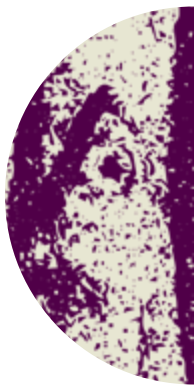




5

**Forestry, fisheries,
aquaculture,
and tourism
as engines of local
development**



Key messages

The forestry, fisheries, aquaculture, and tourism sectors are essential for diversifying rural incomes, creating employment in specific territories—such as forested, coastal, and riverine areas—and integrating women into rural economies.



The income generated by these activities and their products—including non-timber forest resources and aquatic fauna and flora—is crucial for the food security of rural communities, especially in the most isolated areas.



The forestry sector requires consistent, long-term policies to achieve its full development. In addition, forestry enterprises need financing conditions that account for the long growth cycles of trees.



Certification of both timber and non-timber products adds value and helps improve the socioeconomic conditions of workers in the sector.



Sustainable aquaculture has emerged as a dynamic sector in which the region is advancing rapidly, with strong potential to meet the expected rise in food demand.

The sustainability of fishing zones in Latin America and the Caribbean (LAC) is in decline, with the South Pacific showing the lowest sustainability values. This is mainly due to illegal, unreported, and unregulated (IUU) fishing, and to a lesser extent, to the impacts of climate change.



There is a growing demand for tourism experiences linked to culture and nature. The abundance of ecological resources and cultural diversity in LAC offers the region a competitive advantage in this sector.



The main challenges for rural tourism—such as limited infrastructure and basic services—coincide with the needs of local populations. Public investment in these areas should therefore take into account the potential benefits of tourism when setting priorities and evaluating outcomes.

Forestry, fisheries, aquaculture, and tourism as engines of local development¹

Introduction

Forestry, fisheries, and aquaculture activities account for a smaller share of exports, employment, and value added across the region's economies than agriculture, yet they remain vital for rural communities. These sectors provide local employment with relatively low human and physical capital requirements, allowing rural communities to diversify their sources of income, while also supplying essential goods such as fish and non-timber forest products.

In the case of tourism, its role in the region's economies is even smaller, with Caribbean states standing out—where tourism revenues can

represent more than 20% of GDP. The growing demand for nature- and culture-based tourism offers countries an opportunity to develop rural tourism experiences that engage local communities.

This chapter examines these three sectors within the economies of Latin America and the Caribbean (LAC), emphasizing their rural dimension, their contributions to local economies, and their potential. It also analyzes the main opportunities and challenges these sectors face in improving local living conditions and provides policy recommendations to strengthen them.

¹ This chapter was written by Guillermo Cabral and Juan Odriozola. Belén Cañuelo, Delfina Silva, and Emilse Vargas provided research assistance.

Forestry sector

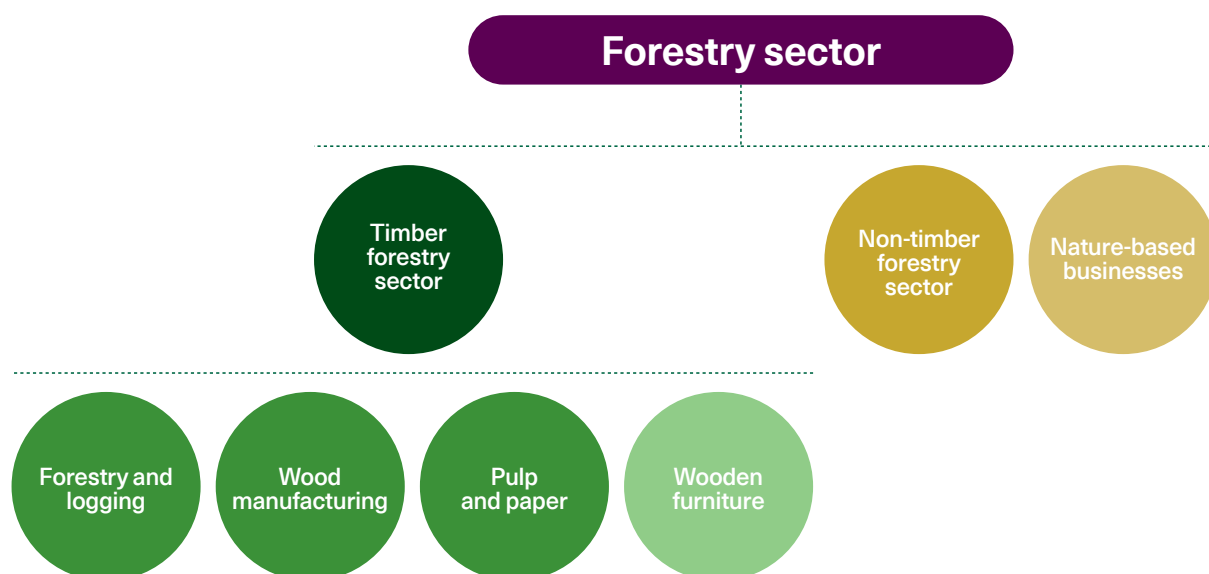
The timber forestry sector comprises four subsectors: (1) forestry and logging, (2) wood manufacturing, (3) pulp and paper, and (4) wooden furniture.

For the purposes of this document, the term “timber forestry sector” refers to the first three subsectors, unless otherwise indicated. The exclusion of the wooden furniture subsector is due to its activity being largely concentrated in urban areas and to the lack of disaggregated data.

The non-timber forestry sector,² in turn, encompasses a wide range of products such as nuts, mushrooms, herbs, spices, aromatic plants, rubber, and others. Its importance in the economy tends to be underestimated because it is poorly represented in public statistics, as much of its trade occurs in the informal sector (Sorrenti, 2017).

Nature-based businesses within the forestry sector sustainably harness forest resources and services to generate income—for instance, through carbon credits.

Figure 5.1
Diagram of forestry subsectors



² The FAO defines non-timber forest products as “goods of biological origin other than wood, derived from forests and that are tangible and physical in nature” (Sorrenti, 2017).

The relevance of the forestry sector in Latin America and the Caribbean

The region has one of the largest areas of forest cover in the world, with approximately 935 million hectares (ha) of forests—around 22% of the planet's total forested area (FAO, 2021a). However, this abundance comes with serious threats. Deforestation, wildfires, and land-use change, especially due to agricultural and livestock expansion, are the main causes of forest loss in the region (WRI, 2025). Although the net rate of forest loss has declined in some countries, degradation remains significant, affecting not only biodiversity but also the livelihoods of rural and Indigenous communities.

As of 2022, LAC had approximately 22.5 million ha of forest plantations (FAO, 2024d), mainly of eucalyptus and pine. Between 1990 and 2022, the region saw a 195% increase in planted area, compared to a 71% global increase over the same period. Argentina, Brazil, Chile, and Uruguay account for 81% of LAC's forest plantations.

●● Latin America and the Caribbean has recorded the fastest growth in forest plantations of any region in the world over the past 22 years

The distribution of forest plantations by property size shows a strong concentration among large landholders. In Chile, for example, three major companies (with more than 30,000 ha of plantations) account for 55.4% of the planted area; ten medium-sized companies (5,000–30,000 ha) represent 10.1%; 683 medium landowners (200–5,000 ha) hold 10.6%; and 22,830 small producers (less than 200 ha) account for 23.9% (World Bank, 2020b).

Brazil's 2017 agricultural census shows the amount of wood produced in cubic meters (m³) by purpose and holding size. The 99,718 farms under 200 ha produced 29.8% of the total; the 4,731 farms between 200 and 2,500 ha accounted for 25.2%; and the remaining 779 farms over 2,500 ha produced 45.3%.

●● Countries in the region show strong potential for forestry development

Several countries in the region stand out for high forestry productivity. Cubbage et al. (2022) measured output in cubic meters of wood per hectare per year (m³/ha/year) for various tree species (see Table 5.1). They also estimated the internal rate of return (IRR) of plantations, factoring in production costs and sales prices. Argentina, Brazil, Colombia, Chile, Paraguay, and Uruguay show high productivity levels, comparable to those of Asian countries and higher than those of Europe or the United States.

The projected growth in global demand for forest-based products together with the comparative advantages of some LAC countries in production, points to significant potential for the sector. According to FAO (2022d), demand for industrial wood-based products is expected to rise by 37% by 2050, in roundwood equivalent—the main input for such products—from 2.1 billion to 3.1 billion cubic meters. Growing demand for sustainably sourced forest products has also made certification an increasingly important factor (see Box 5.1).

Table 5.1

Rotation, average annual increment, and internal rate of return by country and species, 2022

Country	Species	Rotation (years)	Average annual increment (m ³ /ha)	Internal rate of return (IRR, %)
China	<i>Eucalyptus</i> sp. (Pingxiang, Guangxi)	6	20.0	28.6
Vietnam	<i>Acacia</i> (smallholders, northeast)	7	13.5	26.0
Paraguay	<i>Eucalyptus grandis</i> (urograndis clones)	12	25.0	22.0
Vietnam	<i>Eucalyptus urophylla</i> (northeast)	7	12.8	21.9
Laos	<i>Tectona grandis</i> (fast-growing)	18	12.4	21.2
Laos	<i>Eucalyptus</i> sp. (industrial)	7	33.0	20.9
Argentina	<i>Eucalyptus grandis</i> (average)	13	25.0	20.6
Chile	<i>Eucalyptus globulus</i> (pulp)	16	25.0	14.9
Uruguay	<i>Eucalyptus smitthii</i>	10	22.0	14.6
Colombia	<i>Pinus tecunumanii</i>	16	28.0	14.2
Chile	<i>Pinus radiata</i> (sawn wood, good soil)	22	30.0	14.1
Uruguay	<i>Eucalyptus grandis</i> (pulp)	10	25.0	14.1
Uruguay	<i>Eucalyptus grandis</i> (sawn wood)	16	27.0	12.4
Chile	<i>Eucalyptus nitens</i> (pulp)	14	30.0	12.3
Brazil	<i>Pinus taeda</i> (sawn wood)	21	30.0	11.8
Ecuador	<i>Eucalyptus globulus</i> (4 cutting cycles)	38	22.0	11.7
Uruguay	<i>Eucalyptus dunnii</i>	10	22.0	11.6
Chile	<i>Pinus radiata</i> (pulp, poor soil)	16	20.0	11.5
Ecuador	<i>Tectona grandis</i>	20	18.0	11.4
Colombia	<i>Pinus patula</i> (sawn wood)	18	18.0	11.0
Spain	<i>Eucalyptus globulus</i>	12	19.8	10.6
United States	<i>Pinus taeda</i> (average growth, South)	25	11.3	4.8
Finland	<i>Picea abies</i>	63	6.5	4.4
Finland	<i>Pinus sylvestris</i>	66	7.5	4.2
Poland	<i>Pinus sylvestris</i> (state or private forest)	100	9.3	2.9
United States	Mixed hardwoods, same-age plantation	60	6.2	2.9

Note: Countries and species are ordered by internal rate of return (IRR).**Source:** Cubbage et al. (2022).

Box 5.1

The role of certification in the forestry sector

The sustainable development of the forestry sector in LAC largely depends on robust and coherent legal frameworks that safeguard property rights, regulate access, and promote the sustainable management of forest resources. In recent decades, many countries in the region have reformed their regulatory frameworks to align forestry legislation with the principles of environmental sustainability, community participation, recognition of Indigenous rights, and systems to ensure legal compliance.

In this context, voluntary certification systems, such as the Forest Stewardship Council (FSC), have gained prominence as mechanisms that promote forest sustainability and improve traceability in international markets. In 2023, more than 7 million ha^a were certified under FSC standards in LAC—mainly in Bolivia, Brazil, Chile, Mexico, Uruguay, and Peru—the countries leading the region in forest area under responsible management (FSC, 2025).

FSC certification not only adds value to production by opening up access to niche markets (such as sustainable construction and responsible public procurement), but also requires compliance with social, environmental, and labor standards, encouraging fairer relationships with workers and local communities.

In one study, Mo et al. (2015)^b found that the benefits of certification outweigh its costs, estimating financial benefits at USD 6.05 per cubic meter of roundwood-equivalent production, compared to a cost of USD 3.71 per cubic meter. The benefits stem from several factors, including price premiums, operational efficiencies gained through improved planning and waste management, and tax incentives.

FSC certification can play a key role in meeting specific requirements in certain jurisdictions, such as Regulation (EU) 2023/1115, which the European Union (EU) applies to forest products (see Chapter 1). Although FSC certification does not automatically ensure compliance with EU regulations, the FSC has developed a specific complementary module to support alignment. Integrating these certifications into national and regional public policies could amplify their benefits, provided they are accompanied by technical assistance, inclusive financing, traceability systems adapted to local capacities, and eco-efficiency assessment and implementation.

For non-timber forest products (NTFPs), certification by the Union for Ethical BioTrade (UEBT) has been progressively consolidated. It ensures that these products are sourced in line with principles of biodiversity conservation, the sustainable use of natural resources, and ethical working conditions throughout the value chain. Unlike the FSC, which focuses mainly on forest management for timber production, the UEBT targets bioeconomy value chains, often linked to Indigenous, Afro-descendant, and rural communities. This certification has been successfully implemented in Brazil, Colombia, and Peru, contributing to the formalization of NTFP harvesting and improving small producers' access to high-value cosmetic, food, and pharmaceutical markets (UEBT, 2022).

In this context, rural women play a key role, as they often possess highly specialized knowledge of trees and forests, as well as of the diversity of forest species, their management, conservation, and uses for food, medicine, and energy (RedLAC, 2024; FAO, 2025e). This traditional knowledge is not only essential for the sustainability of harvesting practices, but also of strategic value for forest management and governance (CIFOR and ICRAF, 2013), underscoring the importance of their active participation in certification initiatives such as UEBT.

a. According to FAO (2024d), there were approximately 22 million ha of forest plantations in 2022, meaning FSC certification covers nearly one-third of the total.

b. The study examined eleven companies and producers across seven countries: Cameroon, Colombia, Indonesia, Malaysia, Peru, Portugal, and Russia.

A recent assessment covering 62 countries,³ which combined account for 72% of the world's forest area and 94% of global GDP, indicates that the timber forestry sector made a direct formal contribution of USD 661 billion (0.9% of global GDP) at constant 2015 prices (FAO, 2022d). When indirect contributions are included, the total rises to USD 1.52 trillion. In LAC, Li et al. (2022) estimate the sector's contribution at 0.8% of GDP, as shown in Table 5.2.

These estimates understate the sector's real value because they exclude informal economic activity. Based on data from three forestry subsectors—forestry and logging, wood manufacturing, and pulp and paper—that include informal activity, it is found that in Argentina, Chile, and Uruguay, the sector accounts for between 1% and 2% of GDP (Table 5.2). Both Li et al. (2022) and national accounts data show that the pulp and paper subsector generates the highest value added.

Table 5.2
Value added of the forestry complex, 2015 (USD million)

Region	Forestry	Wood manufacturing	Pulp & paper	Wood furniture	Total forestry	Share of GDP
Africa	13,457	2,170	2,651	4,206	22,483	0.9%
Latin America and the Caribbean	10,322	6,996	19,875	8,834	46,027	0.8%
Asia	81,474	88,984	108,045	59,452	337,955	1.3%
Europe	30,505	47,188	58,741	48,818	185,252	1.0%
North America	29,356	11,402	11,827	6,579	59,165	0.3%
Oceania	2,365	3,742	2,636	1,454	10,197	0.6%
Total	167,479	160,482	203,775	129,343	661,079	0.9%

Source: Li et al. (2022) and World Bank (2025g).

Table 5.3
Value added by timber forestry subsector according to national accounts

Country	Year	Forestry & logging	Wood manufacturing	Pulp & paper	Total
Argentina	2024	0.2%	0.2%	0.8%	1.2%
Chile	2022	0.4%	0.7%	0.6%	1.7%
Uruguay	2023	0.6%	0.2%	1.1%	1.9%

Source: Authors based on countries' national accounts (see details in Table A.5.1 in the appendix to this chapter, available in the online edition of the RED).

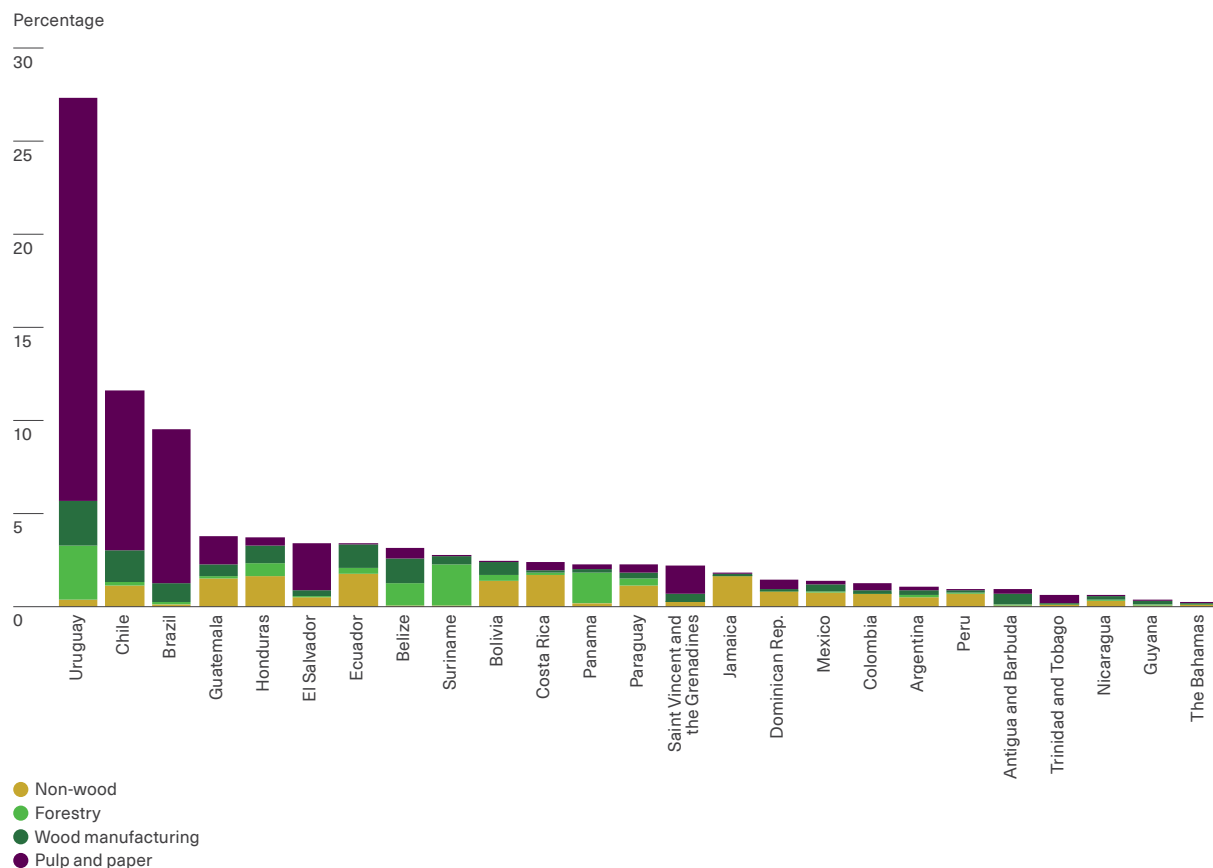
³ The LAC countries included in the assessment are Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Peru.

In terms of trade, the forestry sector accounts for an average of 3.6% of the region's total exports, with considerable variation across countries (Graph 5.1). In Uruguay, which has three large-scale pulp mills, forestry exports represent more than 25% of total national exports, surpassing even the country's

long-established livestock sector. Brazil and Chile follow, with 10.5% and 9.4% of total exports, respectively. Other countries where forestry exports account for at least 1% of total exports include Belize, Ecuador, El Salvador, Guatemala, Honduras, Panama, Paraguay, and Suriname.

Graph 5.1

Forest product exports as a share of total exports in Latin America and the Caribbean, 2023

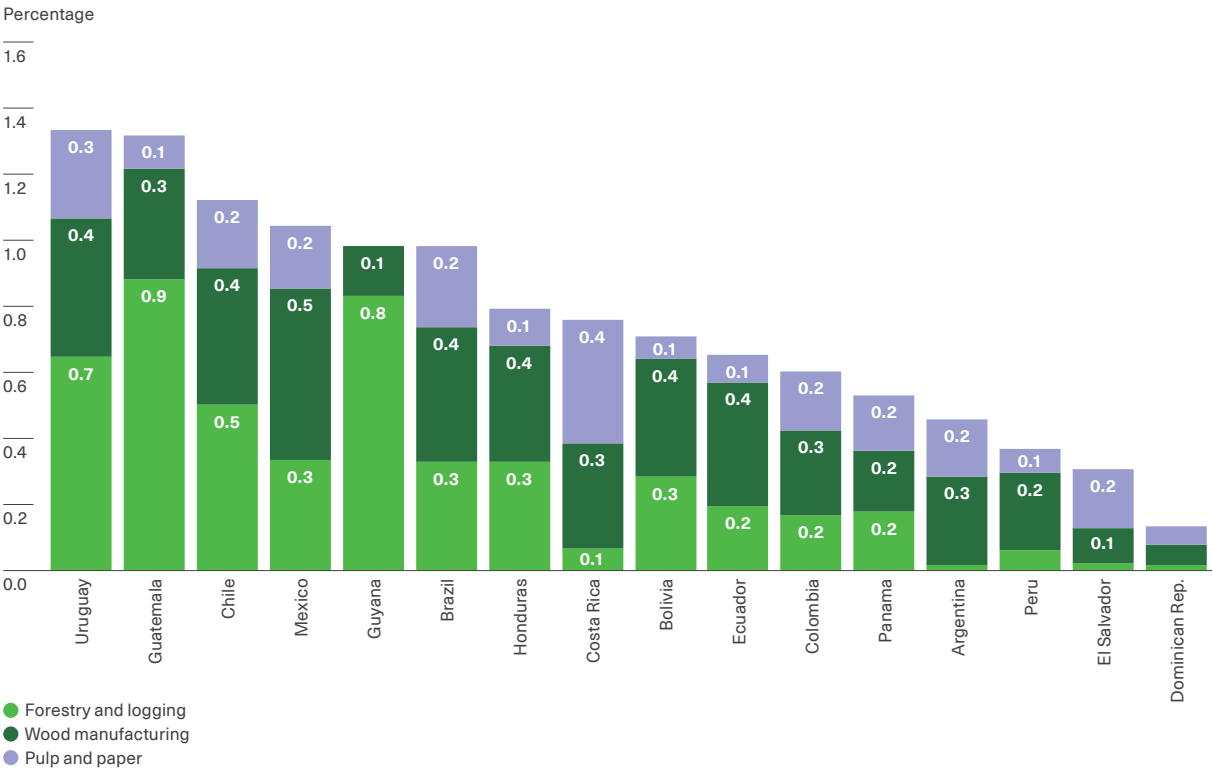


Source: Authors based on United Nations data (n.d.b).

The three timber forestry subsectors, typically rural in nature, account for around 1% of total global employment (Lippe et al., 2022). Informal employment in the sector stands at 77% in countries for which data are available, and only 23% of forestry jobs are held by women. Female employment is highest in the pulp and paper subsector (28%), which also has the lowest level of informality.

In LAC, about 0.86% of total employment is in the timber forestry sector, with wood manufacturing employing the largest share of workers, followed by forestry and logging, and pulp and paper (see Graph 5.2).

Graph 5.2
Employment in the forestry production sector as a share of total employment in Latin America and the Caribbean



Note: The most recent available data are used for each country (2024 for Mexico, Brazil, Costa Rica, Ecuador, Colombia, Panama, and Peru; 2023 for Uruguay, Guatemala, Honduras, Argentina, El Salvador, and the Dominican Republic; 2020 for Chile; and 2019 for Guyana).
Source: Authors based on ILO data (n.d.).

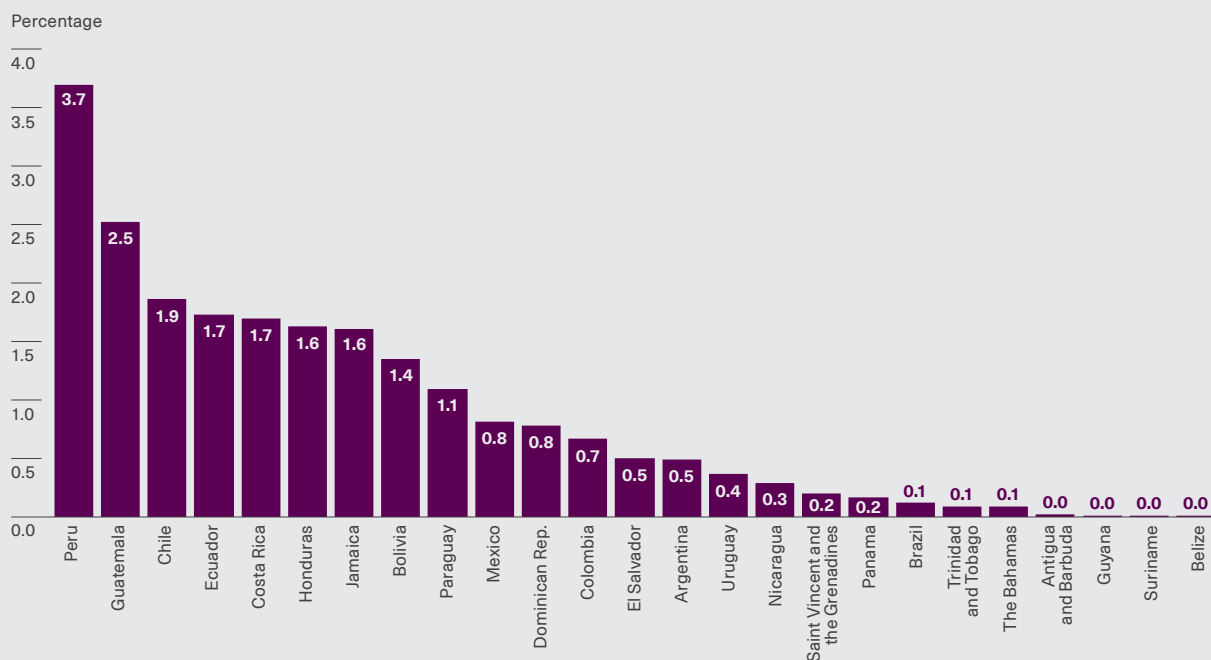
Box 5.2

Non-timber forest products

Measuring the value generated by the non-timber forestry sector presents multiple challenges—from defining which products should be included, to the lack of data on products consumed outside the market, the prevalence of informal trade, and the absence of standardized, comparable statistical information. The wide range of products classified as non-timber forest products includes mushrooms and truffles, forest fruits, edible wild berries, maple syrup, rubber, leaves, ginger roots, bark, flowers, latex, gums, resins, bamboo, ornamental plants, and dyeing materials, among others.

Sorrenti (2017) identifies several of these products within the international trade statistical classification system. The World Customs Organization's Harmonized System allows for greater detail and is used to estimate exports of these products, which account for 0.87% of the region's total exports (Graph 1). Peru stands out, with 3.7% of total exports corresponding to these products—mainly blueberries. Other countries where non-timber forest products represent a relatively high share include Guatemala (2.5%), Chile (1.9%), Ecuador (1.7%), Costa Rica (1.7%), Honduras (1.6%), Jamaica (1.6%), Bolivia (1.4%), Paraguay (1.1%), Mexico (0.8%), Dominican Rep. (0.8%), Colombia (0.7%), El Salvador (0.5%), Argentina (0.5%), Uruguay (0.4%), Nicaragua (0.3%), Saint Vincent and the Grenadines (0.2%), Panama (0.2%), Brazil (0.1%), Trinidad and Tobago (0.1%), The Bahamas (0.1%), Antigua and Barbuda (0.0%), Guyana (0.0%), Suriname (0.0%), and Belize (0.0%).

Graph 1
Non-timber forest product exports as a share of total exports in Latin America and the Caribbean, 2023



Source: Authors based on United Nations data (n.d.b).

Linkages between the forestry sector, agriculture, and other sectors

Agriculture sector

Forest conservation provides key benefits to agriculture, such as water regulation, erosion control, pollination, and soil fertility, while deforestation has reduced the productivity and resilience of agricultural systems in LAC. In this context, agroforestry and silvopastoral systems offer strategic pathways to combine production with conservation.

There are successful experiences in the region that integrate the forestry and agricultural sectors. In Colombia, the Agroforestry Systems Incentive Program, promoted by Fedecacao, has encouraged cocoa cultivation alongside timber and fruit trees, improving productivity and reducing pressure on natural forests (Castillo Ledesma, 2019). In Honduras and Nicaragua, the Fundación Madera Verde promotes silvopastoral systems using native species that restore degraded land, increase carbon sequestration, and generate timber and forage products (Sepúlveda et al., 2020).

Silvopastoral systems constitute a type of agroforestry in which forage crops, including grasses and leguminous species, are cultivated alongside trees and shrubs to support livestock feeding and other complementary functions (Murgueitio et al., 2011). These systems have demonstrated multiple economic and environmental benefits. Chará et al. (2020) analyze ten case studies in Argentina, Colombia, and Mexico spanning a ten-year implementation period and report improvements in pastures, higher milk and meat yields per hectare, lower greenhouse gas emissions per 100 kilograms (kg) of milk or live weight, and improved animal welfare. The authors found that benefits outweighed costs across all farms, although initial cash flow was negative, underscoring the importance of adequate financing.

Energy

Nearly 50% of global wood production is used to generate energy (FAO, 2018). The forestry sector accounts for about 40% of renewable energy in the form of biomass, and it is estimated that one-third of the world's population uses forest-based energy sources (FAO, 2022a). As noted in RED 2024, biomass accounts for 18.4% of the energy matrix in LAC (Allub et al., 2024).

Biomass plays an important role in decarbonization. This organic material can substitute up to 20% of the fuel used in the cement industry without requiring capital investment (Rahman et al., 2016). In addition, biomass ash can replace up to 80% of clinker in cement (Campos Teixeira et al., 2020).



Fifty percent of the world's wood production is used for energy generation

Biomass is also a major source of residential energy (Allub et al., 2024). In countries such as Chile, Colombia, Haiti, Honduras, Guatemala, Nicaragua, Paraguay, and Peru, firewood and charcoal are the main household energy sources (averaging 61% of total residential energy consumption), surpassing electricity and gas. This heavy reliance on solid biomass has negative health impacts on rural populations.

Tourism

It is estimated that 7% of global tourism is nature-based (WTTC, 2019).

Costa Rica has been internationally recognized as a model for restoration and conservation,

successfully reversing rapid deforestation in the 1980s through public policies such as payments for ecosystem services, the promotion of ecotourism, and the strengthening of the National System of Conservation Areas. The country maintains over 50% of its territory under forest cover and has managed to combine economic growth with effective conservation (Porrás et al., 2013).

Illicit activities

One of the most persistent risks is deforestation and forest degradation, driven by agricultural expansion, illegal mining and logging, and unplanned infrastructure development. These factors generate severe environmental and social impacts and weaken the resource base on which sustainable forest development depends. They also threaten the livelihoods of nearly one billion people who depend on forests (Lawson & MacFaul, 2010).

Between 15% and 30% of all wood produced worldwide is estimated to come from illegal logging, with an annual value ranging between USD 51 billion and USD 153 billion, significantly affecting tax revenues (Interpol, 2021). In addition, illegal timber depresses global prices by an average of 7% to 16% (Seneca Creek Associates & World Resources International, 2004).



It is estimated that between 15% and 30% of all wood produced globally comes from illegal logging

In many cases, illegal logging is not an end in itself, but rather a byproduct of broader processes aimed at land capture for commercial agriculture. This helps explain why activities such as logging or mining may appear to have a limited impact on permanent land conversion, when in fact they act as key precursors of degradation (UNODC, 2025b). In LAC, about 77% of tropical forest loss between 2013 and 2019 resulted from commercial agriculture, and of that, approximately 88% was illegal (Dummett et al., 2021).

Latin American and Caribbean countries with a comparative advantage in the forestry sector

Success stories: Brazil, Chile, and Uruguay

The case of Uruguay is emblematic. In 2024, forestry products became the country's leading export category, surpassing the long-dominant livestock sector. The development of the forestry industry was underpinned by two key factors: institutional and legal stability, which ensured the security needed for long-term investment, and consistent productive development policies that spanned successive administrations.

The Forestry Law (Law 15,939 of 1987) granted the sector a special status compared to other economic activities, offering economic incentives for primary production, including tax exemptions, investment subsidies, and improved access to credit. As a result, forest plantations expanded from fewer than 50,000 ha prior to the law to more than 1.1 million ha today (CERES, 2023). The Free Zone Law (Law 15,921 of 1987) further encouraged the establishment of three large pulp mills in the country. This model serves as an international benchmark for vertical integration and can be adapted to other contexts in the region,



Eucalyptus forest in Río Negro, Uruguay.

provided there are stable legal frameworks, long-term incentives, and sustainability-oriented policies in place.

In Chile, the development of the forestry sector was also marked by strong public-sector support, including long-term policies, a solid institutional framework, and financial incentives provided by the government. Specifically, Decree Law 701 of 1974 established a set of economic incentives for forestry activities, including subsidies for plantations. Although the law initially favored large plantations, it was amended in 1998 to include small landowners (World Bank, 2020b).

The public sector also contributed to the creation of the Chilean System for the Certification of Sustainable Forest Management (CERTFOR). Established in 2002, this certification system was recognized and endorsed by the Programme for the Endorsement of Forest Certification (PEFC) in 2004.

Brazil has one of the highest forest growth rates in the world (Cubbage et al., 2022). The sector's expansion has been supported by a broad set of public policies. Between the 1960s and 1980s, the federal government implemented three reforestation incentive programs that provided rural producers with either financial grants or material donations (Bacha, 2008). These programs enabled the expansion of reforested areas by 4.3 million ha between 1970 and 1985 (Bacha, 1995).

● ● Forestry incentive programs evolved from tax benefits to long-term, low-interest credit schemes

Federal tax incentive programs were phased out in the 1990s, giving way to long-term, low-interest credit mechanisms. Among these, the PROFLOA Program of the National Bank for Economic and Social Development (BNDES) stands out (Bacha, 2008).

High-potential cases: Argentina and Paraguay

The internal rate of return (IRR) for forest plantations in Argentina and Paraguay exceeds 20% (see Table 5.1). Yet, unlike Brazil, Chile, and Uruguay, these countries did not experience the same level of forestry development. What held them back?

Argentina has approximately 1.28 million ha of forest plantations (Secretariat of Agriculture, Livestock, and Fishing, 2024).⁴ In addition, at least 3.7 million ha of forest-suitable land are available for plantation expansion without affecting high-conservation-value areas or competing with native forests or croplands (Breard et al., 2024).

Argentina's forest product exports have remained stagnant, with a value of around USD 600 million in 2022, roughly the same as in 2013 (Breard et al., 2024). The country's trade balance in forest products has been negative. However, it is important to note that domestic demand is significant: 88% of particleboard (wood panel) production and 80% of pulp output are destined for the internal market.

In his analysis of Argentina's forestry sector, Mora Alfonsín (2023) concludes that the country's forest industry holds great potential but faces three main challenges. The first is macroeconomic instability: forestry is a long-term business, and recurring financial and economic crises—most notably the 2001 debt default and its lasting impact on access to international markets—have prevented the sector from fully taking off. The second challenge is what the author calls “social license”—the result of public opposition to Metsä Fibre's proposed investment in Entre Ríos, which ultimately relocated to Uruguay, a turning point that proved decisive for the sector's limited development. The third has to do with rural land availability, since Law 26.737 restricts foreign ownership of rural property, making it difficult to establish large-scale projects that require company-owned plantations.

4 The area covered by forest plantations represents approximately 0.55% of the country's total land area, excluding inland water bodies.

Box 5.3

Recent changes in Paraguay driving forestry sector development

Paraguay has reached nearly 340,000 ha of forest plantations (0.9% of its territory). Forestry development has lagged behind neighboring countries due to limited access to credit adapted to the forestry cycle, weak implementation of fiscal and financial incentive policies, institutional fragility, insufficient logistics infrastructure, high transportation costs, the absence of large-scale forestry industries, and Law No. 515, which had prohibited the export of roundwood.

In recent years, however, several key changes have taken place. In 2013, the Real Right of Forestry Surface was regulated, allowing the use of “forest canopy rights” (ownership of the tree volume in a plantation) as collateral for credit access. In 2020, the ban on roundwood exports for exotic species was lifted, and Law No. 6676 was enacted, establishing fiscal incentives for the conservation of native forests.

Institutional modernization included the launch of the Forestry Public Registry Portal, which digitalized administrative procedures, offering 24/7 online services, enabling electronic payments, reducing bureaucracy, and improving transparency. The National Forestry Monitoring System was strengthened through satellite technology and early-warning deforestation alerts, enhancing enforcement capacity.

Integrated fire management has also become more professionalized under Law No. 6818 of 2021 and the creation of the Integrated Fire Management Network, which introduced early-warning systems, monitoring, training, and specialized equipment for firefighters and forestry technicians.

Financing has historically been a challenge, particularly for small producers, though state banks have created special credit lines for the sector.

Large-scale projects, such as the establishment of pulp mills, also play a key role by driving sustained, large-scale demand for raw materials, attracting investment, creating quality jobs, and fostering knowledge and technology transfer.

The National Forestry Institute (INFONA) has begun developing Paraguay’s first National Forestry Policy, with a sustainability-based approach that integrates conservation and productivity. The policy seeks to promote forest plantations, responsible industrialization, and decent rural employment. It also aims to increase the provision of forest goods and services, enhance value added and competitiveness, and strengthen the resilience of forest ecosystems. The strategy includes proactive management of fires, pests, waterways, and biodiversity, ensuring the future availability of timber and non-timber forest products and the ecosystem services they provide.

Source: Authors based on an interview with Cristina Goralewski, President of the National Forestry Institute (INFONA) of Paraguay, conducted specifically for this report.

In Paraguay, the forestry sector experienced steady growth until 2020, after which expansion accelerated. The country went from about 50,000 ha

of forest plantations in 2010 (Davis et al., 2024) to 204,631 ha in 2022 (Infona, 2023a). By the end of 2024, the total plantation area was estimated at

340,000 ha—a surge driven mainly by the Paracel pulp mill project and other private initiatives.⁵ Paracel alone planted more than 25,000 ha in 2024 on its own land (Paracel, 2025).

The National Forestry Institute of Paraguay (INFONA) estimates that there are around 5.9 million ha with “high” or “very high” potential for forest plantations (Infona, 2023b). The estimate is based on biophysical, accessibility, logistics, market, demand, and socioeconomic criteria.

A key limitation to sector expansion in Paraguay was Law No. 515 of 1994, which prohibited the export of roundwood of any species. This law was amended

in 2020 (Law No. 6616), maintaining the ban only for native forest species while allowing exports of exotic plantation species, including eucalyptus and pine.

Davis et al. (2024) identify several factors that help explain Paraguay’s relatively limited forestry development, including logistical challenges stemming from its landlocked geography, lengthy bureaucratic procedures, a complex regulatory framework, potential land tenure conflicts, and high fire risk. Masiero and Massarenti (2023), together with Breard et al. (2024), also point to institutional weaknesses, such as overlapping mandates and fragmented responsibilities.

Opportunities for development and forestry policies

The forestry business is inherently long-term, and as such requires long-term policies and legal certainty. Successful countries share a set of consistent and stable policies over time, supported by dedicated national institutions that oversee sector development, ensure legal security, and streamline administrative procedures. They also feature clear regulatory frameworks and national policies promoting the sector’s growth. It is equally important to review key laws that may hinder sector development, as seen in the cases of Argentina and Paraguay.

Financial support policies and lending instruments tailored to the sector are also essential. Forestry requires loans that defer partial principal or interest payments until the end of the production cycle (8 to 15 years). Since private banks do not typically

offer such terms, the public sector plays a key role in facilitating financing. These incentives must, however, be carefully designed, as the sector tends to be highly concentrated in large operations, and subsidies could otherwise result in public resources being concentrated in few hands.

Certification systems should be promoted as a tool to access better markets and add value to production. Governments can help facilitate certification access, particularly for small producers. There are successful experiences in the region, such as CERTFOR in Chile and INFONA’s partnership with the FSC in Paraguay.

Access to carbon credit markets should also be expanded, allowing more plantations to obtain additional income that encourages sustainable



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⁵ In 2024, the Silvipar Astarte Impact Forestry Fund (SAIFF) was launched—a USD 325 million investment fund aimed at establishing around 60,000 hectares of forest plantations. The project received financial support from CAF. More information is available at <https://www.silvipar.com/post/astarte-capital-partners-and-silvipar-ab-close-inaugural-impact-forestry-fund-at-325m>

forest management. The emergence of new carbon markets creates opportunities to mobilize resources for conservation, afforestation, and reforestation (see Box 5.4). These funds could help finance forestry projects and create jobs in conservation areas. However, for small-scale forestry projects, carbon markets do not always cover the costs of verification and transaction, which can be high. In these cases, governments could play an important role in facilitating market access and reducing entry barriers.

Finally, it is important to foster integration between the forestry sector and others, such as agriculture and livestock, given their economic and environmental synergies. The combination of forest plantations with other productive activities can yield significant economic, environmental, and social benefits. The silvopastoral systems model, in particular, holds strong potential in Southern Cone countries, where forestry and livestock are both highly productive sectors.

Box 5.4

Carbon credits

Carbon credits^a are an additional source of income that can help ease the financial barriers faced by the forestry sector. In the voluntary carbon market, 36.8% of all carbon credits issued to date have resulted from the implementation of conservation and deforestation-avoidance activities (specifically, the UN-backed framework called REDD, for Reducing Emissions from Deforestation and Forest Degradation) and reforestation activities (forest plantations), both belonging to the category of nature-based solutions (Climate Focus, 2025b).

In 2024, five Latin American and Caribbean countries—Brazil, Colombia, Guyana, Mexico, and Peru—were among the largest contributors of projects generating these types of mitigation actions (REDD and reforestation) (Climate Focus, 2025a).

For reforestation activities, the most widely used and successful mechanism in the region has been the so-called “umbrella” or “grouped project” approach. This model brings together multiple forest plantations under a single mitigation initiative, allowing for cost-sharing in credit generation while ensuring a minimum level of profitability for all participants. It has been adopted by most voluntary carbon programs in the region (Verra, GS, Cercarbono, Biocarbon, among others) and has gained broad technical and financial recognition as a viable mechanism to integrate small-scale reforesters into carbon markets at low cost.

It is also worth noting that, despite their environmental, social, and financial benefits, REDD-type initiatives have not been free from criticism. Press reports—both regional (e.g., *La Silla Vacía*) and international (e.g., *The Guardian*)—have questioned the integrity of their mitigation results, arguing that many REDD projects have failed to deliver the reported impact (Greenfield, 2023). Concerns include overestimated mitigation potential, lack of compliance with environmental and social safeguards, and double counting of benefits within the same geographic area. These issues have had a negative effect on the voluntary carbon market, affecting not only REDD projects but also other types of initiatives—including reforestation, which was not subject to integrity concerns— and leading to a significant decline in carbon credit issuance beginning in 2021. However, multiple organizations—both from the Global North (IC-VMC, IETA, VCMi) and the Global South (CAF, FSC Indigenous Foundation)—have defended this mechanism and developed strategies to strengthen its integrity, impact, institutional framework, and transparency. Their efforts have helped renew interest among productive sectors in using carbon credits to offset GHG emissions and have restored confidence in the market.

a. Tradable certificates representing the reduction or removal of carbon dioxide (CO₂) emissions released into the atmosphere.

Fisheries and aquaculture

The importance of fisheries and aquaculture for Latin America and the Caribbean

Fisheries and aquaculture play an essential role in the income, employment, and food security of rural coastal populations across LAC. The sector holds strong growth potential, driven by population growth, rising global food demand, and the expansion of sustainable aquaculture worldwide. The region's share of global aquaculture production increased from 2.6% in 2000 to 4.6% in 2022 (Table 5.4), a growth led mainly by the rapid expansion of marine aquaculture (FAO, 2024b). Brazil, Chile, and Ecuador, the regional leaders in this sector, account for nearly 80% of LAC's aquaculture output and rank among the top 15 producers worldwide (FAO, n.d.b).

●● Latin America and the Caribbean has recorded the fastest aquaculture growth worldwide over the past 25 years

The contribution of fisheries and aquaculture to national value added varies widely across the region, although in most countries these sectors account for only a modest share of total output (Graph 5.3). In Peru, where fishing has long been a key industry, fisheries and aquaculture (including processing) represented about 0.3% of national value added in 2024. In Chile, these sectors account for roughly 0.5% of GDP—a relatively small share compared to mining but significant in terms of value chain linkages and local development.

The value added per ton (t) of production in LAC tends to be high compared with other regions, reflecting the region's focus on high-value commercial species such as shrimp, salmon, and lobster. Latin America ranks as the second region globally in average value per kilogram produced, just behind Oceania (De las Mercedes Jaime Muñiz & Jimber del Río, 2025). This underscores the quality and market value of Latin American products and points to opportunities to further increase value added through processing and sustainable origin certification.

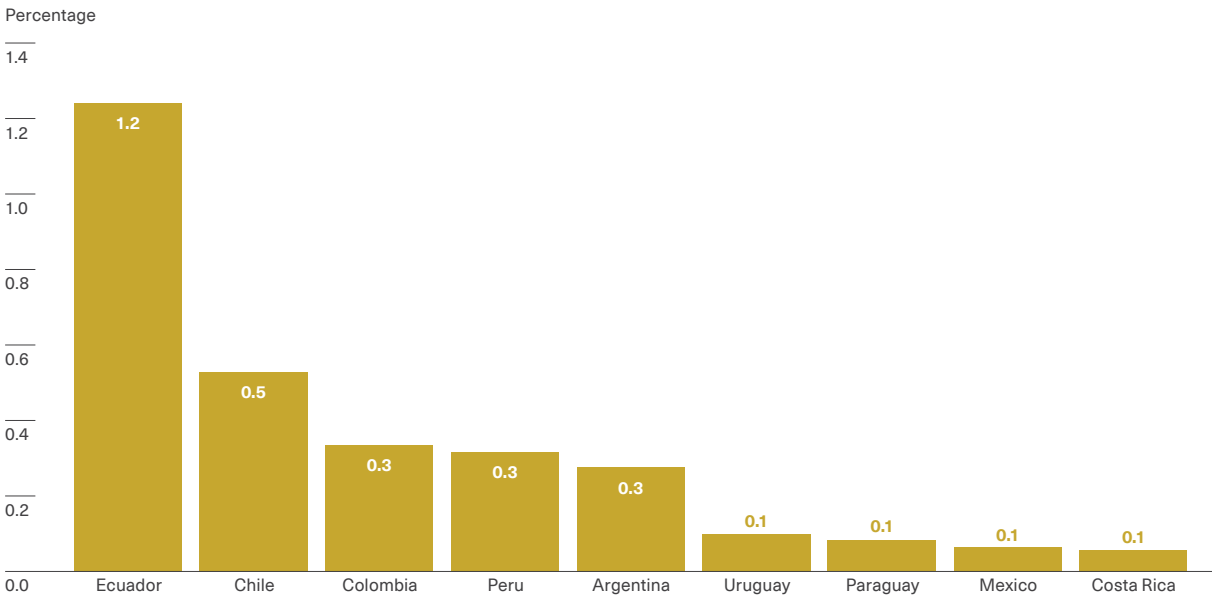
More than 2 million people work in fisheries and aquaculture across the region (FAO, 2024b). Graph 5.4 shows their share in total employment by country. The relatively low participation rates in countries such as Peru and Chile, despite their large industries, reflect both the capital-intensive nature of industrial fishing and underreporting of employment in the sector. Graph 5.5, based on household survey data, shows the share of fishing jobs located in rural areas. Countries dominated by industrial fishing show relatively low rural shares (20%–30%), while in Colombia, El Salvador, and Panama, rural fishing represents between 60% and 80% of employment in the sector.

Table 5.4
Share of aquaculture by region

	Africa	Latin America & Caribbean	North America	Asia	Europe	Oceania	Global
2000	399,622	838,939	584,495	28,422,489	2,052,889	121,824	32,420,258
2022	2,316,825	4,313,508	644,547	83,399,172	3,503,440	235,231	94,412,723
Share in 2000	1.2%	2.6%	1.8%	87.7%	6.3%	0.4%	
Share in 2022	2.5%	4.6%	0.7%	88.3%	3.7%	0.2%	

Note: Production values are expressed in thousand tonnes, in live weight equivalent terms.
Source: Authors based on FAO (2024b).

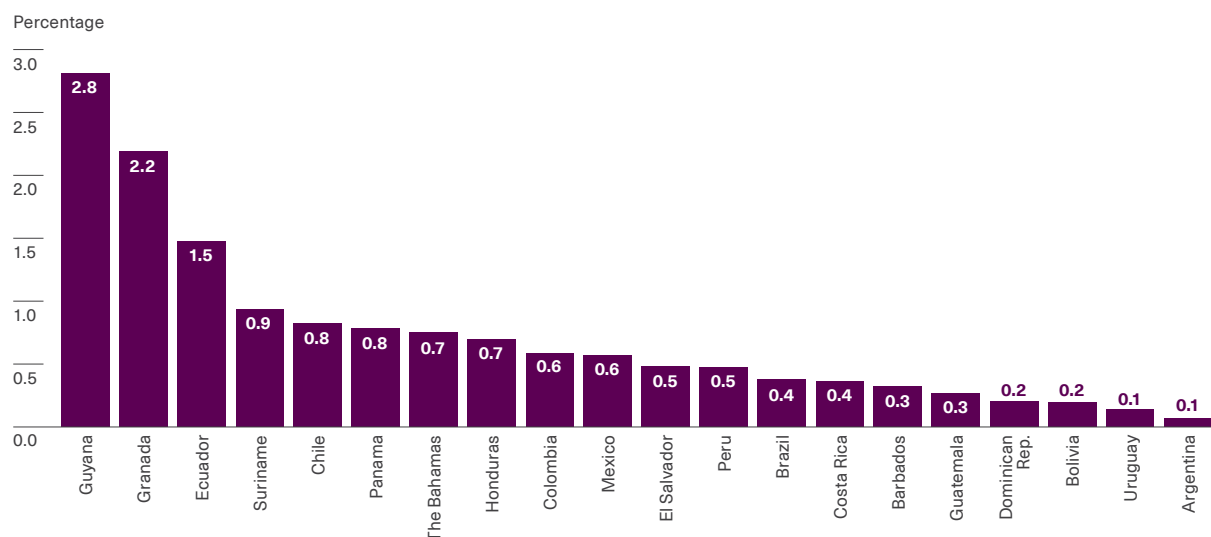
Graph 5.3
Share of fisheries and aquaculture in total value added in Latin American and Caribbean countries, 2023



Note: The data do not distinguish between fisheries and aquaculture; therefore, the figure represents the aggregate total for both sectors.
Source: Authors based on countries' national accounts (see details in Table A.5.1 in the appendix to this chapter, available in the online edition of the RED).

Graph 5.4

Share of fisheries and aquaculture in total employment in Latin American and Caribbean countries



Note: The data do not distinguish between fisheries and aquaculture; therefore, the figure represents the aggregate total for both sectors. The most recent data available for each country were used (2025 for Mexico; 2024 for Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Honduras, Panama, Peru, the Dominican Republic, and Uruguay; 2023 for Barbados, El Salvador, Grenada, and Guatemala; 2020 for Chile; 2019 for the Bahamas and Guyana; and 2016 for Suriname).

Source: Authors based on ILO data (n.d.).

More than 2 million people work in fisheries and aquaculture across the region

In terms of wages, Graph 5.6 shows significant variation across the region. In South America, wages in rural fisheries and aquaculture are generally below the rural average, except in Peru, while in Central America, they tend to be more varied, with levels closer to the overall rural average.

Much of the available data—based on surveys and official records—underestimate employment related to fisheries, as they exclude post-harvest activities. It is estimated that for every person directly employed in fisheries or aquaculture, there are up to three additional jobs in related activities such as processing, transportation, and trade (Flores-Nava, 2019).

Many of these secondary jobs are found in rural areas or small fishing towns, strengthening local economies. Women in coastal communities often work in artisanal fish processing (cleaning, filleting, drying) or in local market sales, thus forming part of the value chain. In fact, between 40% and 90% of post-harvest jobs (processing and commercialization) in LAC are held by women (Flores-Nava, 2019), underscoring the key role of fisheries in promoting women's economic inclusion (see Box 5.5).

Additionally, artisanal fishing often serves as a safety net in rural employment. It functions as a form of self-employment and food security for small farmers or forestry workers during periods of poor harvests, low prices, or off-seasons (Coomes et al., 2010).

Graph 5.5
 Share of rural fisheries and aquaculture in total fisheries employment in Latin American and Caribbean countries, 2003–2023



Note: The data do not distinguish between fisheries and aquaculture; therefore, the figure represents the aggregate total for both sectors.
Source: Authors based on CEDLAS (2025).



Caribbean fishing community in Maracas Bay,
Trinidad and Tobago.

Graph 5.6
 Hourly wage in rural fisheries and aquaculture relative to the average rural hourly wage
 in Latin American and Caribbean countries, 2003–2023



Note: Each value represents the ratio between the hourly wage in rural fisheries and aquaculture and the average rural hourly wage. Missing points are due to a lack of data in surveys for those years. The data do not distinguish between fisheries and aquaculture; therefore, the figure represents the aggregate total for both sectors.

Source: Authors based on CEDLAS (2025).

Box 5.5

Rural women and artisanal fisheries in Latin America and the Caribbean

Rural women from coastal and riverine communities have a longstanding and active presence in artisanal fisheries across Latin America and the Caribbean (LAC). Their work spans the entire value chain—from capture and collection, where women represent around 25% of the regional fishing workforce, to post-harvest processing (cleaning, filleting, salting, smoking, and drying), manufacturing, food preparation, and direct marketing. They are also involved in net-making and repair, community-based tourism, and small-scale aquaculture (Guedes et al., 2021; Nobre & Hora, 2017; Quesada et al., 2023).

These women face structural barriers that limit their autonomy and the recognition of their work. Fishing is traditionally viewed as a male-dominated activity, which excludes women from legal frameworks and fisheries management and makes it harder for them to access formal rights, credit, and productive assets, such as boats or engines. Another challenge lies in the presence of intermediaries in value chains, which creates dependency and reduces their profit margins.

Beyond their key economic role in post-harvest stages, these women also play a crucial role in environmental protection. They are recognized as guardians of water and territory, actively participating in the protection of wetlands and mangroves, environmental education and conservation projects, monitoring of water sources, and reporting of threats linked to extractive or polluting activities (RedLAC, 2023).

Source: Authors based on RedLAC and CAF (2025).



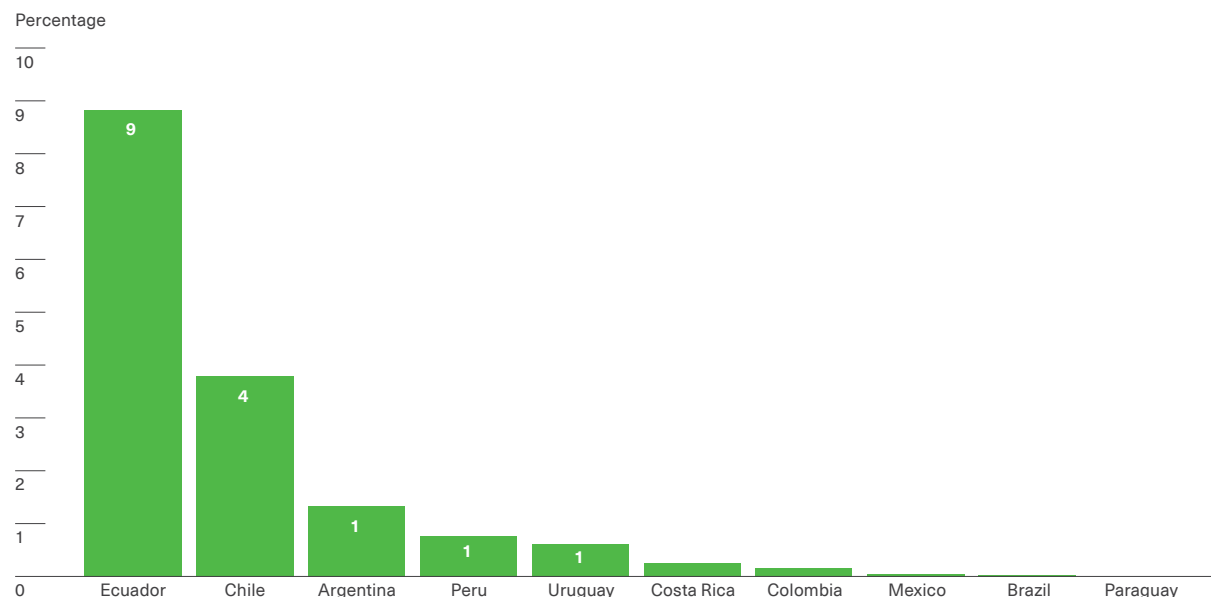
Rural women play a vital role in post-harvest stages and in environmental protection

The fisheries sector contributes to public revenues and national economies through various channels, including foreign exchange from exports, taxes, fees, and licenses, and resource access royalties. Graph 5.7 shows the share of fisheries and aquaculture in LAC exports. Ecuador stands out: thanks to its developed aquaculture industry, fisheries and aquaculture exports account for nearly 9% of its value added.

The commercialization of fishing rights and licenses also generates fiscal revenues. Countries charge fees for commercial fishing permits (e.g., anchoveta quota auctions in Peru, industrial fleet licenses in Chile), which go to the central government. Some countries also obtain income through fishing vessel flag registration. However, the design of these systems can create negative externalities associated with illegal, unreported, and unregulated (IUU) fishing (CLALS American University & InSight Crime, 2022).

Graph 5.7

Share of fisheries and aquaculture in total exports in Latin American and Caribbean countries, 2023



Note: The data do not distinguish between fisheries and aquaculture; therefore, the figure represents the aggregate total for both sectors.

Source: Authors based on UNCTAD data (2025b).

Economic drivers of fisheries in Latin America and the Caribbean

Together, five countries account for 90% of the volume and value of the region's fisheries and aquaculture exports. Chile and Ecuador top the list, each contributing roughly one-third of total export value and over one-fourth of total volume—Chile primarily through salmon, trout, and mussel exports, and Ecuador through farmed shrimp and tuna. They are followed by Peru, which contributes 11% of export value and 20% of volume, while Argentina and Mexico represent approximately 8% and 6% of total volume, and 6% and 5% of export value, respectively (FAO, n.d.b).



Together, Chile, Ecuador, Peru, Argentina, and Mexico account for 90% of the region's fisheries and aquaculture export volume and value

In Chile, seafood products are the second-largest export category after mining. In 2023 alone, salmon and trout sales accounted for 6.7% of total exports (Santander Trade, 2025). In Ecuador, shrimp leads non-oil exports, and the country's aquaculture industry has positioned it among the world's top exporters of aquatic products (FAO, 2024b).

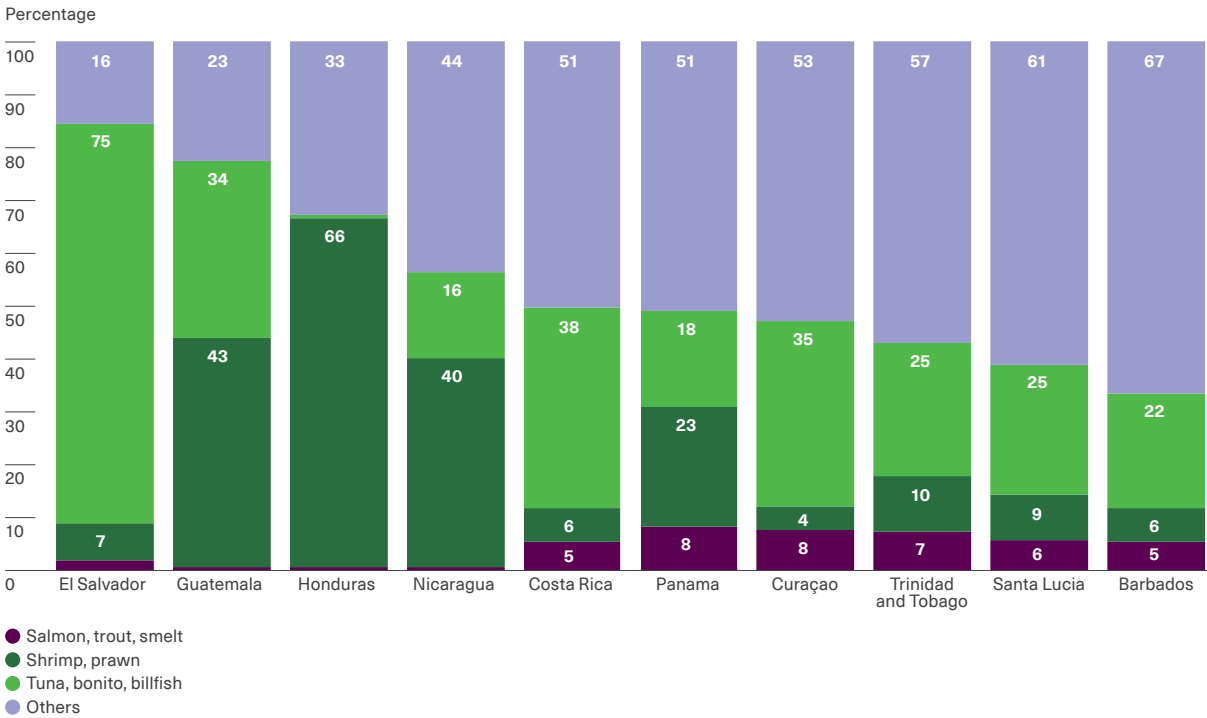
Peru has long maintained a thriving anchoveta industry, with fishmeal as its key product. With the rise of aquaculture, demand for fishmeal has increased, as it is used as an input in aquaculture feed production. Despite its smaller export share compared with Chile and Ecuador, Peru leads the region in total fisheries production, accounting for 40% of LAC’s total catch and 6% of global production—a reflection of both its high per capita fish consumption and strong culinary tradition.

In Central America, only Honduras and Nicaragua report fisheries exports exceeding 1% of GDP (1.2% and 1.6%, respectively). While the sector’s output in Central American and Caribbean economies is primarily geared toward domestic markets, they do export high-value products such as shrimp, prawn, tuna, salmon, and trout.

Graph 5.8 presents the countries in the subregion with the highest share of high-value species in their total fisheries exports. El Salvador and Guatemala stand out, with more than 70% of their exports consisting of salmon, trout, smelt, shrimp, and prawn. Honduras and Nicaragua also show a high share of high-value exports, mainly consisting of shrimp and prawn.

● ●
While production in Central American and Caribbean countries is mainly for domestic consumption, they do export high-value seafood products

Graph 5.8
Share of high-value products in fisheries exports in Latin American and Caribbean countries, 2023



Source: Authors, based on FAO (n.d.b) data.

The rural dimension of the fisheries sector

A large share of fishing activity takes place in small coastal communities, riverine towns, and rural areas far from major urban centers. Small-scale artisanal fisheries involve people who operate small boats or fish from the shore, using traditional gear and working relatively close to their communities, often within family-based economies. Artisanal fishing is deeply rooted in local cultures and is often organized through cooperatives, unions, or family networks, where knowledge and techniques are passed down through generations. Small-scale fisheries account for approximately 90% of fishing operations and 40% of total production (FAO, 2024b).



Most fishing activity takes place in small coastal communities, riverine towns, and rural areas far from major urban centers.

A significant share of the fish and seafood consumed in Latin America comes from local artisanal fisheries. Many isolated communities depend on locally caught fish as an affordable source of animal protein (FAO, 2020a; Pedroza-Gutiérrez & Hernández, 2020). This gives artisanal fisheries a strategic role in supporting rural nutrition and health, complementing subsistence agriculture and livestock farming, especially in remote coastal areas.

Although the average per capita consumption of fishery products in LAC (around 10 kg per year) is well below the global average (about 20 kg per year), in many coastal and riverine communities fish remains the main source of animal protein available. Peru is an exception, with consumption exceeding 20 kg per capita per year, reflecting both its strong fishing industry and its internationally recognized culinary tradition closely tied to the sector. The rural fisheries landscape also includes inland activities in rivers, lakes, and wetlands. While their overall volume is smaller—around 3–4% of regional catches (FAO, 2021b)—they are crucial for the livelihoods of

Indigenous and peasant riverine communities. Brazil and Mexico have the highest inland fishing volumes in the region (each exceeding 100,000 tons per year). In Brazil, inland aquaculture accounts for 86% of total aquaculture production, while in Argentina, Bolivia, Colombia, Jamaica, Paraguay, and Uruguay, the share is close to 100%. (FAO, 2021b).

From a sociocultural perspective, rural fisheries sustain traditional ways of life. Artisanal fishing techniques often reflect deep ecological knowledge and ancestral practices. Many Mesoamerican and Caribbean coastal communities combine fishing with handicrafts, community tourism (such as sport fishing), or local festivals. Sustainable fishing tourism, or pescaturism, offers multiple opportunities for rural communities, from preserving cultural heritage of small-scale fishers and marine resources to diversifying income sources for rural producers (Gomei & Bellia, 2019).



A large share of fish and seafood consumed in Latin America comes from local artisanal fisheries

The rural fisheries sector maintains strong interconnections with agriculture and other primary activities across LAC. In many rural communities, fishing forms part of a diversified subsistence system: families alternate or combine fishing with crop farming, small livestock rearing, forest gathering, or other forms of rural labor. This multifunctionality is common in coastal rural areas, where households may engage in coastal fishing during part of the year and farming during another. This countercyclical role often intensifies in regions where primary activities are increasingly affected by climate change impacts.

Another key link between fishing and agriculture lies in productive value chains—for example, the use of fishery by-products in animal feed and crop production. A notable case is fishmeal, largely derived from industrial fisheries in Peru and Chile, traditionally used as a protein supplement in poultry, pig, and livestock feed. With the rise of aquaculture, much of the fishmeal and fish oil produced in LAC is now exported as feed for farmed fish, mainly to Asia (FAO, 2024b). Conversely, agriculture provides key inputs for aquaculture: grains such as soy, maize, and wheat grown in Argentina, Brazil, and Paraguay are essential components of feed used for shrimp and farmed fish across the region.

Externalities and conflicts also arise between fisheries and other primary sectors, mainly due to competition over natural resources. Both shrimp farming and agriculture have contributed to mangrove loss in LAC. In addition, agricultural runoff can pollute rivers, lakes, and coastal areas,

leading to eutrophication,⁶ which harms aquatic ecosystems. These cross-sector environmental impacts call for integrated watershed and coastal zone management to promote coordination between farmers and fishers and encourage more sustainable practices.

Finally, it is important to note that artisanal fisheries—like other small-scale primary activities—face common challenges in rural development, including high informality, limited bargaining power in value chains, and vulnerability to climate change. This suggests that rural development policies should address these groups jointly. Income diversification programs, microcredit, agricultural insurance, and extension services could have a greater impact if they include components tailored to both farmers and fishers, recognizing that in many communities, the same families alternate between agriculture and fishing depending on the season and available opportunities.

Overexploitation of natural resources and illicit activities

The fisheries sector in LAC faces serious challenges from illicit activities and overexploitation, which threaten the sustainability of aquatic ecosystems, their productivity, and the well-being of rural communities that depend on them. In recent decades, pressure on fishery resources—stemming from both legal and illegal activities—has grown alarmingly. Globally, around one-third of marine fish stocks are overexploited or depleted due to excessive fishing (FAO, 2024b). LAC encompasses four major FAO-defined fishing areas. In the Southeast Pacific, only about one-third of marine stocks were within sustainable levels as of 2021, compared to roughly 60% in both Atlantic regions, while the Eastern Central Pacific showed the highest sustainability rate, close to 85% (FAO, 2024b).

Overexploitation is closely linked to IUU fishing. Foreign fleets have been detected fishing illegally along or within the exclusive economic zones (EEZs) of several Latin American countries, particularly in the South Pacific and South Atlantic. These IUU activities undermine national conservation efforts and generate massive economic losses, estimated at up to USD 2.3 billion, including lost tax revenue, foregone catches, and environmental damage (CLALS American University & InSight Crime, 2022). In capture fisheries, IUU fishing can severely reduce productivity and even lead to the collapse of fish stocks.

Although to a lesser extent, informal fishing also affects ecosystem sustainability. Some artisanal and commercial fishers continue to catch prohibited or regulated species due to weak enforcement mechanisms. Others, lacking proper fishing gear, use harmful techniques that damage habitats,

6 Excessive enrichment of nutrients—mainly nitrogen and phosphorus—in an aquatic ecosystem, which leads to uncontrolled growth of algae and plants, reduces oxygen levels in the water, and decreases biodiversity, severely affecting water quality.

further reducing fish populations and the long-term viability of their activity.



Overexploitation is closely linked to illegal, unreported, and unregulated fishing—often carried out by foreign fleets

In response to these challenges, countries in the region have begun taking steps to combat IUU fishing and overexploitation. Many have signed international agreements, such as the FAO Port State Measures Agreement (PSMA), committing to deny port access to vessels suspected of IUU fishing. They have also strengthened national regulations: for instance, Peru adopted the OECD Fisheries Committee's recommendation to implement traceability systems and ensure that subsidies are directed only to legally authorized vessels. Additionally, several countries have established marine protected areas (MPAs) and seasonal fishing bans to allow species to recover.

However, monitoring and enforcement capacity across LAC remains weak, mainly due to limited physical infrastructure—including patrol vessels, drones, and satellite monitoring systems (CLALS American University & InSight Crime, 2022).

Approximately 22% of LAC's marine waters are designated as marine protected areas (MPAs), making it the region with the largest MPA coverage worldwide. LAC also has the highest prevalence of multiple-use MPAs globally, representing 48% of its total protected waters (Brassiolo et al., 2023). These multiple-use areas aim to balance conservation and sustainable use through instruments such as zoning, seasonal closures, and restrictions on fishing practices and catch sizes. A study by Cinti et al. (2025) covering 11 cases in Argentina, Brazil, Chile, Colombia, Ecuador, and Mexico, found that community-managed MPAs often have positive effects on both governance and small-scale fisheries participation. Governments play a key role in supporting capacity building, facilitating community-based management systems, and recognizing the contribution of local communities and producers to conservation and sustainable fisheries—while also strengthening enforcement against potential illicit activities in protected areas.

Opportunities, challenges, and policy recommendations for fisheries and aquaculture

As discussed in Chapter 1, fisheries present significant development opportunities for rural areas, shaped primarily by three lines of action. The first focuses on countries' capacity to develop aquaculture sustainably. The second centers on improving local working conditions through greater efforts to formalize small-scale employment and increase women's participation. The third aims to harness the sector's potential by promoting fish consumption and linking fisheries with tourism and local gastronomy, thereby strengthening regional food security and diversifying rural incomes.

Promoting sustainable aquaculture development. The main challenge facing the sector is ensuring sustainability in capture fisheries, which is threatened by IUU fishing, overexploitation of resources, and vulnerability to climate change. Another cross-cutting issue is the limited availability of official, disaggregated data on fisheries and aquaculture, particularly regarding rural and small-scale activities. This data gap constrains evidence-based policymaking and the identification of clear priorities.

Aquaculture stands out as the activity with the greatest growth potential to meet rising global food demand, given its high nutritional value and low environmental footprint. It also helps relieve pressure on overexploited marine and oceanic fish stocks (FAO, 2024b). Although LAC is already the world's second-largest aquaculture-producing region, production remains concentrated in a few countries. There is considerable room for others to expand freshwater fish, mollusk, crustacean, and algae farming and to better integrate aquaculture into rural economies. FAO (2022c) estimates that the Americas—including Canada and the United States—will experience the highest growth in aquaculture production globally, particularly in Chile, where output could increase by more than 30% between 2020 and 2030.

Policies in this area should focus on technology transfer, financing, and training for small and medium-sized aquaculture producers. Initiatives such as FAO's Blue Transformation and CAF's Sustainable Blue Economy Strategy pursue this approach, promoting the sustainable intensification of aquaculture to benefit vulnerable communities (CAF, 2025b; FAO, 2024b).

Increasing domestic fish consumption offers an opportunity to improve nutrition in Latin America and the Caribbean and to strengthen intraregional markets. Although LAC is a net exporter of seafood, domestic consumption remains low in most countries—except Peru. Policies in this area include nutrition education campaigns that highlight the health benefits of fish and school meal programs that incorporate locally sourced products. These measures can simultaneously raise the incomes of artisanal fishers by expanding domestic markets and enhance food security across the region.



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Key opportunities for fisheries and aquaculture include sustainable aquaculture growth, job formalization, women's participation across the value chain, and promoting fish's nutritional value

Securing the future of capture fisheries requires restoring and conserving fish stocks. This requires science-based management policies that set catch quotas aligned with the maximum sustainable yield, establish biological closures during spawning seasons, and regulate fishing effort (fleet size, permitted techniques, etc.). Chile, for example, has implemented a quota system since the 1990s, while Mexico provides successful local cases—such as the Baja California red lobster fishery, managed by cooperatives and recognized as the world's first artisanal fishery certified by the Marine Stewardship Council (MSC), which continues to operate sustainably decades later (MSC, 2022). Policies promoting cooperative fisheries models also recognize and strengthen local communities' use rights.

For the measures described above to be effective, illegal fishing will need to be eliminated or at least significantly reduced. Policies in this area should focus on strengthening monitoring and deterrence. One key opportunity lies in modernizing surveillance technology, including satellite tracking systems for vessels, drone patrols, and coastal radar (CLALS American University and InSight Crime, 2022), as well as in global initiatives such as Global Fishing Watch, which provide open-access data on fleet positions. Several LAC countries have already begun cooperating through joint patrols and intelligence sharing to intercept illegal vessels. Continuing along this path—by implementing the Port State Measures Agreement, which prevents IUU catches from being landed, and by applying exemplary sanctions—represents an essential step toward deterrence. These efforts will require investment in monitoring

infrastructure and technology, as well as training for enforcement officers in the use of these tools.

Climate change poses an additional threat to the sector, bringing rising ocean temperatures, acidification, shifting current patterns, and increasingly severe storms that endanger fishers and their livelihoods. Fisheries development policies must therefore integrate climate adaptation as a central pillar. This includes early warning systems, hurricane shelters, insurance against extreme events, and the diversification of target species toward those that are more resilient or migrating to new areas. Fishers should also be trained and actively involved in coastal resilience initiatives—such as mangrove and coral reef restoration—two ecosystems that serve as natural protective barriers.

Sector development also depends on closing rural gaps in basic infrastructure, working conditions, and resilience. This is particularly important for small-scale and artisanal fishers, many of whom lack safe docks, refrigerated storage, reliable electricity, local markets, or adequate roads to transport their catch. Expanding local markets, cold storage, and road and digital connectivity would help reduce high post-harvest losses, which, according to FAO (2011), amount to nearly 35% of the sector's total production each year.

It is also essential to extend social protection to fishers through countercyclical insurance schemes, life and health coverage, and inclusion in pension systems. Some countries, such as Brazil, have begun implementing these policies through programs like Seguro Defeso.⁷ Evidence shows that households benefiting from this program have higher school enrollment among children, better housing conditions, and lower rates of youth unemployment and inactivity (FAO, 2022c). Formalizing small-scale fishers is a necessary first step—not only to improve their income and working conditions but also to enable their inclusion in social protection and insurance systems.



Illegal, unreported, and unregulated fishing and the current and potential impacts of climate change are the main threats to fisheries

Many rural communities remain vulnerable because they depend on limited seasonal fishing or farming resources. Some families migrate temporarily, disrupting their daily lives and social organization in their communities. In this context, credit policies are often poorly suited to the realities of the fishing cycle. Conventional loans do not account for closed seasons or income fluctuations, leading to regressive debt patterns that particularly affect those in informal employment (RedLAC & CAF, 2025).

Finally, rural women remain among the most vulnerable groups, due to their invisibility and the prevalence of informal or even unpaid work. In 2013, FAO published a set of good practices to eliminate gender inequalities in fisheries value chains (FAO, 2013a). These include gender equity legislation; support for women's access to land and fishing resources; training; improvements in information and monitoring systems; better occupational health and safety standards; elimination of child labor; and the promotion of women-led collective action.

Beach and fishing tourism also offer expanding opportunities in many coastal areas. Artisanal fishers can offer guided tours, sport fishing, or ecotourism experiences, while coastal regions can strengthen their culinary industries by promoting the sale of fresh fish—activities that generate additional income for rural coastal communities.

At the same time, efforts should also focus on adding value to fisheries products. Currently, much of the artisanal catch is sold fresh at low prices to intermediaries—a practice that also contributes to waste, as it often relies on rudimentary cleaning methods and a lack of modern storage facilities. Training and small-scale investments can help develop fish-processing microenterprises—such as smoking, canning, and vacuum packaging—enabling fishers to achieve greater profitability.

⁷ It is an insurance program that provides benefits to people who depend on artisanal fishing during periods when the activity is prohibited or restricted.

Tourism sector

The relevance of the sector in Latin America and the Caribbean and its link to rurality

Tourism is an important economic activity in Latin America and the Caribbean (LAC), employing around 1% of the population. The sector is particularly significant in the Caribbean and Central America, largely due to the strength of coastal and beach tourism. In The Bahamas, for example, 10.83% of total employment is concentrated in this sector, while in Barbados it reaches 6.19%. Tourist spending also represents an important source of income for both local communities and governments. Across the region, this spending accounts for between 1.6% and nearly 60% of GDP in several Caribbean and Central American countries, while in South America it ranges from 0.3% to 3.8% of GDP.

●● Approximately 1% of the population in Latin America and the Caribbean works in the tourism sector

Rural tourism has become a policy priority for many governments, according to data from the First Rural Tourism Survey conducted by UN Tourism (2023). This prioritization is reflected in numerous public programs promoting the sector, specifically rural and community-based tourism. The latter is defined as a “form of tourism that takes place in rural areas where local communities, through collective organization, lead and manage their own development” (Gandolfi & Ramírez, 2025). This type of tourism is therefore community-managed, excluding those ventures run by individual families or entrepreneurs.

The importance of rural and community-based tourism has been documented in several countries across the region (see Box 5.6). Based on information from national tourism ministries, its share of total tourism is estimated at 15% in Colombia, 18% in Peru, and 20% in Costa Rica (Gandolfi & Ramírez, 2025).

International organizations such as UN Tourism have also recognized the potential of this subsector, declaring 2020 the “Year of Tourism and Rural Development”, with the goal of fostering development through tourism (UN Tourism, 2024). Building on this momentum, the Best Tourism Villages program was launched to recognize outstanding rural destinations.

International agencies and governments view rural tourism as a tool to bridge infrastructure gaps and expand access to basic services and income opportunities. Moreover, since 54% of tourism jobs are held by women, it also serves as a potential driver of women's economic empowerment (UN Tourism, 2021).

Countries in LAC possess vast natural and cultural wealth, which stands as a competitive advantage in the global rural tourism market. The region hosts nearly 50% of the planet's known biodiversity, despite accounting for only 16% of its land area, and contains 25% of the world's forests and 30% of global renewable freshwater resources (World Bank, 2022).

Box 5.6

The growing importance of rural-based activities in tourism

Between 2010 and 2019, international tourism revenues in LAC grew by 71%, but the COVID-19 pandemic in 2020 caused a sharp 63% drop in earnings (IDB, 2022). By 2023, the number of international visitors to the region had already surpassed pre-pandemic levels, and continued growth was estimated for 2024 (UN Tourism, 2025).

According to UN Tourism, international arrivals in 2024 exceeded the previous year's figures by 7.9% (UN Tourism, 2025). Moreover, about 8 million new jobs are expected to be created in the next decade (WEF, 2025).

There is clear evidence that travelers are increasingly seeking experiences that allow them to connect directly with local culture and nature. Recent reports by Booking.com (2025) show that 77% of travelers look for authentic experiences that reflect the local culture. There is also a growing demand for more sustainable travel, which could further boost ecotourism. This trend is supported by World Bank (2019) studies showing a shift in traveler preferences toward unique cultural experiences at the destination, rather than the traditional focus on accommodation services. According to UNESCO (2021), 40% of all tourism can be classified as cultural tourism.

As Gandolfi and Ramírez (2025) observe:

Since the post-pandemic period, demand for authentic cultural experiences has grown significantly. According to Euromonitor International's Cultural Tourism Report, 65% of travelers included cultural activities in their itineraries in 2022; this figure rose to 72% in 2023 and is projected to reach 78% in 2024. Tourists are also willing to pay up to 20% more for services and products that promote local traditions, reflecting a growing preference for experiential and community-based travel. The report notes that cultural travelers favor accommodations with an authentic local atmosphere—such as country homes, haciendas, or small boutique hotels (25%). A considerable share of their spending goes to regional cuisine, with 40% of budgets allocated to traditional restaurants and local markets to enjoy native dishes. Cultural activities such as craft workshops, cooking classes, and historical tours account for 35% of total spending. According to Euromonitor's survey, average traveler spending on cultural activities and local products rose by 18% between 2022 and 2023 and is expected to grow by another 20% in 2024.

These trends show that a growing percentage of tourists prioritize engaging with the natural and cultural heritage of the communities they visit, fueling demand for destinations in LAC where travelers can immerse themselves in everyday local life, experience ancestral traditions, and enjoy less crowded natural settings.



CAF in Action.

Scan the QR code to explore CAF's strategy to support sustainable tourism industry in LAC



Recent trends—reflecting travelers' growing interest in unique, experience-based tourism—are driving the expansion of cultural and nature-based tourism

In cultural terms, the region stands out for its 147 sites inscribed on UNESCO's World Heritage List, ranging from pre-Hispanic archaeological sites and colonial historic centers to natural landscapes (UNESCO, 2025). Many of these sites are located in rural areas managed by local communities. LAC is home to about 42 million Indigenous people, together with Afro-descendant and mestizo communities that preserve more than 560 languages and unique traditions (World Bank, 2022a). This cultural heritage brings authenticity and added value to the region's tourism offerings.

International programs such as UN Tourism's Best Tourism Villages have recognized several Latin American towns for their achievements in sustainable tourism and community development. In the 2024 edition, award-winning villages were located in Argentina, Chile, Colombia, Ecuador, Guatemala, Mexico, Panama, and Peru.

The main challenges to advancing rural tourism, as identified by national tourism authorities across the region, are presented in Table 5.5. When grouped into seven categories, infrastructure ranks as the top priority, followed by population and economy.

Within the infrastructure category, the main challenges concern the provision of basic services such as drinking water, wastewater treatment, and electricity. These are followed by gaps in access infrastructure for rural areas, including roads, ports, airports, and other facilities.

In the population and economy category, the most significant challenges include income inequality in rural areas and the limited participation of minorities and vulnerable groups.



UNESCO's World Heritage List includes 147 sites in Latin America and the Caribbean

Analyzing rural tourism⁸ as a subsector poses a major challenge due to the lack of statistical information. Not only are harmonized and comparable data across countries unavailable, but in most cases, such data are not collected at all. The First Rural Tourism Survey (UN Tourism, 2023) shows that the availability of basic data on this subsector in the region remains very limited. Of the 18 Latin American countries that responded,⁹ only four¹⁰ (22% of the total) reported collecting information on the total number of visitors engaged in rural tourism. Other variables—such as daily visitors, overnight stays, and spending per visitor—also had low response rates (between three and five countries in the region).

8 UN Tourism defines rural tourism as "a type of tourism activity in which the visitor's experience is related to a wide range of products generally linked to nature-based activities, agriculture, rural lifestyle / culture, angling and sightseeing." It also explains that "rural tourism activities take place in non-urban (rural) areas with the following characteristics: i) low population density, ii) landscape and land-use dominated by agriculture and forestry and iii) traditional social structure and lifestyle."

9 The countries that responded to the survey were the Bahamas, Brazil, Chile, Colombia, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, and Uruguay.

10 Bahamas, Cuba, Honduras, and Paraguay.



Market in Chinchero, Peru.

Table 5.5
Priorities among main challenges (number of countries)

	Infrastructure	Population and economy	Human resources and training	Governance and financial mechanisms	Natural and cultural resources	Destinations, tourism products and business environment	Digitalization and information technologies
Priority ranking (1 = highest priority)	1  (6)	 (3)	 (1)	 (2)	 (2)	 (2)	 (1)
	2  (6)	 (3)	 (2)	 (1)	 (2)	 (0)	 (3)
	3  (1)	 (3)	 (6)	 (2)	 (3)	 (2)	 (0)
	4  (2)	 (3)	 (0)	 (7)	 (2)	 (1)	 (2)
	5  (0)	 (3)	 (3)	 (1)	 (2)	 (6)	 (2)
	6  (0)	 (1)	 (3)	 (4)	 (1)	 (3)	 (5)
	7  (2)	 (1)	 (1)	 (0)	 (5)	 (3)	 (4)
Average ranking	2.53	3.41	3.94	3.94	4.35	4.76	4.88

Note: Rankings ranged from 1 to 7, where 1 indicated the highest priority. No two themes could share the same ranking. Each cell shows the number of countries (numbers in parentheses and diamonds) per priority and challenge.

Source: UN Tourism (2023).

The same survey reveals that the main challenges in collecting such data are budget constraints and the limited availability of technology for obtaining, processing, and analyzing information (66.7% of countries cited both issues). Other challenges include limited knowledge of current technologies used in the field (55.6%), lack of training, education,

and skills among rural tourism providers to collect data (50%), and the limited capacity and expertise of local authorities and destination management organizations (50%). All but one country in the region stated that they require technical, budgetary, or combined assistance to collect and analyze rural tourism data.

Rural and community tourism programs in the region

Gandolfi and Ramírez (2025) analyze the effects of nine rural and community tourism programs in LAC¹¹ (Table 5.6). Except for the Chilean initiative, which dates back to 1995, most of these programs emerged in the region toward the end of the first decade of the century and have generally continued over time. However, several lost priority following the 2020 pandemic.

Table 5.6
Rural and community tourism programs in Latin America and the Caribbean

Country	Program name	Lead government entity	Implementation period
Argentina	Red Argentina de Turismo Rural Comunitario	Ministry of Tourism of the Nation	2009–2017
Bolivia	Programa Nacional de Turismo Comunitario	Vice-Ministry of Tourism	2011–2017
Chile	Programa Nacional de Turismo Rural	National Institute for Agricultural Development (INDAP)	1995–2010
Colombia	Estrategia Nacional de Turismo Comunitario	Ministry of Trade, Industry and Tourism (MINCIT)	2012–Present
Costa Rica	Programa de Apoyo a Mipymes Turísticas (includes rural and community tourism)	Costa Rican Tourism Institute (ICT)	2009–Present
Jamaica	Rural Economic Development Initiative I & II	Ministry of Tourism, Jamaica Social Investment Fund	2017–Present
Paraguay	Plan Nacional de Turismo Rural Comunitario	National Secretariat of Tourism (SENATUR)	2013–2023
Peru	Estrategia Nacional de Turismo Comunitario	Ministry of Foreign Trade and Tourism (MINCETUR)	2007–Present
Dominican Republic	Programa de Turismo Comunitario Sostenible (TCS)	Ministry of Tourism (MITUR)	2016–Present

Source: Gandolfi and Ramírez (2025).

Total spending across these nine programs did not exceed USD 55 million, with individual initiatives ranging from under USD 1 million to the largest—implemented in Bolivia—at USD 16 million. Over time, program budgets showed a clear upward trend. Of the nine analyzed, five received funding from international cooperation agencies, including CAF, IDB, the World Bank, and the Spanish and Japanese cooperation agencies.

11 The study was commissioned for this edition of the RED, and this section highlights its main findings.

Rural and community tourism programs were not created solely to diversify or expand the sector's offerings; in many cases, their primary goal was community development. This was the case for seven of the nine programs reviewed.

Interviewees consulted by Gandolfi and Ramírez (2025) reported a variety of positive outcomes from these programs, spanning economic, sociocultural, environmental, and inclusion-related impacts.

The effects most widely acknowledged included the generation of additional income alongside

traditional activities; spillover benefits extending beyond those directly involved in tourism; job creation for young people and women; and the revitalization of local customs and traditions. Long-term impacts were also noted, such as improvements in education—since higher household income enabled families to finance their children's tertiary studies—and the strengthening of local leadership through capacity development. Tourism also acted as a catalyst for improving basic infrastructure.

Links with agriculture and other rural sectors

There is broad consensus that tourism, when oriented toward celebrating local values, serves as an incentive to protect and showcase the natural and cultural heritage of communities. A notable example is Mexico's Yucatán Peninsula, where tourism around archaeological sites such as Chichén Itzá, along with the participation of Maya communities in the value chain, has strengthened the protection of both cultural and natural heritage (Peraza Cano et al., 2023). Similarly, in Colombia's Coffee Cultural Landscape, tourism centered on local traditions has promoted the conservation of traditional farms and landscapes recognized by UNESCO (Duis, 2007).



Tourism, when aimed at showcasing local values, serves as an incentive for the protection and enhancement of communities' natural and cultural heritage

In general, when forests, landscapes, and traditions become tourism attractions—such as parks, reserves, or cultural events—they generate income and local pride that support their preservation. In Venezuela, NGO Fundación Andes Tropicales implemented the Programa Andes Tropicales (PAT), a community-based tourism initiative designed to strengthen tourism activities linked to livestock and agriculture—mainly coffee—through the creation of tourism routes under the Mucuposadas brand. Later, the program focused its efforts on the Gran Sabana and the Orinoco Delta, developing tourism circuits connected to handicrafts, Indigenous traditions, and environmental conservation. The implementation of this program had positive effects, including income diversification, the development of small productive linkages, the creation of local jobs with strong female participation, community empowerment, the conservation of heritage and natural resources, and enhanced resilience through income generation during periods of low agricultural activity. PAT received support from CAF, and its model was later replicated in Bolivia and Argentina.

Opportunities for rural tourism development and policy directions

Statistical information on rural tourism needs to be strengthened. This issue has been emphasized throughout the report for various areas, but in the case of rural tourism, the data gap is even more severe. In many countries, data are not collected at all. Compounding this is the lack of impact assessments of rural and community tourism programs that provide a full evaluation of their costs and benefits.

Investing in rural tourism means investing in the needs of local populations. According to participants in the First Rural Tourism Survey conducted by UN Tourism, the main challenges are related to connectivity infrastructure and basic services. These constraints affect not only tourists but also residents of rural communities. Public investment in infrastructure and basic services should incorporate potential tourism benefits when assessing priorities and expected returns.

Budgets must align with program objectives. Several programs were long-term and ambitious, yet their allocated budgets were modest. The total spending across the nine programs analyzed by Gandolfi and Ramírez (2025) did not exceed USD 55 million, with individual budgets ranging from under USD 1 million to the largest program at USD 16 million.

Considering that in countries such as Colombia, Costa Rica, and Peru, rural and community tourism accounts for between 15% and 20% of total tourism activity, these programs appear underfunded and should receive greater government support.



Strengthening electrical, digital, and mobile connectivity in rural areas improves the living conditions of their inhabitants and is a key factor in the development of tourism

Adopting a long-term perspective is essential. Cross-country comparisons show that countries implementing rural and community tourism programs with medium- and long-term planning tend to achieve deeper and more sustainable impacts. This is evident in Bolivia, Costa Rica, and Paraguay, where programs in place for over 12 years have generated significant sociocultural, environmental, economic, and inclusion-related outcomes (Gandolfi & Ramírez, 2025).

Roadmap for strengthening the forestry, fisheries, and rural tourism sectors

Throughout this chapter, the main challenges and opportunities in three key sectors for rural economies have been outlined. In addition to improving the collection of more accurate and disaggregated data for each sector, a series of

policy measures can help strengthen them and enhance living conditions in rural areas. Figure 5.2 presents a roadmap summarizing the current situation and key actions that can be taken to achieve this across the sectors analyzed.

Figure 5.2
Opportunities, challenges, and policy recommendations

