

Global Development Initiative Topics

China-Latin America Climate Cooperation under the Global Development Initiative: Foundation, Opportunities and Challenges*

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Abstract: The Global Development Initiative proposes to actively respond to climate change and jointly build a community of life for man and nature. China and Latin America are both developing countries and have similar positions and policies in international climate negotiations and in the field of green and low-carbon cooperation. At a critical period when the world is moving towards carbon neutrality, China-Latin America climate cooperation has broad space in the three major areas of clean technology transfer, climate resilient infrastructure and forestry carbon sequestration, and is expected to play a role in just transition, climate resilient development and Substantial progress has been made in terms of synergies. As a natural extension of the "21st Century Maritime Silk Road", Latin American countries have established good cooperative relations with China in the process of jointly building the "Belt and Road". Although China-Latin America cooperation faces interference from the United States, However, the opportunities for climate cooperation between the two sides outweigh the challenges. In the future, under the leadership of the Global Development Initiative, China-CELAC climate cooperation should be directed towards promoting developing countries to achieve carbon neutrality at low cost. Go deeper and be more practical, continue to expand new topic groups for climate cooperation under the trend of digitalization and intelligence, and strive to reach terms that are beneficial to developing countries as a whole in international climate negotiations. China and Latin America must adopt a forward-looking, developmental, and innovative vision. to look at the opportunities and challenges in climate cooperation, and

continue to make efforts to jointly achieve strong, green and healthy development. Keywords: Global Development Initiative, China-Latin

America Climate Cooperation, Climate Resilience, Development Synergy, Just Transformation. Author: Zhou Yamin, Economics Ph.D., Associate

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Academy of Social Sciences CLC Classification Number: F125 Document Identification Code: A Article Number: 1002 - 6649 (2022) 06 - 0085 - 15

** Thanks to Liu Zhe for his contribution in some data and information. The author is solely responsible for the article.

The Global Development Initiative was announced by President Xi Jinping at the 76th Session of the United Nations General Assembly on September 21, 2021.

The Global Development Initiative proposes to actively respond to climate change, build a community of life between man and nature, increase investment in development resources, focus on promoting cooperation in the fields of climate change and green development, and accelerate the implementation of the United Nations 2030 Agenda for Sustainable Development. (SDGs), building a global community of shared future for development. From the perspective of action areas, climate cooperation is one of the eight key areas of cooperation in the global development initiative. China has solemnly promised to the international community to achieve carbon peak before 2030 and reach carbon dioxide emissions before 2060. Achieve carbon neutrality. As of August 2022, 20 countries in Latin America have announced that they will achieve carbon neutrality before 2050. China and Latin American countries are both developing countries and face common challenges when moving towards the goal of carbon neutrality. At the level of global climate governance, many practices by developed countries that bypass the principle of "common but differentiated responsibilities" will delay the process of carbon neutrality in developing countries. From the perspective of domestic climate governance, how can developing countries achieve low-cost carbon neutrality? Neutralization has become a realistic consideration for all countries.

Climate cooperation under a global development initiative

The Global Development Initiative has six principles: priority on development, people-centeredness, inclusiveness and inclusiveness, innovation-driven development, harmonious coexistence between man and nature, and action orientation. The above six principles clearly answer the question of why development should be Putting it in a prominent position in the global macro policy framework, developing for whom and how to achieve development are three major questions. Addressing climate change is one of the key areas of cooperation in global development initiatives. The above three major questions also need to be answered. Cooperation to address climate change It is an important way to jointly achieve the United Nations 2030 Sustainable Development Goals. It answers the "why". The just transformation pursued in the climate governance discourse is closely related to "people-centered". It answers the "for whom". It answers the question of how to adapt to climate change. The climate resilient infrastructure needed is a necessary condition to ensure sustainable development and answers the question "what to do". Therefore, climate cooperation under the Global Development Initiative will evolve in the direction of boosting development and enable developing countries to clearly identify their participation in global climate change. The real demand of governance is to promote sustainable development, rather than falling into the vortex of "structural reform" or "rule diffusion" in developed countries.

Xi Jinping: "Strengthen confidence and work together to overcome difficulties and build a better world - Speech at the General Debate of the 76th United Nations General Assembly", People's Daily Online, September 22, 2021, <http://politics.people.com.cn/n1/2021/>

0922/c1024-32232511.html [2022-07-13] Antigua is the Latin American country that has announced that it will achieve carbon neutrality by 2040 and Barbuda, to achieve carbon emissions by 2050 Neutralized by Chile, Ecuador, Panama, Costa Rica, Uruguay, Saint Kitts and Nevis, Brazil, Argentina, Colombia, Mexico, Peru, Nicaragua, Trinidad and Tobago, Haiti, Jamaica, Bahamas, Grenada, St. Vincent and the Grenadines, Belize. See Energy & Climate Intelligence Unit. t Zero Emissions Race 2022 Scorecard <https://eci.unep.net/netzerotracker> [2022-08-23]

Throughout the history of global climate governance, from the "Kyoto Protocol" to the "Copenhagen Accord" and then to the "Paris Agreement", the bargaining power of developing countries has been continuously weakened. For example, during the "Kyoto Protocol" period, non-Annex I countries did not have mandatory emission reductions. Obligations, and developed countries need to compulsorily reduce emissions. Developing countries and developed countries have clear historical responsibilities. After experiencing a trough period when some developed countries withdrew from global climate governance, when the Paris Agreement was reached, global emissions reductions The model has changed to countries submitting nationally determined contribution targets. The boundaries of responsibilities between developed and developing countries in the field of emission reduction have become blurred. The core principle of global climate governance "common but differentiated responsibilities" has been regulated by unilateral climate regulations in Europe and the United States, such as The carbon border adjustment tax continues to be diluted. In the absence of climate finance and technical assistance, the cost of achieving carbon peaking and carbon neutrality in developing countries continues to rise, and the gap with developed countries in the low-carbon field continues to widen. Therefore, development The cost of China's participation in global climate governance is too high and the benefits are too low. This situation needs to be corrected from a development perspective.

Climate cooperation under the global development initiative will mainly rely on the South-South framework. China is proposing a global After the development initiative, the South-South Cooperation Assistance Fund was integrated and upgraded into the "Global Development and South-South Cooperation Fund", and an additional US\$4 billion was added to increase resource investment in global development cooperation. Since its establishment in 2015, the South-South Cooperation Assistance Fund has Provide various assistance, including funds, technology and capacity building, to developing countries in Asia, Africa and Latin America. China has always been an active advocate and important participant in South-South cooperation to address climate change. It has built low-carbon parks and donated materials, and provide education and training to help developing countries improve their ability to cope with climate change. However, in specific actions, they face problems such as loose working mechanisms, insufficient cohesion, and competition pressure from Europe and the United States. In recent years, developing countries, especially emerging powers, have participated in global climate governance in groups. The path is gradually becoming clear. Under the guidance of the Global Development Initiative, the situation of "working together" in the field of climate governance of developing countries will be strengthened, thereby continuously improving the operating mechanism of South-South cooperation on climate change, and continuously enhancing the role of developing countries in global climate change. Overall gaming ability in governance

2. The foundation and results of China-Latin America climate cooperation

In the context of increasingly fierce competition among great powers, Latin America and the Caribbean, which have many developing countries, have become important partners for China in expanding South-South cooperation. As a "natural extension of the 21st Century Maritime Silk Road", Latin America and the Caribbean are under the framework of the "One Belt, One Road" initiative . We have established a good cooperative relationship with China.

Zhao Bin: «Groupization: Path Choice for Emerging Powers to Participate in Global Climate Governance», Published in «International Forum», Issue 2, 2017, Pages 8-15. «Xi Jinping held

talks with Argentine President Macri and emphasized that Latin America is the maritime domain of the 21st century A natural extension of the Silk Road» Yangguang Net, May 18, 2017, http://china.cnr.cn/news/2017/05/18/t20170518_523760658.shtml [2022-07-20]

As of March 2022, 21 Latin American countries have signed the "Belt and Road" cooperation agreement. In 2021, the total trade volume between China and Latin America hit a record high, exceeding US\$450 billion. The "Belt and Road" circle of friends has been expanded in Latin America. China has become the second largest trading partner and the third largest source of foreign investment in Latin America. With the joint construction of the "Belt and Road" as a link, China and Latin America have made progress in low-carbon infrastructure construction, clean energy and institutional cooperation, integrating climate change for China and Latin America. Cooperation mechanisms provide opportunities.

First, the "Belt and Road" initiative has played an important role in upgrading infrastructure in Latin America. It has initially built a number of low-carbon infrastructures with economic value and social welfare, which has greatly improved the level of interconnection within and outside Latin America. From 2015 to 2020, China invested in 138 infrastructure projects in Latin America, with an investment amount of US\$940.9 billion, creating more than 600,000 jobs. The distribution of "Belt and Road" infrastructure projects in Latin America is mainly Ecuador, Argentina, Bolivia, Brazil, Chile and Mexico, etc. Among them, the capital intensity of infrastructure projects in Argentina is relatively high (a single project creates an average of 3,107 jobs), while the infrastructure projects in Brazil are mainly labor-intensive (a single project creates an average of 8,367 jobs). In terms of industry distribution, from 2015 to 2020, 42.3% of the projects were concentrated in the energy industry, especially in sustainable energy fields such as wind energy and solar power generation. 47.7% of the projects were concentrated in the transportation field. "One Belt, One Road" infrastructure projects have won China a good reputation in Latin America. For example, the Belgrano UHV DC transmission project that runs through the north and south of Brazil is known as the "power highway" and has solved the power shortage problem of more than 20 million people. Belgrano The freight railway connects Argentina's inland and ports, reducing the logistics costs of agriculture in the northern grain-producing areas. The Sinclair Hydropower Station has completely rewritten the history of Ecuador's power shortage, turning it from an electricity importer to an electricity exporter. Latin America's future transportation needs, communications, ports and airports and other fields still require a large amount of infrastructure investment. Under the guidance of the correct concept of justice and interests, China-Latin America infrastructure cooperation has solved a large number of infrastructure projects related to people's livelihood and well-being in Latin America, improving the level of interconnection and interoperability in the region. Lay the foundation for promoting industrial linkage effects.

Second, the "One Belt, One Road" clean energy cooperation is a model for China-Latin America cooperation. China has clean energy technology advantages, and Latin America has the endowment advantages of developing clean energy. In the past ten years, mutual discussions have

«List of countries that have signed cooperation documents on the joint construction of the "Belt and Road" with China», China Belt and Road Network, August 15, 2022

Wu Jie, Chen Yiming, etc.: «China and Latin America expand new areas of cooperation under the "Belt and Road Initiative"», Published in "People's Daily",

July 13, 2022, «my country has become Latin America's second largest trading partner», Xinhua News Agency, November 2018 29th // www.xinhuanews.com/xinwen/2018-11/29/content_5344567.htm [2022-07-26]

Enrique Peters: «2021 China Infrastructure Projects in Latin America and the Caribbean Report», May 24, 2021, http://www.redalci-china.org/monitor/images/pdfs/menuprincipal/DusselPeters_Monitor_Infraestructura_2021_CHN.pdf [2022-07-19] «Building a China-Latin America

community with a shared future that works together (a shared destiny)» [Guangming.com](http://www.guangming.com) July 23, 2021 <http://www.gmw.com/baijia/2021-07/23/35017968.html>

Through exchanges with China and Latin America, clean energy cooperation has become an advantageous area in China-Latin America cooperation. Latin America is rich in hydropower resources. As the river with the largest flow, basin area and number of tributaries in the world, the Amazon River provides a good foundation for the development of hydropower in the region. Unique conditions. Latin America has abundant solar energy resources. The 70 countries in the world with average daily photovoltaic power generation exceeding 45 kWh/day include Mexico, Peru, Chile and Argentina. Latin America also has huge wind energy potential.

Argentina, Both Colombia and Brazil have abundant wind energy resources. The power generation projects invested and constructed by China in Latin America use clean energy such as wind power,

Hydropower, photovoltaic power generation and biomass power generation are the main ones. Fossil energy power generation only . Among them Brazil accounts for less than 14%. It is the largest clean energy partner, followed by Ecuador, Argentina and Mexico. As one of the BRICS countries, Brazil has long had cooperation with China. With its historical accumulation and its abundant hydropower, solar energy and wind energy, the country has successfully transformed its resource endowments into electricity resources that can independently develop the domestic economy. It has become a model for Latin American countries to carry out foreign cooperation. It has also been involved in the global response to climate change and the implementation of the United Nations 2030 In the process of meeting the goals of the 2016 Agenda and fulfilling the Nationally Determined Contributions of the Paris Agreement, vigorously developing clean energy is not only an effective way to improve people's livelihood and welfare but also provide public goods for global emission reduction. Deepening cooperation between China and Latin America in the field of clean energy will contribute to global sustainable development. Third,

China-Latin America scientific and technological cooperation creates necessary conditions for deepening China-Latin America climate cooperation. Under the global climate governance framework, how developing countries obtain low-cost and accessible climate-friendly technologies has always been the focus of the game between the North and the South. One of the problems. The rapid development and diffusion of low-carbon technology is the guarantee for developing countries to cope with climate change. The scientific and technological innovation capabilities of Latin America are relatively backward. The proportion of R&D investment in gross domestic product (GDP) is less than 1%, which is far lower than that of China in 2021. In recent years, China has transformed from a low-carbon technology importer and aid recipient to a low-carbon technology exporter and importer. It is precisely because of the realization that scientific and technological capabilities are the key factor restricting the rapid development of Latin America. China and Latin America held the first "China-Latin America Science and Technology Innovation Forum" in Quito, the capital of Ecuador, in 2016. China announced the launch of the "China-Latin America Science and Technology Partnership Program" and the "China-Latin America Young Scientists Exchange Program". The second China-Latin America Science and Technology Innovation Forum will be held in 2021. The forum was held via video. China announced the establishment of the China-Latin America Technology Transfer Center and the China-Latin America Sustainable Food Innovation Center. Currently, China and Latin America have already established projects in aerospace, clean energy, agricultural technology, digital economy, and

江洁, 王 Wentao, etc.: "Science and Technology Cooperation Leads the New Situation and Strategic Exploration of Climate Governance", published in "China's Population Resources and Environment", Issue 12, 2017, Pages 8-13.

«Focusing on global challenges, China and Latin America will Deepening practical cooperation in science and technology » Xinhua News Agency September 29, 2021

Comprehensive scientific and technological cooperation in health and other fields. China-Latin America's all-round scientific and technological cooperation and the industrialization of results will help expand the intersection of interests between China and Latin America in the field of climate change, deepen mutual understanding and support between the two sides in climate change negotiations, and contribute to China-Latin America's climate change Cooperation will undoubtedly produce positive spillover effects.

Fourth, China-Latin America climate cooperation is embedded in the China-Latin America and Caribbean Community Forum and has been institutionalized. On July 17, 2014, the leaders of China and Latin America and the Caribbean met and adopted the China-Latin America and the Caribbean Leaders' Meeting in Brasilia. Joint Statement», announcing the establishment of the China-CELAC Forum (hereinafter referred to as the "China-CELAC Forum"). Starting from 2015, the China-CELAC Forum ministerial meeting will be held every three years, kicking off the institutionalized cooperation between China and Latin America and the Caribbean. Under the guidance of the China-Latin America Forum, the two sides have successively established cooperation mechanisms in various key areas, such as the China-Latin America Infrastructure Cooperation Forum, the China-Latin America Agriculture Ministers Forum, the China-Latin America Entrepreneurs Summit, the China-Latin America Think Tank Exchange Forum, the China-Latin America Science and Technology Innovation Forum and The China-Latin America Young Politicians Forum and other forums have embedded climate cooperation content to varying degrees. The content related to climate cooperation in the three action plans signed by China and Latin America is shown in Table 1. China-Latin America climate cooperation reaffirms the main objectives of the United Nations Framework Convention on Climate Change. Channel status, paying special attention to the role of technologies such as space technology, low-carbon technology and nuclear technology in addressing climate change, enhancing climate resilience and climate adaptation capabilities, and the synergistic effects of climate cooperation on the sustainable development goals.

Table 1 Text analysis of the three action plans signed by China and Latin America involving climate cooperation

name	matter	Specific content
«China-Latin America and Caribbean Countries Cooperation Plan (2015-2019)»	Four items	Under the framework of the United Nations Framework Convention on Climate Change, adhere to the principle of "common but differentiated responsibilities" and promote the international negotiation process on climate change.
		Jointly promote the application of space technology in the field of climate change impacts, and fully take into account the interests and needs of small and vulnerable economies, especially small developing countries.
		Carry out cooperation in the field of climate change under the framework of South-South cooperation, including promoting low-carbon, low-cost, energy-saving, and renewable technologies to relevant countries.
		Strengthen cooperation in addressing other impacts of climate change by developing and sharing human and technical resources.
«Joint Action Plan for Cooperation in Priority Areas between China and CELAC Member States (2019-2021)»	Four items	Acknowledging the adverse impact of climate change on regional agricultural and animal husbandry production. To this end, both parties commit to make every effort to enhance the resilience and adaptive capacity of agricultural production to cope with the negative effects of climate change.
		Promote the effective implementation of the Paris Agreement under the United Nations Framework Convention on Climate Change to support sustainable development and poverty reduction efforts.
		Under the framework of South-South cooperation, promote cooperation in addressing climate change, including taking actions to improve mitigation and adaptation capabilities to enhance resilience to the adverse effects of climate change.
		Urge developed countries to set an example in the global response to climate change, fulfill their commitments to provide support means for developing countries to implement emission reduction goals, especially in providing support in terms of funding, technology transfer and capacity building, and promote the implementation of the United Nations Climate Change Framework The emission reduction target before 2020 under the framework of the Convention and its Kyoto Protocol.
«China-CELAC Member States Joint Action Plan for Cooperation in Key Areas (2022-2024)»	Two items	Give full play to the advantages of nuclear technology and nuclear energy in meeting the challenges of climate change.
		Carry out policy exchanges and practical cooperation to address climate change.

Source: Compiled and drawn by the author.

The current results and future progress of China-Latin America climate cooperation will help strengthen the cohesion of developing countries in the global climate governance landscape. As we all know, the CELAC, which covers all countries in Latin America and does not include countries outside the region, was only established in 2010. Latin American countries have never formed a unified voice in the field of global climate governance. Limited by their respective resource endowments and geographical conditions, Latin American countries have formed distinctive "small groups" under the global climate governance framework. Brazil, as a major country in Latin America, is a member of the BRICS and has a high degree of consensus with China on many climate issues and can speak out together. For example, on the eve of the 2015 Paris Agreement, the consensus reached during high-level visits between China and Brazil was of great significance to the signing of the agreement. The Caribbean Due to the greater impact of climate change, island countries have exerted an influence beyond their national capabilities on climate issues through "coalition". For example, Caribbean island countries and Pacific island countries established the "Alliance of Small Island Countries" (AOSIS), advocating that small island countries give priority to solving problems climate risks, taking adaptation to climate change as the top priority, advocating the establishment of an independent climate compensation mechanism and priority access to climate assistance. In 2012, eight countries including Peru, Chile and Colombia newly formed the "Latin American and Caribbean Independence Alliance" (also known as The "Little Latin American Group" (AILAC) is one of the formal negotiating groups under the United Nations Framework Convention on Climate Change. It advocates that all countries must make legally binding contributions to address climate change and insist on equal emphasis on mitigation and adaptation. Latin America The divergence of national positions on climate issues is not conducive to the competition between developing countries as a whole and developed countries on climate issues. The in-depth promotion of China-Latin America climate cooperation will help expand the intersection of interests and mutual understanding between China and Latin America, thereby strengthening the development of developing countries. The country's overall climate gaming capabilities play a positive role.

Three global development initiatives bring new opportunities for China-Latin America climate cooperation

The Global Development Initiative revitalizes the cause of global development and provides a leading role in the implementation of the Sustainable Development Goals. It is another public good and cooperation platform provided by China for the international community. The public goods attributes of the Global Development Initiative are reflected in three aspects. First, in At the conceptual level, we must build political consensus on the priority of development and help countries focus their development efforts on sustainable development. Secondly, at the cooperation level, we must build a cooperation platform on development, focusing on industrialization, food security, poverty reduction, anti-epidemic and vaccines, The eight key areas of digital economy, financing for development, climate change and green development, and interconnection are being carried out in an orderly manner. The third is at the practical level, focusing on exchanges and mutual learning of experiences, and exploring development paths that are in line with the national conditions of the country. The Global Development Initiative adheres to the priority of development and construction A more equal and balanced global development partnership, adhering to the people-centered approach to achieve comprehensive human development, adhering to inclusiveness and inclusiveness, striving to solve the problem of unbalanced and inadequate development within and between countries, adhering to innovation-driven development, and working together to achieve leapfrog development Development ̂ Adhere to human and nature

Harmonious coexistence, achieving green recovery and development, adhering to action orientation, and building a global community of shared future for development. The impact of the COVID-19 epidemic has caused decades of global poverty reduction results to be wiped out. Regional turmoil has pushed up the prices of bulk commodities such as energy and food. Extreme climate change has brought about weather events that make it difficult for even developed countries to adapt to. Only through sustainable development can the world solve many governance problems currently faced.

(1) Just transformation

The "people-centered development" pursued by the global development initiative is reflected in the field of climate cooperation as "just transformation." The research object of just transformation is the groups and regions that may be affected in the climate governance process. Due to the lack of Therefore, it is necessary to rely on policies or external help to get out of the predicament and seek new development opportunities. In the international climate governance process, all parties have different focuses on just transformation. Developed countries emphasize the creation of high-quality employment opportunities, while developing countries pay more attention to assistance in finance, technology and capacity building. Resolution No. 1 of the 26th Conference of the Parties to the United Nations Framework Convention on Climate Change in 2021 stated that "to provide assistance to the poorest and most vulnerable Provide support to regions and groups, and identify the support these regions and groups need to achieve a just transition." Okun's law of climate change shows that for every 1% reduction in carbon emissions in the short term, the number of jobs will decrease accordingly by 0 to 10%. The implementation of climate policies will As a result, backward areas face greater employment pressure than developed areas. Therefore, developing countries face greater economic and social challenges in the process of coping with climate change.

Problems such as the "middle-income trap" and serious polarization between rich and poor are common in Latin American countries. The rich natural resource endowments in Latin America have not positively stimulated economic growth. Instead, they have become a typical region of the "middle-income trap" listed by the World Bank, making the entire region The region has been under the "resource curse" for a long time. Issues such as declining social welfare and unfair distribution caused by insufficient economic development momentum triggered the "Latin American Chaos" in 2019, further hindering the region's path to steady development. Latin The GDP growth rate in 2020 is -68% , 67% in 2021 , America The region is expected to fall to

Xi Jinping: "Building high-quality partnerships to jointly create a new era of global development - Speech at the Global Development High-Level Dialogue", People's Daily Online, June 24, 2022, <http://worldpeople.com.cn/n1/2022/0625/c1002-32456329.html> [2022-07-13]

«Britain welcomes record high temperature of 40 degrees», Sina Finance, July 19, 2022, <http://finance.sina.com/st/yy/yy/yy/2022-07-19/yy-yy/yyml> [2022-07-21] Wang Mou: "Empirical Research on the EU's Promotion of Just

Transition in Climate Governance", published in "People's Forum", Issue 14, 2022, Issue 34 - 37 pages

Wu Shimei, Zheng Xinye, An Zidong: «Climate Governance and Short-term Economic Fluctuations: Okun's Law of Climate Change», published in «Economics Trends», Issue 4, 2022, pp. 49-66. Lu Siheng: «Under the guidance of

populism Resource dependence and development dilemmas in Latin American countries», published in "Journal of Southwest University of Science and Technology" (Philosophy (Social Science Edition)), Issue 3, 2020, Pages 10-16. Wu Hongying:

"Latin America Confused in the Century of Change", published in "Modern International Relations", Issue 6, 2020.

Under the impact of the epidemic, the number of extreme poor people in Latin America has increased sharply, the gender gap in the labor market has continued to widen, the income and wealth differentiation within the region has continued to intensify, and soaring food and energy prices have pushed up the inflation rate. It is estimated that in 2021 The consumer inflation rate is as high as 11.3%. According to the United Nations "2020 Sustainable Development Goals Report", the youth unemployment rate and adult unemployment in Latin America in 2019 were much higher than the world average of 5.4% and 13.6%. In summary, the issues of just transition faced by Latin American countries in the process of responding to climate change are more complex and diversified.

"Accelerating technology transfer and knowledge sharing" proposed by the Global Development Initiative is the starting point and goal of China-Latin America climate cooperation to promote a just transition. The biggest constraint faced by Latin American countries in achieving a just transition in response to climate change is technological factors. Latin America 2017 Annual R&D expenditures account for only 0.67% of GDP. The world average is 172% America has the most populous coastline in the world.

It is one of the most densely populated areas in the world. In some countries, urban populations live in areas less than 5 meters above sea level. Millions of people live in the path of hurricanes, leaving residents in the area directly affected by rising sea levels, storm surges and flooding. The technical needs for adapting to climate change are very urgent. At present, the Latin American countries that have submitted a technical needs report (TNA) for adapting to climate change to the Secretariat of the United Nations Framework Convention on Climate Change include Panama, Ecuador, Dominica, Costa Rica, Uruguay, Jamaica, Grenada, Cuba, Guyana, Peru and El Salvador. The adaptation technology needs proposed by Latin American countries mainly fall into two categories: one is based on the fact that domestic infrastructure is seriously affected by climate change, and the technical needs for protecting and transforming infrastructure are proposed; the other is based on The high temperatures and precipitation brought by climate change have intensified the spread of diseases, raising the need for technologies to deal with extreme weather and protect human health. In recent years, China has continued to carry out in-depth technology transfer cooperation under the framework of the "One Belt, One Road" initiative, and has successively established China- ASEAN Technology Transfer Center, China-Central Asia Technology Transfer Center and China-South Asia Technology Transfer Center, etc. In the future, under the global development initiative, we can consider preparing to establish a China-Latin America Technology Transfer Center, drawing on various existing technology transfer programs, and targeting Latin American countries. Carry out precise technology transfer to adapt to climate change according to the differentiated needs.

(2) Climate Resilient Infrastructure in 2022 The

United Nations Panel on Climate Change (IPCC) released the sixth assessment report, in which the second working group report "Climate Change 2022: Impacts, Adaptation and Vulnerability" will develop climate resilience.

sdgs/ report / 2020 / [2022-07-18] Gao Meixun, Chen
 Minpeng, Teng Fei: «Assessment of technology needs for climate change adaptation in countries along the "One Belt and One Road"», published in «Climate Progress in Change Research » Published online in July 2022, pages 1-13.

Defined as, the combination of adaptation and mitigation actions to improve nature and human well-being and achieve the sustainable development goals. The report pays special attention to the development of climate-resilient infrastructure, and points out that the window of opportunity to achieve climate-resilient development is rapidly shrinking. Global urbanization The trend of climate resilience provides opportunities to promote climate resilient development, especially various scientific decisions for urban infrastructure construction in the process of urbanization. Climate resilience construction has become an important part of South-South cooperation. On the one hand, because it involves agriculture, food, coastal areas, etc. The multi-field topic group has increased the cross-cutting areas of cooperation between countries to deal with climate change. On the other hand, because it is an adaptation measure, it represents the fundamental interests of the majority of developing countries and helps alleviate the developed countries' "emphasis on mitigation and neglect of adaptation". The international pressure brought by this stance on China

Most countries in Latin America are located in areas of high exposure and vulnerability. When problems such as inequality, poverty, high population density, deforestation, biodiversity loss, soil degradation, and an economic structure highly dependent on natural resource exports are superimposed, it is extremely easy to be affected by climate change, climate change has exacerbated economic, racial and social inequalities. As the world's largest biodiversity area, the Amazon rainforest is also the world's largest carbon storage reservoir. Under the influence of high temperatures and droughts, it has transformed from a carbon sink area to a carbon source area. Building climate resilient infrastructure in Latin America will save a lot of investment in public and private funds and human capital for repair and reconstruction in the long term.

In the topic area of China-Latin America cooperation to deal with climate change, the construction of climate resilient infrastructure will become a key content. On the one hand, this is because there is a large gap in the resilience development of infrastructure in Latin America. On the other hand, it is because China is struggling to adapt to climate change. We have accumulated rich experience in the technical field, especially in climate resilient infrastructure, and in terms of funding, we have the support of the Asian Infrastructure Investment Bank and the BRICS New Development Bank. Cooperation between China and Latin America in the field of climate resilient infrastructure will achieve mutual benefit and complementarity, a win-win situation. According to the climate resilience assessment of infrastructure in 15 Latin American countries by the Japan International Cooperation Agency and the Inter-American Development Bank, the average ability of these regions to cope with climate change risks is at a primary level. Among them, only Peru, Mexico, Costa Rica and Colombia are four. Climate resilience infrastructure in each country is at a good level, with five countries: Honduras, Chile, Venezuela, Guatemala and Bolivia in the early stages.

摘要
 本报告旨在探讨气候韧性基础设施的发展，并指出实现气候韧性发展的机会窗口正在迅速缩小。全球城市化趋势为气候韧性发展提供了机遇，特别是在城市化过程中，各种科学决策对于城市基础设施建设至关重要。气候韧性建设已成为南南合作的重要组成部分。一方面，因为它涉及农业、粮食、沿海地区等，多领域主题组增加了国家之间应对气候变化的交叉领域合作。另一方面，因为它是一种适应措施，它代表了发展中国家的根本利益，并有助于减轻发达国家的“强调减缓和忽视适应”。这种立场给中国带来的国际压力

大多数拉丁美洲国家都位于高暴露度和脆弱性地区。当不平等、贫困、高密度人口、森林砍伐、生物多样性丧失、土壤退化以及高度依赖自然资源出口的经济结构等问题叠加时，极易受到气候变化的影响，气候变化加剧了经济、种族和社会不平等。作为全球最大的生物多样性地区，亚马逊雨林也是全球最大的碳储存库。在高温和干旱的影响下，它已从碳汇区转变为碳源区。在拉丁美洲建设气候韧性基础设施将节省大量的公共和私人资金以及人力资本用于修复和重建。从长远来看。

在应对气候变化的中拉合作主题领域，气候韧性基础设施的建设将成为关键内容。一方面，这是因为拉丁美洲在基础设施韧性发展方面存在巨大差距。另一方面，是因为中国正在努力适应气候变化。我们在技术领域，特别是在气候韧性基础设施方面，积累了丰富的经验，在资金方面，我们得到了亚洲基础设施投资银行和金砖国家新开发银行的支持。中拉在气候韧性基础设施领域的合作将实现互利共赢。根据日本国际协力机构和美洲开发银行对15个拉丁美洲国家基础设施气候韧性评估，这些地区应对气候变化的平均能力处于初级水平。其中，只有秘鲁、墨西哥、哥斯达黎加和哥伦比亚是四个。每个国家的气候韧性基础设施都处于良好水平，其中五个国家：洪都拉斯、智利、委内瑞拉、危地马拉和玻利维亚处于早期阶段。

The level of climate change adaptation is at a very low level, while the six countries of Argentina, Dominica, Panama, Jamaica, Haiti and Uruguay are at a very low level. Therefore, Latin America needs to solve the lack of climate change adaptation measures through international cooperation, especially the shortage of resilient infrastructure, to cope with the problem. Disasters and losses caused by climate change

China also faces a large number of typical climate risks in the process of responding to climate change. Investment in climate resilient infrastructure can bring multiple economic, social and environmental benefits. Relevant financing options and incentive mechanisms are currently being explored. Climate resilient infrastructure is being planned. The design, construction and operation of infrastructure must add additional resilience to infrastructure so that it can adapt to changing climate conditions. As one of the sponsors of the Global Council on Adaptation and a major country leading the development of global infrastructure, China is actively involved in the construction of climate resilient infrastructure. The field is increasing investment in the field. Research by the World Resources Institute shows that every 1 yuan invested in climate resilience infrastructure projects can generate a total of 2 to 20 yuan in benefits in the next 30 years. Globally, climate adaptation funds are highly dependent on In the future, public funds will need to be continuously broadened to attract high-quality private capital to accelerate and increase participation. Among the possible areas of China-Latin America climate cooperation, the construction of climate resilient infrastructure will become a way to connect the climate adaptation strategies of both parties and solve common adaptation problems. In important areas, cooperation between the two parties will help solve common problems faced by them.

When building climate resilient infrastructure, China and Latin America must implement the following four principles. First, disaster risk assessment needs to be conducted before project design. The specific tool kit can learn from the existing practices of the International Development Bank and be based on the actual situation. Propose innovative guidelines. The second is to continuously upgrade the building codes of each country, including institutional policies and engineering work, and continue to absorb international successful experiences and share lessons. The third is to strengthen disaster risk spatial management plans. For example, it should target the entire Watersheds should take all necessary measures to reduce flood risks. This requires breaking down administrative barriers between countries and promoting the construction of climate-resilient infrastructure with the concept of "sustainable watersheds." Fourth, proper infrastructure maintenance is extremely important, which is common in Latin American countries. The problem is that there are not enough resources to invest in infrastructure maintenance. Follow-up work should be carried out with "infrastructure maintenance rating" as the focus.

(3) Forestry carbon sinks

Carbon sink trading refers to developed countries paying money to purchase carbon emission indicators from developing countries. This is an effective way to realize forest ecological value compensation through market mechanisms, that is, developing countries invest in afforestation to increase carbon sinks. Developed countries offset their carbon emissions by purchasing carbon sinks to achieve their total carbon emission targets. In global carbon sink trading, the two parties to the transaction are developed countries and developing countries. Developing countries are the sellers, and developed countries are the buyers. The country is the buyer, which provides developing countries with opportunities in carbon sink trading.

World Resources Institute: «Accelerating Climate Resilient Infrastructure» November 2021 <https://www.wri.org/cn/sites/default/files/2021-12/accelerating-climate-resilient-infrastructure-investment-china-full-report-CN.pdf> [2022 - 08 - 29]

It provides the possibility to form synergy in the field. Some studies simulated the scenario where the Brazilian carbon market is connected with the EU carbon market and the Chinese carbon market respectively. It is believed that if the single goal of deep decarbonization is pursued, the Brazilian carbon market should be linked to the EU carbon market. And if To pursue moderate decarbonization, take into account welfare losses and just transition, the Brazilian carbon market should be linked to the Chinese carbon market. Forestry carbon sinks have synergistic effects on poverty reduction, sustainable cities and communities, mitigation and adaptation, biodiversity and other goals. The role of

Currently, China is building the world's largest forestry carbon sink market. According to research by Hu Angang and others, the national forest stock volume will reach 20.89 billion cubic meters in 2030, an increase of 7.17 billion cubic meters compared with 2005. The national forest carbon sink volume will From 25.11 billion tons of carbon dioxide in 2005 to 38.23 billion tons of carbon dioxide in 2030, a net increase of 13.12 billion tons of carbon dioxide equivalent. By then, China will become the country with the largest new forest reserves and carbon sinks in the world. Current international forestry The carbon sink market is mainly dominated by developed countries in Europe and the United States. Carbon sink certification is inconsistent and carbon sink prices fluctuate greatly. Increasing the supply of carbon sinks is an important means to address climate change. For developing countries, developing forestry carbon sinks can help participate in the formulation of carbon sinks. establish international standards for foreign exchange transactions and enhance its voice in international climate negotiations.

Forestry carbon sinks are closely related to international conventions such as the United Nations Framework Convention on Climate Change, the United Nations Convention to Combat Desertification, the Convention on International Trade in Endangered Species of Wild Fauna and Flora, the Convention on Ramsar and the United Nations Forest Instrument. An important measure to achieve sustainable development goals. At present, the world has not yet established a complete forestry carbon sink trading market. Since the world's major carbon trading platform markets are established by demand countries, Europe is the promoter of the primary market, and the United States is the largest secondary market. Players, therefore, the price and mechanism of carbon sink trading fail to fully reflect the relationship between supply and demand. The sales price of forestry carbon sinks in Latin America has remained low for a long time. Developing countries need to form a joint force in the field of forestry carbon sinks and focus on building forestry investment-forestry A virtuous cycle of growth - increase in carbon sinks - carbon sink trading - forestry investment, establishing a new mechanism for sustainable forestry development, thereby accelerating the realization of the sustainable development goals of developing countries. Forestry carbon sinks are of special significance to Latin America. In After the Amazon primeval forest has been transformed from a carbon sink to a carbon source, the only remedy is to increase forestry investment in the region and build new forestry, thereby increasing the amount of carbon sinks. In other words, increasing forestry carbon sinks will become a key factor in mitigating and reducing carbon sinks in Latin America. Important measures and fruitful key steps to adapt to climate change.

In recent years, the annual growth rate of forest carbon storage in Latin America has been negative, which has seriously dragged down global forest carbon storage.

Li Min, Hu Angang: "China builds the world's largest forestry carbon sink market (2020-2060)", published in "Journal of Xinjiang Normal University" (Philosophy and Social Sciences Edition), Issue 4, 2022, Pages 1-15.

The forestry carbon sink function in areas such as the Brazilian seasonal rainforest and the Amazon tropical rainforest continues to decline. Between 1990 and 2020, the regions with negative net increases in global forestry carbon sinks, from high to low, are Latin America, Africa, and Oceania, and the countries with positive forestry carbon sink net increments from high to low are Europe, Asia and North America. The increase in China's forestry carbon sinks is mainly due to the construction of artificial forests, ecological restoration and ecological projects (such as the "Three North" "Shelterbelt Project" and other national strategic plans. ^γ For Latin America, how to increase forestry carbon sinks through institutional design is an urgent task for the region to deal with climate change. From an economic perspective, forestry carbon sinks in Latin America The fundamental reason for the massive loss is that the market price is too low to cover its costs. The costs include the opportunity cost of converting forestry into cash crops and the cost of forestry operations. The price of developed countries purchasing forestry carbon sinks from developing countries has become an important international issue for both parties. The core issue in climate negotiations. From the perspective of forestry carbon sink trading, raising transaction prices in international negotiations is of great significance to both China and Latin America. It will help significantly reduce the cost of achieving carbon neutrality for both parties. For Latin America, As far as the country is concerned, as long as the forestry carbon sink transaction price is sufficient to cover the opportunity cost and operating cost, it will help reverse the current trend of converting carbon sinks into carbon sources in the region and effectively curb large-scale deforestation in the Amazon basin. It will also be beneficial to China. Generally speaking, once an international consensus is reached on forestry carbon sink trading, the large number of newly added forestry carbon sinks in recent years will become an important auxiliary means for China to achieve low-cost carbon peaking and carbon neutrality. Cooperation on forestry carbon sinks in China-Latin America climate cooperation Opportunities mainly lie in the

following three aspects. First,

Strive to build a multi-scale, all-round comprehensive assessment system that is consistent with the national conditions of developing countries, and strive to make developing countries The country has reached consensus and common standards on the monitoring, statistics, and evaluation of forestry carbon sinks, laying the foundation for the formation of a synergy in global carbon sink trading. The second is to build the prediction and evaluation capabilities of forestry carbon sinks through communication and interaction. In the next 30 to 40 years 2020 is an important window period for major regions around the world to achieve carbon neutrality. Improving the forestry carbon sink forecasting ability will help to clearly grasp the supply and demand intensity of carbon sink transactions, so as to be "well-informed". The third is to focus on building a financial market that promotes forestry carbon sinks. ^γ Use carbon finance to support sustainable forestry and effectively mobilize funds from all parties for developing countries. At the same time, it is also necessary to actively learn from the advanced carbon finance experience and technology of developed countries.

4. Challenges Facing China-Latin America Climate Cooperation

China-Latin America climate cooperation currently has some favorable factors, such as the South-South cooperation framework and the BRICS

^γFu Yujie, Tian Di, et al.: "Research progress on global forest carbon sink function assessment", published in "Journal of Beijing Forestry University", Issue 10, 2022, pp. 1-10.

Good interactions have long been established under the framework, and positive results have been achieved in the construction of the green "Belt and Road". Latin America has become one of the priorities of China's diplomacy. China and Latin America are committed to cultivating a new cooperative relationship of equality, mutual benefit, openness and win-win. But at the same time, China-Latin America climate cooperation still faces some difficulties that cannot be ignored, mainly reflected in the external influence from the United States and the internal understanding of the direction of

China-Latin America relations within the CELAC. On the one hand, the United States has great influence in the political, economic and security fields. China has never relaxed its strategic control over Latin America. As the United States elevates climate issues to the level of national security, China-Latin America climate cooperation will always be affected by U.S. factors. A report released by the China Economic and Security Review Commission of the U.S. Congress in 2018 believes that China's entry into The Latin American region has goals and intentions in four aspects: resources, diplomacy, cognition and geopolitics. In the field of international climate negotiations, although Latin American countries belong to the "G77 + China", they have not formed a completely unified position. Some Latin American countries have not formed a completely unified position. Countries such as the members of the "United States of Independence of Latin America and the Caribbean" are more radical in their positions on emission reduction issues and funding. However, the positions of countries such as Argentina and Venezuela are closer to China on many issues. Although Latin American countries currently have divided positions on climate issues it is not entirely the result of direct control by the United States, but the divergence of Latin America's climate stance means that there is room for multiple games, and it can take the opportunity to carry out climate diplomacy aimed at constraining emerging developing countries. As the largest investment in Latin America, the United States Its discourse status and influence are irreplaceable. The climate cooperation issues between China and Latin America will undoubtedly be affected by US factors, and the rapidly developing Sino-Latin America relations are something that the US is not willing to do. Therefore, the China-Latin America climate cooperation process needs to carefully consider the impact of U.S. factors and minimize the adverse effects of Latin America's divergent climate positions.

On the other hand, there are still different views on China-Latin America cooperation within CELAC. Judging from the history of bilateral or multilateral cooperation, participating countries have different capabilities in mechanism design, topic setting and funding arrangements. Therefore, they have different voices and leadership. There will be differences in capabilities. After comparing the operational effects of ASEAN-China ("10 + 1"), ASEAN-China, Japan and South Korea ("10 + 3"), and the Forum on China-Africa Cooperation, Latin American countries believe that with the "10 + 1" + 3" model of cooperation framework can better play the role of small countries leading big countries. Sub-regional powers represented by Brazil and Venezuela are quite active on the Latin American political stage and have always been way of China's participation in the political, economic and social development of Latin America. Quantitative research shows that China is

摘要 良好互动在框架下早已建立，在绿色“一带一路”建设中也取得了积极成果。拉美已成为中国外交的优先方向。中国和拉美致力于培育一种平等互利、开放共赢的新型合作关系。但与此同时，中拉气候合作仍面临一些不容忽视的困难，主要体现在美国的外部影响和拉美的内部认知方向上。

在拉美国家内部，对中美气候合作仍存在不同看法。从双边或多边合作的历史来看，参与国在机制设计、议题设置和资金支持等方面存在差异。因此，各方有不同的声音和领导权。在能力上也会存在差异。通过对比东盟-中国（“10+1”）、东盟-中国、日本和韩国（“10+3”）以及中非合作论坛的运作效果，拉美国家认为，通过“10+1+3”的合作框架模式，小国能更好地发挥引领作用。巴西和委内瑞拉等次区域大国在拉美政治舞台上非常活跃，一直是中国参与拉美政治、经济和社会发展的主要方式。定量研究表明，中国是

The deepening economic participation in Latin America has polarized people's views on China in the region, that is, they are either very positive or very negative. Therefore, it is clear that the mentality within CELAC is both welcoming and worried about cooperation with China. It is very important for the smooth advancement of China-Latin America climate cooperation. It can be seen from this that although China and Latin America have a high degree of overlap in areas of common interest in climate negotiations, they must attach great importance to the ways and means of advancing climate cooperation to avoid making the other party. The formation of a perception of "you lead and I follow" leads to resistance. The Global Development Initiative emphasizes the need to strive to achieve the goal of

leaving no country or person behind, and provides an "accelerator" for the implementation of the United Nations 2030 Agenda for Sustainable Development. Make important contributions to promoting global equality and sustainable development. As a global challenge, addressing climate change is not only an inherent requirement of sustainable development, but also an integral part of building a community with a shared future for mankind. China and Latin America have cooperated in the South-South Cooperation Framework and the "One Belt, One Road" initiative, significant progress has been made in the field of climate cooperation. Latin American countries are constantly learning from China's experience in green energy supply systems. Under the leadership of the Global Development Initiative, China-Latin America climate cooperation aims to connect key areas and meet the needs of various countries. and docking cooperation mechanism as the guiding framework, and deeply explore the areas of complementary advantages, mutual benefit and mutual support between the two parties.

Cooperation to deal with climate change is an important part of the development of a comprehensive cooperative partnership between China and Latin America. Latin America has natural advantages and a good foundation in dealing with climate change, such as abundant renewable energy water, wind, and light resources. China has a strong presence in hydropower, wind power, and solar power generation. has become a global leader in the field. China and Latin America have complementary advantages in integrating green technology and clean energy. From the perspective of domestic demand, both China and Latin America are faced with how to achieve a just transition, climate resilient development and synergy in the process of climate change. In terms of international support, China and Latin America need to speak out together, firmly uphold the principle of "common but differentiated responsibilities", "join together" to strive for climate terms that are beneficial to developing countries as a whole, and actively explore ways to reduce emissions based on market mechanisms. Various institutional arrangements, such as carbon market construction.

Global development initiatives will provide opportunities for China and Latin America to deepen climate cooperation. In an era of low-carbon and green transition, In a new world economy, climate cooperation will run through all aspects of trade, investment and international assistance, and is not limited to mutual support in international climate negotiations. As digitalization and intelligence move toward traditional industries, With the penetration of the industry, the topic areas of China-Latin America climate cooperation will continue to expand. China and Latin America need to look at the opportunities and challenges in climate cooperation from a forward-looking, developmental and innovative perspective, in order to jointly achieve strong, green and healthy development. Keep up the good work

(Editor-in-charge Wang Shuai)

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