

Investment and cooperation opportunities for

Latin America and the Caribbean and the European Union

Contribution by the Economic Commission
for Latin America and the Caribbean (ECLAC)
to the Third Summit of Heads of State and Government
of the Community of Latin American and
Caribbean States (CELAC) and the European Union

17 and 18 July 2023



UNITED NATIONS

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Introduction

This document is a contribution by the Economic Commission for Latin America and the Caribbean (ECLAC) to the third Summit of Heads of State and Government of the Community of Latin American and Caribbean States (CELAC) and the European Union, scheduled to be held on 17 and 18 July 2023, in Brussels. The main purpose of this publication is to provide input to enhance the dialogue between both groups of countries on identifying areas of opportunity for collaboration and investment in strategic sectors to achieve a sustainable and inclusive transition.

Latin America and the Caribbean faces multiple challenges in achieving the Sustainable Development Goals (SDGs) and advancing towards a more productive, inclusive and sustainable future. Now, more than ever, the countries of the region must strengthen their strategic alliances, owing to factors that include the economic and social impacts of the coronavirus disease (COVID-19) pandemic, a series of cascading crises (climate, health, employment, social, education, food security, energy and cost of living) and the structural challenge of practically stagnant productivity over the past few decades.

Forging stronger productive linkages and investment and cooperation relationships with the countries of the European Union represents an important opportunity for the countries of the region to advance in transforming economic and production systems in order to create more and better jobs and enhance technological sophistication. There is an increasing need for these technologies to focus on reducing the environmental impacts of growth and adapting to its negative effects, in particular climate change. For the European Union, strengthening productive linkages with the region would not only enable the consolidation of historic and cultural links but would also create greater opportunities for capacity-building in areas that are key for both groups.

ECLAC has prepared this document to enhance understanding of the strategic opportunities for both blocs in facing the enormous challenges of today and to strengthen the call for action and international cooperation to overcome barriers, seize opportunities and create hope.

I. Latin America and the Caribbean and the European Union in the current global economy

A. Strengthening relations between Latin America and the Caribbean and the European Union to address multiple crises and promote productive development in the region

- The cascading crises faced by the global economy in recent years have exacerbated structural trends that were already of concern for the international community: sluggish economic and trade growth; growing levels of inequality, with widening gender divides; and environmental destruction, with potentially catastrophic consequences for humanity. The socioeconomic impacts of the COVID-19 pandemic and the conflict in Ukraine have confirmed that no single country, region or continent can meet the challenges of sustainable development on its own.
- The European Union is a key partner for Latin America and the Caribbean in strengthening strategic alliances and cooperation, based on shared objectives, values and agendas. Those values are also closely linked to the SDGs, in particular those that involve leaving no one behind, promoting gender equality and preserving the planet for future generations. With the recent resumption of political dialogue between the two groups of countries, a new agenda has been established, focusing on the green transition, digital transformation, infrastructure and connectivity, health, food security, and strengthening multilateralism.
- For the countries of Latin America and the Caribbean to achieve a “transformative recovery”, ECLAC is also recommending that work be done to seize a very clear set of opportunities for growth, job creation and women’s access to strategic sectors for recovery and sustainability, some of which could become part of efforts to enhance productive development. In terms of boosting growth and transforming development models, these areas of opportunity include geographic rearrangement of production, the energy transition, e-mobility, the circular economy, the bioeconomy, the pharmaceutical, life sciences and medical devices industries, exports of modern services mediated by information and communications technologies (ICT), advanced manufacturing, gender equality and the care society, sustainable water management, sustainable tourism, digital governance and food security.
- These areas of opportunity (see diagram I.1) are merely illustrative and others could be added. All open up new opportunities, not only for investment and growth but also for international cooperation and strategic partnerships.

■ Diagram I.1 ■

Areas of opportunity for growth and collaboration: driving sectors



Source: Economic Commission for Latin America and the Caribbean (ECLAC).

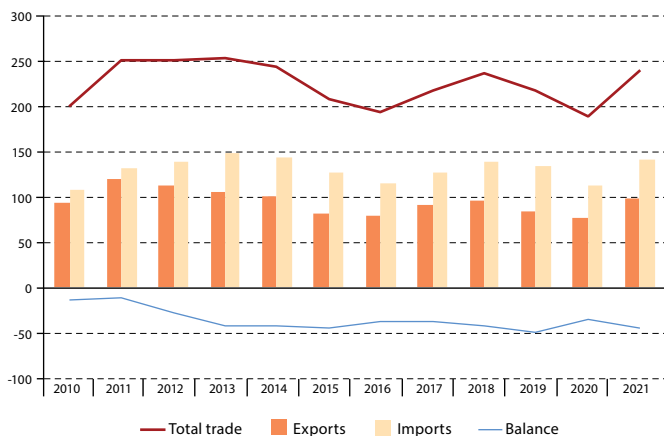
- The countries of Latin America and the Caribbean are seeking recovery through the transformation of their development models for more productive, inclusive and sustainable growth. International investments will be key for the productive development of the region and Europe, and European companies, which have been a source of new capital, driving industry growth and enabling advances in diversification and technological sophistication in sectors such as those mentioned, could take on an even greater role. Incorporating the care economy into those investments and affirmative action to increase women's access to the remaining driving sectors will support productive and inclusive growth. Investing in the care economy, in addition to generating other social returns (such as timely development for children, the reduction of inequality gaps and the creation of green jobs), reduces the opportunity cost for people not involved in productive activities because of care responsibilities.
- It will be key to align the investment and cooperation opportunities for the European Union and the countries of Latin America and the Caribbean with countries' policy priorities for productive development and with their subnational strategies, such as territorial productive development agendas and cluster initiatives. While foreign investment is an important source of financing and technology for the region, for its full contribution to development to be realized, it must be linked with a public-private cooperation agenda that strengthens countries' technological capacities, in particular in innovating and disseminating innovations that promote environmental stewardship and decent work for both men and women.
- Transforming productive development and establishing endogenous technological capacity in developing countries is essential. In their absence, countries will not have the instruments they need to face the environmental problems specific to each location or to improve productivity, which is fundamental for competitiveness and the creation of quality formal jobs.
- Advanced countries are instituting new industrial and technology policies that accelerate technical progress and will strongly impact competitiveness and employment at the global level. Examples of this include the European Green Deal and, in the United States, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act and, more recently, the Inflation Reduction Act. Preventing technological inequalities from worsening is essential, as they can dramatically widen the productivity and income lags of developing economies. It will thus be critical to explore options for enabling Latin America and the Caribbean to take part in these new industrial and technology policies through investment and other cooperation mechanisms.
- In a highly globalized world, problems do not stop at borders. Climate change is a threat to humanity, while poverty and technology and productivity lags drive millions of people to leave their countries in search of better opportunities, creating tensions on both sides of migratory flows, and inequality weakens democracies, fuelling internal and external conflicts. Latin America and the Caribbean and Europe must work together to strengthen multilateral international cooperation, promote trade rules that create more opportunities for export diversification in developing countries, advance towards an international system with less monetary and financial volatility, and lower the barriers preventing the international dissemination of technology.

B. The European Union has been a major trading partner

1. The European Union remains the third largest trading partner of Latin America and the Caribbean, after the United States and China

- After two years of declines in 2019 and 2020 (in the latter, owing to the COVID-19 pandemic), goods trade between Latin America and the Caribbean and the 27 members of the European Union recovered significantly in 2021, reaching US\$ 239 billion, while remaining below the record, of around US\$ 250 billion, between 2011 and 2014 (see figure I.1).

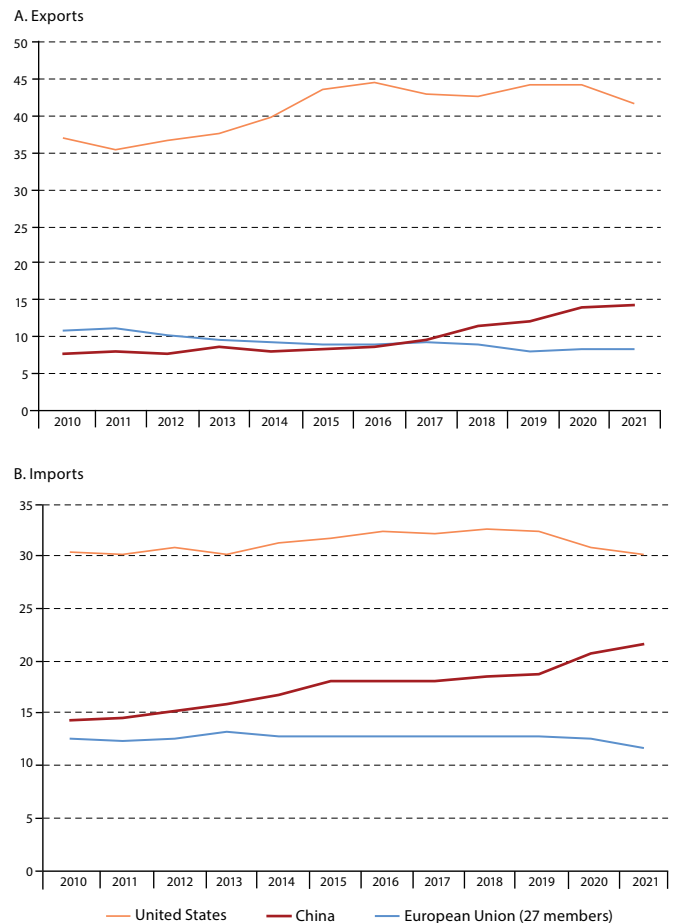
■ **Figure I.1** ■
Latin America and the Caribbean: goods trade with the European Union (27 members), 2010–2021
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.

- The European Union share of the region's foreign trade has been trending slightly downward over the last decade, and in 2021, stood at 8% for goods exports and 12% for goods imports (see figure I.2).
- China, having displaced the European Union as the second leading origin of regional goods imports in 2010, displaced it as the second leading destination for exports in 2017.

■ **Figure I.2** ■
Latin America and the Caribbean: share of selected partners in goods trade, 2010–2021
(Percentages)



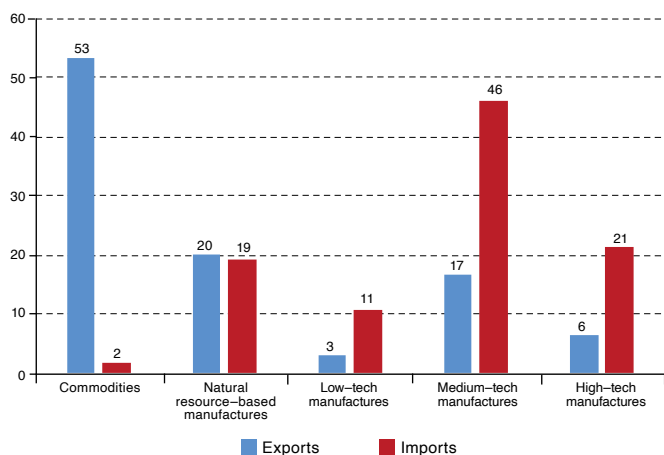
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.

2. Trade between the region and the European Union continues to be characterized by the exchange of raw materials for manufactures

- There is an entrenched pattern of inter-industrial trade between Latin America and the Caribbean and the European Union. While commodities and manufactures based on natural resources represented nearly three quarters of the value of regional exports over the period 2019–2021, medium- and high-tech manufactures accounted for two thirds of the value of regional imports (see figure I.3). Over that period, the region's only trade surplus with the European Union was in commodities.
- In 2021, the top 10 regional exports to the European Union were commodities and natural resource-based manufactures (see table I.1). By contrast, the main products imported from the European Union are sophisticated industrial goods, in particular medicines and automobiles and auto parts. Notwithstanding trade complementarity, diversifying Latin American and Caribbean exports should be used as a means to expand trade and create new productive complementarities in industries with a greater focus on innovation and decent jobs for both men and women.

■ **Figure I.3** ■
Latin America and the Caribbean: structure of goods trade with European Union by category of technological intensity, 2019–2021 average

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.

■ **Table I.1** ■
Latin America and the Caribbean: top 10 products exported to the European Union (27 members), 2021

Rank	Description	Share of total exports (Percentages)
1	Copper ores and concentrates	6.9
2	Soybean meal	6.8
3	Coffee, unroasted and non-decaffeinated	6.1
4	Crude petroleum oils	5.7
5	Soybeans	4.4
6	Iron ores and concentrates	3.1
7	Bananas	2.9
8	Refined copper cathodes	2.6
9	Shrimp	2.3
10	Chemical wood pulp, non-coniferous	2.2

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.
Note: Products are defined using the six-digit codes of the Harmonized Commodity Description and Coding System of the World Customs Organization.

- Mexico is the main exception to the general trade model between the two groups. Its main exports to the European Union are industrial goods, in particular automobiles and auto parts and electronic industry products.

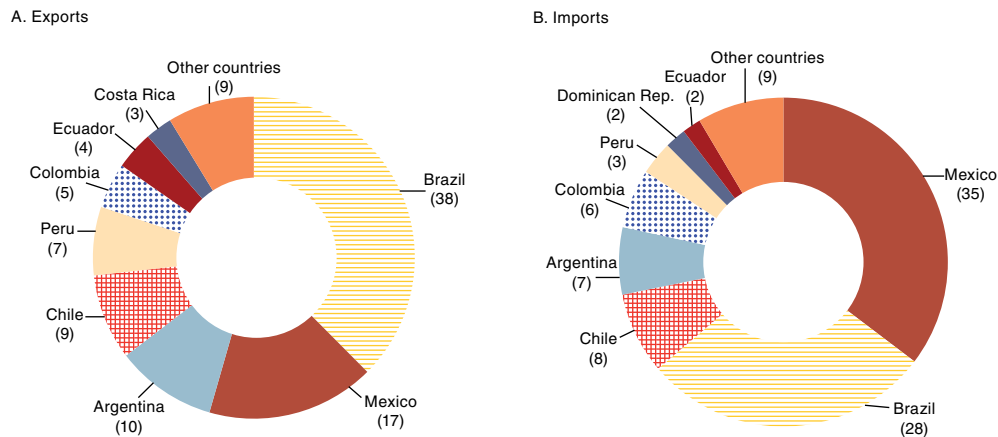
3. Regionally, Brazil is the largest exporter of goods to the European Union while Mexico is the largest importer

- In 2021, the two largest economies in the region, Brazil and Mexico, accounted for 60% of the value of trade between Latin America and the Caribbean and the European Union, with shares of 32% and 28%, respectively. Next are Chile and Argentina, both at 8% (see figure I.4).
- Historically, Brazil has been the region's main exporter to the European Union, reaching a share of 38% of total

export value in 2021. Together with the other members of the Southern Common Market (MERCOSUR), it accounted for 49% of total exports to the European Union that year. The MERCOSUR export basket to the European Union, which includes oil, soybeans, copper and iron ore, coffee and pulp, is dominated by natural resources in primary or processed form.

■ Figure I.4 ■

Latin America and the Caribbean: composition of goods trade with European Union (27 members), by country of origin and destination, 2021
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.

- Since 2015, Mexico has been the largest regional importer of products from the European Union, accounting for slightly more than one third of the total in 2021. Its main imports include medicines, automobiles and auto parts, chemicals

and plastics. There are many European auto makers in the country, producing vehicles for both domestic and export markets, mainly the United States.

4. Improved access to the European Union market for countries that have signed trade agreements

- In 2022, tariffs averaging between 0% and 2.1% were applied to exports from countries in the region that have signed trade agreements with the European Union, much lower than the average most-favoured-nation tariff for all products combined (6.5%). However, there is a marked difference between industrial and agricultural product tariffs; while the former are tariff-free, agricultural product tariffs range from 3.5% for Peru to 9.9% for Chile (see table I.2). The only exception is agricultural products shipped from Caribbean countries that are members of the Caribbean Forum of African, Caribbean and Pacific States (CARIFORUM), which are exempt from European Union tariffs. The agreement with CARIFORUM is the most highly asymmetrical (in its favour) of all the agreements signed by the European Union with partners in the region.
- Average European Union tariffs are particularly high for dairy products (35.8%), sugars and confectionery (24%) and meats (22%). In addition, these categories include products that are fully or partially excluded from the tariff reductions in the agreements signed with countries in the region, preventing them from realizing their full potential to export agricultural and agro-industrial products and limiting their ability to diversify their exports to the European Union.
- In the cases of Chile and Mexico, the figures presented do not reflect the results of updates to their respective agreements with the European Union. Once the updated agreements come into effect, both countries will see improved conditions of access for agricultural exports.
- The new chapter on trade and gender equality in the updated agreement between Chile and the European Union is also expected to contribute to eliminating barriers to women's full participation in international trade. To that end, cooperation initiatives are envisaged to address issues such as women's working conditions in value chains and labour segregation and to increase their participation in science, technology, engineering and mathematics (STEM),

as well as to promote gender-sensitive care policies and measures to balance work and family life.¹

■ **Table I.2** ■
European Union: tariffs applied to selected partners, 2022
(Percentages)

A. Average simple tariff

Partner	All products	Agricultural products	Non-agricultural products
Most favoured nation	6.5	14.9	4.3
Caribbean Forum of African, Caribbean and Pacific States (CARIFORUM) ^a	0.0	0.0	0.0
Central America ^b	1.2	5.9	0.0
Chile ^c	2.1	9.9	0.0
Colombia ^b	1.0	5.0	0.0
Ecuador	1.0	4.8	0.0
Mexico ^c	2.0	9.2	0.0
Peru ^b	0.7	3.5	0.0

B. Duty-free tariff lines

Partner	All products	Agricultural products	Non-agricultural products
Most favoured nation	26.7	18.9	28.9
Caribbean Forum of African, Caribbean and Pacific States (CARIFORUM) ^a	99.8	100.0	99.8
Central America ^b	93.6	70.9	99.9
Chile ^c	90.0	55.2	99.8
Colombia ^b	94.6	75.4	100.0
Ecuador	94.0	73.0	99.8
Mexico ^c	90.7	58.1	99.8
Peru ^b	95.7	80.5	99.9

Source: World Trade Organization (WTO), *Trade Policy Review. Report by the Secretariat. European Union* (WT/TPR/S/442), 11 April 2023.

^a Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago. The data refer to 2019.

^b Tariff reduction program not yet completed.

^c Does not include the results of the updating of the trade agreement.

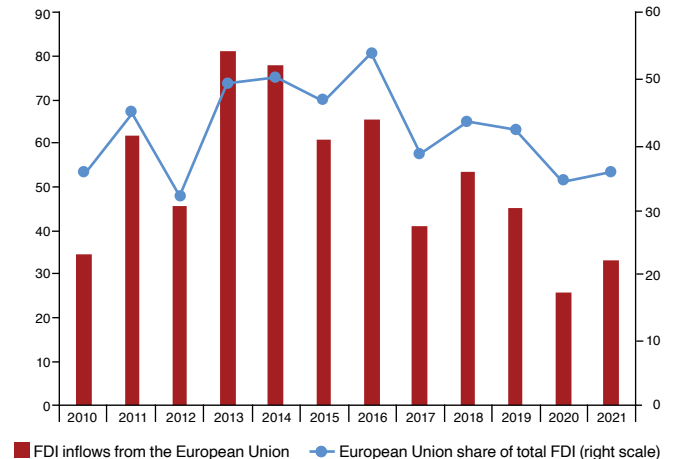
¹ See chapter 27, "Trade and Gender equality" [online] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/chile/eu-chile-agreement/text-agreement_en.

C. European Union investments have supported the region's development

1. European Union companies have been the largest investors in Latin America and the Caribbean

- As a bloc, the European Union is the leading source of foreign investment in the world. Between 2017 and 2021, it accounted for 24% of total foreign direct investment (FDI) outflows, surpassing China and Hong Kong, China (19%), the United States (14%) and Japan (13%) (UNCTAD, 2022).
- The presence of European Union companies in Latin America and the Caribbean is longstanding, and the European Union has been the main source of foreign capital since transnational corporate investment in the region picked up in the mid-1990s. Between 2010 and 2021, 42.9% of FDI inflows to the region came from the European Union. In 2021, US\$ 33 billion was received from the European Union, equivalent to 36% of total inflows, surpassing FDI from the United States (24%) and intraregional investments (7%), which are the second and third largest origin, respectively (ECLAC, 2022a). The European Union remained in first place even though FDI received from the European Union over the past five years declined compared with the first half of the 2010s (see figure I.5), mainly as a result of lower investments in Brazil.
- In Brazil and Chile, two countries in which the country of origin of FDI stock can be identified, the European Union was the main source of foreign capital. In Brazil, the main recipient of FDI in the region, the stock of FDI from the European Union was close to US\$ 370 billion in 2021 (41% of the total). The Kingdom of the Netherlands and Luxembourg, through which capital from other origins enters Brazil, accounted for 18%, while the remaining 23% originated in other European Union countries. The United States accounted for 23%, Switzerland and the United Kingdom for 5%, and China and Hong Kong, China, for 4%. In the case of Chile, FDI from the European Union amounted to some US\$ 64 billion, or 26% of the total. Of this total, 10% was from the Kingdom of the Netherlands and Luxembourg, and 16% was from the remaining countries in the European Union. Next in the rankings were Canada (13%), the United States (11%) and the United Kingdom (7%).
- The presence of European companies and the significant FDI stock of European origin in the region have fostered stable business relations, benefiting both blocs of countries.

Figure I.5
Latin America and the Caribbean (11 countries):^a FDI inflows from European Union, 2010–2021
(Billions of dollars and percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures and estimates as at 21 September 2022.

^a The countries included were those with data by origin in 2021, namely Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico and the Plurinational State of Bolivia. The figures for Brazil do not include the reinvested earnings component. Funds whose origin could not be determined because they entered through tax havens are excluded in all cases.

- The Treaty of Lisbon, signed in 2007, incorporated the issue of FDI, which had previously been the exclusive competence of its member States, into the common commercial policy of the European Union. Since its entry into force in 2009, the European Union has negotiated standards for the protection and liberalization of investments under its new trade agreements. As such, the European Union

adopted a new approach to investment dispute resolution beginning in 2015, both bilaterally and multilaterally. It seeks to address the multiple concerns in Europe and other regions with regard to traditional investor-State dispute settlement (ISDS) mechanisms. In particular, the European Union has proposed replacing ad hoc tribunals with permanent ones and establishing an appeals tribunal,

in an effort to protect the regulatory power of host States on issues such as safeguarding the environment and promoting sustainable development in general. This new institutional architecture has been incorporated into all trade agreements signed by the European Union since 2015, including the updates to the agreements with Chile and Mexico.

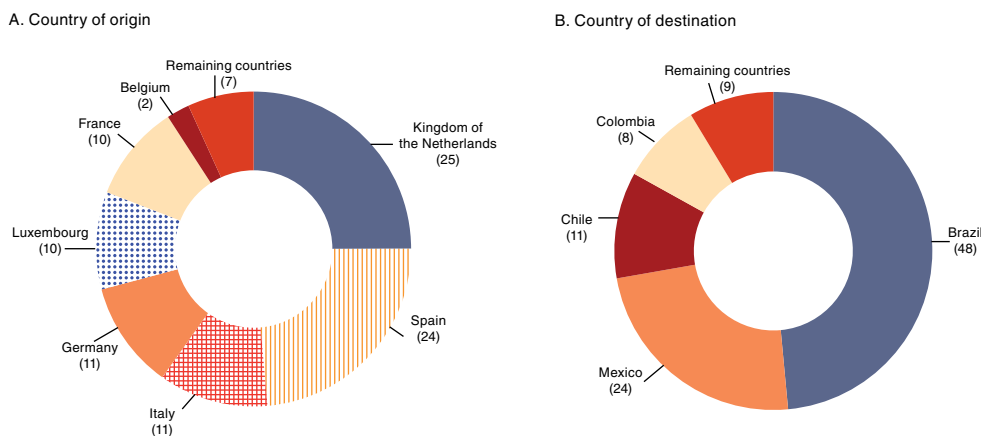
2. Most investments have come from Spain, Italy, Germany and France

- Companies from Spain, Italy, Germany, Belgium and France, which accounted for 58% of total inflows from the European Union between 2017 and 2021, have been the most active in the region (see figure I.6A). Inbound investments from the Kingdom of the Netherlands and Luxembourg do not reflect investments by companies from these countries alone, as the tax benefits they grant mean that they are often used by transnationals to invest in third countries. Their share of the total is therefore overrepresented.
- In terms of the economies in the region, the largest markets take in the most European investment. Between 2017 and 2021, 91% of FDI inflows from the European Union went to Brazil, Mexico, Chile and Colombia (see figure I.6B). The European Union was the largest investor of FDI in Brazil, Chile and Colombia between 2017 and 2021 (at 43%, 44% and 30% of the total, respectively), while investments from the United States played a greater role in Mexico over the same period (41% from the United States compared with 30% from the European Union).

■ Figure I.6 ■

Latin America and the Caribbean (11 countries):^a FDI inflows from European Union, by country of origin and destination, 2017–2021 cumulative growth

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures and estimates as at 21 September 2022.

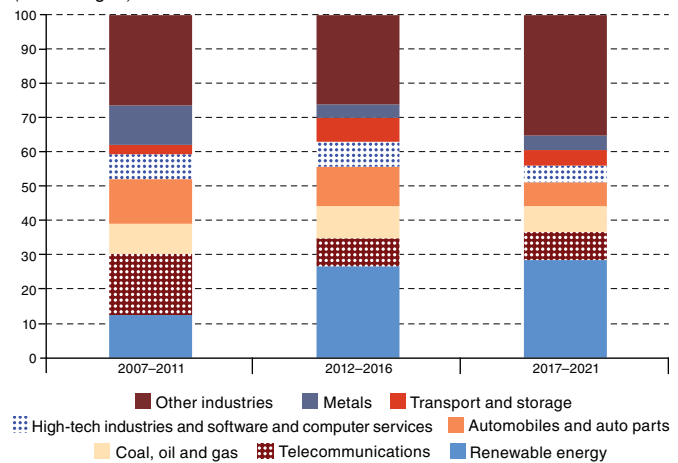
^a The countries included were those with data by origin in 2021, namely Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico and the Plurinational State of Bolivia. The figures for Brazil do not include the reinvested earnings component. Funds whose origin could not be determined because they entered through tax havens are excluded in all cases.

3. European Union investments have boosted telecommunications infrastructure, renewable energy and advanced manufacturing

- Between 2017 and 2021, European companies announced new investments in the region of an estimated US\$ 146 billion, 40% of the total announced in Latin America and the Caribbean in that period.
- The interest of European companies in the development of renewable energies in the region has contributed to a move by Latin American and Caribbean countries towards a cleaner energy mix. The renewable energy sector accounts for the majority of investments announced by European companies in the region: between 2017 and 2021, 28% of all announcements were for renewable energy projects (see figure I.7). European companies have also been leaders in the sector, accounting for 65% of the value of renewable energy investment announcements in Latin America and the Caribbean over the last 15 years.
- European companies have also been important players in the deployment of enabling infrastructure for the digital economy. In the telecommunications sector, which supports the development of digital economy infrastructure, investment announcements by European companies accounted for 29% of the total value of investments between 2017 and 2021 and the sector was the second largest in terms of value for European companies in the region. Through automobile and auto parts industry investments, European companies have

also supported the development of advanced manufacturing skills and capabilities, mainly in Mexico and Brazil, enabling progress in the region on the important issue of enhancing economic sophistication.

■ **Figure I.7** ■
Latin America and the Caribbean: sectoral distribution of FDI projects announced by European companies, 2007–2021
 (Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

4. Reorganization of international production: opportunities for Latin America and the Caribbean

- In the 1980s, 1990s and 2010s, a multilateral trading system with clear rules, technology advances in container transport and the organization of logistics, and certain favourable geopolitical changes enabled transnational companies to roll out complex production and supply networks as they sought to boost efficiency by taking advantage of production cost differences in different countries. It was a time for celebrating the interdependence of economies worldwide and the benefits of the fragmentation and distribution of supply networks.
- However, a series of factors triggered reactions against this interdependent and relatively limited globalization. Initially, in some developed countries, there was a negative

reaction to the large increase in competitive imports—products originating mainly from countries like China, which had become a force to reckon with in the export of manufactures—and its effects on unemployment. Trade deficits in developed countries and the corresponding calls for the imposition of tariffs, which were implemented in the mid-2010s, were also consequential. A growing technology rivalry also played a part, in particular in ITC-mediated services and Internet standards. These factors were aggravated by the supply chain disruptions triggered by the pandemic and worsened even further by the outbreak of the conflict in Ukraine. In little more than a decade, the

sentiment changed from one in which interdependence had been celebrated to a situation in which interdependence and the concentration of supply in certain countries became a threat and a risk that must be reduced.

- All these factors resulted in a slowdown of globalization and a significant reorganization of supply chains aimed at de-risking supply, with consequences that included decoupling, in some cases, along with weakened trade and investment multilateralism and an overall prioritization of global economic and geopolitical considerations.
- In this new competitive environment, there are strong signals that a rearrangement of global value chains has begun in both geographic and functional terms. Efficiency-seeking strategies are also incorporating new strategic elements to boost global supply chain resilience in the face of global

economic, political and environmental instability and to support compliance with human rights, gender equality and sustainability standards.

- Lower costs for labour-saving technology —such as digitalization, automation and additive manufacturing— tend to cancel out the historical labour cost disadvantage in the most industrialized countries, enabling reshoring and nearshoring.
- Although all these factors, including significant industrial policy reforms in the United States and countries of the European Union, can be viewed as threats, they also present opportunities, one of which is the possibility that the countries of Latin America and the Caribbean could establish the region as a strategic alternative for relocation amid the restructuring under way, which would foster investment and boost economic sophistication.

II. Opportunities and challenges of the green transition

A. The energy transition

1. An opportunity to transform the development model in Latin America and the Caribbean

- ECLAC is vigorously promoting the energy transition in the countries of the region as a novel way to drive the transformation of production and development models that can boost new industrial sectors, generate greater surpluses, and capture them along value chains, while creating green jobs and new revenues. This can be achieved by capitalizing on the region's technological know-how, engineering capabilities, experience in creating renewable energy sources, and supply of critical minerals. Five key technological developments and resources stand out in the region for their transformative and synergistic potential: wind and solar energy, energy storage, lithium and copper, e-mobility, and green hydrogen and fuel cells.
- Mitigating climate change and adapting to its effects requires a rethinking of production models and the adoption of innovative solutions to reduce greenhouse gas emissions. Reducing emissions will entail a radical energy transition with a shift to renewable, sustainable sources, changes in consumption patterns and more efficient use of natural resources. This means rethinking production and its regional and global organization and reorienting policy for the green transition.
- The green transition requires development of the entire renewable energy value chain and related industrial sectors, including energy production, transmission, distribution and use, in addition to a marked increase in the renewable energy share of the energy mix and the electrification of all sectors using renewable energy, in accordance with the resources available in each country and territory. This involves developing and adapting policies (in keeping with countries' scientific and engineering resources) and technology solutions (using regionally available minerals that are critical for the transition) for production, storage and distribution infrastructure and distributed electricity generation, based on renewable resources.
- Rising investment in renewable resources, in addition to being competitive and profitable, supports improved access to electricity. According to ECLAC estimates, the investment required to provide universal access to electricity in Latin America and the Caribbean, increasing integration and using renewable technologies (wind and solar) in line with the targets of Goal 7, is equivalent to 1.3% of regional annual GDP for 10 years, which would generate seven million new green jobs and reduce greenhouse gas emissions by 35% (ECLAC, 2020a).
- Although the opportunities for investment and green job creation in the sector are significant, the gaps in the energy sector must be taken into consideration to avoid perpetuating or worsening inequalities. A significant gap in the sector is the gender divide. Women's participation in leadership and technical roles in the renewable energy sector is lower than men's and they represent just one third of its workforce globally (IRENA, 2019). Women are also outnumbered by men in the energy sector in Latin America and the Caribbean (ECLAC, 2019a). In Brazil, for example, women's participation in green jobs related to renewable energy generation and distribution is only 11.7% (Olivera and others, 2021).

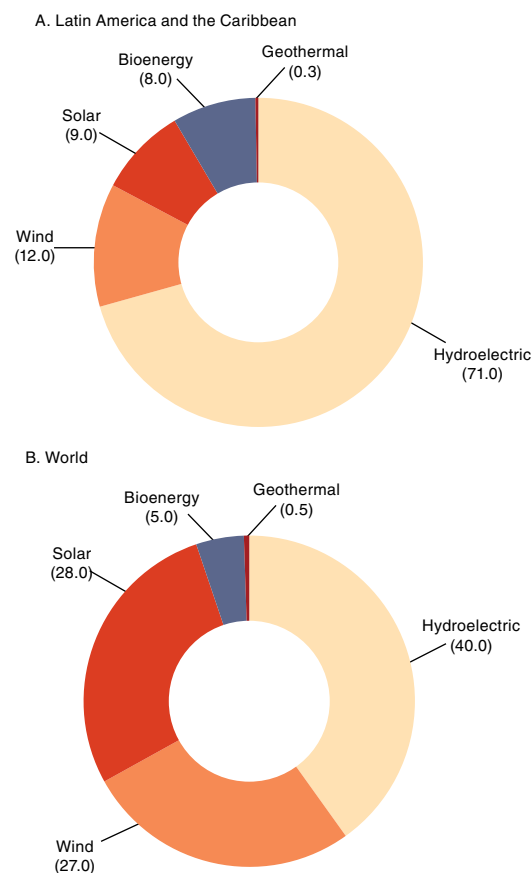
2. Renewable energies are essential for progress in decarbonization

- Transforming the energy matrix is essential for progress in decarbonization and sustainable development. Although the region's contribution to greenhouse gas emissions is lower than that of other regions of the world, the energy sector is one of the largest contributors.
- Latin America and the Caribbean is endowed with vast renewable energy resources and could obtain up to 80% of its electricity from renewable sources affordably, using abundant wind and solar resources as their cost continues to decline (Paredes, 2017).
- Both supply and demand for electricity are expected to continue growing in Latin America and the Caribbean, while a marked expansion is projected in the share of renewables, in keeping with global projections under net zero scenarios, with demand doubling between 2021 and 2050 (IEA, 2023).
- Although, traditionally, there has been more renewable energy in the mix of Latin America and the Caribbean, the primary energy supply in the region grew by a factor of 2.3 over the past 50 years while GDP energy intensity fell slightly, with some sectoral efficiency gains, in particular in the transport sector. The share of renewable energy sources with respect to total primary energy also grew, from 25% in 1971 to 33.2% in 2021, falling slightly during the pandemic and then beginning to recover in 2021.
- A distinction must be made between renewable energy sources that do not require combustion and those that do and therefore generate some emissions (such as firewood and bagasse), since, in 2021, they also represented more than half of all renewable energies (54%) in Latin America and the Caribbean. Furthermore, of the renewables that do not require combustion, hydro power is the predominant form in the region (26%), followed by solar, wind, biomass and geothermic (which, together, account for 20%).
- In 2021, the composition of renewable energy capacity in the region was as follows: hydro accounted for nearly 200 GW, wind for 31.7 GW, solar power for 22.9 GW and bioenergy for 21.5 GW. The total regional bioenergy production capacity is twice the global capacity. Taken

together, wind, bioenergy and solar account for nearly 29% of total renewable energy capacity in the region, while globally, bioenergy accounts for just 5% and wind and solar account for 27% and 28%, respectively (see figure II.1).

■ **Figure II.1** ■
**Latin America and the Caribbean and the world:
renewable energy capacity, 2021**

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Renewable Energy Agency (IRENA), *Renewable Energy Statistics 2021*, 2021 and *Renewable Energy Statistics 2022*, 2022.

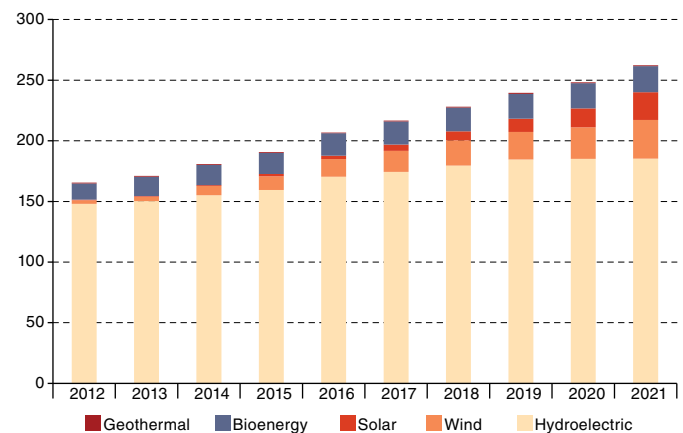
- Investment in renewable energies in Latin American and Caribbean countries is essential to boost the sustainability and diversity of the energy mix. A greener energy mix can support the decarbonization of energy-intensive sectors, such as transport and industry, for which there are currently no viable alternative energy sources on a commercial scale. In addition, a greener mix would make it even more attractive to relocate production to the region from regions with less clean energy mixes.
- The European Union's investments and technological capabilities can make a substantial contribution to renewable energies and decarbonization in Latin America and the Caribbean. In turn, this region can be an important source of renewable energies for the European Union, enabling progress in the decarbonization it requires.

3. The electricity subsector has great capacity to decarbonize the energy mix

- The electricity subsector has great capacity to decarbonize the energy mix.² In 2021, renewable electricity generation reached a regional average of 59%. Although values vary significantly from one country to another (with some below 5% and others at 100%), the share of renewable energy in most countries is rising.
- In 2020, renewables generated 952 TWh of energy across the region, with an installed capacity of 274 GW, and 11 GW of new renewable capacity was installed, of which 53% solar energy and 31% wind (OLADE, 2022). In 2021, renewables continued to expand, in particular wind and solar, with investments made for the equivalent of 23.5 GW of new generation capacity, 81% based on renewables. Of this total, 9.8 GW are for photovoltaic power plants, 5.9 GW for wind power plants, 4.5 GW for non-renewable thermal power plants, 2.4 GW for hydroelectric power plants and the rest for renewable thermal power plants (biogas and biomass) (OLADE, 2022).
- Renewable energy capacity rose by 6% across the region between 2020 and 2021, with hydro power production accounting for more than 70% of the total. However, in keeping with the global trend, the strongest growth in the region between 2020 and 2021 was in solar power, at a rate of 47%. Wind power was next at 22%, followed by bioenergy at 3% and hydro power at 0.1% (see figure II.2).

² As is generally known, the contribution of Latin America and the Caribbean to global greenhouse gas emissions is low (5%–8%), but its countries have committed to reductions through nationally determined contributions, which are being implemented more slowly than expected (UNEP, 2022). In the case of Latin America and the Caribbean, investments would have to be multiplied by a factor of 8 to cover the mitigation needs committed to in the nationally determined contributions and to achieve the 1.5 degree target (UNEP, 2022).

■ **Figure II.2** ■
Latin America and the Caribbean: renewable energy installed capacity, 2012–2021
 (Gigawatts)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Renewable Energy Agency (IRENA), *Renewable Energy Statistics 2022*, 2022.

- The current KW/h cost of electricity derived from renewables —particularly wind and solar photovoltaic energy, even without subsidies— is lower than that of energy sourced from coal and, to a lesser extent, from natural gas. The significant drop in the cost of renewable energy increases its competitiveness in the current context

4. Green transition investments have been concentrated in the energy sector and in power generation

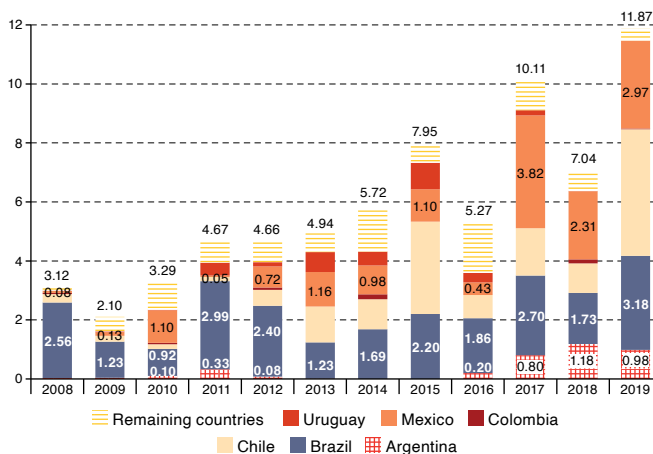
- Investment, in particular from the private sector, is critical to enable the green transition in Latin America and the Caribbean.
- Investments to enable the green transition can be divided into two main groups: investments to mitigate the effects of climate change, which support the transfer of cleaner or more energy-efficient technology, and investments in adaptation, for example in infrastructure, technologies and activities to improve climate change resilience (UNCTAD, 2022).
- In Latin America and the Caribbean, investment in sectors related to the green transition, in particular renewable energy, has been rising since 2009.
- In the region, some US\$ 71 billion was invested in renewables over the period 2008–2019. Brazil received the largest amount of investment over that period (see figure II.3), while since 2012, investment has grown significantly in Mexico and Chile. In Mexico, however, it was lower in 2018 and 2019 than in 2017. Although Argentina received less in relative terms, these investments began to be encouraged in 2016 through the new pro-renewables regime (Act No. 27191), and total investment in renewables from 2017 to 2019 accounted for 80% of all investments received from 2008 to 2019 (US\$ 2.960 billion). In 2019, 77% of these investment inflows to Argentina were for wind power and 23% for solar.
- Between 2009 and 2021, the countries of Latin America and the Caribbean received nearly 900 investment projects in sectors related to the green transition, for a total value of US\$ 148 billion. Of all announcements in

of rising hydrocarbon prices worldwide. According to Lazard (2021), electricity derived from renewable wind and solar photovoltaic sources at plant scale is cheaper and more competitive than electricity derived from non-renewable sources such as combined-cycle gas and coal (without taking subsidies into account).

sectors related to the green transition, 80% have been for renewable energy, in particular solar and wind power generation. Other energy sources include hydroelectric, biomass and geothermal.

- In addition, in the region, between 2011 and 2021, FDI project announcements for renewable energies outnumbered those for projected fossil fuel investments.

■ **Figure II.3 ■**
Latin America: renewable energy investments, by country, 2008–2019
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of BloombergNEF, “Energy transition factbooks”, Climatescope [online] <https://www.global-climatescope.org/tools/>.

5. Green hydrogen is a key product and Latin America could become an important supplier

- Green hydrogen (H₂V) is an enabler or accelerator for the sustainable green transition, and depending on the geopolitical situation of each country, could also contribute to energy security and resilience. It is important to emphasize that green hydrogen should be developed in conjunction with the adoption of priority energy-related measures, including improving energy efficiency and the use of direct electrification from renewables. The short- and medium-term projections for the renewable hydrogen industry include not only accelerated growth but also, and more importantly, a radical change in supply and demand trends in a new clean and renewable energy industry.
- Latin America and the Caribbean produces approximately 5% of the world's hydrogen (90–100 Mt/year in 2020) chiefly grey hydrogen, which is mainly used as a raw material in producing ammonia, methanol and steel, in refining and, to a lesser extent, in the food industry. Regionally, 90% of demand is in Argentina, Brazil, Chile, Colombia, Mexico and Trinidad and Tobago. These countries already have a mature industry that uses grey hydrogen, with infrastructure, dedicated human capital and established, well-defined demand, which bodes well for the new green hydrogen industry.
- The region is set to become a global benchmark in green hydrogen production, thanks to abundant renewable energy, in particular solar and wind power, and to its wealth of essential minerals and technological, engineering and innovation capacity. Several countries in the region have a strong mining tradition and robust production in the context of which green hydrogen can be used, including
 - to power heavy mining trucks, mobile underground equipment and installed power generation facilities. It can also be used in the transport sector (for buses, long-haul trucks and maritime and aeronautic transport), which, together with the industrial sector, accounts for more than two thirds of final energy consumption in Latin America and the Caribbean (36% and 29%, respectively, in 2021).
- Although there is no commercial-scale production in the region as yet, the green hydrogen industry is booming. Several countries have official strategies, have planned or published road maps, and have several pilot projects for ramping up production to enable them to supply not only local markets but in some cases export markets as well (see table II.1). In pilot projects, green hydrogen is being used in such sectors as transport (buses, long-haul trucks and maritime transport) and mining (in particular to replace diesel for trucks). Owing to its versatility, green hydrogen can be used directly in fuel cells (similarly to how batteries are used in modes of transport) and to produce electrofuels, or to store and transport them for later use. One way to support it is to simultaneously induce green hydrogen supply and demand. To this end, mechanisms are being proposed for large-scale purchase commitments with support from State development instruments and in partnership with the private sector.
- European Union investment and technological capacities can boost the green hydrogen industry in the region, while Latin America and the Caribbean can make a significant contribution to Europe's decarbonization and access to sustainable energy sources.

■ Table II.1 ■

Latin America (10 countries): green hydrogen (H₂V) regulatory status, production sources and end uses, 2020–2023

Country	National strategy or road map	Year of publication	Type of power source for H ₂ V	Prioritized end uses
Bolivia (Plurinational State of)	Road map planned	2023	Not applicable	Not applicable
Brazil	National strategy being developed	2022	Solar Wind Hydroelectric Biomass	Not applicable
Chile	National strategy published	2020	Solar Wind Concentrated thermosolar Hydroelectric Solar	Buses, refinery, ammonia, mining trucks, heavy haulage, injection to natural gas networks, maritime transport, light transport
Colombia	National strategy published	2021	Solar Wind Biomass Geothermal Tidal energy	Refinery, heavy transport, green ammonia (fertilizers), light transport, mining transport, air transport, power generation, steelmaking, maritime transport
Costa Rica	National strategy being developed	2022	Solar Wind Hydroelectric Geothermal	Transport, industry and export
Ecuador	Road map planned	2023	Not applicable	Not applicable
El Salvador	Road map planned	2023	Solar Geothermal Biomass	Transport, industry and export
Paraguay	Road map published	2021	Hydroelectric Solar	Heavy transport, maritime transport, food industry, chemical industry, steel industry, electrofuel production, exports
Peru	Road map planned	2023	Not applicable	Not applicable
Uruguay	Road map published	2022	Solar Wind	Heavy haulage, maritime transport and fertilizer production

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of HINICIO, *Estado del hidrógeno verde en América Latina y el Caribe: hojas de ruta y perspectiva regional*, 2022.

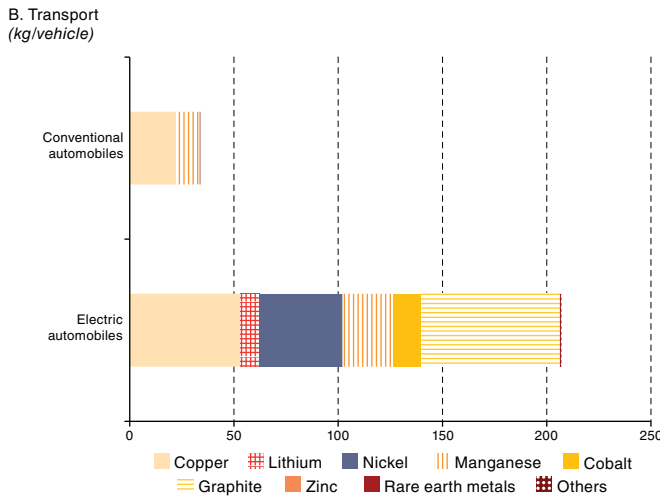
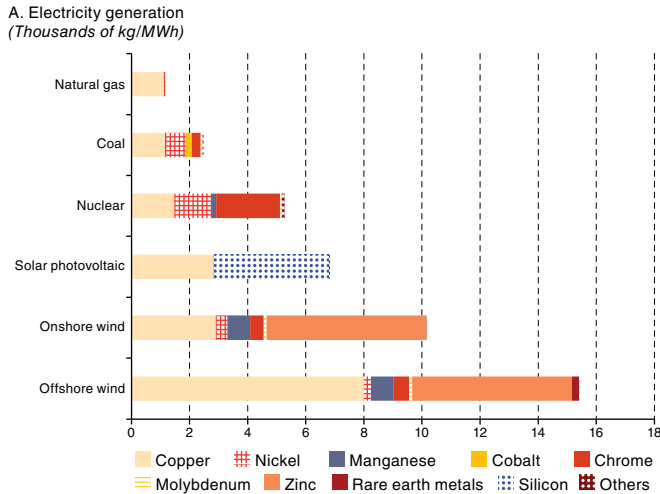
B. Strategic minerals

1. Latin America and the Caribbean is set to become a global benchmark in the production of strategic minerals

- E-mobility and the energy transition towards renewable, low-carbon and sustainable energy, the pillars of the green transition, will require ever-increasing amounts of finite mineral resources. Wind turbines, photovoltaic panels,

lithium-ion batteries and transmission infrastructure use more and a greater variety of minerals than conventional, fossil fuel-based technologies (ECLAC, 2023a) (see figure II.4).

Figure II.4
Mineral use by technology and environmental footprint



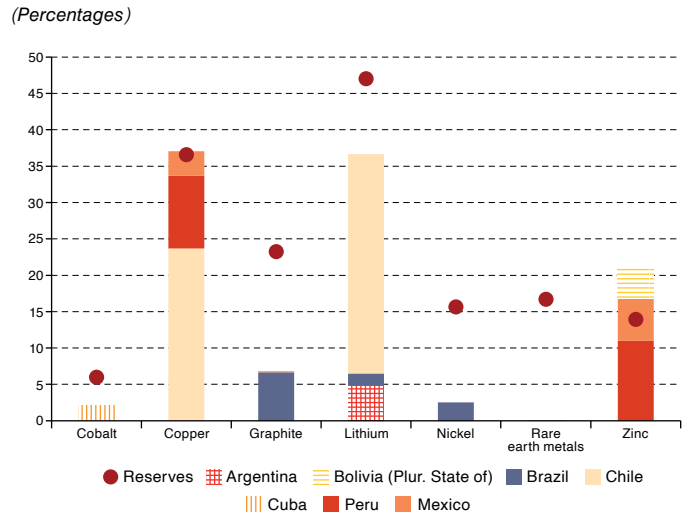
Source: International Energy Agency (IEA), *The Role of Critical Minerals in Clean Energy Transitions*, 2021.

- Global demand for lithium could increase up to 42-fold by 2040, using 2020 as the base year, while demand for graphite, cobalt, nickel and copper could grow by a factor of 25, 21, 19 and 2.7, respectively, according to estimates

by the International Energy Agency (IEA, 2021), in the sustainable development scenario required to achieve the targets of the Paris Agreement.

- While a rise in prices for critical minerals owing to growth in global demand increases the profitability of mining projects, it also increases the cost of the energy transition and e-mobility. As an example, the cost of lithium carbonate, an important mineral for rechargeable batteries, tripled in 2022, surpassing US\$ 68,000 per ton in December (S&P Global Market Intelligence, 2023).
- To satisfy growing global demand for critical minerals—many of which are plentiful in Latin America and the Caribbean—and avoid supply rigidity, extractive and processing capacity must be boosted.
- In terms of global reserves, Latin America and the Caribbean has 47% of lithium reserves, 37% of copper reserves, 23% of natural graphite reserves, 17% of rare earth reserves and 16% of nickel reserves. Globally, the region also accounts for much of the production of certain critical minerals, including 37% of all copper and lithium production (see figure II.5).

Figure II.5
Latin America and the Caribbean (7 countries): share of global mineral production and reserves, 2022



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United States Geological Survey (USGS), *Mineral Commodity Summaries 2023*, 2023.

- However, the share of Latin America and the Caribbean in the global production of some minerals has declined in recent years, owing mainly to faster production growth in other countries. From 2010 to 2022, the region’s share of copper production fell from 44% to 37% and that of lithium production from 49% to 37%.
- On average, Latin America and the Caribbean will need gross fixed capital formation investments of US\$ 56.350 billion by 2030 to maintain its share of global copper and lithium production in an energy transition scenario, according to the *Economic Survey of Latin America and the Caribbean 2022* of ECLAC. Chile would need an average investment of US\$ 36.300 billion in copper and US\$ 7.400 billion in lithium to maintain its share of global production, while Peru would need investments of US\$ 10.400 billion in copper and Argentina would need to invest US\$ 2.250 billion in lithium.
- The region could significantly increase its share of the world’s reserves and production of critical minerals in the coming years through the implementation of new investment projects. For example, 53% of the world’s lithium resources are concentrated in the “lithium triangle”, comprising Argentina, the Plurinational State of Bolivia and Chile, but they are not yet counted as reserves because additional exploration and feasibility studies are needed to confirm the viability of exploitation.
- Globally, Latin America and the Caribbean has the largest budget for exploration for non-ferrous metals mining, which is one of the initial stages for new mining projects. In 2022, it reached a record US\$ 3.261 billion, the highest figure since 2013.

2. Mining has recovered, spurred by rising demand

- Rising global demand for strategic minerals has boosted the mining sector (see table II.2). Planned and active mining investment projects in Argentina, Brazil, Chile and Peru total US\$ 178.04 billion.³
- Critical mineral production increases in Latin America and the Caribbean depend on a number of factors, including the availability of investment, the acquisition of knowledge and technologies and the ability to resolve socioenvironmental conflicts, as well as improved governance and the updating of policy, regulatory and fiscal frameworks.
- Attracting new investments in extractive activities in the region should not result in regulatory, tax and environmental deregulation, but rather should include legitimate mechanisms for community consultation and profit-sharing.

³ Investments include new or expanded projects at all stages prior to launch of operations, including feasibility studies, and therefore may not materialize.

■ Table II.2 ■

Latin America and the Caribbean (4 countries): mining investment projects planned or being implemented, 2022–2023

Argentina	Since December 2019, 24 projects had been recorded, valued at US\$ 10.231 billion, of which 45% were for copper and 42% for lithium. ^a
Brazil	For the period 2022–2026, investments valued at US\$ 40.438 billion are projected, with 46% already having materialized. ^b Most projects are for iron (34%), the main mineral in the country.
Chile	For the period 2022–2031, 53 initiatives worth US\$ 73.655 billion are planned, 19% of which have already materialized. Copper ranks first, accounting for 87% of the total value of investments. ^c
Peru	From 2023 to 2029, 47 projects are planned, valued at US\$ 53.715 billion, of which 3.7% are already being executed. Most of the projects are for copper (72%). ^d

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

^a Investment announcement data from the Public Community Information System on Mining Activity in Argentina (SIACAM), Secretariat of Mining, updated as at 7 December 2022.

^b Instituto Brasileiro de Mineração (IBRAM), mining sector presentation, October 2022.

^c Chilean Copper Commission (COCHILCO), investment project portfolio 2022–2031, December 2022.

^d Ministry of Energy and Mining (MINEM), investment project portfolio 2023, January 2023.

C. The European Union as a strategic partner for the green transition

1. Enabling international investment in all sectors will be critical for the green transition

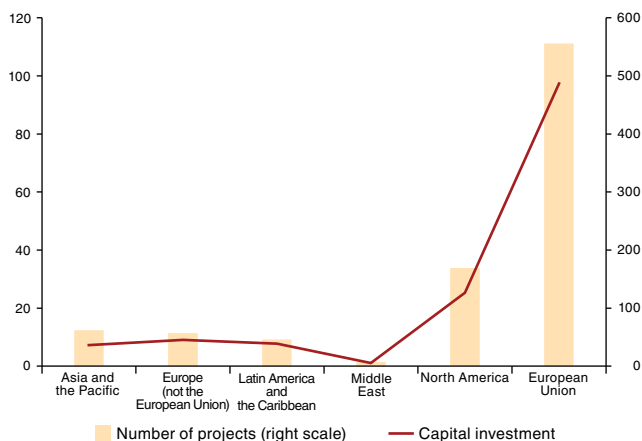
- According to information from IRENA/CPI (2020), the private sector is the main source of financing for renewable energy investments at the global level, accounting for 86% of the total in recent years. Although public financing accounts for the remaining 14% only, public funds are essential for de-risking, attracting investment, getting over early-stage hurdles and reducing capital costs.
- Given the fiscal constraints facing the countries of the region in increasing public investment in renewable energy at the scale required to achieve the energy transition, governments must have sound policies and appropriate instruments for attracting private investment. To achieve the targets established, investments in the sector must double by the end of this decade and triple thereafter (IRENA, 2021), meaning that most new investments will need to come through private financing.
- One of the main challenges facing renewable energy projects in the countries of Latin America and the Caribbean is complying with technical, legal, environmental, economic and financial conditions to receive bank financing. It will be important for the countries of the region to advance in developing these capacities to access appropriate financing and achieve the energy transition quickly and effectively.
- In recent years, the market for green bonds has grown significantly in the countries of the region, in particular owing to issuances from non-financial companies. Since green bonds can help attract institutional investors and channel large volumes of capital towards renewable energy, countries should focus on improving policy design and establishing best practice manuals and clear guidelines for the issuance of green bonds to encourage their development on capital markets.
- The countries of the region offer tax incentives for investment, some general and others specific to renewable energy. They mainly consist of accelerated depreciation schemes, special deductions and income tax breaks for investing in renewable energy projects, and exemptions or reduced rates, in particular for value added tax (VAT) and import duties on procurement of machinery, equipment and other required inputs for investment projects.
- In addition, the countries of the region have used energy auctions with long-term energy purchase and supply agreements between renewable developers and consumers to boost investment in the renewable energy sector.
- In the context of the energy transition, other than investing in the renewables sector, having a relatively clean energy mix would position the region as a preferred destination for investors seeking to relocate production to areas with more renewable energy, making the energy mix into a new competitive advantage for the region.

2. Potential for expanding the strategic partnership between the European Union and Latin America and the Caribbean

- The European Union is a key stakeholder for launching the green transition in Latin America and the Caribbean. Between 2009 and 2021, more than 60% of all investments announced in the region in sectors linked to the green transition have come from European Union companies (see figure II.6).

■ **Figure II.6** ■
Latin America and the Caribbean: FDI project announcements in sectors related to the green transition, by region of origin, 2009–2021

(Number of projects and billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

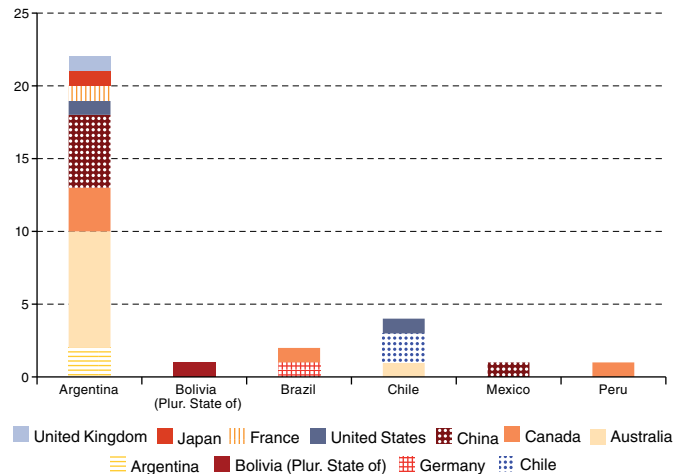
- Announcements from the European Union have centred on the renewable energy sector—which accounted for 90% of all projects and 95% of the value of investment between 2009 and 2021—and in particular on the generation of solar and wind power.

- Brazil, Chile and Mexico have attracted the most interest, receiving nearly 80% of all projects.
- European countries have few critical mineral reserves and their participation in production is limited, which explains their dependence on imports and the growing interest in the related global supply chains.⁴ Projected growth in European demand for minerals such as lithium is mainly based on the growing number of announcements and the construction on European soil of gigafactories for lithium-ion batteries—which are mainly used in producing electric vehicles—whose production capacity is expected to surpass 1,400 GWh by 2030.
- In September 2022, the President of the European Commission announced the European Critical Raw Materials Act, a law that, while still being adopted, focuses on building resilience and diversity in trading partners for the supply of critical minerals, mainly lithium and rare earths.
- However, the participation of European companies in the development of lithium mining projects in Latin America and the Caribbean is limited, and consists of a project by the French company, Eramet, being developed in Argentina in partnership with Chinese firm Tsingshan and a project by Germany-based AMG Lithium company in Brazil, where production has been established and expansion is now under way (see figure II.7). The Eramet project stands out because, for the first time, it employs direct lithium extraction technology at an industrial scale, which could reduce water consumption and extraction time compared with the traditional evaporation method.

⁴ The European Union publishes a list of critical raw materials, which in 2020 included 30 materials, including lithium. The European Raw Materials Alliance (ERMA) was established in 2020 to boost investment in the European supply of critical minerals and promote a circular economy for raw materials.

■ **Figure II.7** ■
Latin America and the Caribbean (6 countries): nationality of companies participating in lithium projects, 2021–2022

(Number of projects in each country)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Chilean Copper Commission (COCHILCO), *Inversión en la minería chilena. Cartera de proyectos 2021-2030*, 2021 [online] <https://www.cochilco.cl/Listado%20Temtico/2021%2010%2028%20Inversi%C3%B3n%20en%20la%20miner%C3%ADa%20chilena%20-%20cartera%20de%20proyectos%202021%20-%202030%20VFinal.pdf>; Yacimientos de Lito Bolivianos (YLB), *Memoria Institucional 2021*, 2021 [online] <https://www.ylb.gob.bo/resources/img/Memoria2021YLB.pdf>; Argentina, Secretariat of Mining (2022), "Proyectos mineros de litio", Sistema de Información Abierta a la Comunidad sobre la Actividad Minera en Argentina (SIACAM), 2022 [online] <https://www.argentina.gob.ar/economia/mineria/siacam/tablero-global-del-litio> and public information of companies.

Note: Projects at different stages of development or expansion. For some projects, more than one company is involved and calculations are broken down by participating company.

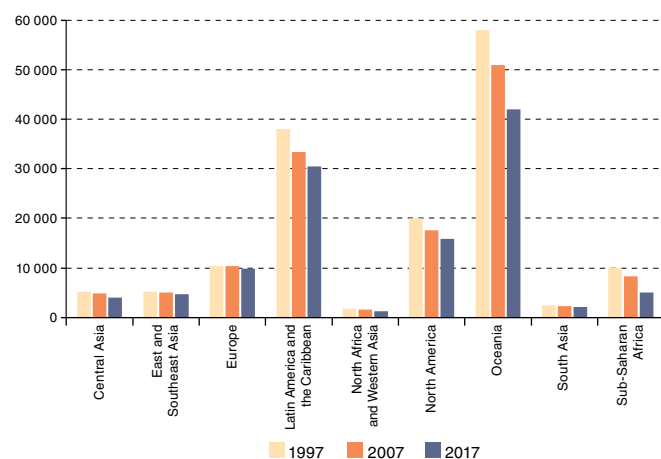
- In that regard, companies from the European Union are involved in sectors that are key for the green transition in Latin America and the Caribbean, through both their technology inputs and the strategic role they can play in reconfiguring the energy mix. More importantly, they can play a strategic role in European decarbonization through Latin American and Caribbean capacity and production.

- The global economic transformation and the emergence of new, more sustainable production and consumption patterns opens up opportunities to strengthen the link between the European Union and Latin America and the Caribbean, going beyond the energy sector to encompass other sectors, including the transport, automotive, waste management, green technology and modern services sectors.
- Attracting investment that includes technology transfer and sustainability criteria during the upstream, midstream and downstream phases will be essential, as will providing support to encourage and establish centres for research and development, innovation and key infrastructure. In this regard, the inclusion in the updated agreement between Chile and the European Union of a clause whereby Chile may —subject to certain conditions— provide that part of local raw material production be sold at a preferential price to companies that add value to these resources in its territory is very positive. This clause is particularly important given the Government of Chile's interest in developing a strategy for added value in the lithium value chain.
- In short, there is room for growth in economic cooperation and collaboration between the European Union and Latin America and the Caribbean in areas such as critical minerals, the energy transition and e-mobility. However, a cooperation framework should be devised that meets the needs of both groups of countries and prevents further entrenchment of the raw material export specialization of the countries of Latin America and the Caribbean, by contributing to the development of productive and technological capacity and to managing the social and environmental conflicts of the region. The concept of a just transition towards more sustainable economies entails transforming production in Latin American and Caribbean economies, not just for greater sustainability but also for greater inclusivity and higher productivity.

D. Sustainable water management⁵

- Despite the fact that Latin America and the Caribbean ranks second worldwide in renewable water resources per inhabitant (behind Oceania), there are currently 161 million people in the region who lack access to safely managed drinking water and 431 million who lack access to safely managed sanitation services. There is therefore both a need and an opportunity to promote investment to provide universal coverage for these services, which would also create green jobs and new revenues, reducing environmental impacts and improving public health.

■ **Figure II.8** ■
Total renewable water resources per capita
(Cubic metres per year)

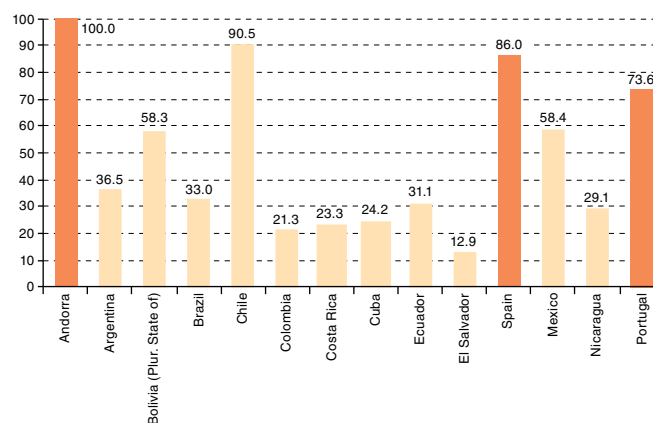


Source: World Bank, *Water Matters: Resilient, Inclusive and Green Growth through Water Security in Latin America*, Washington, D.C., 2022.

- To achieve sustainable water management, progress must be made in efficient water use and treatment and in reusing wastewater, while protecting water-related ecosystems.

Only 40.8% of domestic wastewater in Latin America is treated, on average, which has significant consequences for groundwater quality. In the European Union, for example in Spain and Portugal, more than 70% of domestic wastewater receives proper treatment (see figure II.9). Spain also ranks first in Europe in terms of reusing water, producing the greatest volume of reused water, and also ranks fifth worldwide in installed reuse capacity. European proficiency in this area contrasts with the deficiencies in Latin America, indicating opportunities for collaboration between the two groups of countries, by boosting cooperation programmes and businesses to achieve sustainable water management.

■ **Figure II.9** ■
Selected countries: proportion of safely treated household wastewater
(Percentages)



Source: United Nations Human Settlements Programme (UN-Habitat)/World Health Organization (WHO), *Progress on Wastewater Treatment: Global Status and Acceleration Needs for SDG Indicator 6.3.1*, Geneva, 2021.

⁵ Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

- Water is a strategic, finite resource. Latin America must improve water storage systems and the management of watersheds and domestic distribution, and must also establish systems that provide timely information for decision-making.
- In February 2023, 20 countries in the region adopted the Regional Water Action Agenda,⁶ with guidelines for advancing towards a sustainable and inclusive water transition based on four pillars of action: (i) guarantee the human right to safe drinking water and sanitation through a significant boost in investment in the sector, leaving no one behind; (ii) promote regulatory and normative changes to ensure equitable and affordable access and thus eradicate water poverty, with innovative instruments that include social rates; (iii) reverse the growing negative externalities associated with pollution, overexploitation, and socioenvironmental conflicts by promoting control and regulation and (iv) go from linear to circular management to reduce pressure on water resources, establishing a trend of decoupling between extraction and GDP.

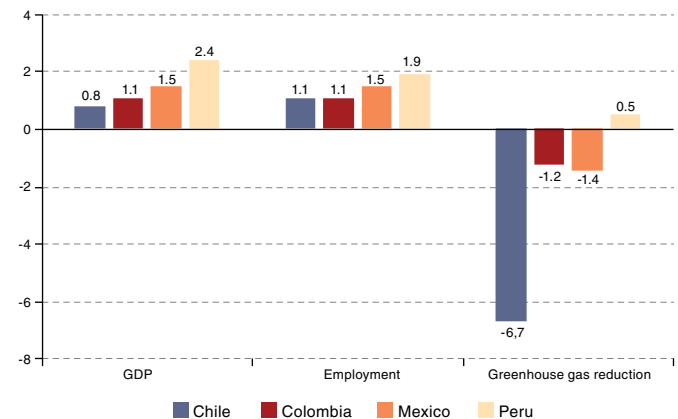
E. Circular economy⁷

- Latin America and the Caribbean are moving forward in the transition to a circular economy, supported by various legal frameworks, policies and sectoral systems that facilitate implementation and promote sustainability. Initiatives such as the Latin America and the Caribbean Circular Economy Coalition, a platform launched in 2020 to share experiences, practices and progress with current strategies in countries of the region (Latin America and the Caribbean Circular Economy Coalition, 2022), are a sign of progress in that regard.
- It is estimated that meeting some circular economy targets—such as an 8% reduction in the use of plastic materials and a 5% reduction in the use of metals, construction materials and fossil fuels, which are linked directly to circular economy or energy efficiency and low-carbon development policies—significantly affects the economy as a whole, which is reflected in higher GDP and employment, as well as reductions in greenhouse gas emissions. Figure II.10 shows the results of studies conducted in four countries in the region: Chile, Colombia, Mexico and Peru. According to these studies, some of the sectors that benefit are the electricity generation, construction, manufacturing, and drinking water and sanitation sectors. Estimates show that, along with a reduction in the economy's material footprint, the carbon footprint—expressed through greenhouse gas emissions— would

decrease significantly in Chile and moderately in Colombia and Mexico. In Peru, circular economy targets serve as an economic driver, meaning that the impact of reducing fuel use is offset by higher economic growth.

■ **Figure II.10** ■
Latin America (4 countries): effects of achieving circular economy targets, 2030

(Percentage variation compared to the baseline scenario)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

⁶ See [online] https://www.cepal.org/sites/default/files/events/files/regional_water_action_agenda_lac.pdf.

⁷ Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

F. Sustainable tourism⁸

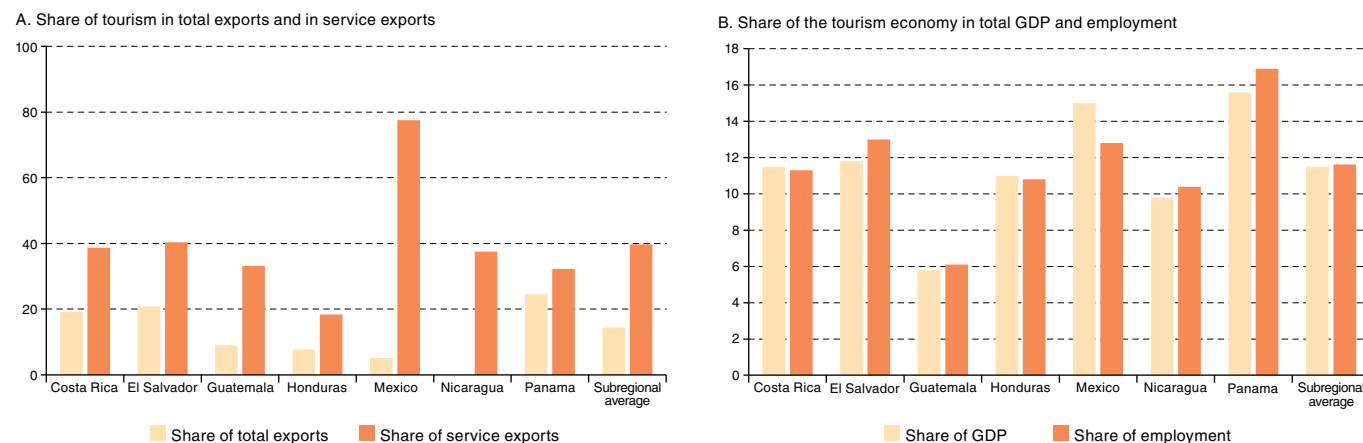
- Tourism is a key generator of foreign exchange, income and employment in several countries in Latin America. In Central America and Mexico, for example, it accounted for 14.4% of goods and services exports and 39.7% of services exports in 2019. Tourism accounts for a large share of

total exports in countries such as Costa Rica, El Salvador and Panama: the average for the three countries is 21.5%. In addition, the tourism economy, including all related subsectors, contributes significantly to GDP and employment in several Latin American countries (see figure II.11).

■ Figure II.11 ■

Central America and Mexico: share of tourism in exports, GDP and employment, 2019

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

- After a long period of movement restrictions between countries owing to the pandemic, there is increasing interest in rebuilding the tourism sector in a more inclusive, sustainable and resilient manner. Governments are seeking to boost investments in health, safety and risk management to provide favourable and inclusive labour, business and socioeconomic conditions, understand the increasingly relevant role of environmental sustainability and take advantage of digitalization (World Economic Forum, 2022). Against this backdrop, sustainable tourism

is being promoted, meaning tourism that takes full account of current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities (UNWTO/UNEP, 2005, cited in UNWTO, 2013, p. 10).

- The adoption of sustainable tourism requires both efforts to improve tourism services in each country and cooperation between countries to ensure resilient responses to future crises. Experiences of coordinating activities and sharing good practices in disaster risk management have laid the

⁸ Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

groundwork for the creation of groups to coordinate the efforts of countries and stakeholders to improve tourism resilience and establish joint guidelines and protocols. Knowledge-sharing practices could be developed and implemented to support tourism. Bilateral or subregional agreements could also be established and strengthened to facilitate the transit of travellers from signatory countries and jointly explore innovative solutions to facilitate cross-border transportation. Measures could also be designed to safeguard public health and to enable businesses along the entire tourism value chain to operate and benefit from industry growth, especially micro-, small and medium-sized

enterprises (MSMEs). These endeavours can benefit greatly from the participation of private actors, both domestic and international, and from that of firms of varying sizes with different roles in the sector's value chains. Their participation could be particularly significant for the widespread adoption and use of digital technologies in different tourism subsectors and zones and by employees.

- ECLAC has proposed 10 pillars (see box II.1) for the development of sustainable tourism (ECLAC, 2022a; Peralta, 2021). European Union cooperation in the implementation of these pillars would make the sector more sustainable and resilient.

■ Box II.1 ■

Pillars proposed by the Economic Commission for Latin America and the Caribbean (ECLAC) for action on sustainable tourism

- Improvement of the quality of life of the destination's population
- Protection of the destination's natural and cultural heritage
- Experiences developed by sustainable and innovative enterprises, especially MSMEs and enterprises led by women, in particular Afrodescendent and Indigenous women
- Protection of workers' rights and well-being
- Resilience to seasonality through the diversification of activities and markets
- Creation of a unique experience that increases tourist satisfaction and minimizes their ecological footprint
- Sustainable use of natural resources based on territorial planning
- Recognition of the impact of climate change and disasters
- Strengthening of governance and institutional capacities
- Creation, use and interoperability of databases

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

III. Opportunities and challenges of digital transformation

A. Infrastructure to enable modern services, advanced manufacturing and digital governance

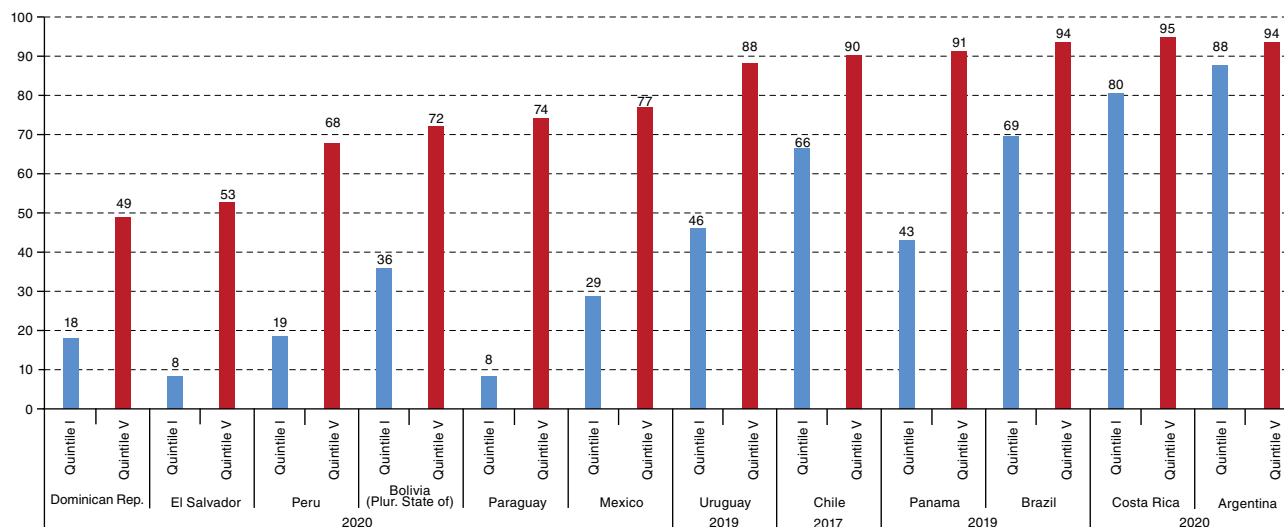
1. In Latin America and the Caribbean, limited connectivity hampers the use of digital services

- Despite advances in connectivity, significant digital gaps persist in access and use, both within and between countries in the region (see figures III.1 and III.2) and with respect to more advanced economies.
- In 2021, broadband Internet penetration for inhabitants of the region was 78%, while in Europe and North America (United States and Canada) it was 105%. Fixed Internet penetration in households in Latin America and the Caribbean was 62%, well below that of other regions such as North America (nearly 100%) and Europe (nearly 90%). A quarter of urban households, 66% of rural households and 43% of households in the two lowest income quintiles have yet to be connected.
- Connectivity gaps stem from supply-side factors linked to the deployment of the infrastructure required to provide services and from demand-side factors related to the affordability of services and of the devices to access them, as well as the development of digital skills.
- As a result of socioeconomic factors such as these, the panorama is very uneven. In most countries in the region, higher-income households have double the connectivity of lower-income households, and where the disparity is worst, connectivity can be up to nine times higher. However, the issue is not solely one of household income: even in the wealthiest households in least developed countries, penetration remains below 50%. In the urban zones of some countries, penetration of more than 80% of households is achieved, while in others, the figure is under 40%.
- The gender divide is one of the dimensions of the digital divide. It is estimated that 4 of every 10 women in Latin America and the Caribbean lack or cannot afford effective connectivity (Internet access, availability of devices and the basic skills to use them) (Vaca Trigo and Valenzuela, 2022). Between 2017 and 2018, 63% of men in the region had access to the Internet, compared with 57% of women (Agüero, Bustelo and Viollaz, 2020, cited in ECLAC, 2022c). However, the regional average masks significant differences between countries. Overall, these gaps favour men by a margin of between 1 and 15 percentage points (Vaca Trigo and Valenzuela, 2022). For the inhabitants of the region to benefit from the opportunities of the digital era, cooperation must be stepped up to close digital divides and increase technology transfer, while negative impacts on security, privacy and trust must be reduced.
- Against this backdrop, leveraging discussions in the context of the European Union-Latin America and Caribbean Digital Alliance, an initiative launched in the region in March 2023, will be critical for boosting economic growth and digital transformation in all its dimensions. This dialogue is particularly important in the framework of recent European Commission initiatives such as the Global Gateway, which presents an opportunity to mobilize resources and investments in digitalization, health, climate, energy, transport, education and research that will be essential for society and the region's future development.
- The region must also advance in devising and implementing innovative and cooperative solutions to close the digital divide, through regulatory amendments that enable new service provision models that are more attractive to investors and through public-private cooperation mechanisms or demand-side subsidies.
- In this regard, ECLAC has recommended the development of a basic digital basket made up of a laptop, a smartphone and a tablet, along with fixed and mobile broadband Internet services, as a benchmark for effective connection for households. In some countries, the cost of such a basket can represent up to 44% of the income of the poorest households, revealing just how difficult it is for them to access adequate connectivity and reinforcing the need for support through subsidies and effective public-private collaboration initiatives. There is a major opportunity for cooperation between the region and the European Union in providing for these needs.

■ **Figure III.1** ■

Latin America (12 countries): households with an Internet connection in the highest income quintile (fifth) and lowest income quintile (first), latest year available

(Percentage of total households in each quintile)

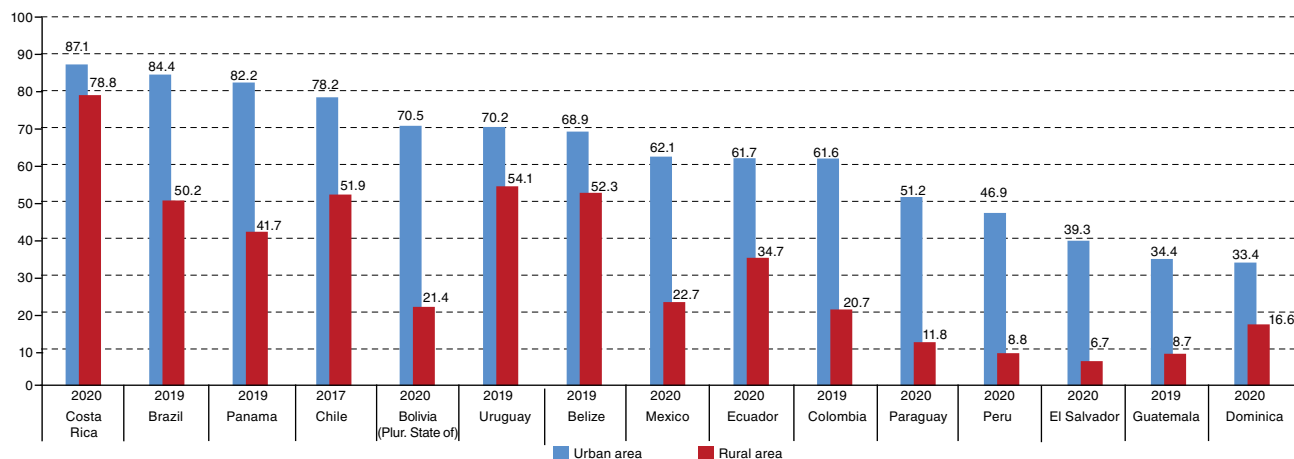


Source: Economic Commission for Latin America and the Caribbean (ECLAC), Regional Observatory for Digital Development, on the basis of National Administrative Department of Statistics (DANE), National Quality of Life Survey (ECV 2018) for Colombia, and information from the Household Survey Data Bank (BADEHOG) for the rest of the countries.

■ **Figure III.2** ■

Latin America (15 countries): households with Internet connection, by place of residence (urban or rural), latest year available

(Percentage of total households in each area)



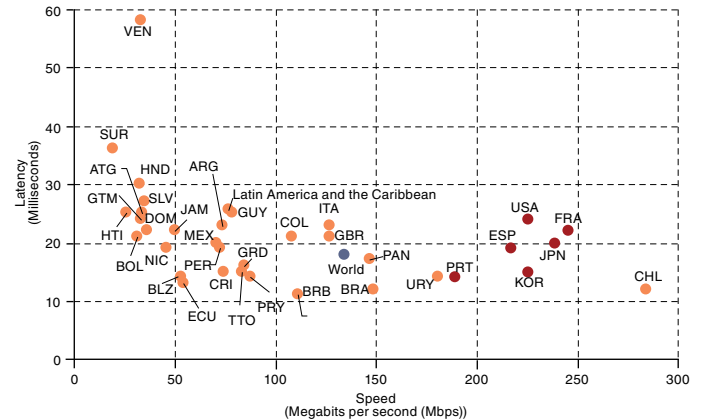
Source: Economic Commission for Latin America and the Caribbean (ECLAC), Regional Observatory for Digital Development, on the basis of National Administrative Department of Statistics (DANE), National Quality of Life Survey (ECV 2018) for Colombia, and information from the Household Survey Data Bank (BADEHOG) for the rest of the countries.

2. Connection quality also affects the use of data-intensive solutions and hinders the deployment of new productive capacities

- Connection quality affects the type of service and number of devices that can be used simultaneously. Fixed broadband through a fibre optic connection allows for high connection speeds with low latency⁹ and is the best option for home connectivity. However, despite a longer useful life, its cost limits the geographical reach and speed of deployment. Fifth generation (5G) mobile networks are therefore the solution for universalization, through fixed connections (fixed wireless access), which also allows for a gradual increase in access speeds, in line with progress in the development of digital skills (De León, 2023).
- The quality of fixed broadband connections is uneven in the countries of the region (see figures III.3 and III.4). Brazil, Chile, Colombia, Panama and Uruguay have high average download speeds (over 100 megabits per second (Mbps)) and low latency (less than 20 milliseconds). These figures surpass the global average and are even comparable to those of some advanced economies, such as the United States, Japan and the Republic of Korea. Argentina, Costa Rica, Mexico, Paraguay and Peru are in an intermediate situation, with speeds of over 50 Mbps (equivalent to the regional average), while El Salvador, Guatemala, Haiti, Honduras and the Plurinational State of Bolivia are lagging in relative terms. Although mobile broadband connection quality is more homogeneous (with speeds of around 30 Mbps and latency that is usually around 35 milliseconds), there is still a lag compared to more advanced countries such as the United States and the Republic of Korea. This is significant because mobile broadband is the main mode of access in the region.
- The gender digital divide is also associated with more limited access and lower quality devices for women. People who use only a telephone to connect to the Internet engage in fewer activities than those who use both a computer and a telephone, and they also have fewer digital skills (Pavez and Correa, 2020). A study conducted by the Alliance for Affordable Internet (A4AI) in Colombia, Ghana and Indonesia found that most women experience suboptimal Internet connectivity, as access conditions do not meet the minimum thresholds for effective connectivity (A4AI, 2020; Vaca Trigo and Valenzuela, 2022).

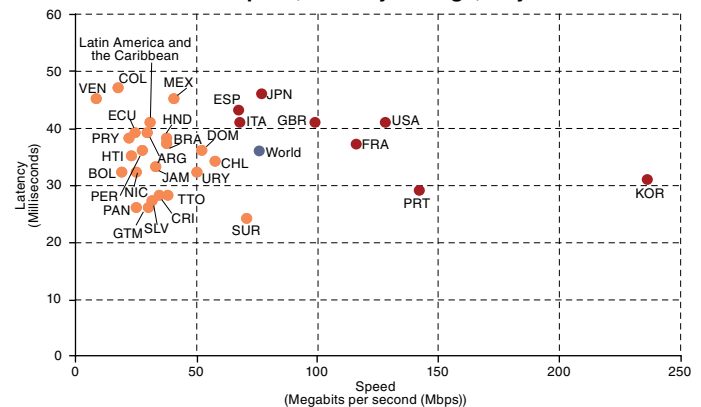
⁹ Latency is the sum of time delays in a computer data network. A delay is produced by the time taken to propagate and transmit data packets in the network.

■ **Figure III.3**
Internet connection quality (selected countries): effective fixed broadband download speed, monthly average, June 2022



Source: Economic Commission for Latin America and the Caribbean (ECLAC), Regional Observatory for Digital Development, on the basis of Speedtest Global Index [online] <http://www.speedtest.net/global-index>.

■ **Figure III.4**
Internet connection quality (selected countries): effective mobile broadband download speed, monthly average, May 2022



Source: Economic Commission for Latin America and the Caribbean (ECLAC), Regional Observatory for Digital Development, on the basis of Speedtest Global Index [online] <http://www.speedtest.net/global-index>.

- To enhance service quality and catch up with the most advanced countries, mass deployment of fibre optic infrastructure and mobile technologies such as 5G needs

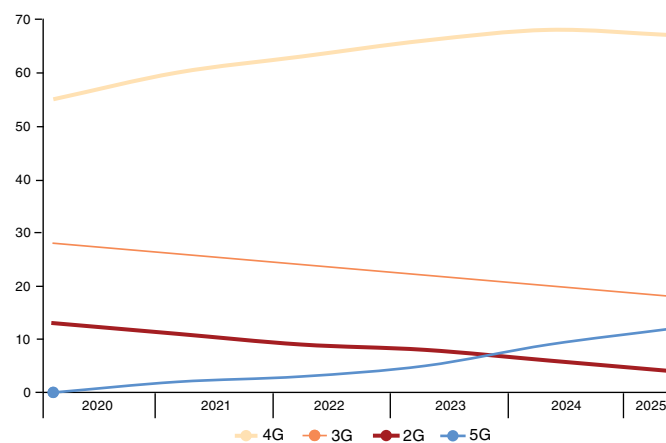
3. The challenge of deploying 5G mobile networks

- In addition to facilitating digital transformation processes, mobile 5G networks can help bridge coverage and quality divides by meeting the need for advanced technologies, such as the Internet of things and edge computing, and enabling the use of advanced applications that require very low latency.
- Enhanced mobile broadband (eMBB) is likely to be one of the first usage categories to be launched on 5G networks, as it enables the introduction of new mobile services transmitting data at high speeds, competitive with fibre optics but with lower infrastructure deployment costs through base stations. Thus, 5G networks are an appropriate technology for providing service in medium- or low-density areas in large cities and in small towns or rural areas. Access speeds can also be progressively improved through this type of deployment.
- 5G technology could be an enabling factor for the digitalization of the production sector. However, the region is lagging in its deployment, with a penetration rate of just 12% projected for 2025, while the global average will be more than double that, and in North America and China is likely to be five and four times higher, respectively (see figure III.5) (GSMA, 2021). In March 2022, only 17% of long-term evolution (LTE)¹⁰ broadband networks were 5G, while in Europe the figure was 58% and in the United States and Canada it was 63% (see table III.1).
- Faced with the accelerating pace of the digital revolution, continuous action is needed on different fronts to harness its potential for economic and social growth. Businesses that develop digital solutions to accelerate the digitalization of production and meet the needs of citizens and consumers in innovative ways must also be boosted to promote network expansion.

¹⁰ Long-term evolution (LTE) is a standard for high-speed wireless data communications for cell phones and data terminals.

to be accelerated. Some countries in the region, such as Brazil and Chile, are moving in this direction by providing services using this technology on a commercial basis.

■ **Figure III.5** ■
Latin America: market share of mobile technology, by generation, 2020–2025
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), Regional Observatory for Digital Development, on the basis of GSMA Intelligence.

■ **Table III.1** ■
Active commercial networks worldwide, by technology, March 2022
(Number of networks and percentages)

	LTE	5G	5G/LTE (Percentages)
Africa	157	8	5
Asia	139	44	32
Europe	172	100	58
Latin America	127	22	17
Middle East	46	22	48
Oceania	38	8	21
Canada and the United States	19	12	63
Total	698	216	31

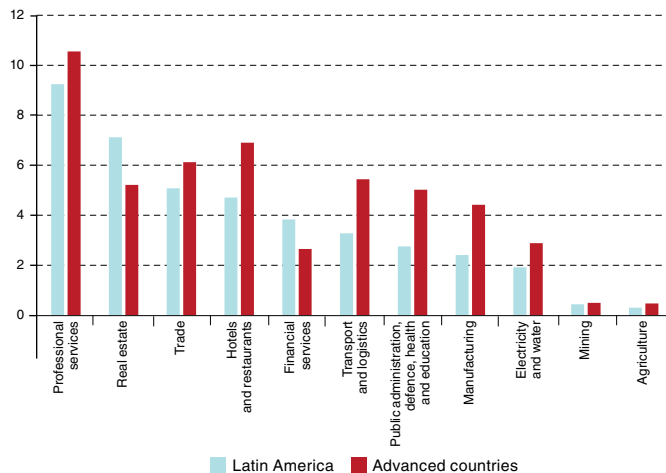
Source: O. de León, "Redes 5G en América Latina: desarrollo y potencialidades", *Project Documents* (LC/TS.2022/181/Rev.1), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2023.

4. There is room for traditional sectors to adopt advanced technologies

- Rather than simply optimizing production and management processes, digital transformation of productive sectors aims to transform business models and reconfigure value chains. In the current scenario, players in traditional industries must incorporate digital technologies into their products, develop services based on the use of data and introduce intelligent systems into innovation, production, logistics and marketing processes (see figure III.6).

■ Figure III.6 ■

Latin America (7 countries)^a and advanced economies (7 countries)^b share of direct intermediate digital inputs, by economic sector, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of R. Katz, “Evidencia sobre el nivel de digitalización sectorial en América Latina”, Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2023, forthcoming.

^aArgentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru.

^bAustralia, France, Germany, Japan, Republic of Korea, United Kingdom and United States.

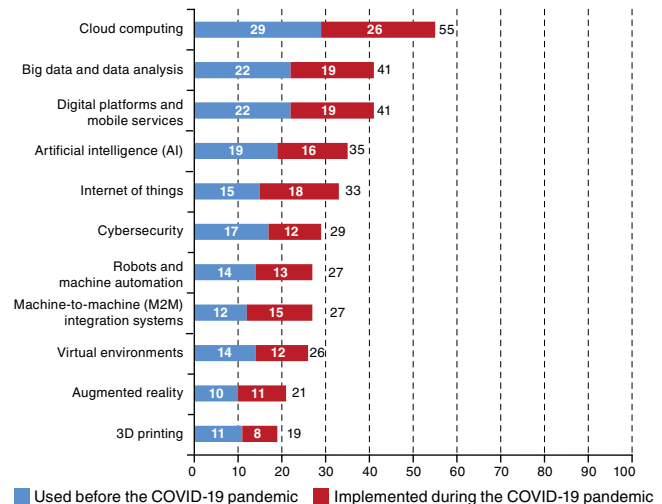
- Companies in the countries of Latin America and the Caribbean generally have very good connectivity, over 90% in the case of larger firms. Despite this, the use of digital technologies in supply, manufacturing and distribution processes lags far behind that of more developed countries. While 70% of companies in Organisation for Economic Cooperation and Development (OECD) countries were using the Internet in their supply chains in 2018, the figure in Latin America and the Caribbean, for companies for which these data were

available, was just 37% (ECLAC, 2020b). Moreover, according to an ECLAC study (Vilgis, Jordán and Patiño, 2023), more than 70% of companies with an Internet presence in Brazil, Chile, Colombia and Mexico were using it passively.

- Pandemic-driven supply chain problems and the need for production scalability have seen companies rush to adopt advanced digital technologies. In Argentina, Brazil, Chile, Colombia and Mexico, cloud computing was the technology that companies used the most (55%) in 2020 and its use also expanded the most during the pandemic (26%) (see figure III.7). Technologies like macrodata and digital platforms also saw significantly higher adoption (19% in each case), followed by the Internet of things (18%) and artificial intelligence (16%) (Basco and Lavena, 2021). Companies with more than 200 employees have advanced the most in technology adoption.

■ Figure III.7 ■

Latin America (5 countries): technology use, 2020
(Percentages, n=500)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the Inter-American Development Bank (IDB).

Note: The sample consists of 100 companies in each of the five countries selected: Argentina, Brazil, Chile, Colombia and Mexico. The survey was directed at sectors with the greatest export potential in each country. Firms in the following sectors account for 70% of the sample: agroindustry; chemicals, petrochemicals and pharmaceuticals; machinery and tools; the automotive industry; mining and metalworking; and optical and medical instruments. The remaining 30% is made up of knowledge-based services firms.

- The factors hindering digital transformation include the following: (i) lack of knowledge of digital applications in the sector and perception of high-complexity implementation; (ii) lack of qualified, skilled professionals to implement advanced solutions¹¹ and (iii) limited investment in research and development and poor execution.¹²
- In general, in order to achieve significant advances in closing the digital divide in the private sector, digital transformation

efforts must be coordinated with productive development initiatives of the countries and their regions. This includes focusing digital transformation efforts on sectors prioritized by countries and their regions within the framework of productive development policies. As an example, digital extension services (meaning support for companies to smooth the process of adopting digital technologies) should be a focus for companies in priority sectors.

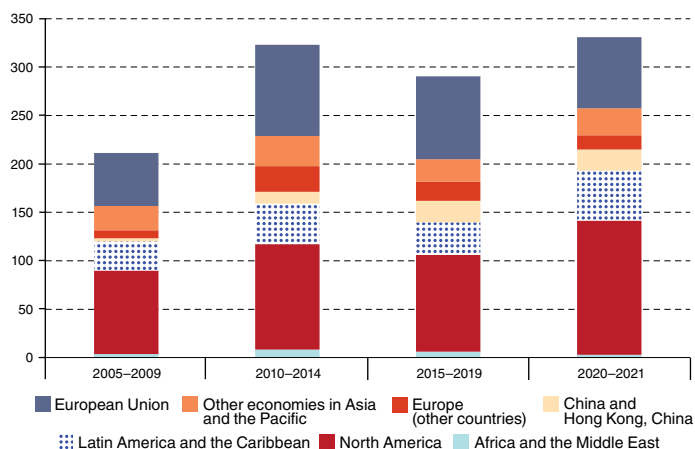
B. European Union investments have been essential to advancing digital transformation

1. Foreign direct investment in digital economy initiatives has been trending upward

- Digital technologies and the digitalization of knowledge are reconfiguring the role of distance in production networks and making it possible to generate and distribute knowledge on a global scale (Castellani, Jiménez and Zanfei, 2013; Castellani, Rullani and Zanfei, 2017). In this scenario, foreign investment project announcements in digital economy-related sectors are geographically concentrated in developed countries: Western Europe was the destination of 33% of projects, compared with 18% for Asia and the Pacific, 7% for Latin America and the Caribbean and 4% for Africa.
- However, there has been an upward trend in new FDI project announcements and mergers and acquisitions in Latin America and the Caribbean for activities related to the digital economy, a reflection of the opportunities in the region. The number of investment projects announced in activities related to the digital economy rose from 118 in 2005 to 396 in 2021, while the share of mergers and acquisitions of such companies in total deals rose from 8% in 2005 to 17% in 2021.
- The value of announced digital economy-related projects grew strongly until 2011, reaching a peak of US\$ 33 billion. Since 2012, it has remained constant at around US\$ 11 billion.

- European Union companies have been strategic partners in the deployment of projects linked to the digital economy, accounting for nearly 30% of announcements between 2005 and 2021, second only to North American companies (40%) (see figure III.8). The largest markets have attracted the most interest and Mexico and Brazil announced the most projects (28% and 25%, respectively).

■ **Figure III.8** ■
Latin America and the Caribbean: FDI project announcements in digital economy activities, by country or region of origin, annual average, 2005–2021
 (Number)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

¹¹ In Latin America, 31.6% of companies have trouble finding qualified workers, a figure significantly higher than the global average (21.2%) (World Economic Forum, 2020).

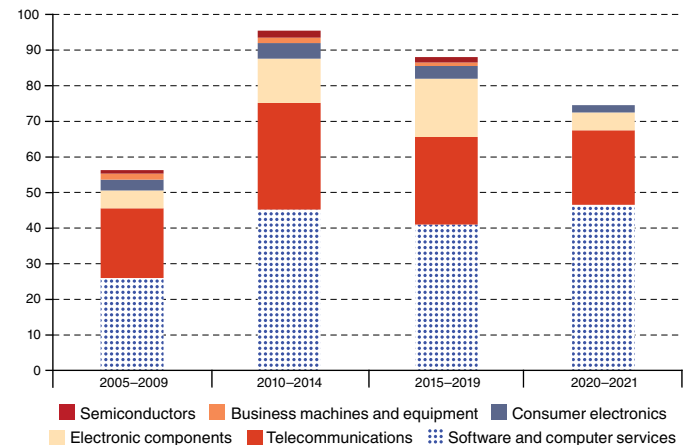
¹² Although nearly 50% of companies in Argentina, Brazil, Chile, Colombia and Mexico invested in research and development (R&D) during the pandemic, 30% did not.

2. European investments strengthened the infrastructure for the digital economy

- In terms of activities linked to the digital economy, the highest number of announcements has been in the telecommunications sector, which accounted for some 70% of the total between 2005 and 2021 and also had the largest projects. However, in terms of the number of projects, 60% were announced in the segment with the strongest growth, software and computer services, while 30% were announced in telecommunications.
- The sectoral make-up of announcements by European Union companies is similar: 50% of project announcements were in software and computer services and 30% were in telecommunications (see figure III.9).
- European Union announcements have trended slightly downward since 2011, both in number of projects and size of investments. Latin America and the Caribbean saw 85 announcements by European companies in the digital economy in 2021, for a value of US\$ 2.130 billion.

■ **Figure III.9** ■
Latin America and the Caribbean: FDI projects announced by European Union companies in digital economy activities, by sector, annual average, 2005–2021

(Number)



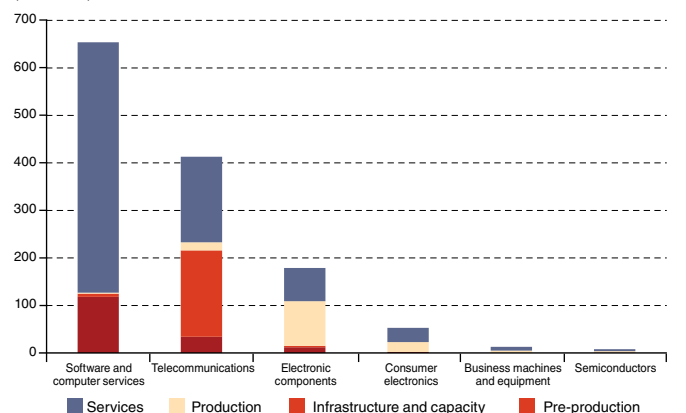
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

3. The greatest opportunity in the digital economy is in services

- Analysis of investment project production chains reveals that, in the software and computer services sector, most European Union companies focus on post-production services (logistics, retail, marketing or consumer services) and, to a lesser extent, pre-production activities (research and development and headquarters) (see figure III.10).
- The telecommunications sector is dominated by services, infrastructure and training activities, which has fostered the development of infrastructure that enables the digital economy. Lastly, there are projects aimed at developing production activities in the electronic components and consumer electronics sectors. Mexico stands out as a destination for these project announcements.

■ **Figure III.10** ■
Latin America and the Caribbean: FDI projects announced by European Union companies in digital economy activities, by activity throughout the value chain, 2005–2021 cumulative growth

(Number)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

IV. Opportunities and challenges in health

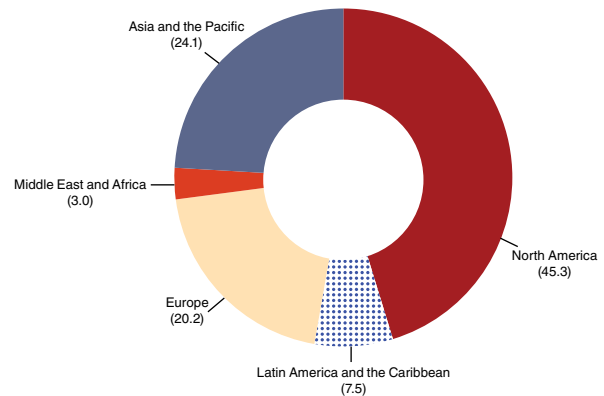
A. Pharmaceutical and life sciences industry

1. Latin America and the Caribbean is a high-growth market

- Latin America and the Caribbean is a high-growth region in the global health sector. With nearly 660 million inhabitants, drug sales climbed from US\$ 34.3 billion in 2008 to US\$ 69.5 billion in 2017 (Vargas, Rama and Singh, 2022) and are expected to continue to rise to between US\$ 115 billion and US\$ 135 billion in 2027 (IQVIA, 2023). The region accounts for between 5.8% and 7.5% of the global pharmaceutical market (see figure IV.1).¹³
- During the COVID-19 pandemic, Latin America and the Caribbean¹⁴ led pharmaceutical sales growth, which came to 15.6% in 2021, outpacing all other regions and nearly double the global average growth of close to 8% (IQVIA, 2022). This outperformance is expected to continue: the IQVIA Institute for Human Data Science forecasts a compound annual growth rate (CAGR) of 9.7% for the period 2021–2026, which would again imply regional growth rates almost double expected global growth (IQVIA, 2022).
- Regional market growth is expected to be sustained by demographic changes, with a growing and ageing population, which will increase demand. Even though the pandemic worsened poverty and extreme poverty in the region, economic changes in the long term are projected to result in higher disposable income and thus greater access to drugs for large swathes of the population. Innovation and new treatments, especially relating to cancer and dermatology, represent an opportunity to improve the health of the population as treatment in both areas is chronically inadequate. As a result of these and other trends, IQVIA expects

defined daily doses (DDD)¹⁵ per capita in Latin America and the Caribbean to grow and to approach North American levels in the medium term. The relationship between per capita GDP and drug use is represented by an inverted U-shape. Between 2012 and 2021, DDD per capita in Latin America and the Caribbean grew sharply, even as per capita GDP also increased. IQVIA (2023) expects Latin America to lead in both spending and volume up to 2027.

■ **Figure IV.1** ■
Global pharmaceutical market by region, 2023
 (Percentages)



Source: NAVADHI, "Global pharmaceuticals industry analysis and trends 2023", 2019 [online] <https://www.navadhi.com/publications/global-pharmaceuticals-industry-analysis-and-trends-2023>.

¹³ According to NAVADHI (2019), the region is estimated to account for 7.5% of the global market in 2023, while Ostwald and others (2020) attribute 5.8% of the sector's value added to the region in 2017.

¹⁴ In studies by the IQVIA Institute for Human Data Science, Latin America and the Caribbean refers to seven markets: Argentina, Brazil, Chile, Colombia, Ecuador, Mexico and Peru. While these markets represent 78% of the regional population, data limitation and bias remains a serious problem, as the excluded markets reflect mixed trends in many other variables.

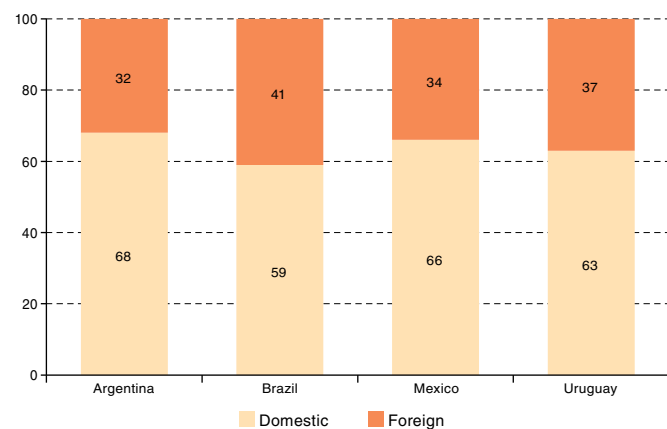
¹⁵ For a detailed definition and discussion of defined daily doses, see [online] <https://www.who.int/tools/atc-ddd-toolkit/about-ddd>.

2. Latin American companies have well-developed production capacity and focus on generic drug production and incremental innovation

- The share of the pharmaceutical industry in output and employment in the region is still small (0.4% of total GDP and 0.2% of employment) (ECLAC, 2021). Both national laboratories and plants installed by transnationals in a few countries account for productive activity in the countries, though the major global pharmaceutical companies have a foothold in all the countries of the region through the marketing of their products.
- On average, transnationals account for 40% of sales, while national firms account for 60% (see figure IV.2). Transnationals generally have a greater share in branded drugs. In Brazil, for example, in 2019, foreign transnationals accounted for 77% of retail sales of patented medicines (innovative or original).
- Although transnationals dominate the branded drugs market, many countries in the region have well-developed production capacity. In Argentina, Brazil and Mexico, national laboratories play a key role in the production of drugs, including biosimilars and generics. Eight of the top 10 laboratories in Argentina and Brazil in terms of sales, for example, are national entities. These countries have the most national companies among the top 10 (Mexico and Colombia have six and one, respectively) (ECLAC, 2021).
- In most cases, these national laboratories have the capacity to operate in international markets. An analysis of the companies that comply with good production practices allowing them to export to the European Union, according to the European Medicines Agency (EMA), and with the authorization required by the United States Food and Drug Administration (FDA), reveals that 46% of the 79 laboratories that can export are national (ECLAC, 2022a).
- However, the region represents a small share of international trade in pharmaceuticals and biopharmaceuticals, and accounted for 1.1% of global exports between 2018 and 2020. In addition, exports have trended downward over the past decade, falling by nearly 30% and consolidating a persistent trade deficit in pharmaceuticals and biopharmaceuticals. In 2020, the value of imports was almost five times that of exports (ECLAC, 2021).
- The regional drug market depends on trade and greater investment in local production capacity, which creates opportunities for collaboration with the established European industry, and with health research centres. In Colombia, Chile and Peru, domestic production accounts for less than 40% of the national market (Gligo, Peres and Plottier, 2023). In Argentina, Mexico and Uruguay, this share is notably higher, reflecting better production capacity—which is still no greater than 75%—and often, local production of low-value added components (for example, generics) and high-value added imports (such as active ingredients). Collaboration between both groups of countries is promising, especially considering the increase in the average age of the Latin American and Caribbean population.

■ **Figure IV.2** ■
Latin America (4 countries): share of domestic market sales, by company ownership, 2020

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from Industrial Chamber of Argentine Pharmaceutical Laboratories (CILFA) for Argentina; Associação da Indústria Farmacêutica de Pesquisa (INTERFARMA), *Guia 2020*, 2020 for Brazil; Institute for Human Data Science (IQVIA) (12 months to April 2021) for Mexico, and *Indufarma* for Uruguay.

3. Regional industry must strengthen production and research capacity to gain a foothold in pharmaceutical industry value chains

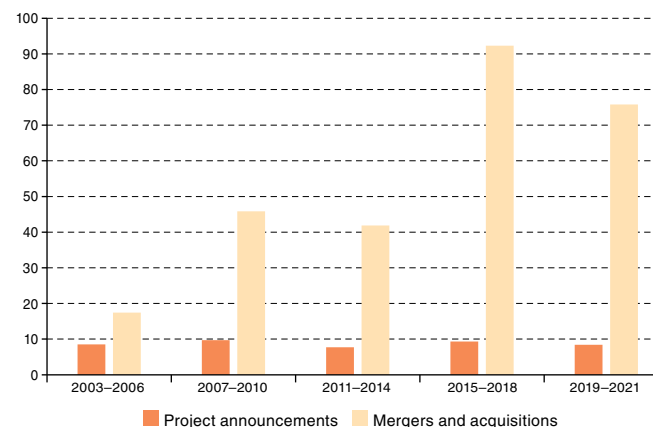
- The pharmaceutical industry plays a strategic role in development, owing to its potential to create capacity, value and employment, and to attract investment. It has significant knock-on effects on high-value added production, given that it is more productive and innovative, has a higher proportion of skilled workers and is more gender-balanced, and pays higher wages than the manufacturing industry (ECLAC, 2021).
- Although some countries of the region have invested in developing a solid base of researchers in the pharmaceutical and biotechnology sectors, traditional market incentives and production capacity —mainly focused on generic drug production— have not been enough to attract quality investment in the pharmaceutical sector.
- Some Latin American and Caribbean countries have well-developed production capacity in high-value added segments of the industry. Companies in Argentina, Brazil, Chile, Colombia, Mexico and Uruguay have the potential to boost the development of the sector by investing in research, development and innovation.
- However, the region is hampered by wide gender gaps in academic trajectories, which have many negative effects, such as the low participation of women in research and development, gender bias in scientific culture and in science and technology content itself, and women's lower scientific output (e.g. publication of academic research and patenting), and more limited representation in leadership positions (ECLAC, 2022a). On average, women in Latin America are overrepresented in the fields of medicine and health sciences, social sciences, humanities and the arts, but make up only slightly more than 25% of researchers in engineering and technology (UNESCO, 2022), which means they are excluded from crucial industries such as pharmaceuticals.
- The structural changes that characterize the pharmaceutical sector create key opportunities for the countries of Latin America and the Caribbean. First, one element to be taken into account is that the number of micromolecular drugs and branded drugs whose patents will expire is expected to double in the next five years. This market segment offers new possibilities for producers in the region that already have well-developed capacity in generic drug production.
- Moreover, biosimilars are a safe and less expensive alternative to biological medicines that face patent expiration in the near term.
- Lastly, clinical trials are one of the main stages in the sector's research and development process and one of the most promising markets for Latin America and the Caribbean. Although the region has increased its share in clinical trials and the capacity to develop them, most clinical studies are conducted by international laboratories or institutes. Investing in capacity-building and addressing other bottlenecks that may be limiting the conduct of clinical trials represents an opportunity to strengthen research and development capacity at the regional level. IQVIA estimates the indirect effects of the research-based pharmaceutical industry at 170% on employment and 70% on GDP. In other words, for every additional job in the research-based pharmaceutical industry, 1.7 new jobs are created, and, for every additional euro of production, 0.7 additional euros are produced elsewhere (IQVIA, 2021).

4. Pharmaceutical transnationals and their participation in Latin America and the Caribbean

- Large transnational companies dominate the pharmaceutical market and value chain. Among the 500 companies with the highest revenues in the world in 2021, 19 belong to the pharmaceutical sector and 8 are based in the United States, 7 in Europe, 3 in China and 1 in Japan (ECLAC, 2022a). These are mostly large companies, with average annual revenue of US\$ 45.172 billion in 2020, that have created a significant number of highly skilled jobs.
- Internationalization strategies have been based on the acquisition of existing assets and not on investment geared towards building new capacity (ECLAC, 2022a). On average, between 2003 and 2021, the value of deals closed amounted to US\$ 54 billion per year (see figure IV.3). Between 2003 and 2021, 94% of the total value of mergers and acquisitions derived from operations involving assets in Europe (50%) and North America (44%), while China and India continued to account for a limited share. Meanwhile, announcements of investments in new plants were limited and stable: US\$ 8.6 billion on average per year. The main destinations were Europe (40%), Asia (27%) and the United States (19%), with productive activities (61%) and research and development (22%) dominating.
- The situation in the region is similar, and international pharmaceutical companies have expanded in Latin America and the Caribbean mainly by acquiring assets with the aim of market-seeking or incorporating existing capacity, rather than by developing new projects (see figure IV.4). From 2005 to 2021, cross-border mergers and acquisitions involving pharmaceutical companies totalled US\$ 16.633 billion, equivalent to 2.2% of the total value of transactions in the region.
- In this scenario, the region has not been a remarkable destination for the development of new projects and has represented only 5% of the global total for the sector (2005–2021). In line with the structure of the global industry, by origin, investment announcements from Europe (59%), the United States (31%) and Asia (6%) stand out.

■ **Figure IV.3** ■
Cross-border mergers and acquisitions and FDI project announcements in the global pharmaceutical sector, annual average, 2003–2021

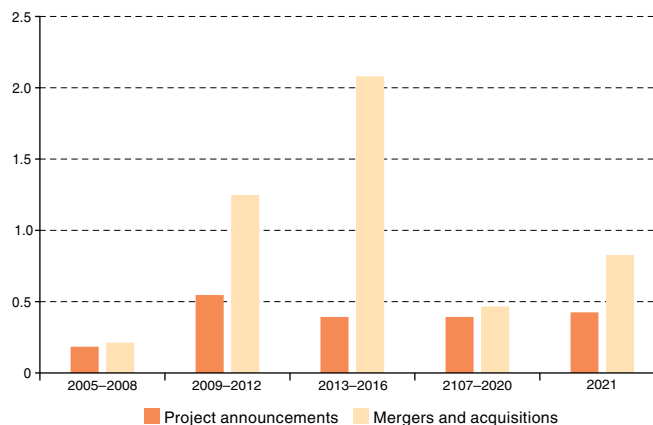
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Foreign Direct Investment in Latin America and the Caribbean, 2022* (LC/PUB.2022/12-P), Santiago, 2022.

■ **Figure IV.4** ■
Latin America and the Caribbean: cross-border mergers and acquisitions and FDI project announcements in the pharmaceutical industry, annual average, 2005–2021

(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDI Markets [online database] <https://www.fdimarkets.com/>.

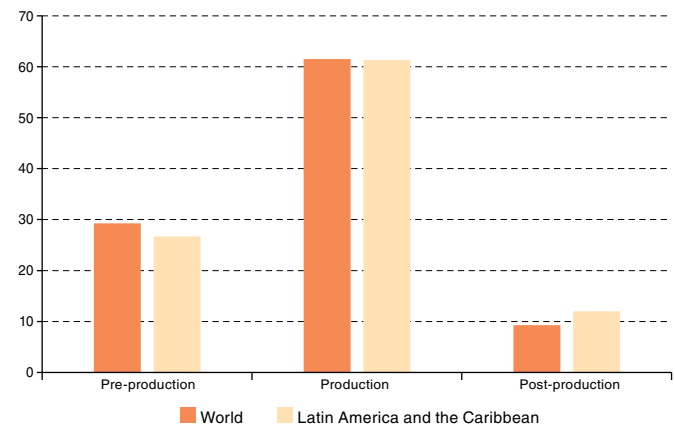
- In terms of destination, Brazil is noteworthy, accounting for 33.9% of the total number of regional projects in the sector, along with Mexico, at 17.4%.
- Latin American pharmaceutical companies have not used the installation of new capacities as a strategy for integration into the regional market. Trans-Latin pharmaceutical companies accounted for just 3% of project announcements in the region.

5. The biggest investment opportunities were in drug manufacturing and, in particular, generic drugs

- In the pharmaceutical industry, which is highly globalized, innovation-intensive and characterized by the presence of large transnationals, research, development and innovation capacities have been a determining factor in the investment decisions of transnational companies.
- Although some countries of the region have invested in establishing a solid base of researchers in the pharmaceutical and biotechnology sectors, traditional market incentives and production capacity —mainly focused on generic drug production— have not been enough to attract quality investment in the pharmaceutical sector.
- Most of the mergers and acquisitions targeting companies in the region have been aimed at producing and manufacturing drugs and pharmaceutical products, along with market-seeking, especially in the generic segments.
- Announcements of investment projects have mainly targeted activities in the pharmaceutical production stage (see figure IV.5). Investments in the region are less focused on pre-production —especially with respect to research and development activities, an area in which it is important to improve collaboration with the European Union—, and slightly more on post-production, especially in logistics and retail services.

■ **Figure IV.5** ■
Latin America and the Caribbean and the world: FDI project announcements in the pharmaceutical industry, by value chain segment, 2003–2021

(Percentages of total value)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

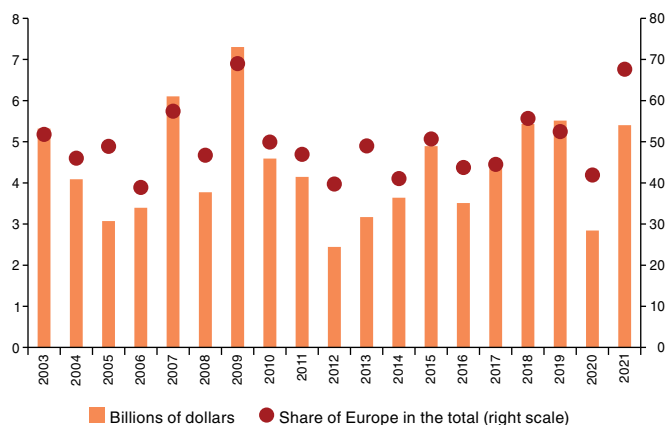
6. European companies have a strong presence in Latin America and the Caribbean

- Europe and the United States dominate pharmaceutical value chains, with European transnationals specializing in research and development, molecule discovery and drug design.
- Latin America and the Caribbean has not been considered a strategic destination in the internationalization strategy of European companies until now and, between 2005 and 2021, only 26% of mergers and acquisitions in the pharmaceutical sector in the region had a European company as a counterpart.
- The aim of most of the mergers and acquisitions of European companies in the region has been market-seeking, particularly in the generics sector. Between 2005 and 2021, European transnationals were responsible for 3 of the 10 largest operations in the region (ECLAC, 2022a).

- Between 2003 and 2021, the value of projects announced by European companies was US\$ 4.5 billion per year, on average (see figure IV.6), corresponding to 50% of the total value of investment project announcements in the sector in the region. In 2021, European companies consolidated their leading position and European announcements accounted for 68% of the total value of announcements in the pharmaceutical industry in the region.
- In the wake of the COVID-19 pandemic, specific initiatives have emerged to encourage investments for the development of COVID-19 vaccines. European companies have shown interest in collaborating with laboratories in Latin America and the Caribbean.
- Among other initiatives, in June 2022, the European Commission announced a new partnership between the European Union and Latin America and the Caribbean on the local manufacture of vaccines, medicines and other health technologies, and the strengthening of the resilience of health systems, as part of the Global Gateway strategy. The purpose of the initiative is to strengthen the productive capacities of the region's laboratories by encouraging investment. As part of this initiative, a virtual marketplace between pharmaceutical companies from

both continents was implemented in the first quarter of 2023, allowing registered companies to identify potential partners, customers or suppliers, and meet virtually in confidential business sessions.

■ **Figure IV.6 ■**
Latin America and the Caribbean: FDI project announcements in the pharmaceutical industry by European companies, 2003–2021
(Billions of dollars and percentages of the total amount)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDI Markets [online database] <https://www.fdimarkets.com/>.

7. Investment efforts are needed to strengthen existing capacities and generate new capacities throughout the value chain

- In the light of ongoing global transformation, Latin America and the Caribbean have the potential to strengthen the regional pharmaceutical industry and increase the supply of medicines in the regional market.
- Technological and structural changes in the pharmaceutical industry require an investment effort to improve innovation and production capacity and to convert the industry into a driver of development for the region.
- With that purpose, agendas, partnerships and collaborations could be developed in at least two areas. First, the CELAC plan for self-sufficiency in health matters could be advanced

and implemented on the basis of regional initiatives.¹⁶ The plan gives a central role to productive policies for the development of regional capacities and investments throughout the pharmaceutical industry value chain, while emphasizing the need to strengthen regional integration in trade, production and health matters to create a market big enough to ensure a competitive scale of production in the pharmaceutical sector. The key stakeholders are member States, relevant ministries, CELAC, the Pan American Health Organization (PAHO) and other United Nations agencies, along with large private sector companies.

¹⁶ CELAC approved a plan for self-sufficiency in health matters in Latin America and the Caribbean of which the ultimate goal is the development, expansion and competitive strengthening of research, development and production capacities for vaccines and medicines at the regional level. The plan aims to promote regional cooperation in strengthening the pharmaceutical sector to leverage existing complementarities in the region with the objective of: (i) providing a stable, large-scale market that gives clear signals and certainty for firms to invest in; (ii) encourage and facilitate research and development in innovative projects and (iii) support local production and integration into regional production chains (ECLAC, 2021).

- Second, as part of its support to countries in the design of productive development policies, ECLAC will seek to work with countries and territories that are focusing their efforts on the health or pharmaceutical sector, in order to develop agendas aimed at addressing bottlenecks that limit the productivity of this sector and its attractiveness as a target for investment. In particular, ECLAC will seek to promote bottom-up initiatives, and especially cluster development initiatives, which involve collaboration and implementation of productive development efforts at the local level. These initiatives include local companies, local governments, business associations, universities and research and development centres as key players, working together to implement policies and initiatives at the national level.
- International investment will be essential to facilitate technology transfer and the integration of the region's companies into global value chains. Transnationals in the region have more research and development and patenting activities, so the transfer of technology and knowledge by foreign companies, in addition to contracts and joint projects, could play a key role in building local capacity.
- National and regional investments have a central role to play in creating the conditions for building and strengthening capacity in the countries of the region with manufacturing industries. In order to find innovative solutions and strengthen capacities, public-private cooperation and coordination is needed, as well as the creation of research and industrial development laboratories that link universities, governments and companies themselves to carry out research projects dedicated to the discovery of new molecules or incremental innovation.
- Latin America and the Caribbean and the European Union have great opportunities for joint work that will allow them to define priority strategic areas and topics and guide research and development through different instruments, such as scholarships, grants, credit, tax subsidies, prizes and innovative public procurement. A notable example is the creation of specific programmes to support research and development in strategic areas for the development of the productive chain, including research and joint productive projects that could strengthen local capacities and contribute to the positioning of the industry.
- Both groups can move forward in designing cooperation programmes, standards agreements and special intellectual property agreements that facilitate joint research, promote business collaboration and facilitate investment. They can also advance in the design of sectoral strategies and mechanisms to identify quality investments in the pharmaceutical sector that are complemented by mechanisms to stimulate national investments and joint public investments in research and development.

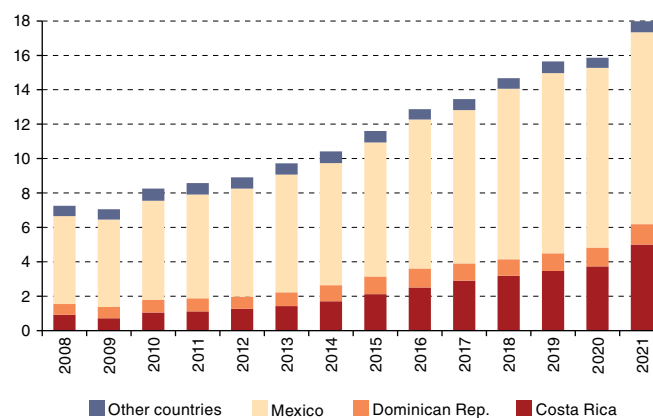
B. Medical devices¹⁷

- The value of the medical device industry was estimated at US\$ 430 billion in 2018 (IQVIA, 2019). Global production is largely located in the United States, Europe and Japan, which were the places of origin of the world's 30 largest companies in the sector in 2019.
- Unlike the pharmaceutical industry, medical device companies have tended to keep much of their value chain localized in their countries of origin, including product manufacturing. Processes aimed at relocating certain manufacturing stages have only begun in the last 20 years. In this context, the performance of different Latin American countries in the medical device industry is closely linked to their ability to insert themselves into the industry's global value chains.
- Most of these countries are net importers of products from high-income countries. Some countries satisfy a fraction of local demand with products made by small or medium-sized domestic enterprises with a low or medium level of technological sophistication.
- Brazil is the most technologically sophisticated country with the most substantial local output. This makes it an exception within the region and able to satisfy 50% of demand for such goods with domestic products (Drucaroff, 2021).
- Meanwhile, three countries in the region (Costa Rica, the Dominican Republic and Mexico) have become manufacturing

hubs for multinational companies that export products, primarily to the North American market, in volumes that exceed the aggregate level of imports for the entire region (see figure IV.7).¹⁸

■ **Figure IV.7** ■
Latin America and the Caribbean: exports of medical equipment and devices, 2008–2021

(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations, UN Comtrade Database [online] <https://comtrade.un.org/>.

¹⁷ Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

¹⁸ See the case of Costa Rica in Salazar-Xirinachs (2022).

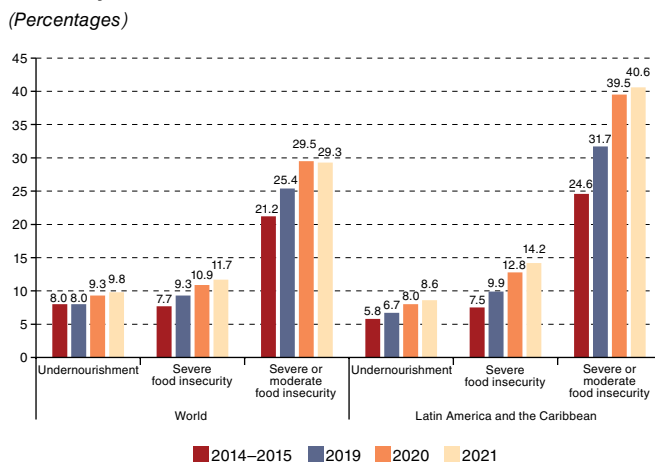
V. Opportunities and challenges in food security

A. Food security

1. Around the world, food insecurity has worsened in recent years

- More than a year after the United Nations Food Systems Summit, successive crises are hampering the achievement of expected results. The global agrifood sector faces considerable challenges (see figure V.1), including food supply disruptions due to the conflict in Ukraine, the need to sustainably feed a growing world population and the severe effects of the climate crisis.

■ **Figure V.1** ■
World and Latin America and the Caribbean: incidence of undernourishment and moderate or severe food insecurity, 2014–2021
 (Percentages)



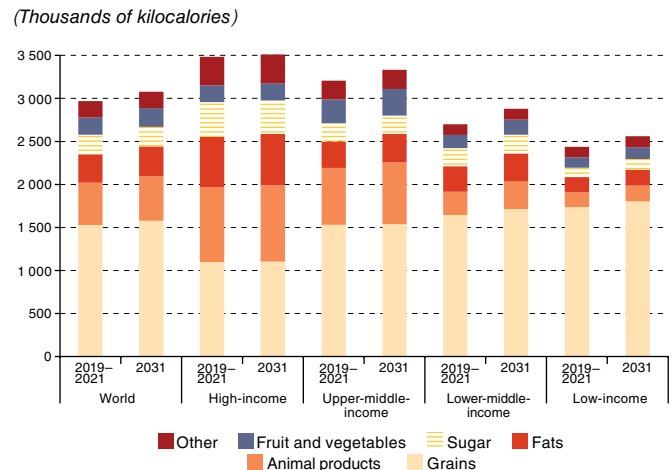
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Food and Agriculture Organization of the United Nations (FAO).

- Even before the conflict broke out in Ukraine, the goal of eradicating hunger and malnutrition in the world by 2030 was far from being achieved. The most recent figures (FAO and others, 2022) indicate that the number of people suffering from hunger worldwide has increased by 150 million since the beginning of the pandemic and stands at 828 million people. At the same time, an estimated 2 billion people suffer from obesity. In Latin America and

the Caribbean, 56.5 million people (8.6% of the population) suffer from hunger.

- The increase in food insecurity worldwide is more an issue of access than of food supply. For the time being, there are no indications of supply problems at the international level. Global availability corresponds to approximately 3,000 kilocalories (kcal) per person per day, an average that is exceeded in high- and upper-middle-income countries (see figure V.2). However, even if supply is sufficient, rising prices and falling incomes in many countries as a result of the pandemic, inflation and other crises, in addition to issues of coordination and distribution of production, have limited the access of certain segments of the population to healthy and nutritious food, which also counters the increase in obesity.

■ **Figure V.2** ■
Per capita availability of main food groups, by country income group, 2019–2021 and 2031
 (Thousands of kilocalories)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organisation for Economic Co-operation and Development/Food and Agriculture Organization of the United Nations (OECD/FAO), *OECD-FAO Agricultural Outlook 2021–2030*, Paris, OECD Publishing, 2021.

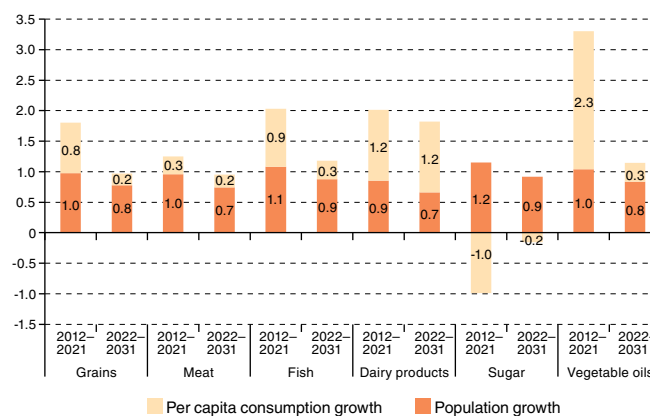
2. By 2050, world food production will have to increase by 49% to meet demand

- Worldwide, additional demand from a growing population will require large increases in production. In the next decade alone, global food consumption is expected to rise by 1.4% per year, owing mainly to population growth (OECD/FAO, 2021). The increase in demand will be strongest for dairy products and vegetable oils (see figure V.3). Most of the additional demand for food will continue to come from low- and middle-income countries.
- Over the next decade, global agricultural production is forecast to grow by 1.1% per year, with additional production mainly in low- and middle-income countries to meet growing local demand. Because of restrictions on the expansion of the agricultural frontier, most of this growth in production is expected to come from increases in productivity.
- Greater investment in technology, infrastructure and training to improve productivity will be a key factor in agricultural development. However, a prolonged increase in the prices of energy and agricultural inputs, such as fertilizers, will raise production costs and may limit productivity and production growth in the coming years. More work will be required for the agricultural sector to effectively reduce global greenhouse gas emissions as set out in the Paris Agreement on climate change,

including the large-scale adoption of climate-smart production processes and technologies, particularly in livestock-raising.

■ **Figure V.3 ■**
Annual growth in demand for selected groups of commodities, 2012–2031

(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organisation for Economic Co-operation and Development/Food and Agriculture Organization of the United Nations (OECD/FAO), *OECD-FAO Agricultural Outlook 2021-2030*, Paris, OECD Publishing, 2021.

3. Three major challenges for the region: increasing productivity, decarbonizing food production and improving access to food for the most vulnerable

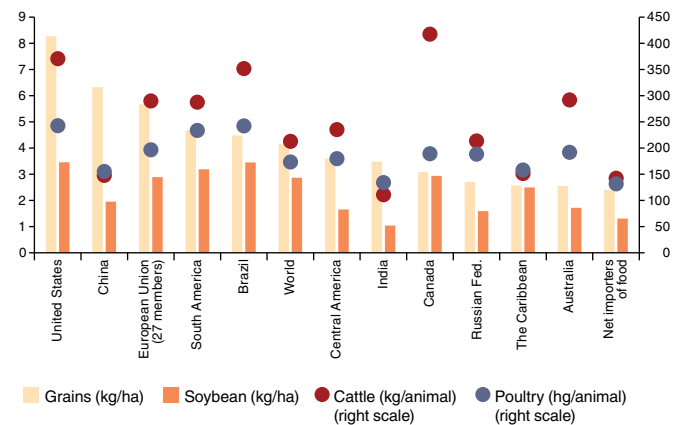
- On the basis of the challenges presented, there are three major priority areas for the region related to investment to improve food security with a long-term approach: increasing productivity, decarbonizing food production and improving access to food for the most vulnerable. This approach takes account not only of current concerns about growing food insecurity and hunger, but also of future trends of greater pressure on agriculture and food production owing to population growth and the need to address climate change.
- The main challenge is that these three major areas of investment must be addressed together, with their externalities and synergies, which can limit, but also enhance, the benefits. To increase agricultural productivity, while reducing both emissions per unit of output and total sector emissions, and improving access to a healthy diet for vulnerable populations, the intensity and direction of technological change must be redefined, with major investments in digital technologies, infrastructure and training of actors at all levels of the food production chain.

4. Productivity challenges in the region are heterogeneous

- Given that agricultural land is the factor of production expected to record the most limited in the future, it is crucial to consider the need to increase land yields in order to meet the objective of expanding world food production by 2050. At present, cereal production yields in the United States are twice the world and Latin American average and three times the average in the Caribbean and in the group of net food importing countries (see figure V.4).¹⁹ In the case of soybeans, meanwhile, the yield in South American countries (especially in Brazil) practically equals that of the technical frontier represented by the United States.
- In the case of livestock-raising, demand-side pressure comes from population growth and rising per capita income in low- and middle-income countries. The higher the income, the greater the tendency to consume more animal protein. At the same time, the high share of livestock-raising in greenhouse gas emissions indicates the need to limit growth in the number of livestock. A key productivity indicator for the sector would thus be the weight per animal, although other ecosystem benefits associated with the preservation of pastures, beyond CO₂-equivalent emissions, should also be considered. In the United States, the weight indicator is 70% higher for beef cattle compared to the world average and about 2.5 times higher compared to the average for the Caribbean and net food importing countries, although, as stated above,

the production model used has discernible environmental impacts. The yield gap with South America is smaller, at 30% in favour of the United States. In the case of poultry farming, South America (especially Brazil) and the United States have similar yields, while the difference compared to the world average is 30%.

■ **Figure V.4** ■
Yield of selected agricultural products
(Thousands of kg/ha, kg/animal and hg/animal)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Food and Agriculture Organization of the United Nations (FAO), FAOSTAT [online database] <https://www.fao.org/faostat/en/#home>.

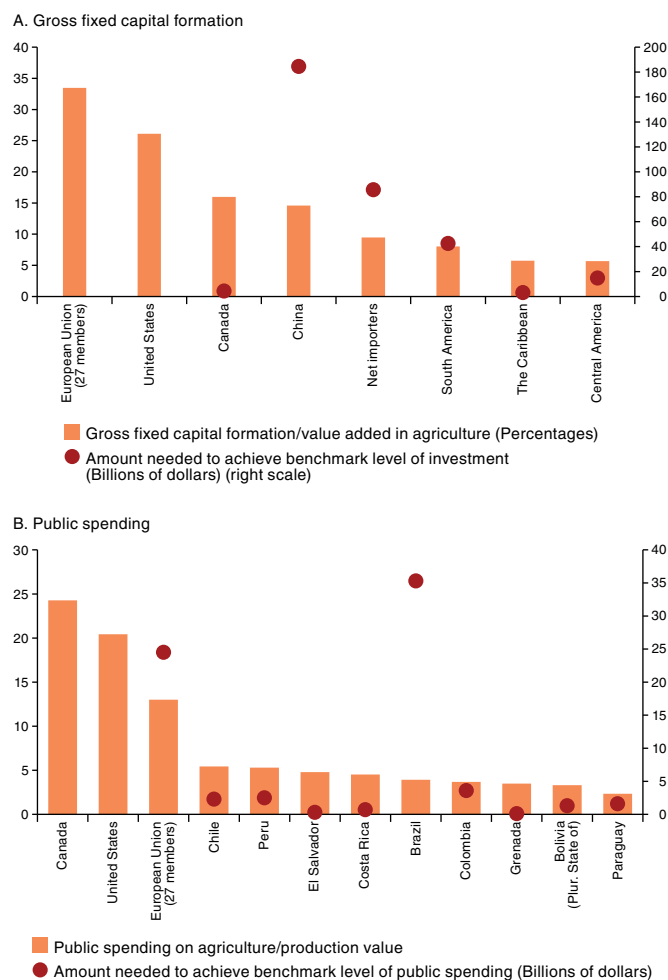
¹⁹ Calculations based on FAOSTAT for 2021.

5. Private and public investment in agricultural production are needed to increase productivity

- Agricultural productivity is directly correlated to investment in the sector. Using gross fixed capital formation in agriculture as a percentage of value added in the sector as a proxy indicator of investment intensity, the difference between the countries with the highest levels of productivity and the subregions of Latin America and the Caribbean becomes apparent (see figure V.5). Agricultural investment intensity in the European Union, the highest in the sample, is four times greater than in South America and about six times greater than in Central America and the Caribbean. In the case of the United States, agricultural investment intensity is three times greater than in South America and about five times greater than in Central America and the Caribbean. Some US\$ 60 billion per year would be needed for the region to reach the relative level of investment in agriculture recorded in advanced economies.
- The agrifood sector is hampered by uncertainty and volatility, so a central function of public investment is, in addition to generating public goods, to reduce investment risks both through reliable information and analysis and through the development of skills and competencies in the institutions and actors involved in the sector. Despite the importance of public spending in making private investment in agriculture viable, Latin America and the Caribbean tends to allocate relatively few public resources to the sector. The United States allocates between 4 and 13 times more public resources to the sector, as a percentage of the value of agricultural production, than selected countries in the region. To reach that country's relative level of public spending, selected countries in the region would need to allocate an additional US\$ 48 billion to the sector each year.

■ **Figure V.5** ■
Groups and selected countries: gross fixed capital formation and public spending on agriculture

(Percentages and billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Food and Agriculture Organization of the United Nations (FAO), FAOSTAT [online database] <https://www.fao.org/faostat/en/#home>.

B. Agriculture, food and beverage production

1. Transnationals have become interested in agricultural and food and beverage production in the region

- Agriculture and agribusiness are key sectors for the economies of Latin America and the Caribbean. The region accounts for 16% of the world's agricultural soils and 33% of unused agricultural land, which means it has the largest reserve of soils with agricultural potential in the world (ECLAC, 2019b). Thus, the sector is key to food security in the region, in addition to being a source of food for the rest of the world. In 2021, the region's agricultural exports totalled US\$ 257 billion, while imports amounted to US\$ 109 billion.
- Transnationals have a strong presence in the region's main agrifood export chains, and companies from the United States, the European Union and China, along with Latin American multinational companies, are major players in the production and marketing of soybeans, sugar, coffee, beef, corn, bananas, poultry and cereals (see table V.1).
- In recent decades, foreign investment in the agrifood chain, mainly in the food and beverage industry, has favoured the purchase of existing assets, through mergers or acquisitions, rather than creating new capacity. This is partly explained by the fact that these are consolidated productive activities with a long history in the region, which means that there are a number of quality assets and established brands that are attractive to foreign companies.

■ **Table V.1** ■
Latin America and the Caribbean: major transnational corporations in the main agrifood export chains

Product	Leading transnational enterprises
Soybeans	ADM (United States), Bunge (United States), Cargill (United States), LDC (France), COFCO (China)
Sugar	LDC (France), Bayer/Monsanto (Germany), Ledesma (Argentina)
Coffee	Nestlé (Switzerland), Jacobs/Kraft General Foods (United States), Sara Lee/Douwe Egberts (United States), Procter & Gamble (United States), Volcafé (Switzerland), Neumann Kaffee (Germany)
Deboned beef	JBS-Friboi (Brazil), BRF (Brazil), Marfrig (Brazil), Minerva (Brazil), Cargill (United States)
Maize	ADM (United States), Bunge (United States), Cargill (United States), LDC (France), COFCO (China)
Bananas	Dole (United States), Chiquita (United States), Fresh del Monte (United States)
Chicken	Tyson Foods (United States), JBS-Friboi (Brazil), Cargill (United States), Sysco (United States), ConAgra Foods (United States), MarFrig (Brazil)
Barley beer	Anheuser-Busch InBev (Belgium), Heineken (Kingdom of the Netherlands), China Resource (China), Carlsberg (Denmark)

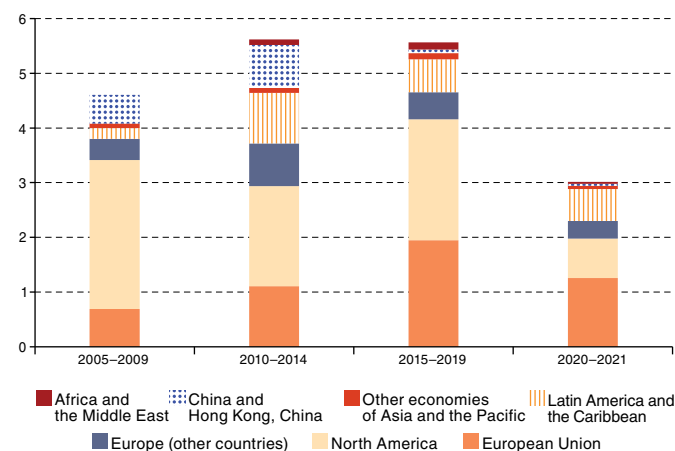
Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Foreign Direct Investment in Latin America and the Caribbean, 2019* (LC/PUB.2019/16-P), Santiago, 2019.

2. Investment opportunities in the food and beverage industry

- Latin America and the Caribbean have significant assets and capacities in the agrifood chain, which have attracted foreign investment. European Union companies have led the announcements of investment projects in the food and beverage industry in Latin America and the Caribbean (see figure V.6). Between 2017 and 2021, they

announced investments worth close to US\$ 9 billion, 38% of the total announced in the region in this sector. In addition, it is one of the top 10 sectors represented in the announcements of European Union companies, accounting for 6% of the value of projects in the period (seventh in the ranking).

■ **Figure V.6** ■
Latin America and the Caribbean: FDI project announcements in the food industry, by country or region of origin, annual average, 2005–2021
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of *Financial Times*, fDi Markets [online database] <https://www.fdimarkets.com/>.

- Brazil and Mexico accounted for the largest amount of investment project announcements by European Union

3. The bioeconomy: sustainable agriculture, genetic resources and bioindustrialization²⁰

- The bioeconomy is one of the drivers of sustainable and inclusive growth. In particular, its contribution to the diversification of the productive structure and the addition of value and knowledge stands out.
- It is estimated that, in 2015, in the 28 countries that then made up the European Union, the bioeconomy contributed the equivalent of 11% of GDP. In Latin America and the Caribbean, ad hoc quantification exercises have been carried out in Argentina, Colombia and Uruguay. In Argentina, it was estimated that, in 2012, the bioeconomy accounted for 15.4% of GDP and generated 2.47 million direct jobs in 2017. In Colombia, the bioeconomy accounted for between 5.0% and 7.3% of GDP, depending on the

companies in food and beverages (38% and 30%, respectively, between 2017 and 2021), followed by Argentina (11%) and Chile (11%).

- European companies in general have made investment announcements for the establishment or expansion of manufacturing plants, which accounted for 79% of the total amount of announcements. European investments in the industry therefore represent opportunities for technology transfer and increasing sophistication of production, with the consequent building of capacity, in the countries of the region. The transfer of technology and good practices is crucial for the region's agrifood exports to meet the growing sustainability requirements they are expected to face in the European Union market, within the framework of the Farm to Fork Strategy launched by the European Union in May 2020.
- It is necessary to foster a selective effort by public institutions to direct FDI towards higher-value added links in the chain, particularly in agro-industrial segments where processing and product differentiation are more relevant (for example, in processed foods that have quality attributes that make them attractive to consumer segments with more dynamic and sophisticated demand) (ECLAC, 2019b).

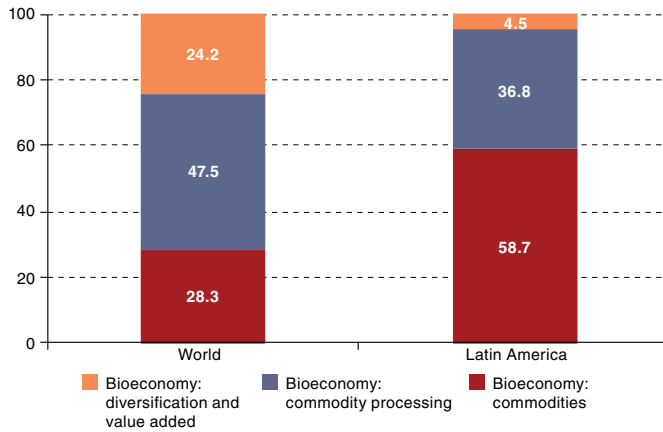
estimation method, and in Uruguay, the corresponding figure was an estimated 14.2% of GDP in 2018. In Costa Rica, the first exercise to develop a bioeconomy satellite account within the System of National Accounts was conducted with the support of ECLAC, with the bioeconomy estimated to account for between 12.8% and 15.7% of the country's GDP in 2018.²¹ In exports, commodities are the main component of the bioeconomy in the region (see figure V.7). They represented around 50% of activity in 2010–2014 and 55% in 2015–2019, with a noteworthy proportion of agricultural production activities. At the global level, however, the weight of the commodity bioeconomy has remained stable at around 28%.

²⁰ Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

²¹ See Kuosmanen and others (2020); Wierny and others (2015); Coremberg (2019); Alviar and others (2021); IICA (2021); Vargas, Rama and Singh (2022).

- The bioeconomy fosters bioindustrialization through the production of goods and services in rapidly expanding market segments, including bioplastics, biomaterials, agricultural bioinputs, biopharmaceuticals, biocosmetics, bioremediation systems and biodiagnosis and biomonitoring

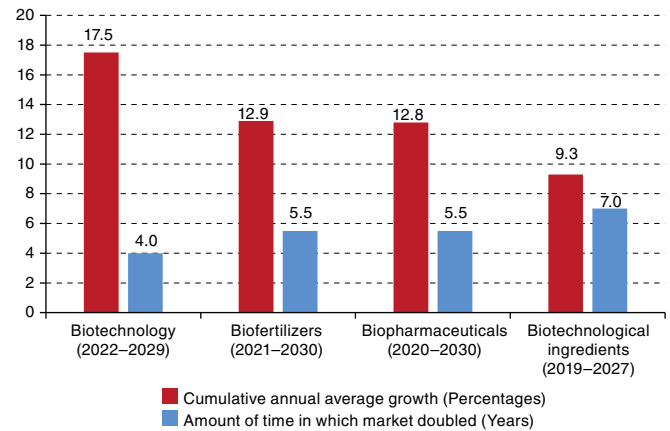
■ **Figure V.7** ■
Latin America and world: composition and evolution of bioeconomy exports



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

services. There are great expectations for growth in the next decade in these markets with high-value added sectors. The markets for biotechnology, biofertilizers, biopharmaceuticals and biotech ingredients are expected to double in the next four to seven years (see figure V.8).

■ **Figure V.8** ■
Indicators of global market growth in bioeconomy products
(Percentages and number of years)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

VI. Opportunities and challenges in the care society²²

²² Adapted from Economic Commission for Latin America and the Caribbean (ECLAC), *Iberoamérica: espacio de oportunidades para el crecimiento, la colaboración y el desarrollo sostenible* (LC/TS.2023/33), Santiago, 2023.

- The care society is a horizon to be shaped in a collective and multidimensional manner, so as to overcome the structural challenges of gender inequality and place the care of people and the planet at the heart of sustainable development. This is what the care society is about: it is a proposal for organizing society in such a way that the sustainability of life is the priority objective. In November 2022, during the fifteenth session of the Regional Conference on Women in Latin America and the Caribbean, the Buenos Aires Commitment was adopted, in which the countries of Latin America and the Caribbean agreed to “design, implement and evaluate macroeconomic policies, particularly fiscal policies (income, spending and investment), from a gender equality and human rights perspective to safeguard the progress made and mobilize the maximum available resources with a view to increasing sustainable public investment over time in care policies and infrastructure,
- in order to guarantee universal access to affordable and quality care services” (ECLAC, 2023c, p. 12).
- To achieve this, the right to care needs to be recognized, which implies guaranteeing the right of each person in the three dimensions of the concept (providing care, being cared for and caring for oneself), recognizing the value of care work and guaranteeing the rights of the persons who provide care. It also implies moving beyond the stereotyped assignment of this function as a woman’s responsibility and promoting institutional co-responsibility among its providers, both between men and women and between the State, markets, communities and families. Some estimates in the region value this care work, performed through unpaid work in the home, at between 15.9% and 27.6% of GDP, depending on the country (see figure IV.1). On average, 74% of this contribution is made by women (Vaca Trigo and Baron, 2022).

■ Figure VI.1 ■

Latin America (10 countries): value of unpaid household work relative to gross domestic product, around 2015

(Percentages of GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

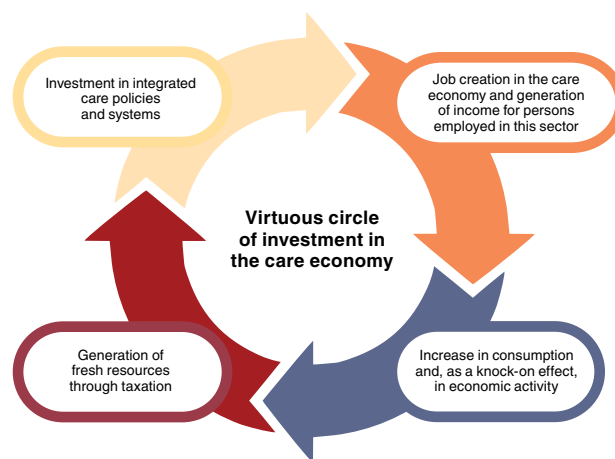
- Building a care society, in the context of a transformation towards sustainable and equitable growth, is the way forward—in synergy with the economic and environmental dimensions—to reverse social and gender inequality, counter the increasing precariousness of care and highlight the multiplier effects of the care economy.
- Investment in care policies is strategic, because it makes it possible to break the vicious circle of poverty and exclusion, while at the same time generating a virtuous circle with multiple positive social and economic effects (UN-Women/ECLAC, 2022) (see diagram VI.1).
- In terms of the investments required and their leveraging effects, studies conducted in Uruguay (De Henau and others, 2019) and in Mexico (UN-Women, 2020) indicate that boosting universal and free childcare systems (with different parameters in each case) would require an annual gross investment of 2.8% of GDP in Uruguay and additional expenditure of 1.2% of GDP in Mexico. Women’s employment would increase by 4.2 percentage points in Uruguay and total employment would increase by 3.9% in Mexico. The new jobs would generate tax revenues that would reduce the net financing gap to 1.4% of GDP

in Uruguay. In Mexico, the additional revenues would represent 0.29% of GDP. Similarly, a study conducted for seven Latin American countries, as well as Canada and the United States, estimated that gross investment in childcare and care for permanently dependent persons, together with an extension of parental leave, would total 4.1% of GDP.²³ This would also generate a 10.6 percentage point increase in the employment rate for women (2.7 percentage points for men), projected to 2035 (De Henau, 2022). The higher tax revenue generated would reduce the investment needed to universalize and extend these systems to 3.1% of GDP (projected). A study for Colombia estimated that if the State and the market were to take responsibility for the care that is currently provided on an unpaid basis, the energizing effects of this new production sector would contribute 33.7% of GDP (López Montaña, 2022).

- Population ageing, higher life expectancies and the epidemiology of communicable and non-communicable diseases have increased the burden of care work. This implies changes to the demand for care, which relates to the redesign of such economic sectors as health, personal services, virtual connectivity and technologies that support care work. Life expectancy at birth in Latin America and the Caribbean was estimated at 75 years in 2015–2020, an increase of three years since the start of the twenty-first century. Although this indicator is higher than those of Asia (73.3) and Africa (62.7), it is still significantly below life expectancy at birth in North America (79.2 years), Europe (78.3) and Oceania (78.4) (ECLAC, 2019c). Declining mortality and changes in disease patterns will generate a

significant increase in the number of older persons with severe chronic diseases or disabilities who will need daily care. In the region, more than 8 million people aged 60 years or older need help in carrying out basic activities of daily living, such as eating, bathing, using the toilet or getting dressed. This figure, which corresponds to more than 1% of the region's population and 12% of persons in this age group, highlights the magnitude of the care problem (ECLAC, 2022c).

■ Diagram VI.1 ■
The virtuous circle of investing in the care economy



Source: Economic Commission for Latin America and the Caribbean (ECLAC), *Towards transformation of the development model in Latin America and the Caribbean: production, inclusion and sustainability* (LC/SES.39/3-P), Santiago, 2022.

²³ Of this figure, 1.4 percentage points correspond to childcare systems.

VII. Concluding remarks

- The rich history of cooperation and the common interests and values shared by Latin America and the Caribbean and the European Union make that cooperation a natural response to the serious challenges facing the countries of the region and the international system. Strengthening democracy and having an open and reliable multilateral international system, with rules that reduce asymmetries and inequalities between countries, encourage inclusion and combat environmental destruction, is at the heart of the cooperation agenda between the countries of these groups.
- In this document, various areas for cooperation and investment in strategic sectors are analysed and evaluations and opportunities are presented, while work agendas and policies are proposed for future expansion and focus. Although the region is facing major challenges in the areas discussed, important progress has also been made and, given that many countries now view these areas as priorities because they drive growth and transform development models, there is room to strengthen economic cooperation between Latin America and the Caribbean and the European Union to benefit the countries of both groups.
- With regard to trade, the European Union currently has trade agreements in force with 25 countries of Latin America and the Caribbean, which will expand to 29 countries upon the signing and entry into force of the agreement reached with MERCOSUR in 2019. This makes the European Union the extraregional partner with the largest network of agreements in the region. Along with the trade aspect, all these partnership agreements include provisions on policy dialogue and cooperation in several areas.
- The European Union and Latin America and the Caribbean are facing a turbulent international scenario, marked by tensions between the United States and China, a weakened multilateral trading system and global supply chain disruptions triggered by the COVID-19 pandemic and the conflict in Ukraine. Against this backdrop, the existing trade agreements are a valuable asset for both regions, as they can support the respective initiatives aimed at achieving greater strategic self-sufficiency by offering not only export opportunities but also a reliable supply of essential products. As an example, the European Union is the main supplier of pharmaceutical products for Latin America and the Caribbean, accounting for 36% of all such imports in 2021. In turn, the region supplies the European Union with fuel, food and minerals that are critical for the energy transition, such as copper and lithium. In addition, it has great potential for the production and export of green hydrogen.
- Faced with the current uncertainty, Latin America and the Caribbean and the European Union must build a long-term strategic alliance focused on pursuing sustainable development in both groups of countries. This requires an adequate regulatory framework for trade and foreign investment flows. It is therefore critical to modernize existing agreements to adapt them for the challenges that have arisen in recent decades, in particular the digital revolution and climate change. The recent update of the European Union's agreements with Chile and Mexico takes a step in this direction by including strengthened provisions on e-commerce, environmental sustainability, labour standards, gender equality and small and medium-sized enterprises (SMEs), among other matters. It also defines a modern regulatory framework for foreign investment, including dispute resolution, which should encourage investment in strategic sectors for a sustainable and inclusive transition. In the medium term, having a common foundation of similar agreements with the European Union could facilitate convergence between the various economic integration mechanisms in the region itself.
- The forthcoming entry into force of the European Union's carbon border adjustment mechanism, on a transitional basis beginning in October 2023 and with full effect from 2026, is causing concern in Latin America and the Caribbean because of the prospect that the region's exports to the European Union will be penalized owing to their carbon footprint. It is therefore essential to take advantage of the period prior to the full entry into force of the regime to clarify doubts about its operation and implement technology transfer programmes that will allow the countries of the region to advance in the decarbonization of their productive and export mixes.
- In this context, the trade agreements linking the region with the European Union can be enriched through the addition of norms and standards to facilitate joint research projects, promote technology exchange through patents, licenses

and permits, and facilitate joint investment and production projects, especially in areas related to the green and digital transitions, health, food security and the care society. The political dialogue and cooperation pillars of partnership agreements with the European Union must be revitalized and filled with pragmatic and ambitious content.

- Boosting investment between the two groups of countries and strengthening productive ties can reinforce a strategic partnership that supports the countries of the region in achieving the SDGs and also supports the European Union in strengthening its international presence.
- In the context of a renewed partnership between the two groups of countries, it would also be appropriate to explore the creation of mechanisms to link the existing trade agreements between the European Union and the region. For example, the implementation of a regime for the diagonal cumulation of origin among the different agreements would promote productive integration among the countries of the region and between them and Europe, generating more favourable conditions for increasing the sophistication of regional exports to the European Union. The Pan-Euro-Mediterranean regime of diagonal cumulation of origin has been in force since 2005 between the European Union, the members of the European Free Trade Association (EFTA) and several countries in the Balkans, North Africa and the Middle East. It became possible to create this regime because the protocols of origin of all European Union trade agreements with other participating countries were identical. To move in a similar direction with the countries of the region, harmonizing the protocols of origin of the various agreements in force would therefore be a prerequisite.
- Multilaterally, there are many areas in which the region and the European Union can cooperate on a common interest agenda in the coming years. These include the reform process of the World Trade Organization (WTO),

the search for synergies between trade policies and the fight against climate change, and international governance of FDI. In this search, the concept of a just transition must not fall by the wayside. This entails a recognition of the right of developing economies to foster environmental stewardship while transforming production for greater diversification, closing technology gaps and promoting the most productive kinds of employment.

- In a context in which all countries—in particular developed countries with vast resources—are taking important steps to reform industrial policy, it will be essential for the region not only to scale up and implement its own sectoral policies more strategically but also to forge links with the industrial policies of other countries. One way of doing this is precisely by attracting investment and cooperation. An important question is how Latin America and the Caribbean can ensure that at least some of the benefits that developed countries are granting to companies in their territories can be granted to projects that receive investments made by those countries in the region. Furthermore, it should be explored whether those benefits could be applied to companies in the region with links to the value chains of companies from developed countries. The European Green Pact is a good starting point for assessing these possibilities.
- Lastly, as mentioned above, it will be essential to align investment and cooperation opportunities between the European Union and the countries of Latin America and the Caribbean with the production priorities defined by countries in their industrial or productive development policies, both at the national and subnational levels. Generating complementarities between the interests of international investors and the public-private agendas of countries and their territories is essential and can support a process in which investment opportunities become opportunities for transformation and local capacity-building.

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Latin America and the Caribbean and the European Union have a rich history of cooperation and share common values and interests such that cooperation is the natural path for responding to the major challenges facing the countries of the region and the international system.

In this document, the Economic Commission for Latin America and the Caribbean (ECLAC) analyses areas for investment and cooperation in strategic sectors, offers assessments, identifies opportunities and proposes work and policy agendas. The region faces significant challenges in the areas analysed, which include energy transition and digital transformation, but it has also made important progress and there is potential to strengthen partnerships that benefit Latin American and Caribbean countries and European Union countries alike.

The Third Summit of Heads of State and Government of the Community of Latin American and Caribbean States (CELAC) and the European Union, which will be held in Brussels on 17 and 18 July 2023, is a valuable opportunity for both country groupings to deepen and strengthen their strategic partnerships. This document aims to facilitate this path, foster a better understanding of the strategic areas of opportunity and support the definition of tangible projects and action that will make these and other opportunities a reality in the near future.



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