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Main Document

PATH TO COMPREHENSIVE SECURITY:

**DEVELOPMENT BANKING,
FORGING THE FUTURE OF LATIN AMERICA**

Secretary General of ALIDE

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INTRODUCTION

The global context is marked by a series of recent, multi-dimensional crises that are profoundly impacting countries' economic, social, and policy structures, and whose severity tends to gradually increase. The confluence of critical events—such as the COVID-19 pandemic, supply chain disruptions, climate change, geopolitical tensions, and accelerated digital transformation—has created an environment of widespread uncertainty and volatility, exposing systemic vulnerabilities that affect not only individual sectors, but the entire fabric of societies.

In this process, various interrelated threats have emerged, placing the need to move toward “comprehensive security” at the center of global concerns. The notion of security today transcends the military sphere to encompass climate, economic, energy, food, digital, civic, social, and labor aspects, among others. This new perspective recognizes that contemporary crises are complex, interconnected, and transnational, and that addressing them requires coordinated strategies that go beyond the isolated and fragmented responses of the past.

Thus, the concept of multiple security proposes not only a response to current crises, but also a long-term transformative vision that drives structural changes toward more resilient, inclusive, and sustainable development models. Building this comprehensive security requires collective efforts, in which international cooperation, the mobilization of financial resources, the transfer of knowledge, and the strengthening of institutional capacities play a crucial role.

In this sense, from the perspective of ALIDE and development banks, there is a need to reflect on their role in this new scenario. What actions are development banks taking, or can take, to help strengthen the various dimensions of comprehensive security? How can they enhance their contribution through development financing? What barriers do they face in promoting a sustainable and inclusive recovery in this context of prolonged uncertainty?

This document is structured into nine chapters that address the main axes of comprehensive security. The first chapter conceptualizes sectoral security from a comprehensive perspective and analyzes the landscape of global and regional risks and trends that outline the main current challenges. The second chapter focuses on economic and trade security, examining the recent dynamics of international trade, the redesign of investment flows in the face of geopolitical tensions, the role of trade agreements and strategic alliances, as well as the impact of US trade policy on our region.

The third chapter addresses climate security and sustainability, analyzing the growing impacts of extreme events, financing needs, and major global and regional initiatives seeking to strengthen the region's resilience to climate change. The fourth chapter analyzes sustainable energy security, describing the historical evolution toward dependence on fossil fuels, the weaknesses of the regional energy market, the risks of inaction, and the opportunities that exist to advance toward a just and sustainable energy transition.

The fifth chapter addresses agri-food systems and food security, highlighting how food security has become a multidimensional objective in Latin America and the Caribbean. It examines the evolution toward the current food crisis, the economic and social costs of inaction, and the need to invest in resilience and sustainability to ensure access to sufficient and healthy food. The sixth chapter addresses cybersecurity and digital security, identifying digital insecurity as a structural threat, analyzing its recent evolution, and assessing the costs and consequences of inaction in this area.

The seventh chapter analyzes job security in the face of the impact of new technologies on employment and the labor market. It examines the challenges faced by public policies to protect labor rights and promote decent employment in a context of digital transformation,

as well as the opportunities for development banks to support sustainable job creation. The eighth chapter examines the relationship between public insecurity and social security, assessing the social and economic effects of violence and crime on the development of national economies and analyzing how public investment has been affected in contexts of growing insecurity.

Finally, the ninth chapter offers a comprehensive reflection on the role of development banks in this multi-risk scenario. Their capabilities, limitations, and the transformative potential they can exert through the mobilization of financial resources, the promotion of sustainable development projects, and the fostering of strategic alliances at the national and regional levels are discussed. Policy recommendations are also presented to strengthen their role as central agents in building a more secure, resilient, and inclusive future for Latin America and the Caribbean.

This technical document seeks to offer an in-depth and multidimensional analysis of contemporary challenges, with the goal of providing a strategic vision that will enable progress toward sustainable development that guarantees the well-being of current and future generations. Development banking, as a key player in development financing, has a historic opportunity to lead this transformation in a world that demands, more than ever, comprehensive responses, effective cooperation, and a firm commitment to resilience and sustainability.

CHAPTER I. FROM INSECURITY AND UNCERTAINTY TO COMPREHENSIVE SECURITY

The confluence of multiple critical events has generated uncertainty and volatility, exposing vulnerabilities across all areas, not just in specific sectors as occurred in previous crises. These crises, with their multiple impacts, have highlighted the need to reconfigure the broad and collaborative development approach in order to ensure a more stable future and comprehensive security in Latin America and the Caribbean (LAC).

It is increasingly evident that economic security—essential for regional stability—must be accompanied by social security, ensuring inclusion and equity in the distribution of the benefits of development. Likewise, environmental security has been consolidated as an essential pillar, considering the region's high vulnerability to the effects of climate change and the urgent need to promote an energy transition toward sustainable and clean sources. The integration of technological and digital security is also critical, as while technological advancement offers significant opportunities, it also poses challenges in terms of cybersecurity, access gaps, and transformations in the labor market.

The most worrying thing is that these different dimensions of security and insecurity feed off each other, worsening the global situation, especially for countries and populations with the most limited resources. This section explores the meaning of this insecurity and the risks identified by various specialized institutions, which are essential to address.

1.1. Conceptualization of sectoral security - insecurity

Global insecurity is understood as the complex network of risks and threats that affect the entire planet, transcending national borders and manifesting in multiple dimensions, whether environmental, economic, trade, energy, food, job, public safety, or others. This reality involves:

- a) **Interconnection of risks:** Crises in one area (such as climate change) can trigger collateral effects in others (such as food insecurity or economic instability), creating cycles of cumulative vulnerability. Examples of this can be seen in both financial crises and the recent health crisis of 2020.
- b) **Transnational impact:** Threats are not restricted to one country or region, but spread globally, affecting interdependent societies and economies. Geopolitical conflicts, accidents in strategic areas, or disruptions to key logistics corridors can have ripple effects with implications for various regions and continents.
- c) **Complexity in management:** The diverse and interrelated nature of these challenges requires comprehensive and coordinated responses among governments, international organizations, and civil society. An example of this is the fight against climate change, which requires joint and sustained action at the global level.
- d) **Challenges to stability:** The simultaneity of risks creates uncertainty regarding States' ability to ensure the well-being and security of their citizens, both from the perspective of social protection and sustainable development.

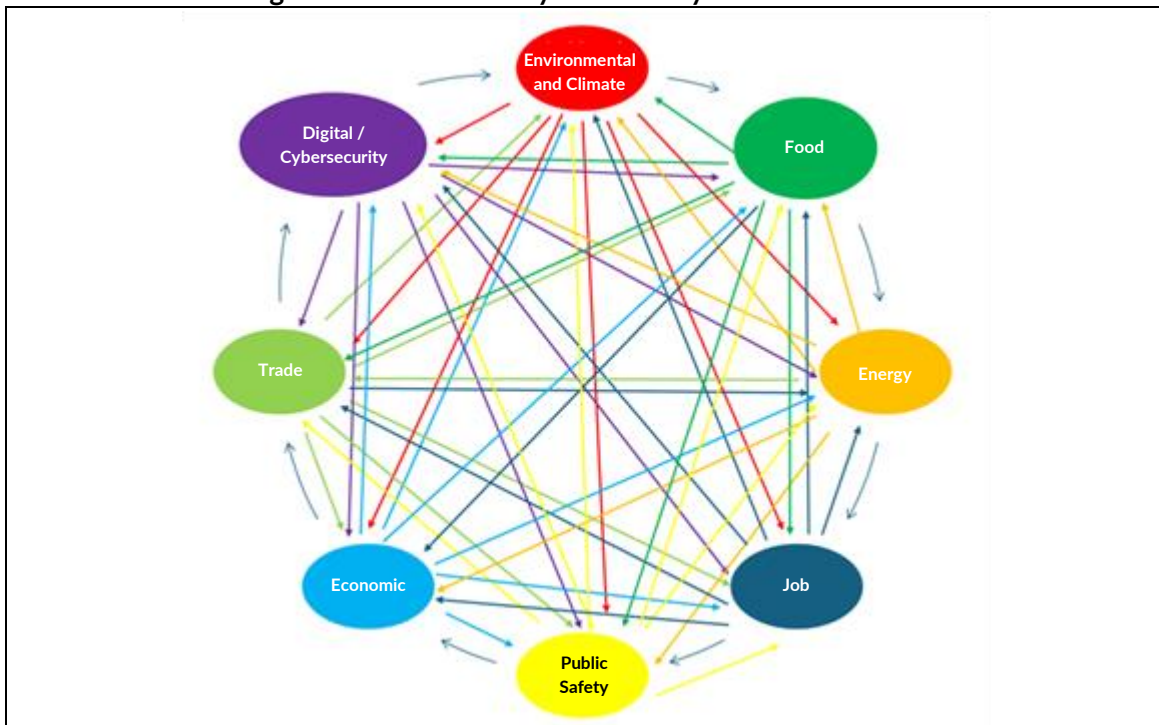
Global insecurity is thus a situation characterized by the convergence of interconnected threats that jeopardize stability, peace, and development, requiring multidimensional and coordinated responses to be effectively managed. Therefore, it is necessary to address this insecurity from multiple perspectives. The main dimensions are presented below:

- **Environmental:** The climate crisis and ecosystem degradation are increasing communities' vulnerability to natural disasters, biodiversity loss, and scarcity of water resources. These conditions generate tensions over access to resources and forced migration.
- **Economic:** Global financial uncertainty, rising inequality, inflation, and debt crises are affecting countries' ability to generate sustainable well-being. Dependence on volatile markets and geopolitical tensions negatively impact economic growth and investment, especially in developing countries.
- **Trade:** Supply chain disruptions, protectionism, economic sanctions, and the concentration of economic power in large corporations have highlighted the fragility of international trade. Competition between powers for control of markets and strategic technologies, although generating uncertainty, has also stimulated investment in technological innovation.
- **Energy:** The transition to renewable energy is progressing unevenly. Persistent dependence on fossil fuels, volatile energy prices, and conflicts over access to energy resources jeopardize energy security, especially in countries struggling to diversify their sources.
- **Food:** Climate change, armed conflict, financial speculation in agricultural markets, and economic crises have aggravated food insecurity. Rising food prices and barriers to accessing basic goods intensify hunger and malnutrition, especially in vulnerable sectors, societies, and regions.
- **Job:** Automation, job insecurity, the growth of the informal economy, and structural unemployment are increasing workers' vulnerability. The lack of transition policies, adequate education, and labor protection impedes effective inclusion in the new productive landscape, especially in emerging economies.
- **Public safety:** Organized crime, urban violence, migration crises, and institutional weakness continue to be latent threats. The erosion of trust in the law enforcement agencies and the State limits response capacity, affecting both governance and economic development.

This panorama suggests that insecurity cannot be understood as an isolated phenomenon in each area, but rather as a network of interrelated crises that require **coordinated, structural, and multidimensional** responses. In a changing world, where crises are increasingly intertwined, it is essential to move toward comprehensive management strategies that simultaneously respond to various challenges, whether environmental, economic, social, governance, or other.

Global insecurity can be analyzed from multiple interconnected areas (Figure 1), reflecting complex challenges that affect sustainable development.

Figure 1. Global Security – Insecurity Interconnections



All of these areas are interrelated, as they are part of interdependent systems in which an alteration or crisis in one of them can have repercussions on the others (Table 1). Below are some key examples:

Table 1. Interrelations among the Different Areas or Dimensions

Environmental and food impact	Ecosystem degradation and climate change generate extreme weather events.	They affect agricultural production.	It worsens food insecurity and impacts the health and stability of the population.
Economic and labor crisis	Economic fluctuations, such as inflation or recession, reduce purchasing power and generate unemployment or job insecurity.	This translates into a reduced capacity to invest in clean technologies or in the recovery of environmentally affected areas,	Creating a vicious circle.
Energy and geopolitical dependence	The high dependence on fossil fuels.	It affects the economy (due to price volatility) and exacerbates international tensions.	Conflicts impact public safety and hinder the transition to renewable energy, exacerbating environmental problems.
Trade and economic disruptions	Alterations in global supply chains due to conflicts or environmental crises.	They can destabilize entire markets.	It affects local and global economies and impacts employment and countries' ability to respond to crises in other areas.
Public safety	Institutional weakness and rising crime	They can destabilize regions, limiting investment in critical infrastructure	It affects economic and social development.

As we can see, a problem in a specific area—such as the climate crisis—can generate ripple effects that impact food production, the economy, and job security, subsequently influencing public safety and trade and energy relations. For this reason, it is essential to adopt a comprehensive and coordinated approach that recognizes the need for cross-cutting solutions capable of addressing the complexity of these interconnections.

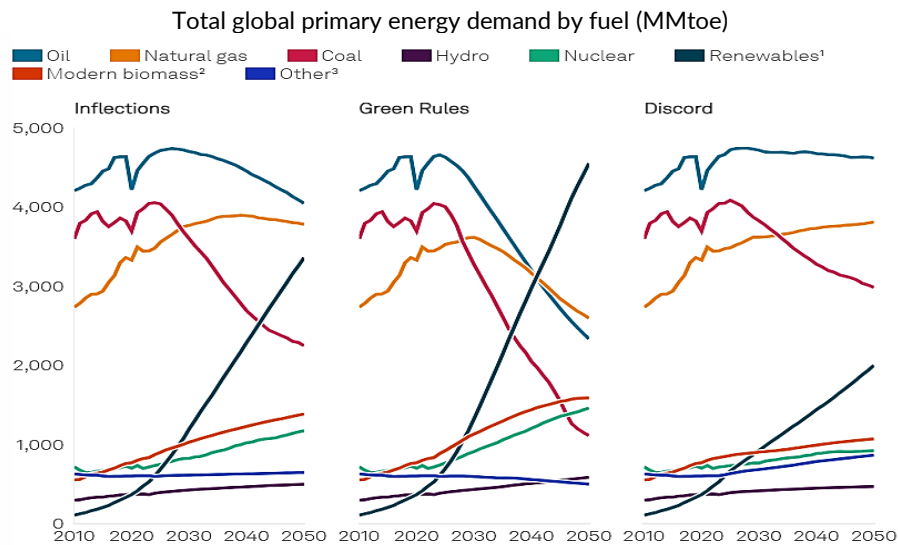
1.2. Global and Regional Risks and Trends

Global insecurity is understood as a complex network of trends, risks, and threats that affect on a worldwide scale, transcend national borders, and manifest themselves in multiple, deeply interconnected areas. At the global and regional levels, various organizations and institutions prepare analyses and reports on the nature, perception, intensity, and effects of these risks. Some of them are prepared by **S&P Global**, the **World Economic Forum**, **Control Risks International Consulting**, and the **Economic Commission for Latin America and the Caribbean (ECLAC)**.

a) **S&P Global: Global Megatrends:** In its 2025 Annual Risks Report, based on surveys of leaders and analysts in sustainability, climate, and energy transition, S&P Global identified the following as the main megatrends that will shape strategies in 2025:

- **Geopolitical uncertainty:** Highly challenging global policy landscape. Geopolitical uncertainty will affect the implementation of strategies in sustainability, climate, and energy transition, in a context in which 60 countries will hold elections during 2025. The results of these elections are expected to significantly influence the international agenda.
- **Energy transition, security and access:** Growing geopolitical uncertainty is diverting some attention from decarbonization efforts, prioritizing energy security and reliable access to energy sources, especially in vulnerable regions (Figure 2).
- **Aggravation of physical climate risks:** An increase in the frequency and intensity of climate disturbances is projected. Companies will need to comply with stricter global disclosure regulations and face the challenges of assessing and reporting on the impacts of these risks. At the same time, opportunities will emerge in financing climate adaptation and resilience, through new financial instruments that could attract greater private investment.
- **Greater demand for climate finance:** Pressure is mounting to close the climate finance gap. Among the solutions proposed are: i) Improving local institutional frameworks; ii) Redefining the mandates of multilateral development banks, directing them toward the mobilization of private capital; iii) Creating mixed financing platforms; iv) Standardizing and scaling up financial structures; and, v) Implementing credit enhancement mechanisms.
- **Growth of carbon markets:** A strengthening of global carbon markets is expected, driven by the Article 6 agreements of the Paris Agreement reached during COP29 (Figure 3). These seek to create transparent and trustworthy markets, facilitating international cooperation and reducing the costs of implementing Nationally Determined Contributions (NDCs) by up to US\$250 billion annually.

Figure 2. Global energy markets are on the cusp of change, with a significant structural realignment expected in the coming decades



Notes: Figure taken from [S&P Global's top 10 sustainability trends to watch in 2025](#)

Data collected in June 2024.

MMtoe = million metric tons of oil equivalent.

¹ Includes solar, wind, geothermal and ocean energy.

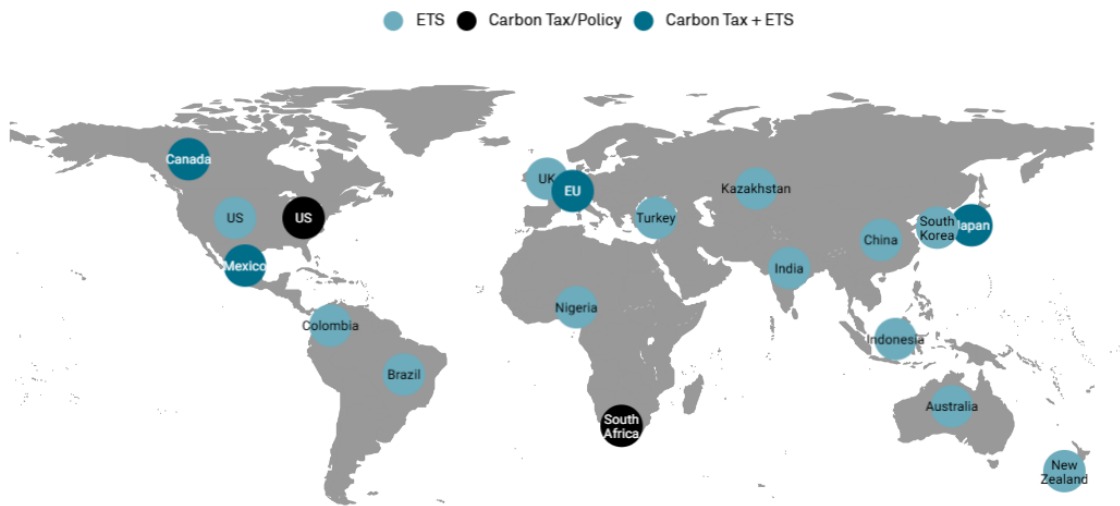
² Includes biofuels and biomass (industry, electricity, district heat and refining).

³ Includes solid waste, traditional biomass, ambient heat, net trade of electricity or heat.

Source: S&P Global Commodity Insights.

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Figure 3. Carbon pricing compliance continues to expand globally



Notes: Figure taken from [S&P Global's top 10 sustainability trends to watch in 2025](#)

As of December 2024

ETS = Emissions Trading System

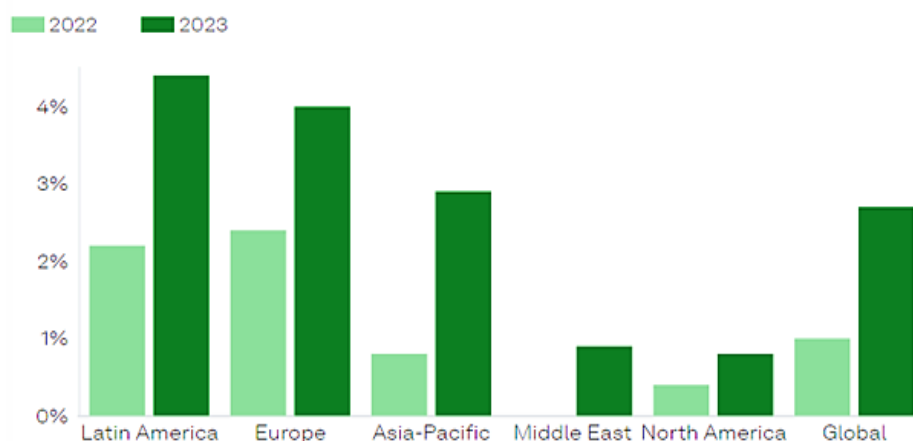
Source: S&P Global Commodity Insights

- **Biodiversity and natural capital:** There is growing recognition of the importance of integrating natural capital into private sector decision-making (Figure 4). COP30 (2025) in Brazil is expected to highlight the critical role of biodiversity and the risks associated with ecosystem loss, with a focus on the development of environmental disclosure standards.

- **Complexities in supply chains:** Geopolitical, regulatory, and climate challenges are putting pressure on the adoption of sustainability practices in supply chain management. Companies may face fewer supplier options, higher product costs, and difficulties in ensuring access and affordability, especially in emerging markets.
- **Just transition: equitable distribution of costs:** The discussion about what constitutes a just energy transition and who should bear its costs will gain relevance in 2025. Recognizing the social impacts of climate change—especially on the most vulnerable sectors—will be key to maintaining policy support and moving toward an inclusive transition.
- **Balanced use of Artificial Intelligence (AI):** AI represents a useful tool for measuring emissions, land use, and analyzing climate scenarios, but its growing infrastructure (especially data centers) demands large amounts of energy. If it comes from fossil fuels, AI can end up increasing emissions, posing the challenge of balancing its potential with its energy footprint.

Figure 4. Corporate commitments to biodiversity and deforestation are strongest in Latin America

Percentage of companies by region that commit to having a net positive impact on biodiversity and not deforesting



Notes: Figure taken from [S&P Global's top 10 sustainability trends to watch in 2025](#)
Data as of August 2024.

S&P Global's 2023 Corporate Sustainability Assessment (CSA) methodology evaluates companies based on whether they have a group-wide commitment to a net positive impact on biodiversity and a commitment to no gross deforestation or no net deforestation.

Net positive impact (NPI) means that a company's actions related to biodiversity, such as habitat protection, are greater than the impact resulting from its business activities. A commitment to NPI generally goes beyond a commitment to no net loss, implying that damages related to business activity are offset by at least equivalent gains, thereby avoiding a net loss of biodiversity and ecosystem services.

No gross deforestation means that the company has committed to ending all deforestation.

No net deforestation means the company is committed to offsetting losses through future reforestation.

The results are based on responses from 8,629 companies assessed in both the 2023 and 2022 CSAs on NPIs, and from 8,591 companies assessed in both years on no-deforestation commitments.

Africa was excluded due to a low sample of companies assessed.

Source: S&P Global Sustainable.

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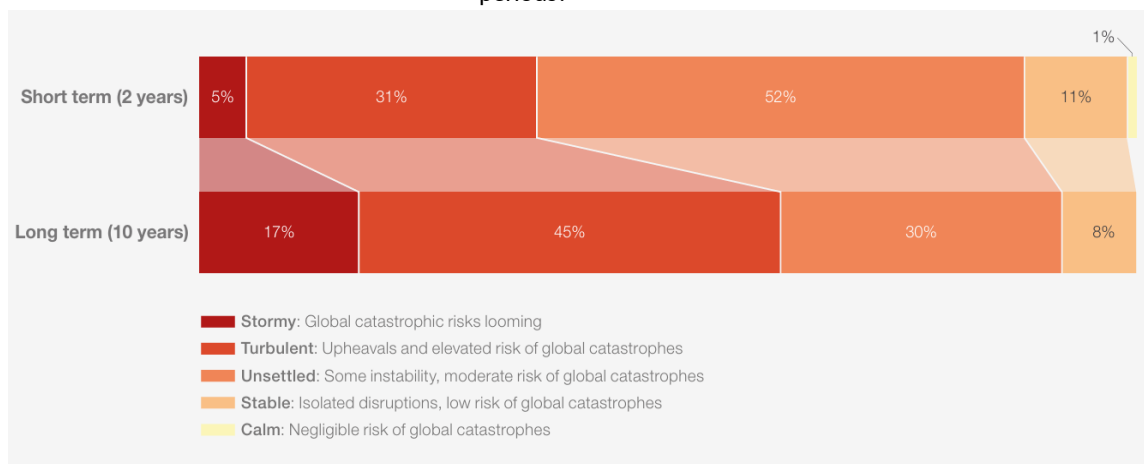
- **Sustainability reports:** Global pressure for more consistent and comparable sustainability reporting will continue to grow. However, there are concerns about the information burden required from companies, which could slow the widespread adoption of these standards.

b) **Global Risks according to the World Economic Forum (WEF):** In its Global Risks Report 2025, the WEF presents an increasingly fragmented global landscape, where geopolitical, environmental, social, and technological challenges threaten global stability and progress (Figure 5).

- **Decreased optimism:** The global perspectives show a growing fracture in the geopolitical, environmental, social, economic, and technological spheres. According to the report, 52% of respondents anticipate an unstable global environment in the short term (next two years); 31% foresee turbulence, and 5% consider a stormy outlook likely. Taken together, these responses reflect an increase in pessimism compared to 2024, with projections continuing into 2027. For the 10-year horizon, the outlook is even more bleak: 62% of respondents expect stormy or turbulent conditions (Figure 5).

Figure 5. The short- and long-term global perspectives is high

"Which of the following options best characterizes your perspective for the world in the following time periods?"



Source: 2024-2025 Global Risk Perception Survey of the World Economic Forum

Note: Percentages in the chart may not add up to 100% because values have been rounded up or down.

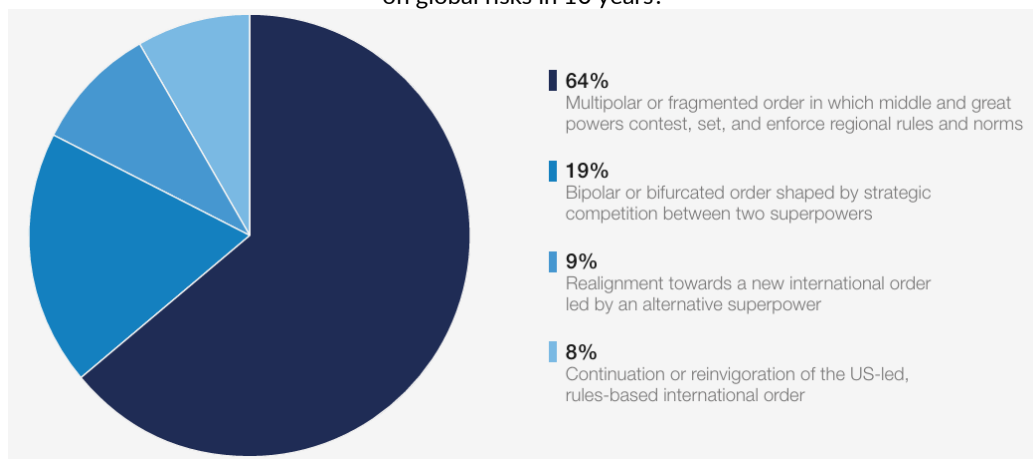
When comparing risk perspectives across three time horizons (short, medium and long), the following are identified as the most relevant:

- **Deepening geopolitical and geoeconomic tensions:** Looking ahead two years, armed conflict among States emerges as the top risk for 23% of respondents, climbing from #5 to #1 in just two years. This shift reflects how national security considerations are increasingly dominating government agendas.
- **Intensified economic tensions:** Geoeconomic confrontation moved up from 14th place in 2023 to 9th in 2025. Likewise, the role of technology in geopolitical conflicts is a major concern, due to cyber espionage and cyber warfare, which rank 5th in the short term. However, the most notable risk two years in the future is misinformation and disinformation, which remains the top threat for the second consecutive year.
- **Growing social fragmentation:** Inequality is perceived as the most serious social risk, as it acts as a trigger or amplifier of other risks. Also in the top 10 are social polarization, forced or voluntary migration, and the erosion of human rights and civil liberties. All of this suggests that global social stability will be particularly fragile in the next two years.

- **Environmental risks as an urgent reality:** The impacts of environmental risks have not only increased in frequency but also in intensity. Projections for the next decade are alarming: although all 33 risks analyzed are expected to worsen, environmental risks show the greatest deterioration. Extreme weather events are perceived as a major concern. Over the next 10 years, biodiversity loss and ecosystem collapse rank second, and their impact is already beginning to manifest itself in the short term.
- **Rising technological risks:** Although concerns about the negative effects of artificial intelligence (AI) are limited in the short term, this risk shows a significant increase over the 10-year horizon. It especially highlights the use of generative AI for the creation of false or misleading content on a large scale, with direct effects on social and policy polarization.
- **An increasingly fragmented world:** Regarding the global policy order, 64% of respondents believe that the world is moving toward a multipolar or fragmented order, in which medium and large powers will compete for the creation and application of norms at the regional level (Figure 6). A decline in Western leadership is anticipated, with the rise of emerging powers such as China, India, and the Gulf States.

Figure 6. Global policy landscape

"Which of the following options best characterizes the global policy environment for cooperation on global risks in 10 years?"



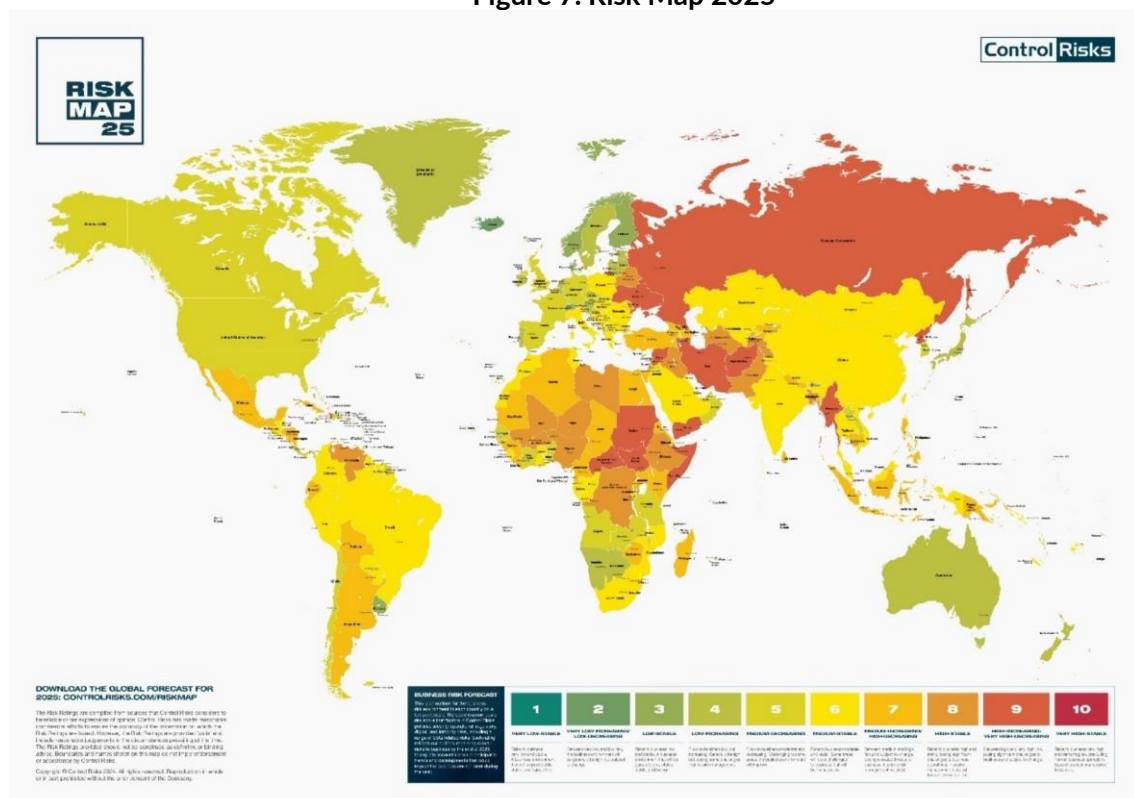
Source: 2024-2025 Global Risk Perception Survey of the World Economic Forum

- c) **Control Risk International Consulting:** The Global Business Risk Map developed by Control Risks International Consulting assesses cyber, policy, regulatory, security, integrity, and operational risks in each country, in order to provide a comprehensive view of the current landscape of global threats and trends (Figure 7). For the year 2025, the consulting firm identifies the following risks worldwide:
- **Decline in US global power:** The arrival of a new administration anticipated an increasingly complex investment environment, marked by intensifying risks stemming from both US domestic and foreign policy, with direct impacts on international business. A more direct and aggressive confrontation with its main economic and geopolitical competitors is also expected.

- **Geopolitics of “red lines”:** Escalation thresholds between countries are becoming increasingly blurred, creating an environment of high uncertainty. Businesses must prepare to face the risks arising from rapid changes in regional and global stability, with less predictability regarding the turning points between diplomacy and conflict.
- **Risk of a global trade war:** China’s manufacturing power, the United States’ protectionist trade policy, and the resurgence of industrial policies around the world increase the risk of a global trade war. In this new context, national security becomes the guiding principle of international trade and investment. Although global trade is projected to continue growing in 2025, geopolitical tensions are driving increasing fragmentation of financial systems and supply chains, hampering strategic decisions, especially in the technological field.

Three key factors fuel this tension: 1) China’s economic policy: Strong government support for strategic sectors has increased its industrial capacity in a context of weak domestic demand. This causes a drop in prices that encourages massive exports, affecting multiple sectors and countries; 2) US trade policy: A protectionist approach, focused on raising tariffs, can trigger retaliation and hamper both domestic and global economic growth; and, 3) Global industrial policies: Many governments are intensifying their industrial policies to compete with geopolitical rivals, protect strategic supply chains, and develop critical sectors.

Figure 7. Risk Map 2025



Source: Control Risk Consulting

- **Increase in political violence:** Political violence is likely to intensify, especially in the context of electoral processes. Control Risks identifies the following global factors contributing to this trend: 1) Growing geopolitical rivalry, which undermines international cooperation and hampers the resolution of regional conflicts and global

problems; 2) Political polarization, which tends to justify or normalize violence against political and social adversaries; 3) Online radicalization, fueled by disinformation campaigns; 4) The use of emerging technologies, which allows for the manufacture of low-cost tools that can be used in physical attacks. In addition, the use of encrypted messaging platforms and generative AI facilitates non-physical but disruptive threats, such as digital harassment and intimidation campaigns.

- **Concentration of digital risk:** The growing centralization of technology services among a few key providers, in an increasingly hostile cyber threat environment, represents one of the greatest risks for organizations in 2025. A deliberate and malicious attack could have catastrophic systemic consequences. The expansion of connected and autonomous devices in critical infrastructure and consumer products is creating new vulnerabilities to high-impact cyberattacks.

d) Economic Commission for Latin America and the Caribbean (ECLAC): Trends in the redefinition of globalization.

In its annual report, ECLAC points out that the confluence of a redefining globalization and technological, demographic, climate, and geopolitical trends—in combination with the three development traps and the historical legacy of structural gaps that the region has failed to overcome—raises the need for new and creative thinking on how to escape these traps and close existing gaps.

ECLAC emphasizes that the world is currently witnessing the emergence of a new scenario in terms of globalization, geoeconomics, and geopolitics, whose transformations represent both challenges and opportunities for LAC development strategies. In the previous paradigm, the market was given a central role in the allocation of resources between sectors and activities, as well as in the determination of wages and the geographical organization of production. It also promoted global interdependence and the pursuit of lower costs as a way to benefit consumers with lower prices.

However, today, this interdependence is perceived as a source of vulnerability. Strategies to reduce dependence on trading partners considered unaligned with national interests are being imposed, marking a transition toward new rules of the game in trade, investment, and globalization.

In this context, ECLAC identifies the following predominant trends:

- **Slowdown in trade and foreign direct investment (FDI):** Global flows of trade in goods and FDI are growing at a slower pace than in the years preceding the 2008-2009 financial crisis. At the same time, their configuration in terms of origin and destination is changing. While trade in services is experiencing accelerated growth, total trade in goods and services as a percentage of world GDP grew steadily between the mid-1980s and 2008. However, between 2009 and 2022, it went through several cycles of decline and recovery, only surpassing in 2022 the level recorded in 2008.
- **Geographical reconfiguration of global value chains:** In economies such as the US and Europe, there is a process of shortening or nearshoring of value chains, along with a push for reshoring (repatriation of production) and the creation of supply chains among partners considered strategically aligned (friendshoring).

- **Return of industrial policy:** Industrial policies, especially those based on large-scale subsidies, have once again taken center stage in developed Western economies, having been relegated during the era of hyperglobalization and the dominance of the Washington Consensus. In China, these policies were already a structural axis of its economic strategy. Furthermore, there is an intensification of technological and protectionist trade policies among the major powers.
- **Reform of international corporate taxation:** In the wake of the 2008-2009 global financial crisis, a reform process was initiated to reduce tax base erosion and the artificial shifting of profits to low- or zero-tax jurisdictions, disconnected from the actual location of economic activity. These reforms limit the traditional use of tax incentives as a tool to attract FDI, reducing the scope for public policy action in this area.
- **Accelerated technological transformation:** Recently, technological progress has profoundly transformed economic, social, and policy dynamics. These technologies have not only generated new growth opportunities and enabled significant improvements in the quality of life, but also opened possibilities for convergence toward more advanced productive structures. They also allow for increased productivity and foster more sustainable economic growth.
- **Technological and industrial rivalry:** Competition among the world's major economies has intensified, with implications that go beyond the economic to the realm of national security. This rivalry manifests itself in restrictions on the export of strategic products and technologies, as well as in the veto on the use of technologies developed by strategic rivals.
- **Growing impacts of climate change:** Climate change imposes ever-increasing economic and social costs, especially in developing and more vulnerable countries, which lack the resources and capacity to address it. In this scenario, the redefinition of globalization poses particular challenges for LAC, such as: 1) Competing in attracting foreign investment and stimulating domestic investment in key sectors; 2) Addressing geopolitical and trade conflicts from a perspective that prioritizes regional interests; 3) Aligning technological development aspirations with the risk of technological decoupling between blocs; and 4) Maximizing trade and FDI attraction opportunities with different geo-economic blocs.

1.3. Comparative Mapping of Identified Global Trends, Risks and Threats

As previously noted, global insecurity encompasses a complex network of trends or megatrends, risks, and threats that transcend national borders and manifest in various areas: environmental, economic, trade, energy, food, labor, and public safety, among others. These elements are interconnected and their effects are felt throughout the world (Table 2).

- **Environmental and climate dimension:** Within these trends, the environment and climate change are emerging as predominant factors. Increased recurrence of extreme weather events is anticipated, as well as increased levels of air, soil, and water pollution, especially during the energy transition process, which poses challenges in terms of security and access.

It is recognized that physical climate risks have worsened, and that their intensity could increase in the coming years. There is also growing concern for biodiversity and its preservation. This creates tensions around the distribution of costs associated with a fair energy transition, which seeks to protect especially developing countries and low-income people, who bear the greatest impacts.

Furthermore, strong growth in carbon markets is expected as a key source of financing for sustainable projects, accompanied by increased regulatory requirements for companies to submit more rigorous and comparable sustainability reports.

- **Geopolitical dimension:** This highlights an increase in global uncertainty, as well as a greater likelihood of armed conflict among States. Added to this is the intensification of geoeconomic confrontation, the decline in US global power, and the emergence of new international actors seeking to share leadership in global governance. This new multipolar balance generates frictions that directly affect trade, investment, and international cooperation.
- **Technological dimension:** In the technological sphere, of particular concern are the intensification of technological and industrial rivalry between powers, as well as the use of AI and digital media for purposes such as cyber espionage, digital warfare, and the spread of disinformation, which have the potential to intensify political and social conflicts.

Therefore, we warn about the risks of technological concentration, particularly in digital platforms and critical infrastructure providers. The need to balance the benefits and risks of using AI is also highlighted, given its ability to support sustainability, but also its potential contribution to increased emissions if its energy footprint is not properly managed.

- **Social dimension:** Growing polarization is observed, with a tendency to worsen in the short and medium term. High levels of inequality persist, as does an increase in forced displacement, erosion of human rights and civil liberties, and increased political violence. All of this represents a significant threat to social peace and can worsen the business climate, weakening countries' ability to attract sustainable investment.
- **Economic dimension:** Although economic risks initially seemed more predictable, their current impact has become more significant. Problems have been identified, such as the weakening of supply chains, the advance of a global trade war, stagnation in the growth of trade in goods and FDI, and the formation of global value chains segmented by geopolitical blocs. In addition, a subsidy-intensive industrial policy has re-emerged, distorting competition and accentuating asymmetries between countries.

Table 2. Risks, Threats and Megatrends

S&P Global Global Megatrends	World Economic Forum Threats and Risks			Control Risk Global Business Risk Map	ECLAC Regional and Global Trends
	No.	Time horizon 2 years	Time horizon 10 years		
Geopolitical uncertainty	1	Disinformation	Extreme weather events	Decline in US global power	Global flows of trade in goods and FDI are growing more slowly
Energy transition – Security and access	2	Extreme weather events	Biodiversity loss and ecosystem collapse		The geography of global value chains has changed
Aggravated physical climate risks	3	State armed conflict	Critical change in the Earth system	Geopolitics of red lines	Industrial policy based on large-scale subsidies
Demand for greater climate finance	4	Social polarization	Scarcity of natural resources		Continuation of the process aimed at reforming the rules of international corporate taxation.
Growth of carbon markets	5	Cyber espionage and digital warfare	Disinformation	Global trade war	Accelerated technological changes
Nature, – importance of biodiversity	6	Pollution (air, soil, water, etc.)	Adverse consequences of AI		
Greater complications in supply chains	7	Inequality	Inequality (wealth, income)	Greater political violence	Technological and industrial rivalry among the world's major economies has intensified
Just Transition - cost sharing tension	8	Involuntary migration or displacement	Social polarization		
Artificial Intelligence – balancing its use	9	Geoeconomic confrontation	Cyber espionage and digital warfare	Digital risk concentration	Climate change
Sustainability Reports: growing demands	10	Erosion of human rights and/or civil liberties	Pollution (air, soil, water, etc.)		

Social	Technological	Geopolitical	Environmental	Economic
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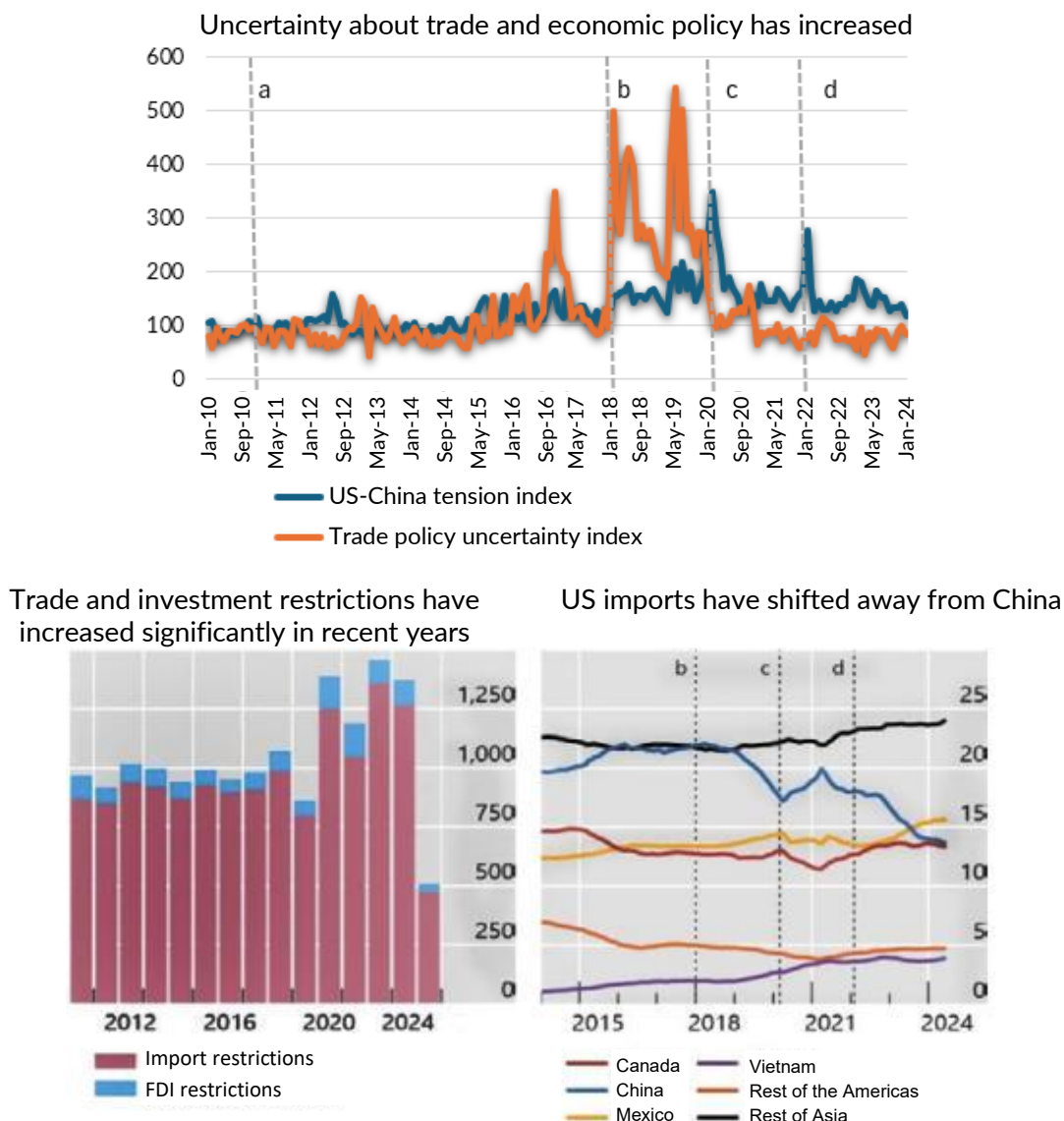
Source: S&P Global, World Economic Forum, Control Risk Consulting, ECLAC
Developed In-house

CHAPTER II. ECONOMIC AND TRADE SECURITY

This section explores how growing geoeconomic fragmentation, trade tensions, and technological transitions are reconfiguring the relationship between security and economic development. Based on the concept of economic security, the strategies adopted by governments and businesses to mitigate risks in critical sectors such as trade, energy, and strategic minerals are highlighted. The potential of LAC in this new environment is highlighted, as well as the challenges associated with its external vulnerability.

The notion of “economic security” has been formally adopted by several governments, blurring the lines that traditionally separated national security from international economic policy. In a context of intensifying geopolitical tensions and greater intervention in security matters, governments are seeking to mitigate their vulnerability to global shocks (Figure 8).

Figure 8. Main Insecurities Affecting Trade and Investment



Notes: a) Great Japan Earthquake, March 2011; b) The U.S. begins imposing tariffs on certain products, January 2018; c) Covid outbreak, March 2020; d) Russia-Ukraine conflict, February 2022.

Source: Bank for International Settlements (2024)

What began as a focus on dual-use technologies has evolved into a broader vision of economic security, including strategic technologies such as semiconductors and new types of interstate conflict,

such as cyberattacks. Furthermore, the geopoliticization of critical points in global trade, such as submarine cables, gas pipelines, and essential inputs like rare earths, has further expanded this concept. Although high-value goods, such as electric vehicles, are not directly linked to national security, their economic and strategic importance is undeniable. Ultimately, the scope of economic security depends on the priorities governments choose to establish.

Companies must deal with increasingly complex security risks, including disinformation, cyberattacks, boycotts, and supply chain vulnerabilities. International trade, by its very nature, carries an intrinsic level of economic risk.

Achieving a balance between efficiency and economic security is largely a task for companies, as long as this process does not affect social security. Public policies, in both advanced and developing economies, focus on diversifying trade and strengthening supply chains to reduce economic and strategic risks. Although protection against economic security risks is essential, it tends to be confused with protectionism.

The analysis of geopolitical risk today is much deeper. Factors such as the location of factories are crucial in assessing vulnerability to conflict, as is the feasibility of mobilizing capital in critical situations. In the current environment, the rise of other powers and geopolitical alliances have a considerable impact on the dynamics of global trade.

The revival of industrial policies presents both opportunities and challenges for companies. A key factor is determining whether government initiatives will translate into practical action, especially considering the challenges related to job skills, infrastructure, and energy access. It is also important to question whether the choices governments are making in the area of industrial policy are appropriate, since the consequences of these decisions will affect international trade and the competitiveness of companies.

2.1. Trade dynamics

The 3% growth projected for world trade in 2025 shows that the global economy is still recovering from the effects of COVID-19 and other critical situations. However, unlike previous episodes, this rebound is not expected to follow traditional patterns. Factors such as rising geopolitical tensions, environmental policies to reform value chains, and technological advances are changing the landscape of global trade. These transformations will not only determine the resilience of economies, but also their capacity for future growth¹.

In the context of globalization, trade flows connect partners located at opposite ends of the geopolitical spectrum. Around 20% of global trade in goods takes place between economies with significant geopolitical distances². That proportion rises to nearly 40% for globally concentrated products³, such as laptops and iron ore, where three or fewer economies provide the majority of all exports.

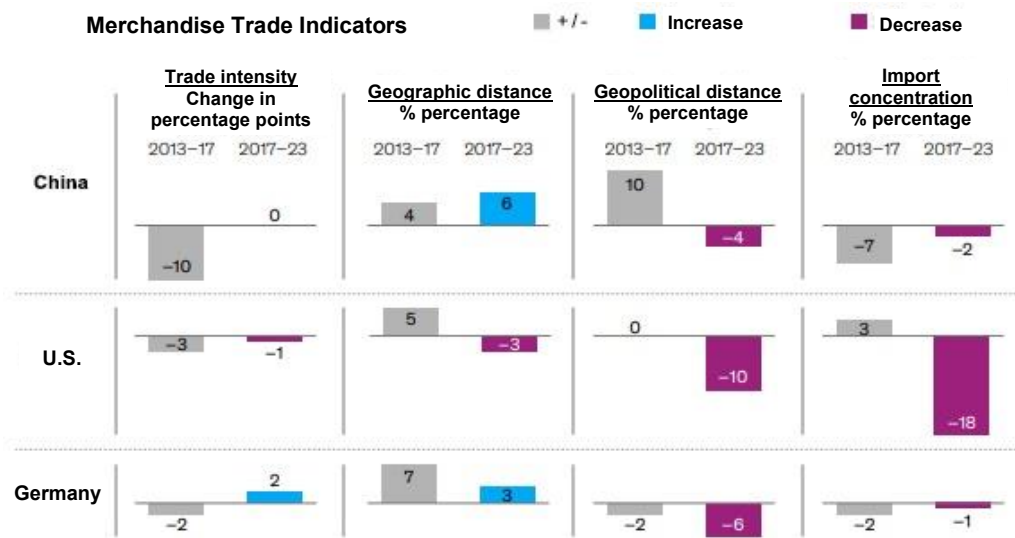
¹ McKinsey Global Institute (2024), Report "Geopolitics and the geometry of global trade".

² The report uses votes on important issues in the United Nations General Assembly between 2005 and 2022 to assess geopolitical distance.

³ It refers to a good that is produced and marketed centrally in a few countries around the world, but that has significant demand and is offered in multiple markets.

Global trade is changing as geopolitical tensions reconfigure trade relations. In 2023, Mexico emerged as the United States' top trading partner in goods (Torres, 2023). Meanwhile, Vietnam has intensified its trade with both China and the U.S. (Azpúrua, 2024). In Europe, energy dependence on Russia has decreased dramatically: Germany, for example, reduced its Russian gas imports from 35% in early 2022 to virtually zero in 2023. Since 2017, China, Germany, the United Kingdom, and the United States have begun to trade more with geopolitically close partners, reducing their trade distance by between 4% and 10% (Figure 9). These changes reveal a response to global tensions, as well as a strategy to strengthen the resilience of economies in the face of future crises.

Figure 9. For some Economies, Trade may Shift toward Geopolitically Closer Partners



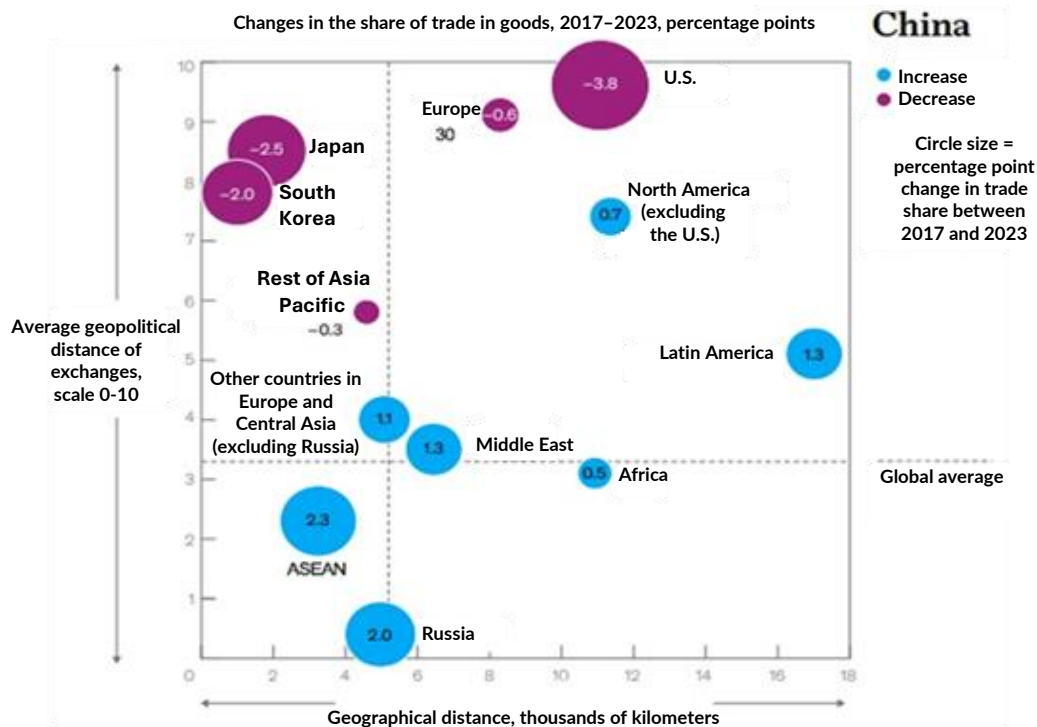
Source: McKinsey (2024)

For example, China's trade patterns are evolving rapidly. Its share of trade with developing economies is on the rise, while trade relations with Japan, South Korea, and the United States have weakened. In Europe, however, imports from China show an increase in key categories, such as electric vehicles (Figure 10). This trade adjustment underscores both China's strategic diversification and its ability to adapt to the demands of ever-changing global trade.

The U.S. has achieved a significant transformation in its trade patterns, reducing both the geographic and geopolitical distance of its trade between 2017 and 2022. While geographic distance decreased by 3%, reflecting a trend toward offshoring, the 10% decrease in geopolitical distance reflects a focus on more politically aligned partners.

This adjustment has been accompanied by diversification in key sectors, such as increased trade with Vietnam in electronics and with Mexico in manufacturing. Likewise, its trade with Europe has grown, driven by the export of energy resources and the import of pharmaceutical products. Between 2017 and 2023, U.S. imports became 18% less concentrated in their origins, breaking a trend of increasing trade concentration that existed before 2017. Although global trade generally traveled longer distances in 2023, the U.S. is leading the way in strategic offshoring, proactively adapting to the new global environment (McKinsey, 2024).

Figure 10. The Reconfiguration of China's Trade toward Developing Economies Around the World



Source: McKinsey (2024)

It is also observed that some economies are strengthening their trade ties with a variety of partner countries. Among them, the countries of the Association of Southeast Asian Nations (ASEAN), Brazil, and India stand out, as they are expanding their trade toward more distant and diversified markets, challenging traditional geopolitical dynamics. India has increased its “geopolitical distance” by 1%, reflecting a higher volume of imports from Russia, mainly in energy resources and strategic raw materials. Brazil has intensified its trade relations with China, driven by the growth of its agricultural exports—especially soybeans and beef—responding to the increasing demand from that country. In addition, Brazil has increased its imports of Chinese manufactured products, especially photovoltaic solar panels, which are key for energy transition projects in the region (BCG, 2025).

In the future, it is anticipated that global trade flows could undergo even more profound transformations. With evolving strategic alliances, geopolitical rivalries, and new national aspirations, the global economy is undergoing reconfiguration. This phenomenon is driven by geopolitical tensions, technological competition between the U.S. and China, and the need to diversify supply chains in the face of supply risks (BCG, 2025; UNCTAD, 2023).

According to Boston Consulting Group (BCG, 2025) forecasts, trade routes will be significantly redefined over the next ten years. In particular, North America is seen consolidating as a stronger and more autonomous trading bloc, gradually decreasing its dependence on Asia, especially China. This process of relocating supply chains, known as “nearshoring,” enables greater integration among North American economies and reduces vulnerabilities to global disruptions.

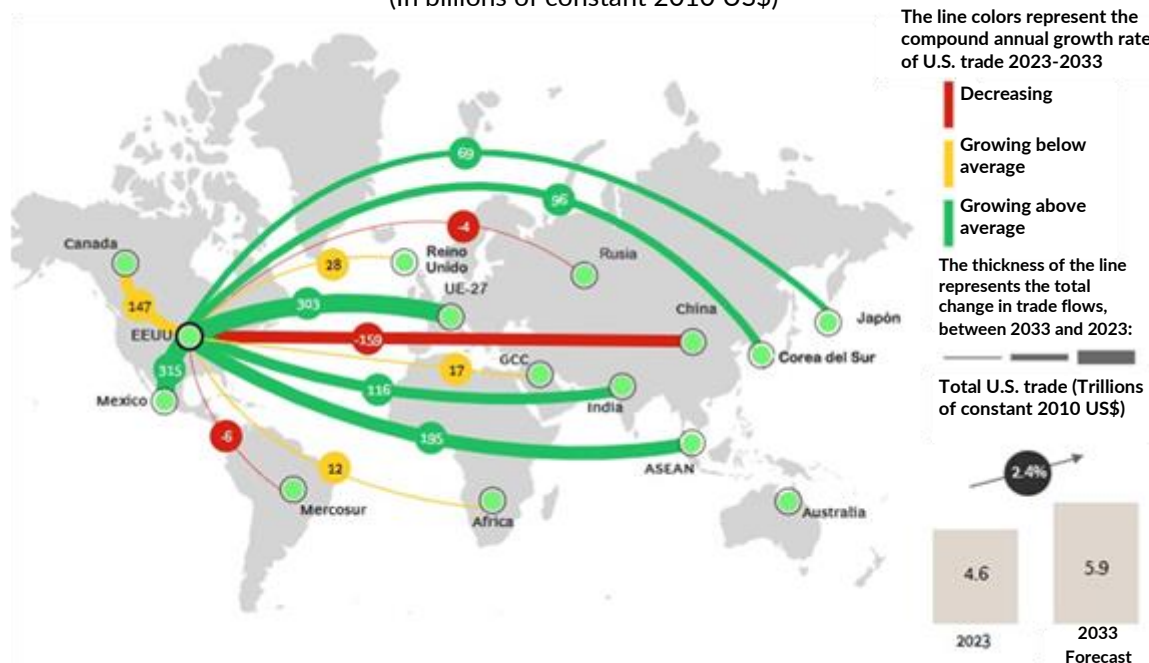
Looking out to 2033, BCG projects that U.S.-Mexico trade will grow by US\$315 billion, representing an annual increase of 4%. Trade between the U.S. and Canada is also expected to increase by US\$147 billion, in part because many companies are shifting components of their supply chains within these markets (Figure 11). This strategy responds to the need to improve the resilience of supply chains

and the competitive advantages these countries offer in terms of geographic proximity, trade agreements, and lower production costs in Mexico (BCG, 2025; USITC, 2023).

However, progress in these dynamics is not without risk. Unforeseen changes in U.S. tariffs on imports from Mexico and Canada could alter both the volume and direction of trade flows. One such attempt was made very recently, but for now it has been abandoned. In addition, growing pressure from some U.S. industrial sectors to adopt protectionist policies would also slow the pace of trade integration in the region .

While China's trade with the U.S. and EU is slowing, it is growing strongly with much of the rest of the world. BCG projects that annual bilateral trade with the West will contract by US\$221 billion by 2033, representing an average annual decline of 1.2%. And that the US\$159 billion decline in annual U.S.-China trade could be more pronounced if the U.S. significantly increased tariffs on Chinese goods, something that would have already been accomplished, but then somewhat mediated.

Figure 11. Trade Flows between Nations and Regions
Change in merchandise trade from the U.S. in 2023 versus 2033
(In billions of constant 2010 US\$)



Sources: BCG Global Trade Model 2024; UN Comtrade; Oxford Economics; IHS Markit; World Trade Organization; BCG analysis.

Note: Floating exchange rates are used throughout the period. Bilateral trade with the Gulf Cooperation Council (GCC) does not include GCC hydrocarbon exports.

Taken from: Boston Consulting Group, -BCG (2024)

In contrast, those same estimates expect China's trade with the Global South to increase by US\$1.25 trillion by 2033, representing a compound annual growth rate of 5.9%. This shift will support China's geopolitical agenda of reducing its economic dependence on developed countries, led by the U.S. and the European Union (EU), while also strengthening ties with major emerging markets (Figure 12). This strategy will be reinforced by China's strong investment in the Global South, through infrastructure programs such as the Belt and Silk Road Initiative projects, and increased trade participation, which are opening up significant opportunities for Chinese companies in some of the world's fastest-growing markets. China's trade with ASEAN nations is expected to account for half of that growth.

In the case of the EU, recent trade policies, such as tariffs on electric vehicle imports, are expected to limit trade growth with China over the next ten years. Meanwhile, trade with Russia will continue to contract due to the sanctions imposed, with a projected decline of up to US\$106 billion in 2033, assuming the current restrictive measures remain in place. At the same time, EU global trade is expected to continue growing at an average rate of 2% per year, with the U.S. consolidating its position as one of its main trading partners. Bilateral trade is projected to increase by US\$303 billion over the next decade, driven primarily by increased EU imports of liquefied natural gas (LNG).

Moreover, EU trade with emerging markets such as India, Turkey, and Africa is also expected to experience significant growth. In particular, North African countries are becoming an attractive destination for the offshoring of manufacturing supply chains, due to their geographic proximity, competitive costs, and abundance of resources. Africa is also emerging as a key supplier of energy and essential minerals to support the green transition in the EU and other regions. On the other hand, the trade agreement between the EU and Mercosur, if implemented, could mark a turning point in economic relations between Europe and South America, facilitating mutual access to new markets and strengthening exports.

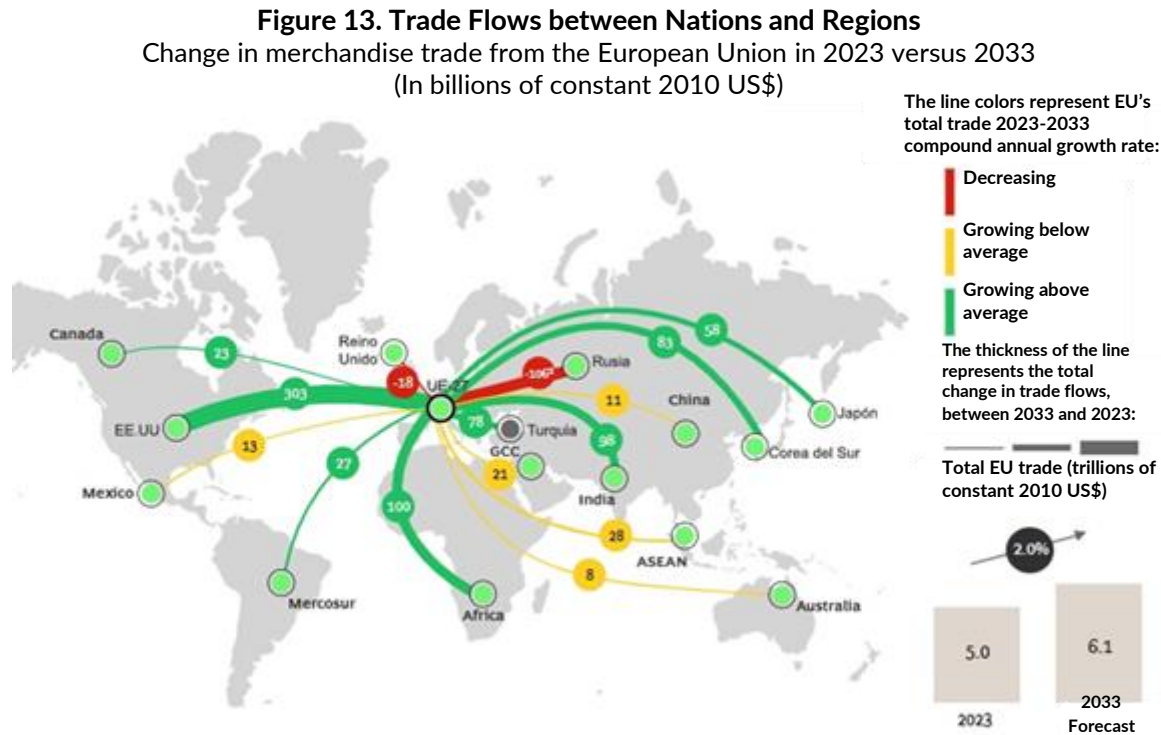
Figure 12. Trade Flows between Nations and Regions
Change in merchandise trade from China in 2023 versus 2033
(In billions of constant 2010 US\$)



Sources: BCG Global Trade Model 2024; UN Comtrade; Oxford Economics; IHS Markit; World Trade Organization; BCG analysis.
Taken from: Boston Consulting Group, BCG (2024)

The rise of the Global South is transforming the structure of international trade. This group, made up of 133 developing countries, currently represents 18% of global GDP, 62% of the global population, and 30% of international trade. Its growing economic weight is shaping a multipolar trading system. Initiatives reflecting this shift include BRICS+, the African Continental Free Trade Area, ASEAN, Mercosur, and the Pacific Alliance. At the same time, projects such as the Belt and Silk Road Initiative and the relocation of production capacity to countries with low labor costs are fostering development and economic integration in these regions, laying the foundation for a new global trade dynamic.

Trade in the Global South is expected to undergo key changes over the next decade. Although trade with China will continue to grow, its pace will slow as local manufacturing capabilities mature. In contrast, trade among nations of the Global South will accelerate to 3.8% per year, while trade between the South and the North will reach an annual rate of 3.7%. Here, LAC stands out with the recent trade agreement between the EU and Mercosur, following lengthy negotiations (Figure 13).



Sources: BCG Global Trade Model 2024; UN Comtrade; Oxford Economics; IHS Markit; World Trade Organization; BCG analysis
Taken from: Boston Consulting Group, BCG (2024)

The profile of global trade is also evolving. Emerging economies are diversifying their trade into more complex sectors, such as automotive manufacturing, chemicals, electronics, and fashion, moving beyond their traditional focus on agricultural products, minerals, and energy. This shift reflects the move toward greater industrial and trade sophistication in the Global South.

Table 3. The State of Freight Transport: From Tariffs to 2025 Trends and their Impact on LAC

The International Maritime Organization (IMO) has imposed stricter regulations that make shipping companies more expensive to operate due to the need for investment in clean technologies and alternative fuels. The decarbonization of maritime transport is a goal for 2050, which requires shipping companies to adapt to new demands and additional costs. In addition, the EU Emissions Trading System (ETS) will increase the proportion of emissions payable to 70% by 2025, triggering additional surcharges. Automation and AI optimize routes and improve operational efficiency, which could offset some cost increases. However, cybersecurity risks have increased, generating additional costs for insurance and protection measures.

The rise of e-commerce is expected to increase demand for maritime transport, which could further impact space availability and rates. According to the Shanghai Container Freight Index (SCFI), rates have increased significantly compared to 2023. Specifically, there has been a 255% increase to Europe, a 245% increase within Asia, a 147% increase to the US West Coast, a 128% increase to Oceania, and a 96% increase to South America (Forceget, 2024). This increase in rates reflects market volatility and pressure on shipping companies' operational capacity.

Furthermore, the idle container ship fleet has reached a historic low of less than 1%, with the largest vessels operating at full capacity. Annual dry container production could reach 7.3 million TEU⁴, with year-on-year growth of 6.5%. In Europe, rates have decreased due to lower demand during peak season and competition among shipping companies. On the Asia-US West Coast route, despite the anticipation of imports due to possible new tariffs, rates have shown slight decreases. Meanwhile, in South America, rates remain significantly higher than in 2023, with a 96% year-on-year increase, due to growing demand, high operating costs, and environmental regulations that are raising the cost of maritime transport.

The implementation of the stricter IMO 2024 environmental regulations has forced many carriers to upgrade their fleet technologies, resulting in increased freight rates. Furthermore, the EU Emissions Trading System will generate additional surcharges in 2025 due to the increase in the proportion of emissions subject to regulation. Regarding schedule reliability, it has improved slightly worldwide, reaching 60%, although congestion and delays at ports persist. Shipping companies' strategies have included adjustments to port rotations and improvements in planning, but logistical issues continue to plague the supply chain.

In 2025, maritime transport will continue to face a challenging environment, influenced by protectionist policies, environmental regulations, technological innovation, and logistical disruptions. Companies must prepare for higher costs and potential new supply chain disruptions, while also seeking strategies to optimize their operations and adapt to new environmental and technological regulations.

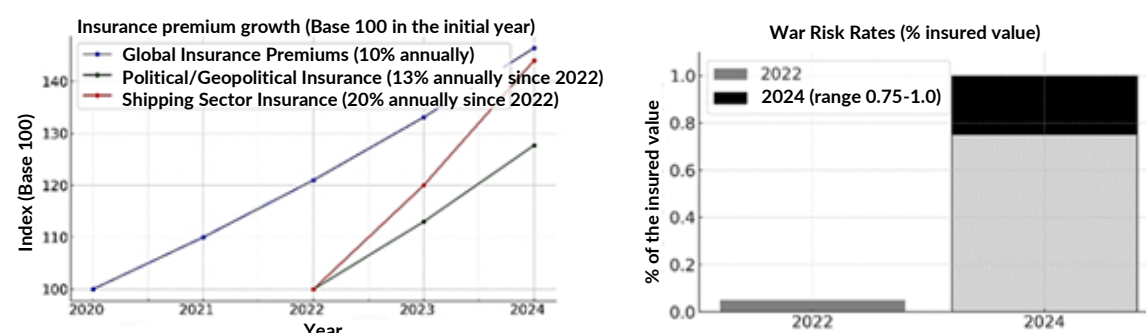
As globalization and digitalization continue to transform international trade, companies' strategies will need to focus on optimizing operational efficiency, reducing dependence on traditional routes, and strengthening cybersecurity to ensure the continuity of their operations. With an increasingly uncertain economic outlook, business decisions regarding maritime transport will be key to maintaining competitiveness in global markets. The growth of e-commerce and evolving consumer patterns will also play a key role in the dynamics of maritime transport, forcing companies to adapt quickly to a constantly changing environment.

⁴ A TEU is equivalent to a 20-foot-long container (approximately 6.1 meters).

Table 4. Insurance and Geopolitics: Impact on the Global Economy

Various factors have led to a realignment of the global geopolitical and economic environment, directly affecting the insurance industry. Since its primary function is to mitigate risks occasionally through financial mechanisms, the sector is not designed to address structural challenges such as international conflicts or economic sanctions⁵. However, the damage caused by geopolitical tensions is often difficult to measure, predict, or share with other actors, as it is targeted at specific objectives. Faced with this uncertainty, many insurers have opted to increase their premiums in various economic sectors.

The increase in risk perceptions has also influenced the rise in insurance costs. A clear example is the impact of the conflict in the Red Sea, where the war in Yemen has sharply increased insurance costs for maritime transport since October 2023. Shipping companies have opted for longer routes, such as the Cape of Good Hope (located at the southern tip of Africa), which entails additional transit times and logistics costs exceeding one million dollars. This price increase has hurt Asian exporters, such as India, whose sales to the U.S. and the EU fell in 2023-2024 due to the risk premium significantly increasing operating costs. To counter these impacts, initiatives such as the India-Middle East-Europe Economic Corridor (IMEC)⁶, the International North-South Transport Corridor (INSTC)⁷, the Middle Corridor⁸ and the Partnership for Global Infrastructure and Investment (PGI)⁹ have been promoted, seeking to reduce dependence on routes exposed to high insurance premiums.



Overall, the insurance sector has experienced significant cost growth. Since 2020, global insurance premiums have increased by 10% annually, while political and geopolitical risk insurance has increased by 13% between 2022 and 2024. In the shipping sector, premiums grew by 20% over the same period, and war risk rates rose from 0.05% to 0.75%-1% of the insured value of vessels. Since 90% of global trade depends on maritime transport, these increases have broad effects on the global economy. Other industries, such as automotive and cybersecurity, have also experienced increases in insurance costs as a result of geopolitical volatility and international conflicts.

⁵ Insurers and reinsurers calculate their premiums based on three key principles: affordability (the ability to quantify losses and payments), randomness (unpredictable events beyond the control of the insured parties), and mutuality (risk sharing among multiple stakeholders).

⁶ It is an economic corridor announced in 2023 that seeks to connect India with Europe through the Middle East, passing through countries such as Saudi Arabia and the United Arab Emirates, with the aim of streamlining trade and reducing dependence on maritime routes affected by conflicts such as those in the Red Sea.

⁷ It is a multimodal corridor linking India, Iran, Russia, Azerbaijan, and Northern Europe via rail, sea, and land routes, with the aim of reducing trade times and costs between Asia and Europe.

⁸ Also known as the Trans-Caspian Corridor, it is a trade route linking China with Europe via Central Asia, the Caspian Sea, the Caucasus, and Turkey, offering an alternative to the Chinese Silk Road and avoiding transit through Russia.

⁹ It is a G7 initiative launched in 2022 to counter the Belt and Silk Road Initiative, with the goal of mobilizing US\$600 billion in global infrastructure by 2027, prioritizing investments in clean energy, digital infrastructure, health, and transportation in developing economies.

Table 5. Latin America: Nearshoring, the New Global Race to attract Industry

Starting in 2024, the global manufacturing industry was expected to undergo a significant transformation driven by the growing trend toward nearshoring—the relocation of production facilities to regions closer to consumer markets, shifting operations from countries like China to the Americas and Southeast Asia. According to the World Bank and the Bank for International Settlements (BIS), the optimal period for this relocation process is 10 to 12 years, after which this logistical restructuring is expected to be fully consolidated.

According to McKinsey, less than 2% of global supply chains moved across countries in the 25 years prior to the pandemic, but companies are now reconsidering their global footprint. Mexico, due to its strategic location and trade agreements, is positioned as a major beneficiary. Centro de Estudios Tecnológico de Monterrey reports more than 350 new industrial projects linked to nearshoring in 2023, with sectors such as aerospace, technology, and medical devices, marking a step forward from its traditional textile focus.

However, nearshoring extends beyond Mexico's borders. Countries such as Costa Rica, Colombia, and Brazil have also been attracting capital thanks to their strategic location and skilled workforce. While BYD, the Chinese electric vehicle manufacturer, is expanding its presence in Brazil, other sectors such as energy, agriculture and mining are also benefiting from this investment flow. Despite this, political instability limits the potential of some LAC countries, contrasting with the success of Southeast Asia, where Vietnam and Thailand capitalize on their manufacturing infrastructure and competitive labor costs, attracting 33% of the global relocation of companies from China, compared to 7.5% captured by Mexico (El Economista, 2024).

Integration into regional value chains has significantly benefited Southeast Asia. An example of this is the Regional Comprehensive Economic Partnership (RCEP), which has strengthened intraregional trade, reaching 63% of total trade in the region—that is, 63 cents of every dollar traded remains within Asia (O'Neil, 2023). In contrast, LAC face significant challenges in this area. According to the IDB (2025), the share of intraregional trade in total goods exports was only 15.2%. Furthermore, the region retains less than 10% of foreign direct investment, indicating a low level of regional economic and financial integration.

To capitalize on the opportunities offered by nearshoring, regions must overcome key challenges: training their workforce to meet the demands of advanced industries, strengthening infrastructure, and optimizing regulatory frameworks. The relocation trend will continue into 2024 and beyond, but success will depend on creating a competitive and resilient environment.

2.2. Investment map redefined by global tensions

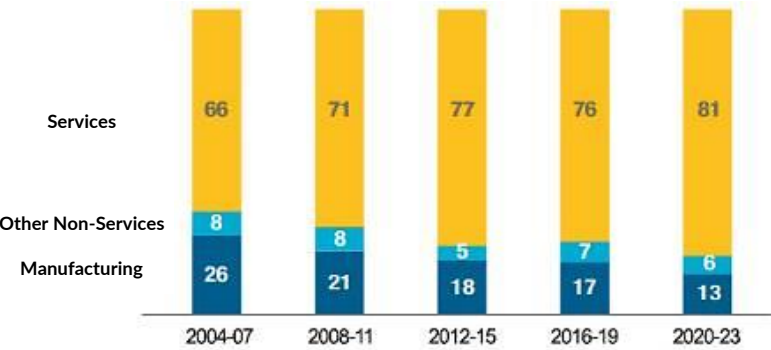
This section takes into account previous research, including UNCTAD's World Investment Reports (2019, 2021, and 2024), which provide valuable data on the evolution of FDI. The analysis focuses on how various factors interact and affect the direction of FDI in this new global environment.

FDI is intrinsically linked to transformations in global trade, and given this interconnectedness, it is crucial to understand how emerging trends are reshaping the investment landscape. As the world faces significant challenges, such as trade tensions and the quest for greater sustainability, there is a need to develop a **comprehensive framework—an analytical tool that combines different dimensions**—economic, environmental, geopolitical, and technological—to identify, interpret, and anticipate key patterns and transformations in global FDI flows.

Over the past few decades, foreign direct investment has been driven by globalization. However, since 2010, although the global economy and trade have continued to grow, FDI has not increased at the same pace. This reflects greater investor caution in a context of changing global production chains, rising trade barriers, and growing tensions between major powers. This slowdown in investment also reveals a major weakness: many developing economies are overly dependent on these capital flows, and their growth is compromised when these investments fail to arrive.

In the 2000s, FDI grew at rates similar to those of trade and GDP, with compound annual growth rates of 8%, 7%, and 4%, respectively. However, in the 2010s, the situation changed dramatically. FDI stagnated completely, showing a compound annual growth rate of almost 0%, while trade and GDP grew more moderately, at rates of 3%, respectively. Already in the 2020s, FDI showed a slight recovery, with compound annual growth rate of 2%, although this is still much lower compared to previous decades, and trade and GDP grew at rates of 8% and 5%, respectively. The general stagnation of FDI hides sectoral differences.

Figure 14. Sectoral Distribution of New Cross-Border Projects
(%)

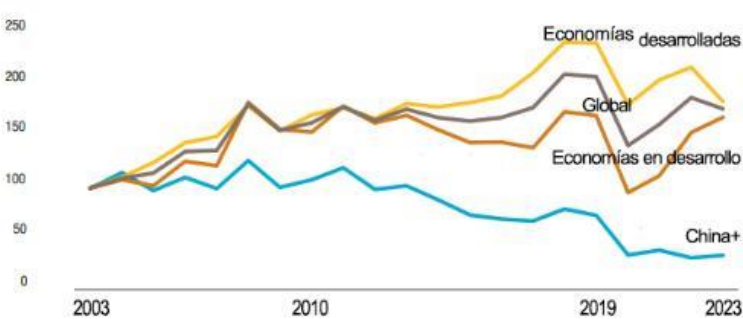


Source: UNCTAD (2024b)

Since the mid-2000s, the proportion of services in total greenfield projects has increased. This includes investments not only in typical service industries (banking or consulting), but also in services associated with manufacturing industries, such as design, logistics, or technical support (UNCTAD, 2024b). This shift shows that FDI is focusing more on value-creating activities at the beginning or end of the production process—such as research or commercialization—rather than focusing solely on production itself. This trend is seen in both developed and developing economies and is making the line between industry and services increasingly blurred (Figure 14).

In this scenario, China’s participation in new cross-border projects has steadily declined over the past two decades, especially following the pandemic. Although multinational interest in China has waned, the country has maintained its global prominence by adapting its production model toward national schemes (Figure 15). However, international tensions and the trade war have accentuated the fragmentation of traditional investment patterns, generating uncertainty and restricting diversification opportunities for many economies.

Figure 15. Cross-Border Investments in New Projects
(number of projects, index 2003=100)



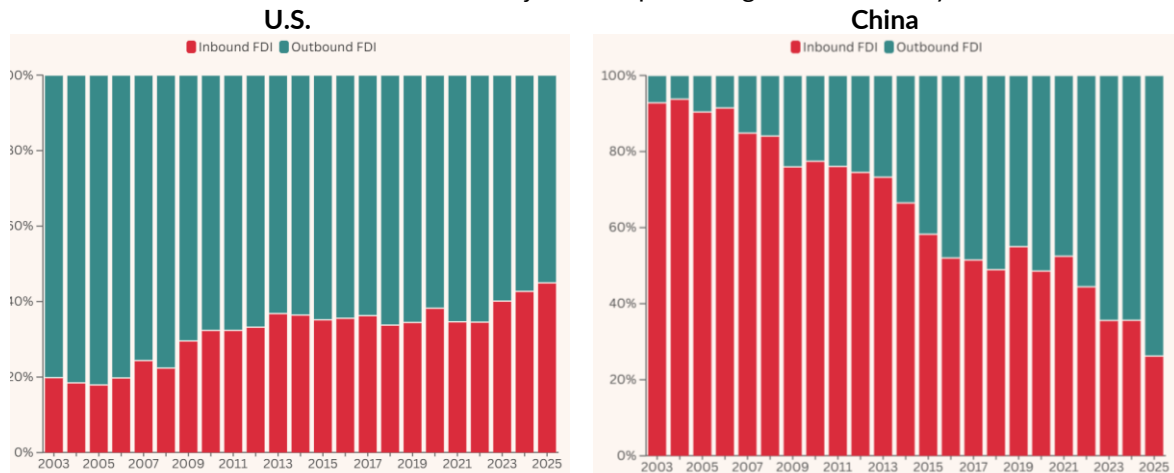
Source: UNCTAD (2024b)

Table 6. U.S. and China: New Directions in FDI

FDI is undergoing a significant structural change under the new U.S. administration, which has reduced its traditional role as the dominant issuer of international capital. In January and February 2025, the ratio of inbound to outbound FDI reached a record high of 45%, surpassing the 42.7% recorded for the whole of 2024. This shift reveals that multinationals are relocating their operations to the U.S. not for reasons of efficiency or profitability, but as a mitigation strategy against new trade barriers. The U.S. has abandoned the approach based on tax and technology incentives (such as the Inflation Reduction Act and the Chips and Science Act) and has adopted an aggressive industrial policy based on punitive tariffs and a narrative that links economic security with national security (FDI Intelligence 2025).

FDI Tracking: U.S. versus China

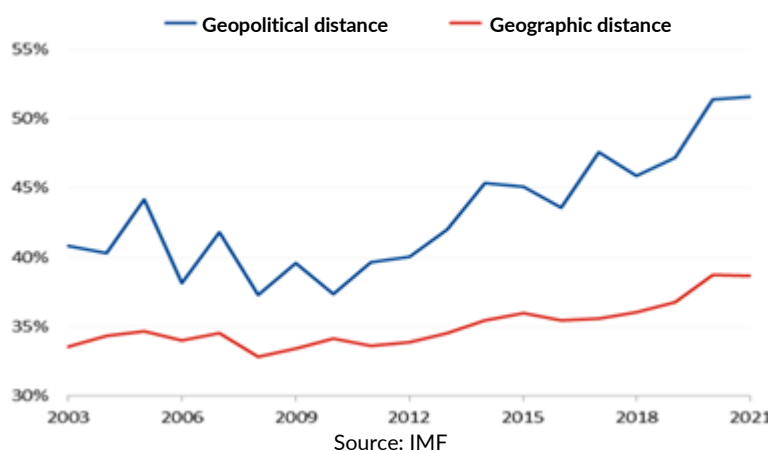
Inbound and Outbound FDI Projects as a percentage of the Country's Total



Source: FDI Intelligence (2025)

In contrast, China has intensified its role as a net capital exporter. Its ratio of inbound to outbound FDI fell to 26%, consolidating its role as a global issuer. This repositioning allows it to fill the gap left by the U.S., increasing its financial influence and becoming an alternative for countries dependent on U.S. capital. Despite the relocation, high production costs in the U.S. are seen as an obstacle. Internationally, this shift in FDI could translate into a reduction in U.S. capital flows to LAC, while China's presence grows as an alternative source of financing.

Figure 16. FDI Flows to Countries with Geographic Proximity and Geopolitical Affinity
Share of total FDI



According to the IMF (2022), over the past ten years, the share of FDI flows among economies with geopolitical affinity has steadily grown, even more so than the share going to countries with geographic proximity; this suggests that the geographic location of FDI is increasingly driven by

geopolitical preferences (Figure 16). Although there has been a boom in investments related to renewable energy and sustainable technologies, these have not offset the stagnation in key industrial sectors. This gap has also reduced FDI flows to more vulnerable developing countries, deepening their exclusion and concentrating investment in advanced and emerging economies. Extreme weather events, which are becoming increasingly frequent, also influence location strategies.

The geography of investment is likely to remain volatile, but companies should also look for ways to further mitigate risk based on adaptive strategies. For LAC, which has so many opportunities to offer investors, the emphasis is on the need to work on an agenda of factors that make the region an even more attractive option for FDI (CAF, 2023).

2.3. Trade Agreements and Alliances to Boost Trade

The multilateral trading system, primarily represented by the World Trade Organization (WTO), is facing a growing erosion of its capacity for arbitration and negotiation due to disputes among economic powers and a lack of consensus among its members (Payosova et al, 2018). Its long-term challenge—how to achieve smooth trade flows in the context of technological revolution in a multipolar world of stakeholders—faces many obstacles. This situation has led to an increase in bilateral and regional agreements as alternatives for promoting trade and as ways to integrate into global value chains in light of the difficulties facing multilateralism.

In this context, the new U.S. administration could exacerbate this fragmentation by prioritizing bilateral agreements that serve its immediate objectives, further weakening multilateral institutions. This would require other economies to adjust their external policies to adapt to a more uncertain and less cooperative environment.

The U.S.-China rivalry remains a central axis shaping the landscape of international trade. Sanctions, tariffs, and technological restrictions have fragmented supply chains and forced countries to choose sides in a new kind of “Economic Cold War.” Within this framework, alliances such as China’s Belt and Road Initiative (BRI) and the US-led Indo-Pacific Prosperity Economic Framework (IPEF) seek to consolidate areas of commercial influence (Figure 17).

Given this scenario, countries face the challenge of balancing their relations with both powers to minimize risks and maximize benefits. For example, Southeast Asia, led by ASEAN, has adopted the strategy of joining both the China-led Regional Comprehensive Economic Partnership (RCEP)¹⁰, and the more diversified Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).¹¹ This type of dual integration allows nations to maintain access to multiple markets and protect themselves against potential disruptions.

In a context of economic uncertainty and fragmentation, trade agreements have evolved to address not only market access but also key issues such as sustainability, digitalization, and social inclusion. The EU-Mercosur and Japan-EU agreements include provisions on climate change, labor rights, and e-commerce, new priorities for the global economy. The commercial potential of the EU-Mercosur agreement extends to the energy dimension, including the opening of markets for raw materials necessary for the transition and biofuels, but also greater bi-regional integration of decarbonized industrial value chains and renewable energy (Escribano, 2025)¹².

¹⁰ Free trade agreement signed on November 15, 2020, by 15 countries in the Asia-Pacific region. Members include the countries of the Association of Southeast Asian Nations (ASEAN)—Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam—and China, Japan, South Korea, Australia, and New Zealand.

¹¹ It is the successor agreement to the TPP, following the voluntary withdrawal of the United States, which is why it is also known as TPP-11.

¹² The agreement incorporates strict socio-environmental sustainability criteria and considers compliance with the Paris Agreement. At the same time, Mercosur countries have secured a rebalancing mechanism that protects them from measures such as the EU’s Carbon Border Adjustment Mechanism (CBAM).

Figure 17. Indo-Pacific Strategy vs BRI



[1Source: www.bilaterals.org

(*) General Agreement on the Security of Military Information South Korea

Fragmentation has also driven the creation of regional supply chain-oriented agreements, such as the IPEF, which prioritize economic security and critical infrastructure development. In LAC, initiatives such as the Pacific Alliance seek to consolidate a competitive trade bloc in the face of global tensions and leverage proximity to key markets such as the United States.

The new U.S. administration represents a dramatic shift in global trade policies, with a protectionist approach that includes renegotiating or withdrawing from existing trade agreements, imposing additional tariffs, and increasing pressure on trading partners to balance bilateral trade balances. It could also open up opportunities for other economies, such as the EU, China, or emerging regional blocs, to lead the global agenda.

In this regard, it is recommended that countries be prepared to adapt to more aggressive trade policies and adopt market diversification strategies, where South-South cooperation and the strengthening of regional alliances will be key to countering potential disruptions in global trade.

The digital age has also influenced the structure of trade agreements, with a greater emphasis on e-commerce, data protection, and technological interoperability. Agreements such as the Digital Economy Partnership Agreement (DEPA) between Chile, New Zealand, and Singapore highlight the importance of the digital economy as a driver of growth and underscore how nations can collaborate to regulate cross-border digital flows.

The adoption of disruptive technologies is also transforming trade dispute resolution mechanisms and trade facilitation. Blockchain, artificial intelligence (AI), and advanced data analytics systems are being incorporated into agreements to increase transparency and efficiency in international trade transactions.

2.4. United States Trade Policy and its Regional Effect

One of the key elements of the recent shift in U.S. trade policy is the “America First” Memorandum, which outlined a new approach based on the strategic use of tariffs. The central objective has been to protect local industry, reduce dependence on foreign countries, and respond to perceived risks to national security. This document marks a break with the multilateralist tradition that characterized previous decades.

The questions regarding the sustainability of this course are whether these measures will be maintained or modified over time. The volatility in trade decisions has generated global uncertainty, forcing many transnational companies to review their investment plans, explore new logistics routes, and anticipate possible retaliation.

The turning point came on March 4, when the U.S. imposed new tariffs on key imports from Canada, Mexico, and China. The decisions included a 25% levy on steel and aluminum, an increase in tariffs on Chinese products up to 20%, and an additional 25% levy on automobiles and auto parts. Subsequently, reciprocal tariffs were established for some 60 countries, imposing a minimum 10% tariff on all imports and greater sanctions on countries with significant trade imbalances with the U.S.

China was the country most affected by the new tariff measures, facing tariffs of up to 84%, which could rise to 245% when cumulative provisions are considered. Southeast Asian countries were also subject to high tariffs, unlike LAC, which mostly remained in the lowest-tax categories.

Mexico and Canada, while not entirely exempt, are in a better position due to the USMCA trade agreement. Exports that comply with the rules of origin are exempt, while those that do not will face a 12% tariff after the expiration of measures adopted under the International Emergency Economic Powers Act (IEEPA). However, the 25% automotive tariffs and existing tariffs on steel and aluminum remain in place, with significant impacts on their respective industries.

However, this policy has its negative side effects. First, there is a high risk of domestic inflation in the U.S. due to rising prices for imported goods. Second, affected countries have responded with counter-tariffs: China imposed an additional 84% levy on US products, Canada implemented 25% ad valorem tariffs on non-USMCA-compliant vehicles, and the EU expressed its willingness to retaliate. This tariff escalation has sparked fears of a global recession and has had an immediate impact on financial markets and global logistics, reducing ocean and air cargo volumes, key indicators of trade dynamism.

- **Implications for Latin America and the Caribbean**

At first glance, LAC—with the exception of Mexico—was moderately affected. Countries such as Argentina, Brazil, Colombia, Chile, Ecuador, Guatemala, Honduras, Peru, the Dominican Republic, Costa Rica, and the Caribbean face the minimum rate of 10%. However, the risk lies not only in the level of the tariff, but in the systemic context that this policy generates: an increase in protectionism and a possible reconfiguration of global trade and investment flows.

According to UNCTAD (2025), developing countries and small island developing states—despite their low contribution to the U.S. trade deficit—are not immune to shocks, and face a perfect storm of adverse external conditions, high debt levels, and internal instability. For LAC, the risks are primarily reflected in exports: LAC relies heavily on the sale of commodities and light manufacturing, sectors sensitive to price and demand shocks.

Brazil could benefit from a “trade diversion” in its favor, given the high tariffs applied to other exporters. The Brazilian agricultural-livestock sector—which already exports US\$12.1 billion to the U.S.—sees opportunities in segments such as pulp, meat, sugar, and ethanol, as well as other agricultural products to China. However, there is also a risk that offshored Chinese production will seek new markets in LAC, disrupting domestic competition and saturating sensitive niches.

In Argentina, the effects are mixed. Although products such as honey and lemons could be affected, wines and olive oil could gain relative competitiveness. The United States is Argentina’s second-largest export destination, with total sales of approximately US\$6.4 billion in 2024, more than a third of which corresponds to agricultural and agroindustrial products.

Colombia, the second-largest supplier of coffee to the U.S., recorded exports worth US\$3.65 billion, including flowers, bananas, and avocados. Peru, for its part, could benefit in the textile sector, due to the high tariffs applied to its Asian competitors, although a drop in international copper prices—its main export—would compromise its trade balance and the attraction of new mining investments.

Meanwhile, Ecuador sees opportunities for products such as bananas, shrimp, and cocoa, given the restrictions imposed on other countries. However, the exclusion of oil—the main export item—limits the net positive impact. In contrast, Venezuela and Nicaragua face higher tariffs (15% and 18%, respectively).

- **The Critical Minerals Opportunity**

In the context of the intensification of the trade war with the U.S., China has imposed restrictions on the export of rare earths as part of its response to U.S. tariffs. This decision significantly reduces the supply to the West of rare earths essential for the manufacture of weapons, advanced electronics, and a wide range of consumer goods.

Although China had long hinted at this possibility, the move further exacerbates tensions between the world’s two largest economies and leaves U.S. manufacturers vulnerable, forcing them to urgently seek new sources of supply for minerals critical to their production chains for decades.

This scenario has highlighted the urgent need to diversify the global sources of these strategic inputs. In this context, LAC emerges as a key region. With vast reserves of critical minerals and rare earths, countries such as Brazil, Chile, Peru, and Argentina are strategically positioned to meet this growing demand, consolidating their role as suppliers in the global market for essential minerals.

The widespread increase in tariffs and the protectionist response of other economic powers not only affects the flow of goods and services, but also puts pressure on foreign exchange markets. In this context, the lessons of the recent past take on renewed relevance. The 2018-2019 trade war demonstrated that tariff disputes tend to trigger aggressive monetary responses from major economies, either through direct foreign exchange interventions or through the strategic use of monetary policies. The experience of the Chinese renminbi and its controlled depreciation during that period demonstrated how countries can use the exchange rate as an economic policy tool to cushion the negative effects of tariffs and sustain their external competitiveness.

Today, with an international landscape marked by the resurgence of protectionism, the weakening of the dollar, and growing geoeconomic tensions, the possibility of a new currency war cannot be ruled out. LAC, whose economies are highly sensitive to capital flows and exchange rate volatility, could be affected by a scenario of competitive depreciations. The implications would be multiple: from inflationary pressures to difficulties in repaying external debt, to greater uncertainty for investments.

Table 7. LAC Reserves of Critical Minerals and Rare Earths

Argentina	Brazil	Chile	Peru
It is part of the “Lithium Triangle” along with Bolivia and Chile, and houses more than 20% of the world’s reserves. Projects are underway in the provinces to exploit these resources and meet the growing global demand for electric vehicle batteries and energy storage.	It has the second largest reserves of rare earths in the world, estimated at 21 million metric tons. However, its current production is limited, representing only 0.2% of world production. More recently, initiatives such as the Serra Verde project in Goiás have begun commercial production, with plans to reach annual production of 5,000 tons of rare earth oxides by 2026.	Known for its vast reserves of copper and lithium, it is also exploring the extraction of rare earths. It has launched initiatives to extract cobalt and rare earths from mine tailings, taking advantage of its nearly 800 tailings deposits. Recent studies indicate that its lithium reserves are 28% higher than previous estimates, further consolidating its position as a leader in lithium.	Known for its production of copper, silver, and zinc, it also has potential in critical minerals such as lithium and rare earths. Discoveries in regions have revealed the presence of neodymium, lanthanum, and cerium, among others. In addition, it holds 11% (IIMP, 2025) of global copper reserves, reinforcing its relevance in the essential minerals market.

Source: Investing news (2025) and Instituto de Ingenieros de Minas del Perú (IIMP) (2025)

Thus, the return of aggressive tariff policies not only contributes to the reconfiguration of global trade, but also affects the stability of the international monetary system. The potential shift from a trade war to a currency war represents a new front of vulnerability for emerging economies, and particularly for LAC.

CHAPTER III. CLIMATE SECURITY AND SUSTAINABILITY

This chapter explores how the increase in extreme weather events—such as heat waves, droughts, hurricanes, and floods—has had a devastating impact on infrastructure, biodiversity, and the well-being of millions of people in the region. Recent data and trend analysis show that climate insecurity is not only an environmental challenge, but also a cross-cutting phenomenon that affects food, water, health, economic, and social security.

It also analyzes how natural disasters have generated significant human, economic, and productive losses, exacerbating pre-existing inequalities, deepening structural vulnerability, and highlighting the urgency of closing the growing climate finance gap to enable investments in mitigation and adaptation. It also examines the serious consequences that inaction could have, such as irreversible ecosystem degradation.

3.1. Climate Insecurity in Latin America and the Caribbean: A Growing Threat

Climate insecurity is one of the most pressing issues facing LAC, and its impact is growing rapidly. This phenomenon not only puts the lives and well-being of populations at risk, but also threatens the economic stability of the region. LAC’s vulnerability to climate change is quite high, and this has generated a sense of insecurity due to the inability of local economies to adapt to the changes taking place.

While 2023 was claimed to be the warmest year in recent decades, especially for our region, with an increase of 0.82°C compared to the 1991-2020 average and 1.39°C compared to 1961-1990, this increase was particularly marked due to the El Niño phenomenon (Table 8). However, 2024 surpassed all previous records, becoming the warmest year on record globally, with average temperatures exceeding pre-industrial levels by approximately 1.55°C. This increase was accompanied by extreme events such as heat waves, floods, cyclones, and droughts. Worryingly, projections indicate that peak temperatures have not yet been reached, jeopardizing the Paris Agreement’s goal of keeping warming below 1.5°C, making it increasingly difficult to avoid catastrophic climate impacts.

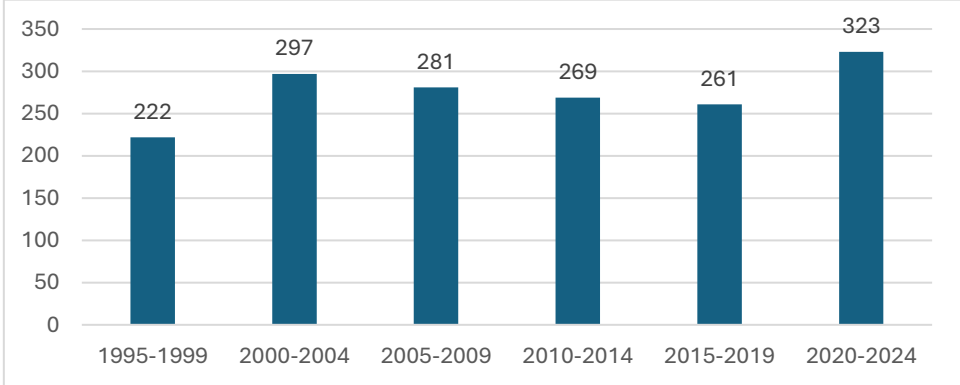
Table 8. 2023 Temperature Classification (1900-2023) and Anomalies for LAC
(°C, difference with the averages for 1991-2020 and 1961-1990)

Subregion/Region	2023 Temperature Classification	Anomaly (°C) compared to 1991-2020	Anomaly (°C) compared to 1961-1990
Mexico	Warmest (1st place)	0.88 [0.81–1.06]	1.58 [1.24–1.83]
Central America	Warmest (1st place)	0.85 [0.67–0.97]	1.31 [1.16–1.54]
The Caribbean	Warmest (1st place)	0.71 [0.60–0.79]	1.21 [0.93–1.42]
South America	Warmest (1st place)	0.81 [0.72–0.97]	1.37 [1.17–1.62]
LAC (Average)	Warmest (1st place)	0.82 [0.75–0.96]	1.39 [1.24–1.62]

Source: [State of the Climate in Latin America and the Caribbean 2023](#) WMO-No. 1351. Note: The data come from six data sets used in this evaluation: Berkeley Earth, ERA5, GISTEMP, HadCRUT5, JRA-55 and NOAA GlobalTemp. Five data sets were used for the assessment relating to the 1961-1990 period. For more details about the data sets, see the “Temperature” section in Methods and Data Sets.

According to the ECLAC database, the region experienced 323 natural disasters between 2020 and 2024. This figure represents a 23% increase compared to the 2015-2019 period, reflecting the region’s growing vulnerability to extreme events (Figure 18). Factors such as climate change, increased adverse weather events, and pressure on ecosystems have contributed to this trend. Moreover, the impact of these disasters has been significant in terms of human losses, damage to infrastructure, and disruptions to local economies, highlighting the need to strengthen mitigation and adaptation strategies in LAC countries.

Figure 18. Number of natural disasters in LAC, 1995-2024



Taken from: [Statista \(2024\)](#)

Extreme weather events—floods in Colombia and fires in South America—have wreaked havoc, highlighting the urgency of drastic and effective measures to meet the commitments of the Paris Agreement and avoid harsher impacts in the future. In 2024, the Brazilian Amazon saw a 45.7% reduction in deforestation between August 2023 and July 2024.¹³ And fires nearly doubled, reaching more than 22,000 hotspots in the first half of the year, the highest number since 2005. This record increase in droughts is attributed to climate change, which increases forest flammability and impacts biodiversity, the economy, and public health.

¹³ <https://elpais.com/america-futura/2024-10-27/mas-incendios-y-menos-deforestacion-que-pasa-en-la-amazonia-brasilena.html>

3.2. Socioeconomic Impact of Climate Insecurity

Climate insecurity is not just an environmental problem: it has a cross-cutting impact on food, water, economic, health, and social security. Reduced agricultural productivity, scarcity of drinking water, increased disease and forced displacement are some of the already observable effects.

Although LAC has managed to reduce its food insecurity rate below the world average for the first time in a decade, the region still faces significant challenges, particularly with malnutrition and childhood obesity. Extreme weather events have reduced agricultural productivity and increased food prices, making it difficult to access healthy diets. For example, by 2024, more than 420,000 children in Brazil, Colombia, and Peru will have been affected by a severe drought in the Amazon, which brought river levels to their lowest point in 120 years¹⁴. This situation has limited access to food, drinking water, healthcare, and schools, increasing malnutrition and school dropout rates, especially among children under five. Similarly, in 2023, it affected 76% of Mexico, impacting both agriculture and livestock, two key pillars of the country's economy. At the Panama Canal, low water levels limited ship traffic, directly affecting international trade. In the Amazon region, low water levels in the Negro River and high temperatures in Lake Tefé negatively impacted biodiversity, affecting local economies that depend on these resources.

Moreover, these extreme events not only endanger human life, but also deteriorate local economic conditions, reducing labor productivity, increasing public health costs, and displacing vulnerable populations. Climate change has increased forced displacement, particularly affecting poor regions in the Southern Hemisphere, as in the case of heavy rains in the state of Rio Grande do Sul, Brazil, in 2023, which caused severe flooding and landslides, forcing the displacement of 20,978 people and leaving 4,904 residents homeless. Furthermore, heat waves, on average between 2000 and 2019, caused 36,695 additional deaths annually in LAC¹⁵. Highlighting the urgency of taking more drastic and effective measures to meet the commitments of the Paris Agreement and avoid more catastrophic impacts in the future that threaten natural resources, biodiversity, and the livelihoods of millions of people, especially those communities that directly depend on ecosystems for their survival.

Climate insecurity has a direct economic impact. Between 1998 and 2020, climate-related disasters in the region caused 312,000 deaths and affected more than 277 million people¹⁶. Floods are one of the most frequent natural phenomena in LAC, with nearly 600 recorded between 2000 and 2019¹⁷. Moreover, the economic costs resulting from these events are high, representing a growing percentage of the GDP of several countries in the region. In 2023, LAC faced 67 climate, weather, and hydrological events, according to EM-DAT database from CRED. Of these, 77% were storms and floods, which were responsible for 69% of the 909 recorded deaths. Reported economic losses reached US\$21 billion, with storms as the leading cause (66%), highlighting the US\$12 billion in damage caused by Hurricane Otis. Floods and drought accounted for 16% and 14% of the losses, respectively¹⁸ (Figure 19). However, the actual impact is likely to be even greater due to underestimation of data and lack of information in some countries.

¹⁴ <https://elpais.com/america-futura/2024-02-08/el-principal-responsable-de-la-sequia-inedita-en-la-amazonia-fue-el-cambio-climatico-no-el-nino.html>

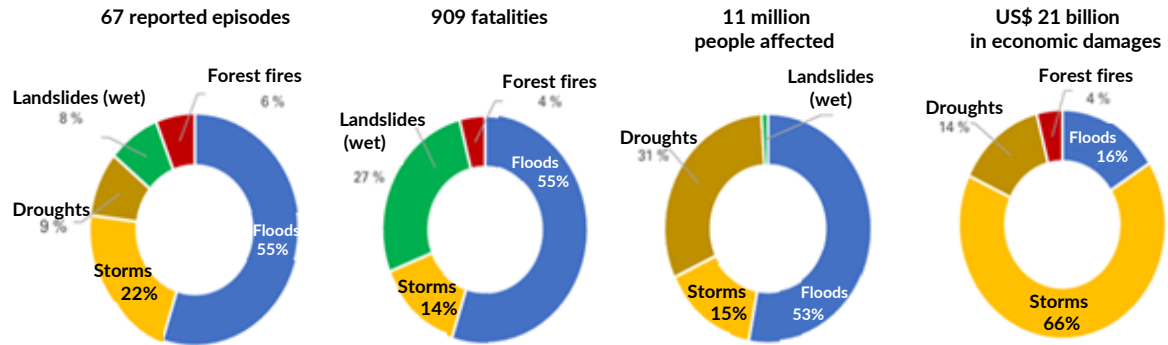
¹⁵ <https://library.wmo.int/records/item/68891-state-of-the-climate-in-latin-america-and-the-caribbean-2023>

¹⁶ <https://news.un.org/es/story/2021/08/1495582>

¹⁷ <https://es.statista.com/temas/10874/desastres-naturales-en-america-latina-y-el-caribe/#topicOverview>

¹⁸ https://library.wmo.int/records/item/68895-el-estado-del-clima-en-america-latina-y-el-caribe-2023?language_id=13&back=&offset=

Figure 19. Climate-Related Disasters in LAC, 2023



Note: Figures relating to the impact of some disasters may not be included due to lack of available data.

Source: EM-DAT database from CRED, accessed on February 21, 2024.

Taken from: [State of the Climate in Latin America and the Caribbean 2023](#)

The economic impact of climate insecurity is manifested in infrastructure losses, decreased agricultural productivity, increased mortality and heat-related illnesses, and the deterioration of sectors such as tourism and fishing. In 2023, in the city of Acapulco, which relies heavily on tourism, Hurricane Otis damaged 80% of the hotel infrastructure and 96% of other establishments. The El Niño phenomenon (rising sea temperatures) impacted fishing, reducing tuna catches in Ecuador by 30% and affecting anchovy fishing in Peru, both of which are crucial fisheries resources in terms of volume.

Therefore, it can be said that social and economic inequalities increase with climate insecurity in LAC. The most vulnerable communities, such as indigenous and rural communities, are the most affected by climate disasters and face greater difficulties in adapting due to a lack of resources, infrastructure, and access to technologies. These inequalities amplify the effects of climate change, creating a cycle of vulnerability that is difficult to break without significant intervention.

3.3. Projection: Consequences of Inaction

Without action, climate insecurity will progress toward a systemic crisis with severe and irreversible impacts on LAC. The destruction of critical ecosystems such as the Amazon, which has already lost 542,581 km² of forest between 2001 and 2020¹⁹, could reach a point of no return, i.e., 8.7% of the forested area observed at the beginning of the period. This not only diminishes biodiversity but also reduces LAC's capacity to mitigate the effects of climate change and contributes to the release of carbon into the atmosphere, further exacerbating climate insecurity. The loss of natural ecosystems has a direct impact on the economic activities that depend on them, such as agriculture, fishing, and tourism, generating economic consequences both locally and globally.

Coral reefs, which regulate Caribbean coastlines and support the blue economy, are threatened by overfishing, pollution, and ocean acidification. According to a World Bank study on the blue or marine economy, 75% of coral reefs in the Caribbean are in danger due to overfishing, pollution, and climate change²⁰. Their disappearance will affect food security and increase coastal vulnerability to storms and hurricanes, increasing the risk of humanitarian crises.

Cities will continue to be affected by extreme rainfall, and production systems will lose competitiveness. Climate models project temperature increases greater than 2°C by 2050, which could make some areas of the tropics uninhabitable, with impacts on agriculture, health, and safety.

¹⁹ https://infoamazonia.org/wp-content/uploads/2023/03/DEFORESTACION-AMAZONIA-2025_21032023.pdf

²⁰ <https://www.diariolasamericas.com/america-latina/el-75-los-arrecifes-coral-del-caribe-esta-riesgo-desaparecer-n4102955>

The cost of inaction is immense. The World Bank (2022) estimates that climate change could push 5.8 million people in LAC into extreme poverty by 2030.

Every extreme event entails immediate emergency and reconstruction costs, while investments in prevention and resilience can generate positive returns estimated at between two and ten times their initial value (Global Commission on Adaptation, 2019). Moreover, environmental degradation generates cascading effects that impact governance, social stability, and forced migration. Without a comprehensive strategy that combines mitigation, adaptation, ecosystem protection, and social equity, LAC will remain trapped in a cycle of chronic vulnerability. Climate insecurity will cease to be an external risk and will become a structural condition of its development.

3.4. From Risk to Potential: Latin America and the Climate Future

Despite these challenges, LAC has the opportunity to become a global leader in climate resilience and sustainability. Countries such as Costa Rica, Chile, Colombia, and Paraguay have taken valuable steps to mitigate the impact of climate change, such as implementing policies to decarbonize their economies and increase the use of renewable energy. Costa Rica, for example, generated around 92-95% of its electricity from renewable sources in 2023 and has managed to reverse deforestation rates in recent decades. Paraguay obtains 100% of its electricity from hydroelectric sources, thanks to dams such as Itaipu and Yacyretá, positioning it as a leader in clean energy generation in LAC. These efforts demonstrate that, while the challenges are significant, LAC also has the tools and capacity to leverage its natural wealth and megadiversity to address the effects and reduce economic insecurity resulting from climate change.

Initiatives such as forest restoration, strengthening early warning systems, and nature-based solutions can generate benefits both locally and globally. An example is the 20x20 Initiative²¹, led by LAC countries, which seeks to restore 50 million hectares of degraded land by 2030, contributing to carbon capture and biodiversity protection. LAC development banks have also launched key programs in this area. The Floresta Viva initiative²², run by Banco Nacional de Desenvolvimento Econômico e Social (BNDES), focuses on restoring biomes in Brazil, such as the Caatinga in Ceará, through investments that restore degraded ecosystems and promote environmental sustainability. For its part, the Green Coalition, made up of 20 development banks, seeks to mobilize up to US\$20 billion to finance sustainable productive activities in the Amazon²³, strengthening LAC's resilience to climate change.

However, despite these efforts, it is essential to adopt a comprehensive approach that combines climate policies with a sustainable development model. This involves ensuring social and economic equity, protecting ecosystems, and promoting adaptation to the impacts of climate change to mitigate the growing insecurity facing the region.

3.5. Climate Security Financing Gap

LAC faces a critical climate finance gap that threatens to undermine its efforts to transition toward resilient, low-carbon economies. Between 2023 and 2030, LAC will need to mobilize approximately US\$2.84 trillion, equivalent to an annual average of 4.9% of regional GDP, to meet its climate change mitigation and adaptation goals. However, in 2022 only 21% of the required finance was reached, which shows a profound financial insufficiency to face the magnitude of the climate challenge (ECLAC, 2024).

²¹ <https://initiative20x20.org/es/restaurando-los-paisajes-de-latinoamerica>

²² <https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/parcerias/floresta-viva>

²³ <https://green-coalition.com/es/coalicion-verde/>

This gap can be broken down into two main areas: mitigation and adaptation. Mitigation actions—such as decarbonizing transport, expanding renewable energy, and combating deforestation—require US\$179 billion annually (or 3.1% of regional GDP on average), of which only US\$46 billion was financed in 2022. The gap, therefore, amounts to US\$133 billion annually. Adaptation needs—water infrastructure, risk management, sanitation, biodiversity conservation—require US\$105 billion annually, but only US\$6 billion has been mobilized, creating a US\$99 billion gap. These figures show a structural deficit of US\$232 billion annually that compromises the region’s capacity to adapt to increasingly intense and frequent phenomena. Overall, the financing available in 2022 represented just 21% of the annual target needed, highlighting the vulnerability of LAC countries to the adverse impacts of climate change (Table 9).

Table 9. Regional Climate Finance Gap
(Billions of US\$)

	Annual regional needs, 2023-2030 ^a	Regional financing (2022)	Financing gap in 2022
Mitigation	179	46	133
Adaptation	105	6	99
Total	284	52	232

Source: Developed in-house with data obtained from ECLAC (2024). Note: ^aThe annual investments required to achieve the nationally determined contributions (NDCs) for mitigation and adaptation have been estimated (excluding multifocal).

This lack of financial resources is amplified by a set of structural vulnerabilities that limit the capacity of LAC countries to implement effective climate policies. Among the most significant is the strong dependence on extractive sectors such as mining, extensive agriculture, oil exploitation, and livestock farming. These activities, while key to tax revenue and exports, cause significant environmental damage, from deforestation in the Amazon to soil degradation caused by monocultures such as soybean plantations in Brazil and Argentina. Furthermore, this dependence makes LAC highly sensitive to fluctuations in international prices, reducing the fiscal space needed to transition toward sustainable production models.

This situation is compounded by **limited productive diversification**—more pronounced in some countries than others—where the economic structure is concentrated in natural resource-intensive sectors.²⁴ This rigidity limits the adoption of clean technologies and their integration into more sustainable and resilient value chains. Pressure on natural resources is also intensified by demographic factors and unsustainable consumption patterns, as evidenced by cases of overexploitation of shared watersheds (e.g., the Colorado River) or the expansion of the agricultural frontier into forested areas.

Another factor exacerbating the situation is the **deep socioeconomic inequality**, as LAC is one of the most unequal regions in the world. The poorest populations often live in areas exposed to natural hazards—favelas, hills, informal settlements—without access to basic services or the means to protect themselves or recover from a disaster. This creates a vicious cycle where climate change exacerbates poverty, and poverty limits climate resilience.

Likewise, the **shortage of resilient infrastructure** represents another significant challenge. Many LAC cities have outdated transportation, drainage, water, and energy systems that are unable to withstand extreme events. For example, Mexico City and Lima suffer from recurrent flooding due to inadequate stormwater networks, while in rural areas, the absence of irrigation and water treatment systems compromises food and health security. **Rapid and uncontrolled urbanization** has forced millions of people to live in high-risk areas, increasing exposure and reducing resilience.

²⁴ For example, Venezuela relies heavily on oil for its economy, while countries such as Bolivia and Peru rely on mining.

Weak governance and limited institutional capacity also impede progress in implementing climate commitments. Although many countries have submitted NDCs, their effective implementation is hampered by the scarcity of technical staff, monitoring tools, and appropriate regulatory frameworks. In many cases, there is a disconnect between national policies and local realities, resulting in fragmented and ineffective strategies. Furthermore, budget priorities are often dominated by debt servicing or addressing social crises, leaving little fiscal space for investments in green infrastructure.

Given this scenario, **closing the climate finance gap** is essential to ensuring sustainable and equitable development in the region. Without effective resource mobilization, countries will remain trapped in a cycle of chronic vulnerability, exposed to increasingly devastating and costly disasters. In the long term, the lack of investment in prevention and adaptation is not only more expensive, but also increases social and economic instability.

To overcome this challenge, urgent and strategic measures are required. Firstly, public and private capital must be mobilized through the use of innovative instruments such as green bonds, concessional financing, and public-private partnerships. Secondly, it is necessary to improve institutional efficiency and coordination, promoting genuine alignment between the national and subnational levels and strengthening the technical capacity to formulate, implement, and evaluate climate projects. Finally, progress must be made toward a comprehensive development approach that simultaneously considers social equity, environmental sustainability, and economic viability. Only through strong political commitment, accompanied by ambitious investments and adequate financial mechanisms, will it be possible to close this gap and build a more resilient region in the face of growing climate uncertainty.

3.6. Global and Regional Climate Initiatives

LAC has been a recipient and co-creator of multiple international and regional climate cooperation initiatives over the past decade. These actions reflect a growing understanding that climate change can only be effectively addressed through collaborative approaches, integrating financing, technical capacity, knowledge sharing, and alignment with the SDGs and the Paris Agreement.

Bilateral cooperation, driven by countries such as Germany, Japan, France, and the United States, has channeled resources toward clean energy, water adaptation, biodiversity conservation, and energy efficiency projects in various LAC nations.²⁵ Although not always quantified in aggregate form, these contributions have played a catalytic role in key sectors such as water resources, energy transition, and sustainable land management.

In parallel, South-South Cooperation (SSC)²⁶ has gained strength as an alternative and complementary mechanism to traditional North-South flows. During 2021 and 2022, US\$18.1 billion was committed through the SSC, of which 34% came from LAC countries (US\$6.1 billion). This type of cooperation strengthens collective resilience to common threats, allowing for the sharing of solutions tailored to the context of developing countries (UNDP, 2021).

At the regional level, development bank coalitions have been established to act as strategic vehicles for coordination, financial innovation, and resource mobilization, including:

²⁵ In this type of cooperation, Germany has provided financing and technical assistance for renewable energy projects, energy efficiency, and climate change adaptation programs in Mexico. Similarly, collaboration between Japan and Peru has included climate change mitigation and adaptation projects focused on promoting renewable energy and sustainably managing water resources in Peru.

²⁶ South-South financing is based on values such as solidarity, equity, mutual benefit, and sovereignty, and is especially relevant in a context where low- and middle-income countries face increasing debt burdens under the North-South development model. This cooperation allows for regional financing and distribution tailored to local market contexts, fostering a deeper understanding of each region's specific needs.

- Water Finance Coalition,²⁷ formed by more than 80 public banks under the umbrella of the Finance in Common Summit (FiCS),²⁸ aimed at financing SDG 6 (water and sanitation) through cooperation, regulatory reforms, and water resource monitoring.
- The Agri-PDB Coalition,²⁹ which brings together 141 institutions led by IFAD and AFD, focused on promoting sustainable and inclusive food systems through green financial services, impact analysis, and institutional strengthening.
- Green Coalition,³⁰ an alliance of 20 Amazonian development banks, committed to mobilizing between US\$10 billion and US\$20 billion by 2030 to finance sustainable productive activities that preserve the Amazon biome.
- The Latin American and Caribbean Carbon Market Initiative (ILACC), led by CAF and 12 development banks, that seeks to position LAC as a competitive player in voluntary and regulated carbon credit markets. Its actions include the ILACC Observatory, a multi-sector forum, and a US\$25 billion green financing strategy over five years.

These regional initiatives not only reflect greater coordination among public development actors, but also the recognition that climate and financial integration is critical to ensuring a just and effective transition. As shown in Table 10, each initiative responds to specific challenges, employs diverse financial and institutional instruments, and sets clear goals for resource mobilization and impact generation.

Table 10. Summary of Global and Regional Initiatives

Initiative	Strategic Objective	Key Players	Mobilized Financing or Goal	Featured Components
Water Finance Coalition	Mobilize resources for water and sanitation; support SDG 6 and the Paris Agreement	80+ multilateral and national development banks	2030 Goal: Mobilize financing to close water gaps	Training, regulatory frameworks, financial flow monitoring, knowledge exchange
Agri-PDB Coalition	Promote investments in sustainable and inclusive agriculture	IFAD, AFD, 141 global banks and agencies	Initial EUR 2.3 million; development of green financial instruments	BDP typologies, impact methodologies, country-level services
Green Coalition	Promote sustainable, resilient, and inclusive development in the Amazon	20 public banks in the Amazon	US\$10–20 billion by 2030 for sustainable projects in the Amazon	Common framework, financial and technical integration, sustainable development of the Amazon biome
ILACC (Carbon Market)	Strengthen the regional carbon market and climate competitiveness in LAC	CAF and 12 national development banks	CAF Goal: US\$25 billion in green projects in 5 years (40% green operations by 2026)	Regional diagnosis, observatory, technical training, multisectoral dialogue

Source: ALIDE | Developed in-house

These platforms and coalitions need to be complemented by the direct and strategic action of the National Development Banks, which have territorial knowledge, specific financial tools, and the capacity to coordinate projects with a direct impact on communities.

²⁷ Official website: <http://www.waterfinancecoalition.org>

²⁸ Official website: <https://financeincommon.org/>.

²⁹ Official website: <https://www.agri-pdb.org/>.

³⁰ Official website: <https://green-coalition.com/es/coalicion-verde/>.

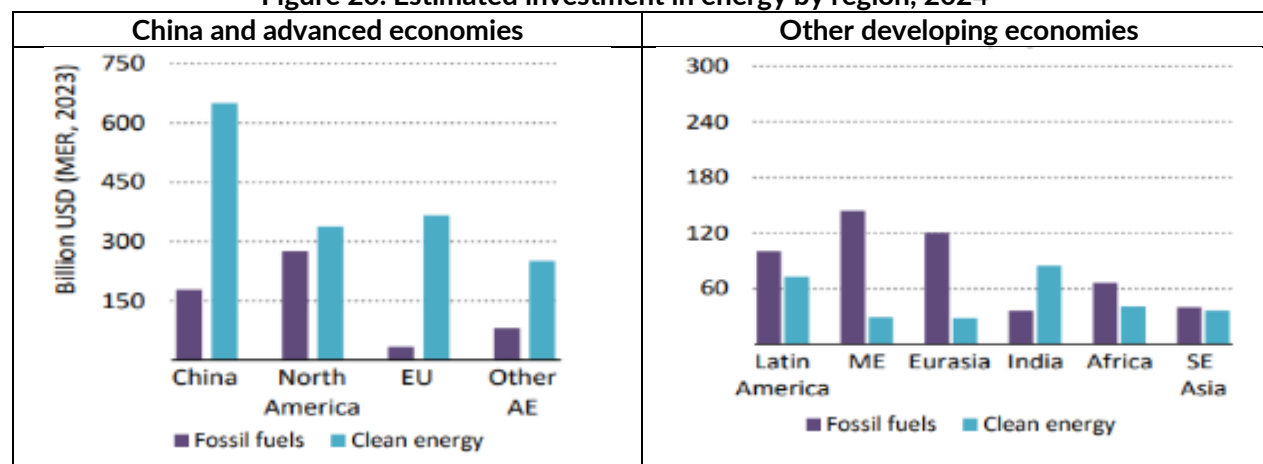
CHAPTER IV. SUSTAINABLE ENERGY SECURITY

Energy security is an indispensable component of economic and social development, and its vulnerability represents a serious risk for LAC. Although significant progress has been made in the adoption of renewable energy—especially hydroelectric, solar, and wind—there is still a considerable gap in terms of equity in access, system efficiency, and diversification of the energy mix. This chapter analyzes the current state of the region’s energy systems, characterized by a heavy dependence on fossil fuels, insufficient investment in modern infrastructure, and fragile regulatory frameworks that hinder the transition to a clean and resilient energy mix. In addition, it highlights the main global and regional initiatives that seek to strengthen energy security in the region.

4.1. Current situation and problems in the energy market

Energy insecurity constitutes a critical challenge for LAC, limiting both economic growth and social inclusion, and hindering the capacity to adapt to climate change. Currently, there is a marked divergence in energy investments between developed countries and emerging economies. In 2023, while advanced economies allocated twice as much resources to clean energy compared to fossil fuels, developing economies maintained balanced investments, due to fiscal limitations and access to favorable financing (IEA, 2024).

Figure 20. Estimated investment in energy by region, 2024



Source: IEA, 2024

In 2023, advanced economies and China accounted for 85% of global investment in clean energy, even though developing countries are home to two-thirds of the world’s population (Figure 20). This concentration of resources deepens the investment gap and limits the ability of developing economies to transform their energy systems, exposing them to greater dependence on fossil fuels and, consequently, greater energy insecurity.

LAC accounts for 6% of global energy demand and 5% of emissions, despite being a net oil exporter. However, it faces low investment in energy (less than 3% of GDP), inadequate infrastructure, and a developing regulatory framework for the energy transition. In turn, new AI demands could consume up to 5% of regional electricity by 2035.

4.2. Historical Evolution toward Energy Insecurity

Over the past few decades, LAC has experienced an energy evolution marked by a persistent dependence on fossil fuels. This situation has created a carbon lock-in³¹ driven by an infrastructure designed around oil, natural gas, and coal, hindering the transition to clean energy. Currently, 70% of

³¹ It occurs when fossil fuel-based infrastructure or assets continue to be used, despite the possibility of replacing them with low-emission alternatives.

primary energy consumption in LAC comes from fossil fuels, a figure slightly lower than the global average of 82% (Figure 21). The region is now an exporter of fossil fuels, particularly oil (McKinsey & Company, 2023³²), with a strong dependence on countries such as Mexico, Venezuela, Colombia, and Brazil. LAC holds nearly 15% of the world's oil and gas resources, and less than 1% of the world's coal resources.

Figure 21. Total energy supply by source in LAC, 1971-2022

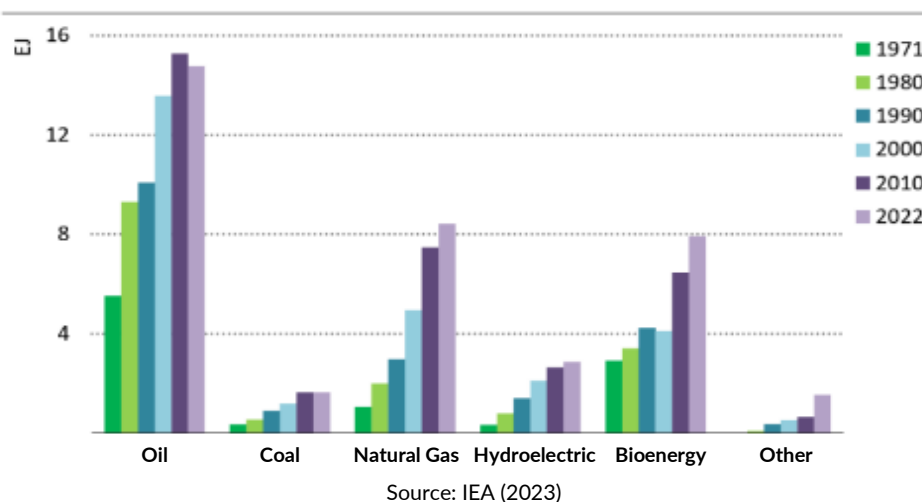
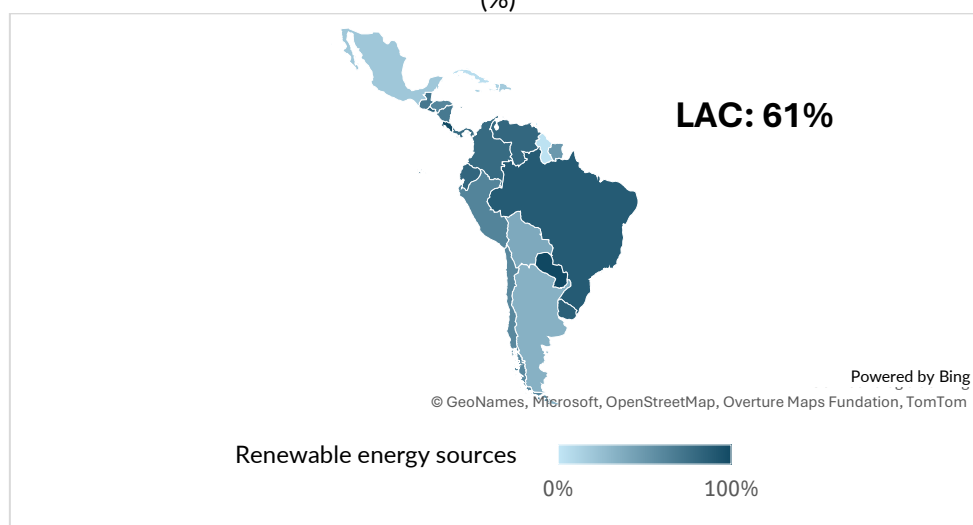


Figure 22. Renewable Sources in the Region's Electricity Generation, 2022 (%)



Source: IEA (2023)

Despite this, LAC has made significant progress in renewable energy, especially hydroelectricity. Brazil stands out as a global hydroelectric powerhouse, while countries such as Costa Rica and Paraguay generate almost all of their electricity from renewable sources. In 2022, more than 60% of the region's electricity came from clean energy, especially hydropower (45%), making LAC one of the regions with the lowest carbon intensity in its electricity mix (Figure 22). In addition, LAC has an expanding bioenergy industry, which has grown by 30% in the last ten years (IEA, 2023)³³.

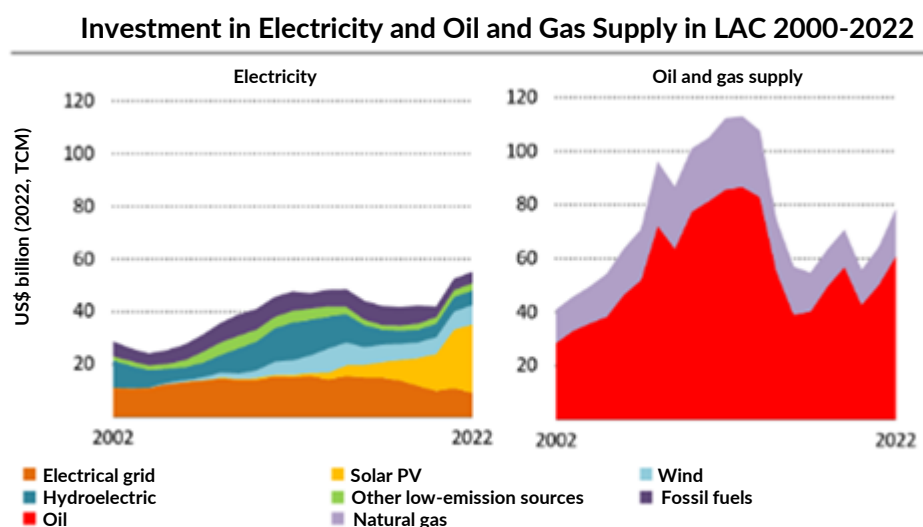
³² <https://www.sela.org/combustibles-fosiles-representan-el-70-del-consumo-de-energia-en-america-latina/>

³³ https://iea.blob.core.windows.net/assets/878e705f-43e0-4858-9c5a-6349447ed669/LatinAmericaEnergyOutlook_Spanish.pdf

Although progress has been made in incorporating renewable energy sources, dependence on fossil fuels remains a major obstacle to achieving an effective energy transition. Diversifying the energy mix, with an emphasis on renewable energy, is essential to reducing greenhouse gas (GHG) emissions and ensuring a more secure and resilient energy supply. This will allow LAC to more effectively address the effects of climate change and move toward a low-carbon economy.

Table 11. Investment in the Supply of Electricity and Oil and Gas in LAC

Energy investment data in LAC reflect a gradual shift in this direction: while investment in oil and gas supply peaked between 2005 and 2014, exceeding US\$110 billion annually, it has since declined significantly. At the same time, investment in the electricity sector has steadily increased, exceeding US\$50 billion in 2022, with notable growth in renewable technologies such as solar photovoltaic and wind. This shift in investment patterns suggests a growing regional priority toward a cleaner energy mix, although these levels are still insufficient for an accelerated and just energy transition.



Source: IEA (2023)

Globally, LAC is in a disadvantaged position in terms of energy investment, with a low percentage of GDP allocated to this sector, less than 3% in the 2014-2022 period. This percentage is considerably lower than in other regions, such as Eurasia, the Middle East and North Africa, which invest around 5%, or sub-Saharan Africa, with almost 4% (OLADE, 2023). This gap reflects not only a limitation in the allocation of resources to the energy sector, but also the structural challenges the region faces in terms of energy infrastructure and policies.

However, the distribution of these sources has not been equitable. Smart grids and clean technologies have been developed in urban areas, but rural areas continue to rely on polluting diesel generators or inefficient and polluting off-grid systems. While there has been a shift toward clean energy sources (investment in electricity exceeded US\$50 billion in 2022), it remains insufficient.

On the other hand, the Latin American Energy Organization (OLADE)³⁴ estimates that the region's energy demand will increase by 2035 due to the rise of the AI era, which could represent up to 5% of total electricity consumption in LAC.

Moreover, the number of data centers globally is expected to grow by 165% between 2023 and 2030, representing an annual growth rate of nearly 15%. If LAC continues this trend, the region will face an unprecedented energy surge, driven by the operational needs of AI servers. This consumption

³⁴ <https://www.olade.org/noticias/la-inteligencia-artificial-consumira-el-5-de-la-electricidad-en-america-latina-y-el-caribe-el-ano-2035/>

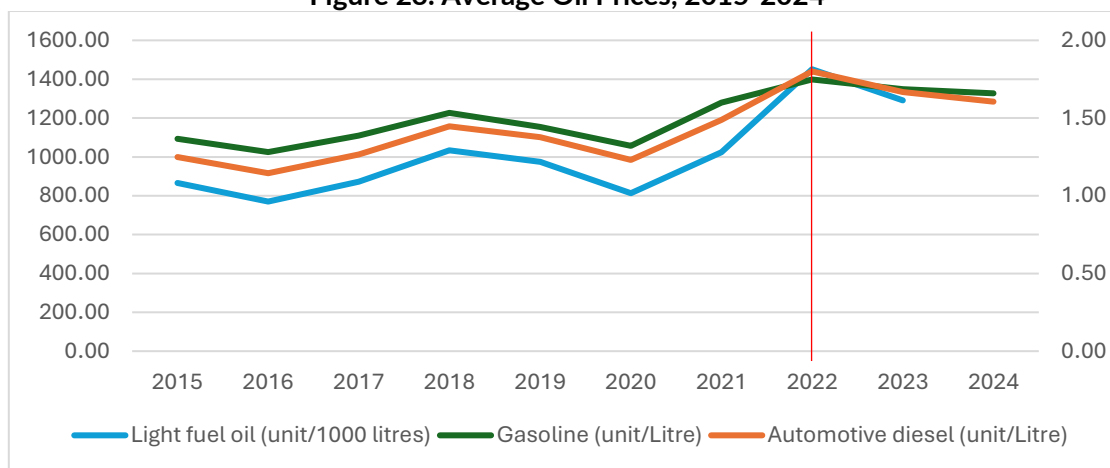
will be primarily associated with intensive processes such as model training, algorithm execution, and the complex cooling systems required for these facilities to operate continuously and efficiently.

4.3. Consequences of Future Inaction

If inaction and insufficient investment persist, LAC will face serious structural consequences. Energy demand will continue to grow—driven by digitalization, urban development, the electrification of transportation, and industrialization—but without effective modernization of the energy system, LAC will remain exposed to multiple risks: global price volatility, geopolitical tensions, supply disruptions, and loss of economic competitiveness.

One of the main restrictions is the energy infrastructure. In many LAC countries, electricity grids, power generation and distribution facilities, and storage systems remain inefficient or technologically obsolete. This lack of modernization increases technical losses and represents a significant economic and environmental cost to society. Structural inefficiency prevents optimal management of energy resources, which translates into greater vulnerability to external events. This was evident during the 2022 energy crisis (Figure 23), when oil and gas prices surged in the wake of the conflict in Eastern Europe, causing a drastic reduction in the accessibility and affordability of energy supplies in many economies in the region (IEA, 2023).

Figure 23. Average Oil Prices, 2015-2024

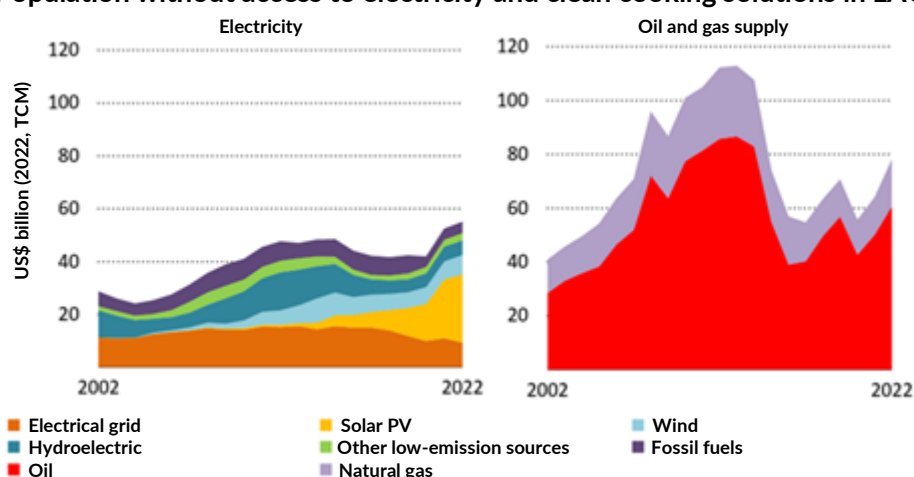


Source: Monthly Oil Price Statistics (IEA, 2025)

To overcome this situation, it is essential to make substantial investments in the modernization and expansion of energy infrastructure, prioritizing the incorporation of advanced storage technologies, automation, smart grids, the integration of renewable energy, and climate resilience systems. These investments increase the efficiency and reliability of the energy system and will reduce losses, improve access, and move toward low-emission economies.

Modernizing energy infrastructure is no small challenge. It requires not only high levels of public and private investment, but also a long-term strategic vision that allows for the integration of renewable energy sources, such as solar, wind, and biomass. This spending has been primarily directed toward clean cooking technologies and the improvement of electrical grids and low-emission electricity generation. However, the allocation of these resources has, in many cases, been insufficient to address the magnitude of the challenge, and attention has been primarily focused on the 2022 energy crisis, with a particular emphasis on keeping transportation fuels affordable. This, while necessary, has diverted attention from the urgent need to comprehensively modernize energy infrastructure.

Figure 24. Population without access to electricity and clean cooking solutions in LAC, 2000-2022



Source: Taken from Latin America Energy Outlook (IEA, 2023)

Another critical obstacle is the lack of robust and stable regulatory frameworks. Although 16³⁵ out of 33 LAC countries have made commitments to carbon neutrality by mid-century, most of them depend on international financing and still lack clear implementation plans with measurable targets and effective verification mechanisms (Table 12). The region's nationally determined contributions (NDCs) remain insufficient: only a third contain absolute emissions reduction targets, while the majority are based on business-as-usual scenarios (IEA, 2023).

Table 12. Main Transportation Policies by Country

	Fuel economy standards for light-duty vehicles	Electric vehicle policies and goals	Biofuel mandates	Support for low-emission aviation fuels
Brazil	X	X	X	X
Argentina, Colombia and Mexico	X	X	X	
Bolivia, Costa Rica, Ecuador, Panama, Paraguay, Uruguay		X	X	
Chile	X	X		
Cuba, El Salvador, Nicaragua, the Dominican Republic, Trinidad and Tobago		X		
Honduras, Peru			X	

x: Applied Policy

Source: IEA (2023)

The transportation sector, one of the main sources of greenhouse gas (GHG) emissions, continues to lag behind in adopting transformative measures. By 2023, few countries had implemented energy efficiency standards, biofuel mandates, or clear goals for the electrification of mobility. This limits the potential for emissions reduction and energy diversification in the short term.

This lack of regulatory and investment momentum prevents the consolidation of investor confidence, compromising the mobilization of the capital needed to transform the regional energy system. Although nearly US\$33 billion were channeled into energy projects in LAC in 2023, these resources have been insufficient, unequally distributed, and in many cases poorly aligned with a long-term vision (OLADE, 2023).³⁶

³⁵ Which represent approximately 65% of the regional GDP and 60% of energy emissions.

³⁶ <https://www.olade.org/publicaciones/panorama-energetico-de-america-latina-y-el-caribe-2023/>

The consequences of this inaction are not limited to the energy sector: they compromise industrial competitiveness, deepen territorial inequalities, hinder inclusive economic development, and increase exposure to extreme weather events. If not reversed, the current energy model will limit the ability to meet the Sustainable Development Goals and the Paris Agreement, affecting the sustainability of future generations.

4.4. Global and regional initiatives to advance energy security

Faced with growing energy insecurity in LAC (aggravated by dependence on fossil fuels, aging energy infrastructure, and limited investment capacity), international and regional initiatives are becoming crucial. These proposals seek to accelerate the energy transition, promote the sustainability of electrical systems, and reduce the access gap through technical and financial cooperation.

Various multilateral organizations and international agreements are leading efforts to strengthen energy security with a comprehensive approach that combines environmental sustainability, social equity, and economic resilience (Figure 25). Among the most relevant initiatives are:

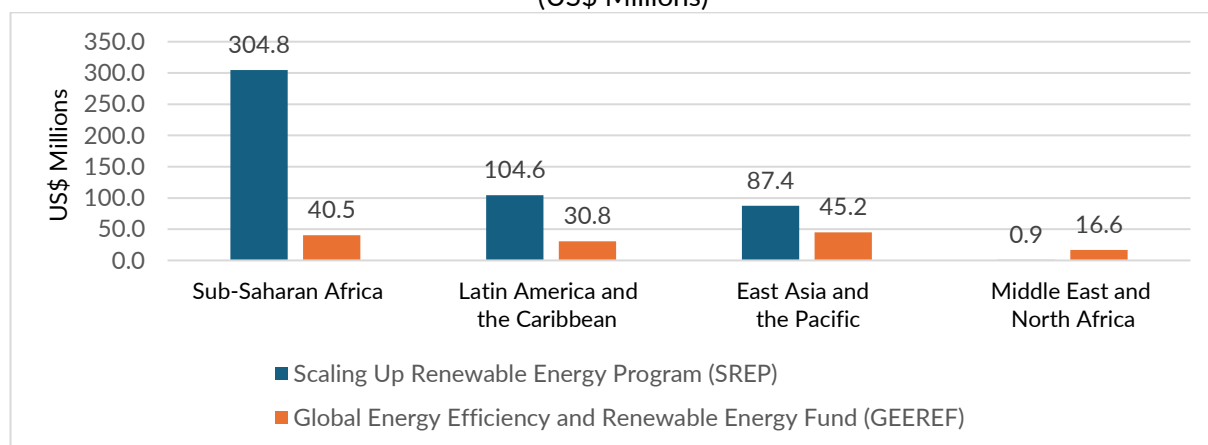
- **Agenda 2030 and the Sustainable Development Goals (SDGs):** SDG 7 sets the goal of ensuring universal access to affordable, reliable, sustainable, and modern energy. This objective drives the promotion of clean technologies, the expansion of sustainable energy infrastructure, and the development of public policies that favor energy efficiency and the use of renewable sources. Furthermore, it raises the need for solid regulatory frameworks that generate certainty and attract investment, especially in developing countries.
- **International Energy Forum (IEF):** It brings together the main energy-producing and -consuming countries, fostering dialogue and cooperation on global energy markets. Its lines of action include improving transparency, promoting energy efficiency, and boosting investment in modern and resilient infrastructure. The forum also promotes price stability as an essential component of global energy security.
- **Scaling Up Renewable Energy Program in Low Income Countries (SREP):** World Bank initiative aimed at low-income countries, with the goal of increasing access to renewable energy sources. The program finances innovative projects, provides technical assistance, and helps improve the financial viability of clean technologies. In LAC, the SREP has approved approximately US\$105 million in projects, helping to strengthen the energy transition in countries with high levels of vulnerability (Climate Funds Update, 2025).³⁷
- **Global Energy Efficiency and Renewable Energy Fund (GEEREF):** It is a public-private fund managed by the EU, designed to mobilize investment in renewable energy and energy efficiency in developing countries. Through a “fund of funds” model, it seeks to reduce risks for investors and accelerate the financing of proven technologies such as solar photovoltaic, onshore wind, biomass, and small hydroelectric plants. In LAC, the fund has approved investments of around US\$31 million (Climate Funds Update, 2025).³⁸

These initiatives not only provide financial resources, but also enable the exchange of technical knowledge, strengthen institutional capacities, and promote favorable regulatory frameworks. In the LAC context, its effective use will depend on coordination with national policies, the consolidation of public-private partnerships, and the countries' ability to structure viable and scalable projects.

³⁷ <https://climatefundsupdate.org/data-dashboard/regions/>

³⁸ <https://climatefundsupdate.org/data-dashboard/regions/>

**Figure 25. Amount Approved for Special Energy Funds by Region
(US\$ Millions)**



Source: Climate Funds Update (2025)

Moreover, these platforms represent key opportunities for the region's development banks, which can act as financial intermediaries, program implementers, or investment catalysts. Their ability to design locally tailored solutions, mobilize concessional financing, and support governments in implementing sustainable public policies will be crucial in translating these global efforts into real impacts on regional energy security.

CHAPTER V. FOOD SECURITY AND FOOD SYSTEMS

5.1. Food insecurity in LAC as a multidimensional threat

Food insecurity in LAC represents a structural threat to the region's sustainable development. Its multidimensional nature compromises not only the physical and nutritional well-being of the population, but also the economic, social, and environmental stability of countries. Therefore, achieving food security is essential for regional development. Food security is achieved when "all people have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and lead healthy lives" (FAO, 2024).

This security is based on four essential dimensions:

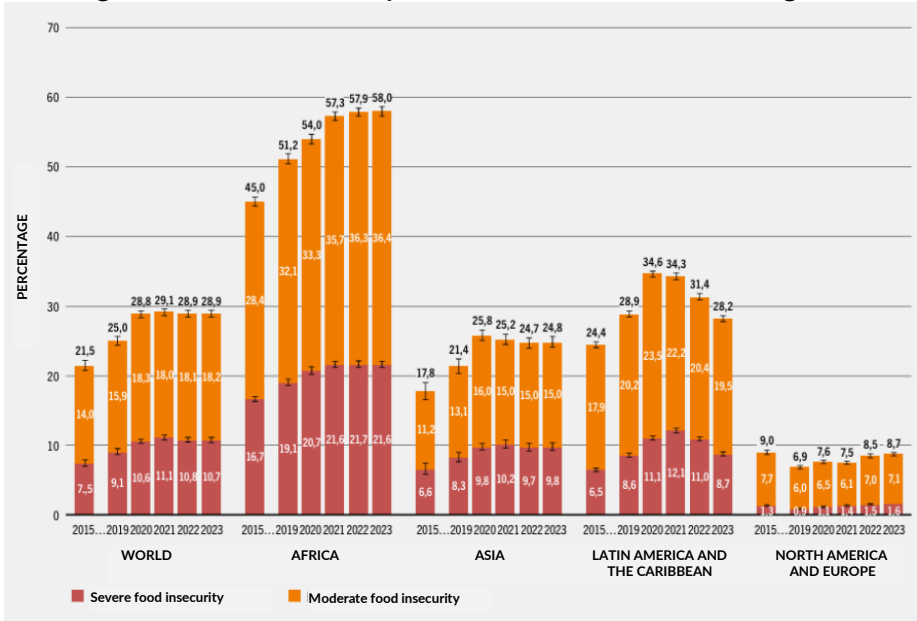
- **Availability:** It involves having a constant and sufficient supply, whether through national production or import. Although production has increased in several subregions, extreme weather events have resulted in losses of 30% to 50% of global productivity (FAO, 2024).
- **Access:** It refers to the economic and social capacity of households to acquire them. Poverty and inequality remain critical barriers. The Caribbean, for example, faces a hunger prevalence of 17.2% (FAO, 2023).
- **Utilization:** It refers to the consumption of healthy and nutritious foods, along with adequate sanitary and educational conditions for their absorption. There are deficits in nutrition and food education. Malnutrition accounts for up to 6.4% of GDP in social and health costs (ECLAC and WFP).
- **Stability:** It consists of having regular access, without seasonal interruptions or sudden crises. Dependence on food imports, with an agri-food deficit in several subregions, increases vulnerability to global shocks.

Hunger and food insecurity in LAC have decreased for the second consecutive year, making it the only region in the world to see this trend. According to FAO et al (2024), more than 28% of the regional population faces food insecurity (Figure 26), with women and rural communities being the most affected. In total, 41 million people cannot access the food they need to meet their nutritional needs, while the cost of a healthy diet amounts to US\$4.56 a day, a figure that makes nutritious food unaffordable for 54 million people.

Factors such as the COVID-19 pandemic, the conflict between Russia and Ukraine, and climate change have intensified this situation. Loss of income, rising inequality, and sustained increases in food prices are the main factors restricting access to healthy diets. Since 2021, the cost of food imports has increased by more than 50% compared to pre-pandemic levels, particularly affecting net importing countries—more than 20 countries depend on imported corn and wheat, and 10 of them are highly vulnerable due to their external dependence (FAO, 2023).

LAC has the highest cost of a healthy diet in the world: US\$4.08 per person per day, compared to a global average of US\$3.60 (FAO, 2023). As a result, 24% of the population cannot access it. This figure rises to 50% in the Caribbean, 28% in Central America, and 20% in South America. The economic barrier generates unbalanced consumption patterns and promotes a double burden of malnutrition: while 11% of children suffer from stunting, 24% of adults suffer from obesity.

Figure 26. Food Insecurity Levels, World and Selected Regions



NOTES: Differences in totals are due to rounding to the nearest decimal place. Only regions for which data were available for all subregions are shown.

SOURCE: FAO. 2024. FAOSTAT: Set of food security indicators. [Accessed on July 24, 2024].

<https://www.fao.org/faostat/es/#data/FS>. License: CC-BY-4.0.

Taken from: FAO (2024). The State of Food Security and Nutrition in the World 2024.

Food insecurity has negative impacts throughout the life cycle. During childhood, it compromises physical and cognitive development; in adulthood, it increases the prevalence of chronic diseases, deteriorates mental health, and reduces work productivity. All of this translates into higher costs for health systems and loss of human capital. In countries such as Guatemala, these consequences are equivalent to 16.3% of GDP, while in El Salvador and Honduras they reach 10.3% and 10.2%, respectively (ECLAC, 2024).

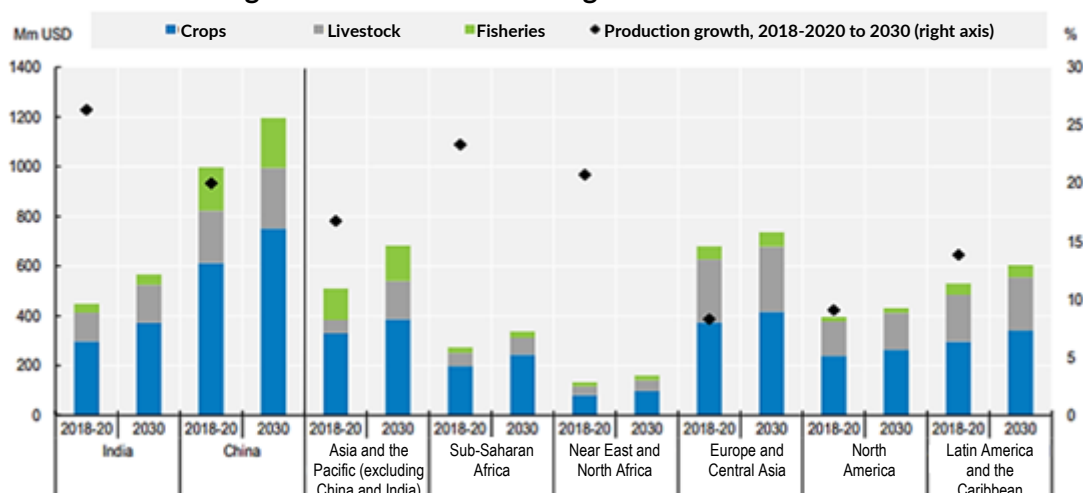
Climate change is another key factor in the worsening of food insecurity. Extreme events such as droughts, floods, or changes in rainfall patterns affect agricultural production, rural incomes, food availability, and logistics infrastructure. This vulnerability increases supply instability and raises food prices, primarily affecting the poorest sectors and countries highly dependent on imports.

5.2. Evolution toward the current crisis: from productivity to vulnerability

LAC's recent trajectory in the area of food security reveals a structural tension between production growth and persistent inequalities in access. LAC has medium-high levels of agricultural production, ranking above regions such as Sub-Saharan Africa and the Middle East/North Africa, but below Asia-Pacific and North America. Projections for 2030 anticipate an absolute increase in the agricultural-livestock sector, especially in crops (Figure 27), which confirms the agro-export nature of the region and its dependence on commodities (OECD, 2021). However, technological and productive advances have not guaranteed the effective fulfillment of the right to food. The disconnect between supply and access has led to a scenario of chronic food insecurity, exacerbated in recent decades by structural factors and temporary events.

Over the past thirty years, LAC has experienced significant expansion of its agri-food sector. The region has established itself as a key supplier of raw materials globally, excelling in the export of soybeans, coffee, tropical fruits, meat, and cereals. Productivity growth has been driven by technological innovations such as mechanization, the use of improved seeds and fertilizers, and improvements in logistics and transportation infrastructure (FAO, 2024).

Figure 27. Trends in Global Agricultural Production



Note: The estimates are based on the historical time series from the FAOSTAT Value of Agricultural Production domain, which are extended using the Outlook database. The other products are extended using the trend. Net Production Value uses its own estimates for domestic use of seeds and feed. Values are measured in constant 2014-2016 US dollars. Source: FAO (2021).

Taken from: OECD/FAO (2021), OECD-FAO Agricultural Outlook 2021-2030, OECD Publishing, Paris, <https://doi.org/10.1787/47a9fa44-es>

The increase in production has not been homogeneous or equitable. While some countries and subregions have substantially improved their agricultural performance, others continue to face critical constraints in terms of productive capacity, infrastructure, and access to technologies (Figure 28). For example, the Caribbean and Central America show lower relative productivity growth (Figure 29), partly due to their high exposure to climate risks and dependence on imports (FAO et al., 2023).

Climate vulnerability is, in fact, one of the most determining factors in the evolution toward food insecurity. The year 2024 marked a negative milestone by becoming the warmest in recent history. The consequences were immediate: heat waves, droughts, and floods significantly affected agricultural systems, with an estimated loss of between 30% and 50% of global productivity due to water and heat stress (FAO, 2024). LAC is positioned as the second region most exposed to these phenomena, only behind Asia. At least 20 countries, representing 74% of those analyzed, face a high recurrence of extreme weather events (UN, 2025). The lack of climate resilience in many agri-food chains has limited their capacity for response and recovery, compromising both the availability and stability of food, and exacerbating the fragility of the regional food system.

Figure 28. Amount of Agricultural-Livestock Production, World, Millions of Tons, 2014-2023

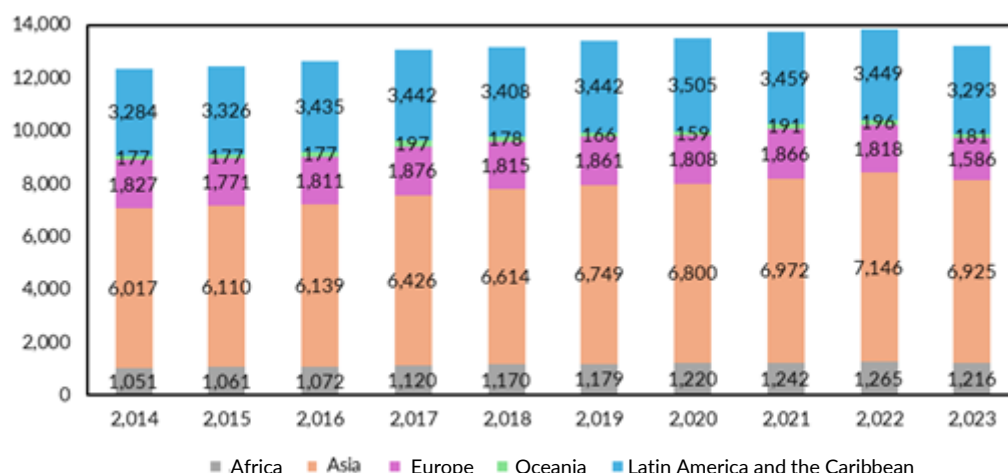
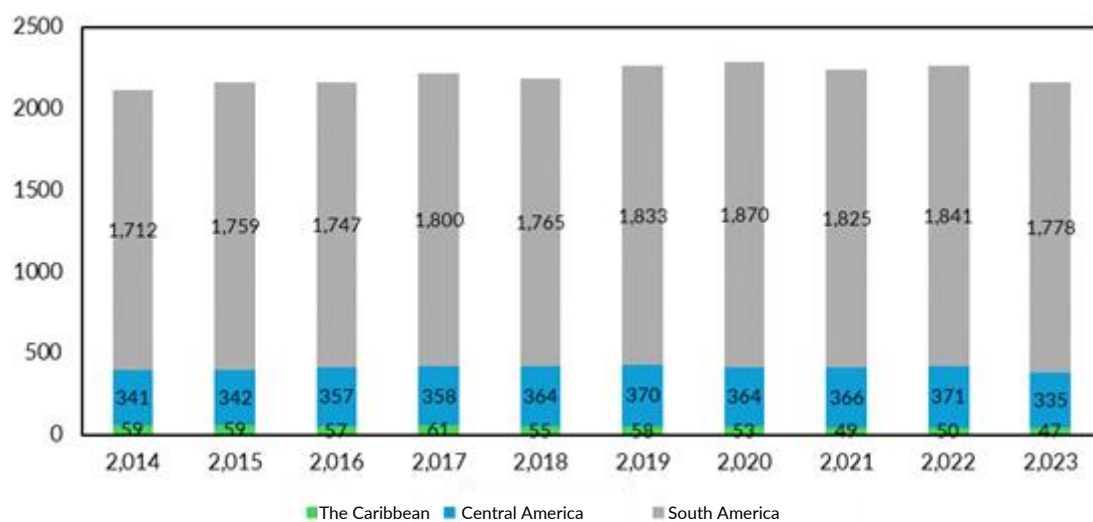


Figure 29. Amount of Agricultural-Livestock Production, LAC, Millions of tons, 2014-2023



Central America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama. South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Uruguay, Venezuela. The Caribbean: Antigua and Barbuda, Bahamas, Barbados, Cuba, Dominica, Grenada, Haiti, Jamaica, Puerto Rico, the Dominican Republic, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Trinidad and Tobago.

Developed in-house

Source: FAOSTAT database

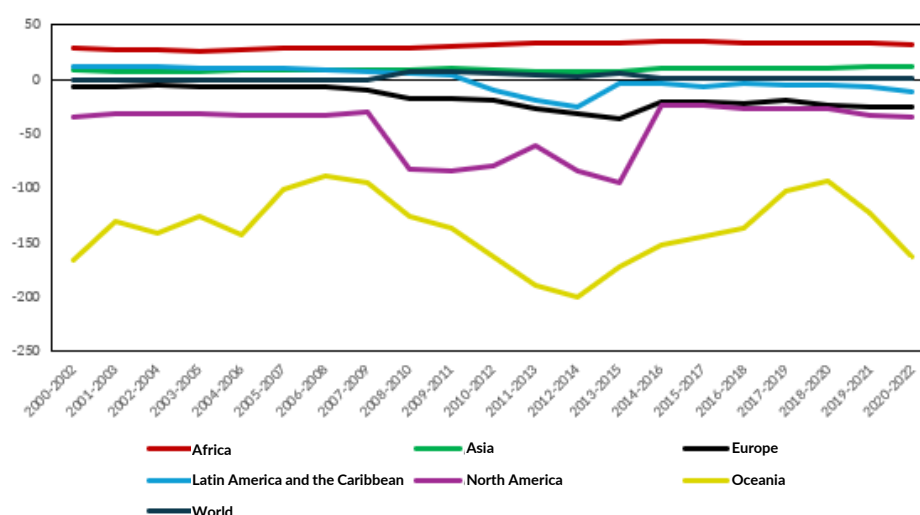
International food trade has been an ambivalent factor in food security in LAC. While it has facilitated supply through greater integration into global markets, it has also exposed deep structural vulnerabilities. LAC has strengthened its profile as an exporter of primary products, but this integration has been accompanied by a growing dependence on strategic inputs and imported

products. Currently, more than 20 LAC countries are net importers of cereals such as corn and wheat, and 10 of them are highly dependent on these imports to meet their basic food needs (FAO, 2023).

At the same time, LAC has transitioned from a food sovereignty approach to a market-based food security approach, prioritizing global availability over local self-sufficiency. This transition has led to a decline in investment in family farming and local productive capacities, weakening the agricultural structure of many countries and making access to a healthy diet more expensive. Rural areas have been particularly affected, with high levels of poverty, infrastructure deficiencies and growing food insecurity (ECLAC, 2024).

While international prices of key foods such as wheat, corn, rice and soybeans decreased in 2024 compared to the previous year, reflecting some market stability (FAO, 2023), this trend is not replicated uniformly across all regions. The cereal import dependency index, which assesses food self-sufficiency and risk exposure, shows marked differences: Africa has the highest dependence at 34.5% (2020–2022), Asia is moving toward self-sufficiency with an index of -11.5%. North America and Oceania are consolidating their positions as net exporters, although the latter has recently recorded a slight decline. Europe and LAC maintain moderate and stable export levels. Taken together, these data reflect a growing gap between highly dependent regions and major exporters, with critical implications for global food stability (Figure 30).

Figure 30. Cereal Import Dependency Index by Region: Global Trends and Gaps, 2000-2022

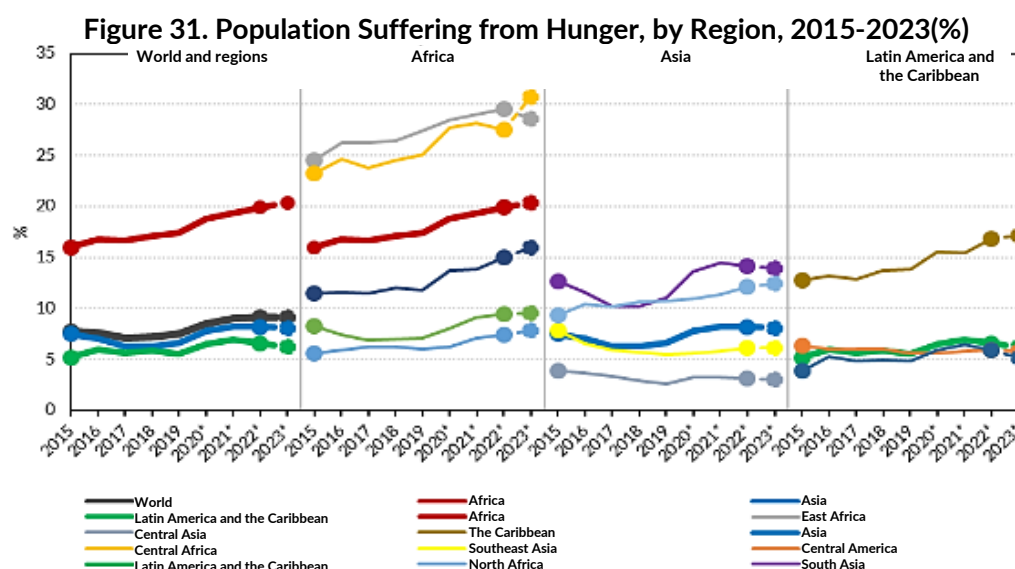


Source: FAOSTAT Database.
Developed in-house

The structural fragility of the regional food system became even more evident during the COVID-19 pandemic. The loss of income, the breakdown of production and distribution chains, and the widespread economic downturn severely weakened food access conditions. Border closures, rising international freight rates, and volatile food and fertilizer prices exacerbated the situation (FAO, 2023). Added to this was the impact of the conflicts in Eastern Europe, which disrupted global supply chains, raised the prices of cereals and fertilizers, and severely affected countries with a high dependence on imports.

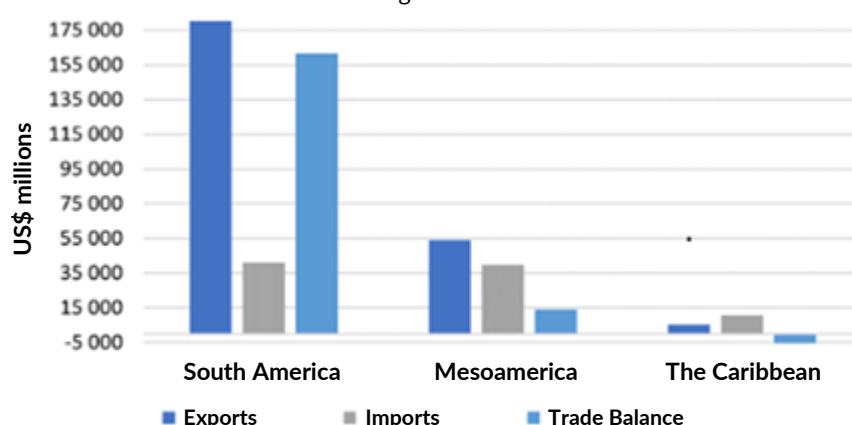
Table 13. Regional disparities in access to food

Access to food is not uniform worldwide. While in developed countries food security is more affected by issues of quality and sustainability, in developing countries economic and logistical barriers remain the main obstacles (Figure 31). García-Díez et al. (2021) analyze the stability of access to food and conclude that countries and regions with the highest levels of food insecurity (populations suffering from hunger) have structural deficiencies in food distribution, exacerbated by social conflicts, environmental and economic crises, as seen in regions such as Africa and the Caribbean.



In LAC, the Caribbean subregion has the highest prevalence of people suffering from hunger as a percentage of the total population (17.2% in 2023), while South America has the lowest prevalence (5.2% in 2023). Factors such as food price volatility, dependence on imports, and distribution barriers contribute to food inequality in the region. Caribbean countries, in particular, are heavily dependent on food imports (FAO, 2023), leading this subregion to present a negative trade balance, which in turn makes them vulnerable to fluctuations in international markets and global economic crises (Figure 32).

Figure 32. Agri-Food Trade Balance in LAC, by Subregion
Average 2017-2021



The result of these overlapping crises is a sustained rise in food costs. As noted in section 5.1, the average cost of a healthy diet in LAC reached US\$4.06 per person per day, compared to the world average of US\$3.60. This difference reflects a structural increase in prices, which is particularly problematic in contexts where incomes have not grown at the same pace. As a result, 54 million

people cannot afford a healthy diet and more than 41 million face serious nutritional deficiencies (FAO, 2024).

5.3. Costs of inaction: critical scenarios and future consequences

Inaction in the face of this trajectory could have critical consequences. Unless structural changes³⁹ are made to strengthen the resilience of agri-food systems and improve equity in access to food, food insecurity could become a permanent condition for large segments of the regional population. The human, social and economic costs of maintaining this course could be high: increased dependence on external markets, loss of biodiversity, increase in food-related diseases, loss of labor productivity and growing pressure on health systems (FAO, 2023). Several studies⁴⁰ have quantified these costs, showing that the lack of intervention can be more costly than the proposed solutions.

- **Economic costs:** According to a joint report by FAO, ECLAC, WFP and IICA (2024),⁴¹ the cost of not eradicating hunger and malnutrition (undernutrition, overweight and obesity) in LAC represents, on average, 6.4% of GDP with variations between 0.2% and 16.3% depending on the country (ECLAC, 2024). This percentage far exceeds the estimated cost of implementing solutions to ensure food security, which stands at around 1.5% of regional GDP.

In monetary terms, Nutrition International (2023)⁴² estimates that malnutrition in the region generates annual losses of approximately US\$71 billion, equivalent to 1.2% of gross national income. These are due to factors such as declining labor productivity, rising healthcare costs, and a reduction in human capital.

A study by Webb et al. (2021) notes that malnutrition reduces labor productivity by 8-10% in developing countries due to chronic diseases and cognitive impairments. Lack of access to nutritious diets in early childhood has irreversible effects on cognitive and physical development. According to Shekar et al. (2017), children with chronic malnutrition have 20% less income in their adult life, perpetuating cycles of poverty. In LAC, if no action is taken, 4.3 million children are projected to suffer from stunting by 2030, which would reduce the future workforce by 5-7% (FAO, 2024).

Table 14. The costs of inaction far exceed the required investments

Intervention	Annual cost (US\$)	Cost of inaction (US\$)
Eradicating hunger (FAO, 2015)	265 billion	3.5 trillion (global losses by 2030)
Reducing malnutrition (Shekar et al., 2017)	7 billion	125 billion (in health and productivity)

Sources: FAO et al. (2015); Global Panel (2016); Shekar et al. (2017); Horton & Steckel (2013).

- **Vulnerability of children and rural populations:** Food insecurity most severely affects rural communities, women and especially children. In LAC, stunting affects 11.5% of children under five years of age. In addition, the region faces a double burden of malnutrition: undernutrition and overweight. In 2022, 8.6% of children under five years of age were overweight in the region, with the highest prevalence in South America.

³⁹ How to strengthen family and community agriculture, climate-resilient rural infrastructure, investments in agricultural innovations, among others.

⁴⁰ Chile, Ecuador and Mexico (Fernández et al. 2017); El Salvador (Prost, M. and Martínez R. 2019a), Guatemala (Prost, M. and Martínez R. 2020a), Honduras (Prost, M. and Martínez R. 2020b); Peru (Mejía, C. and Martínez, R. 2022); and the Dominican Republic (Prost, M. and Martínez R. 2019b).

⁴¹ FAO, ECLAC, WFP and IICA. (2024). *Failure to eradicate hunger and malnutrition costs more than the cost of solutions*. <https://www.fao.org/americas/news/news-detail/failure-to-eradicate-hunger-and-malnutrition-costs-more-than-the-cost-of-solutions/en>

⁴² Nutrition International. (2023). *The cost of inaction: Latin America and the Caribbean*. <https://www.nutritionintl.org/wp-content/uploads/2023/12/Cost-of-Inaction-Latin-America-Brief-FINAL-Digital.pdf>

According to UNICEF, one in ten children in the region live with chronic malnutrition. This situation is closely linked to high climate exposure and vulnerability, threatening the full development of children.

- **Difficulties in accessing healthy diets:** In 2022, 182.9 million people in LAC could not afford a healthy diet. Although this figure reflects an improvement compared to 2021, the differences between subregions are notable: in the Caribbean, 50% of the population cannot access a healthy diet, followed by Central America (26.3%) and South America (26%).

In 2021, obesity was responsible for 2.8 million deaths from noncommunicable diseases (NCDs) in the Americas. In Argentina, according to recent data, 41.1% of the population between 5 and 17 years of age is obese, while countries such as Chile, Mexico, and the Bahamas had the highest prevalence (63%, 64%, and 69%, respectively).⁴³ Therefore, it is necessary to implement fiscal policies, healthy public procurement, advertising regulation, product reformulation, and front-of-pack nutritional labeling.

- **Critical future scenarios and territorial inequality:** Climate change, global economic shocks, and structural disparities in LAC create a highly critical scenario for the future of food security in the region. Far from being an isolated problem, the current and projected impacts reveal profound territorial inequality that could intensify in the coming decades if transformative measures are not adopted (Table 15).

According to CGIAR estimates (2023), by 2050, 31% of agricultural land in LAC will be less suitable for cultivation due to rising temperatures, variability in rainfall, and soil degradation. This phenomenon will drastically reduce agricultural yields: a 25% drop in corn and a 5% drop in wheat is projected if current trends continue. These setbacks have direct implications not only for LAC, but also for global food security, given that LAC produces 14% of the food exported worldwide (FAO, 2024), and the planet will have to increase food production between 50% and 70% by 2050 to meet a constantly growing population (HLPE, 2023).

Climate projections are intertwined with deep territorial inequalities. Rural areas are more vulnerable due to their high dependence on subsistence agriculture, limited access to adaptive technologies, and low coverage of basic services and infrastructure. ECLAC (2024) warns that access gaps between urban and rural areas are widening, worsening conditions of poverty and food insecurity.

At the socioeconomic level, Laborde and Torero (2023) estimate that ensuring healthy diets for all would require an annual redistribution of US\$1.4 trillion globally. In LAC, closing the income gap that prevents access to these diets requires an investment of 0.52% of regional GDP. This figure, although significant, is achievable if supported by effective public policies, investment in sustainable agri-food systems, and social protection mechanisms.

Although some indicators show signs of improvement after the pandemic, progress is uneven. In 2023, 41 million people suffered from hunger in LAC, representing a reduction of 2.9 million compared to 2022 and 4.3 million compared to 2021 (FAO, 2024). However, the Caribbean shows a reverse trend, with a sustained increase in the prevalence of hunger, reaching 17.2%, while in Mesoamerica it remains at 5.8%. These figures reflect the persistence of structural imbalances between subregions, exacerbated by external food dependence and the volatility of international prices.

⁴³ Ríos-Reyna, C., Díaz-Ramírez, G., Castillo-Ruiz, O., Pardo-Buitimea, N. Y., & Alemán-Castillo, S. E. (2022, December 1). *Policies and strategies to combat obesity in Latin America*. PMC. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10395955/#BIB03>.

Table 15. Various Studies with Cost Estimates for Ending Hunger, Food Insecurity, and Malnutrition

Study	Main question asked	Goals and deadline	Additional annual costs until 2030	Investments /interventions
FAO, IFAD and WFP (2015)	What additional transfers and investments are needed to end poverty and hunger worldwide by 2030?	Goals for ending poverty and achieving zero hunger by 2030.	US\$265 billion annually, of which US\$198 billion is allocated to investments that benefit the poor (2016-2030).	Transfers to close the poverty gap and pro-poor investments in irrigation, genetic resources, mechanization, primary agriculture and natural resources, agricultural processing operations, infrastructure, institutional framework, research and development (R&D), extension, and social protection.
Global Nutrition Report (2021)	What is the minimum cost of meeting the World Health Assembly's 2030 targets for reducing malnutrition?	Reduce childhood stunting by 40%, reduce anemia in women by 50%, increase exclusive breastfeeding rates by 50%, and keep child malnutrition below 5%.	US\$10.8 billion per year (2022-2030).	Nutrition-specific interventions (micronutrient and protein supplementation, health and hygiene promotion, and complementary foods) and nutrition-sensitive interventions (fortification of staple foods and breastfeeding policies).
Laborde and Torero (2023)	How much would it cost to reduce chronic hunger to 5% by 2030?	Reduce chronic hunger to 5% by 2030; reduce the number of people suffering from chronic hunger by 314 million, and ensure that an additional 568 million people can afford healthy diets by 2030.	Redistribution by countries of US\$1.4 trillion annually (2020-2030).	Eradicating hunger through significant income redistribution, extensive use of production subsidies, or massive investment in agricultural R&D.
Shekar <i>et al.</i> (2017)	What is the minimum cost of meeting the World Health Assembly's targets for reducing malnutrition by 2025?	Reduce childhood stunting by 40%, reduce anemia in women by 50%, increase exclusive breastfeeding rates by 50%, and keep childhood wasting below 5%.	US\$7 billion per year (2015-2025).	Targeted nutrition interventions (micronutrient and protein supplementation, health and hygiene promotion, and complementary foods) and targeted nutrition-sensitive interventions (fortification of staple foods and breastfeeding policies).
ZEF and FAO (2020)	What are the costs of ending hunger?	G7 commitment to free 500 million people from hunger by 2030.	Total annual investments of between US\$39 billion and US\$50 billion per year (2020-2030).	A combination of cost-effective investments that include improving R&D efficiency, expanding agricultural advisory services, improving agricultural information services, expanding small-scale irrigation in Africa, improving women's literacy rates, and expanding existing social safety nets.

Source: The state of food security and nutrition in the world. FAO (2024).

Moderate or severe food insecurity affected 187.6 million people in the region in 2023. While this represents an improvement over previous years—a reduction of 19.7 million compared to 2022—the numbers are still alarming. The post-pandemic economic recovery in some South American countries, along with social protection programs and food access policies, explain part of this improvement.

Despite this, critical future scenarios remain: the risk of structural setbacks remains latent if profound transformations in agri-food systems are not promoted. This includes increasing resilience to climate change, closing territorial gaps, investing in agricultural innovation, and ensuring equitable access to healthy food. Failure to take immediate action could consolidate a geography of food insecurity, where regional disparities widen, disproportionately affecting rural, Indigenous, and Afro-descendant populations.

5.4. Resilience and sustainability: An economic imperative

In LAC, the dynamics of agri-food systems are challenged by multiple factors: climate change, pressure on natural resources, accelerated urbanization, and the growing demand for healthy and sustainable food. Given these realities, there is a need to establish resilient and sustainable agri-food systems that can not only adapt to changes, but also contribute to inclusive development and the well-being of rural and urban areas.

- **Digitalization and technological transformation:** The incorporation of digital technologies in the agri-food sector has proven to be a key tool for increasing productivity, improving efficiency, and strengthening resilience. According to an FAO report (2021), digitalization allows farmers to access real-time climate information, optimize the use of inputs, and anticipate changes in markets. In particular, precision agriculture systems, based on the use of sensors, drones, and big data, are transforming the way smallholders manage their crops and resources.

In addition, digital trading platforms and mobile applications are improving market access and facilitating direct transactions between producers and consumers. This not only reduces intermediation gaps, but also contributes to greater price control and a fairer distribution of benefits. IICA (2022) highlights that these solutions have increased the income of small producers by up to 30% in some regions, by eliminating intermediaries and promoting fair trade.

- **Innovation in production models:** Innovation is not limited to the technological field. Models such as climate-smart agriculture (CSA) are gaining ground in LAC as comprehensive strategies to improve resilience to extreme climate events. The CSA combines sustainable agricultural practices, such as the use of drought-resistant crops, crop rotation, and agroforestry, with environmental monitoring tools and technical and financial support policies. According to the IDB (2021), these practices have increased yields by up to 25% in drought-prone areas and reduced the agricultural carbon footprint by 15% in countries such as Colombia and Brazil.

Innovation also includes strengthening agri-food value chains by incorporating sustainability and equity criteria. Initiatives that integrate small producers, cooperatives, and agro-industrial companies into fair trade schemes and sustainability certifications have proven effective in increasing competitiveness and access to international markets. Studies by ECLAC (2022) indicate that inclusive value chains generate significant economic and social benefits, promoting more equitable rural development.

- **Investments in green infrastructure:** The construction and modernization of this type of infrastructure is essential to guarantee sustainable agri-food systems. This ranges from efficient irrigation and water storage systems to facilities for the sustainable management of agricultural waste and the generation of renewable energy. According to an analysis by FAO and ECLAC (2022), investment in green infrastructure in rural areas of Latin America has improved water availability by 40%, reduced post-harvest losses by 20%, and generated new sources of income through the sale of renewable energy.

Green corridors and multifunctional agricultural landscapes are examples of innovative approaches to land management. These initiatives not only increase resilience to climate change, but also improve biodiversity, strengthen ecosystem services, and contribute to the well-being of rural communities. In Costa Rica, payment for environmental services programs have incentivized reforestation and ecosystem conservation, creating a model that combines sustainable agricultural production with environmental conservation (IICA, 2022).

- **Risk management and adaptation to climate change:** This is an essential component for building resilience in agri-food systems. It ranges from agricultural insurance and contingency funds to early warning systems and climate information networks. ECLAC (2022) highlights that countries that have implemented these tools have managed to reduce losses from natural disasters by 30%, improving the response capacity of farmers and rural communities.

In turn, crop diversification and the promotion of agroecological production systems have proven to be effective strategies for reducing vulnerability. Agroecology, with its focus on biodiversity, closed nutrient cycles, and the integration of traditional practices with scientific knowledge, offers a path toward more sustainable and resilient agri-food systems. In countries such as Mexico and Peru, agroecology programs have improved food security and increased the income of rural families.

- **Regional and international cooperation:** It has established itself as an essential component for addressing the structural challenges of agri-food systems in LAC. Given the cross-border nature of phenomena such as climate change, market volatility, and food crises, isolated national responses are insufficient. In contrast, collective action, the integration of capacities, and coordinated access to global resources and knowledge enable the scaling of sustainable solutions, especially in contexts of high structural vulnerability.

Multiple global and regional initiatives have emerged in recent years with the aim of strengthening food security, improving the governance of agri-food systems, and promoting public policies consistent with the principles of sustainability and resilience.

- **Market intelligence and information platforms:** Having reliable, real-time data is essential for formulating effective public policies and for decision-making by producers, governments, and other stakeholders in the agri-food system. The following efforts stand out in this regard:
 - **Global Information and Early Warning System on Food and Agriculture (GIEWS):** led by FAO, this system constantly monitors food supply and demand, international prices, and weather conditions, issuing early warnings of imminent risks of food crises.
 - **Regional System for Intelligence and Monitoring of Agricultural Markets (SIMMAGRO):** Central American platform that integrates national market information systems, enabling daily monitoring of wholesale prices, trade, and production of the 40 most traded agricultural products in the region. These types of tools improve market transparency, reduce information asymmetries, and contribute to more efficient regional integration.

- **Market Information Organization of the Americas (MIOA):** intergovernmental network that promotes the collection, analysis, and dissemination of information on agricultural markets. Its cooperative approach facilitates the generation of harmonized statistics, which are necessary for agricultural policy decision-making at all levels.

These platforms strengthen governments' anticipatory capacity and improve systemic resilience, especially in the face of price crises or logistical disruptions.

Coordination of public policies and strategic frameworks: A key dimension of international cooperation is the harmonization of regulatory frameworks and shared strategies for sustainable rural development. Among the most relevant instruments:

- **Public Policy Observatory for Agri-Food Systems (OPSA):** An IICA initiative that promotes the exchange of experiences, evidence, and lessons learned to design a new generation of agri-food public policies. Its systemic approach allows for the integration of environmental, economic, social and health objectives.
- **SAN-CELAC Plan:** Regional Strategy for Food and Nutritional Security, promoted by the Community of Latin American and Caribbean States. This plan seeks to eradicate hunger and malnutrition through a multi-level approach that combines social programs, protection systems, and productive development.
- **Agenda 2030 and SDG 2 ("Zero Hunger"):** The international commitment to the Sustainable Development Goals has led LAC countries to align their strategic frameworks with global goals, particularly regarding hunger eradication, equitable access to food, sustainable production, and improved nutrition.
- **Coalition for Food and Nutrition Security:** Coordinated by FAO, WFP, UNICEF, and other multilateral partners, it promotes synergies between social, agricultural, and environmental policies, in addition to facilitating access to targeted financing for structural interventions.

Climate finance and technical cooperation for resilience: In response to the effects of climate change, international cooperation has created financial and technical instruments that enable LAC countries to adapt their agri-food systems. In this area, the following stand out:

- **Green Climate Fund (GCF):** It is the main source of multilateral climate finance. It has begun to channel resources toward projects in resilient agriculture, water management, and the restoration of degraded agricultural landscapes. Several LAC countries have already accessed funding for pilot initiatives, in some cases implemented by agricultural-livestock development banks.
- **IFAD and FAO regional programs:** Both agencies have worked together on programs such as adaptation in family farming, national agricultural investment plans, and agroclimatic risk management. In addition, they provide technical assistance to develop legal and institutional frameworks consistent with sustainability.
- **Multilateral public-private partnerships:** One example is the Zero Hunger Pact in Guatemala, which brings together government, private companies, civil society, and international cooperation to address malnutrition from a comprehensive perspective.

- **Strategic value of South-South and triangular cooperation:** In parallel with traditional financing and cooperation, LAC has strengthened South-South and triangular cooperation mechanisms. This includes technical exchanges, capacity building, and knowledge transfer between countries with similar conditions. Brazil, Mexico, and Colombia have led this type of cooperation, sharing successful experiences in family farming, agroecology, agricultural insurance, and agri-food information systems. IICA and ECLAC have promoted regional learning and knowledge management networks, enabling the democratization of agri-food knowledge from and for the region.

CHAPTER VI. CYBERSECURITY AND NEW DIGITAL THREATS

6.1. Digital insecurity as a structural threat

Digital insecurity is one of the most significant emerging threats to sustainable development, economic stability, and governance in LAC. As digitalization advances, the risks associated with the use of information technologies grow exponentially. This insecurity not only compromises technical systems, but also puts critical infrastructure, essential public services, and fundamental citizen rights at risk, especially in highly digitalized sectors such as finance, education, energy, and healthcare.

Digital insecurity—understood as the inability of systems, institutions, and regulatory frameworks to adequately prevent, detect, and respond to cyber threats—represents a structural threat that transcends the technological realm. This vulnerability affects individuals, businesses, governments, and entire economies, and its impact is especially critical in regions such as LAC, where digital transformation is advancing faster than the institutional capacity to manage it.

- **A cross-cutting dimension of risk:** Digital insecurity must be addressed as a cross-cutting threat that affects multiple levels:
 - **At the individual level,** it compromises people's privacy, identity, and assets. Theft of personal and financial data, unauthorized access to devices, and manipulation of sensitive information have become common. According to the International Business Machines (IBM) 2024 report, 46% of cybersecurity breaches involved personally identifiable information (PII), directly affecting millions of citizens.
 - **At the business level,** it generates significant economic losses, operational interruptions and reputational damage. In 2024, the average cost of a data breach reached US\$4.88 million per incident (IBM, 2024), primarily due to customer loss, regulatory fines, and post-attack recovery expenses.
 - **At the state level,** it violates digital sovereignty, governance, and national security. Attacks targeting critical infrastructure—such as those that occurred on banks, civil registries, and electricity companies in LAC in 2024—have highlighted the fragility of public systems in the face of digital organized crime.
 - **At the regional and international levels,** digital insecurity can be used as a geopolitical weapon, facilitating espionage, disinformation, and foreign interference. The cyber environment has become a new arena for conflict, where state and non-state actors deploy sophisticated operations for economic, political, and military purposes.

LAC faces a dangerous combination: high digital exposure and low institutional development in cybersecurity. The International Telecommunication Union's (ITU, 2024) Global Cybersecurity Index (GCI) reveals that LAC obtains an average score of 11 out of 20 in key components such as technical,

legal, organizational and human talent development capabilities. While it excels in international cooperation, its poor performance in other areas demonstrates a lack of solid structures for comprehensive digital risk management.

This institutional gap is exacerbated by inequality between countries. While nations such as Chile and Brazil have made progress in regulatory frameworks and technical capabilities, others still lack national cybersecurity strategies, incident response teams (CSIRTs), or adequate legislation to address cybercrime. This heterogeneity creates a “contagion effect”: the weakness of one country can become a gateway for attacks that affect the entire region.

The digital transformation accelerated by the pandemic has expanded the surface of exposure to risk. Sectors such as finance, healthcare, education, and energy have digitized operations without always having adequate protective measures in place. In this context, there has been a sustained expansion of cyber incidents⁴⁴ in LAC, growing at an average rate of 25% per year (World Bank, 2024).

More than 70% of attacks in the region are economically motivated, according to World Bank data. In countries such as Argentina, Peru, and Mexico, this proportion exceeds 80%. This reflects a clear orientation of digital organized crime on asset theft, fraud, and extortion.

- **Legal, educational and technological gaps:** Digital insecurity is also a product of structural failures in three critical dimensions:
 - **Regulatory gap:** Many countries lack specific legislation on data protection, cybercrime, and the responsible use of emerging technologies such as AI or blockchain.
 - **Capability gap:** The shortage of cybersecurity professionals exceeds 50% in most countries in the region (IBM, 2024). The scarcity of specialized talent hinders the prevention, detection, and response to incidents.
 - **Technological gap:** While large companies adopt advanced technologies, SMEs and local governments operate with outdated or insecure systems, exacerbating their vulnerability.
 - **Digital insecurity is not just a technical problem: it is a development and sovereignty issue.** When a country fails to protect its citizens' data, ensure the integrity of its institutions, or prevent the use of cyberspace for criminal or geopolitical purposes, it compromises its development model. In this sense, cybersecurity should be treated as a strategic public good, on the same level as physical infrastructure, education, or healthcare. Therefore, adopting a comprehensive approach involves promoting a culture of cybersecurity from schools to businesses and government; coordinating regional efforts to standardize regulatory frameworks and share technical capabilities; and establishing a public-private investment agenda for secure digital infrastructure, human talent, and emerging technologies.

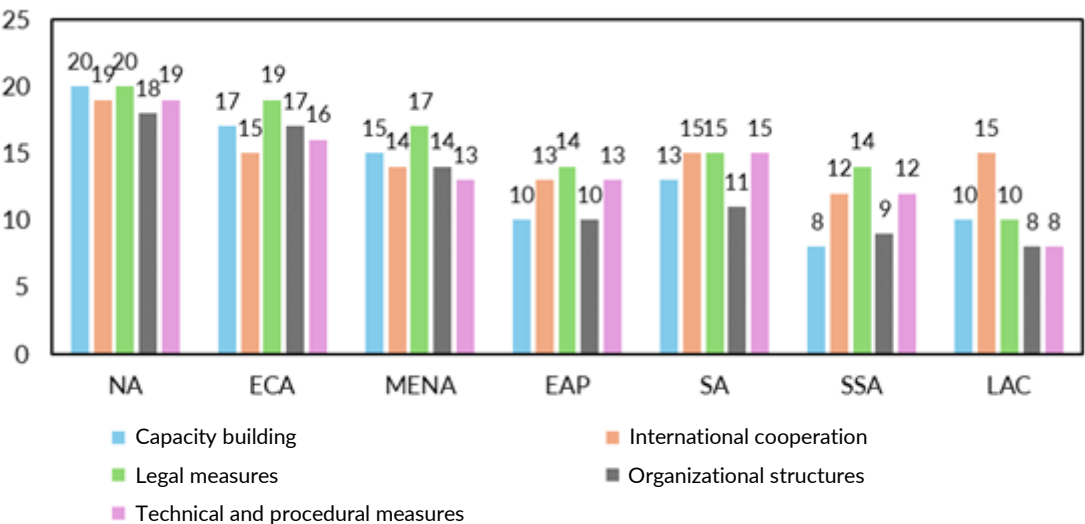
⁴⁴ The most common threats include: 1) **Ransomware:** An action by which a third party gains unauthorized access to a device, blocks access to its information through encryption, and, in some cases, extracts said data with the threat of making it public. A ransom is demanded to regain access to the system and information; 2) **Phishing:** Sending communications pretending to be a reliable or legitimate source, with the intention of deceiving the recipient and facilitating unauthorized access or carrying out an attack; 3) **SQL Injections:** Targeted intrusion into a web application using structured language by inserting malicious commands that exploit flaws in its programming, with the aim of accessing or manipulating the database in an unauthorized manner; 4) **Zombie networks (botnets):** A set of devices compromised and remotely intervened by cybercriminals, which can be used to execute coordinated attacks; 5) **Mail spoofing:** The act of spoofing the email address of a trusted person or entity to obtain personal information from the recipient through deceptive techniques; and 6) **Internal attacks:** carried out by employees with privileged access.

6.2. Evolution toward the current situation of digital insecurity

Digital insecurity in LAC is not a temporary anomaly, but rather the result of a cumulative process of technological transformation, expansion of digital services, and lagging protection policies. This phenomenon has structural roots in the way digitalization has been integrated into the region’s economies and societies, often without the necessary support of regulatory frameworks, institutional capacities, or investments in cyber resilience.

Over the past two decades, the number of cyber incidents has grown steadily globally. The COVID-19 pandemic acted as a catalyst, accelerating unprecedented digitalization processes and, with them, exposure to digital risks. Since 2020, cyber incidents have generated losses of nearly US\$28 billion (IMF, 2024), with a considerable increase in ransomware attacks, phishing, social engineering, and personal data breaches. Charts like those presented by the IMF show how these events doubled after the pandemic, affecting millions of users and organizations.

Figure 33. Global Cybersecurity Index. Average by world region (component score, 0-20)

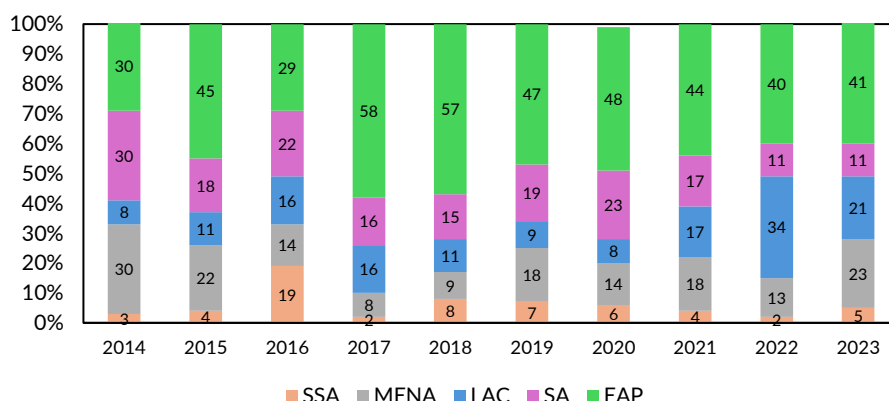


Source: ITU. 2024

In LAC, the situation is particularly critical. The region moved from fourth to second place among the most affected by cyberattacks between 2014 and 2022, with cyber incidents growing at an average annual rate of 25% (World Bank, 2024). This rise has occurred in a context of low institutional capacity: the Global Cybersecurity Index (ITU, 2024) indicates that the region presents marked weaknesses in key components such as organizational structures (score of 8/20) and technical/procedural measures (8/20), although it achieves moderate progress in international cooperation (15/20) and legal frameworks (10/20) (Figure 33).

This institutional imbalance has allowed LAC to record the fastest growth rate in the world in disclosed cyber incidents: 25% annually in the last decade, above Europe (24%) and North America (11%) (Figure 34).

Figure 34. Percentage of Cyber Incidents in Developing Regions

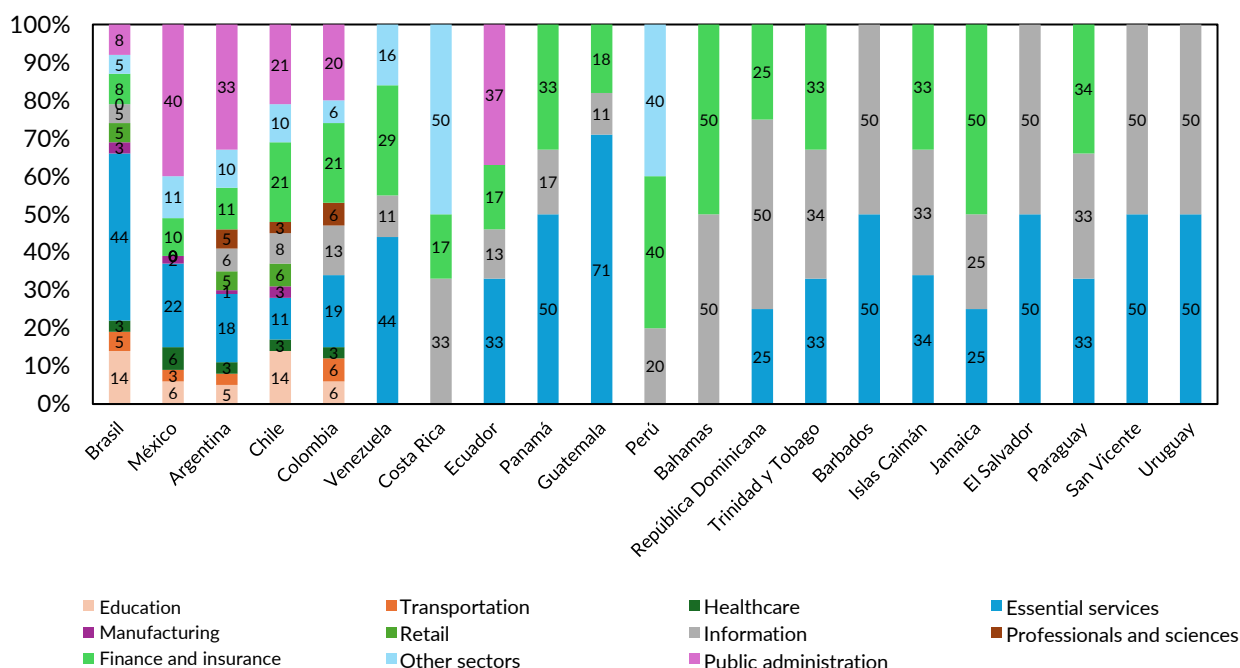


Source: World Bank. 2024.

SSA = Sub-Saharan Africa. MENA = Middle East and North Africa. LAC = Latin America and the Caribbean. SA = South Asia. EAP = East Asia and the Pacific.

- Digitalization without protection: critical sectors at risk:** The pattern of vulnerability in LAC is concentrated in key sectors for economic and social stability. Between 2013 and 2024, a large portion of reported attacks targeted the public and financial sectors, reflecting the lack of robust security protocols and a high concentration of sensitive data (Figure 35).

Figure 35. Distribution of disclosed cyber incidents by sector in LAC, 2013-2024

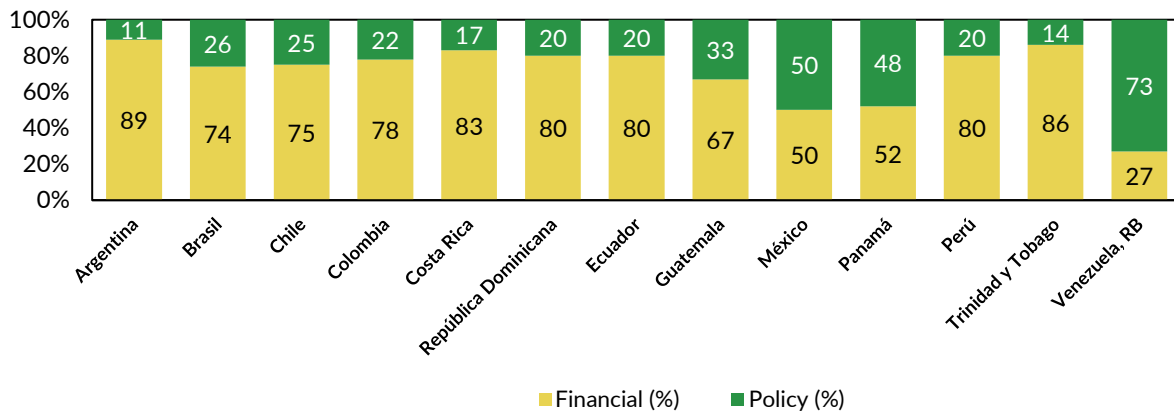


Source: World Bank. 2024

Most of the cyber incidents reported in LAC are financially motivated⁴⁵. On average, more than 70% of reported attacks in the region are driven by economic interests, reflecting a clear focus on asset theft, extortion, or financial fraud by cybercriminals. Countries such as Argentina (89%), Trinidad and Tobago (86%), Costa Rica and the Dominican Republic (80%) and Peru (80%) stand out for this trend (Figure 36).

⁴⁵ Criminally motivated attackers seek financial gain through money theft, data theft, or business disruption. IBM. 2024.

Figure 36. Distribution of Cyber Incidents by Reason in LAC, 2014-2023



Source: World Bank (2024)

During 2024, Latin America was the scene of several large-scale cyberattacks that compromised the security of financial institutions, government agencies, and large companies (Table 16). These incidents demonstrate the growing sophistication of digital threats in the region and underscore the urgent need to strengthen cybersecurity policies.

Table 16. Large-Scale Cyberattacks in LAC, 2024

Country	Institution	Description of the attack
Argentina	Registro Nacional de las Personas (RENAPER)	In April, more than 100,000 photographs of Argentine citizens, stolen in 2021 from RENAPER, were published on Telegram. Although the theft occurred previously, the circulation of this data in 2024 exposed citizens to risks of phishing, social engineering, and identity theft.
Brazil	Banco do Brasil	In March, the bank suffered an internal attack that allowed cybercriminals to access its databases, stealing the personal and financial information of more than 2 million customers. The attackers carried out fraudulent transactions and altered biometric data. Operation “Master Key” led to the arrest of 11 suspects.
Colombia	Air-e	On September 2, energy company Air-e suffered a ransomware attack that affected its operating systems, preventing users from accessing services such as online bill payments. Financial management and logistics operations were also compromised. The company confirmed that payment methods were not affected and remained secure.
Mexico	Coppel	In April, retail chain Coppel was the victim of a ransomware attack attributed to the Lockbit 3.0 group, affecting 1,800 stores nationwide. The operation was interrupted for three months, resulting in losses of nearly US\$15 million. The company activated protection protocols to safeguard its information.
Mexico	Consejería Jurídica del Poder Ejecutivo Federal (CJEF)	On November 15, the RansomHub group attacked the CJEF, hijacking more than 300 GB of information, including contracts and staff data. After failing to receive the demanded ransom, they released 206 GB of information on the Deep Web.
Mexico	Grupo Bimbo	In February, the Mexican multinational was attacked by the Medusa ransomware group, which encrypted data and appended the “MEDUSA” extension to compromised files. The attackers published some stolen files as evidence and demanded a ransom of US\$6.5 million.
Peru	Interbank	In October, a malicious actor nicknamed “kzoldiyck” accessed Interbank’s internal servers using compromised credentials, exposing the personal and financial data of more than 3 million customers. The attacker demanded a US\$4 million ransom, and when it was not received, he threatened further consequences.

Source: SEGURILATAM. | Prepared by ALIDE.

The current situation in digital security and cybersecurity demonstrates the growing complexity and relevance of this issue at the global and regional levels. Mass digitalization has brought with it an expansion of risks affecting institutions and individuals, especially in critical sectors such as finance. Despite regulatory advances and the existence of international frameworks, LAC faces a combination of high exposure to cyberattacks and low institutional development. This requires strengthening technical, legal, and organizational capabilities, promoting a culture of cybersecurity, and ensuring that digital transformation is built on secure foundations.

- **Lack of talent and digital governance:** One of the most critical factors in this evolution is the scarcity of specialized cybersecurity talent. LAC faces a shortage of approximately 1.3 million cybersecurity professionals, representing nearly 32% of the estimated global gap of 4 million specialists (Fortinet 2024). This shortage not only limits incident response capacity, but also significantly increases operational risk for organizations. 70% of LAC companies attribute the increase in cyber risks to a lack of specialized skills, and 87% have experienced security breaches related to this shortage. Additionally, more than 50% of organizations reported losses exceeding US\$1 million due to security incidents in the past year (D'Ambrosio. 2024).

The economic impact of cyberattacks in LAC is significant, representing approximately 1% of annual GDP, and could rise to 6% if critical infrastructure is compromised. The situation is aggravated by the lack of coherent national cybersecurity strategies. Only 10 out of the 33 LAC countries exceed the global average in the 2024 Global Cybersecurity Index, and many lack incident response centers (CSIRT)⁴⁶ with effective coverage (OLADE, 2024). This combination of talent shortage and poor governance creates an environment conducive to successful cyberattacks, especially in critical sectors such as energy, healthcare, and finance.

- **A digital ecosystem under construction and its growing exposure:** The Global Cloud Ecosystem Index 2022 (MIT Technology Review Insights/Infosys Cobalt, 2022) shows that LAC countries have an average score of 5.6 out of 10 in capabilities related to digital infrastructure, cybersecurity, and talent. This contrasts with North America (7.65) and Europe (7.48) and highlights a structural gap in the technological base that supports the digital transformation of LAC. Although countries such as Chile and Uruguay are above the regional average, the overall picture reveals a region still in the process of building its basic digital capabilities.

This historical and technical evolution toward the current situation of digital insecurity demands an urgent shift in public policy, financing, and institutional innovation priorities. Without decisive action to close regulatory, technological, and human gaps, the region will continue to be an attractive and vulnerable target for increasingly complex threats.

6.3. The cost of inaction: future consequences

In a context where digital transformation processes are accelerating, failure to adopt effective cybersecurity measures can have critical consequences at the economic, institutional, social, and governance levels. The region is at a turning point: act with strategic vision or bear the growing and multifaceted costs of inaction.

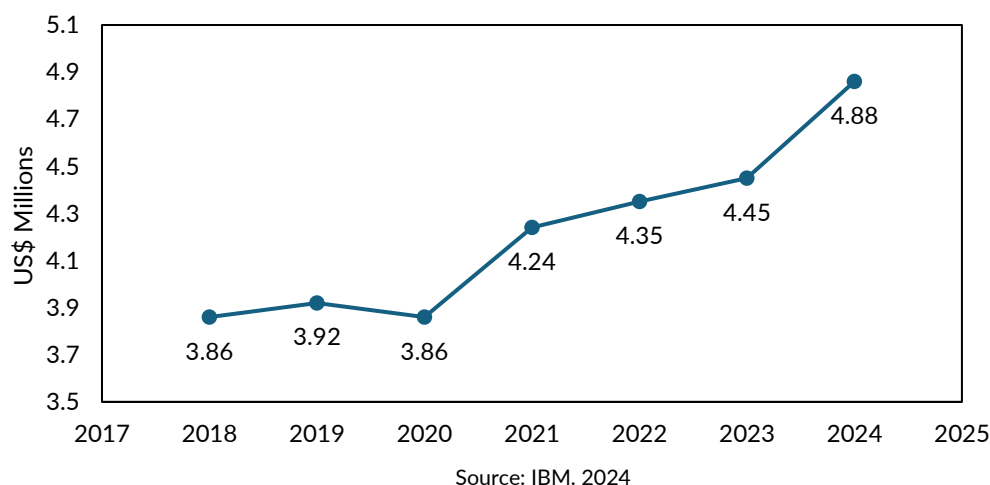
- **Exponential increase in economic costs**

One of the most immediate and quantifiable effects is the sustained increase in economic costs resulting from cyberattacks and data breaches. In 2024, the average cost of a security breach globally reached US\$4.88 million, marking a 10% increase over the previous year, according to the IBM report

⁴⁶ A specialized team can respond immediately to a cyberattack to mitigate its consequences and minimize the impact on the organization.

(2024, Figure 37). For LAC, annual losses attributable to cybercrime range between US\$15 billion and US\$30 billion, equivalent to between 0.28% and 0.57% of regional GDP, although some projections raise this range to 1% of GDP in countries with compromised critical infrastructure. These losses are explained by operational interruptions, regulatory litigation, sanctions, customer churn, and post-incident costs. The increasing sophistication of attacks, driven by the malicious use of AI—such as automated phishing and advanced social engineering—reduces the margin of containment and amplifies the damage, making a proactive and systematic response even more urgent (UNIDIR, 2024).

Figure 37. Global average total cost of a data breach



The increasing digitalization of operations has exposed organizations to increasingly complex and costly cybersecurity threats. An IBM report⁴⁷ reveals an alarming picture of the economic impact of data breaches. From a historic increase in the average cost per incident to new dynamics such as the malicious use of AI and the proliferation of unmanaged data, the findings underscore the urgency of taking preventative measures, closing talent gaps, and improving collaboration with external entities such as law enforcement agencies.

Table 17. Costs of Cybercrime by Region (global estimates), 2017

Region	Regional GDP (US\$ Billions)	Cost of cybercrime (US\$ Billions)	Losses from cybercrime (% of GDP)
North America	20.2	140–175	0.69–0.87
Europe and Central Asia	20.3	160–180	0.79–0.89
East Asia and the Pacific	22.5	120–200	0.53–0.89
South Asia	2.9	7–15	0.24–0.52
Latin America and the Caribbean	5.3	15–30	0.28–0.57
Sub-Saharan Africa	1.5	1–3	0.07–0.20
Middle East and North Africa	3.1	2–5	0.06–0.16
World	75.8	445–608	0.59–0.80

Source: McAfee and CSIS. 2018

These incidents can generate significant costs for companies. Since 2020, reported direct losses from cyber incidents have amounted to nearly US\$28 billion (in real terms), in addition to billions of stolen or compromised records. However, the total cost, which includes both direct and indirect losses, is likely to be much higher⁴⁸. Some estimates put it at between 1% and 10% of global GDP (Table 17).⁴⁹

⁴⁷ Cost of a data breach report 2024. International Business Machines (IBM). 2024

⁴⁸“Risk Management, Firm Reputation, and the Impact of Successful Cyberattacks on Target firms”. Kamiya & others, 2021.

⁴⁹Center for Strategic and International Studies, 2020. Statista, 2022.

Table 18. Costs and Key Factors in Cybersecurity Breaches (2024)

Type of cost / factor	Description	Amount of cost / impact
Average total cost of a breach	It rose to US\$ 4.88 million, the highest increase since the pandemic. Driven by lost business, regulatory fines, and customer service expenses.	US\$4.88 million
Combined cost: lost business and post-breach	Expenses for operational disruptions, customer loss, and incident response. Highest value in 6 years.	US\$2.8 million
Savings from extensive use of AI	Organizations that used AI in prevention workflows reduced the average cost of the breach.	US\$2.2 million less
Cybersecurity talent shortage	More than 50% of the affected organizations have a shortage of specialized personnel. This has translated into increased costs.	US\$1.76 million more
Growing talent shortage	Skills shortage increased by 26.2% compared to the previous year, affecting response and containment capabilities.	+26.2% shortage
Attacks with hidden data or "shadow data"	35% of breaches involved hidden or unmanaged data, and were associated with a 16% increase in costs.	+16% cost
Storage in multiple environments	40% of the breaches occurred in distributed (multi-environment) storage environments, making them difficult to identify and contain.	40% of cases
Average cost per malicious insider attack	Attacks carried out by malicious insiders were the most costly on average, more so than phishing or credential compromises.	US\$4.99 million
Personal data of compromised customers	46% of the breaches involved personal data (PII). The second most affected type was intellectual property data (43%).	46% PII / US\$ 173 per record
Savings from police involvement in ransomware	Organizations that involved law enforcement agencies in ransomware attacks reduced costs and containment time.	US\$1 million less / 16 days less
Duration of attacks due to stolen credentials	These were the attacks that took the longest to identify and contain, exceeding 9 months.	292 days average
Duration of phishing attacks	Phishing attacks lasted an average of 261 days, and social engineering attacks lasted 257 days.	261 / 257 days
Industry with the greatest cost increase	The industrial sector experienced the largest year-over-year increase in cost per breach, highlighting its operational vulnerability.	US\$830,000 more per gap
Average time in the industrial sector	Despite their high sensitivity to disruptions, industries took an average of 199 days to identify and 73 days to contain breaches.	199 + 73 days

Source: IBM (2024)

Figure 38. Global number of cyber incidents, 2004-23

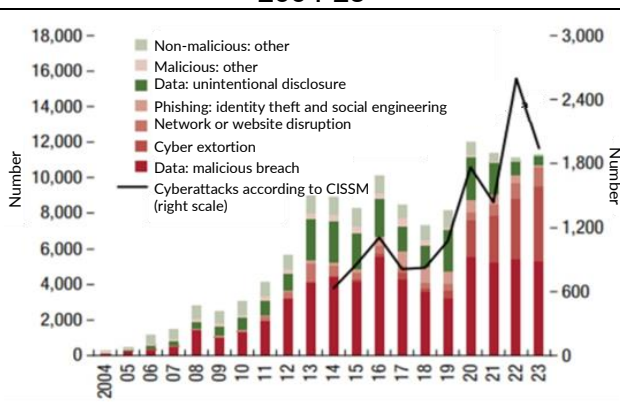
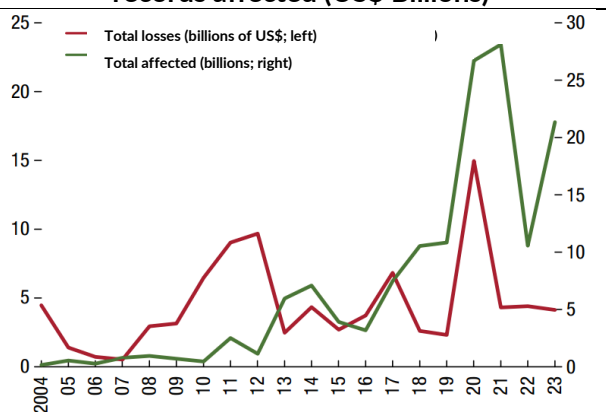


Figure 39. Total amount of losses and number of records affected (US\$ Billions)



Source: International Monetary Fund (IMF). 2024.

Note: Panels 1 and 2 show data from Advisen as of February 22, 2024, using Advisen's cyber incident classification. In panel 1, the black line shows the CISSM cyberattack data. In panel 2, the loss amounts are deflated using the US GDP deflator (2022 = 100). «Affected Count» is the cumulative total number of parties with breached or stolen data, or compromised devices, depending on the type of event.

- **Risks to institutional stability and governance**

Digital insecurity also has profound implications for institutional stability and governance. Attacks targeting civil registries, justice platforms, healthcare systems, or tax databases compromise not only the State's operations but also its legitimacy in the eyes of its citizens. Examples such as the massive data leak from the Registro Nacional de las Personas (RENAPER) of Argentina, or the seizure of more than 300 GB of documents from the Consejería Jurídica del Ejecutivo Federal of Mexico by the RansomHub group, demonstrate the direct impact on critical state functions. If no action is taken, the loss of trust in digital government will deepen, millions of citizens will be exposed to identity fraud, and states will be unable to implement secure digital public policies.

- **Fragmentation of productive ecosystems and greater exclusion**

From an economic and productive perspective, inaction on cybersecurity threatens to fragment digital ecosystems and exclude the most vulnerable actors, such as technology SMEs and rural entrepreneurs. In an environment where trust is a key intangible asset, the perception of insecurity can discourage the adoption of emerging technologies such as blockchain, AI, or cloud services, especially in strategic sectors such as healthcare, agribusiness, energy, or logistics. The direct consequence will be a greater concentration of digital progress in large corporations with defensive infrastructure, while microenterprises, cooperatives, and subnational governments are left behind. The gap between countries and sectors with cyber resilience and those without adequate protection will widen, reinforcing inequalities.

- **Increased cybercrime and loss of territorial control**

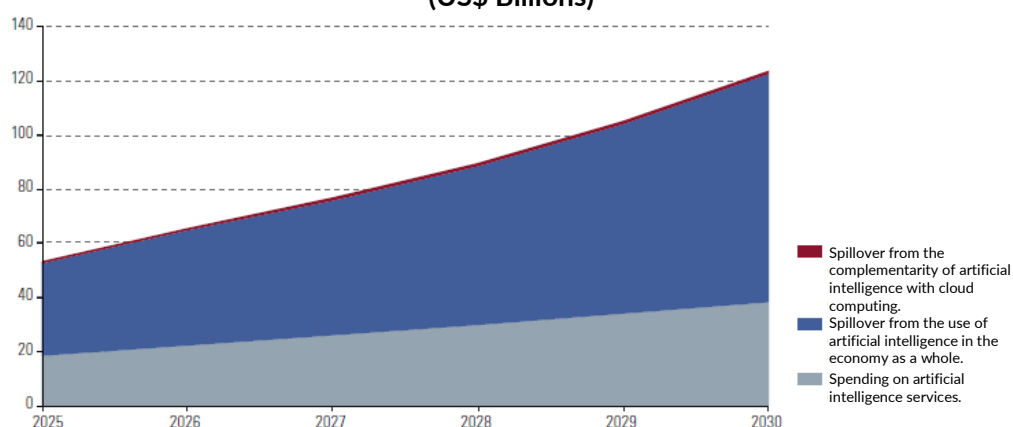
Transnational organized crime is also rapidly adapting to digitalization. In the absence of adequate regulatory frameworks and technical response capacity, cybercrime networks have proliferated in LAC through schemes such as ransomware-as-a-service, dark web extortion, and large-scale identity theft. The lack of state action and regional cooperation allows these organizations to operate with impunity, expanding their control over digital territories and replicating patterns of insecurity that were previously limited to physical space. Inaction, therefore, could result in a progressive loss of digital sovereignty and a weakening of police and judicial capacity to address complex crimes.

- **Missed opportunities for development and innovation**

The consequences of inaction are not limited to damage: they also include the cost of missed opportunities. According to ECLAC (2025), AI could generate a cumulative impact of more than 1% of regional GDP between 2024 and 2030 (Figure 40). However, this transformative potential is directly dependent on the existence of secure, interoperable, and reliable digital environments. The lack of cybersecurity standards will affect the attraction of FDI in technology sectors, limit the implementation of smart cities and virtual educational environments, and hinder LAC's integration into new global value chains based on data and digital services. The region risks being marginalized from the knowledge economy and the benefits it brings in terms of productivity, financial inclusion, and quality employment.

Digital insecurity is not an isolated sectoral or technological challenge: it represents a cross-cutting threat to the development model that LAC aspires to consolidate (Table 19). The lack of a coordinated and structural response not only implies greater costs and vulnerabilities, but also a strategic lag in the region's positioning in the global economy. Therefore, it is essential to adopt a comprehensive vision that articulates public policies, modern regulatory frameworks, regional cooperation, and structured financing. In this scenario, development banking has an essential role as a catalyst for technical, institutional, and financial solutions to close digital security gaps and promote sovereign, secure, and inclusive digital governance.

**Figure 40. Projected economic impact of AI, 2025-2030
(US\$ Billions)**



Source: Taken from Overcoming the Development Traps of Latin America and the Caribbean in the Digital Age. ECLAC. 2025.

Note: The countries considered for the analysis are Argentina, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, the Dominican Republic, and Uruguay.

Table 19. Missed Opportunities Due to Failure to Act on Digital Insecurity in LAC

Dimension	Development opportunity	Consequence of not acting
Digital economy and investment	Attracting FDI in digital technologies (AI, fintech, govtech).	Lower investor confidence due to a lack of secure environments, reducing the flow of capital to emerging digital ecosystems.
Digital government and services	Scaling secure public platforms for health, education, justice, and social transfer services.	Stagnation of e-government initiatives due to vulnerabilities; increased citizen exposure to fraud and leaks of sensitive data.
Education and employment of the future	Training human talent in cybersecurity, data science, STEM, and digital innovation.	Disincentives to invest in key areas of education due to a lack of labor demand and reliable business ecosystems.
Productive transformation	Adoption of technologies such as AI, blockchain, and IoT in sectors such as agribusiness, logistics, and manufacturing.	Loss of global competitiveness due to failure to integrate into digital value chains; exclusion of MSMEs due to a lack of defensive capabilities.
Regional positioning	Participation of LAC in global innovation networks and data governance.	Marginalization of LAC in global technology agreements and international forums on digital governance, cybersecurity, and data trade.

Source: World Bank (2024b), ECLAC (2025), Fortinet (2024), ITU (2024) | Developed in-house

6.4. The Dual Nature of AI

Due to its dual-use nature, not everything we see about AI is necessarily positive. For this reason, debates arose regarding its application. In this regard, it's important to remember that in February 2017, a total of 26 AI experts and researchers met in Oxford, UK, to analyze potential future malicious impacts.⁵⁰

The report examines the landscape of potential security threats stemming from malicious uses of AI technologies and proposes ways to better predict, prevent, and mitigate these threats. They analyzed, but did not conclusively resolve, the question of what the long-term balance between attackers and defenders will be. They focused instead on the types of attacks that were likely to be seen later if adequate defenses were not developed. The report makes four important recommendations:

- Policymakers should work closely with technical researchers to investigate, prevent, and mitigate potential malicious uses of AI.
- AI researchers and engineers should take the dual-use nature of their work seriously, allowing misuse considerations to influence research priorities and standards, and proactively reaching out to relevant stakeholders when harmful applications are foreseeable.

⁵⁰Report: "The Malicious Use of Artificial Intelligence: Forecasting, Prevention, and Mitigation".

- Best practices in research areas with more mature methods for addressing dual-use issues, such as cybersecurity, should be identified and adopted where appropriate in the case of AI.
- Actively seek to expand the universe of stakeholders and domain experts involved in discussions about these challenges.

They further argued that as AI capabilities become more powerful and widespread, the increasing use of AI systems is expected to generate the following changes in the threat landscape:

- Expansion of existing threats. The cost of attacks can be reduced by the scalable use of AI systems to complete tasks that would normally require human labor, intelligence, and expertise.
- Introduction of new threats. New attacks may emerge through the use of AI systems to complete tasks that would otherwise be impractical for humans. In addition, malicious actors could exploit vulnerabilities in AI systems.
- Shift to the typical nature of threats. They believed there was reason to expect that attacks enabled by the increasing use of AI would be especially effective, well-targeted, difficult to attribute, and exploit vulnerabilities in AI systems.

Furthermore, they analyzed three security domains separately, and illustrated possible changes to threats within these domains through representative examples:

- Digital security. Using AI to automate tasks related to cyberattacks would alleviate the existing trade-off between the scale and effectiveness of the attacks. This could amplify the threat associated with labor-intensive cyberattacks. New attacks were also expected to exploit human vulnerabilities (for example, using voice spoofing), existing software vulnerabilities, or the vulnerabilities in AI systems.
- Physical security. The use of AI to automate tasks related to conducting attacks using drones and other physical systems (for example, through the deployment of autonomous weapons systems) could expand the threats associated with these attacks.
- Political security. The use of AI to automate tasks related to surveillance, persuasion, and deception could expand the threats associated with privacy invasion and social manipulation. Novel attacks were also expected that take advantage of an improved ability to analyze human behaviors, moods, and beliefs based on available data.

In addition to these main recommendations, they also proposed exploring several open questions and potential interventions within four priority research areas:

- Learn from and with the cybersecurity community. At the intersection of cybersecurity and AI attacks, the need to explore and potentially implement networked teamwork, formal verification, responsible disclosure of AI vulnerabilities, security tools, and secure hardware stands out.
- Exploring different opening models. As the dual-use nature of AI and machine learning becomes clear, they highlight the need to rethink norms and institutions around open research, starting with pre-publication risk assessment in technical areas of special interest, central access licensing models, sharing regimes that favor security, and lessons from other dual-use technologies.
- Promoting a culture of responsibility. AI researchers and the organizations that employ them are uniquely positioned to shape the security landscape of the AI-enabled world.
- Develop technological and policy solutions. In addition to the above, study a range of promising technologies, as well as policy interventions, that could help build a safer future with AI.

CHAPTER VII. JOB SECURITY AND NEW TECHNOLOGIES

The potential applications of AI are endless in sectors such as transportation, medicine, and industry, as well as in the financial sector. This makes it attractive in times like the present, with a marked decline in the capacity of traditional capital factors of production—the marginal rate of efficiency of capital has been declining for more than 50 years—and in labor. In this context, AI is seen as a third factor of production and could overcome the physical limitations of capital and labor to open new sources of economic growth.

In this regard, Mark Purdy and Paul Daugherty (2016) indicate that “AI opens at least three important paths to growth. Firstly, it can create a new virtual workforce—what we call ‘intelligent automation.’ Secondly, it can complement and enrich the knowledge and skills of the workforce and physical capital. Finally, like previous technologies, AI can drive innovations in the economy. Over time, all of this becomes the catalyst for a broad structural transformation. Economies that use AI not only have a different way of doing things, but they also do different things”.⁵¹ Estimates in 10 developed countries indicate that AI could double the GDP growth rate and increase labor productivity from 11% to 37%.

Regarding LAC, Ovanesso and Plastino point out that “it takes time for the impact of a new technology to begin to be better reflected in the economy.” They use 2035 as the “comparison year.” According to their estimates for Argentina, Brazil, Chile, Colombia, and Peru, AI produces the greatest economic benefits in absolute terms for Brazil, culminating in an additional US\$432 billion in its gross value added (GVA) in 2035. This would imply a 0.9% boost to growth that year. Chile and Peru could increase their GVA by 1% thanks to AI. Meanwhile, Colombia could see an additional expansion of 0.8%⁵². Global estimates suggest the global economy will be US\$16 trillion larger by 2030, thanks to AI.⁵³

Improvements in labor productivity will account for more than half of all economic gains from AI through 2030, while increased consumer demand resulting from product improvements will account for the remainder.

Regional gains will be felt most strongly in China⁵⁴, which will see a 26% increase in GDP by 2030, followed by the U.S. (14.5%). Together, the two countries will account for nearly 70%, or US\$10.7 trillion, of AI’s global economic impact. Europe and developed Asia will also benefit significantly (9 to 12% of GDP in 2030); while developing countries in Africa, LAC, and Asia will see modest gains (less than 6%).

The benefits of AI will be felt differently across all sectors, say Ovanesso and Plastino. Retailers, financial services, and the healthcare sector will reap the rewards as productivity, product value, and consumption increase.

7.1. Impact of AI automation on wealth and employment

Five different conceptions or perspectives have been identified regarding the future impact of automation on employment. These are summarized as follows⁵⁵:

⁵¹ Purdy and Daugherty, 2016 «How Artificial Intelligence can Drive Growth in South America»

⁵² Ovanesso and Plastino, 2017.

⁵³ PWC. (2017) «*Sizing the prize* What's the real value of AI for your business and how can you capitalise?».

⁵⁴ In July 2017, China unveiled a plan to become the world leader in artificial intelligence (AI) and create an industry worth US\$150 billion to its economy by 2030. El Clarin, 2018/02/27. https://www.clarin.com/new-york-times-international-weekly/china-prioriza-inteligencia-artificial_0_Hy1r4bXdz.html.

⁵⁵ Mark Knickrehm (2018).

- **The dystopians.** Humans and machines will fight for hegemony, and the latter will emerge victorious. AI will take over specialized tasks while **robots will perform manual labor**. The result will be **mass unemployment**, falling wages, and unprecedented economic disruption.
- **The skeptics:** Despite smart technologies, productivity growth will be low. Combined with an aging population, wage inequality, and the cost of combating climate change, GDP growth will be virtually zero. According to them, developed countries will have to endure economic stagnation.
- **The utopians:** The takeover of most jobs by intelligent machines does not lead to economic decline, but rather the opposite. Unparalleled wealth. In the 2020s and 2030s, over the course of two decades, AI and computing power will reach “the singularity” (the moment when machines equal or surpass the capabilities of the human brain).
- **The technological optimists:** The productivity boom has already begun, and the problem is that companies have not yet managed to measure it because they do not yet know how to take full advantage of the true potential of smart technologies. According to them, when this happens, a digital “loot” will be created, generating economic growth and an improvement in the quality of life that cannot be measured by GDP, such as **consumer surplus** (due to cheaper and better products) and the value of free apps and information.
- **The optimistic realists:** Digitalization and smart machines can boost productivity, matching other technological booms. Productivity will grow in certain sectors and in well-performing companies. New jobs will be created, but smart technologies could exacerbate past trends, when demand for skilled workers and laborers rose, but demand for middle-level workers fell.

To prevent negative forecasts from occurring, three **ways to anticipate** them were suggested (Knickrehm, 2018). First, **use technology to augment human capabilities**. The goal should not be to replace humans but to get them to work better. Companies that use AI and robots to perform tasks that don't add any value or pose a risk to workers will fare better than those that try to get rid of their workers solely to cut costs. Second, **redefine and rethink organizational design**. Companies will need to plan ahead to determine which roles will be automated in order to prepare and train their employees for other positions. Third, **involve employees in technological development**. Those who want to keep their jobs (someone might always **take advantage of the opportunity** to create a new one) will have to adapt to changes. On the other hand, if no one gets paid, no one buys, and businesses are nothing without customers, so it's a mutual commitment to adapt and help them adapt to a different environment in which our role is yet to be defined.

For his part, David Rotman (2017), at the time, pointed out that no one knew exactly how AI and advanced automation would affect future employment opportunities. **Predictions about what types of jobs will be replaced and how quickly varied widely**. They referenced a 2013 study by Frey and Osborne⁵⁶, which estimated that approximately 47% of US jobs could be lost over the next two decades because they were jobs that were easy to automate, and that wages and educational attainment have a strong negative relationship with the likelihood of computerization. Another study by these same authors with Citibank in 2016⁵⁷ suggested that in 57 countries and regions, the risks were higher than in many other countries; that, in the OECD, on average, 57% of jobs were susceptible to automation. This number rose to 69% in India and 77% in China. Other reports noted that jobs often involved multiple tasks and estimated a smaller percentage of professions that could

⁵⁶ Frey Carl Benedikt and Michael A. Osborne (2013) “The future of employment: How susceptible are jobs to computerisation?”, Oxford Martin School, September.

⁵⁷ Frey Carl Benedikt, Michael A. Osborne and Citibank (2016) “*Technology at Work v2.0: The future is not what it used to be*”, Citibank, January.

be made obsolete by machines. A study by the OECD (2016)⁵⁸ estimated that only around 9% of jobs in the 21 countries that make up the OECD were at high risk of being automated. But the other part of the employment equation (**how many jobs will be created**) was seen, at the time, as impossible to know.⁵⁹

Based on a large-scale analysis of major global employers, including the world's 100 largest employers in each of the major industry sectors of the 15 largest developed countries and emerging economies, to estimate the expected level of employment change between 2015-2020 and extrapolate the number of jobs gained/lost, the World Economic Forum estimated that automation and technological advances could generate a net impact on jobs lost of more than 5.1 million between 2015-2020, with a total loss of 7.1 million jobs, two-thirds of which would be concentrated in office and administrative jobs, and a total gain of 2 million jobs in several smaller sectors⁶⁰.

Later studies, such as the McKinsey Global Institute⁶¹ study in 46 countries representing 80% of the global workforce, found that nearly half of all work activities worldwide had the potential to be automated using current technology: 5% of occupations could be fully automated; 60% had at least 30% of activities that could be automated. Technically automatable activities would affect 1.2 billion workers and US\$14.6 trillion in wages. China, India, Japan, and the U.S. accounted for more than half.

A report by the Gartner Consulting Firm (2017)⁶² stated that AI would create more jobs than it would destroy. Specifically, 2.3 million new jobs would be created by 2020, although 1.8 million would be eliminated. The analysis also detailed that two million more would be created from that date until 2025. He also stated that by 2022, one in five jobs would be related to AI, and that a year earlier this technology would have generated 2.9 quintillion in benefits and recovered 6.2 trillion hours of productivity. Regarding sectors, he noted that healthcare, education, and public administration will have a continuously increasing demand for labor, while the manufacturing industry would be the most affected.

From another perspective, Kai-Fu Lee (2017)⁶³ pointed out that, unlike the Industrial Revolution and the Computer Revolution, the AI Revolution will not take certain jobs or replace them with others. Instead, it will bring about the massive destruction of jobs; most of them will be low-paying jobs, but there will also be well-paid ones. This transformation will result in enormous profits for companies that develop the technology, as well as those that adopt it. We will be faced with two situations that do not easily coexist: enormous wealth concentrated in relatively few hands, and enormous numbers of unemployed people. In his view, part of the answer to this problem would involve educating and retraining people in tasks where AI tools don't excel. This technology is not well suited to work that involves creativity, planning, and interdisciplinary thinking. However, these skills are most often required for well-paid jobs, and it would be difficult to retrain displaced workers for these jobs.

As stated in the previous point, Kai-Fu Lee referred to the fact that most nations would face two insurmountable problems. First, much of the money AI generates would go to the U.S. and China. AI is an industry where strength begets strength: the more data you have, the better the product. It's a virtuous cycle, and the U.S. and China already had the talent, market share, and data to get going.

⁵⁸ Arntz Melanie, Terry Gregory, Ulrich Zierahn (2016).

⁵⁹ David Rotman (2017) "The Relentless Pace of Automation" (and the future of work) | translated by Teresa Woods. February.

⁶⁰ World Economic Forum (2016).

⁶¹ McKinsey Global Institute (2017).

⁶² Gartner, Inc (2017)

⁶³ Kai-Fu Lee (2017) "The Real Threat of Artificial Intelligence," June.

The other challenge facing many countries, except those already mentioned, was that their populations were increasing, especially in developing countries. Although having a large population and growth can be an economic asset, in the AI era it may be a burden, because it would be composed mainly of displaced workers.

So, he suggested, we start thinking about how to minimize the looming gap that AI will open between those who have it and those who don't, both within and between nations. With an optimistic view, he saw AI as an opportunity to rethink economic inequality on a global scale. The effects of these challenges are so far-reaching for any country that it is impossible to isolate itself from the rest of the world.

A closer study in the region was that of Aboal and Zunino (2017)⁶⁴. Its results indicated that approximately two-thirds of the occupations then in Argentina and Uruguay were at risk of being replaced by technical progress. Additionally, technological unemployment would be a widespread phenomenon in all branches of activity, and there was no branch where the probability of replacement was less than 50%. An additional concern arose because no inverse correlation was observed between age and the likelihood of technological unemployment. That is, young people in Uruguay and Argentina continued to enter the workforce in occupations with a high risk of replacement.

More recent analysis for OECD countries (2024)⁶⁵ mentioned that generative AI could have a much broader impact on the labor market than previous technologies that drove task automation, affecting a wider group of people and places. In the OECD, around a quarter of workers would be exposed to generative AI, meaning that 20% (or more) of their job tasks could be performed at least 50% faster with the help of AI. Exposure to AI will continue to grow as new software is developed or integrated with generative AI technologies, and the proportion of workers who could be highly exposed (50% of their tasks could be performed at least 50% faster with generative AI) will likely range from 16% to over 70% across OECD regions. Unlike previous automation technologies, generative AI excels at performing cognitive, non-routine tasks, which changes the way regional labor markets are exposed. Regions that concentrate industries such as education, ICT, or finance become the most exposed to generative AI.

In turn, a Brookings Institution report (2025)⁶⁶ that analyzes how AI could exacerbate regional inequalities and pose new challenges for public policy in the U.S. concludes that, unlike previous waves of automation, which primarily affected manual and routine jobs, this technology is significantly impacting better-educated and better-paid workers in urban areas. Generative AI is proving to be particularly effective in cognitive and non-routine tasks. According to this report, more than 30% of U.S. workers could see at least half of their work tasks affected by this technology. In addition, 85% of workers could experience changes in at least 10% of their roles. Nationally, the average exposure to generative AI is 35% in urban counties and 30% in rural counties. However, this gap widens in states with large technology centers, where internal variation is significant, reaching up to 47% in some cities.

⁶⁴ Aboal Diego and Zunino Gonzalo (2017)

⁶⁵ OECD (2024) "Job Creation and Local Economic Development 2024: The Geography of Generative AI". At: <https://doi.org/10.1787/83325127-en>.

⁶⁶ Mark Muro, Shriya Methkuppally, Molly Kinder (2025) "The geography of generative AI's workforce impacts will likely differ from those of previous technologies", Report, Brookings Institution. At <https://www.brookings.edu/articles/generative-ai-the-american-worker-and-the-future-of-work/>.

Separately,⁶⁷ a McKinsey Global Institute report on AI and the future of work in the U.S. notes that AI could potentially automate activities that account for up to 30% of current working hours across the U.S. economy, while improving the way STEM, creative, business, and legal professionals work rather than eliminating a significant number of jobs altogether. The greatest effects of automation are likely to affect other job categories. Employment in office support, customer service, and food service could continue to decline. But it is also possible that 12 million additional occupational transitions will be needed by 2030. As people leave declining occupations, the economy could shift toward higher-wage jobs. Lower-wage workers are up to 14 times more likely to need to change occupations than those in higher-wage positions, and most will need additional skills to do so successfully. Women are 1.5 times more likely to need to change to new occupations than men.

Overall, the mix of jobs is changing. In general, the U.S. is expected to see stronger growth in demand for jobs requiring higher levels of education and skills, while jobs that typically don't require university degrees are expected to decline. The largest future job gains are expected to come in healthcare, an industry that already had an imbalance, with 1.9 million unfilled positions as of April 2023. They estimate there could be demand for 3.5 million more jobs for healthcare assistants, healthcare technicians, and welfare workers, in addition to two million additional healthcare professionals. An analysis of 17 U.S. sectors and their estimated future job growth from 2022 to 2030 shows that those with the greatest growth, from 23% to 30%, are healthcare professionals; healthcare assistants, technicians, and wellness professionals; and STEM professionals⁶⁸. Decreasing from 1% to 18% are office support, customer service and sales, food service, and production work.

AI will limit some human functions, but could make others more accessible. As AI systems increasingly handle complex tasks, the role of human talent is at risk. Human work may be limited to an ever-shrinking set of tasks, while previously prized talents, such as the ability to memorize large amounts of information, speak multiple languages, or recognize intricate patterns, lose relevance as machines surpass humans in these areas⁶⁹. According to an IMF study, around 40% of global employment, across a wide range of occupations, could be affected by AI⁷⁰.

Some countries risk losing all the economic benefits of AI, but creating more formal jobs and increasing digital access can help. In the case of LAC, it is likely that less than half of jobs will be significantly affected by AI. This figure is lower than that of advanced economies, mainly due to the large size of the informal sector. Overall, in the region, more than half of all jobs are informal. In some countries, the proportion of informal jobs exceeds two-thirds (ILO, 2024).

⁶⁷ Ellingrud Kweilin, Saurabh Sanghvi, Gurneet Singh Dandona, Anu Madgavkar, Michael Chui, Olivia Blanco and Paige Hasebe (2023) "Generative AI and the future of work in America", McKinsey Global Institute, Report July 26.

⁶⁸ Of Science, Technology, Engineering and Mathematics

⁶⁹ Marina M. Tavares (2025) "A Place for Human Talent in the AI Age". International Monetary Fund March. At: https://www.imf.org/en/Publications/fandd/issues/2025/03/a-place-for-human-talent-in-the-ai-age-marina-tavares?utm_medium=email&utm_source=govdelivery

⁷⁰ This estimate is based on the proportion of tasks within these jobs that AI can already perform, including translation, information summarization, and coding. These tasks, classified as "cognitive" because they involve problem-solving and communication, were traditionally considered areas where humans had a clear advantage. This contrasts with the routine, repetitive tasks that previous waves of automation replaced. Mauro Cazzaniga, Florence Jaumotte, Longji Li, Giovanni Melina, Augustus J Panton, Carlo Pizzinelli, Emma J Rockall, Marina Mendes Tavares (2024) "Gen-AI: Artificial Intelligence and the Future of Work" International Monetary Fund, January. At: <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-AI-Artificial-Intelligence-and-the-Future-of-Work-542379?cid=bl-com-SDNEA2024001>

This relatively low exposure⁷¹ to AI may help LAC avoid more immediate disruptions, but countries also risk losing the full benefits of AI-driven economic growth. Bringing more people into the formal workforce will help the region fully realize the growth potential of AI. Formalization would help more users enjoy the benefits of AI and allow workers and businesses to leverage AI to grow.

7.2. AI and Labor Transformation in LAC

In the case of LAC, it is likely that less than half of the region's jobs will be significantly affected by AI. This figure is lower than that of advanced economies, mainly due to the large size of the informal sector. Overall, in the region, more than half of all jobs are informal.

This relatively low exposure to AI may help LAC avoid more immediate disruptions, but countries also risk missing out on the full benefits of AI-driven economic growth, especially as AI is seen as a new factor of production to help address future job shortages and the productivity gap in LAC, as it offers significant opportunities to create new jobs, new industries, and new ways of connecting. In this regard, Ovanesso and Plastino (2017)⁷², in the report "How artificial intelligence can accelerate the growth of South America", which compares five Latin American economies (Argentina, Chile, Colombia, Peru and Brazil) together with other emerging Asian markets, conclude with the idea that the potential of AI in the region could add up to one percentage point to the annual economic growth rates throughout LAC by 2035. And the region has begun to incorporate it into its daily life, promoting its use and investing in new media to take full advantage of its potential. In terms of gross value added, Chile and Peru would be the countries that would increase their growth rates the most with IA, increasing by 1% and reaching 4.5% and 4.2%, respectively. They would be followed by Brazil, with a variation of 0.9% of GDP, Colombia with 0.8%, and Argentina with 0.6%.

As the IMF reports, AI may not reduce overall employment. Technological innovations tend to increase it rather than reduce it. Every wave of automation ends up creating new jobs that didn't exist before. However, as with previous innovations, AI is likely to create social challenges and labor market polarization, as some jobs disappear while others benefit. Jobs most at risk of loss are those where AI can perform most tasks (AI exposure) and replace workers (AI complementarity). In LAC, 25% of jobs in Brazil, Chile, Colombia, Peru, and Mexico fall into the high exposure and low complementarity category with AI. The jobs that will benefit most are those where AI improves worker productivity without replacing them. Twenty percent of jobs in these five countries fall into this high-exposure and complementarity category.

The overall exposure of the LAC workforce to AI is lower than in advanced economies due to the region's sizable informal sector. However, in the formal sector, exposure to AI and its potential benefits are comparable to those in advanced economies, especially in large companies. Considering two scenarios of AI usage intensity in LAC:

- **AI Pessimistic Scenario:** Assumes the AI penetration gap with the U.S. follows the trend of previous technologies. Furthermore, LAC's exposure to AI (estimated at 0.66 times that of the U.S.) exacerbates the technology usage gap.

⁷¹ AI exposure refers to the extent to which AI technologies can perform tasks currently performed by humans and increase overall productivity. AI complementarity assesses whether AI improves human work and increases labor productivity.

⁷² Ovanesso, Armen & Plastino, Eduardo. (2017).

- Aspirational Scenario: Assumes that, by 2050, the cumulative gap in technology intensity between LAC and the U.S. will be halved. In addition, the gap in AI exposure will also be halved. This could result in LAC overcoming structural barriers and increasing exposure to AI by adapting industrial or occupational structures to better use AI.

Under certain assumptions, they simulate production growth in LAC in each scenario and compare it with growth in North America. In the pessimistic scenario, the gap between LAC and North America persists, with its growth rate set at around 65% of that of the U.S. by 2050. In the aspirational scenario, narrowing the intensity gap drives growth in LAC. Initially, the growth rate increases modestly, as AI usage intensity is expected to remain relatively low. However, as AI becomes more widely integrated into the economy and the technology gap narrows, the growth rate in LAC is expected to surpass that of North America by 2050.

In the labor market, they don't see it very clearly, but they do point out that the link between new technologies and labor market outcomes is complex and depends fundamentally on how technology influences the allocation of labor and other production factors. Its potential impact on employment is complex and multifaceted.

In a joint paper, the World Bank Group and the International Labor Organization (2024)⁷³, define that generative AI could have transformative effects on employment and livelihoods in LAC. They conclude that between 30% and 40% of jobs could be exposed to AI; and that certain characteristics consistently correlate with greater overall exposure to AI. Specifically, urban jobs that require higher education, are part of the formal sector, and are held by individuals with relatively higher incomes are more likely to interact with this technology. The proportion of jobs exposed to automation is relatively small but significant, representing approximately 2% to 5% of total employment. Younger and female workers tend to be more exposed to automation, especially in the finance, insurance, and public administration sectors.

At the same time, the proportion of jobs that could benefit from a productive transformation with AI is consistently higher than that of those at risk of automation across all LAC countries, ranging from 8% to 12% of employment across all countries. This applies especially to jobs in education, healthcare, and personal services. Furthermore, customer-facing sectors (retail, commerce, hotels, restaurants, etc.) face greater exposure to the "unknown." This category covers the largest proportion of employment (14-21%) in their estimates, noting that while the concept of occupational exposure is easier to establish, the precise effects on the possible evolution of many occupations are more difficult to predict for a large part of current labor markets.

Finally, they note that access to digital technologies is a determining factor in the extent to which workers can take advantage of the potential benefits of AI. Nearly half of the positions that could benefit from the increase are hampered by digital deficiencies that will prevent them from reaching that potential. Specifically, 6.24% of jobs held by women and 6.22% of those held by men are affected by these gaps. Similar limitations apply to jobs in the "high uncertainty" category: while some of them could potentially be targeted for growth through greater complementarity between GenAI and human workers in these occupations, digital divides will prevent a large proportion of these jobs from being in such a scenario.

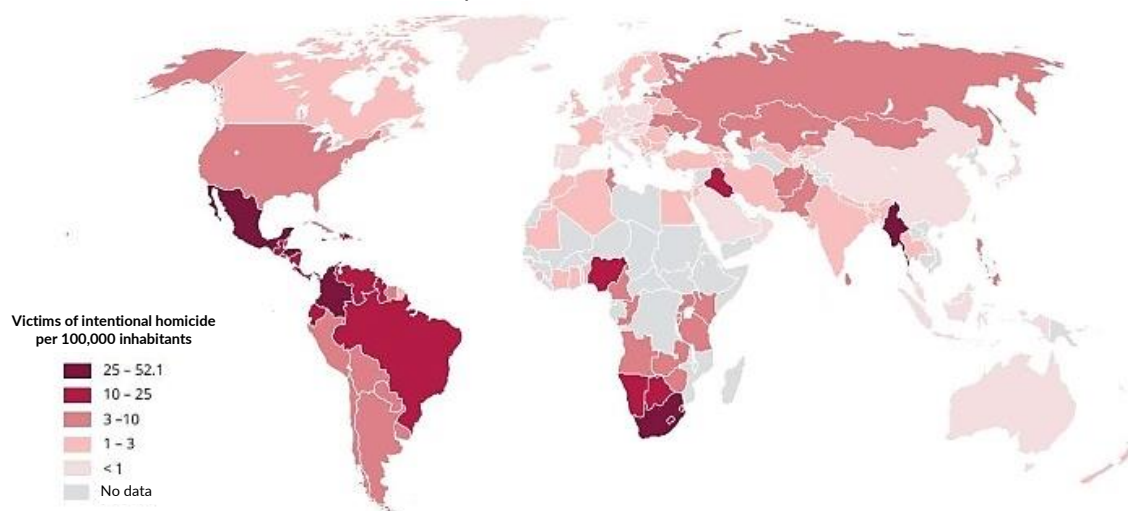
⁷³ Paweł Gmyrek, Hernan Winkler, Santiago Garganta (2024) "Buffer or Bottleneck? Employment Exposure to Generative AI and the Digital Divide in Latin America?". ILO-World Bank Working Paper, July. At: <https://webapps.ilo.org/static/english/intserv/working-papers/wp121/index.html>.

CHAPTER VIII. PUBLIC INSECURITY AND SOCIAL SECURITY

8.1. Public insecurity: a structural problem in Latin America

Public insecurity in LAC is not an isolated or temporary phenomenon: it is a structural threat that compromises the region's economic, social, and institutional development. Violence, in all its forms, represents a critical obstacle to sustainable progress and strengthening social cohesion. According to the UNODC Global Study on Homicide 2023, LAC has a homicide rate of 18 per 100,000 inhabitants, more than three times higher than the world average of 5.8 (UNODC, 2023). In countries such as Venezuela, Honduras, and Mexico, homicide rates exceed 40 per 100,000 inhabitants, figures equivalent to those in war zones (Figure 41).

Figure 41. Homicide rate by country or territory, 2021
(or last year available since 2016)



Source: UNODC (2023)

Organized crime, responsible for more than 50% of homicides in LAC, has permeated social, economic, and political fabric, weakening the rule of law. Robberies, kidnappings, extortion, and human trafficking are crimes that affect millions of citizens on a daily basis. Insecurity is no longer just a public order issue, but a cross-cutting threat that limits access to basic rights, increases inequality, and perpetuates cycles of exclusion and poverty (Pérez-Vincent et al., 2023).

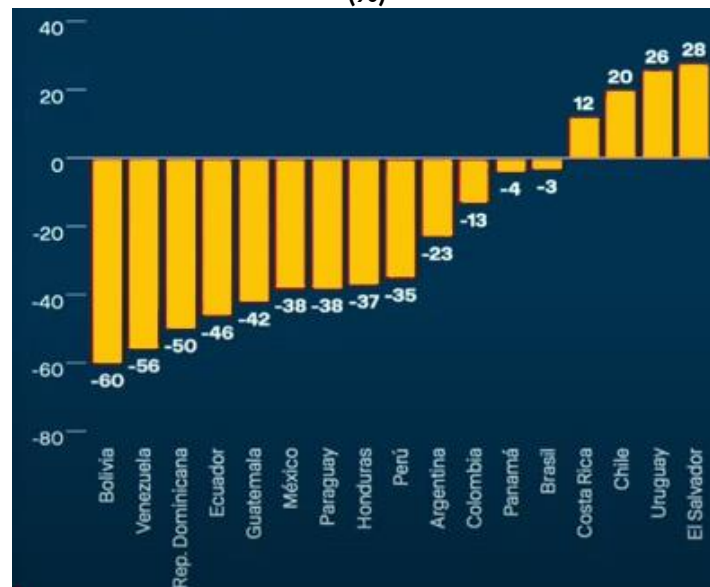
The perception of insecurity is equally alarming: according to Latinobarómetro 2024, 19% of Latin Americans identify crime as the second most serious problem, surpassing concerns such as unemployment and poverty. This perception, in addition to reflecting everyday reality, has knock-on effects on quality of life, urban mobility, commerce, and institutional trust.

This perception of insecurity has a significant impact on people's daily lives and access to opportunities, as well as their economy and institutions.

Governments' failure to guarantee the safety of their citizens erodes trust in public institutions. In many LAC countries, the perception that the State cannot protect citizens from crime and violence has led to increased distrust in institutions, including the police, the judicial system, and local governments. Half of the population in the region does not trust the police (Figure 42).

This erosion of trust has significant implications for political stability and governance. When citizens do not trust institutions, they are more likely to turn to private or informal solutions to ensure their safety, which can perpetuate violence and crime. Moreover, a lack of trust in institutions limits governments' ability to implement effective development policies, as citizens may resist cooperating or complying with regulations.

Figure 42. Confidence in the police in LAC (%)



Source: Latinobarómetro (2023)

Violence also disproportionately affects the most vulnerable groups, such as women, children, migrants, and people from diverse population groups (LGBTQ, Afro-descendants, indigenous people, and people with disabilities). One in three women has been a victim of physical or sexual violence in her life (WHO, 2021). The homicide rate among young people (19-25 years old) is 3 times higher than that of the population (UNODC, 2019). 58% of children have been victims of physical, sexual or emotional abuse (Hills et al., 2016).

The impact of violence is also psychological and communal. Continued exposure to violent situations leads to disorders such as post-traumatic stress, anxiety, and depression, affecting both the direct victims and the communities as a whole (Badillo, 2022; Agudelo-Vélez, 2018). This breakdown in community ties diminishes social resilience, undermines local governance, and fuels new dynamics of violence.

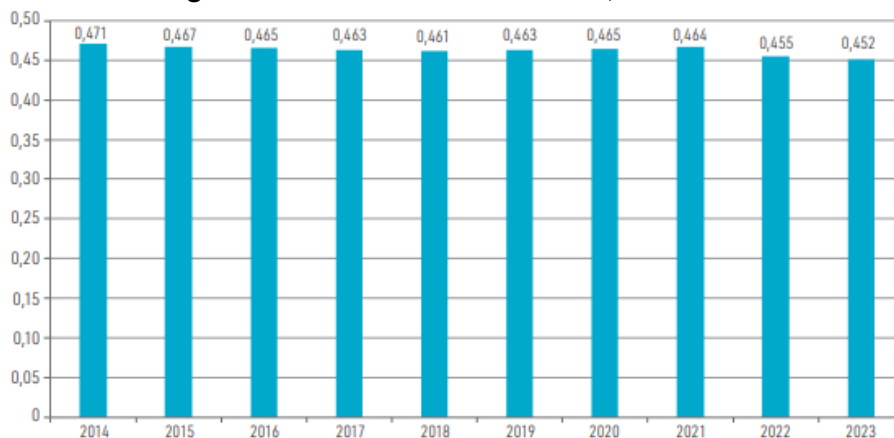
Finally, insecurity encourages forced displacement. In Central America alone, more than one million people have fled their homes due to gang violence (UNHCR, 2020), a phenomenon that destabilizes not only countries of origin but also host nations, generating humanitarian crises and social tensions.

8.2. Trajectory of Insecurity in Latin America: roots and emerging dynamics

Public insecurity in the region has evolved as a result of long-standing structural processes, combined with recent dynamics that have exacerbated its intensity and complexity. This is not an episodic crisis, but rather a persistent configuration of vulnerabilities that affect the entire political, social, and economic system of the region. This section examines the main factors that explain how LAC reached its current situation of insecurity.

- **Structural inequality and exclusion gaps:** LAC remains the most unequal region in the world, despite temporary progress in poverty reduction. According to ECLAC (2024), the average Gini index—which measures income inequality on a scale of 0 (perfect equality) to 1 (total inequality)—rose from 0.471 in 2014 to 0.452 in 2023 in 14 countries in the region (Figure 43). This slight improvement does not change the fact that inequality levels remain structurally high and persistently above 0.45, which prevents full inclusion and generates excluded territories where illicit economies and dynamics of violence thrive (ECLAC, 2024).

Figure 43. Latin America: Gini index, 2014-2023



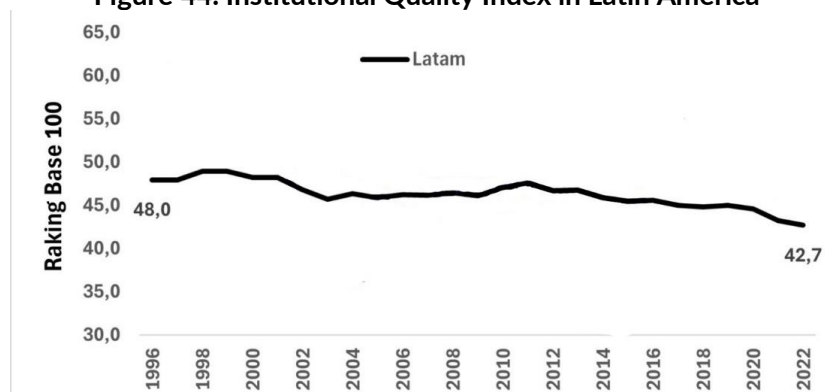
Source: ECLAC (2024)

Note: It includes Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, the Dominican Republic, and Uruguay. Countries with household surveys available for 2022 or 2023.

Inequality is expressed not only in income distribution, but also in unequal access to essential services such as education, healthcare, formal employment, and justice. In marginalized areas, especially rural and peri-urban areas, this exclusion fuels cycles of poverty, informality (over 50% in several countries), and crime, which particularly affect women, youth, and indigenous peoples.

- **States with limited institutional capacity:** In almost three decades, the region has shown a downward trend in its institutional quality (Albornoz et al, 2024) (Figure 44). Institutional weakness has been a constant feature in many countries in the region. The lack of professionalization of law enforcement agencies, police corruption, an overburdened judicial system, and structural impunity limit the State's ability to guarantee justice and protection. Latinobarómetro (2023) reports that more than 50% of Latin Americans distrust the police and justice. This erosion of legitimacy favors extralegal social responses (IDB, 2023).

Figure 44. Institutional Quality Index in Latin America



Notes: The quality of the countries' institutions is classified as follows: If the value falls between 0 and 30, the quality is poor; between 30 and 50, the classification is low; between 50 and 70, the category is good; finally, if it falls between 70 and 100, the institutional quality is high.

Source: UNLZ -Economic based on data from the World Bank, total 179 countries. | Albornoz et al (2024)

- **Organized crime as a parallel power:** That not only controls illicit economies, but also territories and populations. From drug trafficking to smuggling, human trafficking, contract killings, and extortion, these organizations perform state functions in many peripheral areas, providing "protection," income, or dispute resolution. The World Bank (2019) warns that the presence of these groups is related to institutional deficits and high levels of territorial inequality.

- **Urbanization without social integration** Accelerated, unplanned, and exclusionary urban growth has produced poverty belts where violence is concentrated. According to UN-Habitat (2021), 21% of Latin Americans live in informal neighborhoods without safe access to basic services. These environments generate dynamics conducive to the formation of gangs and criminal networks, as well as social fragmentation. The lack of investment in urban infrastructure, transportation, and basic services exacerbates this situation and contributes to territorial marginalization.
- **Digitalized crime and transnational networks** In recent years, crime has adapted to new technologies. From financial fraud to the use of social media to recruit minors, online extortion, and illegal trading on digital platforms, crime has become more agile and anonymous. UNODC (2023) notes that the region has not developed adequate cybersecurity capabilities or sufficient regional cooperation mechanisms to address these challenges.
- **Forced displacement due to violence** Violence is also a cause of mass displacement. In the so-called “Northern Triangle” of Central America (El Salvador, Guatemala, Honduras), UNHCR (2020) reported more than 1 million people displaced by violence between 2018 and 2020. This puts pressure on public services, overloads host cities, and creates new community tensions, increasing exposure to new security risks.
- **Post-pandemic effects and new forms of precariousness** The COVID-19 pandemic exacerbated insecurity by increasing poverty, unemployment, and informality. According to the IDB (2021), extreme poverty reached levels not seen in two decades, while schooling fell by an average of 1.5 years for children and adolescents. These conditions favor the reconfiguration of criminal networks, which take advantage of crises to capture new territories and recruit vulnerable populations.
- **Force-focused security responses** Despite the diagnoses, many public policy responses remain focused on repression. The intensive use of military forces for internal security tasks, without a comprehensive territorial development strategy, has produced counterproductive effects. As ECLAC (2021) points out, these policies have displaced violence without resolving its causes and, in some cases, have contributed to human rights violations.

Overall, LAC faces insecurity rooted in social structure, inequality, and state weakness. Only through comprehensive, sustained, and territorial strategies that combine security, inclusion, and development will it be possible to reverse this trajectory of structural insecurity.

8.3. Public Insecurity and its Impact on National Economies

For years, violence has had a profound impact on the lives and well-being of people in LAC. Outside of wartime contexts, this region is the most affected by violent crime worldwide, with alarming rates of homicide, robbery, and other forms of crime. However, the problem is not only social, but also economic. Crime acts as a heavy burden on development, one that LAC countries can hardly continue to bear.

- **Citizen Insecurity and its Impact on the Economy.**

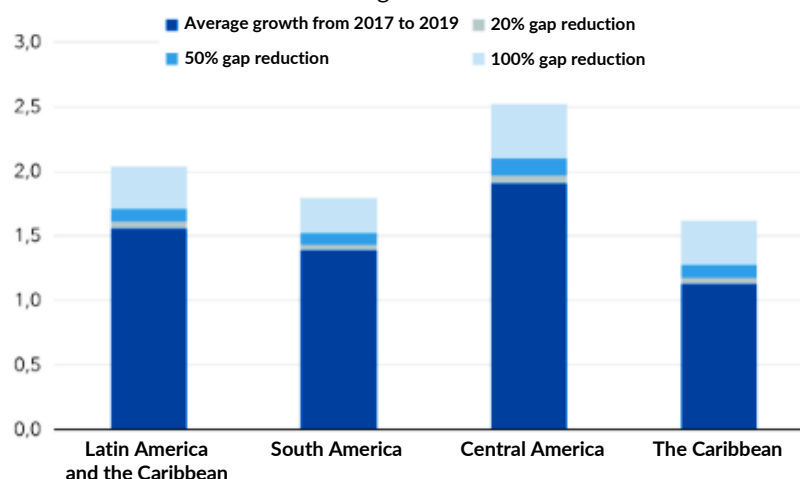
Pérez-Vincent et al (2023) estimate that the economic cost of violence amounts to 3.4% of GDP, equivalent to US\$192 billion annually. This figure represents 78% of education spending and doubles the resources allocated to social assistance. These economic losses reflect not only the direct cost of crime, but also the opportunities for growth and development that are thwarted year after year. Insecurity affects economic growth through various channels, such as the productivity of national economies. High levels of violence and crime generate a climate of fear that reduces labor mobility, limits workers' ability to perform efficiently, and increases absenteeism. It hinders capital

accumulation, perhaps by deterring investors who fear theft and violence. It also reduces productivity, as it tends to divert resources toward less productive investments, such as home security. At the same time, violence and crime have a disproportionate impact on the informal sectors of the economy, which are particularly vulnerable due to a lack of legal protection and job security. Small business owners, street vendors, and informal workers are frequently victims of extortion, robbery, and violence, which limits their ability to generate income and contribute to economic growth.

Reducing violence improves citizen security and boosts economic growth. According to the IMF (2023), if LAC were to reduce its crime levels to the world average, the regional economy would grow 0.5 percentage points more each year, representing a third of the growth recorded between 2017 and 2019 (Figure 45). In nations with the highest homicide rates, closing the crime gap could generate even greater benefits, increasing GDP by 0.8 percentage points.

Figure 45. Impact of Crime Reduction in Latin America and the Caribbean and its Subregions
(Percentage points of GDP growth)

Reducing crime rates in Latin America to the world average would significantly stimulate economic growth



Source: IMF

In response to insecurity, many businesses and households in LAC have opted to invest in private security. This expense, although necessary, represents an additional cost that reduces businesses' profitability and limits the resources available for productive investments. According to IDB estimates, the costs associated with private security in the region can represent up to 3% of GDP in some countries.

These resources, which could be used for infrastructure, education, or technology investments, are instead diverted toward protecting assets and people, limiting long-term growth potential. Furthermore, the need for private security creates a gap between large companies, which can afford these expenses, and SMEs, which often lack the resources to adequately protect themselves, perpetuating economic inequalities.

Moreover, violence discourages FDI. A World Bank study (2018) found that countries with high homicide rates receive 20% less FDI compared to safer countries. This is particularly worrying for LAC, where FDI is a crucial source of development financing. This is particularly problematic in sectors such as tourism, where the perception of insecurity can deter international visitors, reducing foreign exchange earnings and limiting economic growth. In addition, insecurity can increase operating costs for foreign companies, as they must invest in additional security measures, reducing the profitability of their operations. In some countries, violence has led to the cancellation of flights and hotel reservations. This impact on tourism not only affects businesses in the sector, but also has a multiplier effect on the economy, as tourism is an important source of employment and foreign currency in many countries in the region.

- **Public insecurity and public spending**

Public insecurity not only affects economic growth, but also has a significant impact on public finances. Governments in the region are forced to allocate a considerable portion of their budgets to security and justice, limiting the resources available for other critical areas such as education, health, and infrastructure. According to estimates by Pérez-Vincent et al. (2023) in a study for the IDB, the costs associated with insecurity are equivalent to 78% of the total public budget in LAC for education, double the amount allocated to social assistance and twelve times the expenditure on research and development.

In response to rising insecurity, many LAC governments have significantly increased their spending on security and justice. This includes not only hiring more police and security personnel, but also investing in equipment, technology, and training. According to ECLAC data, spending on security and justice in the region has increased by an average of 5% annually over the last decade.

While this spending is necessary to combat crime and ensure citizen safety, it also represents a significant burden on public finances. In many cases, increased spending on security has translated into cuts in other priority areas, limiting governments' ability to implement effective development policies. In addition to direct spending on security and justice, public insecurity generates other costs for governments, such as those associated with medical care for victims of violence, repair of damaged infrastructure, and the loss of tax revenue due to reduced economic activity.

These costs represent an additional burden on public finances and limit governments' ability to invest in key development areas: education, health, and infrastructure. Moreover, the need to allocate resources to security and justice reduces governments' fiscal flexibility, limiting their ability to respond to economic crises or natural disasters.

Public insecurity also has a negative impact on tax collection. In highly insecure environments, many businesses operate informally to avoid becoming targets of crime, reducing their tax base and limiting tax revenue. In addition, insecurity can deter investors and reduce economic activity, which also affects tax collection.

Reduced tax revenues limit governments' ability to finance social and development programs, perpetuating inequalities and limiting long-term economic growth. Moreover, the lack of fiscal resources can lead governments to rely more on borrowing, increasing public debt and limiting future investment capacity.

- **The role of public policies**

Faced with the challenges posed by public insecurity, public policies play a crucial role in mitigating its impacts and promoting economic and social development. However, designing and implementing effective policies in this area requires addressing the underlying causes of insecurity and promoting social and economic inclusion. A comprehensive approach to citizen security must include not only

increased police presence and improved justice systems, but also preventative measures that address the underlying causes of insecurity, such as poverty, social exclusion, and lack of economic opportunities.

In this case, crime prevention programs that include education, employment, and community development components can be effective in reducing crime and promoting social cohesion. In addition, policies for social and economic inclusion, such as access to education and employment, can reduce inequalities and limit the actions of organized crime.

Public insecurity is a challenge that transcends national borders, so international and regional cooperation is essential to combat it effectively. Criminal networks operate transnationally, so efforts to combat organized crime must include cooperation among countries in the region and with international organizations.

Thus, cooperation in areas such as information exchange, extradition of criminals, and the fight against money laundering can be effective in dismantling criminal networks and reducing insecurity. Moreover, regional cooperation can facilitate the implementation of development policies that promote social and economic inclusion, which can reduce the underlying causes of insecurity.

Strengthening public institutions is a key component to addressing public insecurity and promoting economic and social development. Strong and transparent institutions are essential to ensuring citizen security, combating corruption, and promoting trust in the State. An efficient and transparent justice system is essential to combating insecurity and ensuring the rule of law. However, in many LAC countries, judicial systems face significant challenges, such as corruption, impunity, and lack of resources. Justice system reform must include measures to improve judicial independence, increase transparency, and guarantee access to justice for all citizens.

Likewise, it is crucial to strengthen the capacity of judicial institutions to investigate and prosecute crimes, especially those related to organized crime. Law enforcement agencies, including the police and intelligence agencies, play a central role in combating public insecurity. However, in many cases, these institutions face challenges such as lack of resources, corruption, and lack of training. The modernization of law enforcement agencies must include investment in equipment and technology, as well as the implementation of training programs that promote respect for human rights and transparency.

It is important to promote collaboration between law enforcement agencies and local communities. Community policing programs, for example, can be effective in improving trust between citizens and law enforcement agencies, facilitating crime prevention and resolution.

- **Development Policies**

Public insecurity not only affects social cohesion, economic growth, and public spending, but also limits states' ability to implement effective development policies. In highly insecure environments, governments face significant challenges in ensuring the provision of public services, promoting investment, and reducing inequalities.

In highly insecure environments, the provision of public services such as education, health, and transportation is significantly affected. Thus, in areas with high levels of violence, schools and health centers may close or reduce their operating hours, limiting citizens' access to these services. Furthermore, insecurity can generate additional costs for the provision of public services, as governments must invest in security measures to protect workers and facilities. This limits the resources available to improve the quality and coverage of services, negatively impacting human and economic development.

Public insecurity also has a significant impact on infrastructure investment, which is a key component of economic development. In highly insecure environments, infrastructure projects may face delays and cost overruns due to the need to implement additional security measures. In addition, insecurity can discourage private investors from participating in infrastructure projects, limiting governments' ability to finance these projects through Public-Private Partnerships. This reduces states' ability to improve connectivity, reduce transportation costs, and promote economic growth.

Economic and social development policies are undoubtedly essential to addressing the underlying causes of public insecurity, but these policies must be designed to reduce inequalities, improve economic opportunities, and strengthen social cohesion. Hence the importance of developing the following development policies:

- **Poverty and Inequality Reduction Policies**

Poverty and inequality are two of the main factors that contribute to public insecurity. According to the World Bank (2022), LAC is the most unequal region in the world, with an average Gini coefficient of 0.46. Lack of economic opportunities and social exclusion create conditions for crime and violence. Therefore, poverty and inequality reduction policies are essential to prevent insecurity.

- *Conditional Cash Transfer Programs (CCTs)* have proven effective in reducing poverty and improving the living conditions of vulnerable populations. These programs provide cash transfers to poor families in exchange for meeting certain conditions, such as school attendance and medical care. For example, the Bolsa Família program in Brazil, which by 2010 had benefited more than 14 million families since its implementation in 2003. According to a study by Soares et al. (2010), Bolsa Família reduced inequality in Brazil by 15% and contributed to a 28% decrease in the homicide rate in the areas where it was implemented. These results suggest that CCTs not only improve families' economic conditions, but also reduce the incidence of violence by providing alternatives to crime.
- *Investment in Education and Job Training.* According to UNESCO (2021), each additional year of schooling reduces the likelihood of a young person participating in criminal activities by 6%. In Latin America, where 20% of young people between the ages of 15 and 24 neither study nor work (known as "ninis"), education and job training policies are essential to preventing insecurity. One example is the Jóvenes con Más y Mejor Trabajo (Young People with More and Better Jobs) program in Argentina, which offers job training and job placement support to unemployed young people. According to a report by the Argentine Ministry of Labor (2020), the program managed to place 70% of its participants in formal jobs, significantly reducing their exposure to crime.
- *Access to Basic Services,* such as drinking water, electricity, and sanitation, is essential to improving the living conditions of vulnerable populations and reducing insecurity. According to the IDB (2021), 30% of the population in LAC lacks access to adequate basic services, which contributes to social exclusion and violence. The Agua para Todos (Water for All) program in Colombia, which from 2018 to 2021 brought drinking water to more than 2 million people in rural areas since its implementation in 2018. According to a study by the Universidad de los Andes (2021), communities benefiting from the program experienced a 20% reduction in crime rates, suggesting that access to basic services can have a significant impact on citizen security.

- **Social Inclusion Policies.** Social exclusion and lack of community cohesion are key factors contributing to public insecurity. Policies that promote social inclusion and strengthen community networks can reduce violence and improve citizen security.

- *Community-Based Violence Prevention Programs.* These involve citizens in identifying and resolving safety issues. One example is the Barrio Seguro (Safe Neighborhood) program in Peru, which promotes collaboration among law enforcement agencies, local authorities, and communities to prevent crime. According to a report by the Ministry of Internal Affairs of Peru (2022), the program reduced crime rates by 25% in the areas where it was implemented.
- *Strengthening Civil Society Organizations,* which play a crucial role in promoting social inclusion and citizen security. The Fortalecimiento de la Sociedad Civil (Strengthening Civil Society) program in Mexico, which has provided funding and training to more than 500 community organizations since 2019. According to a CIDE study (2021), communities participating in this program experienced a 15% reduction in violence rates, highlighting the importance of strengthening community networks.
- *Promoting a Culture of Legality.* This is essential to combating insecurity and strengthening the rule of law. The Escuelas de Legalidad (Schools of Legality) program in Colombia trained more than 10,000 students in values such as justice, equity, and respect for the law. According to a report by the Universidad Nacional de Colombia (2021), participating schools experienced a 30% drop in cases of school violence, suggesting that education in values has a significant impact on crime prevention.

- **Economic Development and Job Creation Policies**

Unemployment and lack of economic opportunities are factors that contribute to public insecurity. Economic development and job creation policies can reduce crime by providing legitimate income alternatives.

- *Support for Small and Medium-sized Enterprises (SMEs).* According to the IDB (2022), SMEs represent 90% of companies and generate 60% of employment in the region. However, many of these companies face challenges such as access to financing and lack of training. The Crédito Joven (Youth Credit) program in Chile has provided financing and training to more than 5,000 young entrepreneurs since 2020. According to a report by the Chilean Ministry of Economy (2022), the program created more than 10,000 jobs and reduced the youth unemployment rate by 5%, contributing to a 10% decrease in crime rates in the beneficiary areas.
- *Investment in Infrastructure and Urban Development.* Investment in infrastructure and urban development can improve living conditions and reduce insecurity in marginalized areas. The Mi Casa, Mi Vida (My House, My Life) program in Brazil has built more than 4 million homes for low-income families since 2009. According to a study by the Getulio Vargas Foundation (2021), the communities benefiting from the program have experienced an 18% reduction in crime rates, highlighting the importance of investment in infrastructure for citizen security.
- *Promotion of Youth Employment.* According to the ILO (2022), youth unemployment in LAC reaches 20%, which represents a significant risk to citizen security. The Primer Empleo (First Job) program in Uruguay provided training and support for job placement to more than 10,000 young people from 2018 to 2022. According to a report by the Uruguayan Ministry of Labor (2022), the program reduced the youth unemployment rate by 8% and contributed to a 12% decrease in juvenile crime rates.

- **Innovation and technology in the fight against insecurity**

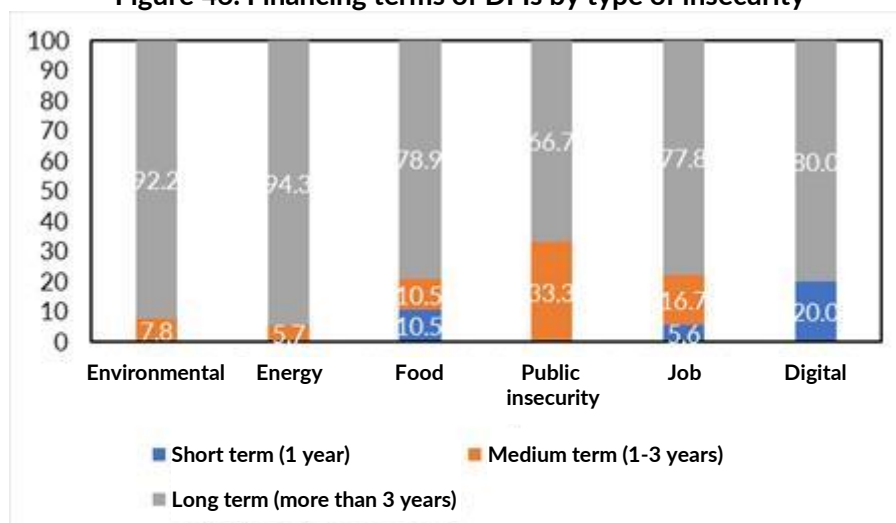
Two factors that can play a crucial role in the fight against public insecurity. The use of advanced technologies, such as AI, data analytics, and video surveillance, can improve the effectiveness of law enforcement agencies and facilitate crime prevention and resolution.

- *Use of data and predictive analysis.* By collecting and analyzing crime data, law enforcement agencies can identify patterns and trends, allowing them to anticipate and prevent crimes before they occur. In addition, the use of data can improve resource allocation, allowing law enforcement agencies to focus on areas and times of greatest risk.
- *Surveillance and monitoring technologies,* such as security cameras and real-time monitoring systems, can be effective in deterring crime and improving the response of law enforcement agencies.
- *Digital platforms for citizen participation.* They can be an effective tool for promoting citizen participation in the fight against insecurity. For example, mobile applications that allow citizens to report crimes or share information with law enforcement agencies can improve collaboration between citizens and public institutions. In addition, these platforms can facilitate transparency and accountability, allowing citizens to monitor the performance of law enforcement agencies and judicial institutions.

CHAPTER IX. ACTIONS OF DEVELOPMENT BANKS FOR COMPREHENSIVE SECURITY

This chapter systematically examines the main initiatives that development finance institutions are implementing to strengthen comprehensive security in the region. These initiatives are grouped into six strategic axes: **investment and trade, climate finance, energy transition, agri-food, cybersecurity, and public safety** (Figure 46). It also analyzes how development banks have adapted their financial instruments to respond to the specificities of each type of insecurity, based on empirical evidence compiled from nearly 1,200 products from 68 Development Finance Institutions (DFIs) in the region. This analysis allows us to identify patterns of action that demonstrate their role as agents of structural change.

Figure 46. Financing terms of DFIs by type of insecurity

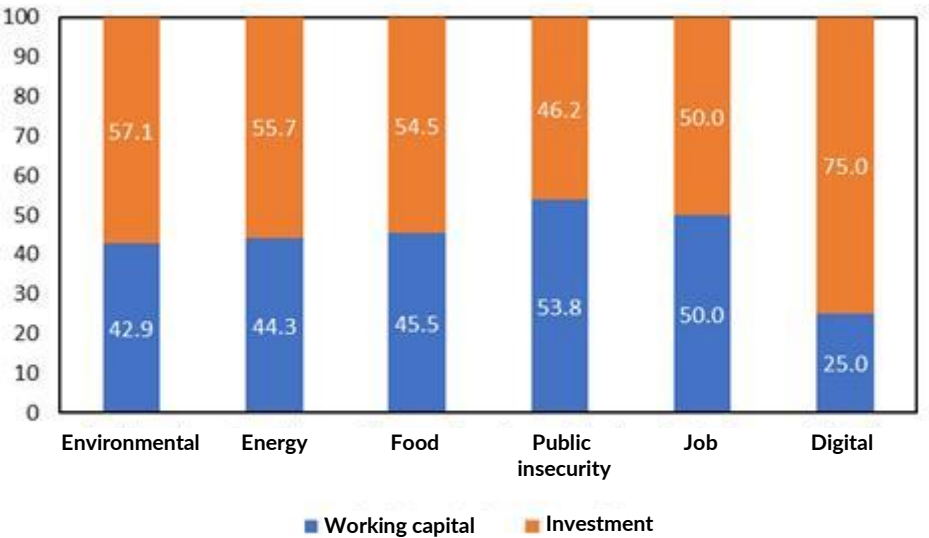


Source: DATABANK (2025) | Developed in-house

The data show that DFIs prioritize the long term in their interventions (Chart X), especially in cases of environmental security (92.2%), energy security (94.3%), food security (78.9%), job security (77.8%) and digital security (80%), where most operations have horizons of more than three years. However, short- and medium-term responses are also identified, particularly in the face of food and digital insecurity. A distinctive case is public insecurity, where the medium term (33.3%) acquires significant importance, reflecting a combination of immediate actions—such as prevention programs—with efforts aimed at structural transformations. Taken together, this evidence suggests a balanced development strategy that combines a long-term vision with the ability to respond to immediate challenges.

Similarly, the design of financial instruments shows a strategic adjustment according to the type of insecurity faced (Figure 47). For environmental, energy, food, and job insecurity, DFIs maintain a balance between working capital and investment. However, two significant deviations are observed: in public insecurity, 53.8% of financing is directed toward working capital, which could indicate support for community, operational, or social intervention programs that require immediate liquidity. In contrast, in digital insecurity, 75% of financing corresponds to investment, suggesting a strong prioritization of technological infrastructure, connectivity, and digital platforms. This pattern demonstrates how DFIs adjust their financial tools to address the specific needs of each challenge in a differentiated manner (Figure 47).

Figure 47. Distribution of DFI Financing between Working Capital and Investment by Type of Insecurity



Source: DATABANK (2025) | Developed in-house

In terms of minimum and maximum amounts (Table 20), financial support shows that operations related to environmental security (US\$66 million) and energy security (US\$107 million) require larger amounts of financing, reflecting the magnitude of the investments required in infrastructure and clean technologies. In contrast, food security (US\$3 million), job security (US\$1 million), and digital security (US\$1.2 million) handle considerably smaller amounts, probably associated with more targeted and decentralized interventions. Public safety has the lowest average maximum amount (US\$32,750), suggesting a focus on prevention programs and community actions with wide reach and low financial requirements.

Table 20. Minimum and Maximum Financing Amount of DFIs by Type of Insecurity

mount (US\$)					
Environmental	Energy	Food	Insecurity	Job	Digital
US\$66 million	US\$107 million	US\$3 million	32,750	US\$1 million	US\$1.2 million

Source: DATABANK (2025) | Developed in-house

This quantitative evidence complements the qualitative analyses presented in the following sections and confirms that development banks do not act solely in a reactive manner but rather design structured and differentiated strategies for each type of insecurity. These strategies combine a **long-term vision**, **adaptation capacity**, and **strategic focus**, reinforcing their role as key players in promoting more resilient and inclusive development.

9.1. LAC development banks and their support for attracting investment and businesses

Development banking plays a fundamental role in promoting investment and productive development in the region, especially in a global context marked by economic uncertainty, protectionism, and geopolitical tensions. These banks correct market failures, mitigate risks, and promote strategic sectors such as renewable energy, infrastructure, and digitalization, thus contributing to more inclusive and sustainable growth.

Trade and financial liberalization without adequate regulations led many countries in the region to specialize in low-value-added primary sectors, perpetuating structures of underdevelopment (Chang, 2002). This dependence on activities such as natural resource extraction or agriculture creates vulnerability to external shocks and limits productive diversification. Moreover, unequal competition with sophisticated multinationals has hampered the emergence of competitive local industries, resulting in the loss of quality jobs and opportunities for innovation.

These local industries, lacking economies of scale, access to advanced technologies, or adequate financing, are unable to compete and eventually collapse. The consequence of this premature deindustrialization is that developing countries lose the opportunity to build robust manufacturing sectors, which have historically been essential for sustained growth and quality job creation in developed economies. These challenges have been compounded by exogenous factors such as protectionism, geopolitical tensions, and increased investor caution, which have altered the relationship between trade, investment, and growth.

This new context represents new opportunities for Latin America and the Caribbean, where countries in the region can attract FDI and promote domestic investment in strategic sectors. In this sense, development banks play a fundamental role in correcting financial system failures and market deficiencies, thus fostering sustained productive and innovative growth.

These institutions stand out for: **1) their national focus and in-depth knowledge of local dynamics**, which allows them to identify barriers and opportunities for investment, in addition to establishing long-lasting relationships with the public and private sectors, leveraging their sectoral expertise (Griffith et al., 2020); **2) they have access to multiple sources of financing**, including international capital markets, official development assistance, and government transfers. They also channel global climate finance, such as the Green Climate Fund; and **3) they design tailored financial solutions**, such as local currency financing and specific packages for infrastructure and city projects.

Their ability to design tailored financial solutions—such as local currency financing and specific schemes for infrastructure and cities—allows them to provide support from the early stages with

technical assistance to the operation with instruments such as debt, equity, or guarantees (IDB, 2017).

They act as catalysts for private investment through innovative, mixed financing schemes, including project aggregation and strategic risk-taking, thus helping to mitigate global economic uncertainties and boost trade and investment in the region. Within this framework, these institutions have developed a set of financial instruments aimed at reducing risks and stimulating productive investment in their respective countries. The main strategies implemented are listed below:

National Focus and Knowledge of Local Dynamics

Development banks, such as BNDES, BANOBRAS, CORFO, and FINDETER, stand out for their deep understanding of local realities, which allows them to identify opportunities in strategic sectors such as infrastructure, renewable energy, and advanced industry; establish relationships of trust with public and private stakeholders to facilitate public-private partnerships (PPPs); and mitigate risks perceived by investors through local currency financing (Griffith et al., 2020).

- **Identify investment opportunities in strategic sectors such as infrastructure, renewable energy, and advanced industry.** For two decades, Chile's CORFO has promoted the development of Non-Conventional Renewable Energy (NCRE) as a strategic opportunity for the country's sustainable growth. Through subsidies, guarantees, and competitive funds, it has allocated nearly US\$1.5 billion to finance NCRE projects during this period, allowing Chile to meet its renewable energy goal five years ahead of schedule. Motivated by this achievement, Chile seeks to become the first developing country to achieve carbon neutrality by 2050. CORFO promotes the National Green Hydrogen Strategy, focused on attracting investments exceeding US\$1 billion, as well as smaller-scale projects for self-consumption in productive and remote areas. With the Facility H2V Chile program, the Corporation reduces costs and financial risks through concessional loans and debt products, addressing the industry's main technological challenges.

For its part, Brazil's BNDES offers long-term structured financing for large infrastructure projects, contributing to industrial growth and the ecological transition. In 2023, the Brazilian government relaunched the Growth Acceleration Program (PAC), through which BNDES channeled R\$127 billion (US\$22 billion) to revitalize the automotive sector, in addition to allocating R\$20 billion (US\$3.45 billion) to innovation and R\$10 billion (US\$1.725 billion) to the Climate Fund. These investments strengthen strategic sectors such as sustainable infrastructure, energy transition, bioeconomy, urban mobility, and the digital transformation of industry.

The bank has also promoted road transport projects, financing 85% of national logistics investments, with a record R\$23 billion (US\$4 billion) approved by 2024. Additionally, together with FINEP, it launched a R\$5 billion (US\$900 million) call to promote the transformation of strategic minerals, investing in industrial production and technological innovation for Brazil's energy transition and decarbonization.

- **Facilitate public-private partnerships (PPPs) by establishing relationships of trust with the private sector and local governments.** Mexico's BANOBRAS has promoted infrastructure development by financing states, municipalities, and public-private partnership (PPP) projects focused on transportation, energy, and water. Between January 2023 and June 2024, its loan placement reached US\$9.6 billion, increasing its portfolio to US\$30.2 billion, a nominal growth of 38% compared to 2018.

In Colombia, Financiera de Desarrollo Nacional (FDN) has consolidated its role as a financier and structurer of highly complex projects, applying models such as project finance and innovative products such as liquidity lines and subordinated debt. With more than 60% of its portfolio in road projects, FDN has facilitated the financial closure of PPP projects in low-confidence contexts, as occurred after the Ruta del Sol project. Recently, it participated in the financing of the Medellín Light Rail (Calle 80 line) through a 13-year senior loan.

These banks also mitigate foreign exchange risks by providing financing in local currency. BANOBRAS encourages the participation of financial intermediaries in pesos, while BNDES offers lines in local currency to attract foreign companies. Bancomext, in turn, provided US\$100 million in financing to Banco Latinoamericano de Comercio Exterior (Bladex) to support the internationalization of Mexican companies.

At the regional level, national development banks work with the Inter-American Development Bank (IDB) and CAF in hybrid schemes that combine public and private resources. Notable operations include the currency swap between the IDB and BNDES for US\$437.5 million and a credit line from CAF to BANDEX for US\$40 million in Dominican pesos, aimed at providing support to strategic sectors. Infrastructure financing strengthens competitiveness, boosts productive linkages, and promotes Latin America's integration into global value chains.

- **Investment Funds and Venture Capital**

Development banks have established investment funds and venture capital that mobilize resources toward strategic sectors, such as renewable energy, digitalization, critical infrastructure, and technological entrepreneurship, mitigating economic risks and facilitating adaptation to an uncertain global environment. **CORFO** has been key in the development of the venture capital industry in Chile since 1997, promoting investment funds and supporting technology startups through the creation of the Fondo Etapas Tempranas Tecnológicas (Early-Stage Technology Fund) (FET) and the Fondo Etapas Tempranas (Early-Stage Fund) (FT). Its strategy has facilitated the internationalization of local companies and encouraged the participation of national and international investors (Table 21). Between 1999 and 2021, CORFO committed US\$953 million in 60 lines of credit to funds, resulting in investments of US\$1 billion in 413 companies, compared to 125 in 2011.

Table 21. Selected CORFO programs

Line of Credit	Objective	Amount	Terms	General Conditions
Competitive MSMEs	Modernization to increase productivity.	US\$46 million	From 2 to 5 years, with a grace period of up to 12 months.	Financing for modernization and productivity improvement.
Internationalization for Productivity	Finance internationalization and export positioning plans.	US\$15 million	Up to 5 years, with a grace period of up to 12 months.	Available in pesos and dollars, depending on the size of the company.
Sustainable Forward	Finance sustainability projects (circular economy, bioeconomy, climate change mitigation and adaptation, energy transition).	US\$15 million	Up to 5 years, with a grace period of up to 6 months.	Support for sustainable initiatives and energy transition.

- **Support for digitalization and capacity building**

Digitalization and skills development are essential to improving the competitiveness of Latin America and the Caribbean and attracting FDI in high-value-added sectors. Development banks have launched programs to technologically modernize institutions and train the workforce. Brazil's BNDES will allocate R\$1 billion (US\$180 million) to the Prodigital Program, which will finance the digital transformation of states and municipalities, focusing on digital governance, Afro-descendant female talent, cybersecurity, digital inclusion, and the digital economy. The selected projects will seek to improve public services and promote connectivity, especially among vulnerable populations.

In Chile, CORFO promotes the use of digital technologies in SMEs through the “Red de Asistencia Digital Fortalece Pyme” (Digital Assistance Network Strengthens SMEs) program, which benefited more than 6,200 companies between 2022 and 2023 with transfers totaling approximately US\$20 million. In addition, it launched the “Absorción Tecnológica para la Innovación (PATI)” (Technology Absorption for Innovation (PATI)) program, offering up to US\$395,000 for technology adoption projects, international missions, workshops, and consulting services. PATI provides additional incentives to projects led by women and seeks to strengthen innovation, productivity, and collaboration among SMEs.

Uruguay's National Development Agency (ANDE) is implementing the Modo Digital (Digital Mode) program to promote the growth of MSMEs through digital tools. In 2023, it provided support to 749 companies through free technical assistance, training, and co-financing of up to 60% for digital transformation plans. The program aims to benefit at least 3,500 companies over its four years of implementation.

For its part, Brazil's Sebrae leads the Brasil Mais Program, which allocated R\$2 billion (US\$180 million) to boost the digital transformation and productivity of 200,000 industrial companies. The program, relaunched in 2023 with support from BNDES, Finep, Embrapii, and SENAI, offers training, technical assistance, and access to financing for the adoption of Industry 4.0 technologies and smart factories. Up to 50,000 MSMEs will receive ongoing support from Local Innovation Agents (ALI) and other Sebrae instruments, seeking to improve production processes, energy efficiency, and management practices, consolidating industrial modernization.

- **Attracting investment in renewable energy and green trade**

Strengthening renewable energy value chains represents a key opportunity for Latin America and the Caribbean, and development banks have designed specific mechanisms to finance sustainable projects and green industries. In Argentina, Banco de Inversión y Comercio Exterior (BICE), in conjunction with the IDB and the national government, launched in 2019 a program worth US\$160 million (US\$100 million from the IDB and US\$60 million from BICE) aimed at SMEs interested in renewable energy and energy efficiency. The financing includes bioenergy projects using biomass or biogas, energy efficiency improvements, and distributed generation, with amounts of up to US\$10 million per project. Additionally, US\$3 million in non-reimbursable technical cooperation was allocated for research and training in the energy sector (IDB, 2019).

In Brazil, the government launched the **Climate and Ecological Transformation Investment Platform (BIP)** in 2024, led by the Ministry of Finance with BNDES, the Glasgow Financial Alliance for Net Zero (Gfanz), and the Green Climate Fund (GCF). The platform seeks to mobilize national and international investment in key sectors such as the bioeconomy, industry, and energy. BNDES validates projects with a “green seal,” facilitating access to financing and generating confidence among investors (BNDES, 2024). The BIP aligns with the country’s climate plans and prioritizes projects through its coordination with initiatives such as ITA Brasil and the Industrial Decarbonization Hub.

In 2023, the Green Coalition was created, an alliance among BNDES, 16 public banks in the Amazon basin, and multilateral organizations such as the IDB, CAF, and the World Bank. Its goal is to mobilize between US\$10 billion and US\$20 billion by 2030 to finance sustainable activities in the Amazon. The strategy is based on four axes: innovative resource mobilization, identification of local needs, creation of a financial innovation laboratory and a common framework for sustainable finance (Green Coalition, 2023).

In Chile, CORFO leads programs that promote the development of green hydrogen, funding pilot and research projects (Table 22). According to CORFO (2024), the supported projects could generate an initial demand of 1,000 tons of hydrogen per year, with a growth potential of up to 45,000 tons once fully implemented.

Table 22. CORFO Instruments to Provide Support for the Green Hydrogen Industry

Name	Description	Amount	Terms
H2V Facility	Its objective is to catalyze private investment in production projects, demand, and actors in the H2V value chain, through instruments that mitigate risks, reduce costs, and help accelerate the realization of investments.	US\$1 billion (total fund available for loans and guarantees)	Medium and long term
Green Credit	Financing program, through participating financial institutions, to promote the development and execution of projects that mitigate the effects of climate change and/or improve the environmental sustainability of companies.	US\$20 million, with access to financing for up to 70% of the total investment required for the project.	Maximum 15 years
Technological Program for the use and adoption of H2V	It seeks to increase the rate of technological innovation in products and processes of companies in the H2V industry, through the coordinated execution of technological development project portfolios and the coordination of consortia.	It co-finances up to 60% of the total cost of the Program, with a maximum subsidy amount of up to US\$4 million.	The maximum execution period for the Programs will be up to 10 years, which may be divided into up to 3 stages.
H2V demand subsidy	It supports the construction and implementation of industrial-scale green hydrogen and derivatives projects through a subsidy that supports final investment decisions and whose implementation allows for understanding the actual costs of green hydrogen and derivatives production in Chile.	Up to US\$ 1 million (to be confirmed)	Annual calls

Source: CORFO
Prepared by ALIDE

9.2. Actions in favor of climate security in LAC development banking

In line with the challenges and opportunities presented in the previous sections, development banking in LAC is positioned as a strategic player in the fight against climate insecurity and in the promotion of sustainable development in the region. These institutions, with a loan and investment portfolio exceeding US\$1.25 trillion in 2023 and an asset portfolio exceeding US\$1.47 trillion (ALIDE, 2024), have a unique capacity to channel financing to critical sectors and to design financial solutions adapted to the challenges of climate change. Considering that in 2022 the annual need for climate financing in the region reached US\$284 billion, of which only about 20% was covered, this presents a strategic opportunity for these institutions.

DFIs operate through both retail and wholesale modalities, channeling funds via local financial institutions. This structure allows them to serve a wide range of sectors and stakeholders, from large infrastructure projects to microenterprises and small producers. Within the range of financial instruments available, **loans and lines of credit** are the most common tools. According to ALIDE (2024b), debt instruments are the predominant type of financing in sustainable development projects (Table 23). These instruments represent **89%** of the resources channeled toward **renewable energy** projects, **83%** toward **sustainable mobility**, and **69%** toward **sustainable agriculture** (Table 23). Debt

instruments include preferential loans, green bonds, and targeted credit lines that offer advantageous terms, such as **low interest rates** and **long grace periods**. These characteristics are tailored to the borrower's repayment capacity, projected cash flows, and the terms corresponding to the useful life of the financed assets.

Table 23. Main Types of Financing Used for Renewable Energy, Agriculture, and Sustainable Transportation Projects
(%)

Main type of financing	Sustainable mobility	Sustainable agriculture	Renewable energy
Subsidies	17	31	16
Guarantees and insurance	22	31	21
Combined instruments	11	19	16
Debt instruments	83	69	89
Other	28	31	16

Source: ALIDE database (2024), with data from 104 regional DFIs.

In sectors such as renewable energy, these instruments have allowed financing for the construction of wind farms, solar plants, and hybrid generation systems. In sustainable mobility, they have contributed to renewing public transport fleets with electric units, while in sustainable agriculture, they have supported the adoption of technologies that reduce the use of chemical inputs, improve water efficiency, and increase the climate resilience of crops. For innovative projects with uncertain returns or emerging business models, such as those linked to the circular economy, DFIs have begun using venture loans, combining debt with equity financing features, allowing them to take on greater risk and finance transformative proposals.

Grants, although less prevalent, are key in sectors with limited access to credit. They represent 31% of financing in sustainable agriculture, 17% in sustainable mobility, and 16% in renewable energy. These non-reimbursable resources help drive the adoption of sustainable practices, such as the transition to resilient crops, agroecological practices, and low-emission transportation solutions. Another essential set of tools is guarantees and insurance, which support projects perceived as risky and protect against extreme weather events. In 2022, they accounted for 31% of agricultural financing, 22% for mobility, and 21% for renewable energy. Guarantees, in particular, are essential for attracting private financing, as they reduce investors' risk exposure. In turn, combined instruments, which combine debt, grants, and guarantees, have proven particularly useful for structuring efficient financing schemes for large-scale and complex projects.

Climate finance has also evolved toward the use of innovative instruments, such as **seed capital** and **venture capital**, primarily aimed at technology startups and emerging companies developing climate solutions. These solutions include AI applications for efficient water resource management or digital platforms that enable traceability in sustainable agricultural chains. These companies, which often face significant barriers to accessing early-stage financing, find in development banking a strategic ally for their **incubation**, **scaling**, and **consolidation**. Through their ability to assume greater levels of risk and offer technical and financial support, these institutions contribute to expanding the climate innovation ecosystem in the region.

In the area of sustainable trade, DFIs have developed specific financial instruments such as **accounts receivable financing for sustainable exporters**, which provides liquidity to SMEs operating in green sectors. There are also **large-buyer-small-supplier programs**, which facilitate local producers' access to preferential financing when they are part of responsible value chains. Another example is the financing offered to small clients by large clean technology providers, which allows for democratizing access to green equipment. In addition, instruments such as **green business credit cards** and **green**

factoring are being used, allowing companies to obtain immediate liquidity through the discounting of invoices linked to sustainable activities.

A transversal feature of these financial products is the existence of **preferential conditions regarding interest rates, terms, and coverage**. Some institutions, such as Banco de la Nación Argentina and FIRA Banco de México, offer reduced interest rates of up to five percentage points for high-impact projects or for beneficiaries without traditional collateral. Financing terms are also flexible: from short-term loans (90 to 360 days) for working capital or marketing, to investment loans that can extend from 7 to 13 years, especially in sectors such as renewable energy. Financing coverage (the percentage of the project financed with credit) can reach 100% for priority activities such as sustainable livestock (Paraguay's Banco Nacional de Fomento) or agricultural infrastructure projects (Panama's Banco de Desarrollo Agropecuario).

A review of 27 financial products from national development banks shows that 37% are allocated to the renewable energy sector, with terms of up to 13 years; 22% to climate change (adaptation and mitigation), with average terms of 12 years; 7% to the agricultural sector, with terms of 10 years and coverage of 80%; and another 7% to the transportation sector, with terms of 5 years and coverage of up to 90%. This diversity reflects an adaptive approach, focused on the characteristics of each sector and the needs of the beneficiaries.

In addition to financial resources, DFIs offer technical advice, feasibility studies, training programs, and support in project restructuring. These services maximize the environmental and social impact of investments, ensuring their long-term viability and sustainability. Its comprehensive approach—environmental, social, and economic—allows it to address projects that are not financially viable for commercial banks but are strategic for sustainable development (ALIDE, 2024b).

However, structural challenges persist: the lack of evidence on the financial returns of sustainable projects, the absence of standardized impact metrics, high monitoring costs, and a shortage of appropriate instruments limit the attraction of private capital (Braly-Cartillier et al., 2021). In the capital markets, the region's low volumes of green bond issuance (only 5% of the global total in 2023) and the limited presence of ESG assets reflect this gap (Climate Bonds Initiative, 2023; Feliba, 2020).

Sixty-one percent of DFIs plan to increase their climate investments over the next three years, and 59% already assess project sustainability before approving loans. However, 70% still lack results frameworks to measure climate impacts (ALIDE, 2024b). Strengthening this institutional capacity will be key to improving accountability, attracting international capital, and building trust around green investment.

To achieve this, it is essential that DFIs integrate environmental and social risk management systems, establish climate performance indicators, and develop capabilities to conduct stress testing and scenario analysis. According to Netto et al. (2021), these tools will allow them to align their operations with national climate commitments and increase the effectiveness of their interventions.

In this way, development banking in LAC not only finances climate solutions, but also leads the construction of a new development paradigm. Its ability to mobilize resources, design innovative instruments, and support local stakeholders is essential to reducing climate insecurity, closing structural gaps, and moving toward a more inclusive, resilient, and sustainable economy. The consolidation of this role will depend on its adaptation capacity, institutional innovation, and multi-stakeholder coordination.

9.3. Role of National Development Banking in the Energy Transition

LAC faces growing energy insecurity, a result of its high dependence on fossil fuels, inadequate infrastructure, and insufficient investment in clean energy. This context demands comprehensive responses that consider both local characteristics and global challenges. In this sense, development banks play a fundamental role in facilitating the energy transition, channeling resources toward priority sectors, and contributing to greater energy stability.

Unlike multilateral organizations, national development banks have the advantage of intimate knowledge of each country's needs. Thanks to this knowledge, they can design flexible financial instruments, offer targeted loans, and provide technical assistance tailored to each situation. Their actions not only strengthen the regional energy system but also promote climate change adaptation, equitable access to financing, and respect for the environment. Below are some of the main ways in which these institutions address the energy challenges in the region:

- **Direct financing of renewable energy projects**

Among the most widely used financial instruments are **long-term loans**, which facilitate the amortization of renewable assets over extended horizons (Table 24). According to BloombergNEF (2024), Brazil's BNDES has provided more than US\$36 billion in sustainable financing over the past two decades. **Working capital financing** is also notable, such as the "Eco-efficiency BDP" line from Bolivia's Banco de Desarrollo Productivo, aimed at SMEs that adopt clean technologies.

Another key tool is **bridge loans**, which provide immediate liquidity during the initial phases of projects while long-term financing is being finalized. In Colombia, FINDETER has used this method to assist electricity distribution companies affected by climate phenomena such as El Niño. Likewise, **financing for decentralized projects** has gained importance in rural areas without connections to traditional electricity grids. In Peru, Banco de la Nación allocated US\$22 million to the company Hidrandina to execute decentralized projects in the departments of Ancash, La Libertad, and Cajamarca, benefiting more than 1.2 million people.

Supported technologies include solar plants, solar roofs for social housing, wind farms, small hydroelectric plants, and biomass and biogas systems. Thanks to these initiatives, LAC achieved a 61% share of clean sources in its electricity generation in 2022, reducing carbon intensity, improving energy resilience, and creating green jobs. However, challenges persist, such as the lack of smart grids, energy storage, and the bankability of small projects, especially in rural areas. To scale these solutions, direct financing must be complemented with guarantees, technical assistance, robust regulatory frameworks, and mechanisms that allow for the aggregation of smaller-scale projects.

Table 24. Main Financing Lines and Programs in the Energy Sector

DFI	Country ^[1]	Product	Sector	Term (years)	Coverage
Banco de Desarrollo Productivo (BDP)	BOL	Eco-efficiency BDP	Renewable energy	Between 3 and 10	Variable
Banco do Nordeste do Brasil (BNB)	BRA	FNE Sun	Renewable energy	Between 12 and 24	Up to R\$ 100,000 (US\$ 16,500)
Banco Nacional de Desenvolvimento Econômico e Social (BNDES)	BRA	BNDES Finame - Low carbon emission	Renewable energy	Up to 10	Up to 100% of the project value
		BNDES Finem - Direct Credit for the Environment	Renewable energy	Up to 34	Up to R\$ 40 million (US\$ 6.6 million)
Banco Regional de Desenvolvimento do Extremo Sul (BRDE)	BRA	The most sustainable energy is BRDE	Renewable energy	Up to 10	Up to R\$ 300,000 (US\$ 49,600)
Corporación Nacional de Finanzas Populares y Solidarias (CONAFIPS)	ECU	Green credits	Renewable energy	Up to 7	Up to US\$ 180,000
Banco de Desarrollo de El Salvador (Bandesal)	SLV	Energy efficiency in SMEs	Renewable energy	Up to 20	Up to US\$ 2,000 million
Caja de Ahorros (CA)	PAN	Green Car Loan	Electro mobility	Up to 84 months	Up to 90% of the project value
Agencia Financiera de Desarrollo (AFD)	PRY	Energy efficiency	Renewable energy	Up to 15 years	Up to US\$ 1,500,000
Banco Nacional de Fomento (BNF)	PRY	100% Electric Vehicle OKm	Electro mobility	Up to 36 months	Up to US\$ 150,000

- **Public-Private Cooperation: Guarantees, Insurance and Combined Instruments**

Public-private cooperation through guarantees, insurance, and combined financial instruments is a tool for making progress in reducing energy insecurity. These solutions mitigate the risks that limit private sector participation in clean energy projects, especially in contexts with high levels of regulatory uncertainty, small scales, or locations in vulnerable areas.

Guarantees offered by development banks, such as BANOBRAS's Timely Payment Guarantees (GPO) in Mexico, partially or fully support the fulfillment of financial or contractual obligations, facilitating access to credit and improving investor confidence. At the same time, **energy insurance**, such as that used in the Colombian ESI (Energy Savings Insurance) program led by Bancóldex and the IDB, covers risks associated with failure to meet promised energy savings, regulatory changes, or extreme weather events. This program integrates four elements: a performance contract, savings insurance, external verification of results, and preferential financing, facilitating investments in energy efficiency and distributed generation.

Blended financial instruments, which combine loans, grants, and guarantees, are gaining ground in the region. They reduce entry costs for beneficiaries, ensure long-term financial viability, and structure more robust projects. Bolivia's BDP, for its part, combines preferential credit lines with technical support and partial guarantees for rural distributed generation projects. Brazil's BDMG combines subsidies for energy audits with credits for energy modernization.

The impact of these mechanisms has been significant in projects with high transaction costs or low commercial scalability, facilitating access to financing, promoting technological innovation, and extending energy solutions to excluded populations. However, their implementation faces challenges. The limited availability of counter-guarantee funds, the lack of specific regulatory frameworks, and the limited technical capabilities of some financial institutions limit their reach. In addition, greater coordination among development banks, multilateral organizations, and insurers is required to consolidate more effective and scalable risk-sharing schemes.

- **Thematic Financial Instruments**

The issuance of **thematic bonds**, particularly **green** and **sustainable bonds**, has become an important source for development banks to mobilize private capital for financing projects aimed at **energy transition, emissions reduction, and climate resilience**. Faced with the urgent need to expand investment in clean energy infrastructure and faced with public budget constraints, development banks have taken on a leading role in the region through the use of this instrument. Through bond issuance in international and regional markets, these institutions have been able to raise funds at competitive rates, significantly expanding the volume of financing available for projects aligned with climate and sustainability goals.

Thematic bonds ensure that the funds raised are allocated to projects with positive environmental and social impacts, while strengthening transparency and accountability. Among the most emblematic cases is **Brazil's BNDES**, which issued a US\$1 billion green bond in 2017 to finance wind farms, positioning the country as a regional benchmark in sustainable finance.

On a national scale, other banks have replicated this practice, adapting it to their context. **Argentina's BICE** and **Peru's COFIDE** issued bonds for US\$30 million each, intended to finance energy efficiency and clean energy projects. In Mexico, **FIRA** issued more than US\$388 million in green bonds between 2018 and 2020 for renewable energy, energy efficiency, environmental management, and sanitation. For its part, **BANCOMEXT** issued a US\$500 million sustainable bond in 2021, targeting energy efficiency and green building initiatives.

Thanks to these issues, the total volume of thematic bonds issued by development banks in LAC grew from US\$497 million in 2014 to more than US\$6.5 billion in 2023, with a compound annual growth rate of 33%, well above the global average.

In addition to financing projects, this strategy has promoted the adoption of international reporting standards and contributed to the development of regulatory frameworks for sustainable finance. However, challenges remain, such as the need to expand the portfolio of eligible projects, improve technical capabilities, and diversify the investor base. Innovations such as transition, blue, and climate-related bonds offer new opportunities to scale the impact of these instruments in the region.

- **Incentives for Energy Efficiency and Electromobility**

Development finance institutions have implemented **specific incentive programs** to promote **energy efficiency** and **electromobility**, with the goal of reducing energy consumption, lowering emissions from the transportation sector, and strengthening energy resilience in urban environments. These initiatives include **preferential financing, specialized technical assistance, and support for the adoption of clean technologies** in various productive sectors, facilitating the transition toward more sustainable and inclusive energy models.

In terms of energy efficiency, programs such as the one implemented by Chile's **BancoEstado** stand out, which has helped businesses and households modernize electrical installations, replace inefficient equipment, and automate industrial processes. These programs include medium- and long-term loans with competitive rates and, in some cases, energy audits. Brazil's **BNDES**, through its "BNDES Finame – Low Carbon Emission" program, finances up to 100% of the purchase of efficient machinery, supporting companies of all sizes in their transition to more sustainable production.

In the field of **electromobility**, development banks have begun actively financing the transition to electric and hybrid vehicles, as well as the associated infrastructure. Various national experiences reflect this impulse. In **Paraguay**, Banco Nacional de Fomento (BNF) offers special loans that cover **100% of the value of electric vehicles**. In **Panama**, Caja de Ahorros implemented the "**Green Car Loan**" program, aimed at facilitating the acquisition of low-emission vehicles. In **Brazil**, Banco Regional de Desarrollo del Extremo Sur (BRDE) promotes electric mobility through its financing line, "**The most sustainable energy is BRDE,**" which focuses on projects that combine clean transportation and energy efficiency.

These programs generate positive impacts on multiple fronts: they reduce aggregate energy demand, reduce business costs, promote technological innovation, create green jobs, and stimulate new local industries. They also contribute to meeting national climate commitments.

However, their expansion faces challenges such as a lack of technical capacity to evaluate projects, the need for charging infrastructure for electric vehicles, and the absence of regulatory frameworks that promote efficiency standards. To move forward, it will be key to develop innovative financing schemes that integrate loans, smart subsidies, guarantees, and pay-as-you-save models, thus facilitating access to these technologies for middle- and low-income groups.

- **Technical Assistance and Capacity Building**

Technical assistance and institutional capacity building are key components of development banks' strategies to address energy insecurity and promote a just and sustainable energy transition. While financing is essential, without the technical capacity to formulate, implement, and operate projects, investments run the risk of being inefficient or unsustainable.

Therefore, development banks complement their financial instruments with technical assistance programs that improve project quality, strengthen local stakeholders, and support the creation of institutional and regulatory frameworks favorable to clean energy.

This assistance is deployed in several dimensions. Firstly, it focuses on **early project structuring**, as **COFIDE does in Peru**, which, with IDB support, prepares bankable projects in rural areas, including technical, environmental, and financial studies. Secondly, it seeks **to strengthen the capacities of borrowers** such as SMEs, cooperatives, and municipalities. For example, the **Bolivia's BDP** complements its "Eco-Efficiency BDP" line with technical advice to identify energy solutions tailored to each beneficiary's consumption.

In the field of energy efficiency and electromobility, institutions like **Chile's BancoEstado** offer integrated programs that combine financing and technical training, ensuring the efficient use of modern technologies and their proper maintenance.

A distinctive feature of these programs is their **ongoing support**, from the initial phase to the operational phase, ensuring that projects meet the expected environmental, social, and financial standards. This approach has been particularly effective in community projects, where end-user training is critical to sustainability.

However, challenges persist, such as the limited availability of non-reimbursable funds, the need to expand territorial coverage, and the difficulty of retaining technical talent in local governments. Overcoming these obstacles will require greater collaboration among banks, multilateral organizations, universities, and centers of excellence, as well as the use of digital platforms and certification programs to scale training efforts throughout the region.

- **Support for Strengthening the Regulatory Framework**

Strengthening regulatory frameworks is essential for the success of the energy transition in the region, and development banks have taken on an increasingly active role in this area. Although they do not design regulations, their technical expertise, knowledge of the local context, and ability to mobilize international assistance make them key players in promoting regulatory environments that favor investment in renewable energy, energy efficiency, and electromobility.

One of its main contributions has been the design of financial incentives linked to regulatory compliance, such as green credit lines or guarantee funds that offer preferential terms to projects that meet environmental and efficiency standards. In Brazil, **BNDES** makes financing for large energy infrastructure projects conditional on compliance with strict environmental requirements, thus incentivizing regulatory compliance through financing.

In the area of energy efficiency, banks such as **Chile's BancoEstado** have collaborated with multilateral organizations to develop minimum performance standards for household appliances, buildings, and vehicles. These efforts have been accompanied by financing programs that facilitate access to technologies compatible with these standards, creating synergies between regulation and the market.

In addition, development banks have played a key role in promoting regulatory stability and predictability, critical factors in attracting long-term private investment. Through their participation in public-private dialogues and regional forums, they have promoted the adoption of regulatory best practices, such as renewable energy auctions, transparent tariff frameworks, and efficient bidding processes.

The impact of these actions is reflected in increased project bankability, reduced regulatory risk, accelerated adoption of clean technologies, and the creation of fairer and more competitive conditions for consumers. However, challenges remain, including institutional weakness, political instability, lack of multi-governmental coordination, and the urgent need to adapt regulatory frameworks to new technologies such as storage, microgrids, and energy data management.

Overcoming these challenges requires development banks to continue promoting regulatory technical capabilities, inclusive governance frameworks, and partnerships with multilateral organizations and research centers that anticipate the future demands of the energy transition in LAC.

- **Energy Resilience and Climate Adaptation Projects**

Aware of the growing impact of extreme weather events on the stability of energy systems, these institutions have begun to integrate resilience criteria into the design, financing, and execution of their infrastructure investments. Among the main lines of action promoted by development banks

are the financing of electrical infrastructure resilient to severe weather events, support for distributed generation projects in vulnerable communities, and the incorporation of efficiency and resilience measures in buildings and electrical grids. It should be noted that the topic of energy resilience, and its broader connection to adaptation strategies in the face of climate insecurity, has already been **explored in depth in the specific section on actions to overcome climate insecurity** within this study.

9.4. Financial, Technical, and Digital Strategies for Agri-Food Security

- **Direct financing for agri-food production and processing**

Direct financing for the agri-food sector is one of the key pillars of development banking in the region, aimed at facilitating access to capital for producers, cooperatives, agro-industries, and rural organizations. Its purpose is to promote essential activities such as food production, processing, collection, and marketing, thus strengthening food security and sovereignty through a territorial and structural development framework.

This type of financing is mainly divided into **working capital loans** and **investment loans**. The former cover short-term operational needs—such as supplies, wages, and logistics—and adapt to the seasonality of the production cycle. Examples of this are Peru's Agrobanco and the "Provincia Agro-SME" program of the Banco Provincia de Buenos Aires. The latter, on the other hand, are geared toward long-term investments such as machinery, irrigation systems, rural infrastructure, or crop renewal. Illustrative cases include the FIRA's programs in Mexico and Agro+BDP in Bolivia, focused on technological modernization and climate change adaptation.

In addition, **rural microcredits**, designed for family farmers and vulnerable communities, have gained importance. They offer flexible conditions, reduced loan amounts, and, in many cases, associated technical assistance. Programs such as BASA's *Amazônia Florescer* program in Brazil and Banco do Nordeste's *Agroamigo* program have proven effective in promoting self-employment, financial inclusion, and economic resilience in remote areas.

Together, these instruments reflect that development banks do not limit themselves to providing liquidity, but rather act as promoters of productive development and sustainable agri-food transformation, helping to close structural gaps and strengthen food security with a vision of endogenous development.

- **Green financing and tools for agri-food sustainability**

Faced with growing pressure on natural resources and the effects of climate change, sustainability has become a central focus of agri-food financing in the region. Development banks have begun redesigning their financial products with a green finance approach, promoting sustainable, low-carbon, and resilient agricultural practices.

Green credit lines stand out, aimed at financing technologies and processes that reduce environmental impact, such as automated irrigation, agroforestry, regenerative livestock farming, organic crops, and energy efficiency. Some notable cases include BNDES in Brazil, which finances sustainable agricultural activities, and FINAGRO in Colombia, which conditions credit on the adoption of good environmental practices.

Moreover, **thematic bonds**—green, sustainable, and climate—allow for raising funds in the capital markets to be allocated exclusively to projects with a positive environmental impact. Banco Nacional de Costa Rica has issued green bonds aimed at producers who practice agroecology and water efficiency.

In response to climate risks, **innovative agricultural insurance** policies have been introduced, such as parametric insurance, which is automatically activated in the event of extreme events such as drought or frost. In Peru, Catastrophic Agricultural Insurance has been key to protecting small farmers in vulnerable areas.

These instruments reflect a profound transformation in rural finance, integrating environmental, social, and governance (ESG) criteria and aligning development banks with the SDGs and climate commitments. The goal is not only to finance, but also to transform the productive matrix and ensure sustainable and resilient food supply.

- **Guarantee and risk reduction instruments**

One of the main obstacles to agri-food financing in the region is the high perception of risk faced by small and medium-sized rural producers. Factors such as informal land tenure, climate variability, dependence on volatile prices, and low banking access make access to credit difficult. In response, development banks have implemented **guarantee instruments and coverage mechanisms** to reduce financial risk and promote inclusion.

Among these, **partial guarantee funds** stand out, which act as guarantors backed by the State or by development banks themselves. These funds cover part of the loan in case of default, facilitating credit for those without traditional collateral. In Mexico, **FIRA** supports up to 80% of the financing for agricultural-livestock MSMEs. In Colombia, between 2022 and 2024, the **Agricultural-livestock Guarantee Fund (FAG)** granted more than 700,000 guarantees for a total value of US\$2.19 billion. Additionally, some banks have begun offering **currency and interest rate hedging** to protect exporting agro-industries from international volatility, as is the case with **Brazil's BNDES** in chains such as coffee, cocoa, and fruit.

- **Technical assistance and capacity building**

In rural areas with significant gaps in education, technology, and training, financing without technical support has limited impact. Therefore, development banks in Latin America and the Caribbean not only provide credit, but also act as capacity-building platforms, offering technical assistance, technology transfer, and organizational strengthening.

Credit-linked technical assistance is an increasingly adopted strategy, supporting producers from project formulation to project evaluation. It may include agronomic diagnostics, financial planning, good agricultural practices, pest management, efficient water use, and technologies adapted to climate change. Prominent examples include Mexico's FIRA, which integrates financing with business training and innovation, and the Bolivia's BDP, which works with high Andean producers to implement agroecological practices and farm planning.

In Colombia, Banco Agrario promotes productive alliances that integrate credit, technical assistance, and market access. Management and financial training is also a priority, as at Banco do Nordeste, which provides training for family farmers, or Banco Provincia de Buenos Aires, which offers virtual training platforms.

Banks also promote technology transfer through subsidies, preferential credit lines, and partnerships with research centers, facilitating access to improved seeds, efficient irrigation, ICTs, and machinery tailored to each region.

- **Leverage instruments and international cooperation**

One of the strategic strengths of development banks in the region is their ability to channel and leverage international resources in support of agri-food development. Thanks to their public or mixed nature, alignment with national policies, and territorial presence, these institutions are well positioned to manage funds from multilateral organizations, cooperation agencies, and private actors with a focus on impact.

Co-financing with multilateral organizations is one of the most widely used tools. Institutions such as the IDB, CAF, IFAD, FAO, and the World Bank have collaborated with agricultural-livestock development banks on programs to strengthen food security, modernize production chains, and promote family farming. In 2024, CAF approved more than US\$2.478 billion for strategic agricultural projects in Ecuador, Paraguay, and Argentina, and allocated US\$75 million to CONAFIPS in Ecuador to expand rural financial access with a focus on sustainability and inclusion.

Another key avenue is access to international climate funds, such as the GCF, the Adaptation Fund, and the CIF. Banks like Brazil's BNDES have been accredited as executing entities, mobilizing resources to finance resilient agriculture and ecosystem restoration projects, especially in the Amazon.

The blended finance model has gained relevance by combining public, private, and donation capital into financial architectures that enable high-impact social and environmental projects with low commercial attractiveness. Development banks act as key facilitators through guarantees, trust funds, and subsidized lines.

Moreover, within the framework of South-South and triangular cooperation, these institutions are sharing technological tools, methodologies, and financial models among countries with similar conditions, strengthening technical sovereignty and promoting regional integration. Together, these instruments position development banks as essential nodes in the sustainable agri-food financing ecosystem, expanding their responsiveness, generating synergies, and linking rural areas to global resource flows.

- **Information tools and digital services**

Digital transformation is key to building more inclusive, efficient, and resilient agri-food systems in Latin America and the Caribbean. In this process, development banks are incorporating digital tools to expand their coverage, reduce operating costs, and offer financial services tailored to the realities of rural areas.

One of the most important advances is the **digitalization of rural financial services**, which allows products to be offered without the need for in-person procedures. In Argentina, **Banco Provincia de Buenos Aires** has developed the *Procampo Digital* platform, which facilitates access to credit and supplies completely online. In Brazil, **Banco do Nordeste** has implemented *AgroamigoNet* and *WhatsApp Agroamigo*, tools that promote the digital inclusion of family farmers through connectivity financing, remote support, and access to marketing platforms.

In Mexico, **FIRA** has developed tools such as *Agrocostos*, which allow for real-time project evaluation, monitoring, and reporting. It also trains technicians and producers in precision agriculture, efficient water use, traceability, and digital marketing.

Another growing field is **traceability and monitoring platforms**, which allow for the certification of sustainable practices and facilitate access to differentiated markets. **Uruguay's BROU**, for example, has supported livestock traceability for exports to the European Union and China.

Banks are also using technologies such as satellites, weather stations, and early warnings to strengthen **digital climate and agricultural-livestock risk management**, linking it to financial products such as agricultural insurance and contingent lines.

Finally, **financial education and remote technical assistance platforms** are being developed, providing access to credit simulators, training content, and technical advice through digital devices. These initiatives strengthen local capacities, reduce technological gaps, and modernize rural development banking.

Table 25. Technology at the Service of Agriculture: New Platform Promotes Rural Financial Inclusion in Mexico
<p>FIRA – Banco de México launched an innovative digital platform called “Agritech Nexus” in April 2025, designed to strengthen financial inclusion, productivity, and profitability in Mexican agribusinesses. This tool will allow financial institutions to access specialized technological services that facilitate credit placement in rural areas, overcoming information barriers and reducing operating costs.</p> <p>In its initial phase, the platform seeks to improve access to financing for small producers and productive units traditionally excluded from the financial system. To this end, it provides intermediaries with historical data on the agricultural performance of farms, including productivity, climate risks, and income trends, allowing for a more accurate assessment of the viability of financed projects.</p> <p>In addition to facilitating credit origination, the platform incorporates remote monitoring functions for crop performance, optimizing risk management in real time and reducing costs associated with field supervision (Agrosíntesis, 2025).</p> <p>FIRA expects a significant portion of its financial intermediaries to adopt the tool in the short term, which would mark a significant advance in the digitalization of rural finance. The platform was developed in partnership with a technology company specializing in digital solutions for the productive sector.</p> <p>This initiative consolidates FIRA’s role as a promoter of financial innovation in the agri-food sector, facilitating sustainable rural development through the strategic use of technology.</p>

9.5. **Role and Activities of Development Banking in Cybersecurity**

Previous chapters addressed the evolution of cybersecurity as a global challenge, identified specificities and gaps in Latin America and the Caribbean, and analyzed both the costs associated with cyberattacks and the new technologies that are shaping the path of digital defense. From this perspective, there is a need to examine the role that various actors in the financial ecosystem can play in consolidating a culture of digital security.

In this context, development banks are in a strategic position. Given their long-term mission, their focus on sustainable development, and their ability to mobilize financial and technical resources, these institutions must not only protect their own operations from cyber threats but also become active promoters of safe practices in the sectors they finance.

This chapter outlines the main responsibilities and opportunities for action that development finance institutions (DFIs) have regarding the cybersecurity agenda. It analyzes their actions as organizations (internal policy implementation, staff training, governance structures), their potential as drivers of transformation (incorporating security criteria into financial products, supporting digital ventures), and their coordinating role at the regional level (exchanging best practices, participating in specialized networks and forums).

- **Internal cybersecurity strategies**

Each institution should have an institutional digital security policy aligned with international frameworks. These policies establish guiding principles, acceptable risk levels and contingency plans (Table 26).

Table 26. Cybersecurity strategies adopted by DFIs

Country	Institution	Strategy	Description
Argentina	Banco de Inversión y Comercio Exterior S.A. (BICE)	NOC (Network Operation Center)	A system that allows to quickly view incidents and threats, alert teams, improve response times, and strengthen the IT Security Management System.
Argentina	Banco de Inversión y Comercio Exterior S.A. (BICE)	Application resilience	It ensures operational continuity with average changeover times of less than 30 minutes and no loss of information.
Argentina	Banco de la Nación Argentina	Information Technology and Information Security Committee (TISI)	It oversees the operation of the Bank's technological environment and is responsible for approving and updating the security policy against cybercrime and computer fraud.
Argentina	Banco de la Provincia de Buenos Aires (BAPRO)	PCI DSS Certification	Digital payment channels incorporated improvements in user experience and, in cybersecurity, achieved PCI DSS certification, guaranteeing data protection in all transactions.
Argentina	Banco de la Provincia de Buenos Aires (BAPRO)	Information Technology and Security Governance Committee	It ensures the implementation of technological management frameworks and information systems aligned with business strategy and in compliance with control regulations.
Belize	Development Finance Corporation (DFC)	Development of a cybersecurity roadmap	Cybersecurity awareness campaigns and defined key actions such as penetration testing, vulnerability scanning, and ongoing training in policies, threat detection, and ongoing education.
Bolivia	Banco de Desarrollo Productivo S.A.M.	Password and account self-service with AD360	Enterprise solution that facilitates identity management, access control, and compliance, with adaptive features, automation, threat detection, and support for Zero Trust environments.
Brazil	Banco da Amazônia S.A. (BASA)	Information and cybersecurity policy	It defines guidelines for information management and cybersecurity.
Brazil	Banco de Desenvolvimento de Minas Gerais S.A. (BDMG)	Computer and cybersecurity policy	Establish principles, guidelines, and responsibilities for protecting data and information belonging to the institution, its clients, and the general public.
Brazil	Banco do Nordeste do Brasil S.A. (BNB)	Corporate cybersecurity policy	It protects sensitive information and ensures a secure environment, with a commitment to continually improve its procedures with the support of senior management.
Brazil	Banco do Brasil	Information and Cybersecurity Policy	It establishes guidelines for information management and cybersecurity.

- **Financing of products and programs with cybersecurity components**

Credit lines, investment funds, and guarantees can encourage the incorporation of cybersecurity standards in strategic sectors such as energy, healthcare, education, and financial services (Table 27).

Table 27. Cybersecurity Strategies Adopted by DFIs

Country	Institution	Products / Programs	Product type	Cybersecurity element
Argentina	Banco de la Nación Argentina	Cyber Risks - Individuals	Insurance	A solution designed to protect the insured and their family against risks arising from the use of electronic information, covering personal injury, crisis management, and expenses caused by data theft or attacks on home systems.
Bolivia	Banco de Desarrollo Productivo S.A.M.	BDP Lends to You	Platform	It's a free platform that allows you to apply for productive loans. It protects applicants' data confidentially through the use of AI and Machine Learning.
Brazil	Banco da Amazônia S.A. (BASA)	Mobile banking with integrated token	Platform	Token-based mobile banking allows you to validate transactions from your phone with an automatic code linked to your CPF and device, without using an additional card or app, improving security and the user experience.

9.6. Development Bank Programs and Lines of Credit to Combat Public Insecurity

Development banks in Latin America play a fundamental role in reducing public insecurity by financing policies that address the structural causes of violence, such as poverty, inequality, and social exclusion. Through specific programs and tailored lines of credit, these institutions promote financial inclusion, productive development, and access to opportunities in vulnerable communities.

Banco Ciudad de Buenos Aires has promoted various initiatives to promote urban equity. Highlights include its lines of credit with preferential rates for vulnerable sectors (such as taxi drivers and microentrepreneurs), financing for first-time homeowners, and the creation of a US\$70 million trust fund for social projects. The “Caja Ladrillo” (Brick Box) program facilitates access to construction materials in disadvantaged neighborhoods through special cards. In addition, it has opened branches in vulnerable areas and offers educational loans aimed at women in technological fields.

Banco de la Nación Argentina (BNA) launched the “BNA te suma” (BNA adds value to you) program to promote financial inclusion for young people. In 2023, it opened more than 74,000 accounts for teenagers, granted more than 1,600 loans to young entrepreneurs, and offered educational workshops across the country, supported by a network of 877 facilitators. The initiative seeks to promote responsible financial habits from adolescence and expand access to the formal banking system.

Banco Provincia de Buenos Aires has developed a special refinancing line for women victims of gender-based violence. The program allows debt restructuring with preferential rates and terms of up to 24 months, contributing to the economic autonomy of women in vulnerable situations, provided they present the corresponding legal documentation.

In **Brazil**, **BNDES** has allocated US\$55 million to the Amazon Plan: Security and Sovereignty, aimed at combating crime. It also supports social and productive inclusion by financing projects in health, education, sanitation, and urban mobility (Table 28). Its offering includes both repayable (loans and microcredits) and non-repayable (funds that do not require repayment, provided the project objectives and the rules established in the contract are met). These modalities are summarized in the following table:

Table 28. BNDES: Programs for Public Safety and to Reduce Social and Regional Inequalities

Program	Type	Contribution to public safety and social cohesion	Destination / Key conditions
Socio-environmental Fund	Non-repayable	It improves the resilience of low-income rural populations, strengthening their self-sufficiency and reducing social tensions.	Support for income-generating projects in semi-arid regions (e.g., cisterns for agricultural production).
BNDES Periferia	Non-repayable	It promotes productive inclusion in favelas by supporting entrepreneurs, with an emphasis on women, youth, and the Black population. It strengthens the social fabric and prevents violence.	Training, mentoring, and seed capital; circular economy, urban agriculture, and climate resilience projects.
Microcredit	Repayable	It expands access to formal credit for microentrepreneurs excluded from the financial system, reducing their dependence on informal or illicit economies.	Small loans through financial institutions; working capital or productive investments.
Finem – Corporate Social Investments	Repayable	It finances social projects in vulnerable communities and businesses, impacting education, employment, basic services, and social management.	Infrastructure, training, management systems, social technologies.
Finem Segurança Pública	Repayable	It improves public safety and intelligence infrastructure and technology, increasing operational efficiency and services to the population.	Direct/indirect financing for studies, construction, equipment, software, and technical training; with a term of up to 20 years.
Pro-Segurança Pública	Repayable	It supports municipalities and states in acquiring equipment for law enforcement agencies (vehicles, vests, technology). It strengthens local security capabilities.	Loans of up to US\$3.6 million; maximum term of 7 years.

Source: BNDES | Prepared by ALIDE

Likewise, at the end of 2024, BNDES disbursed nearly US\$20 million for the Fund for the Universalization of Telecommunications Services (Fust), a project promoted by the Federal Government with the goal of bringing 5G broadband internet to communities in situations of social vulnerability. As part of this initiative, the Ministry of Development and Social Assistance, Family and Fight Against Hunger (MDS) identified the beneficiary areas, which include 145 telecommunications towers distributed across eight rural locations in Bahia, Maranhão, and Piauí, as well as 124 favelas in various regions of Brazil.

Other development banks that have implemented innovative strategies to address public insecurity from a structural perspective, through financial inclusion, the promotion of productive opportunities, and the improvement of living conditions in vulnerable communities are located in Colombia, Ecuador, and Mexico.

In the first, the Government has recognized the strategic role of the popular economy as a foundation for social development. This economy, made up of informal workers and small businesses excluded

from the financial system, has traditionally been ignored by public policies, which has facilitated its exposure to dynamics of extreme informality and, in many cases, to criminal networks. In this context, **FINDETER** has assumed a central role as a territorial development bank, designing instruments to close these gaps and strengthen the social fabric, especially in areas with high levels of violence and historically lagging behind.

In 2023, FINDETER implemented a direct contracting policy that allowed popular economy organizations to execute their own projects through solidarity agreements. This resulted in the signing of 1,308 agreements in 349 municipalities, including 383 in PDET territories—areas prioritized due to their historical conflict—with projects aimed at productive development, improvements in road infrastructure, access to drinking water, and local institutional strengthening. These initiatives have not only improved living conditions but have also helped reduce risk factors associated with a lack of stable income.

Another strategic focus of FINDETER has been access to financing. Through a rediscount scheme with cooperatives and compensation funds, it has facilitated credit for people normally excluded from the financial system, allowing young people and families to start formal businesses, reducing their dependence on informal or illicit economies. Additionally, the **“Compromiso Vivienda Popular” (Popular Housing Commitment) program** has allocated US\$240 million to priority social housing projects, benefiting 160 municipalities, primarily in low-income areas. As of August 2023, 6,847 housing projects had been financed. Habitat improvement has proven key to strengthening community security, preventing domestic violence, and promoting territorial integration.

In Ecuador, **Corporación Nacional de Finanzas Populares y Solidarias (CONAFIPS)** has been a key player in transforming the economy based on a focus on inclusion. As part of the Popular and Solidarity Financial System, CONAFIPS has guaranteed access to credit for marginalized groups such as young people, women, and the elderly. As of August 2023, the entity had managed US\$978 million in productive loans, reaching 6.8 million members and positioning itself as responsible for more than 35% of the sector’s financing. This volume of investment has allowed thousands of Ecuadorians to undertake economic activities that improve their quality of life, breaking cycles of financial exclusion.

One of CONAFIPS’ most effective tools has been the joint guarantee, which supports applicants with savings and credit cooperatives, thus facilitating access to resources that would otherwise be denied. This strategy not only expands economic opportunities but also contributes to the creation of a more inclusive and equitable financial ecosystem. Beyond the amounts disbursed, the true impact is reflected in the social cohesion these policies generate, strengthening communities and reducing their vulnerability to illicit activities. CONAFIPS has executed more than 120,000 credit operations targeting sectors such as agriculture, commerce, services, housing, and production, demonstrating that an inclusive financing approach can transform realities.

In Mexico, **Banco Nacional de Obras y Servicios Públicos (Banobras)** has strengthened its focus on social infrastructure as a driver for reducing inequalities. In a context of high youth unemployment and high informal employment, Banobras has promoted projects that seek to guarantee access to essential services for traditionally excluded groups. Its Gender Policy and Flexible Profitability Policy have allowed it to channel resources from the National Infrastructure Fund (Fonadin) toward projects in sectors such as health, education, telecommunications, public transportation, electrification, and sanitation. These investments promote not only local economic growth, but also safer and more conducive environments for the development of women, girls, and adolescents.

By December 2023, Banobras had provided financing to 310 municipalities, of which 208 had accessed its loans for the first time. Through the Banobras-FAIS program, it promoted high-impact projects in 269 municipalities that historically lacked basic infrastructure. That same year, it provided direct funding to 102 municipalities for projects in drinking water, health, education, and cultural spaces. This territorial expansion of financing represents a significant advance in closing socioeconomic gaps.

Additionally, Banobras has led the issuance of sustainable bonds in the local financial market. During the current administration, it issued 12 bonds totaling US\$1.7 billion, two of which focused on gender. These instruments allow for the financing of projects with social and environmental impact, reaffirming Banobras' commitment to inclusive and sustainable economic development. Its comprehensive approach strengthens social cohesion, reduces structural inequalities, and contributes to building safer and more resilient communities in Mexico.

CHAPTER X. CONCLUSIONS AND POLICY RECOMMENDATIONS

- In a context marked by multiple crises—economic, climate, social, health, and geopolitical—that are generating structural transformations in economies and societies, it is urgent to consolidate and strengthen **development banks**. Their nature, as public-mandate institutions, gives them a crucial role, both in containing the immediate impacts of these crises and in coordinating and financing medium- and long-term development strategies.
- These banks are emerging as **strategic players in building comprehensive security**, gradually evolving into a broader “omnibank” model. This means that, in addition to financing traditionally excluded sectors, they have taken on new responsibilities that include crisis mitigation, fostering social cohesion, promoting gender equality, climate action, and providing global public goods.
- Through increased technical and financial cooperation, development banks are moving toward a **more interconnected and cohesive system**, coordinating efforts with multilateral and regional banks and other international funds. This coordination allows them to respond more comprehensively to the region’s shared challenges.
- Their **in-depth understanding of the national and local context**, as well as regulatory, political, and economic frameworks, allows them to more accurately identify financing gaps and design solutions tailored to the specific challenges of each region. This proximity also facilitates the issuance of loans in local currency, a key component in mitigating financial risks.
- To support this comprehensive security, development banks deploy a unique combination of functions: they mobilize public and private capital, design innovative financial instruments, assume strategic risks in priority sectors, deepen territorial knowledge, and act as **multi-stakeholder coordination platforms**.
- However, the new scenario also reveals limitations. **Many development banks face budget constraints** and insufficient resources to respond to the magnitude of the challenges. This has encouraged the search for international financing to expand their capital base. However, a key challenge remains: by operating primarily in local currencies, the question of who bears the currency risk—whether international players or local banks—remains unresolved, which may limit their ability to scale operations.

Throughout this document, various initiatives have been examined that demonstrate the strategic direction these institutions are taking to respond to the growing **structural insecurities** facing the region. Below are the main actions carried out by development banks in the various areas of comprehensive security.

- Development banks, thanks to their national focus, territorial knowledge, and access to diverse sources of financing—including international and climate funds—are well positioned to design tailored financial solutions that overcome barriers to investment. This capacity allows them to promote the attraction of FDI and stimulate domestic investment in strategic sectors such as green goods, e-commerce, and renewable energy value chains.

- They have created investment funds and venture capital to channel resources toward strategic sectors such as renewable energy, digitalization, critical infrastructure, and technological ventures, thus facilitating adaptation to an uncertain global environment.
- They have launched technological modernization and job skills training programs, with the goal of strengthening regional competitiveness and preparing the workforce for the challenges of the digital economy.
- To promote the green transition, banks have designed specific financial mechanisms aimed at strengthening renewable energy value chains and developing sustainable industries in LAC.
- Development banks are essential because they lead the mobilization of climate finance, in an environment where additional flows of up to US\$250 billion annually are required to meet adaptation and mitigation commitments.
- They have the potential to act as catalysts for green transformation in countries, thanks to the combination of their public mandate, deep knowledge of the local context, and ability to reduce investment risks and provide financing in local currencies.
- This institutional configuration positions them as key agents in driving a sustainable and inclusive transition. However, their potential remains underutilized due to structural limitations (institutional, regulatory, and operational obstacles) and financial constraints that hinder their ability to scale transformative interventions.
- Collaboration with international entities, particularly multilateral and regional banks, has become a strategic mechanism for development banks to strengthen their technical capabilities, access global knowledge, and diversify their sources of financing. Although institutional and operational differences may limit the formation of systematic alliances, their increasingly active presence in venues such as the Finance in Common Summit (FiCS) allows them to enhance their interlocution and prominence in the international financial agenda.
- The ability of development banks to address environmental and social challenges depends largely on their integration into a more coherent and articulated financial system. This requires active collaboration among public, private, and multilateral actors, aimed at mobilizing resources and scaling up sustainable solutions that impact growth and employment.
- They are in a position to mobilize private resources through blended finance schemes and guarantee mechanisms, allowing investment to be channeled toward resilient, low-emission projects beyond the limits of traditional public investment. At the same time, they are increasingly incorporating biodiversity and ecosystem services into their financing strategies, aligning themselves with emerging international standards and promoting the valuation of natural capital as an integral part of a sustainability agenda.
- They play a catalytic role in the energy transition by structuring innovative financing and taking strategic risks that improve the bankability of renewable projects. Through instruments such as thematic bonds and partnerships with institutional investors, these banks are able to mobilize private capital for long-term initiatives, facilitating investments that would otherwise face entry barriers in developing countries.

- Development banks not only channel financing for energy transition projects, but also integrate specialized technical advice and concessional resources through blended financing schemes. This ability to structure complex investments and align them with social objectives—such as gender inclusion—reinforces their strategic role in driving an inclusive and sustainable energy transition.
- The enabling role of development banks in addressing structural barriers is noteworthy. This is the case with BNDES, which demonstrated its capacity for financial innovation by structuring a dollar-linked loan for a renewable energy project for the first time, enabling strategic investments in an environment marked by exchange rate volatility. This operation, supported by a new legal framework, expands the tools available to finance the energy transition in export sectors.
- The energy transition and sustainable urban mobility require development banks to overcome technical, regulatory, and infrastructure barriers by designing innovative financial schemes. By combining loans, smart subsidies, guarantees, and pay-as-you-save models, these institutions can expand access to clean technologies, especially among low- and middle-income groups, strengthening their role as facilitators of inclusive transformation.
- Direct financing for the agri-food sector positions development banks as strategic players in strengthening food security and sovereignty in Latin America by facilitating access to capital throughout the production chain and promoting a territorial development approach that fosters productive inclusion and strengthens local capacities.
- Development banks play a key role in promoting food security and import-substituting industrialization by channeling financing and technical assistance to agricultural-livestock and manufacturing microenterprises. The case of BDP, with its territorial, inclusive approach and growing female participation, reflects how these institutions contribute to increasing the income, yields, and quality of life of small producers throughout Bolivia.
- By promoting sustainable agricultural practices and strengthening production systems in the face of climate change, development banks reinforce the strategic role of family and small-scale agriculture as a fundamental pillar of food security and sovereignty.
- Development banks are vital to financing the strengthening of critical infrastructure and cybersecurity platforms, in a context where 90% of organizations face increasing risks of cyberattacks.
- Moreover, these entities support inclusive digital transformation, reducing the connectivity and access gaps that deepen socioeconomic inequalities, essential for a more integrated and resilient regional economy.
- Development banks are key players in addressing the challenges of the changing labor market. These entities are essential for financing labor reconversion and training programs in emerging sectors, in response to the risks of automation that could affect up to 30% of jobs.

- At the same time, they promote the financing of high-quality employment-intensive activities—especially in green and digital technologies—promoting a just transition that reduces informality and fosters social inclusion. Furthermore, they actively promote the integration of young people and women into the labor markets of the future, helping to close the gender and age gaps that limit more equitable and sustainable growth.
- Development banks also play a decisive role in building citizen security and territorial cohesion. They are key players in financing social infrastructure, violence prevention, and community strengthening programs, especially in a context where the economic costs of public insecurity can reach up to 3% of GDP in some countries.
- These entities, in turn, promote investments in urban projects that are safe, accessible, and sustainable, contributing to improving the quality of life and local governance in vulnerable areas. They also strengthen institutional capacities at the subnational level, a key aspect for improving governance in contexts marked by insecurity and citizen distrust.

The analysis highlights the leading role that development banks have been playing as essential sources of financing to address various forms of insecurity. However, it also highlights a number of unresolved challenges, opening the door to further reflection and the following recommendations:

Reconfigure institutional mandates toward comprehensive development banking

- Strengthen and formalize the mandate of development banks as architects of comprehensive security, expanding their focus beyond sectoral financing to a logic of systemic resilience (economic, climate, energy, labor, food, digital, territorial).

Increase capitalization and financial autonomy

- Expand sources of capital, thematic issuances, and sovereign contributions to overcome budgetary constraints that limit the scale and ambition of their interventions.
- Promote regional and multilateral guarantee schemes to mitigate exchange rate risk when operating in local currency and coordinating international financing.

Promote strategic alliances and interconnected financial systems

- Promote greater coordination with multilateral development banks, climate agencies, green investment funds, and sovereign wealth funds to access knowledge, leverage financing, and avoid duplication.
- Strengthen their presence on platforms such as Finance in Common (FiCS) and climate and digital negotiation venues, positioning a regional voice on the priorities of the Global South.

Scaling up the use of innovative financial instruments

- Design and expand products such as sustainable bonds, climate-contingent loans, blended finance, energy savings insurance, and performance-based payment mechanisms that respond to the new demands of the environment.

- Promote financing for projects with cross-cutting impacts: clean energy, regenerative agriculture, resilient social and urban infrastructure, and cybersecurity.

Consolidate monitoring and impact systems

- Establish standardized and transparent mechanisms to assess the transformative impact of their operations, especially in terms of quality job creation, emissions reduction, digitalization, social cohesion, and institutional strengthening.
- Actively participate in the design of regional sustainable investment taxonomies that reflect the priorities of Latin America and the Caribbean.

Promote technical and regulatory capacities for the digital and green transition

- Develop internal capacities in new risk areas: energy transition, artificial intelligence, ecosystem services, big data for development, and digital platform management for microfinance.
- Promote regulatory frameworks that favor long-term investment, reduce institutional fragmentation, and improve coordination between entities in the public financial system.

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