Workshop on energy transition in the fisheries sector within the ATLAFCO Region

Climate change international regime: challenges and horizons

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Outline

I. Introduction & Foundations
- Historical Context
- The 1972 Stockholm Conference

II. Institutional Frameworks
- IPCC (1988)
- Montreal Protocol
- UNFCCC

III. The Evolution of Climate Agreements
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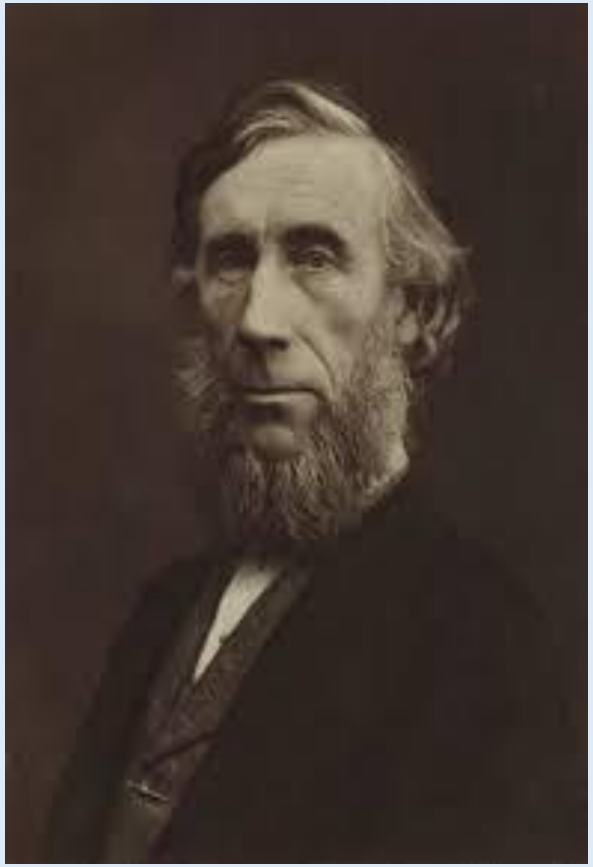
- The Transition Era (2005–2014):
- The Paris Era (2015–2020):.
- The Implementation & Finance Era (2021–2026):

IV. Current Challenges & Headwinds
- Geopolitical/Structural risks
- The Transparency Barrier

V. Future Horizons: Path to 2030

Some central figures in climate science

Scientist	Primary Method	Major Contribution
John Tyndall	Laboratory Experiment	identified CO_2 and water vapor as heat-trapping gases.
Svante Arrhenius	Mathematical Modeling	quantified the link between CO_2 levels and global temperature rise.



John Tyndall
Irish physicist, 1820 - 1893

Svante Arrhenius
Swedish chemist , 1859-1927

1972 United Nations Conference on the Human Environment

The **1972 United Nations Conference on the Human Environment**, held in Stockholm from June 5–16, was the first major global summit to focus specifically on environmental protection. It marked a historic shift in international relations, elevating environmental issues from localized concerns to a central pillar of global diplomacy.

Participating countries	113 Nations (the Soviet bloc boycotted the event due to the exclusion of East Germany).
Core concept	Bridged the gap between **environmental protection** and **economic development**, particularly for developing nations.
Outcome	Created the **United Nations Environment Programme** (UNEP), headquartered in Nairobi, Kenya.

First World Climate Conference (Geneva, 1979)

Organizers	Led by the World Meteorological Organization (WMO) in collaboration with UNEP, FAO, UNESCO, and WHO.
Nature of Event	A Scientific Conference (unlike the political COPs we see today), attended by 350 specialists from 50 countries.
Core Conclusion	It issued a formal declaration warning that "continued expansion of man's activities" could lead to regional and global climate changes.
Primary Outcome	Established the World Climate Programme (WCP), which aimed to improve climate data and research globally.
Political Impact	Created the momentum that eventually led to the formation of the IPCC (1988) and the UNFCCC (1992).

First World Climate Conference 1979

1972 UN Conference on the Human Environment

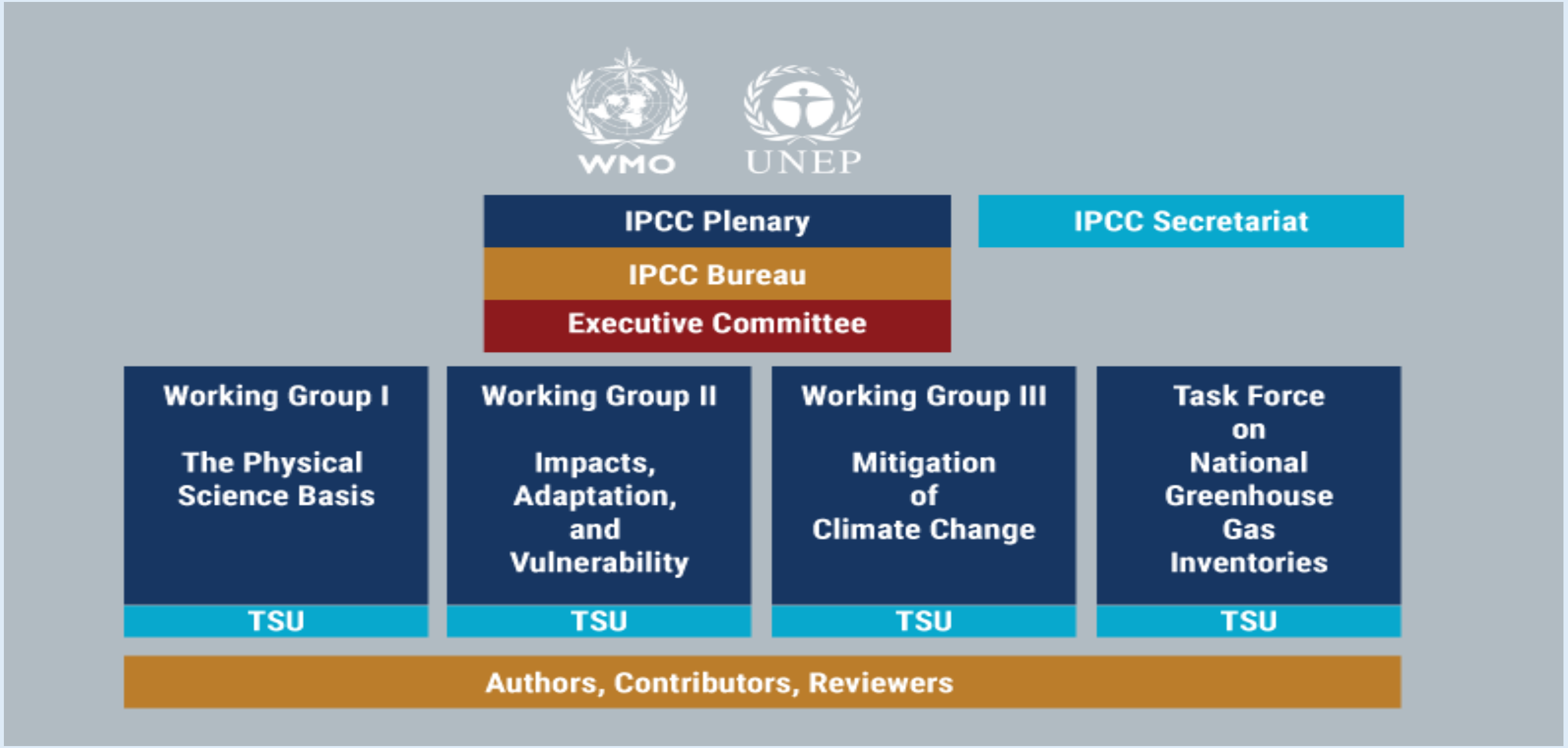
The Intergovernmental Panel on Climate Change (IPCC)

- The Intergovernmental Panel on Climate Change (IPCC) is a global independent body established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). Its primary mission is to provide governments with rigorous scientific assessments to guide climate policy and international negotiations. **The first assessment report of the IPCC was released in 1990, the second report in 1995, the third, the fourth, the fifth and the sixth respectively in 2001, 2007 and 2014 and 2023.**

- **Main objectives**:
  - **Scientific Assessment:** Evaluates the drivers, impacts, and future risks of climate change.
  - **Policy Support:** Proposes adaptation and mitigation strategies for policymakers at all levels.
  - **Consensus Building:** Identifies areas of strong scientific agreement and highlights where further research is required.

- **Key features:**
  - **Non-Research Entity:** The IPCC does not conduct its own original research. Instead, it reviews and synthesizes thousands of existing scientific papers published annually.
  - **Volunteer Expertise: hundreds of scientific and experts** volunteer their time to author reports and ensure comprehensive summaries of climate data.
  - **Transparency:** The assessment process involves open reviews by both experts and governments (**195**) to maintain objectivity and reflect a diverse range of perspectives.

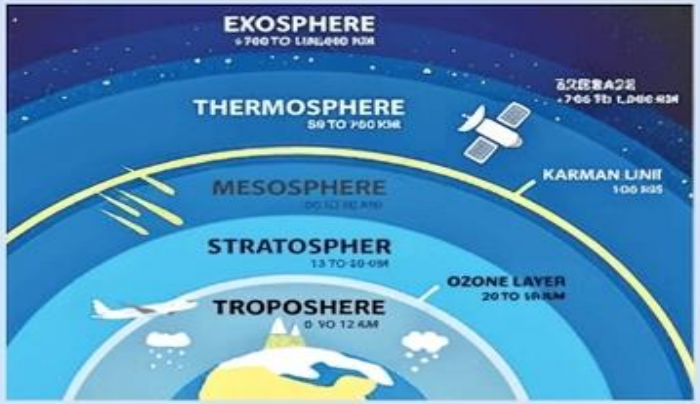
IPCC structure



MONTREAL PROTOCOL

"International agreements aimed at protecting the ozone layer by regulating the use of ozone-depleting substances. Ozone-depleting substances (ODS) include CFCs, HCFCs, Halon, Carbon Tetrachloride, 111-TCA, Methyl Bromide, Bromochloromethane."

OZONE LAYER:



Ozone (O_3) naturally exists in the Earth's stratospheric layer.

Serving as a protective layer against harmful ultraviolet (UV) rays from the sun.

The increase in UV radiation due to the depletion of the ozone layer can elevate the risk of skin cancer and cataracts, weaken the human immune system, reduce agricultural productivity, and have negative effects on aquatic organisms and sensitive ecosystems.

OZONE-DEPLETING SUBSTANCES CAN BE FOUND IN THESE PRODUCTS:


Refrigerator


Fire extinguisher


Air-conditioning


Solvent


Foam Insulation


Aerosol

General Chronology of the Montreal Protocol

- **1985** — Vienna Convention signed.
- **1987** — Montreal Protocol signed.
- **1989** — Montreal Protocol entered into force globally.
- **1990** — London Amendment. Expansion of the list of(HCFCs…)
- **1992** — Copenhagen Amendment. methyl bromide pesticide
- **1993** — Copenhagen Amendment signed.
- **1997** — Montreal Amendment. licensing system
- **1999** — Beijing Amendment
- **2001** — London Amendment signed: Multilateral Fund (MLF) financial assistance approved.
- **2010** — Global phase-out of CFC production and consumption.
- **2010** — Global use of CFCs completely phased out. (Crossed-out 'CFC' logo remains)
- **2013** — Gradual global phase-out of HCFCs begins.
- **2016** — The Kigali Amendment signed. Phase out of HFCs
- **2020** — The Kigali Amendment enters into force globally.
- **2020** — Entry into Force.
- **2024** — Gradual global reduction of HFC usage is in effect.

United Nations Framework Convention on Climate Change (UNFCCC)

The **United Nations Framework Convention on Climate Change (UNFCCC)** is the comprehensive international convention on climate change.

It was adopted in 1992 at the United Nations Conference on Environment and Development (UNCED), also known as the "Earth Summit," held in Rio de Janeiro, Brazil, gathering more than 170 countries. It entered into force on March 21, 1994. The number of parties is **198**.

It was aimed to stabilize the level of greenhouse gases to a level that did not cause dangerous anthropogenic interference with the climate system (The instrument did not explicit the level of danger).
The agreement document consists of 26 articles and two annexes.

Salient principles of the UNFCCC

- **Common but Differentiated Responsibilities and Respective Capabilities** (**CBDR-RC**): Acknowledging behalf of the historical emissions of the developed nations and the development demands of poorer countries.
- **Precautionary Principle:** The idea of taking such preventative environmental actions even though there is scientific uncertainty.
- **Sustainable Development:** The relationships between climate action, economic growth, and poverty alleviation.

Category of parties	Belonging	Main obligations
Annex I (43)	Industrialized (OECD) nations + Economies in Transition (e.g., Russia, Eastern Europe).	Committed to leading emission reductions based on 1990 levels.
Annex II (24)	A subset of Annex I; strictly the wealthy OECD members.	Must provide financial resources and technology transfer to developing nations.
Non-Annex I	Developing countries (e.g., Morocco, China, India, Brazil).	Focusing on sustainable growth; entitled to support for climate adaptation.

Annex I parties

Annex I parties of the Kyoto Protocol comprise **43* industrialized nations and economies in transition (EIT)** aimed at reducing greenhouse gas emissions. These include original OECD members from 1992, the European Union, and several Central/Eastern European nations.

List of Annex I Parties (Including EU):

A-C: Australia, Austria, Belarus, Belgium, Bulgaria, Canada**, Croatia, Cyprus, Czechia.
D-I: Denmark, Estonia, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy.
J-M: Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco.
N-S: Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland.
T-U: Türkiye, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America**.

* There is an updated figure, given that there were 37 nations (adoption of the Kyoto protocol)
** While Canada withdrew and the U.S. did not ratify, they remained listed in Annex I to the Convention.

Key Milestones in Climate Change Negotiations (1979-2025)

The Kyoto Era (1995–2004)

Focus: Establishing the rules of the game and binding targets for industrialized nations.

COP	Year	Location	Key Outcomes
COP 1	1995	Berlin, Germany	**The Parties recognized that in light of further scientific evidence (The IPCC's Second Assessment Report), The existing commitments under the UCFCCC were inadequate.** The Berlin mandate was a political signal for strengthening the commitments of developed countries in Annex I, with no obligations for the non Annex I countries.
COP 2	1996	Geneva, Switzerland	Accepted the IPCC's Second Assessment Report, confirming a "discernible human influence" on the global climate. **There was a pivot from vague promises toward legally binding commitments**, though there was a preference for a flexible approach (USA).
COP 3	1997	Kyoto, Japan	**The Kyoto Protocol:** The first legally binding treaty, mandating 37 industrialized nations to reduce emissions by 5% below 1990 levels in the commitment period 2008-2012
COP 4	1998	Buenos Aires, Argentina	Due to the unsettlement of some issues such as operational rules, emissions trading and the use of sinks, a 2-year Plan of action was set to be finalized by 2000.

The Kyoto Era (1995–2004)

COP	Year	Location	Key Outcomes
COP 6	2000	The Hague, Netherlands	Negotiations on the Kyoto Protocol's operational details were suspended without agreement due to disputes over carbon sinks and compliance.
COP 6-2	2001	Bonn, Germany	The US, the world's largest emitter of CO2, announced that it will not ratify the Kyoto Protocol on the basis that it would be detrimental to the country's economy and that there were no binding commitments for developing countries.
COP 7	2001	Marrakech, Morocco	The adoption of **the Marrakech Accords established clear rules for emissions reporting, accounting, and compliance.** The Accords also consolidated matters related to funding and capacity building for developing countries
COP 10	2004	Buenos Aires, Argentina	Deposit of the ratification of the Russian federation

The Kyoto protocol in a nutshell

Adoption	Adopted: Dec 11, 1997 (COP 3). Entered into Force: Feb 16, 2005 (The ninetieth day after : > **55% of emission emitters in 1990 of Annex I ratified and 55 countries ratified)**
Parties	192 Parties (Note: US never ratified; Canada withdrew in 2011).
Core Target	Reduce 6 GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) by an average of 5% below 1990 levels (**2008-2012**). NF_3 added in the Doha Amendment.
Commitments: Annex B Parties	Developed countries and "Economies in Transition" (EITs) listed in Annex B accepted legally binding Quantified Emission Limitation and Reduction Objectives (QUELROs). They had to meet specific numerical targets or face penalties for non-compliance.
Commitments: Non-Annex I Parties	Non-Binding: Primarily developing nations. They had no mandatory emission caps but were required to report on their emissions and implement national mitigation programs. They could host projects via the Clean Development Mechanism (CDM) to earn financial/tech support.
Market Mechanisms	❑ International Emissions Trading: A "carbon credit" market. ❑ Clean Development Mechanism: Projects in developing nations (Non-AnnexI) ❑ Joint Implementation (JI): Projects between Annex B nations.

The Parties of Annex B

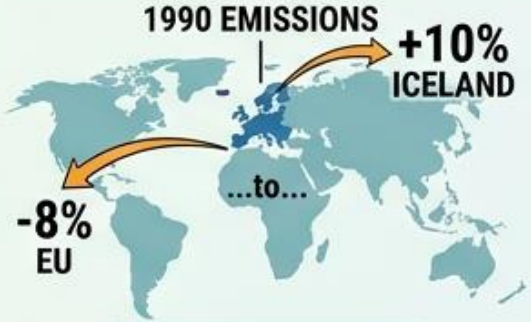
Category	Countries
Industrialized Members	Australia, Austria, Belgium, Canada, Denmark, European Union, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.
Economies in Transition (EITs)	Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovak Republic, Slovenia, Ukraine.

SUMMARY OF KYOTO PROTOCOL: ANNEX B PARTIES' TARGETS & IMPLEMENTATION

1. ANNEX B PARTIES' TARGETS

DIFFERENTIATED TARGETS

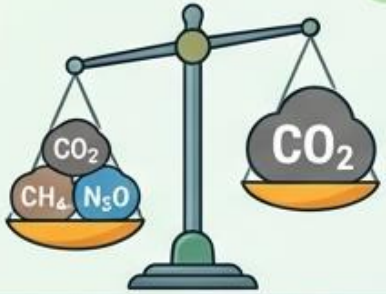
BASED ON PARTICULAR CIRCUMSTANCES (e.g., TECH ACCESS)



TARGET RANGE: ASSIGNED AMOUNTS

CHANGES IN LAND USE & FORESTRY FOR REDUCTIONS, MUST BE REAL & PERMANENT

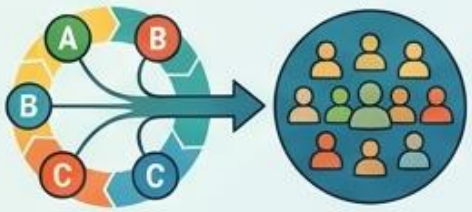
CARBON SINKS



GWP: GLOBAL WARMING POTENTIAL

NON-CO_2 GASES CONVERTED TO CO_2 EQUIVALENT (CO_2e) USING IPCC GWP

EXAMPLE LAND OF 4, GREOMINING TARGETS



JOINT FULFILLMENT

COUNTRIES CAN AGGREGATE EMISSIONS TO MEET COMBINED TARGET (ARTICLE 4)

2. IMPLEMENTATION OBLIGATIONS

2005 DEMONSTRABLE PROGRESS

INDICATIVE MEASURES TO ACHIEVE TARGETS

1

ENERGY EFFICIENCY

PROMOTING MORE EFFICIENT ENERGY USE

2

RENEWABLE ENERGY

DEVELOPING & USING RENEWABLE SOURCES

3

SUBSIDY REFORM

PHASING OUT SUBSIDIES CONTRAVENING CONVENTION OBJECTIVES

4

SINKS PROTECTION

PROTECTING & ENHANCING CO_2 ABSORPTION

5

SUSTAINABLE AGRICULTURE

PROMOTING ENVIRONMENTALLY FRIENDLY FARMING PRACTICES

KYOTO PROTOCOL: THE 3 FLEXIBLE MECHANISMS

INTERNATIONAL EMISSIONS TRADING (IET)

CLEAN DEVELOPMENT MECHANISM (CDM)

JOINT IMPLEMENTATION (JI)

SUMMARY TABLE OF FLEXIBLE MECHANISMS

MECHANISM	TYPE	LOCATION OF PROJECT
Emissions Trading	Trade-based	International Market
Clean Development (CDM)	Project-based	Developing Countries
Joint Implementation (JI)	Project-based	Other Developed Countries

Joint implementation (article 6)

Eligibility Requirements:

1- **Have an assigned amount that has been calculated and recorded.**
2- **Have a national registry in place.**
3- **Be an Annex I party and a party to the 1997 Kyoto Protocol.**
4- **Have in place a national system for estimating greenhouse gas emissions.**
5- **Have submitted annual greenhouse gas inventory reports.**
6- **Have submitted the necessary supplementary information on its assigned amount.**

JI Project Tracks (The "Twin Track"): The specific "Track 1" and "Track 2" procedures were further defined during the Montreal Climate Change Conference (COP/MOP 1) in **2005 as part of the Marrakech Accords**.

Feature	Track 1	Track 2
Condition	The 'host' party meets all six eligibility requirements.	The host party only meets the first three eligibility requirements.
Certification	The host country can certify the ERUs (Emission Reduction Units) itself.	Procedures and certification are determined by the Supervisory Committee (SC).
External Oversight	No recourse to the Supervisory Committee is required.	Verification is strictly overseen by the Supervisory Committee.

- **Example: Germany-Russia , in 2000 (gaz leakage in Russia)**

Clean Development Mechanism (CDM)

	Legal Basis	Established under Article 12 of the Kyoto Protocol.
	Core Objective	Allows Annex I (industrialized) parties to fund emission-reduction projects in non-Annex I (developing) nations to earn Certified Emission Reductions (CERs).
Eligibility	**Host Country**	Must have ratified the Kyoto Protocol.
	Governance	Must establish a Designated National Authority (DNA).
	Approval	DNA must confirm the project is voluntary and supports sustainable development.
Project Cycle	**1. Preparation**	Participants create a Project Design Document (PDD) using official UNFCCC templates and methodologies.
	2. Validation	An independent Designated Operational Entity (DOE) validates the PDD for technical and rule compliance.
	3. Registration	The CDM Executive Board (EB) formally accepts the validated project, allowing it to begin official operation.
	4. Monitoring	Participants monitor actual emissions according to the plan; a DOE then verifies and certifies the reductions achieved.
Final Result	**Issuance**	The CDM Registry issues CERs (**1 CER = 1 tonne of CO_2e**) to be used against emission targets.

The CDM is currently in its **sunset phase**. Projects have until **June 30, 2026**, to transition into the new **Article 6.4 mechanism** under the Paris Agreement. Any credits (CERs) not issued or transitioned by the final system shutdown (currently transitioning throughout 2026) may lose their eligibility for international compliance trading.

International Emission Trading (ET)

Core Rule	Supplementality	Trading must support, not replace domestic emission cuts.
Units	Tradable Assets	AAUs, CERs, ERUs, and RMUs
Eligibility	Compliance	Must have a fixed Assigned Amount, a National Registry, and up-to-date UN Reporting.
Participants	Entities	Governments and authorized private companies/individuals.
Safety Net	90% Reserve Rule	Countries must keep a Commitment Period Reserve to ensure they don't oversell their credits.
History	Launch	Global trading began in 2008 (post-EU pilot systems).

Unit	Full Name	Source / Origin
AAU	Assigned Amount Unit	A country's total allowed emissions (base allowance).
CER	Certified Emission Reduction	Projects in developing nations (via the CDM).
ERU	Emission Reduction Unit	Projects between industrialized nations (via Joint Implementation).
RMU	Removal Unit	Carbon sinks and forestry activities (LULUCF).

VERs (Voluntary Emission Reductions): Carbon credits traded in the voluntary market, often used by companies for corporate social responsibility rather than legal compliance.

UNFCCC KYOTO PROTOCOL: AMENDMENTS, COMPLIANCE, AND ADAPTATION FUND

1. AMENDMENTS TO THE KYOTO PROTOCOL

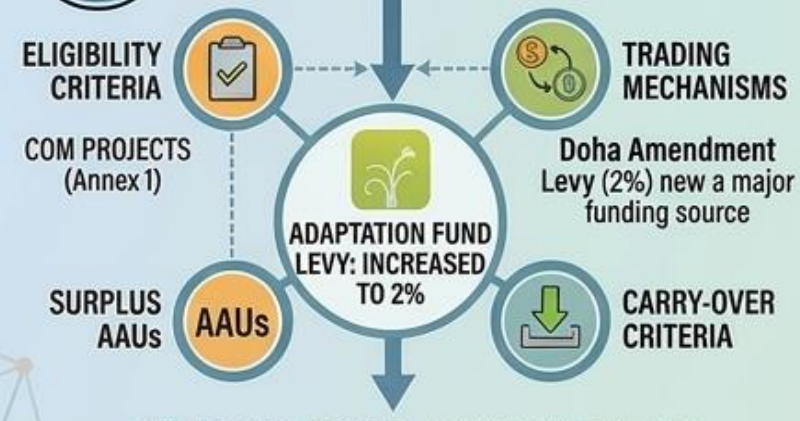
2006 AMENDMENT TO ANNEX B

GOAL: INCLUDE BELARUS IN ANNEX & FOR EMISSION COMMITMENTS (GELRC)

AS OF 2026, THE 2006 AMENDMENT REMAINS **NOT IN FORCE**

PROGRESS:
ONLY 20 PARTIES ACCEPTED
(REQUIRES 3/4 ACCEPTANCE)

2012 DOHA AMENDMENT



Doha Amendment
Levy (2%) new a major funding source

THE 2012 DOHA AMENDMENT IS IN FORCE SINCE DECEMBER 31, 2020

Threshold of 144 ratifications was met on October 2, 2020, and all related amendments are now fully active.

2. THE COMPLIANCE COMMITTEE

FINDING OF NON-COMPLIANCE

FACILITATION BRANCH

1. ADVICE & ASSISTANCE

2. EARLY-WARNING SYSTEM

3. RESOURCE MOBILIZATION

Core Functions:
- Guidance
- Warnings System
- Resource Mobilization

ENFORCEMENT BRANCH

1. JUDICIAL-LIKE DETERMINATION

2. COMPLIANCE REVIEW

3. SUSPENSION OF ELIGIBILITY

Specific Functions:
- Target Review
- Monitoring
- Flexible mechanism

SUBMIT ACTION PLAN

Analysis, corrective measures, timeline

SUSPENSION OF ELIGIBILITY

Flexible mechanisms blocked

THE ADAPTATION FUND

ERA 1: FOUNDATION AND INNOVATIVE FINANCE (2001–2007)

*Unique Financing: 2% levy on 'Certified Emission Reductions' (CERs) from Clean Development Mechanism (CDM).

2005–2006 (DIRECT ACCESS PRINCIPLE): parties agree to this radical shift. Developing countries manage funds themselves.

COP13, BALI (2007)
- AF Board (AFB) launched; GEF (interim secretariat) & World Bank (trustee).

ERA 2: OPERATIONALIZATION AND 'DIRECT ACCESS' (2008–2015)

2009 (FULLY OPERATIONAL):

2010 (FIRST PROJECTS APPROVED): Direct Access modality pioneered; NIEs accredited (e.g., Senegal, Jamaica).

2012 (PIVOT TO VOLUNTARY CONTRIBUTIONS):

CER prices plummet (financial crisis); shift to voluntary government funding.

ERA 3: THE PARIS ERA AND EXPANSION (2015–2023)

2015 (COP21, PARIS AGREEMENT):

Agreement recognizes Fund's importance (legal status tied to KP).

2018 (COP24, KATOWICE): Landmark Decision: "AF *shall serve* the Paris Agreement."

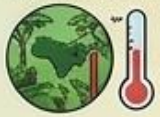
2021 (COP26, GLASGOW):

Record-breaking pledges; doubled 'Country Cap' to $20M.

2023 (COP28, DUBAI): UAE Framework for Global Climate Resilience; AF at center of Global Goal on Adaptation.

ERA 4: SCALING FOR THE FUTURE (2024–2026+)

2025 (COP30, BELÉM):



Calls to triple outflows by 2030 ($387B/yr adaptation gap).

APRIL 2026 (BONN): NEW

Largest-ever funding round ($134M); Transition to Article 6.4 proceeds (new market levy) for long-term survival.

NEW Legend Elements

The Transition & "Copenhagen Crisis" (2005–2014)

Focus: Attempting to bring the US and emerging economies (China/India) into the regime.

COP AND LOCATION	Year	Key Outcome / Action
COP 11 (Montreal)	2005	Launched the "Montreal Action Plan" for a post-2012 framework; first meeting after Kyoto's entry into force.
COP 12 (Nairobi)	2006	Focused on the "Nairobi Work Programme" for adaptation in Africa.
COP 13 (Bali)	2007	Established the Bali Action Plan with four pillars: Mitigation, Adaptation, Technology, and Finance.
COP 14 (Poznan)	2008	Officially launched the Adaptation Fund.
COP 15 (Copenhagen)	2009	Copenhagen Accord: Nations agreed to limit warming to 2°C and pledged $100 billion in annual finance.
COP 16 (Cancun)	2010	Cancun Agreements: Formalized the 2°C target and established the Green Climate Fund (GCF).
COP 17 (Durban)	2011	Durban Platform: All nations agreed to negotiate a new, universal legal agreement by 2015.
COP 18 (Doha)	2012	Doha Climate Gateway: Extended the Kyoto Protocol to 2020 to prevent a "legal gap."
COP 19 (Warsaw)	2013	Created the Warsaw International Mechanism for Loss and Damage.
COP 20 (Lima)	2014	Lima Call for Climate Action: Established the concept of Nationally Determined Contributions (NDCs).

THE PATH TO PARIS

Technology Mechanism

TEC — POLICY COMPONENT

CTCN — OPERATIONAL COMPONENT: TOOLBOX, ENGINEERS, UN PARTNER

2007 → 2007 → — — 2015 → 2018 → 2018

CORE OBJECTIVE

(Established Cancun 2010):
TEC provides policy advice to the COP;
CTCN provides technical assistance & knowledge sharing to developing countries.

2007 – Bali Road Map (COP13)

ESTABLISHED A TWO-TRACK NEGOTIATING PROCESS (AWG-LCA AND AWG-KP)

2009 – Copenhagen Accord (COP15)

INTRODUCED VOLUNTARY EMISSION REDUCTION PLEDGES AND THE CONCEPT OF THE GREEN CLIMATE FUND (GCF)

2010 – Establishment of TEC, CTCN & GCF

TEC — 20 (TECHNOLOGY EXECUTIVE COMMITTEE)

GCF — FORMALLY ESTABLISHED TO SUPPORT DEVELOPING NATIONS

CTCN — (CLIMATE TECHNOLOGY CENTRE & NETWORK)

FORMALLY ESTABLISHED THE TECHNOLOGY MECHANISM, WITH TEC (POLICY) AND CTCN (IMPLEMENTATION) AS ITS OPERATIONAL ARMS.

2012 – Doha Climate Gateway (COP18)

8 years

ADOPTED THE DOHA AMENDMENT, ESTABLISHING A SECOND 8-YEAR COMMITMENT PERIOD FOR THE KYOTO PROTOCOL

2013 – Warsaw Outcomes (COP19)

REDD+

ADOPTED THE WARSAW FRAMEWORK FOR REDD+. ADVANCED THE OPERATIONS OF THE GREEN CLIMATE FUND.

THE PARIS AGREEMENT 2015

ADOPTED:
12 DECEMBER 2015 AT COP21

ENTERED INTO FORCE:
4 NOVEMBER 2016

RATIFICATION THRESHOLD

REQUIRED AT LEAST 55 COUNTRIES REPRESENTING 55% OF GLOBAL GHG EMISSIONS

55%

THE PREAMBLE

RECOGNIZES 'DIFFERENT NATIONAL CIRCUMSTANCES',

'BEST AVAILABLE SCIENTIFIC KNOWLEDGE', AND THE NEED FOR SUSTAINABLE LIFESTYLES.

THE PARIS AGREEMENT IN DEPTH: A COMPREHENSIVE GUIDE

CORE PILLARS (Articles 4-11)

Mitigation (Article 4)

- **Long-term Goal (Art 4.1):** Peak GHG emissions and achieve Net Zero in second half of century
- **NDCs (Art 4.2):** Legally update contributions
- **LEDs (Art 4.19):** Strive for strategies

Adaptation & Loss/Damage (Articles 7 & 8)

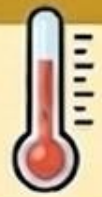
- **Global Goal on Adaptation (Art 7.1):** Enhance adaptive capacity and reduce vulnerability
- **Developing Country Priority:** Adaptation as urgent need
- **Loss and Damage (Art 8):** Dedicated to permanent and repairable damages

Means of Implementation (Articles 9-11)

- **Finance (Art 9):** Must support developing countries. Developed nations to provide resources and lead. Operates via GCF and GEF.
- **Technology & Capacity Building** (Articles 10 & 11): Strengthen development & transfer; Enhance ability of LDCs and SIDS; PCCB addresses implementation gaps.

GOALS, PARTIES, & MECHANISMS (Articles 6, 12-15)

Main Goals



- Limit warming to well below 2°C, pursue 1.5°C
- Achieve Net Zero balance by 2050

Key Mechanisms & Approach

- **NDCs:** National targets updated every 5 years with progressive ambition
- **Bottom-Up Approach:** Country-defined NDCs; Higher buy-in
- **Cooperative Approaches (Art 6):** Voluntary Cooperation (market-based); UN carbon market credit issuances (2026 update)

Parties & Implementation

- **194 Parties** with the **USA** (withdrew eff. from agreement eff. January 2026)
- **Global Stocktake (GST)** (Art 14): Periodic progress check; COP 28 agreement to transition from fossil fuels
- **Implementation & Compliance** (Art 15): Overseen by a dedicated committee

THE AGREEMENT UNDER SCRUTINY: CHALLENGES & UPDATES

What Makes the Difference

- **Bottom-Up Approach:** define NDCs
- **The Ratchet Mechanism:** represent "progression."
- **Global Stocktake (GST):** formal check-up; COP 28 agreement.

Transparency & Finance Updates

- **Transparency (Article 13):** ETF active; report detailed emissions.
- **Finance tools transition:** initially $100B/year to $300B+ NCQG by 2035.

Current Challenges & Updates

- **The 1.5°C Gap:** projected 2.3°C–2.8°C warming with current NDCs; last chance submission cycle in 2025/2026.
- **Finance Implementation:** movement from pledges to disbursement friction point; **Loss and Damage Fund** operationalized at COP 28.

Cooperative Approaches (Article 6)

Feature	Article 6.2 & 6.3 (ITMOs)	Article 6.4 (SDM)	Article 6.8 & 6.9 (NMAs)
Approach Type	Market-Based (Bilateral/Plurilateral)	Market-Based (Centralized)	Non-Market Based
Primary Unit	ITMOs (Internationally Transferred Mitigation Outcomes)	A6.4ERs (Article 6.4 Emission Reductions)	N/A (No trading of units)
Governance	Decentralized: Participating countries set their own standards and oversight.	Centralized: Overseen by a UN Supervisory Body.	Cooperative Framework: Facilitated by the Glasgow Committee on NMAs.
Historical Precedent	Similar to "Joint Implementation" (Kyoto).	Successor to the Clean Development Mechanism (CDM).	New framework for holistic, non-trade cooperation.
Key Objectives	Voluntary transfer of credits with high environmental integrity.	Incentivize reductions while supporting sustainable development.	Boost ambition in mitigation/adaptation via coordination.
Accounting Rule	Mandatory authorization and "Corresponding Adjustments."	Article 6.5: Strict accounting to prevent double counting.	Integration of finance, tech transfer, and capacity building.
Adaptation Funding	Encouraged but voluntary "Share of Proceeds."	Mandatory: 5% of proceeds go to the Adaptation Fund.	Direct synergy between climate action and poverty eradication.

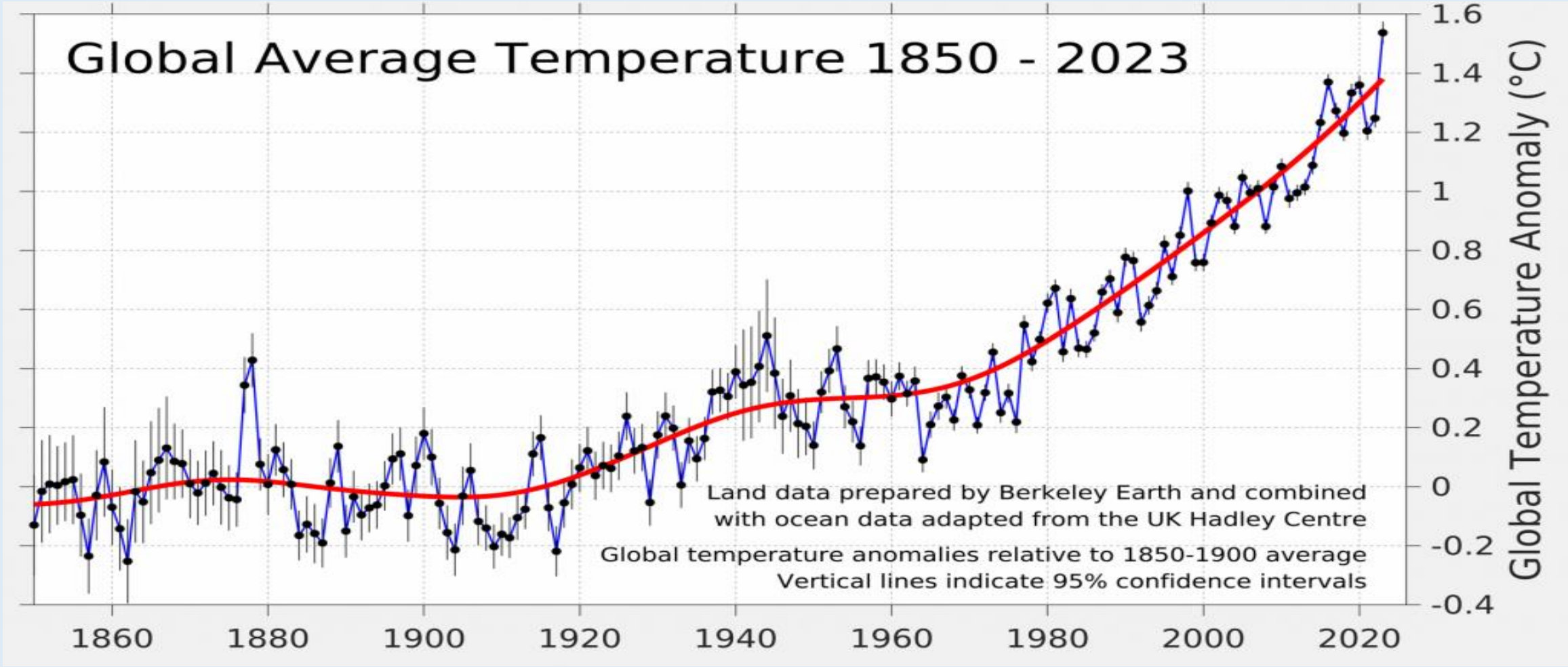
The Paris Era (2015–2020)

Focus: A universal, "bottom-up" approach where every nation sets its own targets

COP	Location	Year	Key Outcome / Action
COP 21	Paris, France	2015	The Paris Agreement: The most important milestone since 1992. Aimed to limit warming to 1.5°C, established a transparency framework, and mandated five-year update cycles.
COP 22	Marrakech, Morocco	2016	Proclamation of Marrakech: Focused on demonstrating global unity and commitment to the Paris Agreement despite political shifts in the US.
COP 23	Fiji (held in Bonn, Germany)	2017	Launched the "Talanoa Dialogue", a process designed to help countries implement and enhance their Nationally Determined Contributions by 2020.
COP 24	Katowice, Poland	2018	The Paris Rulebook: Finalized the technical guidelines and functional rules for how countries measure and report their emissions and progress.
COP 25	Madrid, Spain	2019	Focused on Carbon Markets (Article 6); however, it concluded with many complex technical issues deferred to future sessions.

The Loss and Damage Framework

Section	Component	Key Details & Relevant Articles
1. Core Pillars & Context	**Mitigation**	Peak GHG emissions and reaching Net Zero (Art. 4)
	Adaptation	Reducing vulnerability and building capacity (Art. 7)
	Means of Implementation	Finance, Tech, and Capacity Building (Art. 9-11)
2. Key Mechanisms	**NDCs**	Nationally Determined Contributions; updated every 5 years
	Net Zero Balance	Target goal by 2050
	Global Stocktake (GST)	A formal "check-up" on global progress
3. Loss & Damage (Art. 8)	**Core Definition**	Averting, Minimizing, and Addressing permanent & irreversible damage
	Focus Areas	Slow-onset events (e.g., Sea-Level Rise) and Non-economic losses (e.g., Culture, Biodiversity)
4. Warsaw International Mechanism (WIM)	**Functions (ExCom)**	1. Enhancing knowledge; 2. Strengthening dialogue; 3. Facilitating action & support
	Technical Criteria	Case studies (e.g., Level Mranha & Bradimort Criteria)
5. Support & Funding	**Santiago Network**	Provides expert support: Technical assistance, matching needs/providers, and countrywide assessments
	Loss & Damage Fund	Facilitates support for claims (e.g., Sea-level rise displacement in Pacific Islands)
6. Accountability	**Transparency**	Biennial Transparency Reports (BTRs) used for reporting and tracking



Between 1880 and 2012, the average global surface temperature warmed by approximately **0.85 °C**, according to the IPCC Fifth Assessment Report. This long-term trend shows a clear increase in global temperatures, with the majority of this warming occurring since 1975, at a rate of roughly 0.15 °C to 0.2 °C per decade.

The Implementation & Finance Era (2021–2026)

Focus: Fossil fuel phase-outs, Loss & Damage, and the "1.3 Trillion" Finance Target

COP	Location	Year	Key Outcome / Action
COP 26	Glasgow, UK	2021	**Glasgow Climate Pact:** First COP to explicitly mention "phasing down" coal and ending "inefficient" fossil fuel subsidies.
COP 27	Sharm El-Sheikh, Egypt	2022	**Loss and Damage Fund:** A breakthrough for climate justice, creating a fund to compensate vulnerable nations for climate disasters.
COP 28	Dubai, UAE	2023	**The UAE Consensus:** Concluded the first Global Stocktake (GST). Nations agreed to "transition away from fossil fuels" in energy systems.
COP 29	Baku, Azerbaijan	2024	**The New Collective Quantified Goal (NCQG):** Set a finance target for developed nations to lead in mobilizing at least $300 billion annually, within a broader 1.3 trillion goal by 2035.
COP 30	Belém, Brazil	2025	**The Belém Package:** Launched the "Belém Mission to 1.5" for 2035 NDCs, the Belém Action Mechanism (BAM) for a Just Transition, and finalized GGA indicators.
COP 31	Antalya, Turkey	2026	**The Implementation COP:** Focuses on "Antalya Implementation Roadmaps," verifying NDC progress, and securing specific financing for Small Island Developing States (SIDS).

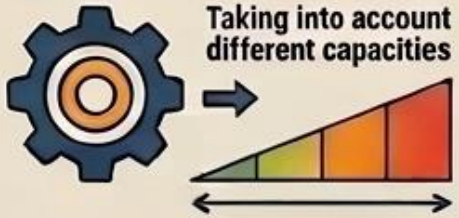
ARTICLE 13: THE ENHANCED TRANSPARENCY FRAMEWORK (ETF) & PATHWAY

FOUNDATION & PRINCIPLES

13.1 MUTUAL TRUST & CONFIDENCE

Promote Effective Implementation

13.2 BUILT-IN FLEXIBILITY



13.3 FACILITATIVE & NON-INTRUSIVE

- Helpful, non-punitive
- National Sovereignty
- No undue burden

THE PROCESS: BTR

13.7a NATIONAL INVENTORY

GHG Emissions & Removals

NDC Target

13.7b TRACKING NDCs

Progress towards individual contributions

13.8 ADAPTATION ACTIONS (Optional)

NDC Target

Good practices, priorities, gaps

THE REVIEW CYCLE

13.11 TECHNICAL EXPERT REVIEW

Checks consistency, accuracy, improvement areas

13.11 FACILITATIVE, MULTILATERAL CONSIDERATION

LEADER in MENA Region

Peer-review session

13.15 CONTINUOUS IMPROVEMENT

Building capacity on a continuous basis

LEGEND

- Legest
- NDCs
- NDCs
- Technology transfer

4. THE BIGGER PICTURE & 2026 UPDATE

13.5 INFORM GLOBAL STOCKTAKE (Art 14)

13.6, 13.9, 13.10 SUPPORT PROVIDED & RECEIVED

A. **BTR1: SUBMITTED** (JAN 2, 2025)
Morocco meets early deadline.

B. **REVIEW & VERIFICATION (IN PROGRESS, 2025-2026)**
Technical Expert Review & Q&A.

C. **SUBMITTED** (SEP 30, 2025)
NDC 3.0

D. **FISHERIES ADAPTATION TRACKING**

FUTURE STEPS & CONTINUOUS LEARNING

Building on lessons learned.
Advancing transparency.

FAO STRATEGY ON CLIMATE CHANGE 2022–2031

GUIDING **AGRIFOOD SYSTEMS** FOR
A **RESILIENT, SUSTAINABLE FUTURE.**

PROGRAMME PRIORITY AREAS

CLIMATE RESILIENT PRODUCTION

INNOVATION & DIGITAL AGRICULTURE

BLUE TRANSFORMATION
sustainable aquaculture

ONE HEALTH
animals, people, environment

SMALL-SCALE PRODUCERS' EQUITABLE ACCESS

SUSTAINABLE DIETS & REDUCED LOSS

HEALTHY DIETS FOR ALL

REDUCING FOOD LOSS & WASTE

SAFE FOOD

TRANSPARENT MARKETS & TRADE

CLIMATE CHANGE MITIGATION & ADAPTATION

MITIGATING & ADAPTED AGRIFOOD SYSTEMS

BIOECONOMY & CIRCULARITY

BIOFUELS

BIODIVERSITY & ECOSYSTEM SERVICES

Pollinators, soil health

SUSTAINABLE URBAN FOOD SYSTEMS

INCLUSIVE RURAL TRANSFORMATION & EMPOWERMENT

GENDER EQUALITY & WOMEN'S EMPOWERMENT

AGRICULTURE & FOOD EMERGENCIES

RESILIENT LIVES

DIVERSE INCOMES

SCALING UP INVESTMENT

PRIVATE SECTOR PARTNERS

BETTER PRODUCTION

BETTER NUTRITION

BETTER ENVIRONMENT

BETTER LIFE

LEAVING NO ONE BEHIND.

THE FOUR BETTERS: INTEGRATED ACTION

FAO SUPPORTS MEMBERS VIA:

- INSTITUTIONAL & TECHNICAL CAPACITY DEVELOPMENT
- INTEGRATION OF AGRIFOOD SYSTEMS IN INTERNATIONAL CLIMATE AGENDA (e.g., NDCs, PARIS AGREEMENT)
- STRENGTHENING INTERNAL FAO COORDINATION

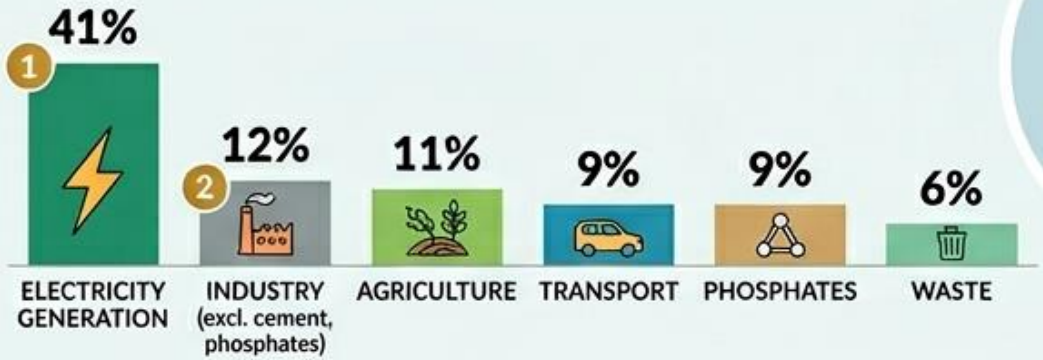
MOROCCO'S ENHANCED NDC 3.0: UNLEASHING CLIMATE AMBITION

OFFICIALLY SUBMITTED TO UNFCCC, MARKING A STEP FORWARD IN CLIMATE AMBITION AND IMPLEMENTATION

OVERALL CLIMATE AMBITION

53% REDUCTION IN GHG EMISSIONS BY 2035 (vs. BAU)

MITIGATION EFFORT BY SECTOR (BY 2035)



LONG-TERM ENERGY VISION (BY 2050)

FISHERIES & AQUACULTURE: BLUE ECONOMY STRATEGY

FISHERIES DECARBONIZATION (MITIGATION)

- Efficient Fishing Fleets
- Low-Carbon Vessel Propulsion
- Improved Cold Chain Logistics

RESILIENT AQUACULTURE (ADAPTATION)

- Sustainable Fish Farming Practices
- Species Diversification
- Water Quality Monitoring & Disease Control
- Ecosystem-Based Management

SECTORAL ADAPTATION GOALS & PROJECTS

80 GOALS

107 SPECIFIC PROJECTS

61 UNCONDITIONAL PROJECTS

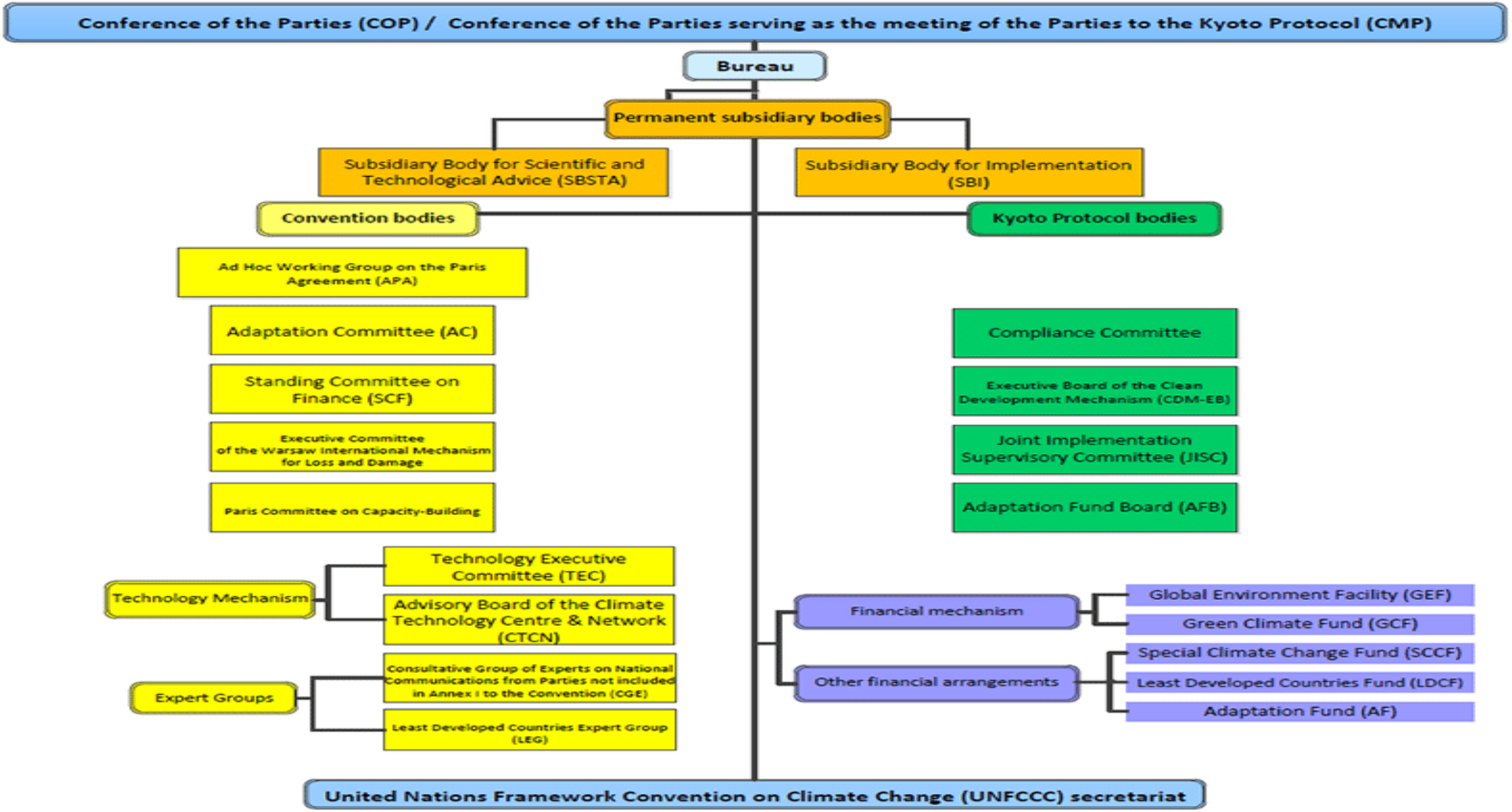
46 CONDITIONAL PROJECTS

GGGI CONTRIBUTION TO METHANE INTEGRATION

GGGI

- NATIONAL METHANE ROADMAP
- LANDFILL GAS ASSESSMENTS
- WASTE MITIGATION STRATEGIES
- MRV SYSTEM
- BIODIGESTATE STANDARDS

Inclusive growth and innovation


Conference of the Parties (COP) / Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP)
Bureau
Permanent subsidiary bodies
Subsidiary Body for Scientific and Technological Advice (SBSTA)
Subsidiary Body for Implementation (SBI)
Convention bodies
Kyoto Protocol bodies
Ad Hoc Working Group on the Paris Agreement (APA)
Adaptation Committee (AC)
Standing Committee on Finance (SCF)
Executive Committee of the Warsaw International Mechanism for Loss and Damage
Paris Committee on Capacity-Building
Compliance Committee
Executive Board of the Clean Development Mechanism (CDM-EB)
Joint Implementation Supervisory Committee (JISC)
Adaptation Fund Board (AFB)
Technology Mechanism
Technology Executive Committee (TEC)
Advisory Board of the Climate Technology Centre & Network (CTCN)
Expert Groups
Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE)
Least Developed Countries Expert Group (LEG)
Financial mechanism
Global Environment Facility (GEF)
Green Climate Fund (GCF)
Other financial arrangements
Special Climate Change Fund (SCCF)
Least Developed Countries Fund (LDCF)
Adaptation Fund (AF)
United Nations Framework Convention on Climate Change (UNFCCC) secretariat

Conclusion and Path Forward

Category	Key Elements	Status & Details
Temperature Targets	The Ambition gap	Progress: Projected warming reduced from 4°C (pre-2015) to 2.4°C–2.7°C via NDCs. Reality: 1.5°C is now deemed "physically implausible" without an overshoot; emissions have plateaued rather than peaked.
Key Achievements	Diplomatic & Financial	- Adoption: 194 parties; most comprehensive treaty in history - Market Shift: Clean energy investment is now double that of fossil fuels. - Mechanisms: Loss & Damage Fund operationalized; Article 6 carbon market rules set; first Global Stocktake (COP28) concluded.
Headwinds & Risks	Geopolitical & Structural	- Volatility: Second U.S. withdrawal (Jan 2026) creating a leadership/funding vacuum. - NDC Lag: 1/3 of parties failed to update NDCs in 2025 cycle. - Energy Security: Recent pivots back to fossil fuels due to regional conflicts.
Some Capacity Gaps	The Transparency Barrier	➢ Technical Constraints: Many African nations struggle with the CBIT-GSP National Inventory Document Template due to fragmented historical data and lack of localized emission factors. ➢ Reporting Burden: Transitioning to GSP Phase III highlights a shortage of "MRV experts" needed to maintain national climate registries. ➢ Methodological Hurdles: Assessing Loss & Damage for the first BTRs remains difficult due to a lack of standardized tools for reporting non-economic losses (e.g., cultural heritage or biodiversity). ➢ *BTR Complexity: The transition from Biennial Update Reports (BUR) to Biennial Transparency Reports (BTR) requires a level of data granularity that current national statistical systems in developing countries are not yet equipped to provide.*
Path to 2030	The Decisive Window	➢ Implementation: Focus moving from "rule-writing" to "money-investing.“ ➢ Stocktake: Second GST (2026–2028) to verify if NDCs are becoming national law. ➢ Blue Economy: Integration of Blue Carbon and maritime transport into national targets.

THANK YOU FOR YOUR ATTENTION

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