# Space and Climate Masterclass

## Preparing AEB for Engagement in Global Climate Action

6 & 7 October 2025

# Agenda - overview

| | |
|---|---|
| 01 | Setting the Stage: COP & Global Climate Governance |
| 02 | COP Decision-Making Structure and Negotiation Dynamics |
| 03 | Brazil’s Climate Commitments & Challenges |
| 04 | Opportunities and Challenges of Mitigation Negotiations |
| 05 | Opportunities and Challenges of Adaptation Negotiations |
| 06 | Implementing COP decisions in Brazil |

# Agenda – Day 1

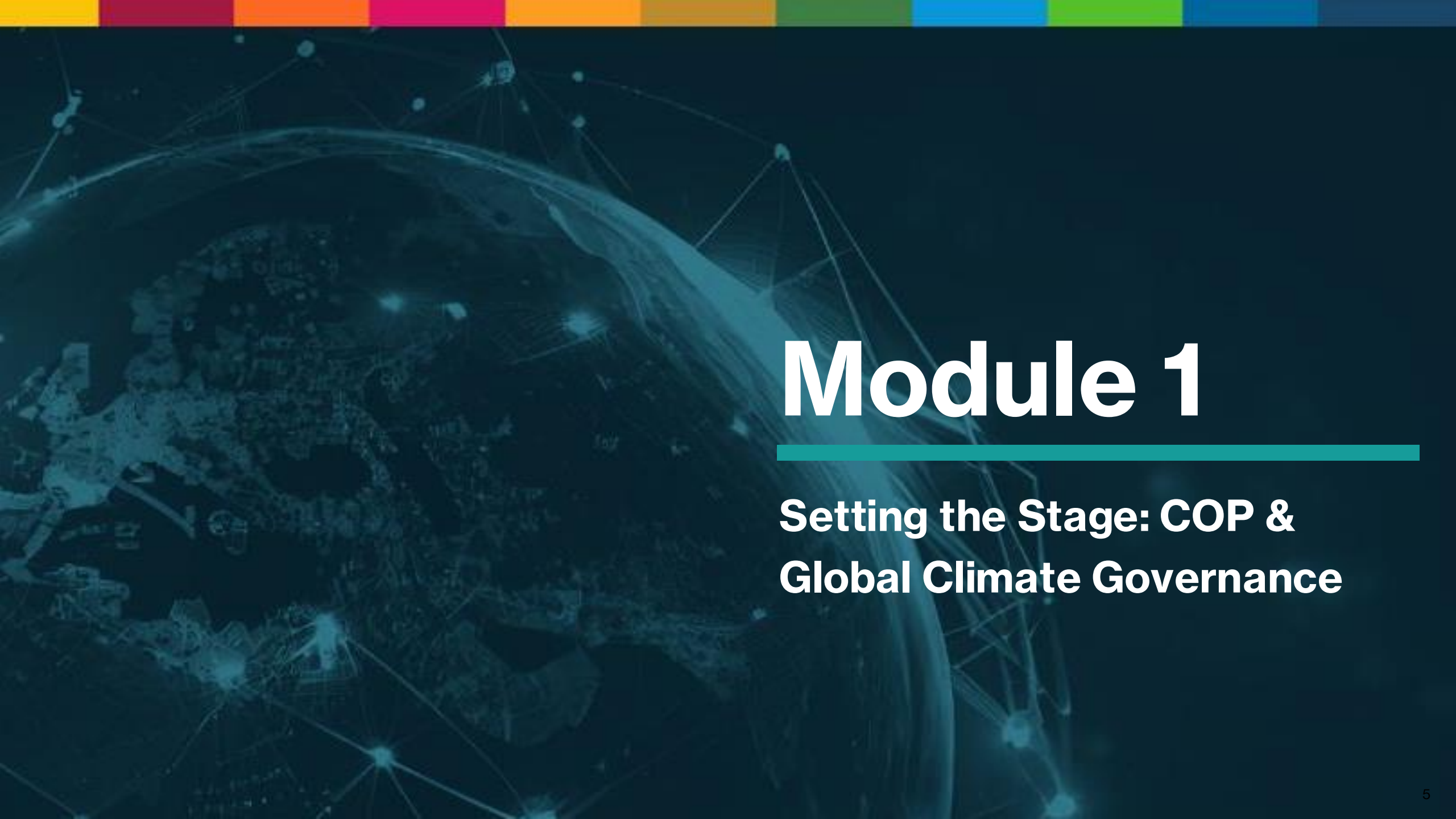
| Time | Topic |
|---|---|
| 9:00 – 9:10 | **Introduction remarks** |
| 9:10 – 10:00 | **Module 1 - Setting the Stage: COP & Global Climate Governance** |
| | *Origins and evolution of the UNFCCC and COPs* |
| | *UNFCCC key milestones and major outcomes from selected COPs* |
| | *Negotiation groups* |
| | *Brazil's historical role in international climate change negotiations* |
| | *Brazil opportunities and challenges arising from key COP decisions* |
| | *Q&A* |
| 10:00 – 10:05 | **Coffee-break** |
| 10:05 – 10:55 | **Module 2 - COP Decision-Making Structure and Negotiation Dynamics** |
| | *Main subsidiary and constituted bodies under the UNFCCC* |
| | *UNFCCC secretariat* |
| | *How UNFCCC negotiations work in practice* |
| | *Overview of key agenda items for COP 30* |
| | *The role of space in tracking Paris Agreement implementation* |
| | *Q&A* |
| 10:55 – 11:00 | **Coffe-break** |

| Time | Topic |
|---|---|
| 11:00 – 11:50 | **Module 3 - Brazil's Climate Commitments & Challenges** |
| | *Institutional players in Brazil's climate change governance* |
| | *Brazil's NDCs and net-zero targets* |
| | *Brazil's climate change vulnerabilities* |
| | *Brazil's overall strengths and weaknesses in climate change negotiations and opportunities in leadership* |
| | *Q&A* |
| 11:50 – 12:00 | **Closing remarks** |

# Agenda – Day 2

| Time | Topic |
|---|---|
| 9:00 – 9:10 | **Recap day 1** |
| 9:10 – 10:00 | **Module 4 - Opportunities and Challenges of Mitigation Negotiations** |
| | *Understand how mitigation is framed in COP negotiations* |
| | *Identify opportunities and challenges in mitigation negotiations* |
| | *Brazil's mitigation profile* |
| | *Understand Brazil's national positions on mitigation* |
| | *Opportunities for space data and technology* |
| | *Q&A* |
| 10:00 – 10:05 | **Coffee-break** |
| 10:05 – 10:55 | **Module 5 - Opportunities and Challenges of Adaptation Negotiations** |
| | *Understand how adaptation is framed in COP negotiations* |
| | *Identify opportunities and challenges in adaptation negotiations* |
| | *Brazil's adaptation profile* |
| | *Understand Brazil's national positions on adaptation* |
| | *Opportunities for space data and technology* |
| | *Q&A* |
| 10:55 – 11:00 | **Coffe-break** |

| Time | Topic |
|---|---|
| 11:00 – 11:50 | **Module 6 - Implementing COP decisions in Brazil** |
| | *Integration of adopted decisions into national and subnational public policies* |
| | *Summarize the main discussions/findings from previous sessions and to develop a draft road-map to COP 30 and beyond* |
| | *Opportunities for environmental monitoring through AEB services/technologies* |
| | *Space as a driver for climate monitoring: EO satellites, data for mitigation & adaptation* |
| | *Q&A* |
| 11:50 – 12:00 | **Space Solutions and Business Applications** Learning from International Practices |
| 12:00 – 12:10 | **Closing remarks** |



# Module 1

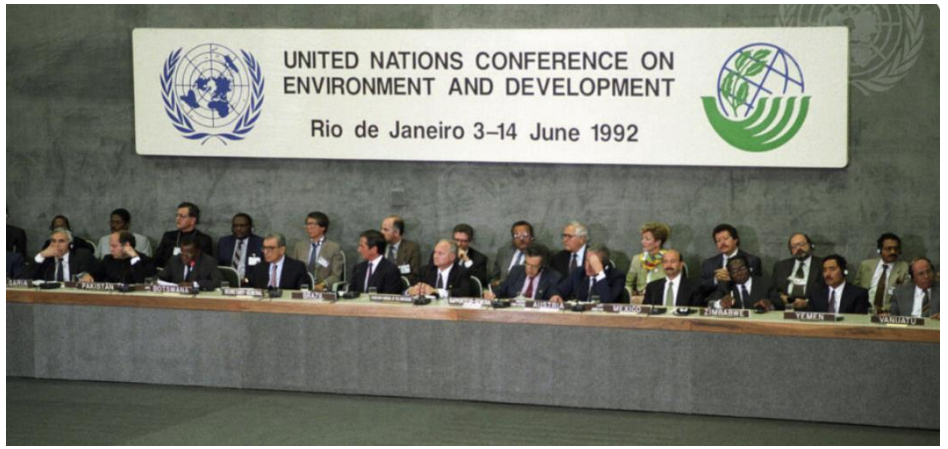
## Setting the Stage: COP & Global Climate Governance

# Learning objectives

- At the end of this module participants will be able to understand:
  - UNFCCC origins
  - What is a COP
  - Selected key decisions taken
  - Brazil historical role in international climate change negotiations across the years

# Origins and evolution of the UNFCCC and COPs

- At the 1992 Earth Summit in Rio de Janeiro countries came together to discuss and address the impact of human socio-economic activities on the environment
- Key outcomes included:
  - Agenda 21
  - Convention on Biological Diversity
  - **United Nations Framework Convention on Climate Change**




Credit: un.org

# United Nations Framework Convention on Climate Change - UNFCCC

- The UNFCCC entered into force on 21 March 1994
  - After the 50th instrument of ratification, acceptance, approval or accession had been deposited (in accordance with Article 23 of the Convention)
- The 198 countries that have ratified the Convention are called **Parties to the Convention**
- "The ultimate objective of this Convention ... is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"(Article 2)

United Nations Climate Change

Suggested reading: UNFCCC text

# Quiz

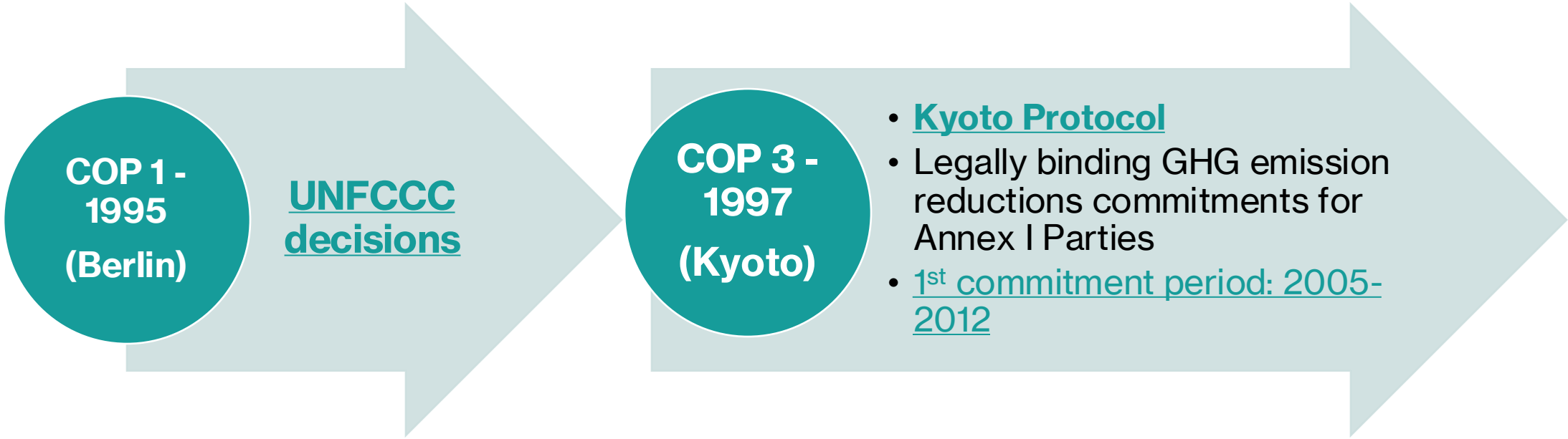
What would be “dangerous anthropogenic interference”?

What would be the “GHG concentration level that would prevent dangerous anthropogenic interference with the climate system”?

Menti.com – código 9489 0415

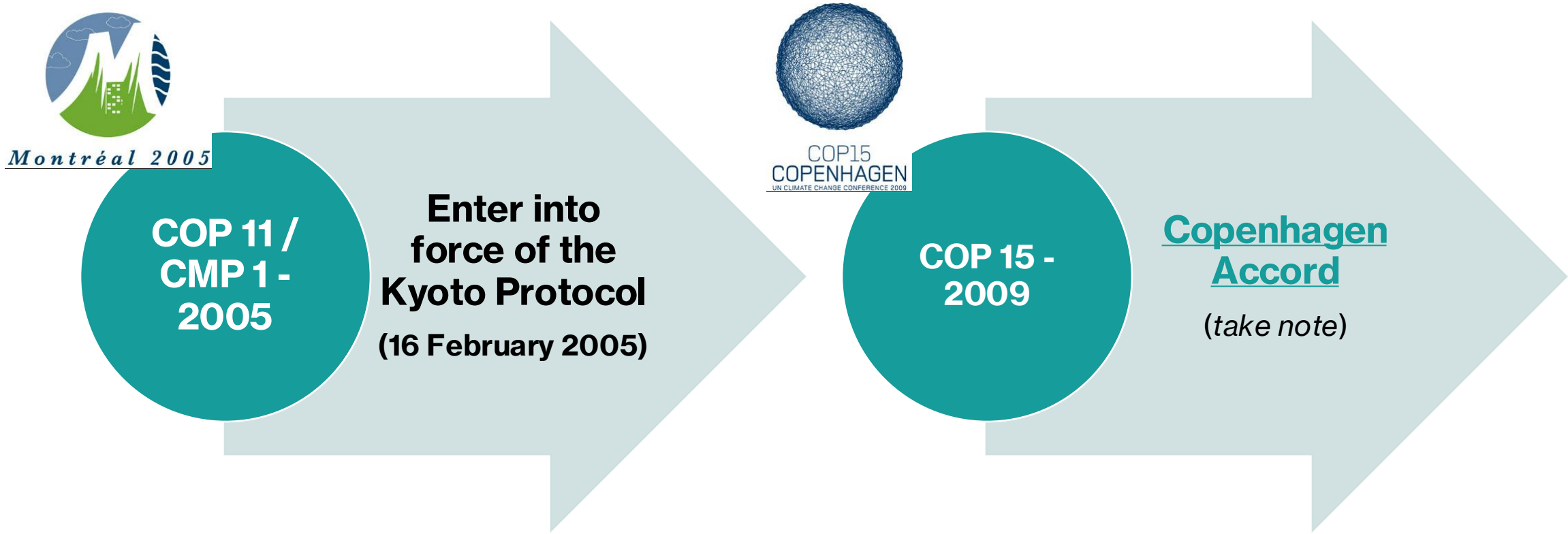
# UNFCCC key milestones and major outcomes from selected COPs

COP - Conference of the Parties



# UNFCCC key milestones and major outcomes from selected COPs (2)

CMP - Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol



# UNFCCC key milestones and major outcomes from selected COPs (3)


Suggested reading: Paris Agreement text

# UNFCCC key milestones and major outcomes from selected COPs (4)

CMA - Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

COP24·KATOWICE 2018
UNITED NATIONS CLIMATE CHANGE CONFERENCE

**COP 24 / CMA 1.3 - 2018**

**Modalities, procedures and guidelines (MPGs) for the Enhanced Transparency Framework (ETF) of the Paris Agreement**

UN CLIMATE CHANGE CONFERENCE UK 2021
IN PARTNERSHIP WITH ITALY

**COP 26 / CMA 3- 2021**

**Glasgow Climate Pact**

Paris Agreement entered into force on 4 November 2016

# UNFCCC key milestones and major outcomes from selected COPs (5)


Suggested reading: GST outcome

# Selected highlights from the Global Stocktake

18. Acknowledges that significant collective progress towards the Paris Agreement temperature goal has been made, from an expected global temperature increase of 4 °C according to some projections prior to the adoption of the Agreement to an increase in the range of 2.1–2.8 °C with the full implementation of the latest nationally determined contributions;

21. Notes with concern the findings in the latest version of the synthesis report on nationally determined contributions that implementation of current nationally determined contributions would reduce emissions on average by 2 per cent compared with the 2019 level by 2030 and that significantly greater emission reductions are required to align with global greenhouse gas emission trajectories in line with the Paris Agreement temperature goal and recognizes the urgent need to address this gap;

# Selected highlights from the Global Stocktake

107. Encourages inclusive international cooperation on research, development and demonstration as well as innovation, including in hard-to-abate sectors, with a view to strengthening **endogenous capacities and technologies and fostering national systems of innovatio**n in line with the findings of the Intergovernmental Panel on Climate Change;

183. Encourages the scientific community to continue enhancing knowledge on and addressing knowledge gaps in adaptation and availability of information on climate change impacts, including for **monitoring** and progress, and to provide relevant and timely inputs to the second and subsequent global stocktakes;

# Key takeaways from Global Space Leaders Summit: "Space challenges in the fight against climate change"

- Azercosmos, the Space Agency of the Republic of Azerbaijan, hosted the **World Space Leaders Summit** within the framework of COP29
- Primary objective was to promote the role of space technology in addressing climate change and to define collaborative steps with global and emerging space agencies
- As a result of the Summit, around 20 global space agencies endorsed an "International Pledge for Space-Based Climate Action – COP29 Impact and Output"

1. **Deploy Space-Based Technologies:** Identify and deploy practical space-enabled solutions to help address the Earth's greatest climate challenges
2. **Enhance Global Collaboration:** Strengthen international partnerships to improve capacity building, scientific data sharing, and the development of joint climate strategies
3. **Support the UN's Space2030 Agenda:** Actively contribute to the objectives of the "Space2030 Agenda" as adopted by the UN General Assembly on 25 October 2021, including four objectives - advancing space economy, space society, space accessibility, and space diplomacy
4. **Enhanced Data Sharing:** Amplify scientific data sharing efforts, particularly between established and emerging space nations, with a specific focus on inclusivity, especially in engaging developing countries

# Negotiation groups

- There are currently 16 official negotiating groups in the UNFCCC negotiation process
- 5 regional groups, mainly for the purposes of electing the Bureau:
    i. African States
    ii. Asia-Pacific States
    iii. Eastern European States
    iv. Latin American and the Caribbean States
    v. European and Other States (include Australia, Canada, Iceland, New Zealand, Norway, Switzerland and the United States of America, but not Japan, which is in the Asian Group)

# Negotiation groups: Annex I Parties to the UNFCCC

- Australia
- Belgium
- Croatia
- Denmark
- Finland
- Greece
- Ireland
- Latvia
- Luxembourg
- Netherlands
- Poland
- Russian Federation
- Spain
- Türkiye
- United States of America
- Austria
- Bulgaria
- Cyprus
- Estonia
- France
- Hungary
- Italy
- Liechtenstein
- Malta
- New Zealand
- Portugal
- Slovakia
- Sweden
- Ukraine
- Belarus
- Canada
- Czechia
- European Union
- Germany
- Iceland
- Japan
- Lithuania
- Monaco
- Norway
- Romania
- Slovenia
- Switzerland
- United Kingdom of Great Britain and Northern Ireland

+ Israel and Kazakhstan

**UMBRELLA Group:**

- **Normally the group advocates for "balanced GHG emission reductions" between developed countries and major developing countries**

Sally Box, Australia, on behalf of the Umbrella Group - UNFCCC SB58 - 13Jun23 - photo | IISD Earth Negotiations Bulletin

# Negotiation groups: Annex I Parties to the UNFCCC

- Australia
- Belgium
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- Ireland
- Latvia
- Luxembourg
- Netherlands
- Poland
- Russian Federation
- Spain
- Türkiye
- United States of America
- Austria
- Bulgaria
- Cyprus
- Estonia
- France
- Hungary
- Italy
- Liechtenstein
- Malta
- New Zealand
- Portugal
- Slovakia
- Sweden
- Ukraine
- Belarus
- Canada
- Czechia
- European Union
- Germany
- Iceland
- Japan
- Lithuania
- Monaco
- Norway
- Romania
- Slovenia
- Switzerland
- United Kingdom of Great Britain and Northern Ireland

**European Union:**

- Have a common position (that is previously negotiated among EU members) in all agenda items

Veronika Bagi (right) head of the Hungarian Delegation at UNFCCC, and Jacob Werksman, head of the EU delegation to the UNFCCC, attend COP29, November 14, 2024. — Reuters

# Negotiation groups: Annex I Parties to the UNFCCC

- Australia
- Austria
- Belarus
- Belgium
- Bulgaria
- Canada
- Croatia
- Cyprus
- Czechia
- Denmark
- Estonia
- European Union
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Italy
- Japan
- Latvia
- Liechtenstein
- Lithuania
- Luxembourg
- Malta
- Monaco
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Romania
- Russian Federation
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Türkiye
- Ukraine
- United Kingdom of Great Britain and Northern Ireland
- United States of America

+ Mexico, Republic of Korea and Georgia

**Environmental Integrity Group (EIG):**

- **Advocates for ambitious GHG emission reductions targets (despite the minimum contribution to global emissions of most members)**


Franz Perrez, Switzerland, on behalf of the Environmental Integrity Group ( EIG) - UNFCCC SB58 - 13Jun23 - photo | IISD Earth Negotiations Bulletin

# Negotiation groups: Non-Annex I Parties to the UNFCCC

## Group of 77 and China:

- Most diverse negotiation group due to the large differences among its members
- Not always possible to have a common position
- When a common position is achieved it become a powerful asset in the negotiation process


Abbas Kadhom Obaid Al-Fatlawi, Iraq, on behalf of the G-77/China

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

**African Group (AGN):**

- Historically, has presented strong demands related to means of implementation – MOI (i.e., finance, technology and capacity building), adaptation, loss and damage, among others


**Richard Muyungi**, Tanzania, on behalf of the African Group

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

Alliance of Small Island States (AOSIS):

- Member are particularly vulnerable to the impacts of climate change
- Very vocal in favor of ambitious mitigation targets, adaptation and loss and damage


**Anne Rasmussen**, Palau, on behalf of the Alliance of Small Island States (AOSIS)

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

**Least Developed Countries (LDCs):**

- Among the most vulnerable to climate change impacts
- Lowest GHG emissions
- Strong demands related to adaptation, loss and damage and MOI


**Isatou Camara**, The Gambia, on behalf of the Least Developed Countries (LDCs)

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

**Arab States:**

- **Economies still depend heavily on the production and export of fossil fuels**
- **Always seek to obtain robust decisions on "response measures"**

**Mohammad Ayoub**, Saudi Arabia, on behalf of the Arab Group

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

**Like-Minded Developing Countries (LMDCs) group:**

- **Very diverse group**
- **Strong positions in critical agenda items, including mitigation and climate finance**


**Diego Pacheco**, Bolivia, representing Like-Minded Developing Countries (LMDCs)

Photo by IISD/ENB - Kiara Worth

# Climate negotiations: key negotiations groups within G77/China

**Independent Association of Latin America and the Caribbean (AILAC):**

- **Very vocal regarding climate finance**


**Mabel Zúñiga**, Panama, on behalf of the Independent Alliance of Latin America and the Caribbean (AILAC)

Photo by IISD/ENB - Kiara Worth

# Quiz

How many negotiations groups Brazil participates?

**BASIC Group:**

- **Up to date the group have delivered opening and closing statements**
- **Emphasis in the**“need to protect the development space of emerging economies”

**Túlio Andrade**, Brazil, on behalf of Brazil, South Africa, India and China (BASIC)

Photo by IISD/ENB - Kiara Worth

# Quiz

How many negotiations groups Brazil participates?

**Grupo SUR (formerly known as ABU Group)**:

- Recent changes in the group composition
- Common positions regarding the NCQG of climate finance

First SUR Group coordination meeting on climate change
April, 2024

# Brazil's historical role in international climate change negotiations

- Hosted Rio 92 (cradle of UNFCCC)
- Leading voice in G77/China
- Instrumental role in key negotiation agenda items, *inter alia*:
  - AWG-KP LULUCF: rules for LULUCF activities under the 2nd commitment period of the Kyoto Protocol
  - REDD+ Warsaw Framework: rules for REDD+ activities and result-based payments
  - Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP): "process to develop a protocol, another legal instrument or an agreed outcome with legal force under the Convention applicable to all Parties" - that lead to the Paris Agreement
  - Modalities, procedures and guidelines (MPGs) for the Enhanced Transparency Framework (ETF) of the Paris Agreement



# Brazil opportunities arising from key COP decisions

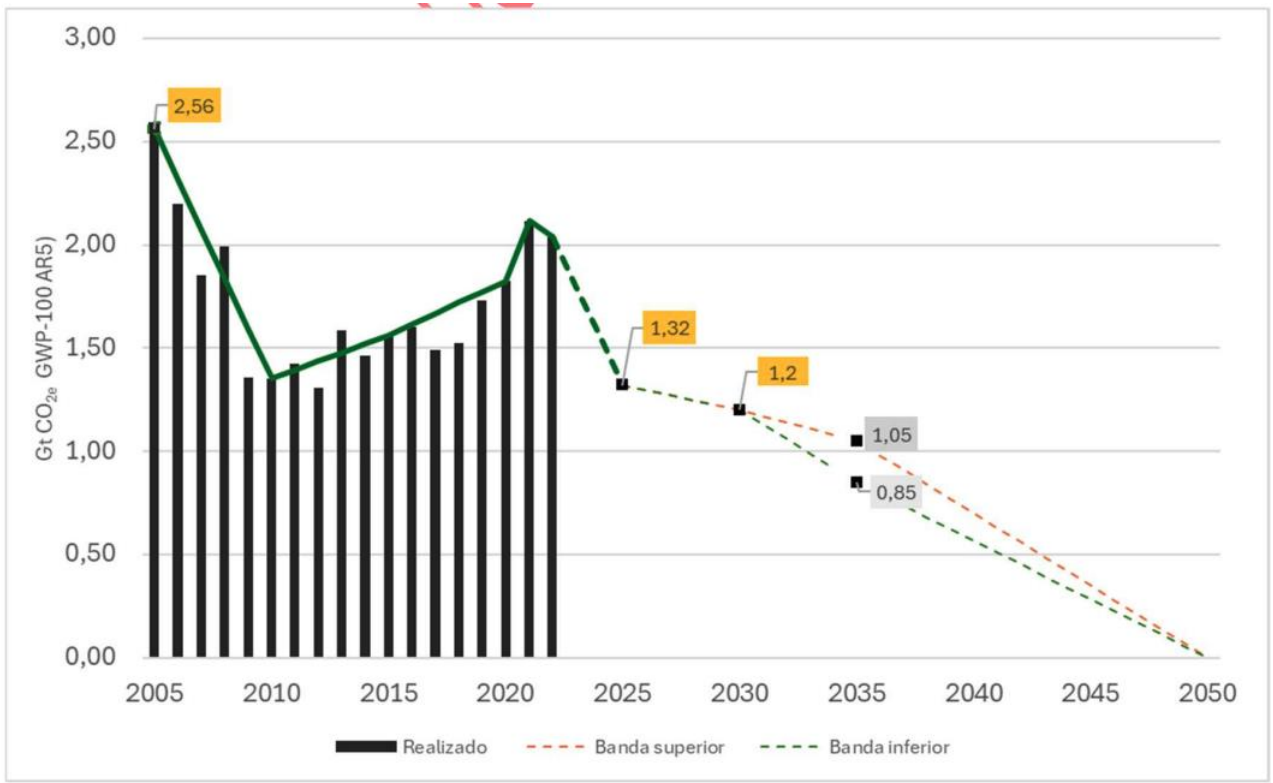
- As a major GHG emitter, is expected that Brazil undertake ambitious mitigation actions based on COP decisions
  - Was a key player in the Kyoto Protocol, through 385 registered Clean Development Mechanism (CDM) projects, resulting in emissions reductions of more than 205 millions tonnes of $CO_2eq$ (from 2007 through 2020)
  - Was instrumental in the establishment of the REDD+ Warsaw Framework, with emissions reductions of more than 9.3 billion tonnes of $CO_2eq$ (from 2010 through 2018)
  - Has presented an ambitious nationally determined contribution (NDC) under the Paris Agreement (NDC 3.0)

# Brazil opportunities and challenges arising from key COP decisions

- How to achieve NDC targets and climate neutrality?
- How to proper monitor, report and verify (MRV) mitigation target acstions?
- How to proper MRV adaptation goals and actions?

Suggested reading: Brazil Climate Plan

**Brazil NDC and climate neutrality targets**




Source: Brazil National Mitigation Strategy

# Q&A

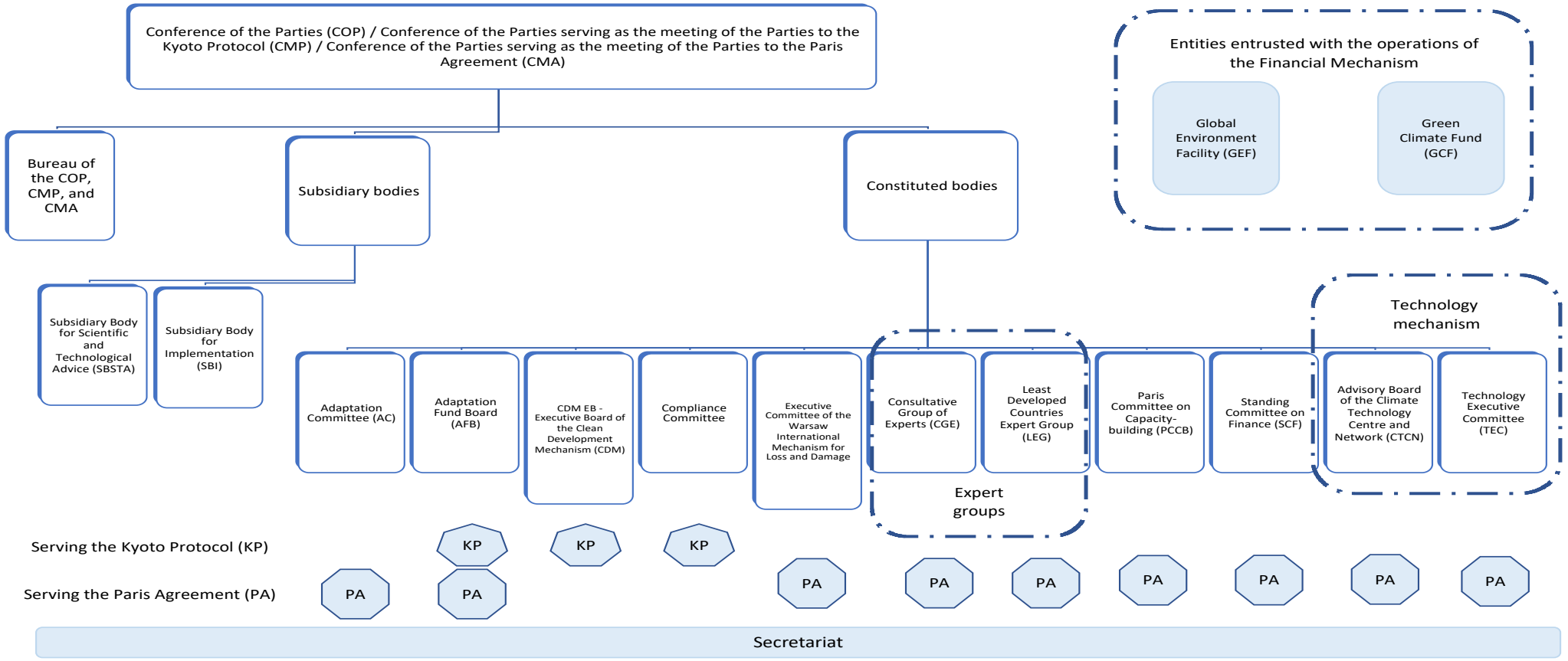
# Module 2

## COP Decision-Making Structure and Negotiation Dynamics

# Learning objectives

- At the end of this module participants will be able to understand:
  - The negotiation process under the UNFCCC
  - The main subsidiary and constituted bodies
  - Key agenda items for COP 30
  - Potential roles of space science and technology for tracking the Paris Agreement implementation

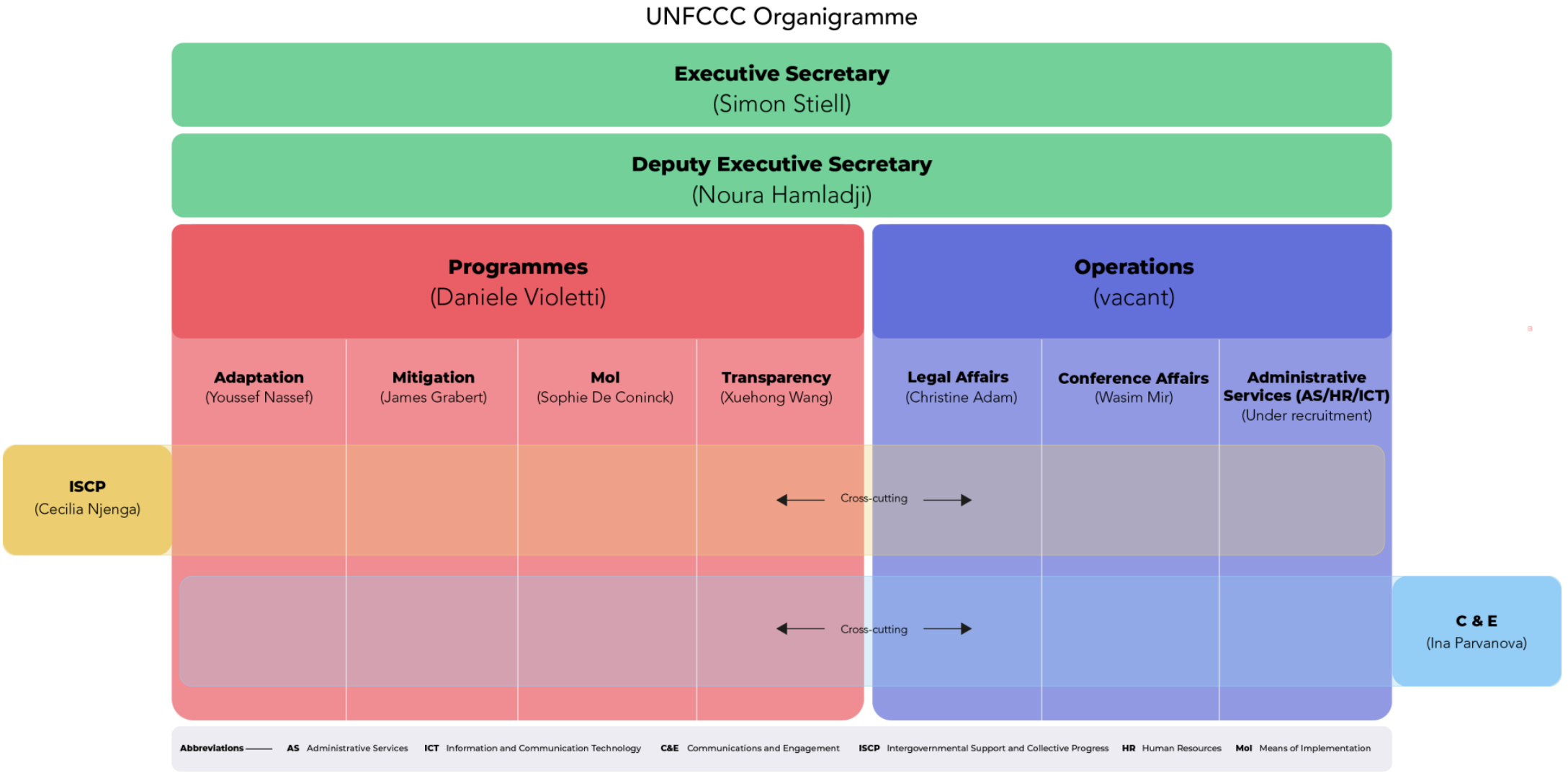
# Main subsidiary and constituted bodies under the UNFCCC



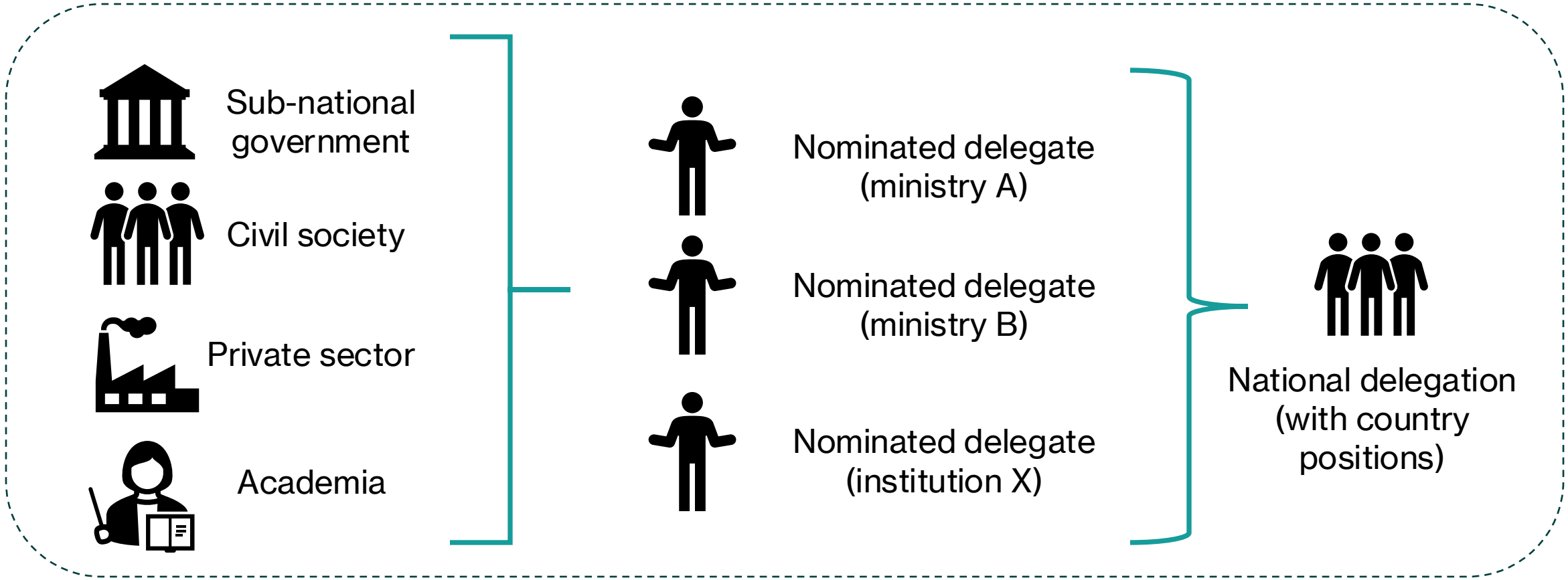

***Source:*** *Developed based on UNFCCC, 2020*

For a description of each body consult https://unfccc.int/process-and-meetings/bodies/governing-and-subsidiary-bodies

# UNFCCC secretariat

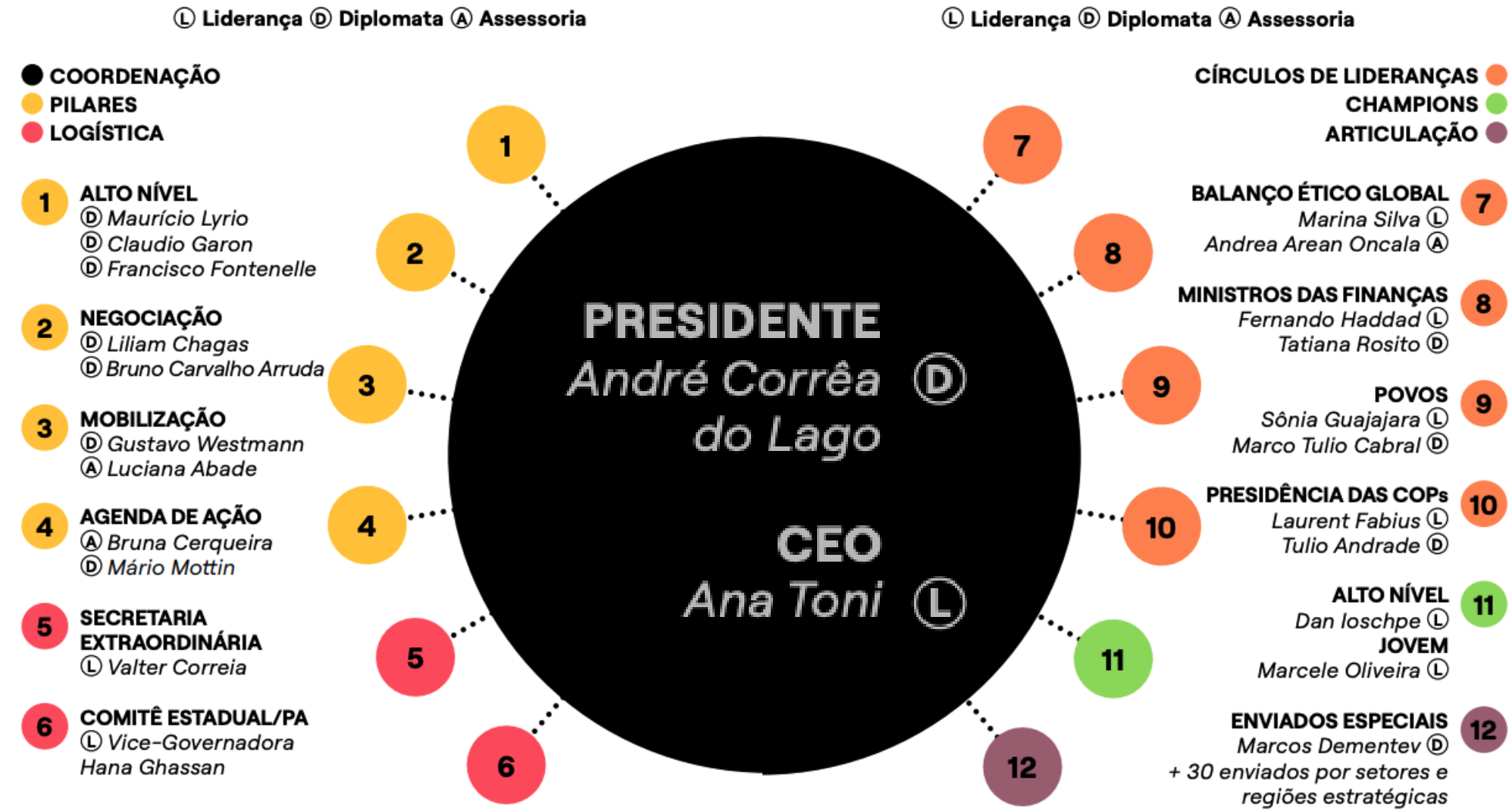


# How UNFCCC negotiations work in practice: pre-COP




**National level, in preparation for a COP**

# COP 30: Governance



# COP 30: Presidency team

## TIME DA PRESIDÊNCIA

**ANDRÉ CORRÊA DO LAGO**
Presidente

**Nicola Speranza**
Chefe de Gabinete

10

**Tulio Andrade**
Chefe de Estratégia e Alinhamento

**André Novo Viccini,** assessor de estratégia e alinhamento
**Vinicius Kuczera Zampier,** assessor de estratégia e alinhamento
**Guilherme do Prado Lima,** assessor de relações institucionais
**Rafael da Soller,** assessor de temas transversais
**George Almeida Margalho,** assessor de planejamento

**Conselho de Economia:** José Alexandre Scheinkman
**Conselho de Ciência do Clima:** Thelma Krug
**Conselho de Tecnologia e IA:** A ser confirmado

**Conselho de Adaptação:**
Andreia Coutinho
Avinash Persaud
Ellen Johnson Sirleaf
Helen Clark
José Marengo
Jussara de Lima Carvalho
Natalie Unterstell
Sarah Ahmed
Vanessa Grazziotin
Virgílio Viana

# COP 30: Presidency team

## TIME DA PRESIDÊNCIA

**ANA TONI**
CEO

**Monique Sacardo Ferreira**
Chefe de Gabinete

**Alice Amorim**
Diretora de Programa

**Amanda Ohara**
Assessora de Política Energética

**Teresa Rossi**
Assessora de Adaptação

- **Bruna Cerqueira,** coordenadora da agenda de ação
- **Barbara de Godoy,** assessora da agenda de ação
- **Luma Dias,** assessora para o plano de ação

(4)

- *Facilitador do eixo 1:* **Jonas Kulakauskas,** energia e indústria
- *Facilitador do eixo 2:* **Thaíssa Avena,** oceano e florestas
- *Facilitador do eixo 3:* **Sami Sternberg,** agricultura e alimentos
- *Facilitador do eixo 4:* **Maria Clara Nascimento,** resiliência urbana
- *Facilitador do eixo 5:* **Rafaela Viana,** social
- *Facilitador do eixo 6:* **Giovana Figueiredo,** transversais

- **Luciana Abade,** coordenadora de mobilização
- **Micaela Valentim,** assessora para mobilização (GST e Jovens)
- **Camilla Valadares,** assessora para mobilização Internacional
- **Eric Terena,** assessor para mobilização (Mutirão Global)

(3)

- **Marcos Dementev,** coordenador para enviados especiais
- **Carolina Hoffenberg,** assessora de eventos e assuntos culturais

(12)

**José Mauro O' de Almeida,** coordenador de parcerias e contratos
**Camilla Penna de Miranda Figueiredo,** assessora de parcerias
**Débora de Castro Leal,** assessora de parcerias
**Beatriz Sakuma Narita,** assessora de parcerias
**Isabel Cristina Schmidt,** coordenadora de protocolos e eventos
**Gabriel Joaquim,** assessor de assuntos culturais
**Riane Carvalho,** coordenadora de programa para a COP 30
**(vago),** coordenação de comunicação
**André Aroeira Pacheco,** assessor para florestas

# COP 30 special envoys

## STRATEGIC REGIONS

1. **Adnan Amin** • Oriente Médio
2. **Arunabha Ghosh** • Sul da Ásia
3. **Carlos Lopes** • África
4. **Denis Minev** • Setor privado amazônico
5. **Jacinda Ardern** • Oceania
6. **Joaquim Belo** • Sociedade civil amazônica
7. **Jonathan Pershing** • América do Norte
8. **Laurence Tubiana** • Europa
9. **Patricia Espinosa** • América Latina e Caribe
10. **Xie Xhenhua** • Leste Asiático

## SECTORAL

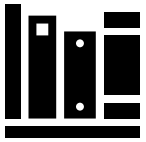
11. **André Guimarães** • Sociedade civil
12. **Beto Veríssimo** • Florestas
13. **Clemente Ganz** • Sindicatos
14. **Denise Dora** • Direitos humanos e transição justa
15. **Elbia Gannoum** • Energia
16. **Ethel Maciel** • Saúde
17. **Frederico Assis** • Integridade de informação
18. **Janja Lula da Silva** • Mulheres
19. **Jurema Werneck** • Igualdade racial e periferias
20. **Maguy Etlin** • Cultura e indústria criativa
21. **Marcelo Behar** • Bioeconomia
22. **Marcello Brito** • Governos subnacionais amazônicos
23. **Marina Grossi** • Setor empresarial
24. **Marinez Scherer** • Oceanos
25. **Maya Gabeira** • Esportes
26. **Paulo Petersen** • Agricultura familiar
27. **Philip Yang** • Soluções urbanas
28. **Roberto Rodrigues** • Agricultura
29. **Sérgio Xavier** • Fórum Brasileiro de Mudança do Clima
30. **Sineia do Vale** • Povos indígenas

*Source:* *Quem é Quem no time da COP30 (Talanoa, 2025)* / For the biography visit: https://cop30.br/en/brazilian-presidency/special-envoys

# Quiz

Who can be part of the Brazilian delegation at COPs?

How to be nominated to be a delegate during COP?



Suggested reading: UNFCCC code of conduct

# Types of badges at COPs


- **Party overflow:** enables delegate to access the Blue Zone. While holders of a party overflow badge maintain access to most negotiations as an **observer**, they are not authorized to speak on behalf of the Party
- **UN Organizations:** Article 7, paragraph 6 of UNFCCC provides that the United Nations, its specialized agencies and the International Atomic Energy Agency, may be represented at sessions as **observers**
- **IGOs and NGOs:** have been admitted by the COPs as **observers** to the UNFCCC

# How UNFCCC negotiations work in practice: general overview

**UN Climate Change Conference - Baku**

4 - 10 November 2024 (pre-sessional period)

11 - 22 November 2024 (sessional period)

**Overview Schedule**

Twenty-ninth session of the Conference of the Parties
(COP 29)

Nineteenth session of the Conference of the Parties to the Kyoto Protocol
(CMP 19)

Sixth session of the Conference of the Parties to the Paris Agreement
(CMA 6)

Sixty-first session of the Subsidiary Body for Scientific and Technological Advice
(SBSTA 61)

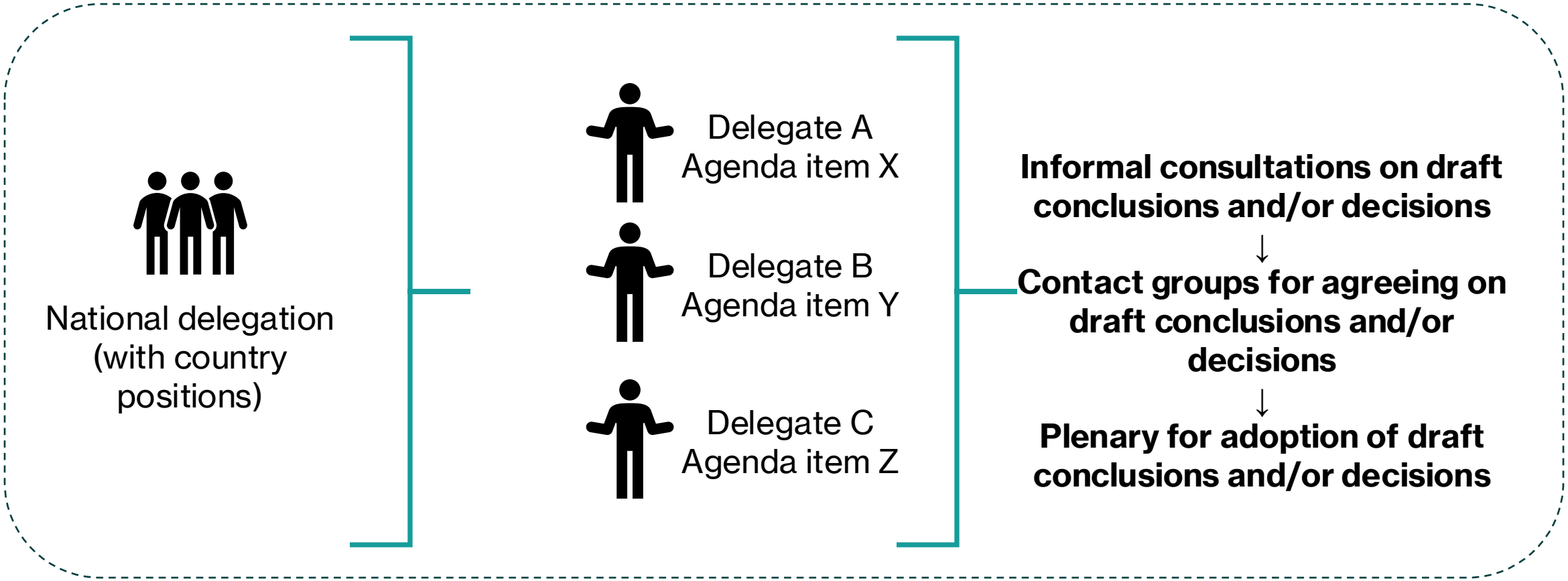
Sixty-first session of the Subsidiary Body for Implementation
(SBI 61)

Version of 7 November 2024

# How UNFCCC negotiations work in practice: general overview (2)

1. Opening plenary: COP, CMP, CMA, SBSTA and SBI
   - Adoption of the agenda: provisional agenda versus adopted agenda
2. Constitution of contact groups/informal consultations (lead by co-facilitators)
3. Schedule of contact group meetings / informal consultations
   - Draft conclusions
   - Draft decisions
4. Closing plenary: SBSTA and SBI (first week) COP, CMP and CMA (second week)
   - Adoption of conclusions and decisions

# How UNFCCC negotiations work in practice: during COP



# Understaing SBs conclusions and COP/CMA decisions

## SBSTA CONCLUSION

United Nations
Framework Convention on Climate Change

FCCC/SBSTA/2024/L.17

Distr.: Limited
16 November 2024

Original: English

**Subsidiary Body for Scientific and Technological Advice**
**Sixty-first session**
Baku, 11–16 November 2024
Agenda item 4
**Research and systematic observation**

**Research and systematic observation**

**Draft conclusions proposed by the Chair**

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA) recognized the vital importance of robust Earth observation systems and related long-term data records, as well as the role of related innovation and technologies, for enhanced understanding of changes in the global climate system and their attribution, mitigation and adaptation action, efforts to avert, minimize and address loss and damage, and early warning systems, and the importance of observational data, including to the work of the Intergovernmental Panel on Climate Change (IPCC).

2. The SBSTA noted with appreciation the information reported in the statements delivered at the joint opening plenary of SB 61 by representatives of the Committee on Earth Observation Satellites and the Coordination Group for Meteorological Satellites Joint Working Group on Climate, the Global Climate Observing System (GCOS), the World Climate Research Programme and the World Meteorological Organization (WMO).[1] The SBSTA also noted with appreciation the statement by the IPCC Chair and welcomed the ongoing work of the IPCC in the seventh assessment cycle.

3. The SBSTA took note of the informal summary report on Earth Information Day 2023.[2] It expressed appreciation to the SBSTA Chair and Vice-Chair and the secretariat for organizing Earth Information Day 2024,[3] which provided relevant updates and information and an opportunity for direct engagement between the systematic observation community and end users of climate data and information. The SBSTA thanked the representatives of the participating organizations and programmes for their valuable contributions, called for continued development of the format and organization of the event, and requested its Chair, with the assistance of the secretariat, to prepare an informal summary report on the event.

4. The SBSTA took note of the 2023 WMO Greenhouse Gas Bulletin[4] and the WMO *State of the Climate 2024 Update*.[5] It expressed utmost concern about the state of the global climate system, with record high atmospheric greenhouse gas concentrations being observed

[1] The statements are available at https://unfccc.int/sites/submissionsstaging/Pages/Home.aspx (in the search field, type "joint opening plenary").
[2] Available at https://unfccc.int/documents/641518.
[3] See https://unfccc.int/event/earth-information-day-2024-mandated-event.
[4] WMO. 2024. *WMO Greenhouse Gas Bulletin: The State of Greenhouse Gases in the Atmosphere Based on Global Observations through 2023*. WMO Greenhouse Gas Bulletin No. 20. Geneva: WMO. Available at https://library.wmo.int/records/item/69937-wmo-20-28-october-2024.
[5] WMO. 2024. *State of the Climate 2024: Update for COP29*. Geneva: WMO. Available at https://library.wmo.int/records/item/69973-state-of-the-climate-2024.

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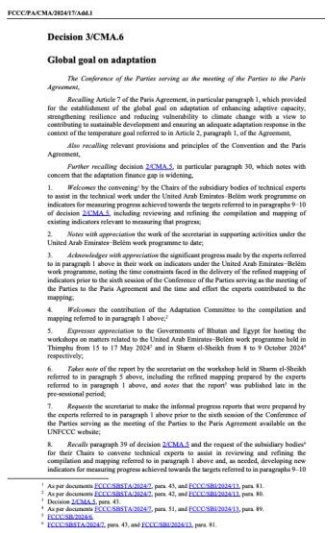
Please recycle

Suggested reading: [SBSTA 61 conclusion on research and systematic observation]

## CMA DECISION



FCCC/PA/CMA/2024/17/Add.1

**Decision 3/CMA.6**

**Global goal on adaptation**

*The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement,*

*Recalling* Article 7 of the Paris Agreement, in particular paragraph 1, which provided for the establishment of the global goal on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change with a view to contributing to sustainable development and ensuring an adequate adaptation response in the context of the temperature goal referred to in Article 2, paragraph 1, of the Agreement,

*Also recalling* relevant provisions and principles of the Convention and the Paris Agreement,

*Further recalling* decision 2/CMA.5, in particular paragraph 30, which notes with concern that the adaptation finance gap is widening,

1. *Welcomes* the convening[1] by the Chairs of the subsidiary bodies of technical experts to assist in the technical work under the United Arab Emirates–Belém work programme on indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10 of decision 2/CMA.5, including reviewing and refining the compilation and mapping of existing indicators relevant to measuring that progress;

2. *Notes with appreciation* the work of the secretariat in supporting activities under the United Arab Emirates–Belém work programme to date;

3. *Acknowledges with appreciation* the significant progress made by the experts referred to in paragraph 1 above in their work on indicators under the United Arab Emirates–Belém work programme, noting the time constraints faced in the delivery of the refined mapping of indicators prior to the sixth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement and the time and effort the experts contributed to the mapping;

4. *Welcomes* the contribution of the Adaptation Committee to the compilation and mapping referred to in paragraph 1 above;[2]

5. *Expresses appreciation* to the Governments of Bhutan and Egypt for hosting the workshops on matters related to the United Arab Emirates–Belém work programme held in Thimphu from 15 to 17 May 2024[3] and in Sharm el-Sheikh from 8 to 9 October 2024[4] respectively;

6. *Takes note* of the report by the secretariat on the workshop held in Sharm el-Sheikh referred to in paragraph 5 above, including the refined mapping prepared by the experts referred to in paragraph 1 above, and *notes* that the report[5] was published late in the pre-sessional period;

7. *Requests* the secretariat to make the informal progress reports that were prepared by the experts referred to in paragraph 1 above prior to the sixth session of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement available on the UNFCCC website;

8. *Recalls* paragraph 39 of decision 2/CMA.5 and the request of the subsidiary bodies[6] for their Chairs to convene technical experts to assist in reviewing and refining the compilation and mapping referred to in paragraph 1 above and, as needed, developing new indicators for measuring progress achieved towards the targets referred to in paragraphs 9–10

[1] As per documents FCCC/SBSTA/2024/7, para. 43, and FCCC/SBI/2024/13, para. 81.
[2] As per documents FCCC/SBSTA/2024/7, para. 42, and FCCC/SBI/2024/13, para. 80.
[3] Decision 2/CMA.5, para. 43.
[4] As per documents FCCC/SBSTA/2024/7, para. 51, and FCCC/SBI/2024/13, para. 89.
[5] FCCC/SB/2024/8.
[6] FCCC/SBSTA/2024/7, para. 43, and FCCC/SBI/2024/13, para. 81.

Suggested reading: [Decision 3/CMA.6 on Global goal on adaptation]

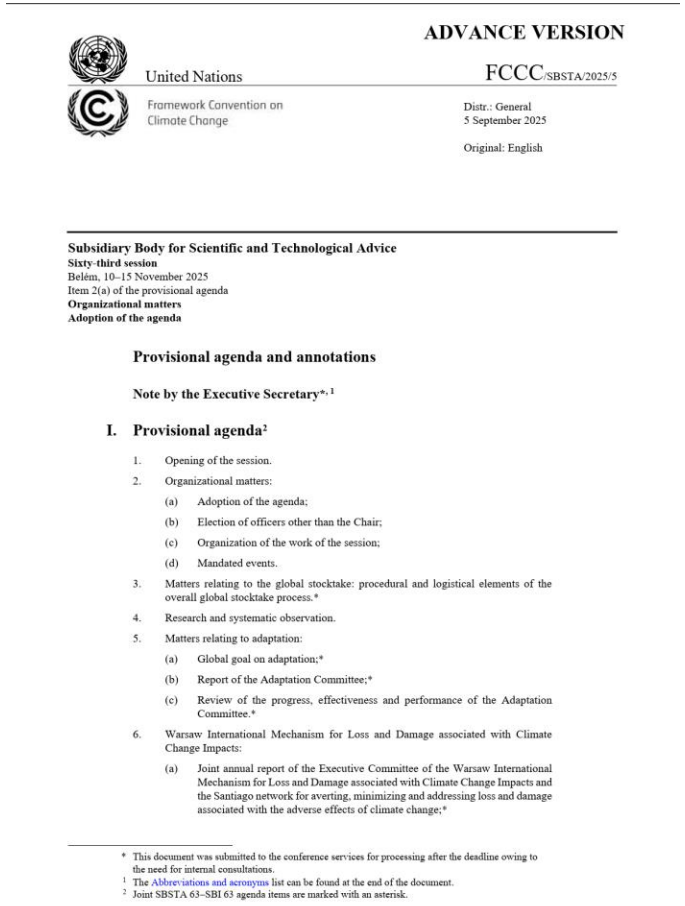
# COP 30 Presidency letters

- First letter (March 10)
- Second letter (May 8)
- Third letter (May 23)
- Fourth letter (June 20)
- Fifth letter (August 12)
- Sixth letter (August 19)
- Seventh letter (August 29)

Suggested reading: COP 30 Presidency letters


Embassador **André Corrêa do Lago**
*President of COP30*

# Overview of key agenda items for COP 30



ADVANCE VERSION

United Nations

Framework Convention on Climate Change

FCCC/SBSTA/2025/5

Distr.: General
5 September 2025

Original: English

**Subsidiary Body for Scientific and Technological Advice**
**Sixty-third session**
Belém, 10–15 November 2025
Item 2(a) of the provisional agenda
**Organizational matters**
**Adoption of the agenda**

**Provisional agenda and annotations**

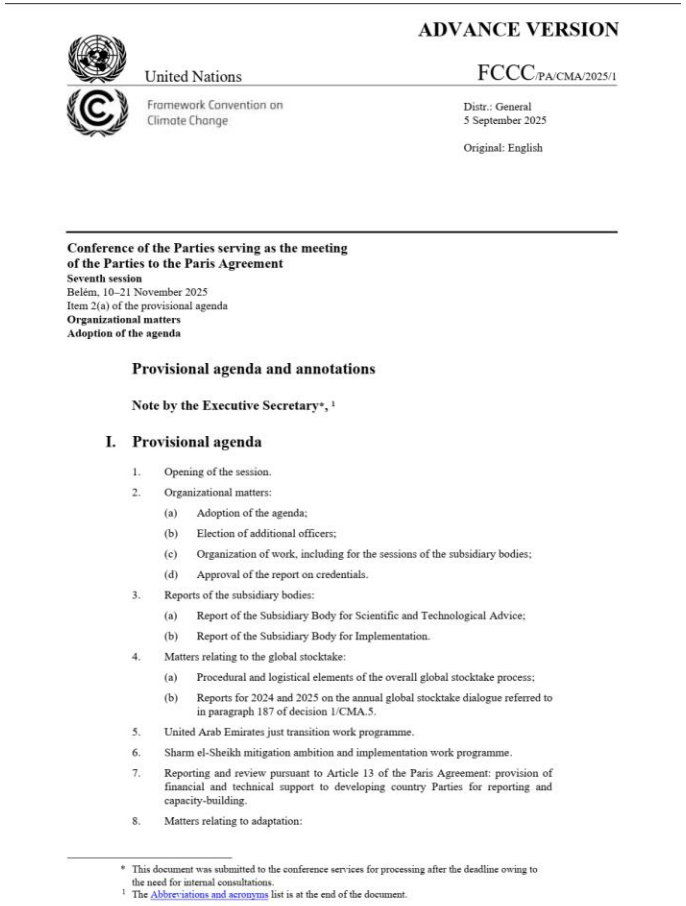
**Note by the Executive Secretary**[*, 1]

**I. Provisional agenda**[2]

1. Opening of the session.
2. Organizational matters:
   (a) Adoption of the agenda;
   (b) Election of officers other than the Chair;
   (c) Organization of the work of the session;
   (d) Mandated events.
3. Matters relating to the global stocktake: procedural and logistical elements of the overall global stocktake process.*
4. Research and systematic observation.
5. Matters relating to adaptation:
   (a) Global goal on adaptation;*
   (b) Report of the Adaptation Committee;*
   (c) Review of the progress, effectiveness and performance of the Adaptation Committee.*
6. Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts:
   (a) Joint annual report of the Executive Committee of the Warsaw International Mechanism for Loss and Damage associated with Climate Change Impacts and the Santiago network for averting, minimizing and addressing loss and damage associated with the adverse effects of climate change;*

* This document was submitted to the conference services for processing after the deadline owing to the need for internal consultations.
[1] The Abbreviations and acronyms list can be found at the end of the document.
[2] Joint SBSTA 63–SBI 63 agenda items are marked with an asterisk.

Suggested reading: SBSTA 63 Agenda



ADVANCE VERSION

United Nations

Framework Convention on Climate Change

FCCC/PA/CMA/2025/1

Distr.: General
5 September 2025

Original: English

**Conference of the Parties serving as the meeting of the Parties to the Paris Agreement**
**Seventh session**
Belém, 10–21 November 2025
Item 2(a) of the provisional agenda
**Organizational matters**
**Adoption of the agenda**

**Provisional agenda and annotations**

**Note by the Executive Secretary**[*, 1]

**I. Provisional agenda**

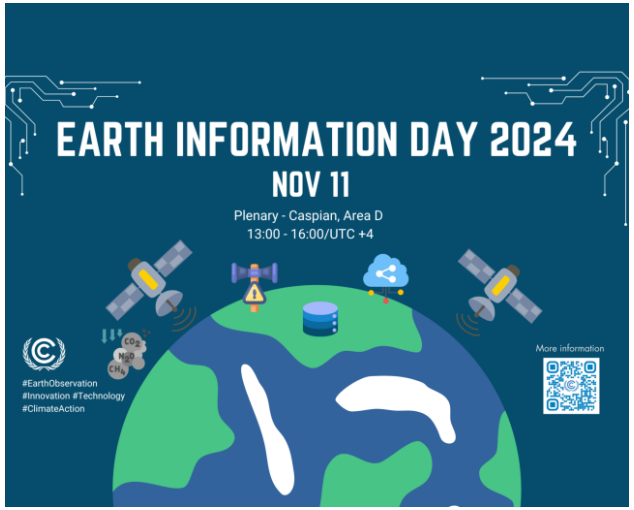
1. Opening of the session.
2. Organizational matters:
   (a) Adoption of the agenda;
   (b) Election of additional officers;
   (c) Organization of work, including for the sessions of the subsidiary bodies;
   (d) Approval of the report on credentials.
3. Reports of the subsidiary bodies:
   (a) Report of the Subsidiary Body for Scientific and Technological Advice;
   (b) Report of the Subsidiary Body for Implementation.
4. Matters relating to the global stocktake:
   (a) Procedural and logistical elements of the overall global stocktake process;
   (b) Reports for 2024 and 2025 on the annual global stocktake dialogue referred to in paragraph 187 of decision 1/CMA.5.
5. United Arab Emirates just transition work programme.
6. Sharm el-Sheikh mitigation ambition and implementation work programme.
7. Reporting and review pursuant to Article 13 of the Paris Agreement: provision of financial and technical support to developing country Parties for reporting and capacity-building.
8. Matters relating to adaptation:

* This document was submitted to the conference services for processing after the deadline owing to the need for internal consultations.
[1] The Abbreviations and acronyms list is at the end of the document.

Suggested reading: CMA 7 Agenda

# Earth Information Day

- **Earth Information Day** provides a platform for dialogue, enabling the exchange of information on the state of the global climate system and advancements in systematic observation




**Key messages, Earth Information Day 2024**

1. The year 2024 was on track to being the warmest year on record, with global mean surface temperature of 1.54+/-0.13ºC, and the last ten years, 2015-2024 have been the warmest decade on record. However, sustained observations over time indicate that warming has not reached the Paris Agreement long-term temperature goal.

2. Global GHG concentrations, based on the three key GHGs of $CO_2$, $CH_4$, and $N_2O$, reached record observed levels in 2023 at approximately 420 ppm, 1934 ppb and 336.9 ppb respectively.

3. Sea level continues to rise, at 4.77 mm per year, ocean heat content is increasing and glacier mass loss is accelerating, including as reflected by the low Antarctic and Artic Sea ice extent in 2024. Ocean heat content was the highest on record in 2023.

4. EWS coverage remains low in the global south, particularly in SIDS and LDCs, however progress has been made, including under the EW4ALL initiative to bridge the gaps, with over half of the countries having MHEWS.

5. Advancements are being made in innovation and technologies for advancing Earth observations through, for instance, AI, Machine Learning and other novel methods and there is need to enhance the deployment of fit-for-purpose and scalable solutions.

6. Sustained long-term observations and monitoring as well as historical data sharing is key to effectively informing climate policy and action. Countries are encouraged to support efforts to increase monitoring capacity and close observational gaps in under observed regions.

7. Financing, including through innovative financing models, for Earth observations is critical to filling observation gaps as well as ensuring a country's compliance with GBON. The SOFF is providing long-term open-ended support to countries to enhance Earth observation.

# Quiz

What are your expectations for COP 30?

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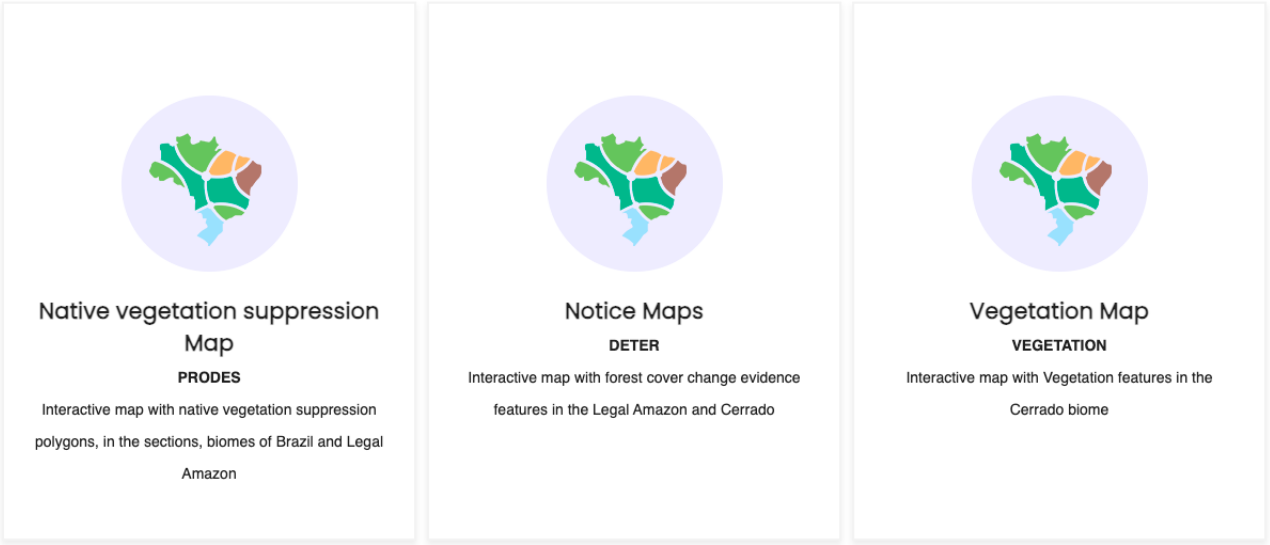
# The role of space science and technology in tracking Paris Agreement implementation

- According to paragraph 20 of Decision 18/CMA.1 (ETF MPGs):
  - Each Party shall use the 2006 IPCC Guidelines (GL) and shall use any subsequent version or refinement of the IPCC guidelines agreed upon by the CMA
  - Each Party is encouraged to use the 2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands

- Chapter 3 of Volumen 4 of the 2006 IPCC GL Parties requirer to use the following **land-use categories** for estimating and reporting GHG emissions and removals from land use and land-use conversions:
  - Forest land
  - Cropland
  - Grassland
  - Wetlands
  - Settlements
  - Other land

# The role of space science and technology in tracking Paris Agreement implementation – Brazil case study

- Land-use and land-cover conversion matrices are obtained from cross-referencing the maps of all Brazilian biomes for the years of 1994, 2002, 2005 (for the Amazon only), 2010 and 2016
- Maps are based on images from the Landsat and Resourcesat-1 satellites at a scale of 1:250,000 and a minimum area of 6 ha
- Deforestation rates reported by the National Institute for Space Research (INPE) for the Amazon and Cerrado biomes are used for the annualization of gross $CO_2$ emissions between the mapped years



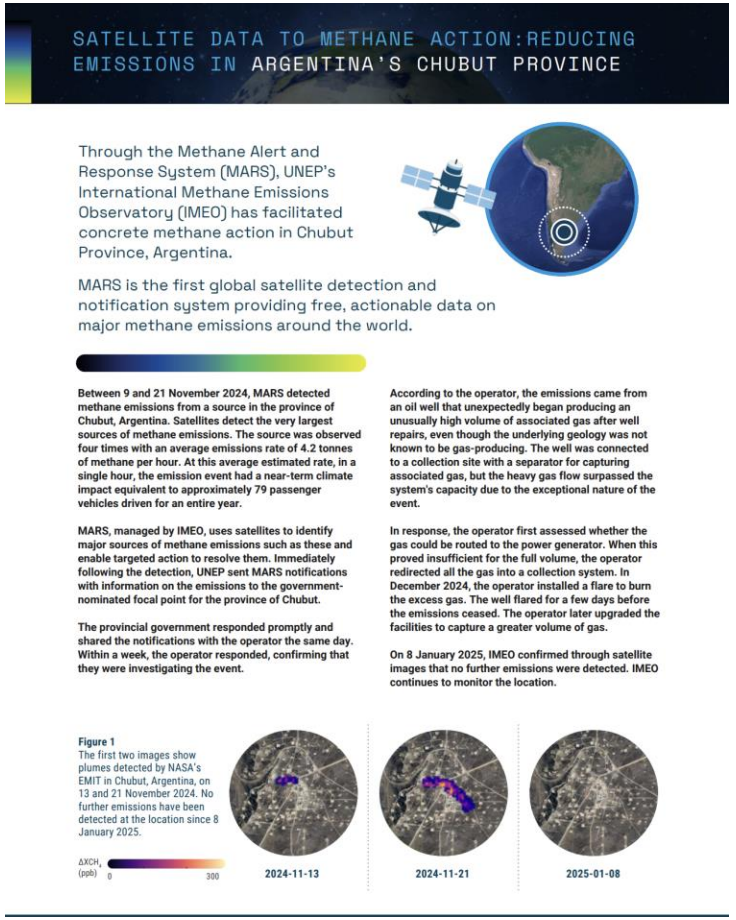
# The role of space science and technology in tracking Paris Agreement implementation (2)

- According to paragraph 65 Decision 18/CMA.1 (ETF MPGs):
  - Each Party shall identify the **indicator(s)** that it has selected to track progress towards the implementation and achievement of its NDC under Article 4
  - Indicators shall be relevant to a Party's NDC under Article 4 and may be either qualitative or quantitative

- Space science and technology may be used to collect the necessary annual information/data of the indicator(s) identified
  - Areas of forest (hectares)
  - Soil carbon
  - Other examples?

# IMEO's Methane Alert and Response System (MARS)

- UN Environment Programme launched MARS at COP27 in 2022
- First public global satellite detection and notification system providing actionable data on very large methane emissions around the world
- Cases studies



SATELLITE DATA TO METHANE ACTION: REDUCING EMISSIONS IN ARGENTINA'S CHUBUT PROVINCE

Through the Methane Alert and Response System (MARS), UNEP's International Methane Emissions Observatory (IMEO) has facilitated concrete methane action in Chubut Province, Argentina.

MARS is the first global satellite detection and notification system providing free, actionable data on major methane emissions around the world.

Between 9 and 21 November 2024, MARS detected methane emissions from a source in the province of Chubut, Argentina. Satellites detect the very largest sources of methane emissions. The source was observed four times with an average emissions rate of 4.2 tonnes of methane per hour. At this average estimated rate, in a single hour, the emission event had a near-term climate impact equivalent to approximately 79 passenger vehicles driven for an entire year.

MARS, managed by IMEO, uses satellites to identify major sources of methane emissions such as these and enable targeted action to resolve them. Immediately following the detection, UNEP sent MARS notifications with information on the emissions to the government-nominated focal point for the province of Chubut.

The provincial government responded promptly and shared the notifications with the operator the same day. Within a week, the operator responded, confirming that they were investigating the event.

According to the operator, the emissions came from an oil well that unexpectedly began producing an unusually high volume of associated gas after well repairs, even though the underlying geology was not known to be gas-producing. The well was connected to a collection site with a separator for capturing associated gas, but the heavy gas flow surpassed the system's capacity due to the exceptional nature of the event.

In response, the operator first assessed whether the gas could be routed to the power generator. When this proved insufficient for the full volume, the operator redirected all the gas into a collection system. In December 2024, the operator installed a flare to burn the excess gas. The well flared for a few days before the emissions ceased. The operator later upgraded the facilities to capture a greater volume of gas.

On 8 January 2025, IMEO confirmed through satellite images that no further emissions were detected. IMEO continues to monitor the location.

Figure 1
The first two images show plumes detected by NASA's EMIT in Chubut, Argentina, on 13 and 21 November 2024. No further emissions have been detected at the location since 8 January 2025.

ΔXCH4 (ppb) 0 300

2024-11-13 2024-11-21 2025-01-08

# G20 Space Economy

- South Africa hosted the G20 in 2025
- South African National Space Agency will host a series of meetings for the Space20 engagement group
  - Focus on “leveraging space technology as a driver of inclusive and sustainable development within the G20 countries”
- G20 Heads of Space Agencies will prioritize the following:
  - Policy Alignment for Development Goals
  - Public-Private Collaboration and Knowledge Transfer
  - Capacity Building and Inclusivity
  - Sustainable Space Operations


To know more visit: https://selm6.org.za/

# Q&A

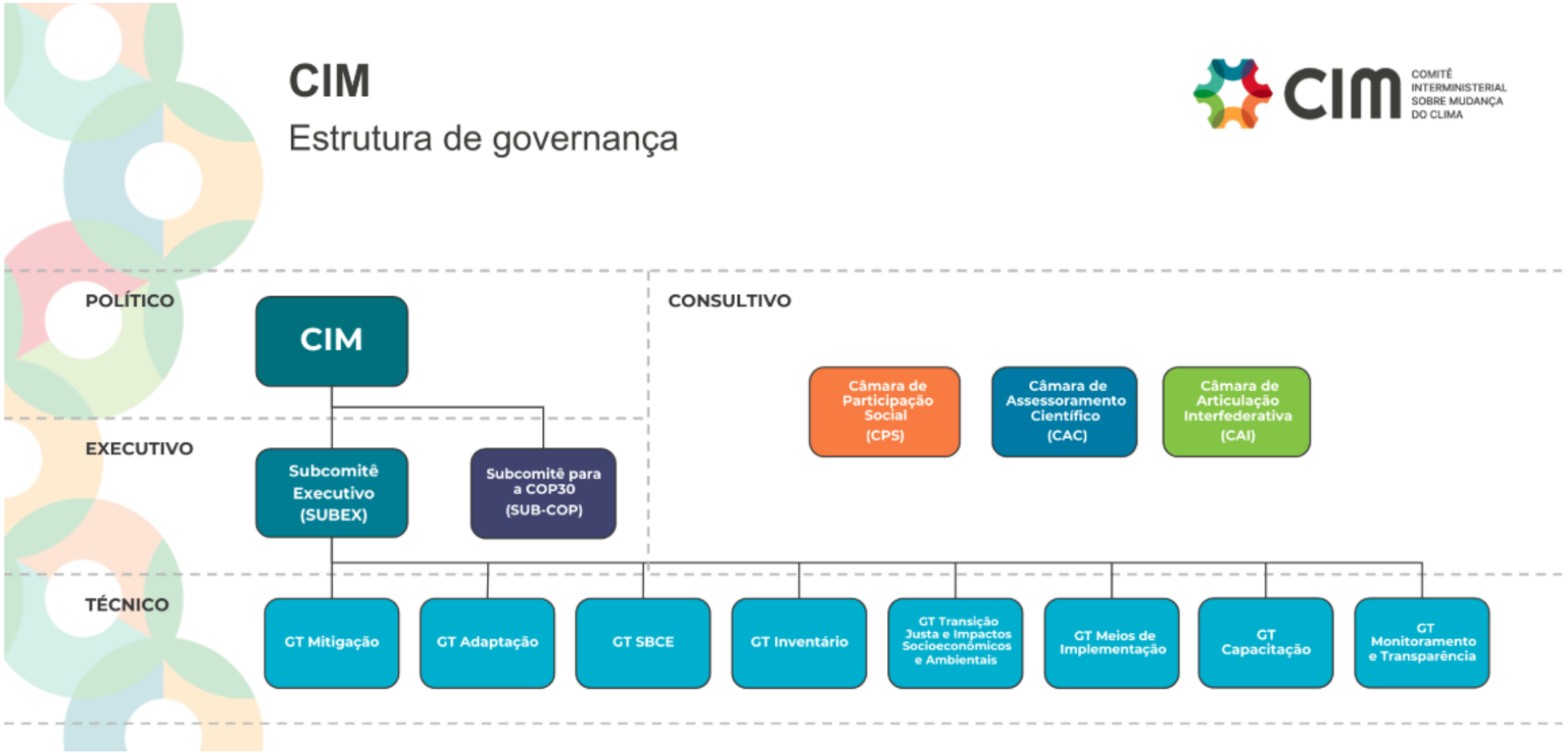
# Module 3

## Brazil's Climate Commitments & Challenges

# Learning objectives

- At the end of this module participants will be able to understand Brazil's:
  - Climate change governance
  - Mitigation targets under the Paris Agreement
  - Major climate change vulnerabilities
  - Strengths, weaknesses and opportunities for leadership in climate change negotiations

# Institutional players in Brazil's climate change governance




Source: Brazil CIM

# Quiz

Has AEB been involved direct/indirect involved in the Brazilian climate change governance?

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# Scientific Advisory Chamber (CAC)

- Main role is to ensure climate policies formulation and implementation are guided by the best available scientific evidence and knowledge
- Responsibilities:
  - Propose recommendations for the development, improvement, and implementation of climate change policies and instruments
  - Provide technical assistance with data, studies, and scientific information to support planning and decision-making
  - Promote public awareness and scientific dissemination on the causes, effects, and solutions to the climate crisis
- Formed by experts from the scientific community with a two-year mandate, renewable for another two years

| Nome | Instituição | Tit/Sup |
|---|---|---|
| MOACYR CUNHA DE ARAUJO FILHO | UFPE | Coordenador |
| JEAN PIERRE HENRY BALBAUD OMETTO | UFPE | Coord. Subst. |
| JEAN PAUL METZGER | USP | Titular |
| MARIANA MONCASSIM VALE | UFRJ | Suplente |
| MARIA FERNANDA LEMOS | PUC-RJ | Titular |
| TATIANA GADDA | UFPR | Suplente |
| CARLOS AFONSO NOBRE | USP | Titular |
| GILVAN SAMPAIO | INPE | Suplente |
| PAULO EDUARDO ARTAXO NETTO | USP | Titular |
| SAULO RODRIGUES FILHO | UnB/CDS | Suplente |
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| EDSON PAULO DOMINGUES | UFMG | Suplente |
| REGINA RODRIGUES | UFSC | Titular |
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| ANNELISE VENDRAMINI | FGV | Suplente |
| LETICIA COTRIM DA CUNHA | UERJ | Titular |
| MARGARETH DA SILVA COPERTINO | FURG | Suplente |
| VANDERLECIA O. SANTOS (VANDA WITOTO) | INPA | Titular |
| PATRICIA PINHO | IPAM | Suplente |
| PAULO HILÁRIO NASCIMENTO SALDIVA | USP | Titular |
| MAURICIO BARRETO | Fiocruz BA | Suplente |
| ANE AUXILIADORA COSTA ALENCAR | IPAM | Titular |
| IMA CÉLIA GUIMARÃES VIEIRA | MPEG | Suplente |
| MERCEDES MARIA DA CUNHA BUSTAMANTE | UnB | Titular |
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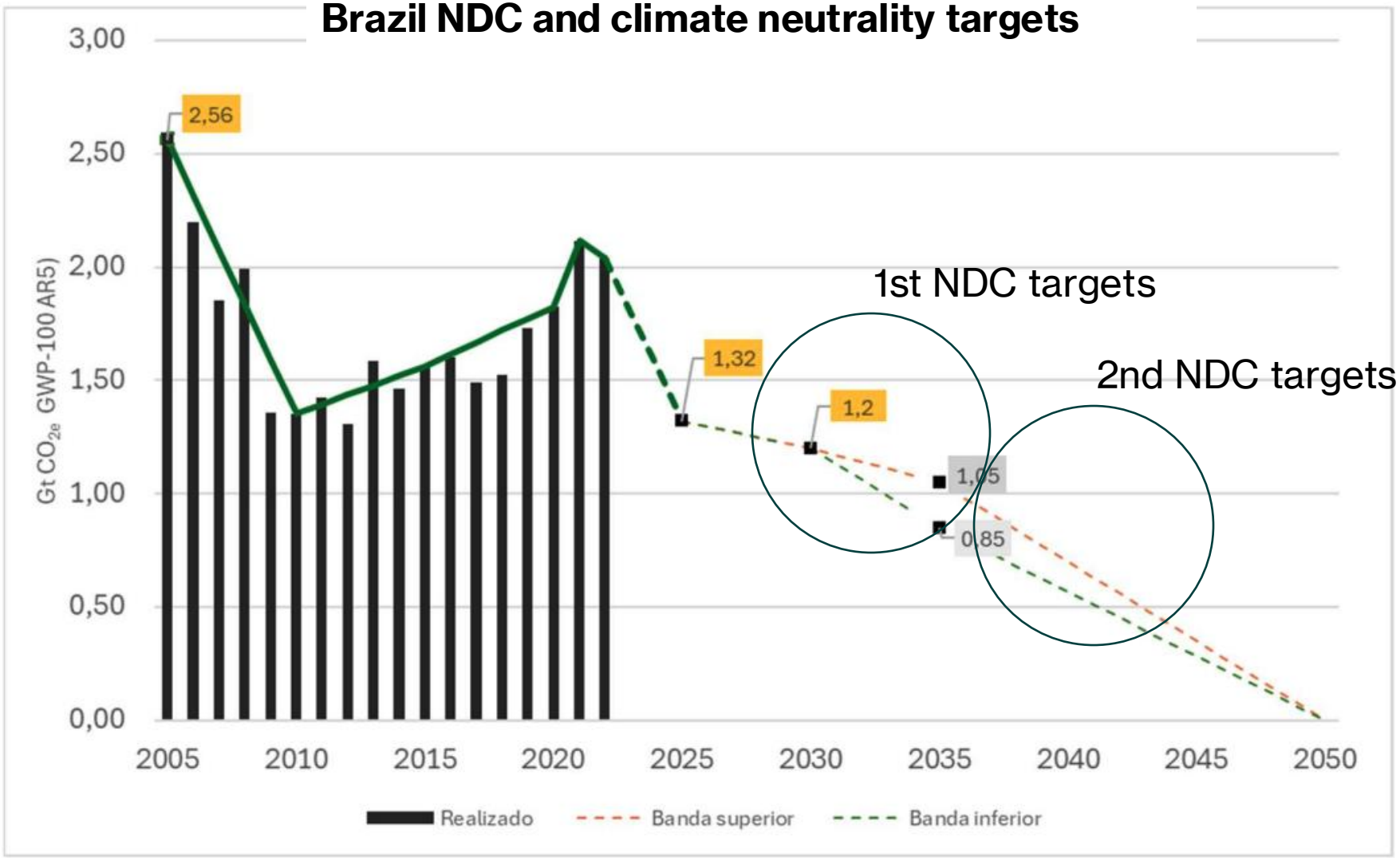
| ANDRÉ FROSSARD PEREIRA DE LUCENA | UFRJ | Titular |
| ADALBERTO LUIS VAL | INPA | Suplente |
| JAVIER TOMASELLA | INPE | Titular |
| VERA LUCIA ANTUNES DE LIMA | UFCG | Suplente |

# Brazil's NDCs and net-zero targets




Source: Brazil National Mitigation Strategy

# Brazil's NDCs and net-zero target

## Mitigação: planos setoriais

**Escopo mínimo:**

I. Contexto setorial de mitigação
II. Objetivos e prioridades setoriais de mitigação
III. Metas setoriais de mitigação para 2030 e metas indicativas para 2035
IV. Ações, programas e medidas específicas para o alcance das metas, incluindo as respectivas metas, indicadores, custos, fontes de financiamento e outros meios de implementação
V. Propostas de revisão do arcabouço normativo setorial visando alinhamento aos objetivos, prioridades e metas setoriais de mitigação
VI. Governança para a gestão, monitoramento e avaliação do plano setorial, incluindo mecanismos de participação e transparência

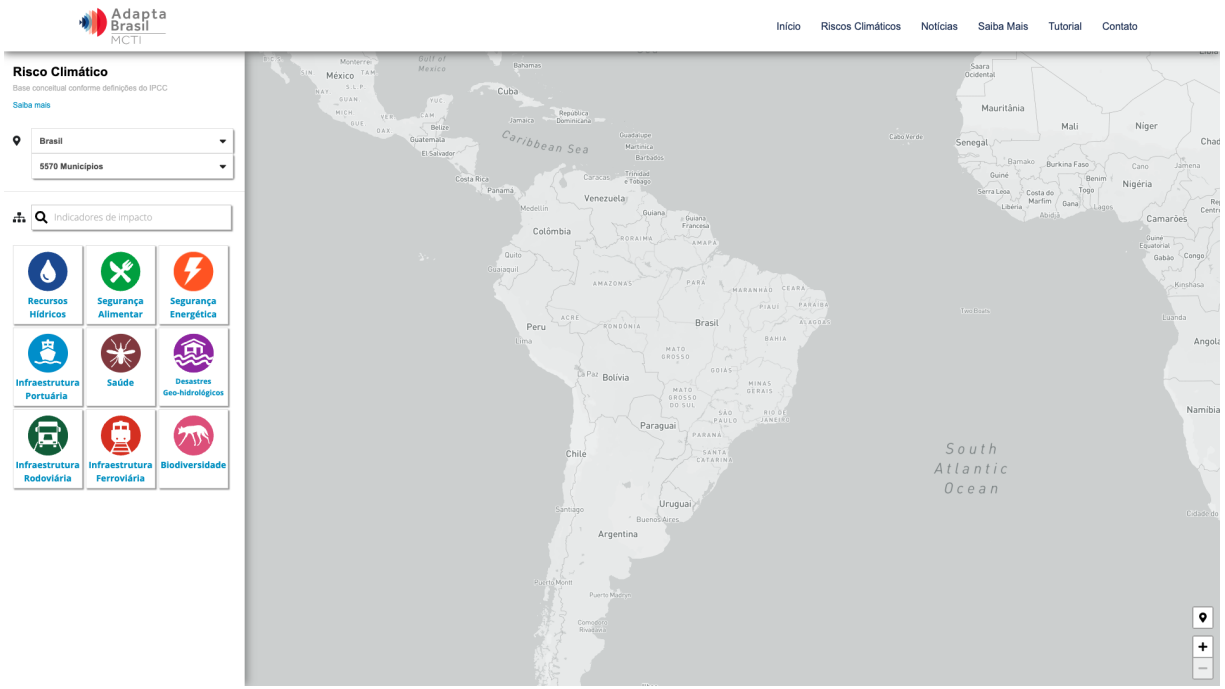
**Planos Setoriais**:
1. Agricultura e Pecuária
2. Conservação da Natureza
3. Cidades, incluindo Mobilidade Urbana
4. Energia, incluindo Mineração
5. Indústria
6. Resíduos Sólidos e Efluentes Domésticos
7. Transportes

Os **Planos de Ação de Mitigação** trarão:
I. Ações Impactantes
II. Ações Estruturantes
III. Metas 2024-2027 / 2028-2031 / 2032-2035

Source: Brazil National Mitigation Strategy

# Brazil's climate change vulnerabilities

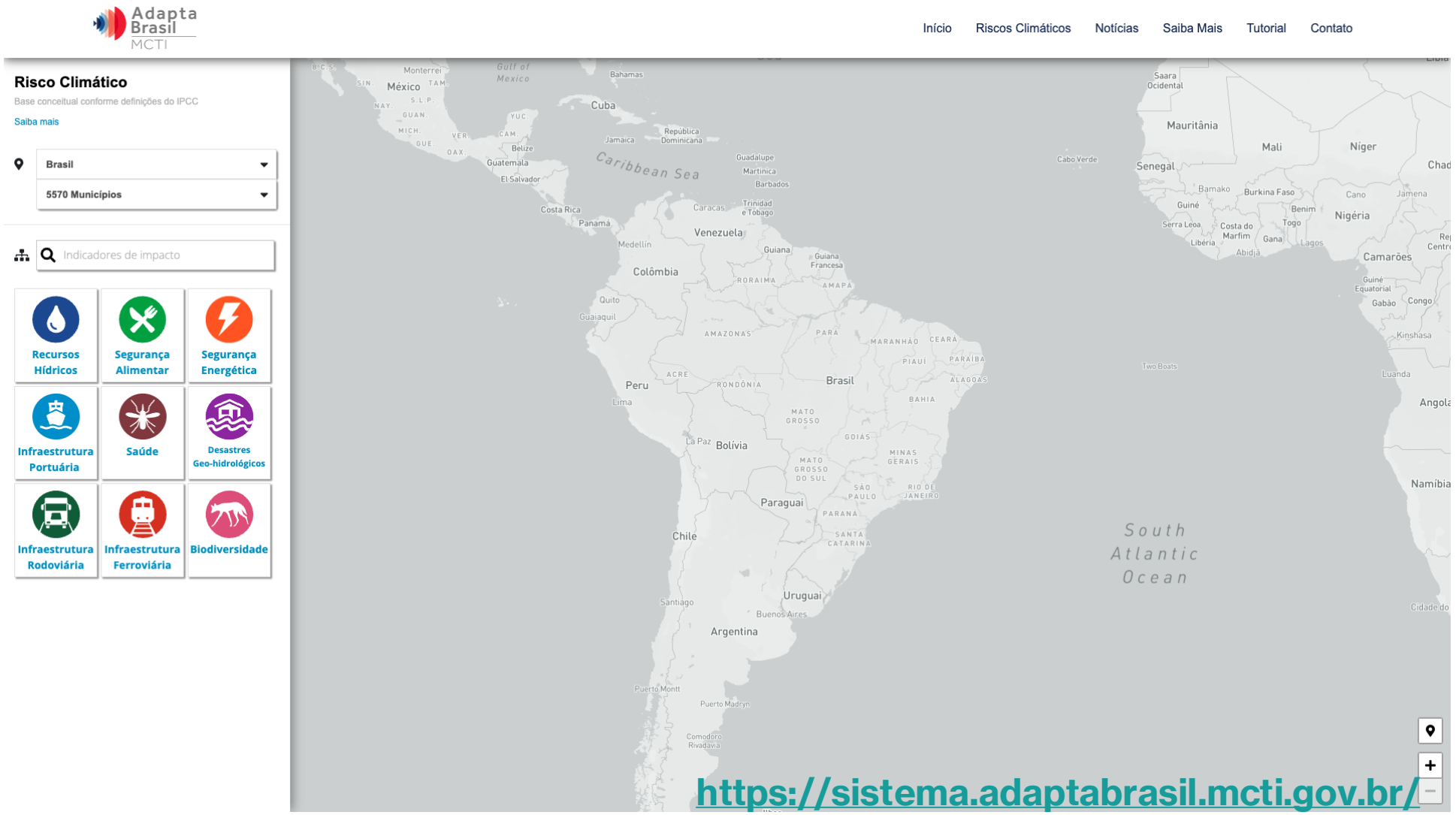
- AdaptaBrasil MCTI (Climate Change Impact Information and Analysis System) was established by the Ministry of Science, Technology and Innovation, through Ordinance No. 3,896, of October 16, 2020
- Aims to consolidate, integrate and disseminate information that enables the analyses of climate change impacts (observed and projected) in the national territory, providing subsidies to the competent authorities for adaptation actions
- AdaptaBrasil MCTI is developed through cooperation between the National Institute for Space Research (INPE) and the National Research and Education Network (RNP)



# Brazil’s climate change vulnerabilities

- At **AdaptaBrasil**, climate risk combines three factors:
    1. **Climate threat:** the possibility of extreme events, such as heavy rains, floods, or droughts, capable of causing economic losses, environmental impacts, or even putting lives at risk;
    2. **Exposure:** the existence of elements to which the climate threat can cause damage, whether people, species, ecosystems, or infrastructure; and
    3. **Vulnerability:** indicates an area's predisposition to be affected by climate change impacts. It is composed of:
    - Sensitivity: the extent to which the area can be immediately affected by the climate threat; and
    - Adaptive Capacity: the ability to prepare for, react to, and adapt to the climate threat, either by preventing risks or reducing impacts after they occur.
- The **Climate Risk Index** is calculated for each sector and municipality in Brazil

# Brazil's climate change vulnerabilities



# Brazil's overall strengths and weaknesses in climate change negotiations

## STRENGTHS

- Long tradition on climate change diplomacy, starting at Rio 92
  - Most of the time looking for "landing zones"
- Well prepared delegations
- Wide representation of civil society, private sector and academia in the delegations

## WEAKNESSES

- Recent bi-polarism (not radical as in other countries)
- Potential criticism on "walking the talking" (e.g., oil exploration at the Equatorian margin)
  - Associated with level of urgency of other socio-economic demands

# Brazil's overall opportunities for leadership in climate change negotiation

- In the past Brazil played a key role on reaching agreements:
  - Kyoto Procotol and the Clean Development Mechanism (CDM)
  - Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action (that lead to the Paris Agreement)
  - Modalities, procedures and guidelines (MPGs) for the Enhanced Transparency Framework (ETF) of the Paris Agreement
- As the first time as COP Presidency, Brazil will need "strong political leverage" to overcome the challenges impose by the current geo-political and economic momentum

# Quiz

Do you foresee COP 30 as “the moment we turn the game around” (“Brazil believes we can win by “virada”)?

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# Q&A

# Additional Resources

## Free Online UN Climate and Sustainability Courses

- The Paris Agreement on Climate Change as a Development Agenda
- Integration of the SDGs into National Planning
- Green Marketing Challenge
- Impact Measurement & Management for the SDGs*
- Applying Integrated Policy Approaches to Accelerate the 2030 Agenda
- Digital4Sustainability Learning Path
- What is the Net-Zero Standard
- Setting Science-Based Targets to Achieve Net-Zero*
- Mastering International Climate Negotiations: All You Need to Know
- Please visit our webpage for more info: Masterclass

*Available in Portuguese

# Additional Resources

## Technical Courses

- ESA Climate Training and Education
- NASA Applied Remote Sensing Training Program
- ECMWF Learning




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