

# Mechanisms Against Climate Change

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# Outline

- our atmosphere is a common shared resource
- international cooperation and the Paris Agreement
- a constructive alternative

# The atmosphere is a common, shared resource

The ability of our atmosphere to hold greenhouse gases at stable global temperature is a finite *resource*.

It fits the definition: it is valuable and exists in limited quantity.

Who owns this resource? Not in a legal, but an ethical<sup>1</sup> sense? All of us.

How is this resource being managed? It's not.

We act as though the price for this resource was set to zero; economists call this an **unpriced externality**.

**Key idea:** we need to cooperate over our atmospheric resource. A carbon price is an effective tool.

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<sup>1</sup>Peter Singer: One World Now: the ethics of globalisation (2016)

# Why is cooperation essential?

Individually, it's in nation's interest to use fossil fuels, because

- the user gets the full benefit from using the fuel
- but the CO<sub>2</sub>e is diluted across the entire globe.

But, when every nation does this, the dilution effect disappears, and everyone pays the full cost.

Thus: rational individual behaviour leads to irrational collective behaviour: **even if the costs exceed the benefits for every single country.**

Once we understand this, we can avoid it, by cooperating.

# Why would you cooperate?

International cooperation is between free, sovereign countries. Why would they voluntarily agree to participate?

Successful cooperation means that we all pay a small cost now, but avoid the much larger cost associated with unchecked climate change for generations to come.

The difficulty with cooperation is in avoiding free-riders.

**Erroneous inference:** my country is only responsible for 1% of emissions, so it's essentially irrelevant what we do.

# When does cooperation work?

Necessary conditions for cooperation<sup>2</sup>: Participants must

- share objectives
- take responsibility
- commit
- share mutual trust
- ensure transparency
- share reciprocity<sup>3</sup>
- ...

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<sup>2</sup>Elinor Ostrom: *Governing the Commons*, CUP (1990)

<sup>3</sup>MacKay, Cramton, Ockenfels and Stoft: *Price Carbon – I will if you will*, Nature (2015)

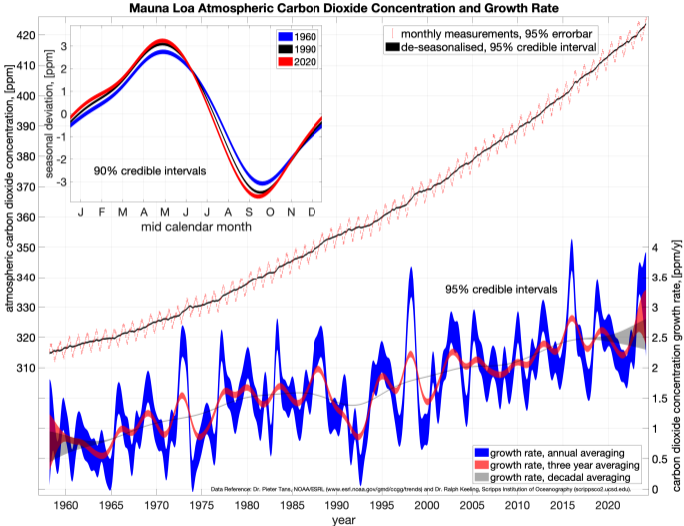
## ... aren't we already cooperating? The Paris Agreement

The Paris Agreement has been ineffectual so far, and is going to fail. Here are some of the reasons why:

- lack of meaningful individual duties or responsibilities
- lack of binding commitments
- no framework for building mutual trust
  - poor intermediate goals
  - poor time frames for NDCs (2030) and Net Zero 2050
- poor transparency
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- no mechanisms for reciprocity
- (singular focus on) temperature proxy is a poor choice
- poor choice of language for NDCs
- ...

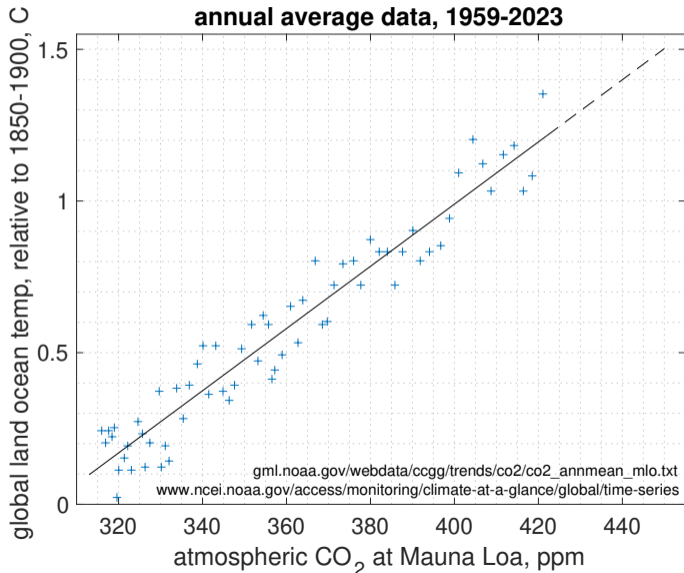
The Paris agreement has **none of the properties necessary for cooperation.**

# Atmospheric CO<sub>2</sub> concentration and growth rate





# Recent temperature vs CO<sub>2</sub> concentration



# Proposal: the Equitable Atmosphere Climate Cooperative

The cooperative works in the following **yearly cycle**:

- ① countries are invited to join the cooperative for a single year, at a pre-fixed price  $p$  €/ton CO<sub>2</sub>e
- ② at the end of the year, countries
  - report their greenhouse gas **emissions** (using UN FCCC reporting rules)
  - pay their contribution: **emissions**, times the price  $p$
- ③ the cooperative immediately re-distributes all the proceeds according to population of the member states (reflecting that we all own the resource)
- ④ member countries vote (by open ballot median vote, one vote per country) for next year's price  $p$ .

The first year, the price is set to  $p = 0$  €/ton CO<sub>2</sub>e.

# Some properties of the cooperative

The cooperative is designed to co-exist with (not replace) other initiatives.

A nation's net contribution or payout depends *only* on per capita CO<sub>2</sub>e [emissions](#).

The cooperative *immediately* creates strong economic pressure on *all members* to reduce [emissions](#).

Because of the [annual cycle](#), the cooperative builds trust. No long term difficult to verify promises *necessary*.

Simplicity:

- the cooperative is governed by a single number  $p$
- there is no room for *any* negotiation (which has obstructed past schemes).
- every nation has a single annual binary choice: to join or not.

Transparency: nations only agree to a single year at a fixed, given price  $p$ .

Nations can join *conditionally*, eg. only if certain other countries join (the “I will if you will” reciprocity principle).

## Some practical details (skip this slide)

In practice, **emission** data from the *previous year* is used, to avoid the delay associated with gathering data. Since emissions don't fluctuate wildly, the difference is small.

If a country who wasn't previously a member wants to join, they must pay the fee retroactively back to the inception of the cooperative (but not the pay-outs) to avoid countries delaying membership.

# Cooperative dynamics

Nations in the global south who typically have low per capita **emissions** benefit immediately.

Why would higher emitters join:

- it relies on sound, fair, effective mechanisms
- based on the equitable, ethical principle that atmosphere belongs to all
- no persuasive alternatives
- the transparent **annual cycle** may put pressure on non-members

Once a nation has joined, it'll be to their advantage to get other, higher per capita emitters to join.

Once the cooperative gets going, members may put pressure (trade tariffs) on non-members.

Adjusting the price annually will enable the cooperative to adapt to future demands.

The cooperative could be successful without universal membership.

# What the proposed cooperative doesn't do

The cooperative doesn't address widely differing *historical* emissions.

The cooperative itself doesn't directly ensure long term behaviour

- it doesn't force ratcheting up of prices
- it doesn't force long term commitments (but doesn't disallow it either)

... but let's not let the perfect be the enemy of the good!

# Conclusions

It is difficult to know whether humanity is able to rise to the climate challenge.

It's important to acknowledge that the Paris Agreement is very unlikely to succeed and why.

Sound mechanisms addressing the fundamental problem: **unpriced externalities** using principles of **cooperation**.

We can design a coalition of the willing alliances, which may allow **cooperation** to work:

- simple
- equitable
- transparent
- can build trust
- take immediate effect

Much climate awareness is centered on protest. Instead we need concrete, practical solutions. The EACC is such a solution.

Tell your friends about it.