



Introduction

Financing a transition to a low-carbon economy within a new climate governance

09/01/2018

Hadrien Hainaut, Morgane Nicol, **I4CE – Institute for Climate Economics**

I4CE – Institute for Climate Economics

“Harnessing Economics for the Climate”

- We are a non-profit think-tank founded by *Caisse des Dépôts* and *Agence Française de Développement*
- We provide independent expertise and analysis on economic issues relating to climate & energy policies in France and throughout the world
- We help public and private decision-makers to improve the use of economic and financial resources transition to a low-carbon economy

What's new in climate change ?

1. In 2015, the adoption of the Paris Agreement at COP 21 opens a new model of international governance of the growing climate change crisis
 - What are the characteristics of this model and how much change has it brought compared to previous regimes ?
2. Under this model, countries are to undertake a massive economic shift, notably towards low-carbon and climate resilient infrastructures
 - Why is this a challenge and what tools can be deployed to make it happen ?
3. This shift can't happen without a coordinated mobilization of private finance and investment
 - How does the financial sector deal with climate risks ?

Course outline

Pop quiz

1. The new climate regime set by the Paris Agreement : reaching net zero by the end of the century
2. The economic challenge of redirecting investment towards low-carbon and climate-resilient capital
3. Mobilizing private investment

Pop Quiz

A hand is shown writing the words "Pop Quiz" in white chalk on a dark green chalkboard. The letters are written in a casual, slightly slanted, hand-drawn style. The hand holding the white chalk is visible on the right side of the frame, with the tip of the chalk just finishing the letter 'z'. The background of the chalkboard is dark and slightly textured.

Pop Quiz ! 1/3

How familiar are you with...

Externalities

(in economic theory)

Mitigation vs. adaptation

(fighting against climate change)

Actualization

(in economic analysis)

Cost-benefit analysis

(in economic analysis)

Risk premium

(the higher is not the better)


Tragedy of the Commons


(and the theory of public goods)

Loss and damages

(a topic of the Paris agreement)

 Very familiar, topic already
discussed at length

 Somewhat familiar but would
still like to learn more about

 Never heard of it,
or unfamiliar with the topic

Pop Quizz ! 2/3

How familiar are you with...

NDCs, formerly INDCs

Nationally Determined Contributions
(but to what?)

Carbon pricing

(carbon taxes, emission trading schemes)

CDM

Clean Development Mechanism
(it's a Kyoto thing, isn't it?)


Fossil fuel subsidies


(where are there and why remove them)

The Action Agenda

(spoiler: it's not the Paris Agreement)

 Very familiar, topic already
discussed at length

 Somewhat familiar but would
still like to learn more about

 Never heard of it,
or unfamiliar with the topic

Pop Quizz ! 3/3

How familiar are you with...

Disclosure

(ever heard about article 173?)

Stranded Assets

(what's a carbon bubble?)

De-risking

(and how it saves money)

Divestment

(it's not about scuba diving)

Physical, transition & litigation risks

(what's the difference?)

Green bonds

(more than 0.07% of all bonds)

Mainstreaming

(it's not the latest video website)



Very familiar, topic already discussed at length



Somewhat familiar but would still like to learn more about



Never heard of it, or unfamiliar with the topic

The Paris Agreement climate regime : reaching net zero emissions by the end of the century

09/01/2018

Hadrien Hainaut, Morgane Nicol

1. In 2015, the adoption of the Paris Agreement at COP 21 opens a new model of international governance of the growing climate change crisis
 - What are the characteristics of this model and how much change has it brought compared to previous regimes ?

Outline

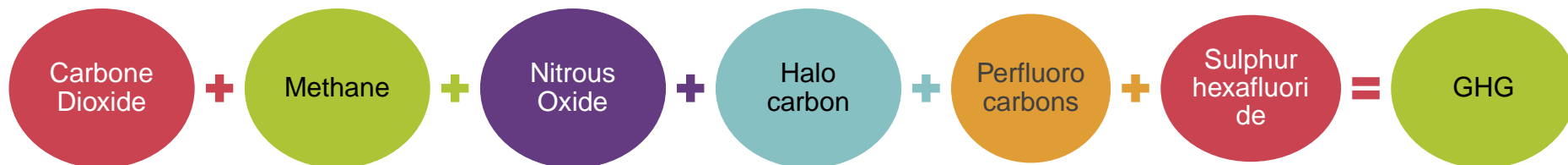
- A. From the UNFCCC to COP 21
- B. What's in the Paris Agreement ?
- C. Recent developments : Trump & COP 23
- D. What's next ?

The UNFCCC was established in 1992 at the Rio Summit, to stabilise atmospheric GHG concentration

- The United Nations Framework Convention on Climate Change (UNFCCC)
 - Main platform to negotiate global governance on climate change
 - Its primary objective is to :

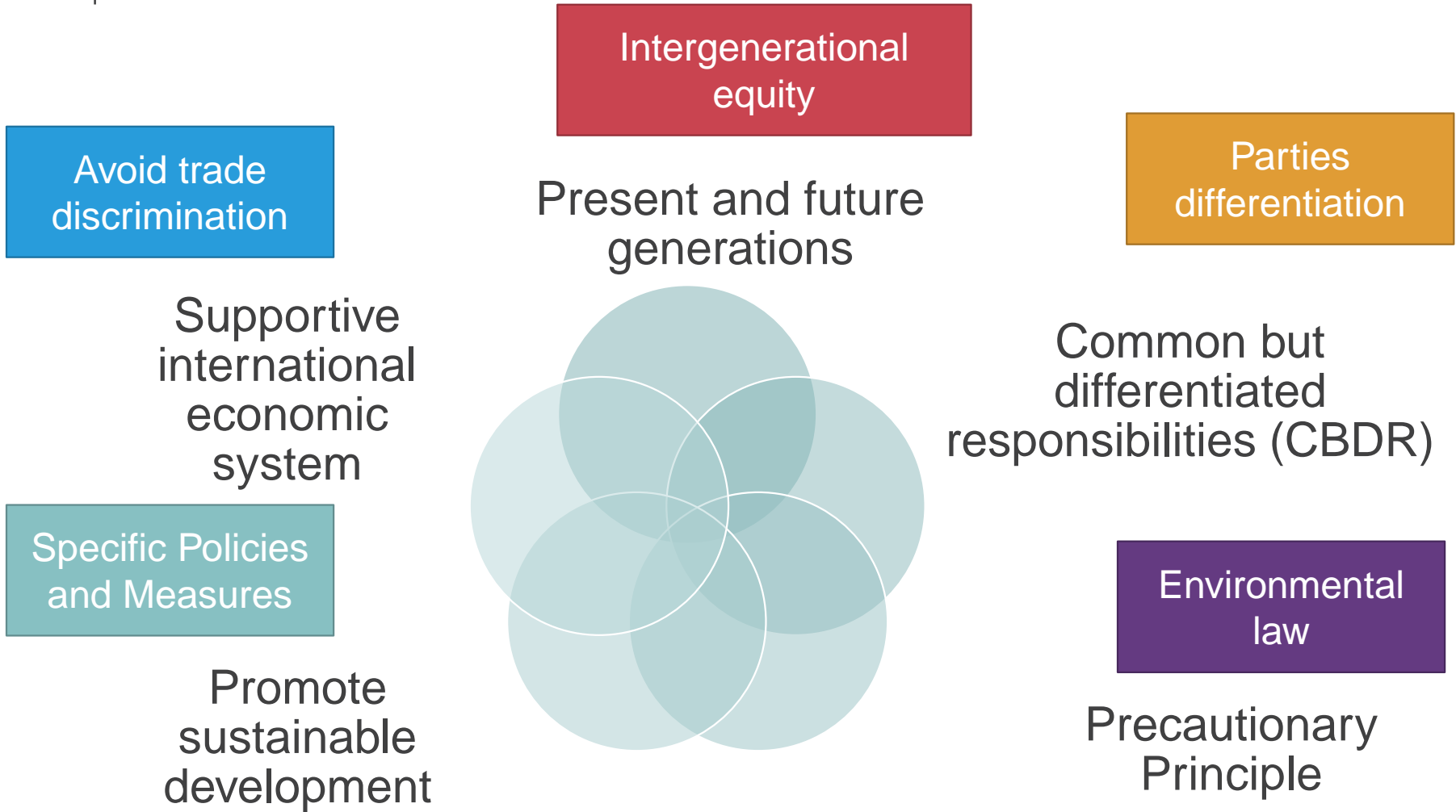
Stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system

- ➔ Ecosystems can naturally adapt to climate change
- ➔ Food production and water resources are not threatened
- ➔ Economic development can proceed in a sustainable form



Source : Cristofari, Hainaut

Equity and responsibility are the fundamental principles of the Convention

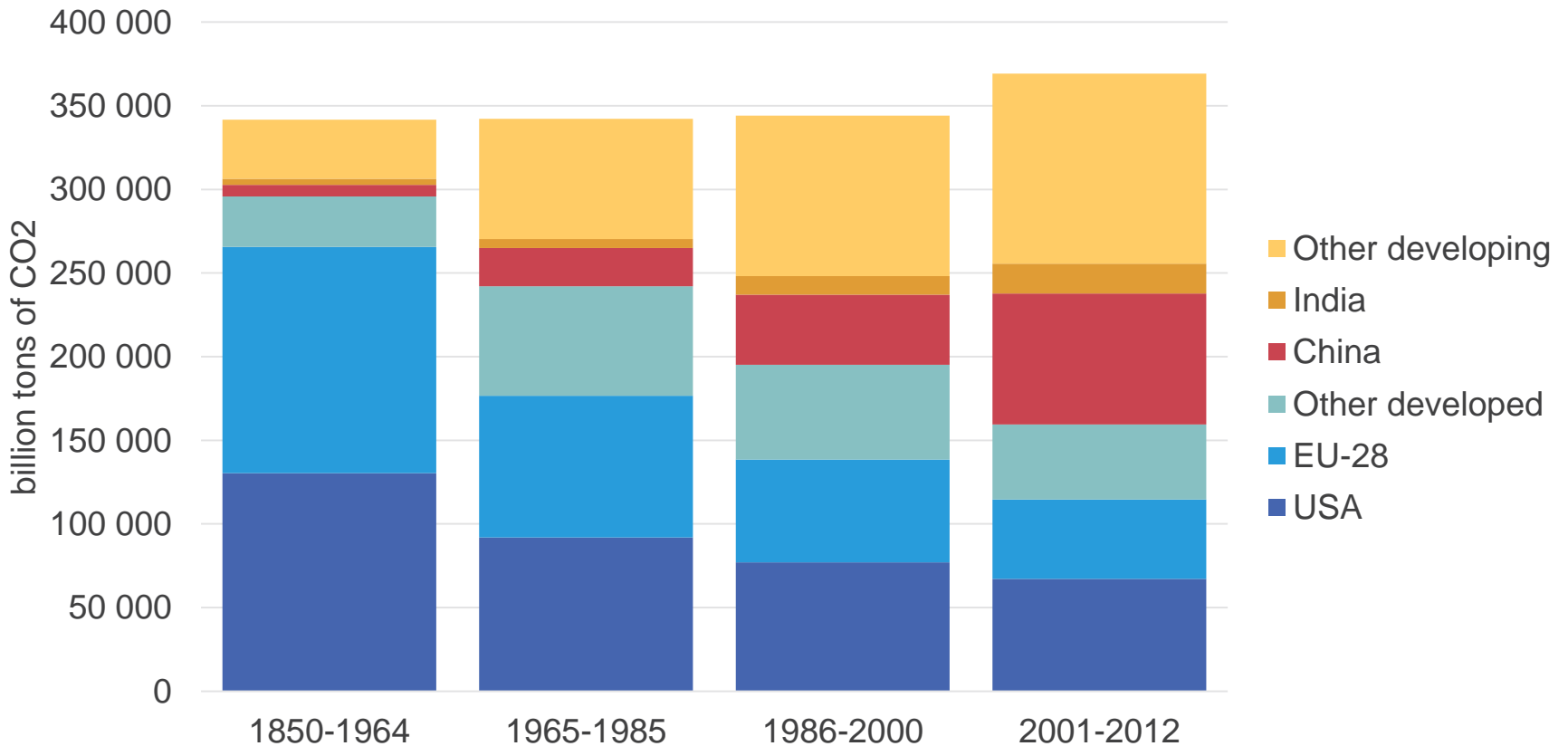


Source : Cristofari, Hainaut

Differentiated responsibility is a consequence of the historical breakdown of emissions between countries

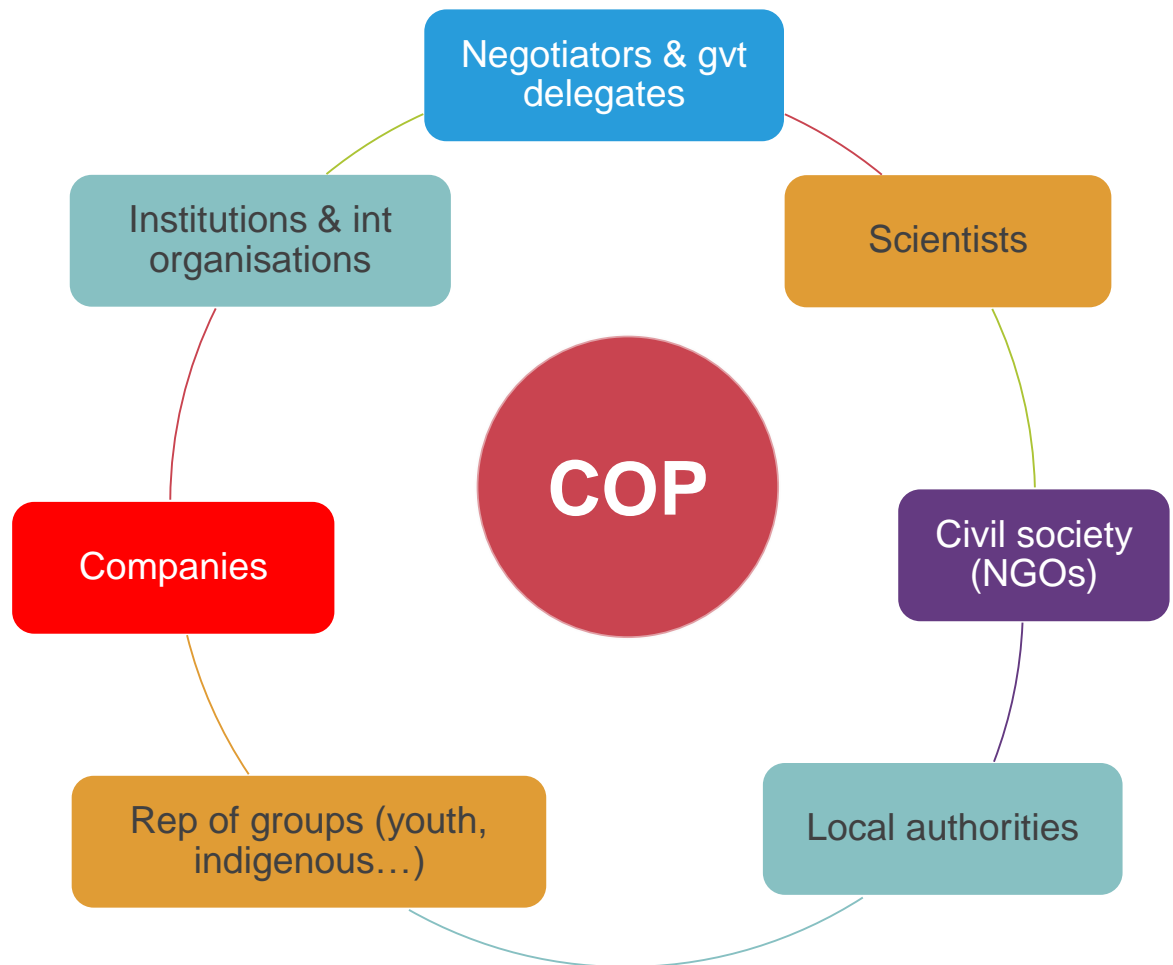
Breakdown of CO2 emissions per period and country

Each column represents around 1/4th of all the CO2 emitted since 1850.
 CO2 emissions do not include land-use. Source: WRI



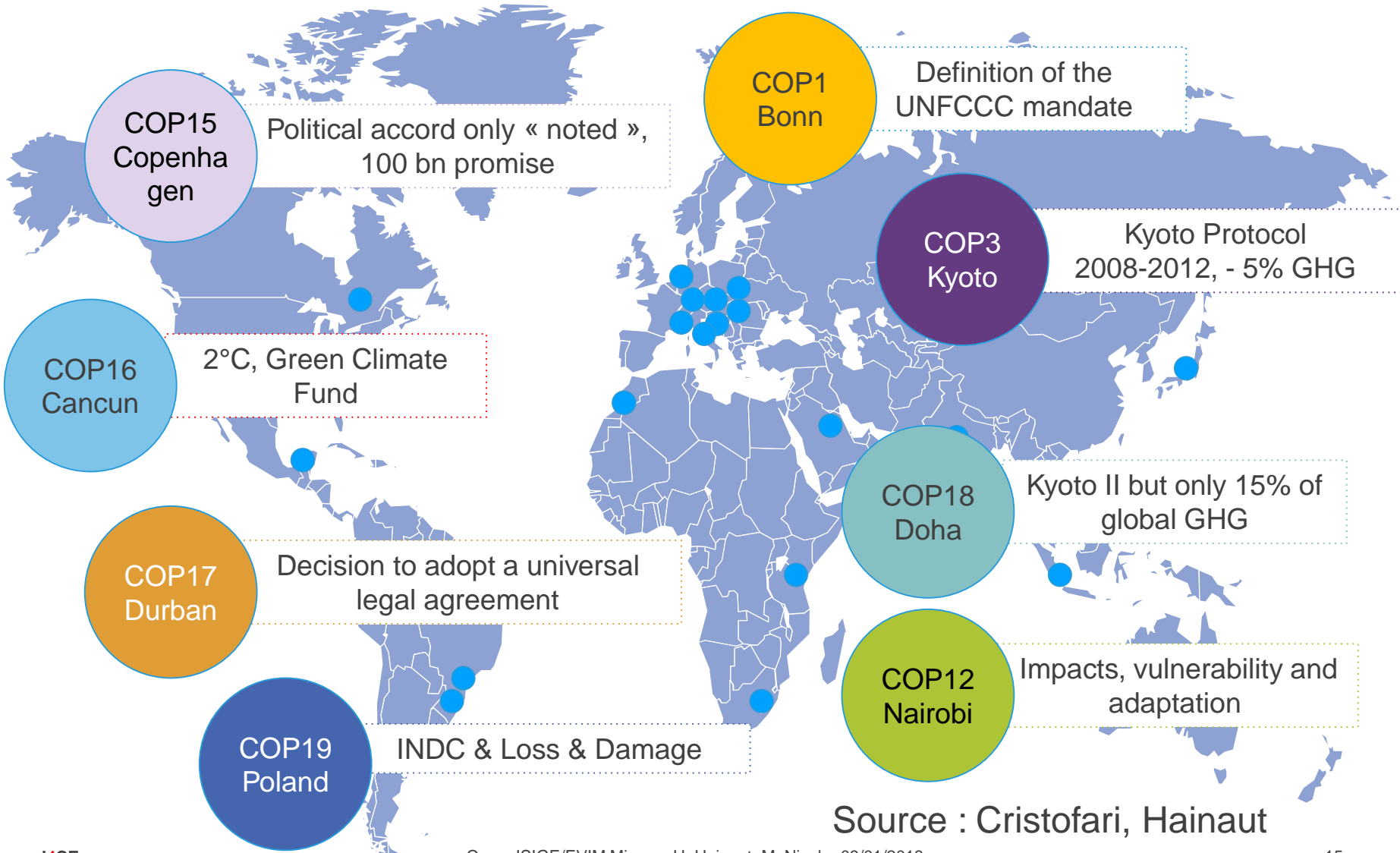
Annual conference of parties (COP) bring together multiple climate change stakeholders

- Objective
 - Negotiate, adopt decisions and monitor their implementation
- Timeframe
 - 2 weeks at the end of the year
 - On the negotiating progress made throughout the year
- Variety of participants
 - Different roles within and without the negotiating process



Source : Cristofari, Hainaut

A 20-year journey – major COP milestones



Source : Cristofari, Hainaut

Why was COP21 so crucial in the climate negotiation timeline ?



- Outcome of 4 years negotiating process
 - Durban Mandate (ADP : Ad hoc working group of the Durban Platform)
 - « Come up with an agreement, a protocol, and instrument with legal force »
 - New governance framework to take over Kyoto II (2012-2020)
- « the last chance » conference
 - Make it up for Copenhagen failure in 2009
 - Send a powerful signal to the economy
 - Respond adequately to alerts from the scientific community
- International spotlight supporting national campaigns
 - Renewed civil society mobilisation on climate issue

Source : Cristofari, Hainaut

2015 saw the convergence at the top between climate and development agendas



United Nations
Framework Convention on
Climate Change

- 2015 : two universal agreements applicable to all countries
 - All countries responsible for their implementation
 - But with flexibility and support provided to developing countries
- Climate and development agendas are increasingly linked
 - Climate change being recognized as an obstacle to development
 - Development thus has to be low carbon and climate resilient
- Financial support provided to developing countries is no longer a condition for their contribution to the agreements

COP-21 opened with five major negotiating topics on the menu

Ambition	<ul style="list-style-type: none"> • How should the agreement translate the UNFCCC's goal of stabilizing GHG concentrations in the atmosphere ? • What should the PA make of the COP16 decision to commit to a +2°C warming by 2100 ? • Should there be any objective <i>in terms of actual emissions</i> ?
Ambition mechanism	<ul style="list-style-type: none"> • How should countries contribute to the achievement of the objective ? • How free should countries be in defining their contribution ? • How often should contributions be reviewed in light of new developments ?
Adaptation	<ul style="list-style-type: none"> • What is the agreement's goal on adaptation ? • What about irreversible impacts already occurring in (mostly developing) countries ?
Finance and support	<ul style="list-style-type: none"> • Should some countries provide specific climate support to others as part of the PA ? • If so, what should the agreement make of the COP15 « \$100bn » promise ? • Should the agreement set which countries are to contribute first or most ?
Rules	<ul style="list-style-type: none"> • What should countries report to each other on their emissions, policies and finance given or received ? • Should the agreement create the option for countries to exchange or trade some emission reductions as part of flexibility mechanisms ?

Source : Cristofari, Hainaut



United Nations

FCCC/CP/2015/L.9



Framework Convention on
Climate Change

Distr.: Limited
12 December 2015

Original: English

Conference of the Parties

Twenty-first session

Paris, 30 November to 11 December 2015

Agenda item 4(b)

Durban Platform for Enhanced Action (decision 1/CP.17)

**Adoption of a protocol, another legal instrument, or an
agreed outcome with legal force under the Convention
applicable to all Parties**

ADOPTION OF THE PARIS AGREEMENT

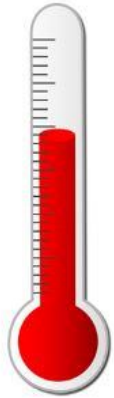
Proposal by the President

COP 21 negotiations focused on hotspots and cross-cutting issues

Ambition	Ambition mechanism	Adaptation	Finance and Support	Rules
<ul style="list-style-type: none"> • 2°C vs. 1,5°C • Long term mitigation goal (zero net emissions) • Long term strategies 	<ul style="list-style-type: none"> • NDCs • 5-year progression • Ratcheting up • Links btw global stocktake & NDCs 	<ul style="list-style-type: none"> • Long term adaptation goal • Included in global stocktake • Loss and damage in agreement 	<ul style="list-style-type: none"> • Capacity building in agreement • \$100bn floor post 2020 • North-South only or also South-South 	<ul style="list-style-type: none"> • Measuring • Reporting • Verification • Flexibility • ITMOs
Cross-cutting issues				
<ul style="list-style-type: none"> • Differentiation (CBDR +NC <i>national circumstances</i> +RC <i>respective capabilities</i>) • Legal form of the agreement – « bindingness » • Pre-2020 action 				

Source : Cristofari, Hainaut

Ambition : the Paris agreement sets 3 objectives on mitigation, adaptation and alignment of financial flows



1. Limit global warming well below 2°C while aiming at bringing it to 1.5° above pre-industrial levels (...) reach global peaking of GHG emissions as soon as possible (...) and **zero-net emissions by the second half of this century.**

2. Increasing the ability to adapt to the adverse impacts of climate change by promoting resilience and low-carbon development

3. Making financial flows consistent with a pathways towards low GHG and climate-resilient resilient development.

Previous regimes had only called for « stabilisation of GHG concentrations in the atmosphere » (UNFCCC) and holding the increase of global temperatures to +2°C compared to pre-industrial levels (Copenhagen, 2009)

HOW AMBITION HAS EVOLVED IN THE UNFCCC

1992

Adoption of the UNFCCC

Stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system



2009-2010

Copenhagen & Cancún (2020 horizon)

Recognition of the objective to hold the increase in global average temperature below 2°C above pre-industrial levels



2015

Paris Agreement and decision

The Agreement aims to:

- Hold the increase in the global average temperature to well below 2 °C above Pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels
- Increase the ability to adapt to the adverse impacts of climate change
- Make finance flows consistent with a low carbon and climate-resilient development pathways

Ambition mechanism : nationally-determined contributions (NDCs) reviewed every 5 years

- Each party shall prepare, communicate and maintain successive nationally determined contributions that it intends to achieve.
- Parties shall pursue domestic mitigation measures with the aim of achieving the objectives of such contributions.
- Each Party's successive nationally determined contribution will represent a progression beyond the Party's then current NDC and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.
- Each Party shall communicate a nationally determined contribution every five years

In previous regimes, notably the Kyoto Protocol, absolute emission reduction targets were set and then dispatched between developed countries only (“burden sharing”).

HOW MITIGATION COMMITMENTS HAVE EVOLVED IN THE UNFCCC

1992

Adoption of the UNFCCC

Developed countries should implement national policies to deal with climate change

1997

Kyoto Protocol

Absolute targets for developed countries (-5% below 1990 levels in the commitment period 2008 to 2012)

2009-2011

From Copenhagen to Durban (2020 horizon)

- Absolute targets for developed countries (pursuing Kyoto commitments in some cases)
- Voluntary mitigation goals for a number of developing countries

2015
INDC

Established by all countries

From 2020

NDC with progressive ambition

established by all countries, with developed countries continuing on taking the lead

Adaptation is set as goal on par with mitigation, while Loss and damages are integrated, without liability

- Parties hereby establish the global goal on adaptation of **enhancing adaptive capacity, strengthening resilience and reducing vulnerability** to climate change
- Parties recognize the importance of **averting, minimizing and addressing loss and damage** associated with the adverse effects of climate change, including extreme weather events and slow onset events
- Parties should **enhance understanding, action and support**, including through the Warsaw International Mechanism, as appropriate, **on a cooperative and facilitative basis** with respect to loss and damage associated with the adverse effects of climate change.
- The provision of scaled-up financial resources should aim to achieve a **balance between adaptation and mitigation**

In previous regimes, adaptation has received a much smaller focus than mitigation, while Loss and damages were not addressed at all until COP 19 in Warsaw.

HOW ADAPTATION AND LOSS & DAMAGE HAVE EVOLVED UNDER THE UNFCCC

1992

Adoption of the UNFCCC

- Mention of the need for Adaptation measures
- Calls upon Annex II countries to support vulnerable countries meeting the costs of Adaptation to climate change

2001

Marrakesh

Creation of three Adaptation funds

2010

Cancún

Decision of a balanced funding between Mitigation and Adaptation within the Green Climate Fund

2013

Warsaw

Creation of the Warsaw International Mechanism for Loss & Damage

2015

Paris Agreement

- Balance between mitigation and adaptation, the means of implementation, and the transparency
- Extension of the Warsaw International Mechanism for Loss & Damage within the Paris Agreement

Financial support obligation rests on developing countries, while other countries contribute voluntarily

- Developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations
- Other Parties are encouraged to provide or continue to provide such support voluntarily.
- Developed country Parties should continue to take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels
- (COP decision) prior to 2025 the Conference of the Parties shall set a new collective quantified goal from a floor of USD 100 billion per year

Previous COP decisions had recognized the need for financial support and set the 100 billion goal. However countries were not able to agree on a definition of climate finance that could serve as a common ground to account for this goal.

HOW FINANCE FOR DEVELOPING COUNTRIES EVOLVED UNDER THE UNFCCC

1992

UNFCCC Adoption

Obligation for developed countries to provide new and provide new and additional financial resources without any clear definition of scope nor amounts

Paris Agreement and decision

- USD 100 billion dollars a year commitment mentioned as a floor to increase in 2025 as a new collective quantified goal
- Obligation to report on finance provided including projected levels of public finance

2015

2009-2011

Copenhagen & Cancún (2020 horizon)

- *Fast-start Finance*: new and additional USD 30 billion for the period 2010 - 2012
- Developed countries' commitment to jointly mobilize USD 100 billion dollars a year by 2020 to address the needs of developing countries
- Launch of the Green Climate Fund

2015

- Developing countries are invited to voluntarily provide financial support to other developing countries
- Provide information on financial support received

Developed countries (Annex II)
Developing countries

2018

Definition of what counts as mobilised finance flows

A common « transparency framework » allows for reporting, verification, compliance and flexibility

- **Reporting** : provide a clear understanding of climate change action, including **clarity and tracking of progress** towards achieving NDCs
- **Verification** : each Party shall participate in a **facilitative, multilateral consideration of progress** with respect to its respective implementation and achievement of its NDC
- **Compliance** : [establishes a] committee that shall be **expert-based and facilitative in nature and function** in a manner that is transparent, non-adversarial and non-punitive
- **Flexibility** : the transparency framework shall build on arrangements under the Convention, recognizing the **special circumstances of the least developed countries** and be implemented in a facilitative, non-intrusive, **non-punitive manner, respectful of national sovereignty**

In previous regimes, only developed countries (Annex I) had to make regular contributions on their climate action.

Towards a common transparency framework

HOW TRANSPARENCY HAS EVOLVED UNDER THE UNFCCC

1992

- Regular National Communications (NC)
- Detailed annual GHG inventories
- Biennial Reports (from 2010)

1997

- Supplementary reporting for Annex B Parties to the Kyoto Protocol
- Peer-review by the UNFCCC

1992

- Non-regular National Communications (NC)
- Biennial Update Reports (from 2011) depending on capabilities

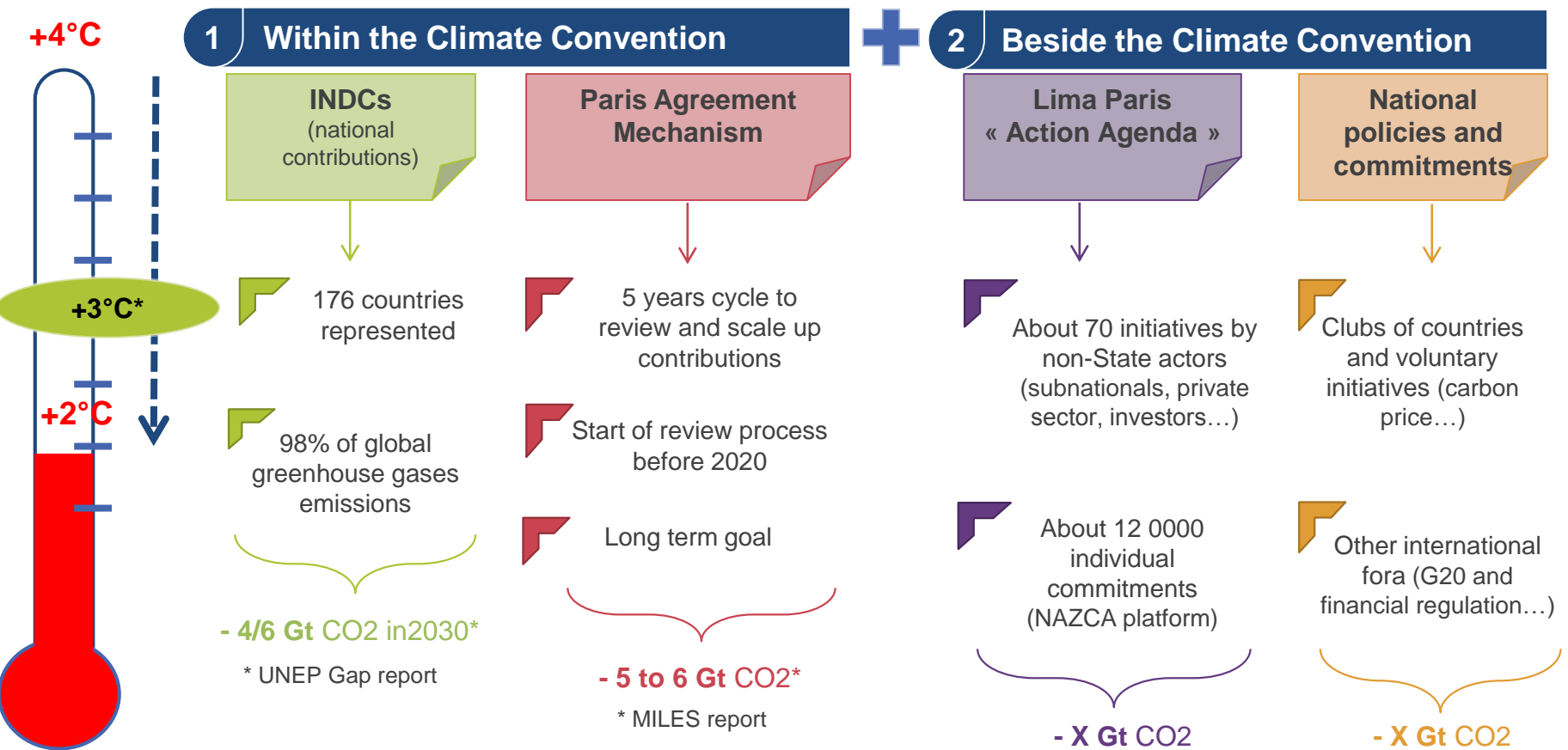
Developed countries (Annex I)
 Developing countries (Non-Annex I)

Apply to all Parties

- Common and regular GHG inventory reporting for (with built-in flexibility)
 - NDC progress reporting
 - Independent review of National Communications (NC)
- (TBD: Technical MRV details, and flexibility provisions)*

2015

Key reminder 1 : Not all climate contributions are registered within the Paris Agreement or UNFCCC



* Climate Action Tracker

Source : Cristofari, Hainaut

Key reminder 2 : the power of the Paris agreement to tackle climate change is not limited to its legal form

- At the core, the Paris Agreement is near-universal (197 signed, 172 ratified), legal under the UNFCCC, it has entered into force in 2016
- However, reluctant countries could evade many provisions in the agreement based on the often soft or weak written language
- At any rate, mechanisms set within the agreement, the UNFCCC or general international law are slow to react and ultimately unlikely to single-handedly force countries into taking drastic domestic measures to tackle climate change
- Nevertheless, the agreement sets mechanisms to facilitate implementation and promote compliance
- Ultimately, the power behind the agreement relies principally on :
 - Political leadership at the highest level
 - Domestic measures being taken by countries inside or outside their NDCs
 - Civil society (companies, NGO) and local government initiatives to implement, anticipate and supplement State's course of action

How can Trump influence US Paris pledges?

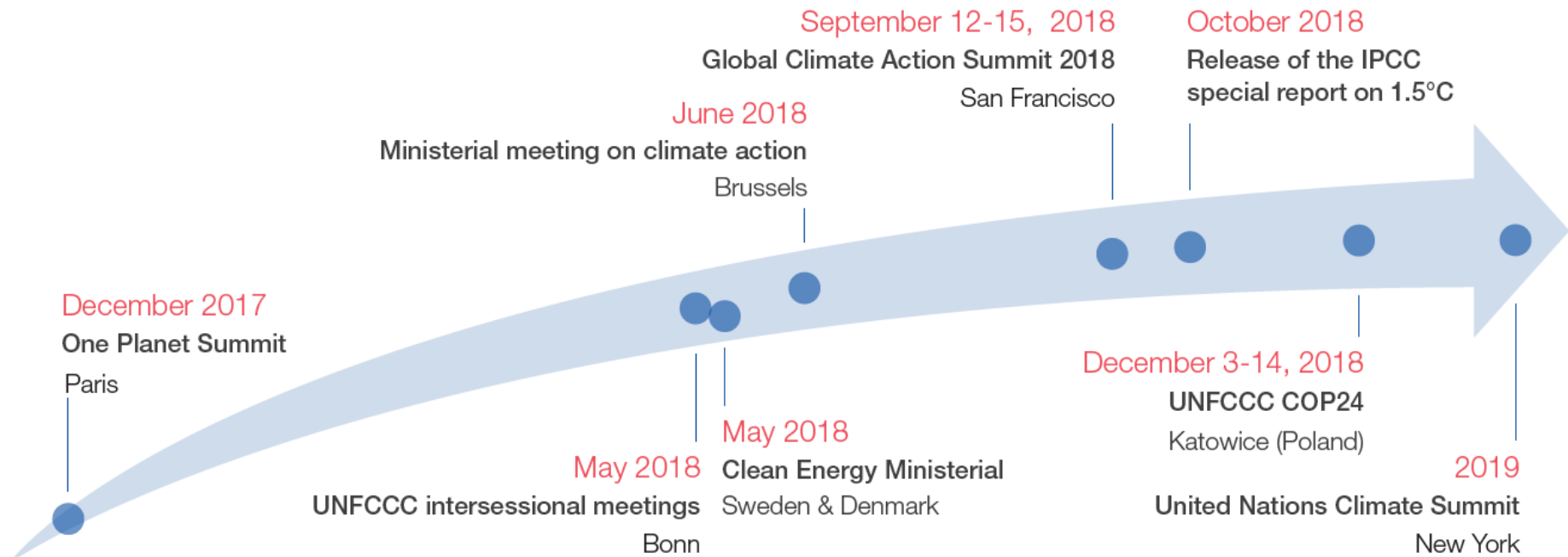
- U.S. President Donald Trump announced its intention to withdraw from the Paris agreement while remaining a Party to the UNFCCC in June 2017
- Article 28 of the Paris agreement states that a Party that wants to withdraw can notify its intend no earlier than three years after its entry into force, and that withdrawal will be effective one year later after notification.
- As the agreement entered into force on November 4th 2016, the earliest effective leaving date for the U.S. would be **4th November 2020**
- The U.S. has also announced its intend to cut its contribution to various multilateral climate funds
- Major regulations on GHG emission are being dismantled : methane regulations, car emission regulations, clean power plan.
 - This process is likely to be long and challenged in courts.

COP 23 saw the PA sustained by states and non-state actors, but little political leadership

- The Paris Agreement withstood the shock of the U.S. withdrawal
 - All major leaders reaffirmed their commitment to implementing PA without reopening negotiations on its content ;
 - The U.S. civil society displayed its resolve to implement the agreement through state and local initiatives, investor and corporate strategies
- The Action Agenda is now firmly entrenched as an autonomous complementary process to country negotiations at the COP
- However, the lack of political leadership from major countries during the COP delayed significant ambition increases and stalled progress on financial support
- Increased focus on pre-2020 action reignited traditional tensions between developed (annex 1) and developing (non-annex 1) countries

From I4CE, Climate Brief n°51 : COP23, The Paris Agreement warms up before the big 2018 game, Clément Métivier, Alice Pauthier, Vivian Dépoues, Emilie Alberola, Ian Cochran, Lucile Rogissart, Benoit Leguet, December 2017

A new sequence for political leadership to agree on increased ambition in COP-24

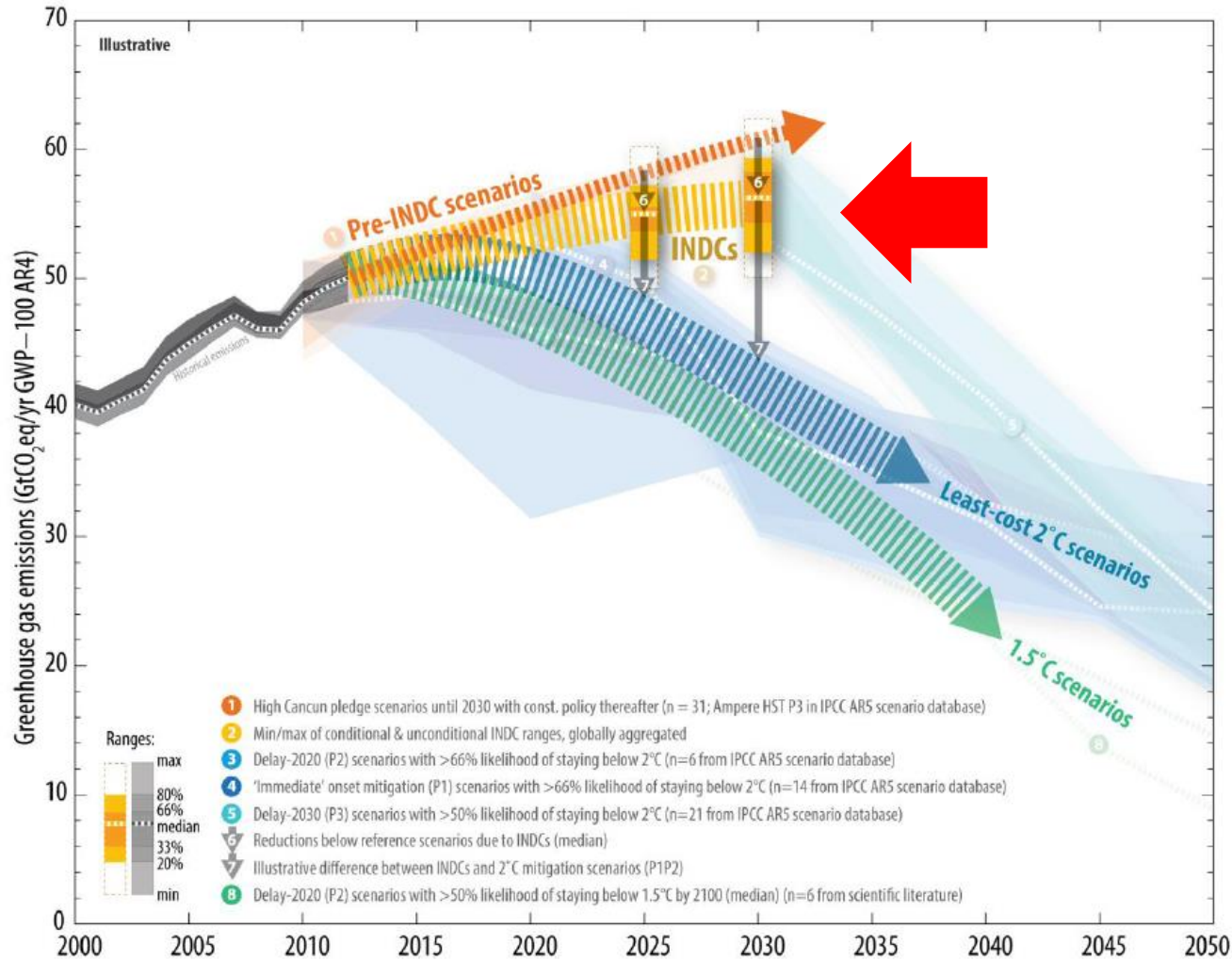


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Key messages

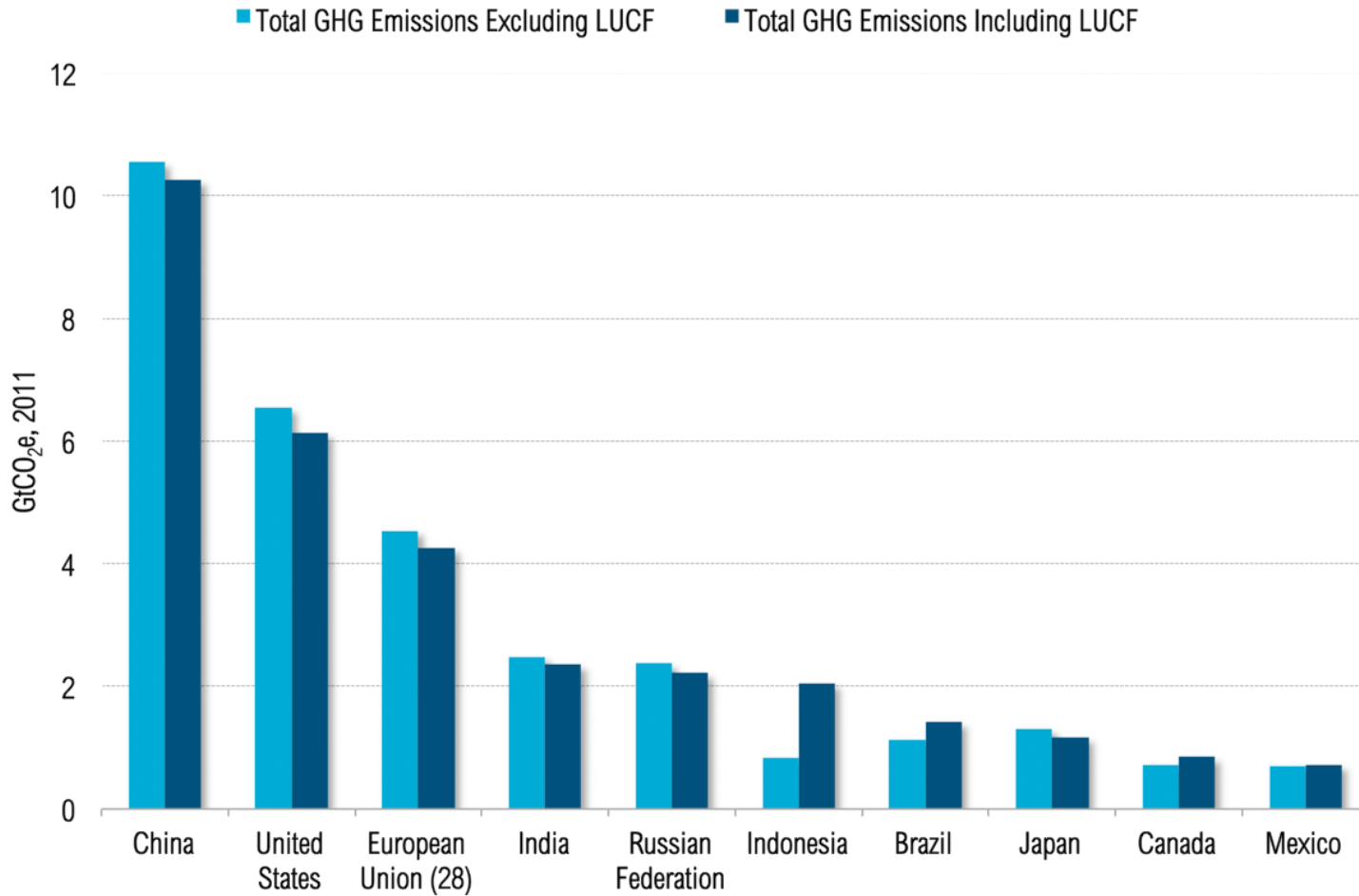
- Paris Agreement not a stand-alone document but the result of a 20+ year process within the UN convention
- Starting in 2020, the PA provides a comprehensive framework about how states manage their contribution to climate change mitigation and adaptation goals
- PA defines an ambitious mitigation goal, a mechanism to gather and improve countries' contributions (NDCs), deals with specific measures for adaptation and loss and damage, sets a framework for international financial support and capacity building, and rules for MRV and flexibility
- Annual COP process continues to define PA proceedings and aggregate contributions from within and without the convention
- Despite intense focus on PA's legal status and bindingness, its implementation depends on national processes as well as non-state initiatives

Even if correctly implemented, Paris agreement pledges (NDCs) still fall short of shifting emissions towards 2°C



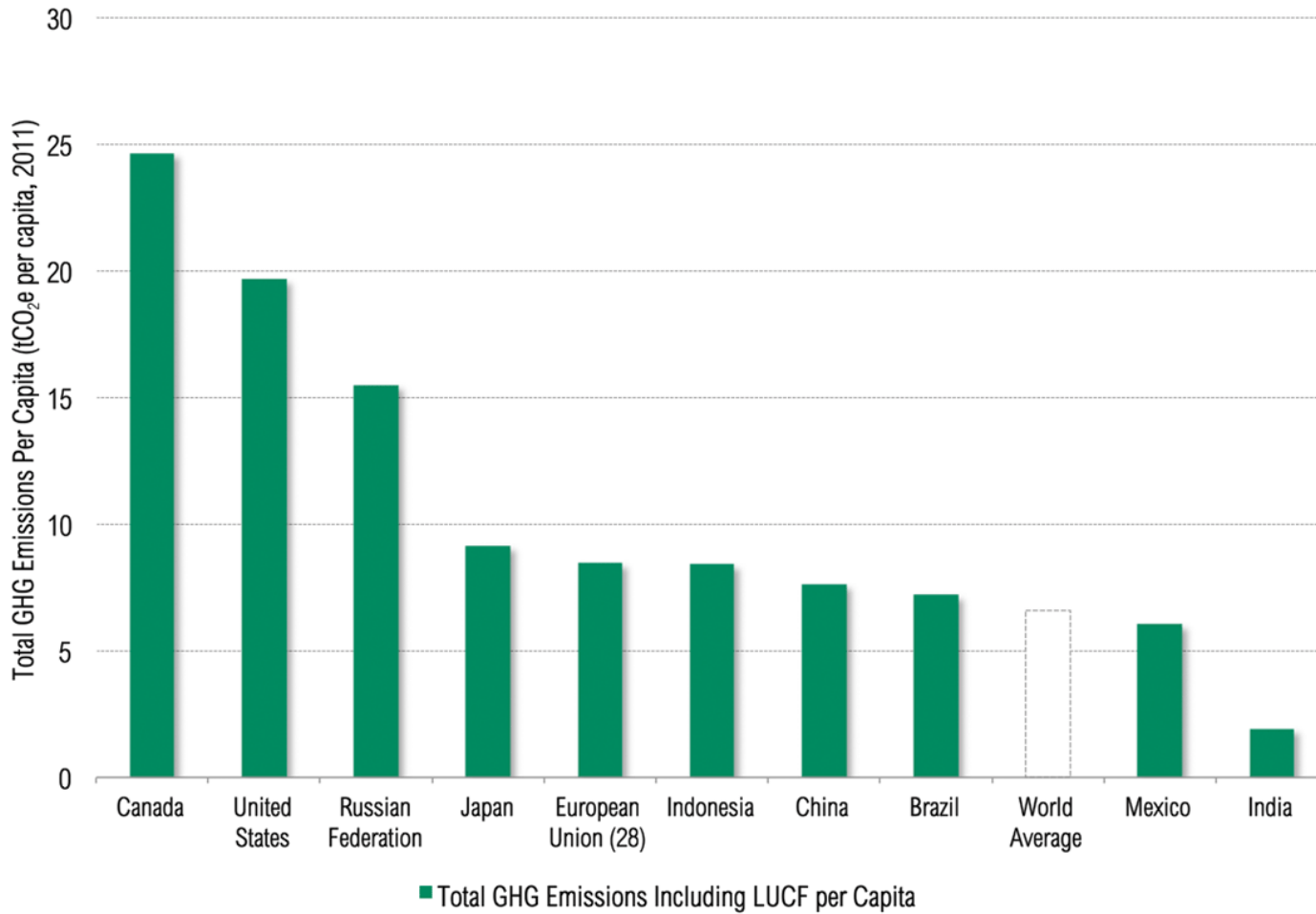
Sources: Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report scenario database, 1.5 °C scenarios from scientific literature (see footnote 18), IPCC historical emission database and intended nationally determined contribution quantification.
 Abbreviations: AR4 = Fourth Assessment Report of the Intergovernmental Panel on Climate Change, GWP = global warming potential, INDC = intended nationally determined contribution, IPCC AR5 = Fifth Assessment Report of the Intergovernmental Panel on Climate Change, n = number of scenarios, yr = year.

Largest GHG emitters



<http://bit.ly/11SMpJA>

GHG emissions per capita



<http://bit.ly/11SMpjA>

At the origins, the UNFCCC (1992)

- UN Framework Convention on Climate Change (UNFCCC)
 - Adopted in 1992 during the Rio Earth Summit
 - 197 signatory countries known as “parties to the Convention”
 - Objective: “stabilizing GHG concentrations to a level would prevent dangerous anthropogenic interference with the climate system”
 - Conference of the parties (COP) every year
- It recognizes three key principles:
 - precautionary principle: scientific uncertainty regarding the impacts of climate change do not justify deferring action
 - principle of common but differentiated responsibility: all emissions have an impact on climate change, but the most industrialized countries bear greater responsibility for the current concentration of GHGs
 - principle of the right to economic development



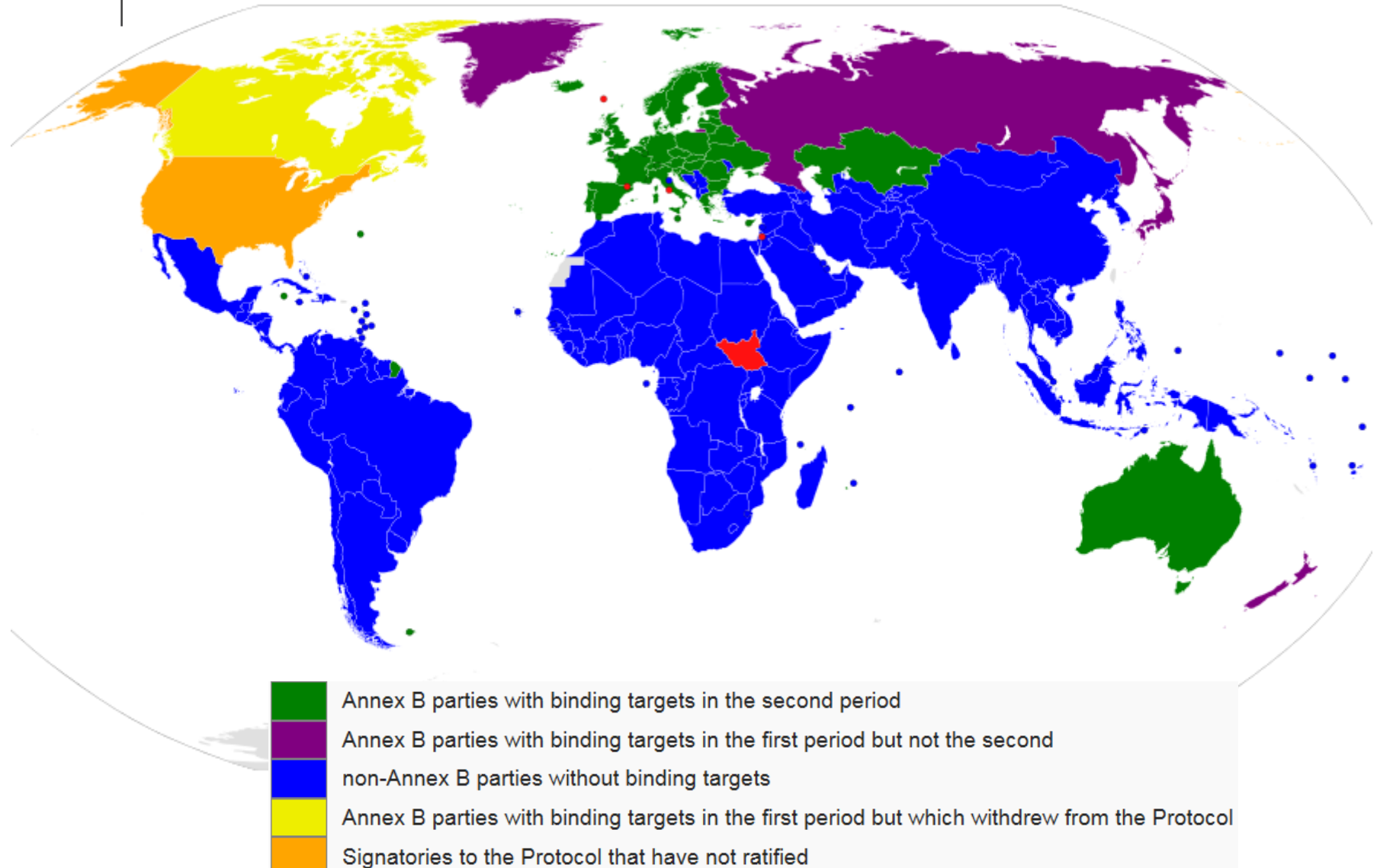
Kyoto Protocol (1997)

- Should have covered all industrialized countries, a total of 38 states, known as "Annex B"
- Target: decrease GHG emissions by 5% between 1990 and 2008-2012: CO₂, methane, nitrous oxide, fluorinated gases (PFC, HFC and SF₆)
- Entered into force in 2005 after ratification by Russia (55 countries and 55% of developed countries emissions)
- Every Annex B country received emissions allowances called Assigned Amount Units (AAU) equivalent to 1 ton of CO₂e (first global environmental commodity)

Kyoto flexibility mechanisms

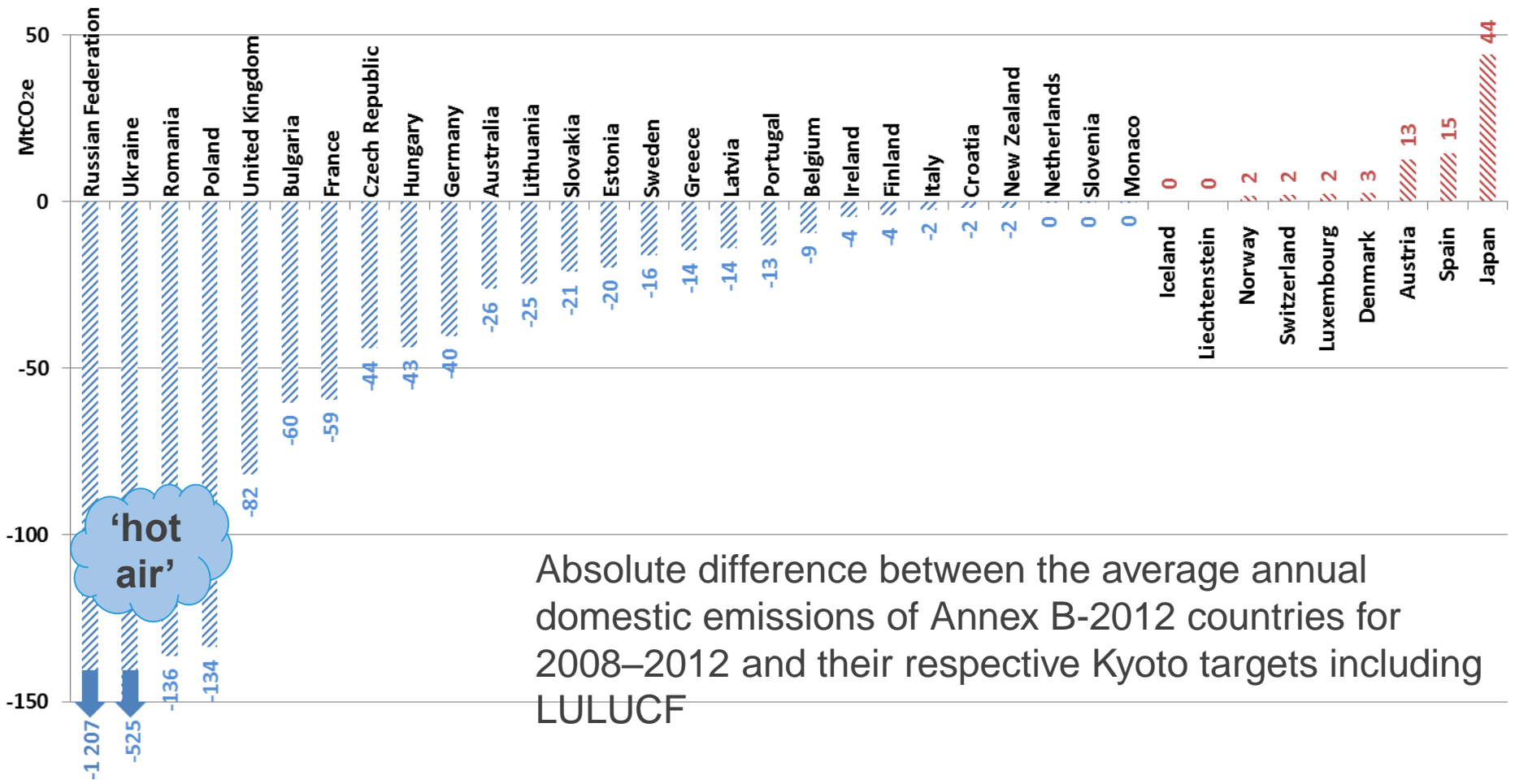
- **Exchange of allowances:**
 - **Emissions trading (article 12):** country A buys country B's AAUs
 - **“Bubbling” (article 4):** redistribution of effort within a group of countries (e.g. EU)
- **Project mechanisms (carbon credits for reduced emissions):**
 - **Joint Implementation – JI (article 6):** for developed countries
 - **Clean Development Mechanism – CDM (article 17):** for developing countries

Kyoto Protocol ratification status



- Annex B parties with binding targets in the second period
- Annex B parties with binding targets in the first period but not the second
- non-Annex B parties without binding targets
- Annex B parties with binding targets in the first period but which withdrew from the Protocol
- Signatories to the Protocol that have not ratified

Results of the Kyoto Protocol



Absolute difference between the average annual domestic emissions of Annex B-2012 countries for 2008–2012 and their respective Kyoto targets including LULUCF

Tacking stock of Kyoto

Achievements:

- Carbon accounting frameworks (MRV)
- USD400 billion mobilized through the CDM
- Capacity/experience/demonstration

Limitations:

- Did not make a dent in global GHG emissions
- Coverage (only 12% of global emissions in CP2)
- Environmental integrity criticism (partly justified)