

GREEN FINANCE IN LATIN AMERICA: CURRENT STATUS AND CHALLENGES

GROWING EXPECTATIONS FOR THE DEVELOPMENT OF GREEN TAXONOMIES

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SUMMARY

- Latin America is susceptible to the effects of climate change. In fact, intergovernmental organizations and the United Nations have pointed out that the region is one of the most vulnerable areas in the world.
- Climate change action will require a massive investment of US\$2.1-2.8 trillion by 2030. In addition to large-scale investments aimed primarily at reducing GHG emissions, such as infrastructure development and promotion of renewable energy, other issues that are just as vitally important may require smaller-scale investments. These include early warning systems as a precautionary measure to minimize the effects of climate change.
- In light of the vital need for private investment, countries in the region are developing their own green taxonomies, which are systems for classifying the level of environmental considerations and environmental sustainability of economic activities. The publication of regional taxonomy design guidelines in July 2023 is expected to increase interoperability within and outside the region. If cross-border multilateral risk analysis becomes possible, investment in the climate change sector is expected to increase.

1. CLIMATE CHANGE MEASURES IN LATIN AMERICA: MASSIVE INVESTMENT IS URGENTLY NEEDED

1-1. Importance of climate change measures

Latin America is vulnerable to the effects of climate change for a wide variety of reasons, such as geographic factors, social structures, and economic frameworks. Many cities, especially in the Caribbean, are concentrated in coastal areas, and the effects of rising sea levels are severe. Given that the population of the region is projected to reach approximately 750 million by 2050, with an urbanization rate expected to reach 88%, there are concerns about delays in infrastructure development and the risk of the spread of infectious diseases due to high population density in unsanitary environments. In addition, while the region has many informal sectors that are more vulnerable to the effects of extreme weather events, and large populations of poor people, there are also many pressing social issues, such as the need to stabilize economies, create jobs, maintain public safety, and improve health and education. Consequently, climate change measures are being given a lower priority. In countries where agriculture and fishing are major industries, it is important to consider not only the economic impact of crop and fishing failures but also the impact on small producers who are left behind in the transition towards sustainable farming and fishing. The mining of abundant underground resources also poses a threat to forest resources and biodiversity in the region.

The Intergovernmental Panel on Climate Change (IPCC), an intergovernmental organization, points out that Latin America is “vulnerable to climate change and its impacts are significant.” The United Nations Economic Commission for Latin America and the Caribbean (ECLAC) also details the eight biggest risks for Latin America (Figure 1).

Figure 1: Eight key risks climate change-associated risks in Latin America

1. Risk of food insecurity owing to more frequent or extreme droughts
2. Risk to life and infrastructure owing to flooding and landslides.
3. Risk of water insecurity
4. Risk of severe health impacts owing to increasing epidemics, particularly vector-borne diseases.
5. Systemic risks of surpassing infrastructure and public service systems.
6. Risk of large-scale changes and biome shifts in the Amazon
7. Risk to ecosystems associated with coral reefs, owing to coral bleaching
8. Risks to socioecological systems in coastal areas owing to sea level rise, storm surges and coastal erosion.

Source: Compiled by MGSSI based on the ECLAC's "The economics of climate change in Latin America and the Caribbean, 2023"

2. KEY CHALLENGES IN THE REGION AND THE INVESTMENT SCALE REQUIRED TO ADDRESS THE SITUATION

2-1. Sectors in need of urgent attention to address challenges

Climate change measures are broadly categorized as either “mitigation” or “adaptation.” The former are measures to mitigate rising temperatures, mainly by reducing greenhouse gas (GHG) emissions, such as through wider adoption of renewable energy and low-carbon public transportation. The latter refers to measures to cope with the adverse effects of climate change, and an example is early warning systems. ECLAC estimates a total of approximately US\$2.1-2.8 trillion in investments will be required by 2030 for the countries in the region to achieve their respective nationally determined contributions (NDCs)¹. This is equivalent to approximately 3.7-4.9% of the region's GDP per year² (Figure 2).

Figure 2: Scale of investment needed to achieve NDC goals by countries in the region (% of GDP)

	(%)
Mitigation	2.30-3.11
Energy systems	0.22-0.97
Infrastructure development: Transportation	2.0
Electrification of public transportation	0.02-0.08
Reducing deforestation	0.06
Adaptation	1.40-1.83
Poverty reduction	0.05-0.46
Infrastructure development: Irrigation	0.10
Infrastructure development: Water and sanitation	0.70
Infrastructure development: Riverine and coastal flood control	0.28
Comprehensive early warning systems	0.012
Protection of biodiversity	0.26-0.28
Total	3.70-4.94

Source: Compiled by MGSSI based on ECLAC's "The economics of climate change in Latin America and the Caribbean, 2023"

2-2. Scale of investment required for major climate change measures

Of the total amount of investment needed for “mitigation” and “adaptation” measures, infrastructure development requires the largest investment, or spending amounting to approximately 3% of the region's GDP. Latin America has one of the world's highest rates of public transportation use. In preparation for growing urbanization, governments in each country are promoting the development of railways, which are a cleaner means of transportation, as well as accelerating the adoption and use of electric buses (Figure 3).

Figure 3: E-bus introduction plans in major countries in the region

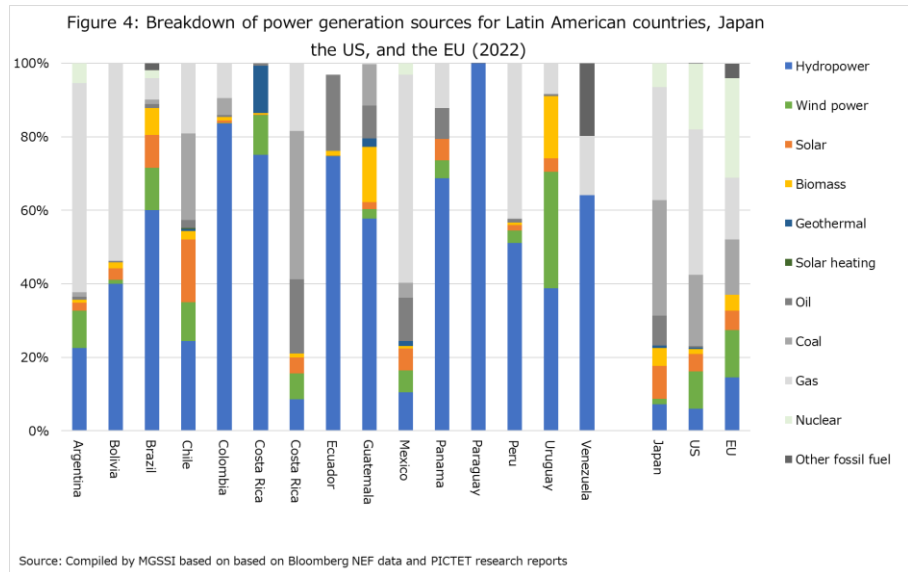
Country	Target city	Existing no. of E-buses	Planned no. of units to be introduced by 2030	Notes
Argentina	Buenos Aires, San Juan, Rosario		0	1,400
Brazil	Curitiba, Rio de Janeiro, Niteroi, Salvador, Sao Paulo, São José dos Campos, Campinas, Goiânia		53	10,999
Chile	Santiago, Valparaiso, Antofagasta		2,040	3,142
Colombia	Bogota, Valledupar, Manizales, Bucaramanga, Barranquilla		1,485	5,528 *By 2025 for Bucaramanga
Costa Rica	San Jose		0	288
Ecuador	Quito, Cuenca		0	1,715
El Salvador	San Salvador		0	70 *By 2025
Guatemala	Guatemala City		24	24
Mexico	Mexico City, Guadalajara, Cuernavaca, Monterrey, Mérida, León		355	1,941 *By 2027 for Monterrey; by 2025 for Mérida
Panama	Panama City		5	414
Uruguay	Montevideo		30	622
Total			3,992	26,143

Source: Compiled by MGSSI based on C40 Cities Climate Leadership Group's "Pipeline of Electric Bus Projects in Latin America"

¹ Nationally Determined Contributions: Targets and plans submitted by each country as part of the climate change measures agreed to in the Paris Agreement. In Latin America, 29 countries, which account for 95% of the region's GHG emissions, have already submitted their respective targets. The targets were updated in June 2023 to aim for a 24% reduction in GHG emissions by 2030 against a BAU (business as usual) scenario, which is more ambitious than the 2015 target of 13%.

² At the [Roadmap to Unlock New Climate Finance in LAC](#), held on May 11, 2023 and organized by Inter-American Dialogue, it was pointed out that the required investment in the region could amount as much as 7-10% of GDP/year.

The energy sector also requires huge investments. Latin America boasts a high percentage of renewable energy use, but it is heavily dependent on hydroelectric power generation, which requires major repairs due to aging infrastructure (Figure 4). In addition, power shortages have become frequent in recent years due to low rainfall and extreme heat. Currently, such shortages are covered by thermal power generation that is being used on a spot basis,



but diversification of power generation sources is required to ensure a stable supply of electricity. It is also necessary to increase the energy efficiency of end-users, such as by improving building insulation, encouraging the use of low-carbon transportation, and boosting the efficiency of industrial processes. The International Energy Agency (IEA) identified that the priority areas for investment are the development of power transmission and distribution infrastructure (35% of total investment) and power plants (21% of total investment), both of which are large-scale projects. The Network for Greening the Financial System (NGFS) estimates that the scale of investment in the power sector needs to expand to US\$13-56 billion/year compared to 2020 levels.

In addition, on a smaller scale, but of extreme urgency, are “adaptation” measures. In particular, ECLAC points out that the establishment of early warning systems is a top priority. Such systems provide accurate information to the government and public on extreme weather events and serve as a readiness measure against major natural disasters, such as those caused by heat waves, storms, droughts, cyclones, and river flooding. It is believed that such measures can make a significant contribution to addressing the problems of the vulnerable poor and the informal sector.

2-3. Protection of forests and biodiversity

Latin America is rich in natural resources. However, illegal logging has led to the conversion of forests into cattle ranches and agricultural land, and the resulting GHG emissions now account for 38% of the region's total GHG emissions. Many countries have pledged to eliminate illegal logging by 2030 in their NDCs and endorsed the Glasgow Leaders' Declaration on Forests and Land Use³ at COP26. If the current pace of deforestation continues, approximately 272,000 km² of forest is expected to be lost by 2030, requiring an investment of approximately US\$33 billion to address the problem⁴. Biodiversity protection is also an issue the region will need to address in a stepped-up manner. Currently, 24.3% of the region's protected land areas and 24.4% of its protected marine areas fall short of the international target of “30 by 30”⁵. ECLAC states that US\$103 billion to \$291 billion per year will be needed in the future to maintain existing protected areas and expand new ones.

³ Glasgow Leaders' Declaration on Forests and Land Use: The declaration commits to strengthen efforts to halt forest loss and land degradation by 2030, and to promote forest conservation and restoration to turn around the deforestation situation. The declaration has been endorsed by 22 countries in the region.

⁴ Estimate based on the market price of land cleared in the Amazon region (US\$1,200/ha) and the volume of land projected to be lost by 2030 (272,000 km²). Note that this is an estimate based on current land prices, and there is the possibility the cost could increase should the value of forests rise.

⁵ “30 by 30”: A goal for each country to designate at least 30% of land and sea areas within its territory as protected areas by 2030.

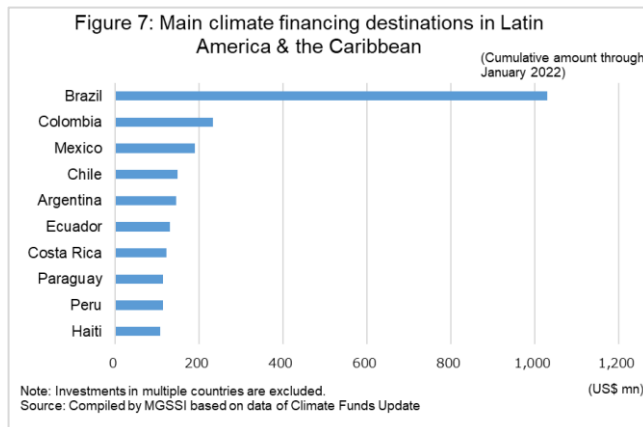
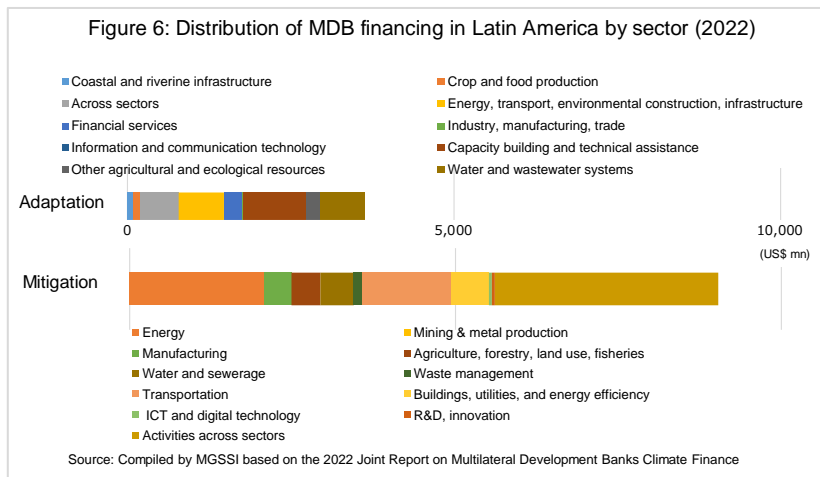
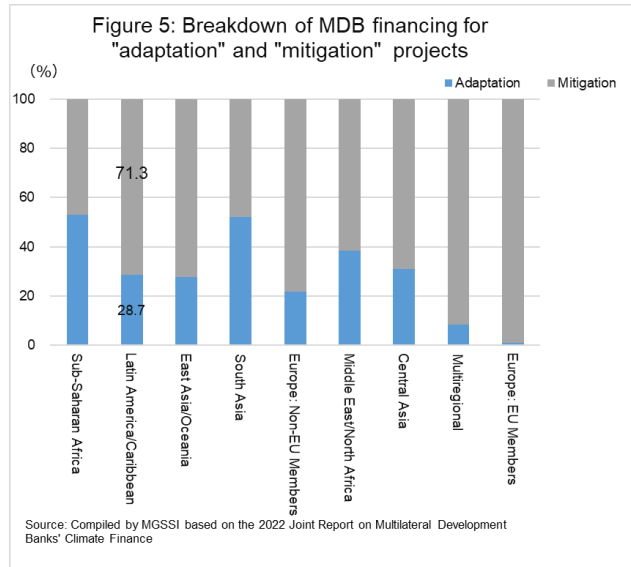
3. GREEN TAXONOMY TO BE A FACTOR IN THE ACCELERATION OF INVESTMENT

3-1. Current state of green finance and barriers to its expansion

While large-scale investments are essential to achieve the NDCs, the financial situation in each country is challenging, and raising funds from external sources is essential. A promising solution is green finance, a funding scheme aimed at promoting climate change action. The total amount of green finance in 2020 amounted to US\$22.9 billion. ECLAC notes that as the total amount of foreign direct investment (FDI) in the region that year was US\$105 billion, green finance can be expanded 7 to 10 times from the present level by promoting investments by the private sector.

Currently, green finance in the region faces two challenges. The first is the disproportionate investment in "mitigation" versus "adaptation" measures, due to their different nature. The IPCC has highlighted that approximately 70% of financing goes to "mitigation" projects, while less investment is made in "adaptation" measures than in other regions (Figures 5 and 6). Mitigation consists primarily of investment in physical infrastructure to reduce emissions. The project period is short, usually only a few years, and the benefits and risks⁶ are clear. The projects represent a mature business field and it is relatively easy for such projects to gain strong support from financial institutions. On the other hand, adaptation takes the form of "nature-based solutions"⁷, which require long-term monitoring to verify effectiveness. The projects tend to be small in scale, and feasibility and revenue streams are unclear, making it difficult to incentivize traditional investors.

The second challenge has to do with the uneven distribution of financing sources. Long-term projects carry risks, such as higher financing costs



⁶ Examples of risks include high interest rates and a weak local currency, as well as frequent changes in environmental policy due to a change of government and political instability.

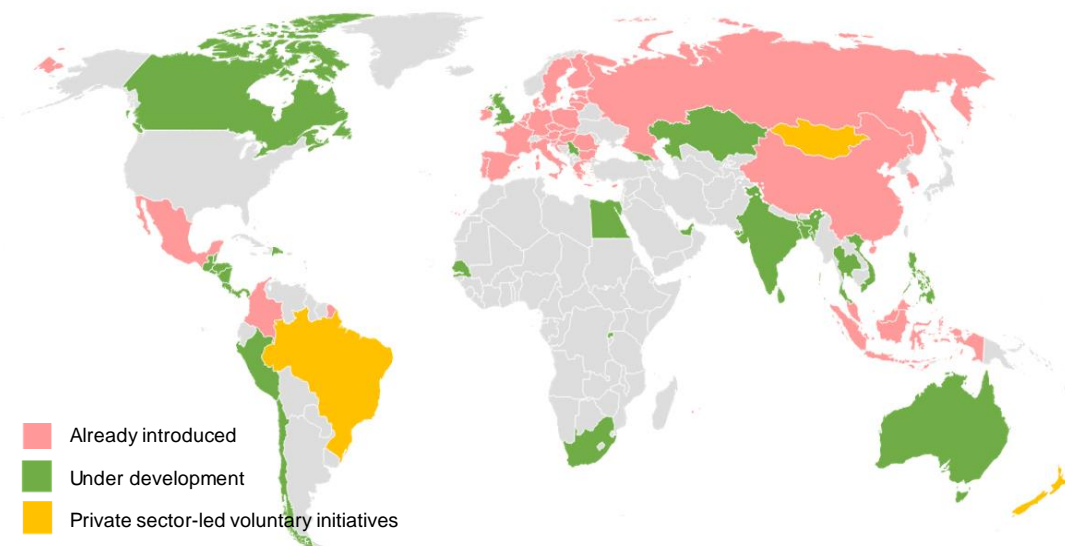
⁷ Nature Based Solutions (NbS): The International Union for Conservation of Nature (IUCN) describes NbS as addressing "societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time."

due to interest rate and foreign exchange risks, currency depreciation, and high uncertainty of returns. As a result, investments tend to be concentrated in low-risk countries (Figure 7).

3-2. Green taxonomy essential for investment promotion

The key to expanding green finance is attracting investment for “adaptation” projects and diversification of investment destinations. It is in this context that green taxonomy is attracting attention. Green taxonomy, which is the systemization of the sustainability of economic activities, contributes to simplifying, expediting, and reducing the cost of the financial screening process, and helps companies avoid greenwashing⁸, unintended investments due to lack of clarity of information, and reputational risk associated with deceptive corporate activities. Moreover, for governments, green taxonomy plays a part in promoting strategic projects in line with their NDC goals and SDGs. Green taxonomy is said to contribute to promoting investment by making environmental risks visible and increasing the transparency and credibility of projects, and many countries are developing such systems (Figure 8).

Figure 8: Development of green taxonomies making progress globally



Source: Compiled by MGSSI based on United Nations Environment Programme Finance Initiative (UNEP FI) 2023

Colombia was the first country in the region to develop a green taxonomy. The country’s green taxonomy, announced in 2022, facilitates the visualization of a sustainable activity’s contribution to “goals” based on the classifications of “economic activity” and “land use” (Figure 9). It is also highly compatible with the EU taxonomy and is thought to have increased the country’s competitiveness⁹.

The following year, Mexico similarly announced its green taxonomy (Figure 10). The system visualizes the sustainability of economic activities, subdivided into up to 124 categories, by classifying each activity’s contribution to “environmental goals” and “social goals.” The classification method incorporates social development and climate change measures, making it an advanced initiative even when compared to global taxonomy examples.

⁸ Greenwashing: A practice that makes a company appear to be environmentally conscious on the surface, when in fact it is not.

⁹ The Colombian government has shown a willingness to further develop the system so that “soil management,” “water management,” and “protection of ecosystems and biodiversity” can also be set as targets in the future.

Figure 9: Colombia's green taxonomy

Goal	
Mitigation	Soil management
Adaptation	Water management
	Protection of ecosystems and biodiversity
Economic activity	
Energy	Solar electric power generation
	Solar thermal power generation
	Wind power generation
	Marine energy
	Hydroelectric power generation
Construction	Geothermal electric power generation
	Biomass, biofuels, biogas power generation
	Low-carbon hydrogen production
	Transmission and distribution of renewable energy
Waste management and emission allowances	Construction of new buildings
	Building renovation
	Sewage sludge processing
Water	Separation, collection, and transport of non-hazardous waste
	Anaerobic digestion of organic waste, methane recovery and utilization
Transport	Water supply systems
	Sewerage maintenance
ITC	Urban public transport
	Micro mobility
Manufacturing	Transportation infrastructure
	Data processing, hosting, and related operations
	Manufacturing for low carbon technologies
	Components for cement production
	Electricity storage
	Thermal energy storage
	Low carbon hydrogen storage
	Biomass, biofuel, and biogas production
	Cogeneration of heating/cooling and electricity from solar thermal power generation
	Cogeneration of heating/cooling and electricity from geothermal heat
	Cogeneration of heating/cooling and electricity from bioenergy
	Heating/cooling and energy production using waste heat
	Establishment of heating supply districts
	Acquisition and ownership of buildings
	Use of non-hazardous waste
	Energy production from waste (thermal processing)
	Recovery and utilization of landfill gas
	GHG capture, transport, and storage/utilization
	Wastewater treatment systems
	Investments for efficient water use
	Intercity transportation (freight and passenger)
	Private service transport
	Data-driven solutions for GHG reduction
	Components for chlorine production
	Components and organic chemicals for manufacturing
	Parts for the manufacture of processed plastics
Land use	
Livestock	Investment in sustainable livestock production
Agriculture	Investment in organic agriculture
	Conversion to coffee plantations
Forests	Conversion of rice farming
	Reforestation for commercial purposes
	Investment to strengthen the sustainable forestry sector
	Conversion of fruit crops
	Conversion to cacao farming
	Restoration of degraded forest soils
	Conservation, management and use of natural forests
	— Reduce deforestation, natural forest degradation, and other forest risks
	— Technology development, technical assistance, basic infrastructure

Note: Gray text indicates goals to be addressed going forward.
Source: Compiled by MGSSI based on announcements by the Colombian government

Figure 10: Mexico's green taxonomy

Environmental goal	Social goal
<ul style="list-style-type: none"> • Mitigation • Adaptation • Water/marine resource management • Protection of ecosystems/biodiversity • Promotion of a circular economy • Pollution prevention/control 	<ul style="list-style-type: none"> • Contribution to gender equality • Provision of basic needs • Medical treatment/healthcare • Education • Access to financing
Economic activity	
<ol style="list-style-type: none"> 1. Agriculture, livestock, animal husbandry, use of forest resources 2. Generation, transmission, distribution, and sale of electricity and supply of water 3. Construction 4. Manufacturing industry 5. Means of transportation 6. Promotion of waste management and environmental cleanup 	

Source: Compiled by MGSSI based on announcements by the government of Mexico

3-3. Region-wide common green taxonomy framework seen as a key to driving investment

While a green taxonomy is essential for investment promotion, interoperability of taxonomies across countries and regions is vital for improving effectiveness. The reason is that comparability and compatibility¹⁰ will facilitate the provision of highly transparent information and multilateral cross-border risk analysis for investors within and beyond the region. In light of this, the United Nations Environment Programme (UNEP) published the Common Framework of Sustainable Finance Taxonomies for Latin America and the Caribbean in July 2023, a set of guidelines for improving taxonomy compatibility within and beyond the region. The framework sets forth six guiding principles for developing a green taxonomy and four design elements (Figure 11). Each country

Figure 11: Common framework for a sustainable taxonomy for Latin America and the Caribbean

Guiding principles
<u>Interoperability with other taxonomies globally</u>
Make material positive contribution to well-defined objectives and avoid damage
<u>Provide clear definitions that are science-based for environment or evidence-based for other sustainability issues</u>
Allow for credible transition of high emission sectors with a clearly defined final goal, regardless of the pathway
<u>Be dynamic and subject to regular reviews</u>
Ensure good governance, transparency and practical applicability

Source: Compiled by MGSSI based on UNEP "Common Framework of Sustainable Finance Taxonomies"

is encouraged to design a green taxonomy that is tailored to its own issues while keeping these principles in mind.

3-4. Future challenges with green taxonomies

Green taxonomies are expected to become the drivers of investment, but the development of such systems is still in the formative stage. To enhance the interoperability of taxonomies within the region, it is expected that the following three points will be discussed in depth going forward.

The first is the treatment of nuclear and natural gas. In the EU, these two items were initially excluded from the classification, but were later included in September 2022, after industry lobbying highlighted the necessity of these energy sources for economic activity and the transition to net zero. As Latin America also contains many natural gas-producing countries, similar discussions are expected to arise. If nuclear and natural gas become subject to classification, concerns may arise regarding potential investment delays in other sectors.

Another challenge has to do with data coordination. The data comparison from different countries is essential to achieve interoperability, but at present, data calculation methods differ from country to country. Experts point out the need for technical adjustments and coordination to make the data comparable in all classifications.

The final concern is the realization of inclusive growth. The guidelines currently solely cover "mitigation" and "adaptation," and other environmental and social issues have yet to be addressed. To achieve a sustainable society beyond green growth, social growth must also be considered. This includes providing support for individuals facing unemployment or suffering economic hardship as a result of the energy transition, enhancing healthcare and education, while taking into account the location of industries, and ensuring the accessibility and quality of these services. Green finance should expand dramatically, with these social systems ensuring the transparency and effectiveness of investments across a wide range of areas.

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