strategy	Statégie Nationale pour le Développement des Energies Renouvelables	Policy strategy	Adopted	Ministère des Mines, de l'Énergie et de l'Eau	included	
Africa	Mauritius	National	2013	Bioeconomy-related Strategy	The Ocean Economy A Roadmap for Mauritius	Roadmap	Adopted	Prime Ministers Office	included	
Africa	Mozambique	National	2024	Bioeconomy-related Strategy	Blue Economy Development Strategy	Development Strategy	Adopted	Ministry of the Sea, Inland Waters and Fisheries	included	
Africa	Mozambique	National	2012	Bioeconomy-related Strategy	Green Economy Action Plan 2013 – 2014	Action Plan	Adopted	Ministry of Planning and Development	included	

Region	Geographical Scope	Scale	Year of Publication	Strategy Type	Strategy Title	Type of Document	Status	Author/Commissioner	Analysis inclusion	URL
Africa	Mozambique	National	2012	Bioeconomy-related Strategy	Mozambique Biomass Energy Strategy (BEST)	Policy Strategy	Preparation	Ministry of Energy	included	
Africa	Mozambique	National	2009	Bioeconomy-related Strategy	Politica e Estrategia de Biocombustiveis	Policy Strategy	Adopted	República de Moçambique	included	
Africa	Namibia	National	2024	Dedicated Bioeconomy Strategy	The Namibia Sustainable Bioeconomy Strategy 2024–2029	National Strategy	Adopted	Ministry of higher Education, technology and Innovation; National Commission on Research, Science and Technology	included	
Africa	Namibia	National	2014	Bioeconomy-related Strategy	National Programme on Research, Science, Technoloy and Innovation	National Programme	Adopted	Republic of Namibia, National Commission on Research, Science and Technology	included	
Africa	Nigeria	National	2007	Bioeconomy-related Strategy	Nigerian Biofuel Policy and Incentives	Policy	Adopted	Federal Republic of Nigeria	included	
Africa	Rwanda	National	2023	Bioeconomy-related Strategy	Green Growth and Climate Resilience Strategy	National Strategy	Adopted Update	Ministry of Environment; Republic of Rwanda	included	
Africa	Rwanda	National	2011	Bioeconomy-related Strategy	Green Growth and Climate Resilience - National Strategy on Climate Change and Low Carbon Development	National Strategy	Adopted	Government of Rwanda; Ministry of Natural Resources (MINIRENA); Smith School of Enterprise and Environment (SSEE) at the University of Oxford	included	
Africa	Rwanda	National	2009	Bioeconomy-related Strategy	Rwanda Biomass Energy Strategy (BEST)	Policy Strategy	Preparation	Ministry of Infrastructure	included	
Africa	Senegal	National	2012	Bioeconomy-related Strategy	Lettre de Politique de Développement du Secteur de L'Energie	Policy	Adopted Update	Government of Senegal	included	Link
Africa	Senegal	National	2008	Bioeconomy-related Strategy	Lettre de Politique de Développement du Secteur de L'Energie	Policy	Adopted	Government of Senegal	included	
Africa	Senegal	National	2006	Bioeconomy-related Strategy	Biofuels in Senegal Jatropha Program 2007-2012	Policy Framework	Adopted	Ministry of Agriculture	included	
Africa	South Africa	National	2024	Bioeconomy-related Strategy	Updated National Biodiversity Economy Strategy (NBES)	National Strategy	Preparation	Ministry of Forestry, Fisheries and the Environment	included	
Africa	South Africa	National	2013	Dedicated Bioeconomy Strategy	The Bio-Economy Strategy	National Strategy	Adopted	Department of Science and Technology	included	
Africa	Tanzania	National	2014	Bioeconomy-related Strategy	Biomass Energy Strategy (BEST) Tanzania	Policy Strategy an Action Plan	Adopted	Camo Clean Energy Tanzania Limited / Ministry of Energy and Minerals and European Union Energy Initative Partnership Dialogue Facility	included	
Africa	Tanzania	National	2010	Bioeconomy-related Strategy	National Biotechnology Policy	Policy	Adopted	Ministry of Communication, Science and Technology	included	
Africa	Uganda	National	2020	Dedicated Bioeconomy Strategy	National Bioeconomy Policy	National Policy	Preparation	included		
Africa	Uganda	National	2014	Bioeconomy-related Strategy	Biomass Energy Strategy (BEST) Uganda	Policy Strategy	Adopted	Ministry of Energy and Mineral Development	included	
Africa	Uganda	National	2008	Bioeconomy-related Strategy	National Biotechnology and Biosafety Policy	Policy	Adopted	Ministry of Finance, Planning and Economic Development	included	
Africa	Uganda	National	2007	Bioeconomy-related Strategy	The Renewable Energy Policy For Uganda	Policy	Adopted	Ministry of Energy and Mineral Development	included	

Region	Geographical Scope	Scale	Year of Publication	Strategy Type	Strategy Title	Type of Document	Status	Author/Commissioner	Analysis inclusion	URL
Americas	Argentina	National	2015	Bioeconomy-related Strategy	Program for Promoting the Use of Agricultural Bio-inputs (PROFOBIO) Programa de Fomento del Uso de Bioinsumos Agropecuarios, PROFOBIO	National Program	Adopted	Ministerio de Agricultura, Ganadería y Pesca	included	Link
Americas	Argentina	National	2023	Bioeconomy-related Strategy	Bioeconomy Action Plan for the Agricultural Sector Plan de acción de la bioeconomía en el sector agropecuario	National Plan	Adopted	Subsecrearía de Alimentos, Bioeconomía y Desarrollo Regional	included	Link
Americas	Argentina	National	2023	Dedicated Bioeconomy Strategy	BIOECONOMÍA DESARROLLO FEDERAL INFORME FINAL DICIEMBRE 2023	Strategic guideline and conceptual developments	Preparation	Instituto Interamericano de Cooperación para la Agricultura (IICA), Federal Investment Council (CFI)	included	
Americas	Argentina	National	2023	Bioeconomy-related Strategy	Operational Manual for the Argentine Agricultural Bio-inputs Program (PROBIAAR) Manual operativo del programa de bioinsumos agropecuarios Argentinos (PROBIAAR)	National Plan	Adopted Update	Secretaria de Agricultura, Ganadería y Pesca	included	Link
Americas	Argentina	National	2019	Bioeconomy-related Strategy	La Bioeconomía como Estrategia para el desarrollo argentino	Development Strategy	Preparation	Expert Working Group	included	
Americas	Argentina	National	2017	Bioeconomy-related Strategy	Programa Bioproducto Argentino	National Program	Adopted	Ministerio de agroindustria	included	Link
Americas	Argentina	National	2017	Bioeconomy-related Strategy	Bioeconomía Argentina - Visión desde Agroindustria	National Plan	Preparation	Ministerio de Agroindustria	included	
Americas	Argentina	National	2016	Bioeconomy-related Strategy	Biotecnología argentina al año 2030: Llave estratégica para un modelo de desarrollo tecno-productivo	Policy Strategy	Preparation	Ministerio de Ciencia, Tecnología e Innovación Productiva	included	
Americas	Argentina	National	2012	Bioeconomy-related Strategy	Argentina Innovadora 2020: Plan Nacional de Cienca, Tecnología e Innovación Lineamientos estratégicos 2012-2015	National Plan	Adopted	Ministerio de Ciencia, Tecnología e Innovación Productiva Secretaría de Planeamiento y Políticas en Ciencia, Tecnología e Innovación Productiva	included	
Americas	Brazil	National	2026	Dedicated Bioeconomy Strategy	National Bioeconomy Development Plan 2026–2035 (executive summary) Plano Nacional de Desenvolvimento da Bioeconomia 2026–2035 (Sumário Executivo)	National Strategy	Adopted	Brazilian Federal Government	included	Link
Americas	Brazil	National	2025	Bioeconomy-related Strategy	National Strategy for Science, Technology, and Innovation (ENCTI – 2024–2034)	National Strategy	Adopted	MCTI / CCT	included	Link
Americas	Brazil	National	2024	Dedicated Bioeconomy Strategy	National Bioeconomy Strategy	National Strategy	Adopted	The President of the Republic	included	Link
Americas	Brazil	National	2024	Bioeconomy-related Strategy	Lei do Combustível do Futuro (Lei 14.993/2024)	Law	Adopted	National Congress / MME	included	Link
Americas	Brazil	National	2024	Bioeconomy-related Strategy	Brazilian Emissions Trading System - SBCE (Lei 15.042/2024)	Law	Adopted	National Congress / CIM	included	Link

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Americas	Brazil	National	2024	Bioeconomy-related Strategy	Law No. 15070	Law	Adopted	Presidência da República do Brasil	included	Link
Americas	Brazil	National	2020	Bioeconomy-related Strategy	Plano Decenal de Expansao de Energia 2029	10-Year-Plan	Preparation	Ministério de Minas e Energia	included	
Americas	Brazil	National	2019	Bioeconomy-related Strategy	Brazilian Bioeconomy Sociobiodiversity Program Programa Brasileño de Bioeconomía Sociobiodiversidad	National Plan	Adopted	Ministerio de Agricultura, Ganadería y Abastecimiento (MAPA)	included	Link 1, Link 2
Americas	Brazil	National	2018	Bioeconomy-related Strategy	Plano de Ação em Ciência, Tecnologia e Inovação em Bioeconomia	Action Plan	Adopted	Ministério da Ciência, Tecnologia, Inovações e Comunicações	included	
Americas	Brazil	National	2018	Bioeconomy-related Strategy	Estratégia Nacional de Ciencia, Tecnologia e Inovacao 2016 – 2022	National Strategy	Preparation	Ministério da Ciência, Tecnologia, Inovações e Comunicações	included	
Americas	Brazil	National	2014	Bioeconomy-related Strategy	Plano Decenal de Expansao de Energia 2023	10-Year-Plan	Preparation	Ministério de Minas e Energia	included	
Americas	Brazil	National	2007	Bioeconomy-related Strategy	Biotechnology Strategy	National Strategy	Adopted	Governo Federal	included	
Americas	Canada	National	2019	Dedicated Bioeconomy Strategy	Canada's Bioeconomy Strategy Leveraging our Strengths for a Sustainable Future	National Strategy	Preparation	Bioindustrial Innovation Canada (BIC)	included	
Americas	Canada	National	2017	Bioeconomy-related Strategy	A Forest Bioeconomy Framework for Canada	National Strategy	Preparation	Canadian Council of Forest Ministers Innovation Committee	included	
Americas	Canada	National	2013	Bioeconomy-related Strategy	Growing Forward 2	Policy Framework	Adopted Update	Federal, provincial, and territorial governments	included	
Americas	Canada	National	2008	Bioeconomy-related Strategy	Growing Forward	Policy Framework	Adopted Update	Federal, provincial, and territorial governments	included	Link 1, Link 2
Americas	Colombia	National	2020	Dedicated Bioeconomy Strategy	Bioeconomía: para una Colombia Potencia viva y diversa: Hacia una sociedad impulsada po el Conocimiento	Policy Strategy	Adopted	Gobierno de Colombia	included	
Americas	Colombia	National	2018	Bioeconomy-related Strategy	Colombia Green Growth Policy	National Policy	Adopted	National Planning Department Ministry of Agriculture and Rural Development Ministry of Labor; and 7 more ministries	included	
Americas	Colombia	National	2016	Bioeconomy-related Strategy	Colombia Bio	Strategy Framework	Preparation	Ministerio de Ciencia, Tecnología e Innovación	included	
Americas	Colombia	National	2015	Bioeconomy-related Strategy	Plan nacional de desarrollo 2014-2018	National Strategy	Adopted Update	Departamento Nacional de Planeación	included	
Americas	Colombia	National	2014	Bioeconomy-related Strategy	Programa Nacional de Biocomercio Sostenible (PNBS) 2014 – 2024	National Strategy	Adopted	Ministerio de Ambiente y Desarrollo Sostenible	included	
Americas	Colombia	National	2011	Bioeconomy-related Strategy	Politica para el Desarrollo Commercial de la Biotecnología a partir del Uso Sostenible de la Biodiversidad	Policy	Adopted	National Planning Department (DNP) – DDRS; Ministry of Agriculture and Rural Development; Ministry of Environment, Housing, and	included	

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								Territorial Development; Ministry of Commerce, Industry, and Tourism; Ministry of Social Protection; Ministry of Foreign Affairs; Administrative Department of Science, Technology, and Innovation – Colciencias		
Americas	Costa Rica	National	2020	Dedicated Bioeconomy Strategy	National Bioeconomy Strategy – Costa Rica 2020 – 2030 (2 files: original in Spanish, summary in English)	National Strategy	Adopted	Ministry of Agriculture and Livestock; Ministry of Environment and Energy; Ministry of Science, Innovation, Technology and Telecommunications; Ministry of Economy, Industry and Commerce	included	
Americas	Ecuador	National	2026	Dedicated Bioeconomy Strategy	National Bioeconomy Strategy of Ecuador 2026–2036	National Strategy	Adopted	Ministry of Environment and Energy	included	Link
Americas	Ecuador	National	2025	Dedicated Bioeconomy Strategy	Estrategia Nacional de BioEconomía Sostenible del Ecuador Ecuador's National Sustainable Bioeconomy Strategy	National Strategy	Preparation	The Ministry of Environment and Energy	included	Link 1, Link 2
Americas	Ecuador	National	2019	Bioeconomy-related Strategy	Guidelines for the Promotion of Bio-Entrepreneurship	Ministerial Guideline	Adopted	Ministerio del Ambiente del Ecuador	included	
Americas	Guatemala	National	2023	Dedicated Bioeconomy Strategy	National Bioeconomy Strategy (proposal)	Strategy	Preparation	Unknown	included	
Americas	Mexico	National	2023	Bioeconomy-related Strategy	Propuesta de Estrategia Sectorial de Bioeconomía Agrícola para México (ESBAM)	Sectoral Strategy	Adopted	Secretaría de Agricultura y Desarrollo Rural	included	Link
Americas	Mexico	National	2023	Bioeconomy-related Strategy	Estrategia de Transición para Promover el Uso de Tecnologías y Combustibles más Limpios	Policy Strategy	Adopted Update	Secretaría de Energía	included	Link
Americas	Mexico	National	2020	Bioeconomy-related Strategy	Estrategia de Transición para Promover el Uso de Tecnologías y Combustibles más Limpios	Policy Strategy	Adopted Update	Secretaría de Energía	included	
Americas	Mexico	National	2016	Bioeconomy-related Strategy	Estrategia de Transición para Promover el Uso de Tecnologías y Combustibles más Limpios	Policy Strategy	Adopted	Secretaría de Energía	included	Link 1, Link 2
Americas	Mexico	National	2009	Bioeconomy-related Strategy	Estrategia Intersecretarial de los Bioenergéticos	National Strategy	Preparation	Comisión Intersecretarial para el Desarrollo de los Bioenergéticos	included	
Americas	Panama	National	2024	Dedicated Bioeconomy Strategy	Estrategia Nacional de Bioeconomía de Panamá (ENBP 2026–2040) National Bioeconomy Strategy (ENBP 2026–2040)	National Strategy	Preparation	Senacyt/SNI	included	Link 1, Link 2
Americas	Paraguay	National	2016	Bioeconomy-related Strategy	Estrategia Nacional y Plan de Acción para la Conservación de la	National Strategy and Action Plan	Adopted Update	Secretaría del Ambiente	included	Link

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					Biodiversidad del Paraguay 2015 – 2020					
Americas	Paraguay	National	2011	Bioeconomy-related Strategy	Politica y Programa Nacional de Biotecnoloía Agroprecuaria y Forestal del Parauay	National Strategy	Adopted	Ministro de Agricultura y Ganadería; Grupo Técnico Multisectorial de Biotecnología y Bioseguridad (GTMSBB)	included	
Americas	Peru	National	2026	Dedicated Bioeconomy Strategy	Hoja de Ruta de Bioeconomía para el Perú Bioeconomy Roadmap for Peru	Roadmap	Preparation	Ministry of the Environment (Minam), the General Directorate of Economy and Environmental Financing (DGEFA)	included	Link 1, Link 2
Americas	Peru	National	2025	Bioeconomy-related Strategy	National Circular Economy Roadmap to 2030 Hoja de Ruta Nacional de Economía Circular al 2030	Roadmap	Adopted	Ministry of the Environment	included	Link
Americas	United States	National	2025	Bioeconomy-related Strategy	Charting the Future of Biotechnology	Report	Adopted	National Security Commission on Emerging Biotechnology	included	Link 1, Link 2
Americas	United States	National	2023	Dedicated Bioeconomy Strategy	Bold goals for U.S. biotechnology and biomanufacturing: Harnessing research and development to future societal goals	Report	Preparation	The White House Office of Science and Technology Policy	included	
Americas	United States	National	2022	Dedicated Bioeconomy Strategy	Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy	Executive Order	Withdrawn	President of the USA (Joe Biden)	included	
Americas	United States	National	2012	Dedicated Bioeconomy Strategy	The Bioeconomy Blueprint	Strategic Plan	Adopted	The White House	included	
Americas	Uruguay	National	2024	Bioeconomy-related Strategy	Plan Nacional de Bioinsumos (PNB)	National	Adopted	Ministerio de Ganadería, Agricultura y Pesca (MGAP)	included	Link
Americas	Uruguay	National	2024	Dedicated Bioeconomy Strategy	Estrategia Nacional de Bioeconomía Sostenible	National Strategy	Adopted	Ministerio de Ganadería, Agricultura y Pesca	included	
Americas	Uruguay	National	2019	Bioeconomy-related Strategy	Estrategia Nacional de Desarrollo Uruguay 2050	Foresight- and Policy-Framework	Adopted	Oficina de Planeamiento y Presupuesto	included	
Americas	Uruguay	National	2012	Bioeconomy-related Strategy	Plan Sectorial de Biotechnología 2011 –2020	National Plan	Adopted	Consejo Sectorial de Biotecnología (CSB)	included	
Americas	Uruguay	National	2010	Bioeconomy-related Strategy	Uruguay Agro inteligente 2010 – 2014	Report	Preparation	Ministerio de Ganadería, Agricultura y Pesca	included	
Asia-Pacific	ASEAN	Regional	2021	Bioeconomy-related Strategy	Framework for Circular Economy for the ASEAN Economic Community	Framework	Adopted	Association of South East Asian Nations (ASEAN)	included	Link
Asia-Pacific	Australia	National	2026	Bioeconomy-related Strategy	National Bioenergy Feedstock Strategy	National Strategy	Adopted	Department of Agriculture, Fisheries and Forestry	included	Link
Asia-Pacific	Australia	National	2018	Bioeconomy-related Strategy	National Collaborative Research Infrastructure Strategy	Guidelines	Adopted Update	Department of Education and Training	included	
Asia-Pacific	Australia	National	2015	Bioeconomy-related Strategy	National Marine Science Plan 2015 – 2025	National Plan	Preparation	National Marine Science Committee	included	

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Asia-Pacific	Australia	National	2014	Bioeconomy-related Strategy	Opportunities for Primary Industries in the Bioenergy Sector: National National Research, Development and Extension Strategy Priority Area RD&E Implementation Plan	Strategy	Preparation	Rural Industries Research and Development Corporation	included	Link 1, Link 2
Asia-Pacific	Australia	National	2013	Bioeconomy-related Strategy	National Collaborative Research Infrastructure Strategy	Strategy	Adopted Update	Department of Industry, Innovation, Climate Chnage, Science, Resaearch and Tertiary Education	included	
Asia-Pacific	Australia	National	2011	Bioeconomy-related Strategy	Opportunities for Primary Industries in the Bioenergy Sector: National Research, Development and Extension Strategy	Strategy	Preparation	Rural Industries Research and Development Corporation	included	
Asia-Pacific	Australia	National	2011	Bioeconomy-related Strategy	Strategic Roadmap for Australian Research Infrastructure	Roadmap	Preparation	Australian Government - Department of Innovation Industry, Science and Research	included	
Asia-Pacific	Cambodia	National	2013	Bioeconomy-related Strategy	National Strategic Plan on Green Growth 2013-2030	Strategic Plan	Adopted	Ministry of Environment	included	Link
Asia-Pacific	China	National	2026	Bioeconomy-related Strategy	15th Five-Year Plan for National Economic and Social Development	Policy Strategy	Adopted Update	Ministry of Industry and Information Technology (MIIT)	excluded	Link
Asia-Pacific	China	National	2022	Dedicated Bioeconomy Strategy	14th FYP for Bioeconomy Development	Policy Strategy	Adopted Update	National Development and Reform Commission (NDRC)	included	
Asia-Pacific	China	National	2016	Bioeconomy-related Strategy	13th FYP for Science, Technology Innovation	Policy Strategy	Adopted Update	PRC State Council	included	
Asia-Pacific	China	National	2016	Bioeconomy-related Strategy	13th FYP for Strategic Emerging Industries	Policy Strategy	Adopted Update	PRC State Council	included	
Asia-Pacific	China	National	2016	Bioeconomy-related Strategy	13th FYP on Bioindustry Development	Policy Strategy	Adopted Update	National Development and Reform Commission (NDRC)	included	
Asia-Pacific	China	National	2012	Bioeconomy-related Strategy	12th FYP for National Strategic Emerging Industries	Policy Strategy	Adopted Update	PRC State Council	included	
Asia-Pacific	China	National	2011	Bioeconomy-related Strategy	12th FYP on Bioindustry Development	Policy Strategy	Adopted Update	Ministry of Science and Technology	included	Link 1, Link 2
Asia-Pacific	China	National	2011	Bioeconomy-related Strategy	12th FYP (2011-2015) on Agricultural Science and Technology Development	Policy Strategy	Adopted Update	Ministry of Agriculture	included	
Asia-Pacific	India	National	2024	Bioeconomy-related Strategy	Biotechnology for Economy, Environment and Employment	Policy Framework	Adopted	Department of Biotechnology, Ministry of Science and Technology, Government of India	included	Link
Asia-Pacific	India	National	2021	Bioeconomy-related Strategy	National Biotechnology Development Strategy 2021-2025	National Strategy	Adopted Update	Department of Biotechnology Ministry of Science & Technology Government of India	included	Link
Asia-Pacific	India	National	2018	Bioeconomy-related Strategy	National Biofuels Policy 2018	Policy	Adopted Update	Ministry of Petroleum and Natural Gas	included	
Asia-Pacific	India	National	2015	Bioeconomy-related Strategy	National Biotechnology Development Strategy 2015-2020	National Strategy	Adopted Update	Department of Biotechnology Ministry of Science &	included	Link

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								Technology Government of India		
Asia-Pacific	India	National	2014	Bioeconomy-related Strategy	National Biotechnology Development Strategy	National Strategy	Adopted Update	Department of Biotechnology Ministry of Science & Technology Government of India	included	
Asia-Pacific	India	National	2007	Bioeconomy-related Strategy	National Biotechnology Development Strategy	National Strategy	Adopted	Department of Biotechnology Ministry of Science & Technology Government of India	included	Link
Asia-Pacific	Indonesia	National	2025	Bioeconomy-related Strategy	Strategic Plan of the Indonesian Ministry of Agriculture 2025 – 2029	Strategic Plan	Adopted Update	Ministry of Agriculture	excluded	Link
Asia-Pacific	Indonesia	National	2023	Bioeconomy-related Strategy	Indonesia Blue Economy Roadmap	Roadmap	Adopted	Badan Perencanaan Pembangunan Nasional (Bappenas) / Ministry of National Development Planning	included	Link
Asia-Pacific	Indonesia	National	2020	Bioeconomy-related Strategy	Strategic Plan of the Indonesian Ministry of Agriculture 2020 – 2024	Strategic Plan	Adopted Update	Ministry of Agriculture	included	Link
Asia-Pacific	Indonesia	National	2015	Bioeconomy-related Strategy	Strategic Plan of the Indonesian Ministry of Agriculture 2015 – 2019	Strategic Plan	Adopted Update	Ministry of Agriculture	included	
Asia-Pacific	Indonesia	National	2014	Bioeconomy-related Strategy	National Energy Policy	Policy	Adopted	President of the Republic of Indonesia	included	
Asia-Pacific	Japan	National	2024	Dedicated Bioeconomy Strategy	Updated Bioeconomy Strategy	National Strategy	Adopted Update	Japan's Cabinet Office, Council for Promotion of Integrated Innovation Strategy	included	Link
Asia-Pacific	Japan	National	2020	Dedicated Bioeconomy Strategy	Bio-Strategy Japan	National Strategy	Adopted Update	Cabinet Office; Council for Science, Technology and Innovation	included	
Asia-Pacific	Japan	National	2019	Dedicated Bioeconomy Strategy	Bio-Strategy Japan	National Strategy	Adopted	Council for Promotion of Integrated Innovation Strategy	included	Link
Asia-Pacific	Japan	National	2006	Bioeconomy-related Strategy	Biomass Nippon Strategy	National Strategy	Adopted	Cabinet Office; Council for Science, Technology and Innovation	included	Link
Asia-Pacific	Malaysia	National	2023	Bioeconomy-related Strategy	National Biomass Action Plan 2023–2030	Action Plan	Adopted	Ministry of Plantation and Commodities	included	
Asia-Pacific	Malaysia	National	2022	Bioeconomy-related Strategy	National Biotechnology Policy 2.0	National Policy	Adopted	Ministry of Science, Technology and Innovation	included	Link
Asia-Pacific	Malaysia	National	2015	Dedicated Bioeconomy Strategy	Bioeconomy Transformation Programme (BTP) - Annual report	Annual report	Progress report	Ministry of Science, Technology and Innovation; Malaysian Biotechnology Corporation SDN BHD	excluded	
Asia-Pacific	Malaysia	National	2012	Dedicated Bioeconomy Strategy	Bioeconomy Transformation Programme (BTP) - Booklet Brochure	Transformation Programme	Adopted	Ministry of Science, Technology and Innovation; Malaysian Biotechnology Corporation SDN BHD	included	Link
Asia-Pacific	New Zealand	National	2022	Bioeconomy-related Strategy	Towards a productive, sustainable and inclusive economy - First	National Plan	Adopted	Ministry for the Environment	included	Link 1, Link 2

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					Emissions Reduction Plan CHAPTER 9: Circular economy and bioeconomy					
Asia-Pacific	New Zealand	National	2020	Bioeconomy-related Strategy	Agritech Industry Transformation Plan	Transformation Programme	Adopted	Ministry of Business, Innovation and Employment	included	
Asia-Pacific	New Zealand	National	2017	Bioeconomy-related Strategy	Primary Sector Science Roadmap – Te Ao Turoa	Roadmap	Adopted	Ministry for Primary Industries	included	
Asia-Pacific	New Zealand	National	2013	Bioeconomy-related Strategy	Biological Industries Research Fund	Investment Plan	Adopted	Ministry of Business, Innovation and Employment	included	
Asia-Pacific	New Zealand	National	2010	Bioeconomy-related Strategy	Bioenergy Strategy	National Strategy	Preparation	Bioenergy Association of New Zealand (BANZ)	included	
Asia-Pacific	Pacific Community (SPC)	Regional	2024	Bioeconomy-related Strategy	Unlocking Blue Pacific Prosperity	Programme	Preparation	Pacific Community (SPC); Office of the Pacific Ocean Commissioner	included	Link 1, Link 2
Asia-Pacific	Pakistan	National	2025	Bioeconomy-related Strategy	National Agricultural Biotechnology Policy (NABP) 2025	Policy	Adopted	Ministry of National Food Security and Research	included	Link
Asia-Pacific	Singapore	National	2026	Bioeconomy-related Strategy	Research, Innovation and Enterprise 2030 Plan (RIE2030)	Plan	Adopted	National Research Foundation, Prime Minister's Office	included	Link
Asia-Pacific	South Korea	National	2025	Bioeconomy-related Strategy	Synthetic Biology Promotion Act	Act	Adopted	Ministry of Science and ICT (MSIT); National Assembly	included	
Asia-Pacific	South Korea	National	2024	Bioeconomy-related Strategy	Act to Promote Green Bio Industry	Act	Adopted	National Assembly, MAFRA (Ministry of Agriculture, Food and Rural Affairs)	included	Link 1, Link 2
Asia-Pacific	South Korea	National	2024	Bioeconomy-related Strategy	Advanced Biotechnology Initiative (draft)	Strategic Plan	Adopted	Ministry of Science and ICT	included	Link
Asia-Pacific	South Korea	National	2023	Dedicated Bioeconomy Strategy	Bio Economy 2.0 Promotion Direction	Promotion Direction	Adopted	Ministry of Trade, Industry and Energy	included	Link 1, Link 2
Asia-Pacific	South Korea	National	2022	Bioeconomy-related Strategy	5th Basic Plan for Science and Technology	Strategic Plan	Adopted Update	Ministry of Science and ICT	included	Link
Asia-Pacific	South Korea	National	2013	Bioeconomy-related Strategy	Biotechnology in Korea 2013	Report	Progress report	Ministry of Science, ICT and Future Planning	excluded	
Asia-Pacific	South Korea	National	2013	Bioeconomy-related Strategy	3rd Basic Plan for Science and Technology (draft & entire)	Strategic Plan	Adopted Update	Ministry of Science and ICT	included	Link 1, Link 2, Link 3
Asia-Pacific	South Korea	National	2008	Bioeconomy-related Strategy	Blue-Bio 2016 Plan	National Roadmap	Adopted	Ministry of Education, Science and Technology	included	
Asia-Pacific	South Korea	National	2007	Bioeconomy-related Strategy	2020 Vision and Strategy of Bio-industry	Strategic Plan	Adopted	Ministry of Science, ICT and Future Planning	included	
Asia-Pacific	South Korea	National	2006	Bioeconomy-related Strategy	2 nd Framework Plan for Promotion of Biotechnology, Bio-Vision 2016	Framework	Adopted	Ministry of Science and Technology	included	
Asia-Pacific	Sri Lanka	National	2010	Bioeconomy-related Strategy	National Biotechnology Policy	Policy	Adopted	Ministry of Science and Technology	included	
Asia-Pacific	Thailand	National	2021	Dedicated Bioeconomy Strategy	Bio-Circular-Green Economy Action Plan	Action Plan	Adopted	Ministry of Higher Education, Science, Research and Innovation	included	

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Asia-Pacific	Thailand	National	2019	Dedicated Bioeconomy Strategy	Bio-Circular-Green Economy (BCG) in Action: The new Sustainable Growth Engine	White Paper	Preparation	Ministry of Higher Education, Science, Research and Innovation	included	
Asia-Pacific	Thailand	National	2018	Bioeconomy-related Strategy	Measures for the Development of Bio-Industry in Thailand 2018 – 2027	Development Strategy	Adopted	Ministry of the Industry	included	
Asia-Pacific	Vietnam	National	2026	Bioeconomy-related Strategy	Directive on Promoting the Production, Blending, Distribution, and Use of Biofuels in Vietnam (Directive 07/CT-TTg)	Directive	Adopted	Prime Minister	excluded	Link
Asia-Pacific	Vietnam	National	2023	Bioeconomy-related Strategy	Resolution of the Politburo on the development and application of biotechnology to serve the country's sustainable development in the new situation (No. 36-NQ/TW)	Resolution	Adopted	Central Committee	included	Link
Asia-Pacific	Vietnam	National	2017	Bioeconomy-related Strategy	Decision approving the master plan for biotechnology industry development through 2030	Decision	Adopted Update	Prime Minister	included	Link
Asia-Pacific	Vietnam	National	2008	Bioeconomy-related Strategy	Decision approving the master plan for biotechnology industry development through 2020	Decision	Adopted Update	Prime Minister	included	Link
Asia-Pacific	Vietnam	National	2005	Bioeconomy-related Strategy	Directive No. 50-CT/TW on accelerating the development and application of biotechnology to serve the cause of national industrialization and modernization	Directive	Adopted	Secretariat	excluded	Link
Asia-Pacific	Vietnam	National	1994	Bioeconomy-related Strategy	Government resolution on the development of biotechnology in Vietnam up to 2010	Resolution	Adopted	Vietnam Government	excluded	Link
Europe	Austria	National	2022	Dedicated Bioeconomy Strategy	Aktionsplan für Bioökonomie	Action Plan	Adopted	Government of Austria. As of 2026, the responsible Ministry is: BMLUK, Bundesministerium für Land- und Forstwirtschaft, Klima- und Umweltschutz, Regionen und Wasserwirtschaft.	included	Link
Europe	Austria	National	2019	Dedicated Bioeconomy Strategy	Bioeconomy – A Strategy for Austria	National Strategy	Adopted	Bundesministerium für Nachhaltigkeit und Tourismus; Bundesministerium für Bildung, Wissenschaft und Forschung; Bundesministerium für Verkehr, Innovation und Technologie	included	
Europe	Bulgaria	National	2025	Dedicated Bioeconomy Strategy	Roadmap for the Development of the Bioeconomy in Bulgaria (2 files: Full document in Bulgarian, summary in English)	Roadmap	Preparation	The Working group established by order of the Minister of Agriculture and Food of Republic of Bulgaria	included	Link 1, Link 2, Link 3

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Europe	Croatia	National	2026	Dedicated Bioeconomy Strategy	Proposal for a bioeconomy strategy until 2035 (officially adopted in 2026)	National Strategy	Adopted	The Ministry of Agriculture, the Ministry of Economy and Sustainable Development, the Ministry of Science and Education and the Ministry of Regional Development and European Union Funds are responsible for the development of this Strategy, with the coordination of the development of the Strategy entrusted to the Ministry of Agriculture.	included	Link
Europe	Croatia	National	2023	Dedicated Bioeconomy Strategy	Draft Strategies Bioeconomy by 2035 (draft for public consultation)	National Strategy	Preparation	The Ministry of Agriculture, the Ministry of Economy and Sustainable Development, the Ministry of Science and Education and the Ministry of Regional Development and European Union Funds are responsible for the development of this Strategy, with the coordination of the development of the Strategy entrusted to the Ministry of Agriculture.	included	Link
Europe	Croatia	National	2016	Bioeconomy-related Strategy	Rural Development Programme 2014-2020	Development Programme	Adopted	Ministry of Agriculture, Directorate for Management of EU Funds for Rural Development, EU and International Co-operation	included	
Europe	Czechia	National	2019	Dedicated Bioeconomy Strategy	Bioeconomy concept in the Czech Republic from the perspective of the Ministry of Agriculture 2019–2024	National Strategy	Adopted	Ministry of Agriculture	included	
Europe	Czechia	National	2012	Bioeconomy-related Strategy	Action Plan for Biomass in the Czech Republic 2012–2020	Action Plan	Adopted	Ministry of Agriculture; Ministry of Environment	included	
Europe	Denmark	National	2018	Bioeconomy-related Strategy	Strategy for Circular Economy	Strategic Plan	Adopted	Ministry of Environment and Food; Ministry of Industry, Business and Financial Affairs	included	
Europe	Denmark	National	2018	Bioeconomy-related Strategy	Research 2025 – promising future research areas	Research Framework	Adopted Update	Danish Agency for Higher Education and Science	included	
Europe	Denmark	National	2013	Bioeconomy-related Strategy	Growth Plan for Water, Bio and Environmental Solutions	Growth Plan	Adopted	Danish Government	included	
Europe	Denmark	National	2013	Bioeconomy-related Strategy	Growth Plan for Food	Growth Plan	Adopted	Ministry of Business and Growth	included	
Europe	Estonia	National	2024	Dedicated Bioeconomy Strategy	Methodological Framework for Developing a Regional Circular Bioeconomy Roadmap	Methodological Framework	Preparation	Tallinn University in cooperation with Ministry of	included	

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								Regional Affairs and Agriculture		
Europe	Estonia	National	2023	Dedicated Bioeconomy Strategy	Circular Bioeconomy Roadmap	Roadmap	Adopted	Ministry of Climate; Ministry of Rural Affairs	included	
Europe	European Union	Regional	2025	Dedicated Bioeconomy Strategy	A Strategic Framework for a Competitive and Sustainable EU Bioeconomy	Framework	Adopted Update	European Commission	included	
Europe	European Union	Regional	2022	Bioeconomy-related Strategy	EU Bioeconomy Strategy Progress Report	Progress Report	Adopted Update	European Commission	included	
Europe	European Union	Regional	2018	Dedicated Bioeconomy Strategy	A sustainable Bioeconomy for Europe: strengthening the connection between economy, society and the environment	Strategic plan (update)	Adopted Update	European Commission	included	
Europe	European Union	Regional	2012	Dedicated Bioeconomy Strategy	Innovating for Sustainable Growth: A Bioeconomy for Europe	Strategic Plan	Adopted	European Commission	included	
Europe	Finland	National	2022	Dedicated Bioeconomy Strategy	The Finnish Bioeconomy Strategy Sustainably towards higher value added	Policy Strategy	Adopted Update	Ministry of Economic Affairs and Employment, Ministry of Agriculture and Forestry, Ministry of the Environment, Ministry of Education and Culture, Ministry of Social Affairs and Health, Ministry of Transport and Communications, Ministry of Finance, Prime Minister's Office	included	
Europe	Finland	National	2014	Dedicated Bioeconomy Strategy	The Finnish Bioeconomy Strategy	National Strategy	Adopted	Ministry of Employment and the Economy; Ministry of the Environment	included	
Europe	France	National	2017	Dedicated Bioeconomy Strategy	A Bioeconomy Strategy for France (2017) A bioeconomy strategy for France: 2018–2020 Action plan (2018)	Strategic Plan	Adopted	Ministère de l'Agriculture et de l'Alimentation	included	
Europe	Germany	National	2020	Dedicated Bioeconomy Strategy	National Bioeconomy Strategy	National Strategy	Adopted Update	Bundesministerium für Bildung und Forschung; Bundesministerium für Ernährung und Landwirtschaft	included	
Europe	Germany	National	2013	Dedicated Bioeconomy Strategy	National Policy Strategy on Bioeconomy	National Policy Strategy	Adopted	Bundesministerium für Ernährung und Landwirtschaft	included	
Europe	Germany	National	2010	Dedicated Bioeconomy Strategy	National Research Strategy BioEconomy 2030	Research Framework	Adopted	Federal Ministry of Education and Research	included	
Europe	Hungary	National	2024	Bioeconomy-related Strategy	Biogas and Biomethan Action Plan Biogáz és biometán akcióterv	Action Plan	Adopted	Ministry of Energy	included	Link

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Europe	Ireland	National	2026	Dedicated Bioeconomy Strategy	Draft Bioeconomy Strategy 2026-2030 BioScale 2030: Advancing a Sustainable Bioeconomy for Ireland	National Strategy	Preparation	Government of Ireland (Department of Climate, Energy and the Environment and Department of Agriculture, Food and the Marine)	included	Link
Europe	Ireland	National	2023	Dedicated Bioeconomy Strategy	Bioeconomy Action Plan 2023-2025	Action plan	Adopted	Department of the Environment, Climate and Communications and the Department of Agriculture, Food and the Marine	included	
Europe	Ireland	National	2018	Dedicated Bioeconomy Strategy	National Policy Statement on the Bioeconomy	National Policy Statement	Adopted	Government of Ireland	included	
Europe	Italy	National	2024	Dedicated Bioeconomy Strategy	Updated Implementation Action Plan (2025-2027) for the Italian Bioeconomy Strategy	Action Plan	Adopted Update	National Bioeconomy Coordination Board (NBCB) of the Presidency of Council of Ministers	included	
Europe	Italy	National	2020	Dedicated Bioeconomy Strategy	Implementation Action Plan (2020–2025) for the Italian Bioeconomy Strategy BIT II	Action Plan	Adopted Update	National Bioeconomy Coordination Board	included	
Europe	Italy	National	2019	Dedicated Bioeconomy Strategy	Bioeconomy in Italy: A new Bioeconomy strategy for a sustainable Italy – BIT II	National Strategy	Adopted Update	Presidenza del Consiglio dei Ministri	included	
Europe	Italy	National	2017	Dedicated Bioeconomy Strategy	Bioeconomy in Italy: A unique opportunity to reconnect economy, society and environment (BIT)	National Strategy	Adopted	Italian Presidency of Council of Ministers; Ministry for Economic Development; Ministry of Agriculture, Food and Forestry; Ministry of Education, University and Research; Ministry of the Environment, Land and Sea; Committee of Italian Regions; Agency for territorial cohesion; Italian Technology Clusters for Green Chemistry Agri-Food and Bluegrowth	included	
Europe	Latvia	National	2017	Dedicated Bioeconomy Strategy	Latvian Bioeconomy Strategy 2030 (LI-BRA)	National Strategy	Adopted	Ministry of Agriculture	included	
Europe	Lithuania	National	2023	Dedicated Bioeconomy Strategy	Bioeconomy concept paper executive summary	Concept Paper	Preparation	Vytautas Magnus University (BIOEASTsUP H2020 project funded by European Union's Horizon 2020 research and innovation programme)	included	Link
Europe	Lithuania	National	2017	Dedicated Bioeconomy Strategy	Lithuanian Bioeconomy Development Feasibility Study	Feasibility Study	Preparation	Ministry of Economy, Aleksandras Stulginskis University	included	Link

Region	Geographical Scope	Scale	Year of Publication	Strategy Type	Strategy Title	Type of Document	Status	Author/Commissioner	Analysis inclusion	URL
Europe	Lithuania	National	2006	Bioeconomy-related Strategy	National Industrial Biotechnology Development Programme 2007-2010	Development Programme	Adopted	Ministry of Economy and Innovation of the Republic of Lithuania	included	
Europe	Netherlands	National	2025	Bioeconomy-related Strategy	Government's vision on Biotechnology 2025 - 2040	Government's Vision	Preparation	Government of the Netherlands	included	Link
Europe	Netherlands	National	2018	Dedicated Bioeconomy Strategy	The position of the bioeconomy in the Netherlands	Framework	Adopted	Ministry of Economic Affairs ans Climate Policy	included	
Europe	Netherlands	National	2013	Bioeconomy-related Strategy	Groene Groei: voor een sterke, duurzame economie	Unknown	Adopted	Unknown	included	
Europe	Netherlands	National	2012	Bioeconomy-related Strategy	Groene Groei – Van Biomassa naar Business	Strategic Framework	Adopted	Ministerie van Economische Zaken	included	
Europe	Nordic Countries	Regional	2018	Dedicated Bioeconomy Strategy	Nordic Bioeconomy Programme: 15 Action Points for Sustainable Change	Framework	Adopted	Nordic Council of Ministers	included	
Europe	Norway	National	2016	Dedicated Bioeconomy Strategy	The Government's Bioeconomy Strategy: Familiar resources – undreamt of possibilities	National Strategy	Adopted	Ministry of Trade, Industry and Fisheries	included	Link
Europe	Poland	National	2019	Bioeconomy-related Strategy	Road map towards the transition to circular economy	Roadmap	Preparation	Council of Ministers	included	Link
Europe	Portugal	National	2021	Dedicated Bioeconomy Strategy	Plano de Ação Para a Bioeconomia Sustentável Horizonte 2025	Action plan	Adopted	Republica de Portuguesa; Agricultura e Pescas; Ambiente e Energia	included	
Europe	Portugal	National	2019	Bioeconomy-related Strategy	Blue Bioeconomy Strategy	Roadmap	Adopted	BLUEandGREEN; CIIMAR – Interdisciplinary Centre of Marine and Environmental Research	included	
Europe	Portugal	National	2017	Bioeconomy-related Strategy	National Plan for the Promotion of Biorefineries	Promotion Plan	Adopted	Ministero dello Sviluppo Economico	included	
Europe	Portugal	National	2017	Bioeconomy-related Strategy	Circular Economy Action Plan	Action Plan	Adopted	Potuguese Council of Ministers	included	
Europe	Portugal	National	2013	Bioeconomy-related Strategy	Estrategía Nacional para o Mar	Action Plan	Adopted	República Portuguesa; Direção-Geral de Política do Mar (DGPM)	included	
Europe	Russia	National	2026	Dedicated Bioeconomy Strategy	Strategy for the Development of the Bioeconomy in the Russian Federation for the Period up to 2036 and the Long Term up to 2050	National Strategy	Adopted	Government of the Russian Federation	included	Link 1, Link 2
Europe	Russia	National	2013	Bioeconomy-related Strategy	Russian Government Roadmap for Development of Biotechnology	Roadmap	Adopted	Government of the Russian Federation	included	
Europe	Russia	National	2012	Bioeconomy-related Strategy	Comprehensive Program for the Development of Biotechnology in Russia by 2020 (BIO2020)	Strategic Framework	Adopted	Government of the Russian Federation; Ministry of Economic Development of the Russian Federation	included	
Europe	Slovenia	National	2015	Bioeconomy-related Strategy	Transition to a Green Economy in Slovenia	Framework Programme	Preparation	Ministry of the Environment and Spatial Planning	included	
Europe	Spain	National	2018	Dedicated Bioeconomy Strategy	Spanish Bioeconomic Strategy: "Horizon 2030 – Action plan 2018"	Action Plan	Adopted	Ministry of Agriculture, Fisheries, and Food	included	

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Europe	Spain	National	2016	Dedicated Bioeconomy Strategy	Spanish Bioeconomic Strategy: 2030 Horizon - The 2016 Action Plan	National Strategy and Action Plan	Adopted	Ministerio de Economia y Competitividad	included	
Europe	Sweden	National	2023	Dedicated Bioeconomy Strategy	En hållbar bioekonomistrategi – för ett välmående fossilfritt samhälle	National Strategy	Preparation	Government of Sweden	included	
Europe	Sweden	National	2018	Bioeconomy-related Strategy	Sweden's National Forest Programme	National Plan	Adopted	Government of Sweden	included	
Europe	Sweden	National	2012	Bioeconomy-related Strategy	Swedish Research and Innovation Strategy for a Bio-based Economy	National Strategy	Preparation	Swedish Government commissioned Formas, in consultation with VINNOVA and the Swedish Energy Agency	included	
Europe	United Kingdom	National	2018	Dedicated Bioeconomy Strategy	Growing the Bioeconomy Improving lives and strengthening our economy: A national bioeconomy strategy to 2030	National Strategy	Withdrawn	HM Government	included	Link 1, Link 2
Middle East	Oman	National	2026	Bioeconomy-related Strategy	National Biotechnology Strategy	National Strategy	Preparation	Unknown	included	Link
Middle East	Saudi Arabia	National	2024	Bioeconomy-related Strategy	The National Biotechnology Strategy	National Strategy	Adopted	Kingdom of Saudi Arabia	included	Link

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AI Usage Disclosure: Artificial intelligence (AI) tools were used in the preparation of this report. AI was used mainly for two purposes: first, to support linguistic revision and editing of the text; second, to validate key figures and indicators against the underlying databases. All AI-supported checks and edits were reviewed by the authors.

In addition, an initial draft of the Methods chapter was generated by AI on the basis of the internal documentation of the methodology. This draft was subsequently revised by the authors. The authors take full responsibility for the content, analysis and conclusions of this report.