POLICY BRIEF N° IDB-PB-00383

Advancing a Just Transition in Latin America and the Caribbean

Mariana Alfonso
Alexandre Bagolle
Dulce Baptista
Marfa Soledad Bos
Andreas Fazekas
Liora Schwartz
Adrien Vogt-Schilb
Manuel Urquidi

Inter-American Development Bank
Climate Change Division

October 2023

Advancing a Just Transition in Latin America and the Caribbean

Mariana Alfonso
Alexandre Bagolle
Dulce Baptista
María Soledad Bos
Andreas Fazekas
Liora Schwartz
Adrien Vogt-Schilb
Manuel Urquidi

Inter-American Development Bank
Climate Change Division

October 2023

Cataloging-in-Publication data provided by
the Inter-American Development Bank
Felipe Herrera Library

Advancing a just transition in Latin America and the Caribbean/ Mariana Alfonso, Alexandre Bagolle, Dulce Baptista, Marfa Soledad Bos, Andreas Fazekas, Liora Schwartz, Adrien Vogt-Schilb, Manuel Urquidi.

p. cm. - (IDB Policy Brief; 383)

Includes bibliographical references.

1. Climate change mitigation-Social aspects-Latin America. 2. Climate change mitigation-Social aspects-Caribbean Area. 3. Greenhouse gas mitigation-Social aspects-Latin America. 4. Greenhouse gas mitigation-Social aspects-Caribbean Area. 5. Social security-Latin America. 6. Social security-Caribbean Area. I. Alfonso, Mariana. II. Bagolle, Alexandre. III. Baptista, Dulce. IV. Bos, Marfa Soledad. V. Fazekas, Andreas. VI. Vogt-Schilb, Adrien. VII. Urquidi, Manuel. VIII. Inter-American Development Bank. Climate Change Division. IX. Inter-American Development Bank. Social Sector. X. Series.

IDB-PB-383

JEL CODES: Q54, Q58, J08, I38, H53, H23
Keywords: Just transition, adaptation, climate change, decarbonization, inequality, jobs, skills, net zero.

http://www.iadb.org

ADVANCING A **JUST TRANSITION**

in Latin America and the Caribbean

Mariana Alfonso
Alexandre Bagolle
Dulce Baptista
María Soledad Bos
Andreas Fazekas
Liora Schwartz
Adrien Vogt-Schilb
Manuel Urquidi

IDB

Acknowledgments: The authors would like to thank Ferdinando Regalia, Graham Watkins, Pablo Ibarrarán, Laura Ripani, Mariano Bosch, Philip Keefer, Tomás Serebrisky, Allen Blackman, Aaron Atteridge, Hugh Searight and Isaura Espinosa for their valuable comments and suggestions.

This paper is part of a series of publications by the **IDB Social Sector** and **Climate Change and Sustainability Division** highlighting the role of social themes in the process of adaptation to the impact of climate change and decarbonization in Latin America and the Caribbean.

Editing: Steven Ambrus.
Design: Jesús Rivero and Laura Scaron (Cristaliza Global).

Advancing a Just Transition
in Latin America and the Caribbean

Mariana Alfonso
Alexandre Bagolle
Dulce Baptista
María Soledad Bos
Andreas Fazekas
Liora Schwartz
Adrien Vogt-Schilb
Manuel Urquidi

To contain the climate crisis and meet the Paris Agreement's goal of limiting global warming to 1.5°C above pre-industrial levels by 2050, countries around the world need to undergo deep socio-economic transformations towards carbon neutrality. This transition towards net-zero can take many forms and pathways for each economic sector, but regardless of its shape, there will be winners and losers. For countries in Latin America and the Caribbean (LAC), for example, achieving this goal can bring significant net financial benefits, estimated at 1% of the region's GDP by 2030. But if not well managed, the transition runs the risk of increasing inequality and exclusion. For that reason, countries in the region should be mindful of ensuring that it is just and that its benefits are distributed equitably. They should also ensure that its negative impacts are avoided, or that policies to reduce and compensate for negative impacts, especially for low-income households, are introduced. The impacts range from the transformations of jobs, skills, households and communities to fiscal stability and challenges to the political economy.

This document identifies the social impacts of the transition to net-zero for Latin America and the Caribbean (LAC). It discusses how a just transition is included in the climate change agenda and presents a set of actions that governments in the region can take to ensure that the transition to net-zero is just and inclusive.

1 THE CHALLENGE: TRANSFORMING OUR ECONOMIES IN A JUST WAY

Transformational economic changes are required to achieve the goals of the Paris Agreement and transition to net-zero emissions of greenhouse gases.[1] Limiting temperature increases and creating resilience to the impacts of climate change is paramount to containing the climate crisis. The Paris Agreement's goal is to limit global warming to less than 2°C (ideally 1.5°C) compared to preindustrial levels. To achieve this long-term objective, countries aim to reach a global peak of greenhouse gas emissions as soon as possible to achieve a climate neutral world by 2050.

Achieving these objectives constitutes an enormous undertaking for the region, demanding profound economic transformations that will yield substantial social impacts. Addressing the climate crisis requires redirecting between 2% and 8% of GDP in existing spending to provide infrastructure services, and between 5% and 11% to address various social challenges. The benefits of this reorientation will be much greater than the costs, as they will prevent the worst impacts of climate change.[2] This document outlines the social consequences of transitioning to net-zero emissions in LAC. It examines the incorporation of just transition considerations into the climate change agenda, and proposes a set of actions that governments in the region can take to ensure an equitable and inclusive path to net-zero.

1. Net-zero refers to balancing out all human-made (anthropogenic) emissions with anthropogenic carbon removals, such as enhancing natural carbon sinks (e.g., forests) or directing air capture and storage (which is currently still in development and not cost competitive).
2. Galindo Paliza, et al. (2022).

Key transformations in economic sectors seeking to transition to net-zero emissions

On a global scale, the highest emitting sectors are electricity and heat production (32%), transport (17%), agriculture, forestry, and land use change[3] (15%), manufacturing and construction (13%), buildings (6%), industrial processes (6%), and waste (3%). In Latin America and the Caribbean, the biggest emitting sectors are agriculture, forestry, and land use changes (46%), followed by transport (15%), electricity (13%), manufacturing and construction (6%), waste (6%), and industrial processes (4%).[4] To transition to net-zero emissions, traditional industries with high emission footprints, such as coal mining, or oil and gas extraction,[5] will have to reduce their size while other sectors will need strong growth, including the renewable energy sector, public transport, electric mobility, and recycling. Some activities will not completely disappear but undergo significant changes. Farming practices will have to change, for example, as will ways of planning and building infrastructure. Finally, we can expect that business sectors and industries that do not exist today will become relevant over the coming decades due to the strong need for innovation in the transformation towards decarbonization and resilience.

- In **forestry and land use,** the goal is to restore ecosystems. This requires, among other actions, expanding the coverage and improving the efficacy of protected areas, forest regeneration, afforestation, modifying agricultural practices, addressing rural poverty, and changing income streams for populations that depend on unsustainable forestry and land uses.
- In **agriculture,** the goal is to improve yields, adopt climate-smart practices, and reduce the carbon footprint of human diets.[6] This goal will require skills development for farmers so they can improve their use of fertilizers; engage in farming practices that increase their yield per square meter; introduce climate-smart agriculture practices, such as organic farming; and develop new technology to, for example, reduce methane emissions from cattle.

---

3. Land use change refers to the change from one land use category to another. Land use categories are a broad classification based on arrangements, activities and inputs applied to a parcel of land or the social and economic purposes for which land is managed. The IPCC usually refers to six general types of land use: forest land, cropland, grassland, wetlands, settlements, and other land. Land use is relevant for CC as different land use activities can emit or remove greenhouse gases from the atmosphere (IPPC, 2019; UNFCC, 2023).

4. WRI (2022).

5. The IEA (2021) stated in its landmark net-zero 2050 report that new fossil extraction projects should be stopped from 2021 onwards.

6. Dumas and Vogt-Schilb (2022).

- In **transport,** the goal is to move towards more sustainable modes of transport by adopting the "avoid-shift-improve" model. This refers to reducing the number of trips in private vehicles; shifting trips to public transportation, walking and cycling; and improving energy efficiency and the use of alternative and clean energy in vehicle technology. Such transformations will demand a strong investment in enabling infrastructure, such as dedicated bus lanes, sidewalks and charging stations, and the development of a workforce for industries related to sustainable transport (for example, transitioning workers towards electric vehicle industries and upgrading their skills for designing, producing, and servicing electric vehicles).
- In **energy,** the goal is to shift from fossil energy sources to renewable ones. A decreased demand for labor and investments in the fossil fuel sector, from exploration, extraction and refining to downstream activities (e.g., gas stations), is expected. This will result in unemployment and loss of income. At the same time, there will be an increase in demand in the generation, maintenance, and distribution of renewable energy (solar, wind or green hydrogen) creating demand for investments and skilled workers. This transformation will also create new business opportunities in the renewable energy value chain, from manufacturing, installation, and maintenance to building auxiliary infrastructure, such as transmission lines.
- In **waste management,** the goal is to shift the production and consumption model in all the sectors of the economy to reduce and better manage the amount of generated waste. This can be done by promoting the circulation (use, reuse, remake, and recycling) of materials and products for as long as possible. Transitioning to a circular economy can generate new business and job opportunities in activities like recycling, repairing, and remanufacturing, while also affecting current jobs and businesses. The shift to a circular economy requires a set of measures, from skills development and the promotion of entrepreneurship to efforts to incentivize investments, formalize employment, and adapt norms.

Social impacts of transitioning to net-zero in LAC

Latin American and Caribbean countries have set a path towards decarbonization by adhering to the Paris Agreement and committing to reducing greenhouse gas emissions (GHG) in their Nationally Determined Contributions.[7] Both economic and social benefits can be realized if the region embarks on a transformational and socially inclusive process towards a net-zero future. Getting to that point by 2050 can bring net financial benefits worth 1% of the region's GDP by 2030.[8] That would amount to US$41 billion in the case of Costa Rica and US$140 billion in that of Peru.[9] Moreover, this would be in addition to the main benefit of avoiding further climate damages and their associated socioeconomic impacts,[10] as estimations suggest that the effects of climate change could lead to a 37% reduction in global GDP by 2100.[11]

The transition towards net-zero will have winners and losers. The region needs to be mindful of its structural challenges to ensure that its benefits and costs are equitably distributed.[12] Latin America and the Caribbean is among the most unequal regions in the world, with the richest 10% of the population earning 22 times the income of the bottom 10% and holding over half of the region's income.[13] Women in the region earn about 18% less than men (on an hourly basis), and their employment rates are 25 percentage points lower. Less than half of the workers in the region are formally employed, and differences are large across countries, with countries like Brazil, Chile, and Uruguay having formality rates of around 70% and countries such as Bolivia, Peru, and Nicaragua with only 20% of the labor force in formal employment.[14] Formal jobs are particularly scarce in rural areas, with a high prevalence of self-employment in the agricultural sector. Around 53% of rural workers earn below the minimum wage, and the share of formal employment is 29%, versus 48% in urban areas. These high levels of informality are a barrier for people facing unemployment. They impede their access to social protection benefits like unemployment and disability insurance, pension systems, and, in some countries, health insurance. The lack of social insurance coverage has led countries to expand their social assistance programs to fill the vacuum. Tax structures in the region are also highly reliant on consumption, with almost half of tax revenues coming from taxes on goods and services.[15] Public spending has shown low redistributive capacity.[16]

7. Saget et al. (2020).
8. IDB (2021b).
9. Groves et al. (2020); Quirós-Tortos et al. (2021).
10. Hallegatte et al. (2016); IPCC (2022).
11. Jarmo et al. (2021).
12. Gambhir et al. (2018).
13. Busso and Messina (2020).
14. IDB (2021).
15. OECD, 2021
16. Izquierdo et al. (2018).

A just transition to net zero needs to internalize these structural challenges. It must try to distribute the benefits equitably and avoid their negative impacts or introduce policies to reduce and compensate for negative impacts, especially for low-income households. The effects range from transformations in employment and skills, households, and communities to impacts on fiscal stability and on the political economy, as described below.

1 Employment and skills

The transition to net-zero will have large impacts on the region's labor markets: jobs will be created, substituted, eliminated, transformed, and redefined. Projections by the Inter-American Development Bank (IDB) and the International Labour Organization (ILO)[17] suggest that LAC could gain 15 million net new jobs by promoting a net-zero economy instead of following current trends. Specifically, an estimated 22.5 million jobs could be created in agriculture, renewable energy, forestry, construction, and manufacturing. However, this potential gain could be partially offset by the loss of an estimated 7.5 million jobs in the fossil fuel industry (both extraction and energy generation), and in animal-based food production. The jobs to be created will not necessarily be distributed equally among workers with different skills, or between men and women, and will depend on where the jobs are located geographically. Of the 22.5 million new jobs, 13.5 million will be in the medium-skill category, while 8.2 million will be low-skill, and 820,000 high-skill.[18] Many of the new jobs will require workers with a new set of skills, for instance, entrepreneurial ones for adopting and applying new technologies, or technical ones for installing and maintaining electrified equipment. More than 80 percent of them will be in today's male-dominated sectors. For that reason, women will likely benefit less from job creation unless the current gender segregation by occupation is addressed.[19] Finally, many of the new jobs to be created may be in different geographic regions than those lost, requiring reskilling towards other industries, compensation for jobs lost, assistance in job searches, or support for internal migration.

17. Based on an input-output analysis, a commonly employed tool for assessing the direct and indirect environmental and socioeconomic impacts of decarbonization efforts, the study simulates potential job creation and destruction in the most carbon-intensive sectors during the global transition to net-zero emissions. The main data source for these estimates is the Global Trade Analysis Project Power database updated with information from the ILO Labor Force Surveys, which provide more recent estimates of employment per sector in each country. Some of the main assumptions and limitations of the study are: (i) the relative prices between products and countries and international trade are assumed to remain constant, (ii) labor productivity grows similarly in all sectors, (iii) it does not account for other drivers of the future of work.

18. High-skills include occupations listed under codes 1, 2, and 3 of the International Standard Classification of Occupations (ISCO-08); intermediate level skills consider codes 4, 5, 6, 7 and 8 of the ISCO-08; and low-level skills encompass code 9 of ISCO-08. For more information regarding ISCO-08 refer to ILO (2012).

19. In relative terms, female and male-dominated occupations will experience similar losses (close to 2%), but male-dominated occupations will enjoy a greater proportional gain in jobs (6.3%) than female-dominated occupations (3%) (Saget et al., 2020).

TRANSITIONING JOBS AND SKILLS FROM COAL TO RENEWABLE ENERGY IN CHILE

An example of the transition's labor reskilling challenges is the phasing out of coal mines in Chile. The country has set a goal of withdrawing 65% of its coal generation from its national energy matrix by 2025,[20] and the process of closing several coal power plants has begun, mainly in the regions of Atacama, Antofagasta, Valparaíso, Biobío and Tarapacá. To support communities affected by this transition, Chile has formulated a national "Just Transition Strategy in the Energy Sector." Affected workers and communities will participate in its design and execution.[21] One of the strategy's most important components is the promotion of training and skills development to allow for the communities' local development. The transformation of jobs towards clean energy will require capacity building and new competencies. According to estimates, more than 43,000 new jobs will be created in renewable energy projects, both in the construction and operation stages, in the regions where the coal-fired power plants are located. Some actions envisioned to achieve this include: (i) the development of a plan for the reinsertion and job retraining of affected people; (ii) the establishment of job fairs, in collaboration with stakeholders, in the affected communities to promote opportunities for new jobs in clean energy; and (iii) the implementation of entrepreneurship support programs for affected workers.

2 Households and poverty

The transition to net-zero can impact households positively or negatively through price changes in energy, food, and mobility. Spending on food and energy as a share of total household spending ranges from around 32% in Mexico to more than 53% in Argentina.[22] Renewable energy can lower and stabilize prices in the medium and long terms. But the potential increases in taxes or decreases in fossil fuel subsidies needed to transition to net-zero may temporarily boost the cost of living. This would disproportionally affect low-income households.[23] Food could become less expensive if more resilient crops were used to reduce the negative impact of droughts, floods, and other extreme weather events on food production. However, food might, at least initially, become more expensive due to the adoption of climate-smart farming practices, including organic farming, which could

20. Ministerio de Medio Ambiente de Chile (2021).

21. Ministerio de Energía de Chile and IDB (2019).

22. Allianz (2021).

23. Mori & Yepes (2020) find that the share of energy expenditures in total household spending decreases as income increases, ranging from approximately 7.8% for the bottom income quantile to around 3% for the top quintile.

be more labor intensive and of smaller scale. Transportation prices could also be affected by changes in energy sources and in the means of transport and by public investments in public transit.[24] A key consideration for a just transition is thus to anticipate price changes that affect low-income households to ensure that the burden of potentially higher costs of living, although temporary, does not unfairly fall on them.

3 Regions and communities

Communities strongly tied to carbon intensive industries, such as fossil fuel extraction, will face challenges due to the gradual decrease in economic activity in these sectors. For instance, in Chile, over 4,000 people were working in coal power plants when the government decided to start planning for a coal phase out in 2018. In Huasco, one of the most coal-dependent communities in the country, coal power represents almost 4% of local GDP and generates 7.1% and 15% of the community's direct and indirect employment, respectively.[25] Jobs in coal power plants also tend to pay above-average wages and provide benefits (e.g., health insurance, pension plans). Even if more jobs are created in the renewable energy sector, there is no guarantee that they will be in the same communities or that they will pay above-average wages.[26] Closing these industries negatively impacts the regional value chain, for instance restaurants, hotels, supermarkets, maintenance, and local industrial production. Dislocation or social deprivation are among potential consequences for affected communities. To reduce the negative impact and create new opportunities for them, the public sector needs to provide support through policies and investments intended to diversify their economies and attract other business.

4 Revenues for social investments

More than US$3 trillion in oil royalties, and more than US$200 billion in natural gas royalties are at risk of disappearing in the region by 2035. This could affect the provision of social services and poverty levels in regions and communities linked to economic activities in high emitting sectors. For example, in Colombia, 11.2% of royalties from gas and oil were assigned to the education sector in 2018, representing 5.7% of its budget for that year.[27] In both Peru and Colombia, royalties from oil and gas are partly distributed to regional and local governments using compensatory formulas that consider levels of poverty and unmet

24. Rivas, Serebrisky & Suárez-Alemán (2018).

25. Viteri (2019). The share of local GDP represents only the direct contribution of coal, and not the indirect contribution though local value chains.

26. Saget et al. (2020).

27. Forero & Moreno Parrado (2019).

basic needs.[28] In the short term, supporting a just transition requires estimating the distributional effects of the reduction in fiscal revenues associated with high emitting sectors and finding alternative sources of funding for social investments. In the medium to long term, it will demand the creation of new revenue streams, for instance by attracting other businesses, including green ones; diversifying economic activities; and devising new, progressive revenue distribution formulas to reduce regional social inequalities.

5 Political economy

Countries that embark on decarbonization efforts have often faced a backlash when no adequate alternative was provided to mitigate the negative financial impacts on households, workers and communities.[29] Continuous criticism of decarbonization efforts might create a complex and difficult political economy landscape, significantly slowing down necessary net-zero transformations.[30] The changes required to achieve net-zero encompass several sectors, such as energy, agriculture and transport. Different labor and social protection policies are needed to ensure that they are fair and equitable. However, these sectors generally work in silos, without coordination between them. Certain sectors can have a unique standing in a community, increasing their negotiation power and ability to organize to advance their interests. At the same time, social issues like job losses can greatly impact infrastructure projects needed for decarbonization.[31] Supporting a just transition therefore requires developing a deep understanding of today's political economy in key sectors and then engaging the relevant actors productively by reducing resistance/barriers and tapping into existing support for the transition. Recent evidence shows that success in implementing climate change policy depends on complementing it with higher social expenditure that compensates the losers.[32]

28. In Peru, the Fondo de Desarrollo Socioeconomico de Camisea (Camisea Socioeconomic Development Fund, FOCAM) was created to contribute towards sustainable development of the departments where the main gas pipelines for Lots 88 and 56 are located, with the goal of improving wellbeing of impacted communities. FOCAM resources are partly allocated to compensate for existing inequalities, such as high levels of unmet basic needs, and local and regional governments must use them to finance public investment projects and to maintain existing social infrastructure (MEF, 2021). In Colombia, 12% of royalties for 2023 were earmarked to municipalities with the highest poverty levels with the aim of closing gaps and promoting local productive capacities (La Republica, 2022).

29. ILO Social Protection Department (2014).

30. World Bank Group (2018).

31. Munoz-Raskin, Urquidi & Bagolle (2015).

32. Furceri et al. (2021).

2 THE OPPORTUNITY: JUST TRANSITION AND THE CLIMATE CHANGE AGENDA

A just transition is imperative for a fair distribution of benefits and costs in a decarbonized world

The concept of a just transition originated with union and labor activists from industries heavily dependent on fossil fuels who were supporting workers who had lost their jobs due to environmental policies. Over time, it developed into a much broader toolkit of actions and strategies intended to guarantee equity and fairness in environmental and climate policy accompanying the economic transformations associated with the transition to net-zero emissions. The concept emphasizes the need for planning processes that include all stakeholders. It involves the development of a broad set of policies and actions, such as social protection and employment policies, to accompany the economic transformations and mitigate their potentially negative impacts on individuals, communities, regions, and businesses.

The ultimate goal of a just transition is to equitably share the benefits and mitigate the losses of a changing economic landscape.[33] A just transition seeks to: (i) maximize the net benefits of decarbonization and distribute them equitably; (ii) recognize, anticipate, minimize, and offset the costs of the transition, such as those related to increases in prices, impacts on the workforce, impacts on businesses and communities, and impacts on fiscal revenues and public investments; (iii) avoid the creation of new carbon lock-ins,[34] as these might generate short-term benefits but create additional losers and challenges for a just transition in the medium and long term;[35] and (iv) create inclusiveness in the transition process, for instance through dialogue with and involvement of the affected communities.

33. Just Transition Centre (2017).

34. Carbon lock-ins occur when technologies, institutions and norms that are incompatible with low-carbon systems perpetuate, delay, or prevent the transition to sustainable alternatives. These can be the result of social, political, and technical barriers interacting to create inertia that favors fossil fuels (Strambo et al., 2022; Sato, et al., 2021).

35. Healy and Barry (2017).

LESSONS FROM PAST TRANSITIONS

The concern for a just transition is not new or unique to climate change. The distributional challenges of large shifts in economic policy are a long-standing concern of economists and policy makers. During the 1990s, for example, Latin America liberalized trade with the goal of improving growth, employment and welfare and reducing trade inequalities.[36] This shift towards international trade, like transitioning to a net zero economy, generated both winners and losers. In the case of labor markets, expectations for more jobs were high. But the intensified competition accelerated the rate of job reallocation within sectors.[37] With labor markets still heavily regulated, informality became the reallocation pathway.[38] For example, Mexico experienced noticeable employment growth in the 1990s, with an estimated net gain of 14% in formal manufacturing jobs due to the North American Free Trade Agreement (NAFTA).[39] However, intense competition from Asian markets, the adoption of labor-saving technologies and unchanged labor regulations eventually put an end to the job growth trend.[40] LAC countries generally did not implement labor adjustment policies that could have compensated workers negatively affected by trade liberalization and help ensure the sustainability of the reforms.[41]

The **Paris Agreement,** in its preamble, sets out the need for a just transition and states that parties to the agreement are *taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities.*[42] Various international institutions have provided definitions of a just transition and are working towards supporting this goal.

The multilateral development banks (MDBs) have jointly agreed on a set of five high level principles for the just transition. These principles state that MDBs' support for a just transition aims to: (i) deliver climate objectives while enabling socio-economic outcomes; (ii) move away from economic activities intensive in GHG emissions in line with MDBs' mandates and strategies and country priorities including nationally determined contributions (NDCs)

36. See Mesquita Moreira and Stein (2019) for a full review of the region's experience with the 1990s trade liberalization.

37. Haltiwanger, et al (2004).

38. Egaña and Micco (2011).

39. Trachtenberg (2019).

40. Blyde, Busso, et al. (2019); Levy (2018).

41. According to Galiani, Torre, and Torrens (2015) large reforms cannot be sustained in time without compensation, because a comprehensive reform is prone to provoke a costly rollback unless it is accompanied by a well-designed mechanism to adequately compensate the losers.

42. UNFCCC (2015).

and long-term strategies; (iii) build on existing MDB policies and activities while mobilizing other sources of public and private finance and enhancing coordination to deliver long-term, structural economic transformation; (iv) mitigate negative socio-economic impacts and increase opportunities associated with the transition to a net zero economy; and (v) encourage transparent and inclusive planning, implementation and monitoring processes that involve all relevant stakeholders and affected groups, and that further inclusion and gender equality. These principles provide a common understanding of MDBs' support for a just transition, optimizing development assistance and supporting consistency in country engagement. They also provide clear signals and a consistent framework for engagement with other stakeholders and sources of finance, including national and regional development banks, donors, and financial institutions.[43]

NDCs in the region start to highlight linkages between decarbonization and a just transition

Countries in Latin America and the Caribbean have started to address the just transition within their short-term and long-term climate planning, with 15% of the regions' NDCs[44] and 50% of its long-term strategies (LTS)[45] having specific commitments regarding a just transition. Argentina, Chile, Colombia and Costa Rica commit to a just transition in their updated NDCs, and a just transition is mentioned in the LTSs of Chile, Colombia, Costa Rica, and Uruguay.

43. MDBs (2021). https://www.ebrd.com/MDB-just-transition-high-level-principles.pdf

44. The NDCs consolidate the efforts that each country will undertake to reduce national emissions and adapt to the impacts of climate change to achieve Paris Agreement objectives.

45. In the context of the Paris Agreement, the LTSs are formal documents that countries must formulate to communicate their plans for long-term, low-emission development strategies. They consider each country's differentiated responsibilities and capabilities.

GRAPH 1: COUNTRIES IN LAC THAT MENTION JUST TRANSITION OBJECTIVES IN THEIR NDCS

Source: IDB's analysis of NDCs.

The commitment to a just transition in LAC's NDCs is also reflected in the integration of six sustainable development goals (SDGs) linked to just transition efforts.[46][47][48]

- **No poverty (SDG 1),** has 7 sub-targets. The following countries mention these sub-targets within their NDCs: Mexico (5), Colombia (3), Chile, Costa Rica, and Venezuela (2).
- **Good health and well-being (SDG 3),** has 13 sub-targets. The following countries address these sub-targets within their NDCs: Chile (13), Mexico (3), Costa Rica (3), Colombia (2), and Panama (2).

46. Considering all NDCs in the region published prior to May 2021. Data from Climate Watch (2021).
47. List only provides examples and is not exhaustive (i.e., not all countries that included only 1 sub-target are listed).
48. EBRD (2022).

- **Affordable and clean energy (SDG 7),** has 5 sub-targets. The following countries mention these sub-targets within their NDCs: Costa Rica, Mexico, Jamaica, Panama (4 per country); Belize, Bolivia, Chile, Colombia, El Salvador, Guyana, Honduras, and Suriname (3 per country).
- **Decent work and economic growth (SDG 8),** has 12 sub-targets. The following countries address these sub-targets within their NDCs: Mexico, Colombia, Costa Rica (4 per country), and Chile (3).
- **Industry, innovation and infrastructure (SDG 9),** has 8 sub-targets. The following countries mention these sub-targets within their NDCs: Mexico (6), Costa Rica (5), Chile, Dominican Republic (4 per country), and Colombia (3).
- **Reduced inequality (SDG 10),** has 10 sub-targets. The following countries address these sub-targets within their NDCs: Mexico (5), and Costa Rica (2).

While this indicates progress in considering the just transition, many of the SDGs do not explicitly point to the distributional impacts associated with it. They generally speak to a sustainable society-wide uplift, without delving into where the gains and losses might occur in seeking to achieve the goals. Hence, there is a need for a just transition approach in national strategies.

3 THE RESPONSE: CREATING AND USING A JUST TRANSITION TOOLKIT IN LAC

Given LAC countries' commitments and the impacts they face in transitioning to net-zero, they should create the institutional and policy environment that enables a just transition. They should also invest in programs that support workers, people, and communities throughout the process. The IDB will support countries in the region to ensure that their transitions are just and inclusive. It will be guided by the following overarching principles:

1. Just transitions should promote equity by seeking to fairly distribute benefits, while vigorously mitigating negative impacts to ensure equal opportunity for all regardless of gender, race/ethnicity, age, geographic location, socioeconomic status, or other circumstances.
2. Just transitions should create quality jobs, with benefits and with a wage sufficient to overcome poverty. They should also promote skills development and employment services to help people access these jobs.
3. Just transitions should avoid new carbon lock-ins that might generate short-term benefits but create larger employment and economic losses in the future. They should provide incentives for investing in new, low-carbon technologies and infrastructure while disincentivizing investments in fossil-reliant infrastructure.
4. Just transitions should actively promote the inclusion of all stakeholders including, among others, workers, the private sector, community leaders, and traditionally marginalized groups. These should be included in a continuous dialogue in both the planning and implementation of the transformation.

A toolkit to enable a just transition

Governments in LAC can rely on a set of policies and programs in seeking a just transition. These include shaping the normative environment, investing in specific programs, providing financial support, and convening different stakeholders to ensure an inclusive process. Table 2 provides an overview of government actions that can promote a just transition.[49]

TABLE 1 OVERVIEW OF GOVERNMENT ACTIONS THAT CAN PROMOTE A JUST TRANSITION

Aims and Objectives	Instruments	Description
Planning for a Just Transition: Creating an institutional and policy environment that enables a just transition and addresses the political economy challenges	Climate and sector policies and strategies	Include principles of a just transition in solid, evidence-based climate strategies (NDCs, LTS) to support the alignment and coordination between sectors and stakeholders, facilitate its financing, and ensure the definition of a clear path to net-zero. Similar considerations must be included in the sectoral strategies seeking to transition to net zero.
	Multisectoral institutional arrangements	Promote institutional arrangements that facilitate meaningful participation and coordination of all relevant stakeholders, including in the environment, finance, labor, energy, transport, health, education, and social protection spheres. A just transition must break the silos among these sectors and ensure communication and coordination between them. The coordination of such a process could be led by a government entity, in charge of alignment targets and actions across sectors and promoting sustainability through subsequent changes in government.
	Stakeholders dialogue	Achieve social consensus on the importance of a just transition to build support and the buy-in of all stakeholders. Promote continuous, transparent (i.e., available information should be accessible to all stakeholders), and respectful (e.g., respecting rights to organize) dialogue between the main stakeholders: workers, affected communities, regional and local administrations, employers and, of particular importance, those whose voices are often marginalized.
	Knowledge generation and dissemination with focus on social impact analysis	In alliance with international organizations, and those specifically dedicated to research, create and disseminate knowledge about the positive and negative impacts of the transition to help design, understand and implement the just transition process and its policies. Planning for a just transition requires identifying and quantifying the impacts of transitioning to a net-zero economy on employment and skills, households and poverty, regions and communities, and fiscal budgets. It also requires continuous analysis of results.

49. Based on Salazar-Xirinachs & Chacaltana (2018), UNFCCC (2018), ILO (2015), Just Transition Initiative (2021), and IDB (2021).

Aims and Objectives	Instruments	Description
Employment and skills: Addressing labor market impacts and taking advantage of new job opportunities	Standards for quality employment	Include quality employment standards in labor market considerations and economic growth strategies.
	Public employment services to match demand and supply	Introduce or strengthen public employment services, defining their role as transition agents. They should provide information, guidance, matching services, and training.
	Wage subsidies	Provide wage subsidies, for instance shared wage payments for a defined period or tax benefits, to companies that actively hire from vulnerable groups, the long-term unemployed and other groups likely to suffer strong negative transition impacts.
	Upskilling	Provide training programs that enable the current and future workforce to improve skills (e.g., through vocational orientation) that facilitate access to new jobs (particularly in green sectors) and provide professional guidance and skills certification. The focus should be on core skills (such as literacy and communication) as well as job-specific skills.
	Reskilling	Provide training programs that enable the current workforce to apply already existing skills in a new working environment.
	Work-related training and practical experience	Support training on the job or in specific occupational training facilities to increase practical experience and employability.
	Entrepreneurship programs	Provide training programs to create entrepreneurial capacity. This can be combined with financial incentives for start-ups (e.g., tax rebates, increasing the availability of financial instruments such as loans, insurance, and public guarantee systems).
	Regular update of skill-development plans	Introduce regular consultation processes with industry and training providers to identify and anticipate the evolution of skills needs and review and align skill profiles and training.
	Equal access to skills training	Ensure equal access to training facilities, focusing on women, workers who need to be redeployed, rural communities, informal workers and owners and workers of micro, small and medium enterprises (MSMEs). Offer specific training services, considering the demands on time and location limitations of addressed groups.
	Promote gender equality in access to green jobs	Attract girls and women to green careers, generating a pipeline of future green talent. Provide training in green skills with a gender perspective, support women's networks in transition sectors, foster women's entrepreneurship, and employment in green sectors, improve data collection on the gender-differentiated effects on jobs to ensure equal access to green jobs and promote inclusive hiring practices in government and the private sector.

Aims and Objectives	Instruments	Description
Employment and skills: Addressing labor market impacts and taking advantage of new job opportunities	Unemployment benefits or insurance	Introduce unemployment benefits or an unemployment insurance system to mitigate the immediate negative impact of job losses due to the economic transition. There are at least four mechanisms for protecting workers' income during periods of unemployment: (i) severance pay; (ii) individual unemployment savings accounts; (iii) unemployment insurance; and (iv) temporary employment programs, including public employment schemes and employment guarantees limited to the period of time needed to mitigate negative transition impacts and allow for a reorientation (including job searches or re-/up-skilling). Unemployment benefits or insurance should be combined with active labor market policies to support labor market insertion, including job search assistance and training programs.
	Early retirement and pension plans	Introduce early retirement plans developed and financed together with affected companies to help reduce the negative impacts of layoffs on workers' income.
	Safety, health, and equality considerations in business sustainability certifications	Introduce or improve existing sustainability certification processes. Include safety, health, and equality considerations as part of these processes to increase their adoption.
	Worker compensation	Provide cash transfers, for a limited time, to laid-off formal and informal workers to prevent them from suffering economic hardship. Tie transfers to certain conditions, such as reskilling and active cooperation with employment services, among others.

Aims and Objectives	Instruments	Description
Households and poverty: Minimizing negative impacts on households and ensuring the transition does not exacerbate poverty	Cash transfer programs	Introduce or increase the benefits of direct cash transfer programs when reducing fossil fuel subsidies or introducing other decarbonization measures that might increase the costs of the basic consumption basket. These transfers can be based, for instance, on the number of children or elderly people in the household.
	Poverty reduction and ecosystem restoration	Innovate in the use of conditional cash transfer programs to benefit the conservation of environmental assets in sectors such as forestry and land use. This can simultaneously address the challenges of poverty reduction and ecosystem restoration needed for carbon storage.

Aims and Objectives	Instruments	Description
Regions and Communities: Supporting regions and communities to manage transition impacts and diversify their economies	Business cluster development	Promote clusters of green and sustainable enterprises in communities and regions affected by the loss of high emission industries. This can be done, for instance, by providing land or infrastructure, and by facilitating innovation, knowledge and resource sharing, thus enhancing productivity and efficiency.
	Regulatory procedures	Ease regulatory procedures, while keeping them in sync with social and environmental standards, so that green and sustainable industries can increase the economic attractiveness of a region (or nation).
	Green business practices	Provide targeted information and advice on green business practices, eco-innovation, and regulatory systems and on how to achieve compliance, with particular attention to MSMEs. This should be done in easily accessible formats, such as user-friendly toolkits, to promote the green economic diversification of regions and communities affected by the transition.
	Infrastructure improvements	Determine what infrastructure is needed to attract green and sustainable businesses and improve the quality of life in a region or community affected by the transition. Create a construction roadmap to enhance clarity over the process, thereby incentivizing companies to plan-ahead and increase the economic attractiveness of the region.
	Community compensation	Provide direct cash transfers for a limited time to impacted communities to prevent their economic hardship. Tie transfers to certain conditions, such as the design of a reorientation plan for the community or the creation of new businesses.
	Regional public transport	Improve public transport options to enhance the mobility of the workforce, the overall mobility of the community and the connectivity of businesses in affected regions and communities. Develop alternative solutions in case public transport is not feasible.
	Sustainable public procurement	Use public procurement to incentivize a shift to environmentally sustainable goods and services from affected regions and communities and promote social inclusion by ensuring that enterprises, in particular MSMEs, as well as disadvantaged groups, can apply for public procurement.

Aims and Objectives	Instruments	Description
Financing a just transition: Ensuring resources to finance social investments needed for a just transition	Taxes on natural resource extraction (royalties)	Tax existing extraction industries (and do not permit the commissioning of new projects) to finance part of just transition initiatives.
	Business tax and subsidy reform	Reform subsidies and the tax code so that fossil fuel enterprises are discouraged and green and sustainable businesses promoted. This can be done, for instance, through tax credits, subsidies, or faster amortization of clean energy infrastructure, enhancing energy efficiency in the process.
	Environmental tax reform paired with social spending	Increase taxes and decrease subsidies for fossil fuel use, lower taxes and boost subsidies for clean energy use and offset the negative impacts on households with social spending, including cash transfers.
	Blended finance to mobilize private capital	Utilize blended finance to enlarge the available resources, contributing to a just transition while providing positive returns to investors.
	Public-private partnerships	Promote public-private partnerships for capital-intensive projects, particularly the infrastructure needed for a just transition.

4 JUST TRANSITION IN PRACTICE: EXAMPLES FROM LATIN AMERICA

Creating the institutional capacity to promote green jobs in Ecuador[50]

Ecuador aims to be a pioneer in the region by developing the key institutions and policies needed to take advantage of the labor opportunities accompanying the transition to a zero-net emissions economy. Together with the Inter-American Development Bank, the Ministry of Labor in Ecuador has developed and is currently executing a four-step approach to analyzing and realizing the potential of the green economy. First, data on green labor markets is being generated. Several studies were developed to identify the potential for generating green jobs within the country's decarbonization pathways in the agriculture, energy, transportation, water, and waste management sectors. Second, a Green Jobs Coordination Committee has been created to promote policy coherence and coordination between economic, environmental and labor objectives. The Committee defines job-related goals and priorities in green sectors and ensures that policy objectives translate into employment and skills development. Third, coordination between the productive and training sectors for green skills development is actively being promoted. The Ministry of Labor also recently issued a Ministerial Resolution to implement the guidelines for the incorporation of a hybrid training offer in green jobs. It is currently working to ensure that the training offer is aligned with the needs of green productive sectors. Ecuador has promoted the so-called Strategy for the Promotion of Green Employment to establish a framework for employment initiatives aimed at achieving a successful transition to a green economy. Fourth, a model for the provision of specialized employment services is being created to support the reallocation of labor to emerging or growing green sectors. Finally, the platform Encuentra Empleo is being used to disseminate accurate and timely information on green jobs to interested job seekers (through events or web portals with job and training opportunities). Encuentra Empleo also seeks to form partnerships and to serve as an intermediary between the training and productive sectors, for example by facilitating collaboration between employers and training centers to identify short and effective retraining modules.

50. IDB (2021a), IDB (2022a).

Creating an inclusive approach towards renewable energy generation in Uruguay[51]

Uruguay has managed to significantly increase its renewable energy generation to almost 100%. The renewable energy sector employed around 11,000 people in 2018. It is a driving force behind green employment in Uruguay, which created around 3,000 new jobs between 2013 and 2018. The energy sector's ongoing decarbonization effort is being accompanied by a Just Transition strategy. Uruguay's Long Term Climate Strategy (LTS), published in 2021, includes a chapter on the Just Transition that is informed by successful experiences with employment creation from the early introduction of renewable energy. It incentivizes continuous dialogue with relevant stakeholders and seeks to mitigate the negative impact on workers in fossil fuel energy generation with a strong focus on reskilling and upskilling as transitions are implemented in other sectors. Three key elements contributed to the initial, successful Just Transition process in the energy sector. First, Uruguay, in its Energy Policy 2005-2030, set out a clear strategy to diversify the electricity sector and promote renewable generation. This allowed for sufficient time for preparation and negotiation between all stakeholders. Second, the country introduced an economy-wide job strategy in 2015, which was used as a reference for mitigating the negative impacts of the transition. When fossil fuel plants were shut down, unions were included in the design of early retirement plans for workers, thereby reducing the negative impact of the closures. Third, reskilling and upskilling was provided to allow workers to obtain the necessary skills for the renewable sector. As a result, workers formally engaged in the fossil fuel industry were able to join the local and regional renewable energy value chain.

Involving communities in renewable energy projects in Mexico[52]

For more than two decades, Mexico has set an ambitious path towards boosting renewable electricity generation. The goal of achieving 50% clean energy is found in various strategic economic development documents. These documents suggest that the country needs to rapidly scale up its renewable generation, something it has done. Building large-scale renewable projects has, however, led to conflicts with indigenous communities that were not adequately included in the development process or only consulted once plans were finalized. The resulting social conflict has led to delays in the realization of projects. For that reason, Mexico has introduced legislation to bolster social standards, incentivize consultation processes, and mitigate conflicts. The law requires the development of social impact assessments. It requires community consent for a project if impacts are identified and calls for indigenous stakeholders to supervise and monitor activities. Between 2012 and 2018, indigenous communities were consulted on 14 projects, with nine consultation processes completed and eight of them receiving approval.

51. WRI (2021).
52. WRI (2021a).

Retirement and conversion plan for coal power plants in Chile[53]

In keeping with Chile's goals for achieving carbon neutrality by 2050, in 2018 Chile's government and the companies that own coal power generation plants have agreed to stop generating new coal projects and gradually eliminate existing plants. This is an ambitious goal, as coal-based electricity generation in Chile represented 40% of the country's energy.[54] To ensure a just transition, a working group composed of the owners of coal power plants, the public sector (Ministry of Energy and Ministry of Environment, among others), consumer associations, labor unions, academia, and international organizations was created to identify and quantify the impacts of the transition and reach a consensus on key elements of the process of closing or reconverting the plants. To inform the decision-making process, the working group commissioned two studies: one exploring the labor impacts of different electricity generation scenarios, and the other one evaluating the economic, social, and labor impacts in the municipalities where the coal plants are located.

Based on the results of these studies, the operators of the plants, with the support of the Ministry of Energy, established a timeline and the conditions for the gradual closing of the plants. The Government also developed a labor transition strategy, coordinated by the Ministry of Energy with support from the Ministries of Labor and Social Protection. This strategy includes a quantification of the direct impact on the labor force and a characterization of the job profiles and skills of those affected. It also includes an identification of labor opportunities in new investment projects of the region, the gaps between available skills and those required for the conversion of the coal power plants, and other governmental projects that could assist in the process. In the communities where the retirement of the power plants was imminent, the government, in coordination with the firms, started to relocate workers to other company projects and implement voluntary early retirement plans.

Chile's case shows that transitioning away from fossil fuel energy production is feasible but must be accompanied by a clear strategy on how to address negative social effects such as job losses.

53. Ministry of Energy (2020), Viteri, (2019) and Vogt-Schilb and Feng (2019).

54. Ministry of Energy (2020).

The way forward

Latin America and the Caribbean has set out ambitious climate goals to reach carbon neutrality. The transformation towards decarbonization may bring large economic and social benefits, but to capitalize on these, countries in the region need to create the conditions that enable this transition while ensuring that it is inclusive and just. Countries must distribute benefits fairly. They must do so while mitigating negative impacts, promoting the creation of quality jobs, supporting skills development, and incentivizing low carbon investments. All stakeholders must be included in a continuous dialogue during planning and implementation. As the region, and the world, face the current and future impacts of climate change, urgent action is needed to accelerate the transition to net-zero economies and tackle structural socio-economic challenges. By using the principles and toolbox for government action presented in this document, Latin America and the Caribbean can move forward on a path of sustainable and inclusive growth.

REFERENCES

Allianz (2021). This is (Latin) America: The unequal costs of living. https://www.allianz-trade.com/en_global/news-insights/economic-insights/This-is-latin-america-The-unequal-cost-of-living.html

Blyde, Busso, Faggioni, and Romero (2019) "The Impact of Chinese Competition on Mexican Labor Outcomes." Inter-American Development Bank, Washington, DC. Unpublished.

Blyde, Pires, Rodríguez Chatruc, and Russell (2019) "Training and Labor Adjustment to Trade." Inter-American Development Bank, Washington, DC. Unpublished.

Borgen Project (2020). 9 facts about the informal economy in Latin America. https://borgenproject.org/informal-economy-in-latin-america/

Busso and Messina (2020). The inequality crisis: Latin America and the Caribbean at the crossroads. Inter-American Development Bank. http://dx.doi.org/10.18235/0002629

Busso and Messina (2019) "Adult Training: What Do We Know?" Inter- American Development Bank, Washington, DC. Unpublished

CEPAL (2020). The resilience of infrastructure services in Latin America and the Caribbean: a first approach. https://repositorio.cepal.org/bitstream/handle/11362/45450/1/S1901144_en.pdf

Climate Watch Data (2021). Explore NDC-SDG linkages. https://www.climatewatchdata.org/ndcs-sdg?goal=

Columbia University (2023) Climate Case Chart. Sabin Center for Climate Change Law. http://climatecasechart.com/

EBRD (2022). What is a just transition? https://www.ebrd.com/what-we-do/just-transition

Egaña and Micco (2011) Labor market in Latin America and the Caribbean: The missing reform. Departamento de Economía. Universidad de Chile. https://econ.uchile.cl/uploads/publicacion/72f5ab45673acaf7b7adbe61248d131c265bb3c4.pdf

Finance for tomorrow (2021). Stakeholders in the just transition. Number 2 consumers. https://research-center.amundi.com/article/stakeholders-just-transition-ndeg2-consumers

Forero, D. and Moreno Parrado, C. (2019). Gasto en el sector educativo en Colombia. Bogota: Fedesarrollo. https://www.repository.fedesarrollo.org.co/bitstream/handle/11445/3909/Capi%CC%81tulo%203%20-%20Gasto%20en%20Educacio%CC%81n%20en%20Colombia%20%28002%29.pdf?sequence=2&isAllowed=y

Furceri, Ganslmeier and Ostry (2021) Are climate change policies politically costly? IMF Working Paper.

Galiani, Torre, and Torrens (2015) "International Organizations and Structural Reforms." NBER Working Paper no. 21237. National Bureau of Economic Research, Cambridge, MA.

Galindo Paliza, Hoffmann y Vogt-Schilb (2022). ¿Cuánto costará lograr los objetivos del cambio climático en América Latina y el Caribe? Banco Interamericano de Desarrollo. http://dx.doi.org/10.18235/0004021

Gambhir, A., Green, F. and Pearson, J. G. (2018). Towards a Just and Equitable Low-Carbon Energy Transition. 26. Imperial College of London, London. https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/26.-Towards-a-just-and-equitable-low-carbon-energy-transition.pdf

Groves, D. G. et al. (2020). The Benefits and Costs Of Decarbonizing Costa Rica's Economy: Informing the Implementation of Costa Rica's National Decarbonization Plan under Uncertainty, http://dx.doi.org/10.18235/0002867

Hallegatte et al. (2016). Shock Waves: Managing the Impacts of Climate Change on Poverty.

Haltiwanger, J., A. Kugler, M. Kugler, A. Micco and C. Pages (2004) "Effects of tariffs and real exchange rates on job reallocation: evidence from Latin America," Journal of Policy Reform, Taylor and Francis Journals, vol. 7(4), pages 191-208, December

Healy and Barry (2017). Politicizing energy justice and energy system transitions: Fossil fuel divestment and a "just transition". Energy Policy, 108. 451–59. http://dx.doi.org/10.1016/j.enpol.2017.06.014

Hirnoven et al (2020). Affordability of the EAT–Lancet reference diet: a global analysis. Lancet Global Health, 59-66.

IDB (2019). The Future is Now: Transversal Skills in Latin America and the Caribbean in the 21st Century

IDB (2021). Labor Sector Framework Document. https://www.iadb.org/en/about-us/sector-policies-and-sector-framework-documents

IDB (2021b) Opportunities for Stronger and Sustainable Postpandemic Growth. 2021 Latin American and Caribbean Macroeconomic Report. https://flagships.iadb.org/en/MacroReport2021/Opportunities-for-Stronger-and-Sustainable-Postpandemic-Growth?_gl=1%2A1pbfl82%2A_ga%2AMTEwNTM1NTc0MS4xNjM4ODI4MDM0%2A_ga_9CQ7ER9V3F%2AMTY3NDA1Mzg1NS4yNy4xLjE2NzQwNTUzMzAuNjAuMC4w

IDB (2023). Climate Change Sector Framework Document.

IEA (2021). Net Zero by 2050, IEA, Paris https://www.iea.org/reports/net-zero-by-2050

ILO (2012) International Standard Classification of Occupations: ISCO-08. International Labour Office. Geneva. https://www.ilo.org/public/english/bureau/stat/isco/docs/publication08.pdf

ILO Social Protection Department (2014). Social Protection Global Policy Trends 2010–2015. From Fiscal Consolidation to Expanding Social Protection: Key to Crisis Recovery, Inclusive Development and Social Justice. Geneva, International Labour Organization. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_319641.pdf

ILO (2015). Guidelines for a just transition towards environmentally sustainable economies and societies for all. Retrieved from ILO: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf

IPCC (2019). 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/

IPCC (2021). Sixth Assessment Report. Working Group 1. Regional fact sheet – Central and South America. https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Central_and_South_America.pdf

IPCC (2022). Climate Change 2022. Mitigation of Climate Change. Summary for policy makers. Working Group III. https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf

IRENA (2020). OLADE and IRENA Put Renewables at Heart of Economic Recovery in Latin America and Caribbean. https://energynews.biz/olade-and-irena-put-renewables-at-heart-of-post-pandemic-economic-recovery-in-latin-america-and-caribbean/

Izquierdo, Pessino and Vuletin (2018) Better Spending for Better Lives: How Latin America and the Caribbean Can Do More with Less. Inter-American Development Bank. http://dx.doi.org/10.18235/0001217-en

Just Transition Initiative (2021). COP26: The Perfect Opportunity for Latin America and the Caribbean to Champion a Just Transition to Net Zero. https://justtransitioninitiative.org/cop26-the-perfect-opportunity-for-latin-america-and-the-caribbean-to-champion-a-just-transition-to-net-zero/

Kikstra, Waiderlich, Rising, Yumashev, Hope and Brierley (2021) The social cost of carbon dioxide under climate-economy feedbacks and temperature variability Environ. Res. Lett. 16 094037. https://dx.doi.org/10.1088/1748-9326/ac1d0b

Lamb et al. (2021). A review of trends and drivers of greenhouse gas emissions by sector from 1990 to 2018 Environ. Res. Lett. 16 073005 A review of trends and drivers of greenhouse gas emissions by sector from 1990 to 2018 (iop.org)

La Republica (2022). Gobierno apunta a hacer cuentas con regalías de $31,3 billones para 2023. https://www.larepublica.co/economia/gobierno-nacional-apunta-a-hacer-cuentas-con-regalias-de-31-3-billones-para-2023-3461505

Levy (2018) Under-Rewarded Efforts: The Elusive Quest for Prosperity in Mexico. Washington, DC: Inter-American Development Bank.

McKinsey Global Institute (2021). "The Future of Work after COVID-19."

MDBs (2019). MDB just transition high-level principles. https://www.adb.org/sites/default/files/related/238191/MDBs-Just-Transition-High-Level-Principles-Statement.pdf

Mesquita Moreira and Stein (2019). Trading Promises for Results. What Global Integration Can Do for Latin America and the Caribbean. Inter-American Development Bank, Washington, DC.

Muñoz-Raskin, R., Urquidi, M. & Bagolle, A. (2015). Modernization of Urban Public Transport: What Can We Learn from Other Industries About Insertion into the Labor Market and Job Retraining? Transport Research Record, Vol 2512, Issue 1, 2015.

OECD et al. (2021), Revenue Statistics in Latin America and the Caribbean 2021 , OECD Publishing, Paris, https://doi.org/10.1787/96ce5287-en-es

Oosthuizen, Inglesi-Lotz and Thopil. (2019). The relationship between renewable energy and retail electricity prices: panel evidence from OECD countries. ESRA Working Paper, No. 797.

Quiros-Tortos, J., L. Victor-Gallardo, and L. Ochoa (2019). Electric vehicles in Latin America: Slowly but surely toward a clean transport. IEEE Electrication Magazine, 7(2), 22–32, http://dx.doi.org/10.1109/MELE.2019.2908791

Rivas, M. E., Serebrisky, T., & Suárez-Alemán, A. (2018). How Affordable is Transportation in Latin America and the Caribbean? (No. IDB-TN-1588). https://publications.iadb.org/publications/english/document/How_Affordable_is_Transportation_in_Latin_America_and_the_Caribbean.pdf

Saget, Catherine, Vogt-Schilb, Adrien and Luu, Trang (2020). Jobs in a Net-Zero Emissions Future in Latin America and the Caribbean. Inter-American Development Bank and International Labour Organization, Washington D.C. and Geneva

Salazar-Xirinachs, José Manuel & Chacaltana, Juan (2018). Políticas de Formalización en América Latina: Avances y Desafíos. Lima: OIT, Oficina Regional para América Latina y el Caribe, FORLAC.

Sanchez et al. (2017). "Inversiones en infraestructura en América Latina: tendencias, brechas y oportunidades", Natural Resources and Infrastructure series, No. 187 (LC/TS.2017/132), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC).

Sato, Elliott and Schumer (2021) What Is Carbon Lock-in and How Can We Avoid It?. World Resources Institute. https://www.wri.org/insights/carbon-lock-in-definition

Stevis, Krause, Morena (2021). Towards a just transition for all: Lessons from the pandemic. International Journal of Labour Research. Vol 10. Issue 1-2

SEI Stockholm Environment Institute (2020). Seven principles to realize a just transition to a low-carbon economy. https://cdn.sei.org/wp-content/uploads/2020/06/seven-principles-for-a-just-transition.pdf

Solano-Rodríguez, B. et al. (2021): Implications of climate targets on oil production and fiscal revenues in Latin America and the Caribbean. Energy and Climate Change, 2(May), 100037, http://dx.doi.org/10.1016/j.egycc.2021.100037

Strambo, Arnold, Calles Almeida and Vega Araújo (2022) Q&A: What is carbon lock-in? SEI scientists give a primer. Stockholm Environment Institute. https://www.sei.org/featured/qa-what-is-carbon-lock-in/

Trachtenberg (2019). "The Impact of NAFTA on Local Labor Markets in Mexico." Inter-American Development Bank, Washington, DC. Unpublished.

UNDP (2022) How Just Transition Can Help Deliver the Paris Agreement. https://climatepromise.undp.org/sites/default/files/research_report_document/Just%20Transition%20Report%20Jan%2020.pdf

UNFCCC (2015). Paris Agreement. https://unfccc.int/sites/default/files/english_paris_agreement.pdf

UNFCCC (2018). Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs. Technical paper. https://unfccc.int/sites/default/files/resource/Just%20transition.pdf

UNFCC (2023). Introduction to Land Use. https://unfccc.int/topics/introduction-to-land-use

Viteri, A. (2019). Impacto económico y laboral del retiro y/o reconversión de unidades a carbón en Chile. Inter-American Development Bank. http://dx.doi.org/10.18235/0001960

Vivid Economics (2019). Why a just transition is crucial for effective climate action. https://www.vivideconomics.com/wp-content/uploads/2019/07/IPR-Just-Transition-discussion-paper_16-September-2019.pdf

Vogt-Schilb, A. & Hallegatte, S. (2017). Climate Policies and Nationally Determined Contributions: Reconciling the Needed Ambition with the Political Economy. IDB Working Paper 818

Watkins, Mueller, Meller, Ramirez, Serebrisky and Georgoulias (2017) Lessons from Four Decades of Infrastructure Project-Related Conflicts in Latin America and the Caribbean. Inter-American Development Bank. http://dx.doi.org/10.18235/0000803

Welsby, D., B. S. Rodriguez, S. Pye, and A. Vogt-schilb. (2021): High and dry: stranded natural gas reserves and fiscal revenues in Latin America and the Caribbean. (October).

World Bank Group (2018). Managing Coal Mine Closure. Achieving a just transition for all.

World Bank Group (2022). GDP per capita growth. https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?locations=XJ

World Economic Forum (2021). How can we ensure a just transition to the green economy. https://www.weforum.org/agenda/2021/04/how-can-we-ensure-a-just-transition-to-the-green-economy/

World Meteorological Organization (2021). State of the Climate in Latin America & the Caribbean 2020. https://storymaps.arcgis.com/stories/b9e1619f4897444babf79b21907b7910

WRI (2021). Uruguay: Leveraging Partnerships to Create Green Jobs and Ensure a Just Transition. https://www.wri.org/update/uruguay-leveraging-partnerships-create-green-jobs-and-ensure-just-transition

WRI (2021a). Mexico: Policymaking to ensure energy justice in renewables development. https://www.wri.org/update/mexico-policymaking-ensure-energy-justice-renewables-development

WRI (2022) Climate Watch Historical GHG Emissions. Washington, DC: World Resources Institute. Available online at: https://www.climatewatchdata.org/ghg-emissions

WWF (2021a). Latin America and Caribbean NDCs. Recommendations for decision makers.

WWF (2021b). Climate Change Impacts in Latin America. https://www.wwfca.org/en/our_work/climate_change_and_energy/climate_change_impacts_la/


IDB
Improving lives