

Bioeconomy in Panama

Insights from a gender equality, disability and social inclusion analysis

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Key messages

‘Bioeconomy’ refers to the sustainable production, utilisation, conservation and regeneration of biological resources within integral ecosystems, fostering value chains in food, energy and industrial goods (ECLAC, 2023b).

Panama is advancing efforts related to the bioeconomy: previous efforts were uncoordinated and lacked national leadership and direction.

A national bioeconomy strategy is now being developed under the leadership of the National Secretariat of Science, Technology and Innovation (Secretaria Nacional de Ciencia, Tecnología e Innovación; SENACYT), which has internal gender and social inclusion mechanisms that could shape an inclusive strategy. The plan is for it to be in place by 2026.

Panama’s rich natural resources, biodiversity and indigenous knowledge systems offer significant potential for inclusive and sustainable bioeconomy development.

Regional actors such as Instituto Interamericano de Cooperación para la Agricultura (IICA), the Inter-American Development Bank (IDB), and the Food and Agriculture Organization of the United Nations (FAO) have implemented successful inclusive bioeconomy initiatives in Latin America that offer valuable lessons for Panama.

There are opportunities to engage marginalised groups, particularly women and indigenous peoples, in bioeconomy value chains and to address current barriers to their participation.



About the authors

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About this publication

The UK Foreign, Commonwealth & Development Office (FCDO) has commissioned ODI Global to conduct a gender equality, disability and social inclusion (GEDSI) analysis in Latin America, with a view to inform FCDO's efforts to support women, girls and other minority groups across the region. Focused on four countries: Chile, Guatemala, Panama and Uruguay, the analysis provides the latest high-quality evidence on the state of a number of GEDSI dimensions at national levels. The research also spotlights a range of salient issues including: gender-based violence, women's participation in politics, women's economic autonomy, feminist foreign policy, LGBTQ+ rights, children in alternative care, online violence and bioeconomy. For each country, the analysis provides:

- an overview of up-to-date data on gender equality, disability and social inclusion
- an analytical 'deep dive' into two/three topics of national relevance
- recommendations for relevant stakeholders to support national-level action and/or collaborate with potential international partners.

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Front cover image: A woman in a colorful dress and holding a vibrant umbrella at a fruit market in Bocas del Toro, Panama (2025) © Rafael de Gracia | Shutterstock ID: 2604681261

Introduction

This brief outlines the current status and potential of Panama's bioeconomy from a gender equality, disability and social inclusion (GEDSI) perspective. The brief provides a synthesis of the emerging strategy, the role of key actors, the potential for inclusive development and examples of good practices in the region that could guide Panama's approach. The analysis draws on existing literature, national and international reports, and expert interviews.

Key statistics

GEDSI in Panama

- Panama is one of the most unequal countries in Latin America, with deep intersectional disparities affecting women, indigenous populations and people with disabilities.
- Rural women face a multidimensional poverty rate of 64.2%, compared to 22.9% for urban women (Madrigal et al., 2023).
- Poverty in indigenous territories is more than four times higher than in non-indigenous areas (ECLAC, 2023a).
- Indigenous women earn 70% less than non-Indigenous men (World Bank, 2022).
- Households with people with disabilities face poverty rates of 23.9% in urban areas and 46.8% in rural areas (García Mora et al., 2021).
- Women's labour force participation is 50%, compared to 77% for men (UNDP, 2022a).
- Afro-Panamanian women, despite higher educational attainment than other social groups, continue to face employment and wage discrimination (UNFPA, 2023).
- Average national lower secondary completion is 93% for females and 85% for males. Rural lower secondary completion rates are 79% against 93% in urban areas, and 75% among the poorest Panamanians compared to 99% among the richest (UNESCO indicators, 2021).

Bioeconomy

- The bioeconomy represents 12% of national production and only 4% of exports (ECLAC, 2023b).
- Panama has the lowest gross production value from the bioeconomy among 13 Latin American countries studied by ECLAC (ECLAC, 2023b).
- Sixty-six (66)% of agricultural imports come from the United States, especially yellow corn, wheat and rice (Olson, 2023; International Trade Administration, 2023).

Findings

Current context of the bioeconomy in Panama

Panama does not yet have a national bioeconomy policy framework, but institutional interest and activities in the sector are increasing. SENACYT is leading the formulation of a national strategy, and its institutional mandate includes gender equality and social inclusion considerations (key informant interview; KII). Currently, bioeconomy-related initiatives in Panama are scattered and often lack coordination (SENACYT and PNUD, 2023). They are led by various actors including SENACYT, the Agricultural Research Institute of Panama (Instituto de Innovación Agropecuaria de Panamá; IDIAP), the National Institute of Vocational Training for Human Development (Instituto Nacional de Formación Profesional y Capacitación para el Desarrollo Humano; INADEH), and the Institute for Scientific Research and High Technology Services of Panama (Instituto de Investigaciones Científicas y Servicios de Alta Tecnología de Panamá AIP; INDICASAT). These projects focus on areas such as bioenergy, sustainable agriculture and biodiversity conservation (IICA, 2024).

Panama's bioeconomy sector remains in an early stage of development, especially in terms of institutional and policy coherence. However, the leadership of SENACYT and the presence of established national and international actors offer a strong foundation for coordinated progress.

Potential for inclusive bioeconomy development

Panama's rich biodiversity and the traditional knowledge of its indigenous peoples position the country as a promising site for inclusive bioeconomic development. However, the participation of marginalised groups – especially indigenous communities and rural women – in the bioeconomy remains limited (KIIs).

Barriers include lack of access to finance, limited technical training, low digital and scientific literacy, and the absence of targeted policy instruments. These barriers have a disproportionate impact on women, youth, indigenous groups, and people with disabilities (KIIs; IICA, 2024; SENACYT and PNUD, 2023).

The development of Panama's bioeconomy strategy provides a critical opportunity to embed GEDSI principles from the outset. SENACYT's gender unit and its adherence to the United Nations Development Programme (UNDP) Gender Equality Seal signal an institutional willingness to address these gaps.

Regional and international good practices

Several countries in Latin America – particularly Brazil, Colombia and Costa Rica – have made substantial progress in designing and implementing inclusive bioeconomy policies that Panama can draw upon as it develops its own strategy.

1. **Brazil:**¹ The principles of Brazil's bioeconomy strategy emphasise respect for the rights of indigenous peoples and traditional communities to self-determination and the traditional use and management of their territories. They also highlight the importance of reducing inequalities to promote regional development and ensuring the fair and equitable sharing of benefits arising from access to genetic heritage and associated traditional knowledge (Ministério do Meio Ambiente e Mudança do Clima, 2024).
2. **Colombia:**² The country's bioeconomy strategy explicitly notes that inclusive and equitable bioeconomy must recognise and address existing inequalities in access to resources, land, knowledge and benefits. This includes gender inequalities, as well as those affecting indigenous peoples, rural communities and other historically marginalised groups (Gobierno de Colombia, 2020)
3. **Costa Rica:**³ This country has adopted a strategy guided by territorial equity and social inclusion, aiming to create opportunities for Indigenous peoples, youth, and women, and positioning the country as a sustainable development model (Ministerio de Ambiente y Energía, 2020).

Additionally, the Latin American Bioeconomy Network, led by IICA and comprising more than 60 institutions from 10 countries, provides a regional platform for sharing experiences and aligning with guiding principles such as sustainability, respect for cultural diversity and equitable distribution of benefits (IICA, 2024).

The examples below highlight how integrating local knowledge, equitable access and community ownership into bioeconomic initiatives can lead to more sustainable and inclusive outcomes.

1 www.gov.br/mma/pt-br/composicao/sbc/dpeb/estrategia-nacional-de-bioeconomia

2 https://minciencias.gov.co/sites/default/files/upload/paginas/bioeconomia_para_un_crecimiento_sostenible-qm_print.pdf

3 <https://chmcostarica.go.cr/recursos/documentos-y-publicaciones/estrategia-nacional-de-bioeconomia-costa-rica-2020-2030-resumen>

Examples of inclusive bioeconomy projects in the region

Panama may benefit from reviewing the following good practices:

1. **Uruguay's agroecological systems for women's empowerment:**⁴ Supported by FAO and the World Bank, this programme leverages technical and financial support to build sustainable agricultural productivity and promote climate change adaptation via the creation and promotion of practices that consider specific social, environmental and economic conditions. Another key factor is the inclusion of women-led farming systems in programmatic enhancements through access to technical assistance.
2. **Ecuador's Chakra system by Kichwa communities:**⁵ This initiative integrates agroforestry and biodiversity conservation, spearheaded by the Kichwa indigenous population. The project has garnered commercial value, which has led to the creation of a series of unique commercial certifications and the support of production associations. This has resulted in the creation of a social support fund, and has increased commercialisation and international collaboration.

Knowledge gaps

The research observed the following knowledge gaps:

- limited data on the participation of marginalised groups in existing bioeconomy-related initiatives (KII)
- lack of analysis on the potential economic impact of GEDSI-inclusive bioeconomy strategies
- absence of a monitoring and evaluation framework to assess GEDSI outcomes in bioeconomy programmes (Senacyt and PNUD, 2023).

4 www.fao.org/support-to-investment/news/detail/en/c/1601307/

5 <https://repositorio.cepal.org/server/api/core/bitstreams/822fc6fo-b72e-438e-9291-746fbfcaaae3/content>

Recommendations

- Support inclusive, scalable bioeconomy pilot projects via the Science and Technology Network (STN).
- Map current bioeconomy initiatives involving women, indigenous, Afro-Panamanian and rural groups.
- Identify bioeconomy entry points for marginalised groups, especially women, in sectors like agroforestry, sustainability, fisheries and energy – potentially through regional collaboration.
- Promote gender and social inclusion in Panama's bioeconomy roadmap by leveraging UK and regional expertise and networks. Additionally, facilitate science partnerships through UK-led knowledge exchange and collaboration with regional networks.
- Facilitate regional and international knowledge exchange, including training, virtual courses and technical visits, to strengthen inclusive bioeconomy strategies and practices.
- Support capacity-building and financing initiatives – such as bioeconomy think tanks, tailored training and microcredit schemes – for marginalised groups and bio-entrepreneurs.

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