



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation in Latin America and the Caribbean¹

Key regional statistics on SDG 9

- In Latin America and the Caribbean, differences in Internet access persist between rural and urban areas: the difference in penetration averages 27 percentage points.
- In relation to income, the gaps in access between households in the richest and poorest quintiles are as high as 20 percentage points in some countries of the region.
- Small businesses are the backbone of industrial development in developing countries. Adequate financing is crucial for these businesses to grow, as it allows them to innovate, increase efficiency, expand into new markets and create new employment opportunities. More than half of the small businesses in Latin America and the Caribbean receive financial services, compared to 20.7% in sub-Saharan Africa.
- In 2017, there were 400 million connections to the Internet of Things in the region through mobile phones and other devices, representing a fivefold increase since 2010.
- Moreover, 7% of all Internet of Things developers are located in the countries of the region, in line with its weight in the global economy. At the same time, blockchain mining has been expanding across several countries in the region, usually the largest ones.
- International investment in the region's technology start-ups has more than doubled since 2013. In 2017, 25 new global corporate investors entered the region.
- The Caribbean occupies a geospatial area covering 2.75 million square kilometres, to which transportation and other infrastructure and connectivity are critical for social, cultural and economic development. However, in 2016, only four Caribbean countries had port infrastructure that was of an adequate or high standard. The others were either in a poor state with immediate need for reinvestment or were ports with poor infrastructure layout.

¹ The analysis of the Sustainable Development Goals (SDGs) presented here is the outcome of the discussions held within the framework of the third meeting of the Forum of the Countries of Latin America and Caribbean on Sustainable Development, convened under the auspices of the Economic Commission for Latin America and the Caribbean (ECLAC) in Santiago, from 24 to 26 April 2019.



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- The Information and Communications Technology (ICT) Development Index, produced by the International Telecommunication Union, captures meaningful progress in access and usage in the subregion and has almost all Caribbean countries currently ranked in the top third or half of 175 countries.
- Micro-, small and medium enterprises, which constitute between 70% and 85% of enterprises in the Caribbean, contribute between 60% and 70% of GDP and account for about 50% of employment. These enterprises provide livelihoods for a high proportion of women and young people, but often face disproportionately high overheads and low operating margins.

Key messages from the region on the issues addressed by SDG 9 and its targets

- Meeting the targets of SDG 9 is critical to unleashing dynamic and competitive economic forces capable of generating employment and income, facilitating the uptake and promotion of new technologies, boosting international trade and promoting the efficient use of resources.
- The region needs to accelerate the development of its manufacturing sector and to increase investment in scientific research and innovation to meet SDG 9 by 2030.
- Importing clean technologies puts additional pressure on the current accounts of certain countries in the region, adding to external constraints arising from specialization patterns, the burden of external debt and profit remittances by foreign companies.
- The convergence between innovation and sustainability enables the confluence of economic and environmental efficiencies. The case of sustainable cities is an example of policies in which different objectives, sectors and stakeholders converge and enhance one another.
- Technological progress must be directly linked to efforts to achieve environmental goals, decoupling economic growth from use of natural resources and increasing energy efficiency.
- In order to approach this technological frontier, the Latin American and Caribbean region must endeavour to absorb, disseminate, adapt and upgrade technologies for its own ecological, social and economic conditions. Only thus will it be able to make effective use of global technological progress and to engage with certain segments of it.

Challenges and opportunities for the implementation, follow-up and review of SDG 9 and its targets

Challenges

- Internet penetration continues in Latin America and the Caribbean. However, there are still problems with quality and equity.
- The countries that have managed to narrow the per capita income gap with developed economies have done so by changing their patterns of specialization. Nevertheless, as a region, Latin America and the Caribbean has been unable to transform its production structure with the same pace and intensity as Asian economies such as China. The region's pattern of specialization has changed little in the past 30 years and in some cases existing patterns have become entrenched.



- The commodities boom led to improvement in a number of economic and social indicators; but, at the same time, it heightened the reprimarization of exports in South America and the Caribbean, meaning that the end of the boom brought with it an economic slowdown.
- South America relies on natural-resource exports and resource-intensive manufacturing as a source of foreign currency. Resource-intensive and low-tech manufacturing also play a key role in Caribbean and Central American exports.

Opportunities

- One example of an investment opportunity linked to environmental protection is transformation of the energy matrix. The total energy supply of Latin America and the Caribbean is still heavily dependent on hydrocarbons, despite the enormous potential of renewable sources in the region, and their geographical and seasonal complementarity.
- The environmental dimension of innovation heightens the idiosyncrasy of technological learning, as the challenges faced by each country and region are very specific. The potential for learning from these specificities is enormous. The mere importation of technology is only the beginning of the processes of dissemination and innovation in environmental technologies.
- To disregard the need to develop endogenous capabilities would be to miss a window of opportunity to reduce the technology gap and promote learning and investment. It also represents a loss of environmental efficiency for every dollar invested in imported equipment and technology, which are less efficient when not complemented by local capabilities and local innovation.

Lessons learned and good practices with respect to SDG 9 and its targets

- In Mexico, medium- and high-technology manufactures account for a large percentage of total exports. However, in the case of high-technology exports, the data reflect the fragmentation of production chains — rather than the bridging of gaps with the technological frontier — with Mexico positioned in the most labour-intensive segments. In the region, Brazil is the country with the largest number of cryptocurrency exchange sites; Argentina is the leader in terms of the number of firms; and Mexico has the largest volume of digital currency exchange.
- In 2018, Mexico passed the Law to Regulate Fintech Institutions, which seeks to regulate the provision of financial services such as electronic payments, crowdfunding and virtual assets. The application of this law requires nine others to be updated, including the Federal Law for the Prevention and Identification of Operations using Funds of Illegal Origin. The new law makes Banco de México, the central bank, responsible for authorizing virtual assets that can be used as means of payment on fintech platforms.





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Recommendations from Latin America and the Caribbean to achieve SDG 9 and its targets

- To promote economic growth and employment in Latin America and the Caribbean, while mitigating the related environmental impacts, policies must be designed to foster investment in technologies, goods and services linked to a low-carbon development path and a smaller environmental footprint. Such a path forms the productive and technological basis of sustainable development.
- In order to channel investments in the desired direction and make them viable, incentives and institutional frameworks must be reshaped, to strengthen the guiding role of public investment and foster greater public-private cooperation. The steering role of the public sector is particularly important given that some of the key environmental markets do not yet exist.
- Activities that hurt the environment and create relatively little employment or production linkages must be replaced by more diversified activities that have smaller environmental footprints and generate substantial employment and income.
- It is essential to strengthen and update the region's own technological capabilities and thereby gradually reduce its shortage of more technology-intensive goods. It must also apply policies that combine demand for new skills with education and professional training in the new areas of environmental technology.



Economic Commission for Latin America and the Caribbean (ECLAC)
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