

## Background information

Please read this important background information before completing the survey.

A relevant new insight in the Intergovernmental Panel on Climate Change's (IPCC) most recent sixth assessment report (AR6), is that while pathways that could enable the world to hold the increase in global average temperature below 2°C above pre-industrial levels remain, the world is not on track to reach such pathways and even in those with the most rapid and deep emissions reduction, it is now more likely than not that global warming will temporarily exceed 1.5°C in the coming decades (overshoot).

While awareness of the global climate emergency is growing, a persistent gap remains between international commitments and pathways to the 1.5-2°C temperature goal of the Paris Agreement (PA). The IPCC pathways that aim for limiting warming to 1.5°C by 2100 after a temporary temperature overshoot require net removal of CO<sub>2</sub> from the atmosphere in the second part of the century and will therefore need to rely on large-scale deployment of carbon dioxide removal (CDR).

According to the 2022 UNEP Emissions Gap report, policies currently in place internationally are projected to result in global warming of 2.8°C this century. Implementation of unconditional and conditional Nationally Determined Contributions (NDCs) reduce this to 2.6°C and 2.4°C respectively but the UNEP report cautions that the international community is falling far short of the Paris goals, with no credible pathway to 1.5°C in place.

As the risks of overshoot increases, in addition to deep and rapid climate mitigation and adaptation efforts and the deployment of large-scale carbon dioxide removal approaches, voices are calling for research on additional "emergency" options such as solar radiation modification (SRM) to keep global temperature rise in check by reflecting sunlight back into space to reduce the risks from an overshoot. In addition to its potential benefits, researching, developing, or deploying SRM poses multiple potential risks – both known and unknown. However, overshooting the Paris Agreement temperature goals also entails risks for both humanity and the ecosystems we depend on for survival, posing serious threats to the achievement of the Sustainable Development Goals.

In its sixth assessment report, the IPCC identified the lack of formal and robust governance<sup>1</sup> around SRM as a risk in itself. Several international entities, protocols, treaties and multilateral agreements contain provisions applicable to SRM, partially covering the topic but none of them comprehensively including the UN Convention on Biological Diversity, the UN Convention on the Law of the Sea, the Environmental Modification Convention (ENMOD), London Convention and London Protocol (LC/LP) and the Vienna Convention on the Protection of the Ozone Layer and its Montreal Protocol.

In Summer 2023, the European Commission and the US White House independently issued reports addressing SRM and its governance. The former focuses on the risks of SRM in the context of climate risks in general as well as on the need for international governance at the highest levels, while the latter addresses what a potential research programme to learn about SRM impacts might look like. Both

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<sup>1</sup> IPCC defines governance as: "A comprehensive and inclusive concept of the full range of means for deciding, managing, implementing and monitoring policies and measures. Whereas government is defined strictly in terms of the nation-state, the more inclusive concept of governance recognises the contributions of various levels of government (global, international, regional, sub-national and local) and the contributing roles of the private sector, of nongovernmental actors, and of civil society to addressing the many types of issues facing the global community" (p550, IPCC, 2018).

highlight the need for international cooperation. The Executive Vice-President of the European Commission said: "*This should be discussed in the right forum, at the highest international level,*" and suggested the United Nations as a potential venue for, according to a Reuters report.

With respect to the Latin American and Caribbean region, the lack of international and national governance schemes is particularly relevant. In January 2023, the Government of Mexico, through inter-institutional coordination between the Ministry of Environment and Natural Resources (SEMARNAT) and the National Council of Science and Technology (CONACYT) announced their intention to ban solar geoengineering experimentation and large-scale deployments on Mexico's national territory (as stated in its Press Release 3/23). This decision was taken after news was made public of a small-scale commercial intervention of balloons filled with aerosols by a US-based start-up "Make Sunsets" in the state of Baja California Sur, without the consent of the Government of Mexico and the surrounding communities.

The United Nations Economic Commission for Latin America and the Caribbean (ECLAC), the Inter-American Institute for Global Change Research (IAI) and the Carnegie Climate Governance Initiative (C2G) have been working together to (i) raise member states' awareness of the need for addressing the gaps in governance of large-scale CDR and SRM approaches and the risk and benefits these entail; and (ii) catalyse regional capacities to build comprehensive and inclusive governance frameworks for informed decision making on these issues (see Annex for details).

## ANNEX: AWARENESS RAISING ACTIVITIES IN LATIN AMERICA AND THE CARIBBEAN

Over the last four years, ECLAC and C2G have been working together to raise awareness on carbon dioxide removal (CDR) and solar radiation modification (SRM) in Latin America and the Caribbean.

### Joint events:

- 12 March 2020: Side event: The role of climate-altering technologies in managing climate risk in Latin America and the Caribbean (during the 1st Conference on Scientific Evidence and Public Policy, Santiago, Chile)
- 20 May 2020: Webinar: [Potential of public sector policies to achieve the objectives of the Paris Agreement](#)
- 29 June 2020: Webinar: [Carbon Dioxide Removal: Why Analyse its Governance Now?](#)
- 29 July 2020: Webinar: [Introduction to SRM: Analysis of Potential Benefits and Risks in the Context of Latin America and the Caribbean](#)
- 17 November 2020: Webinar: [Connecting Carbon Dioxide Removal Approaches, SDGs and Zero Net Emissions Strategies in Latin America and the Caribbean](#)
- 15 March 2021: Side event: [Impacto de las medidas y/o tecnologías de remoción de CO<sub>2</sub> sobre los Objetivos de Desarrollo Sostenible en América Latina y el Caribe](#) (during the UN Forum of Latin American and Caribbean Countries on Sustainable Development)
- 13 July 2021: Side event: [Potential implications of Carbon Dioxide Removal on the Sustainable Development Goals in the African and the Latin American and Caribbean regions](#) (during the UN High-Level Political Forum)
- 24 September 2021: Side event: [Challenges and Opportunities for Harnessing Climate & SDG Synergies: the role of carbon dioxide removal](#) (during the UN High-Level Dialogue on Energy)
- 6 July 2022: Side event: [Managing the risks of a global warming overshoot to safeguard sustainable development](#) (during the UN High-Level Political Forum)
- 24-25 August 2022: "[Americas Conference on Solar Radiation Modification: Solar: Science, Governance and Implications for the Region](#)" co-organized by The Inter-American Institute for Global Change Research (IAI), The DEGREES Initiative and C2G in Kingston, Jamaica.
- 9 November 2022: Side event: [Keeping 1.5C Alive: Opportunities & Challenges for CO<sub>2</sub> Removal and Storage in the Global South](#) (during the COP27)
- 4 May 2023: Side event: [Managing the risks of lack of governance around solar radiation modification](#) (during the UN Science, Technology and Innovation Forum)
- 11 July 2023: Side event: [Risk-risk analysis and governance of solar radiation modification to safeguard sustainable development](#) (during the UN High-Level Political Forum)

### Publications:

- 12 July 2021: [Current understanding of the potential impact of CDR approaches on SDGs in selected countries in Latin America and the Caribbean](#) (Landing Page) ([Full Report](#)) ([SPM – English](#)) ([SPM – Español](#))
- 7 January 2022: [Interactive tool on the impact of carbon dioxide removal measures and technologies on the Sustainable Development Goals in Latin America and the Caribbean](#) User instruction ([EN](#) and [ESP](#)), Template ([EN](#) and [ESP](#)), Example of the tool in use ([EN](#) and [ESP](#))
- 2023 (publication date TBC) Strengthening regional capacities to address the risk of and from overshooting 1.5°C global warming in Latin America and the Caribbean