

Environmental and Climate Economics

International Climate Policy

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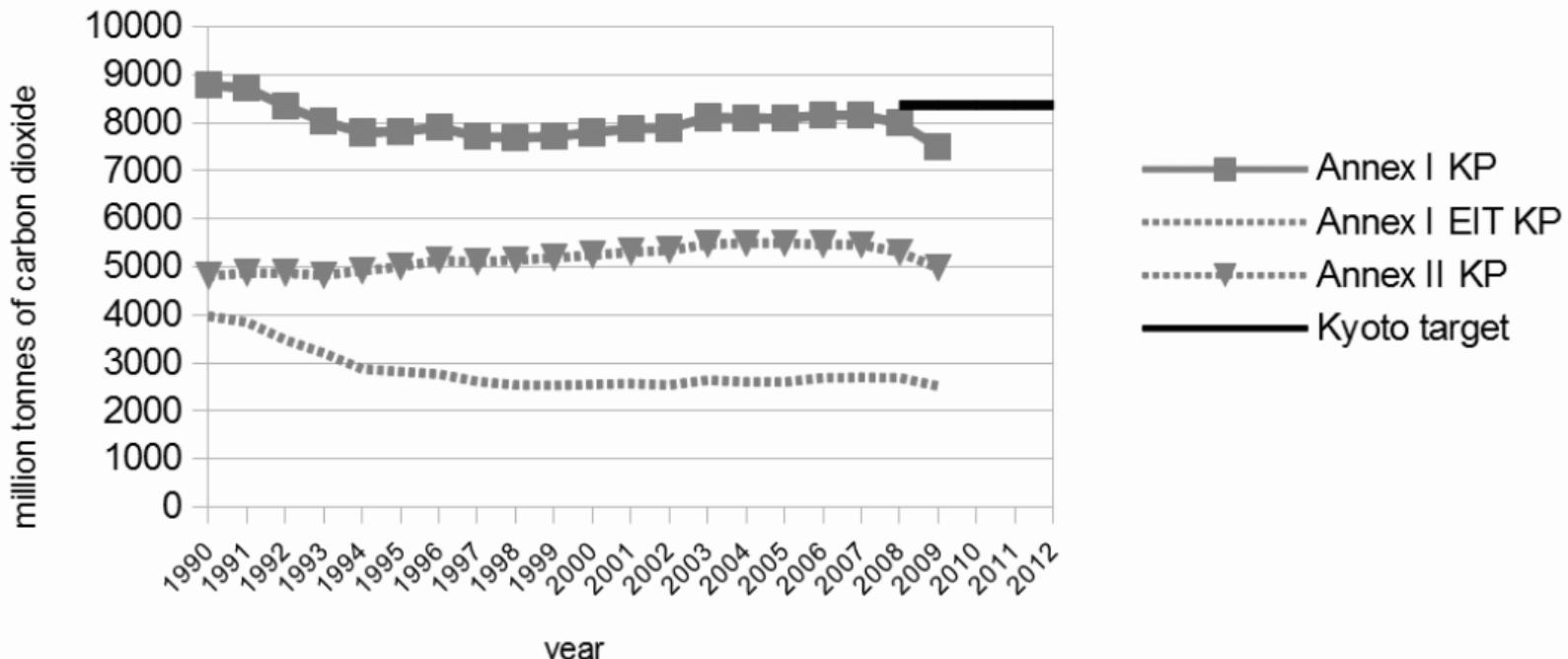
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Carbon dioxide emissions from fuel combustion of Kyoto Protocol Parties 1990-2009



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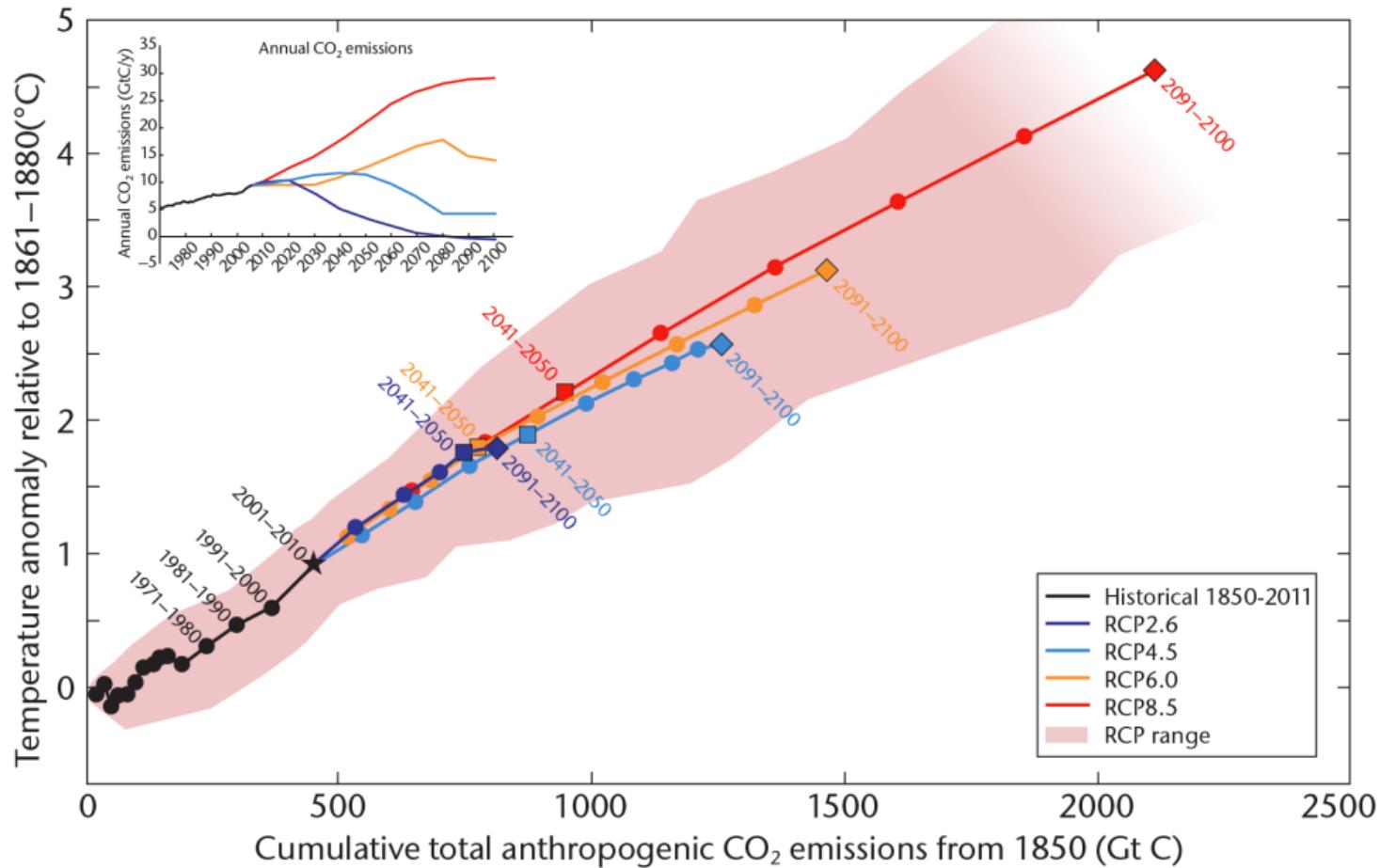
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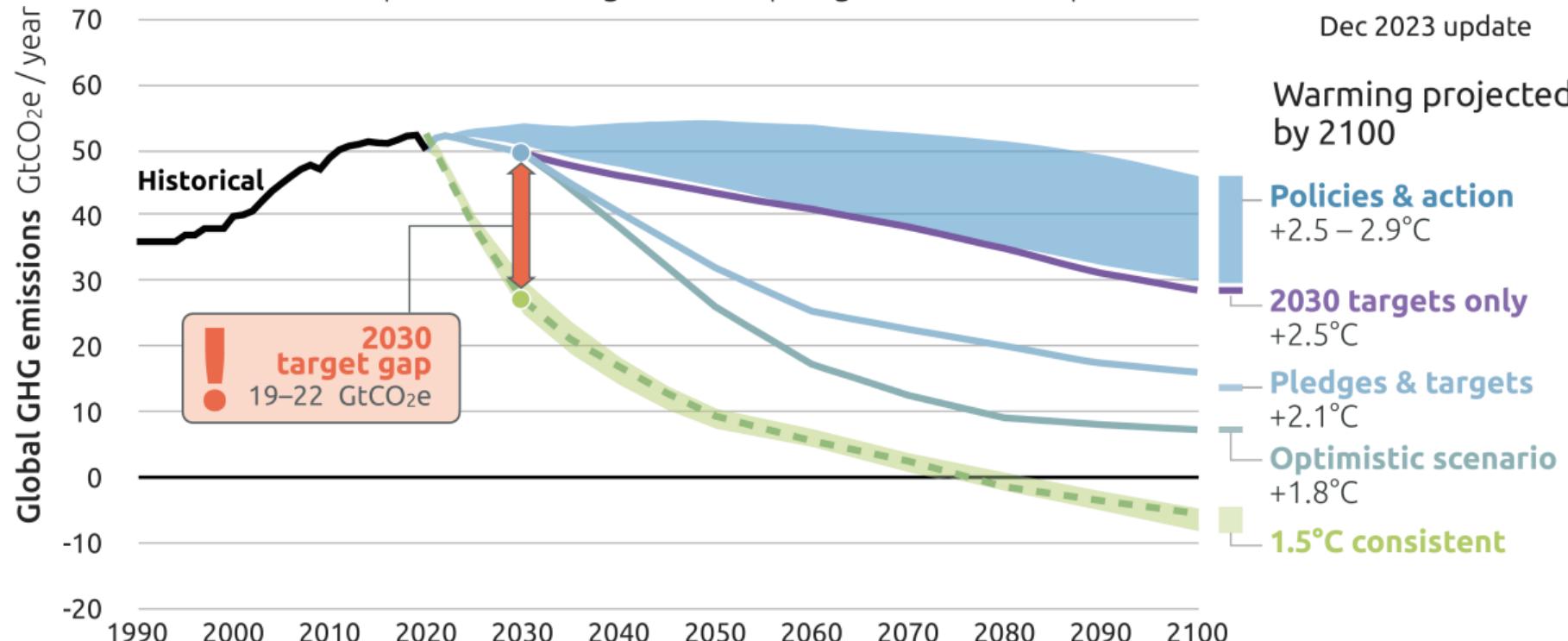
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Dec 2023 update

2100 WARMING PROJECTIONS

Emissions and expected warming based on pledges and current policies



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How to break the deadlock? IMHO, North–South transfers and give up on universal agreements.

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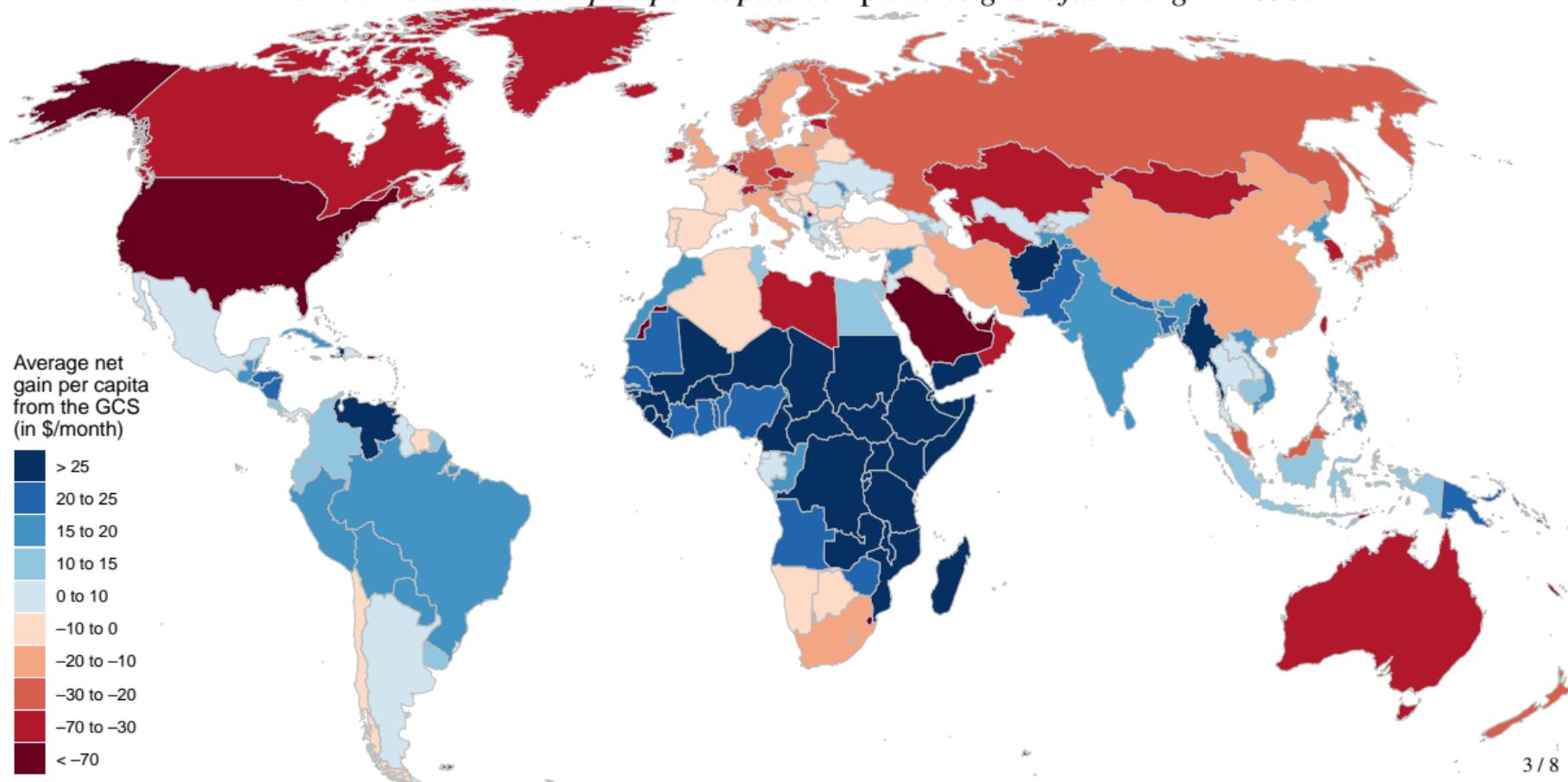
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Distributive effects of *equal per capita* compared to *grandfathering* in 2030.



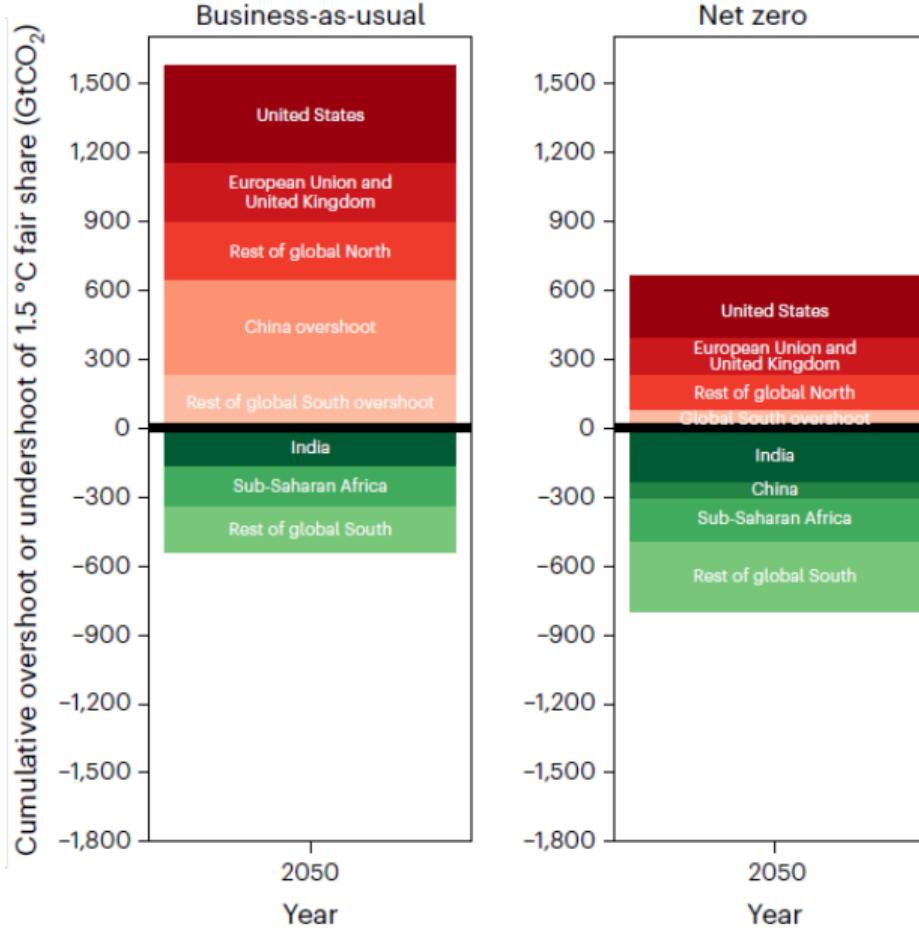
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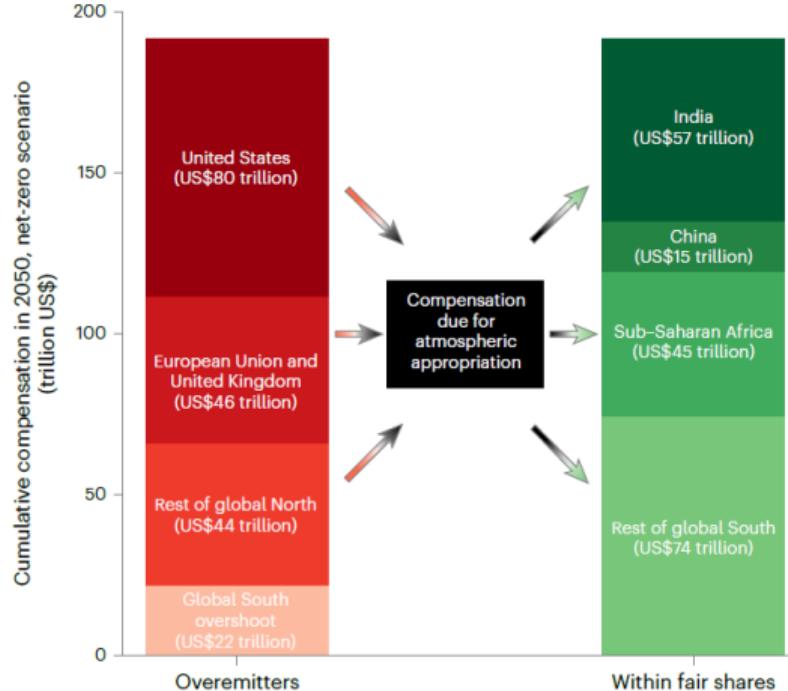
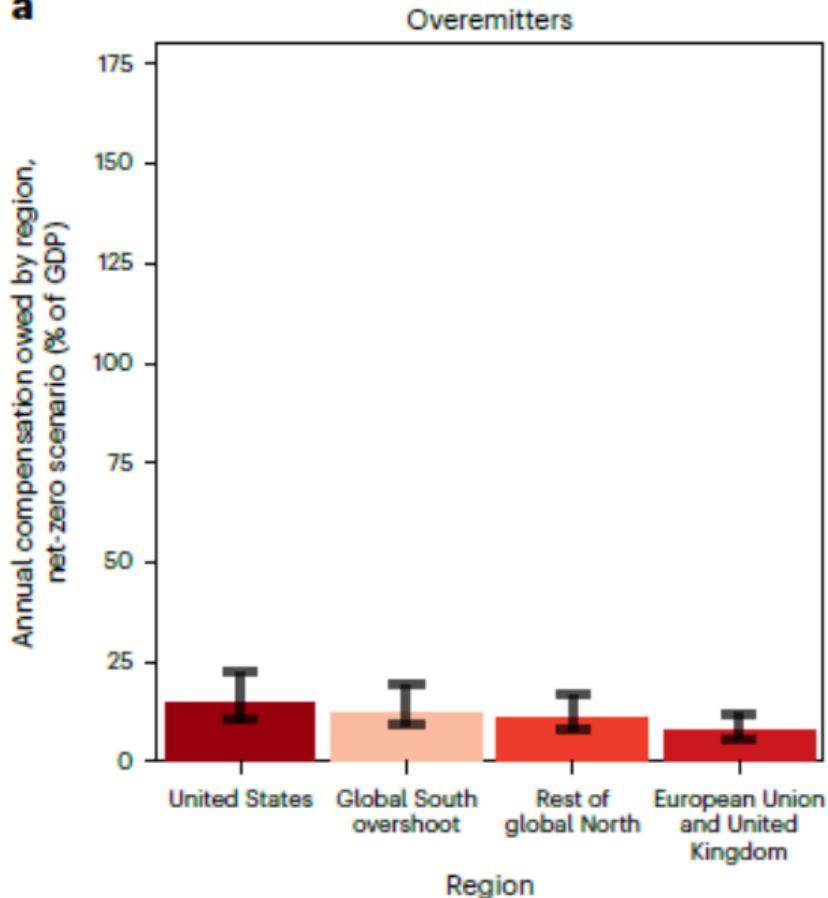
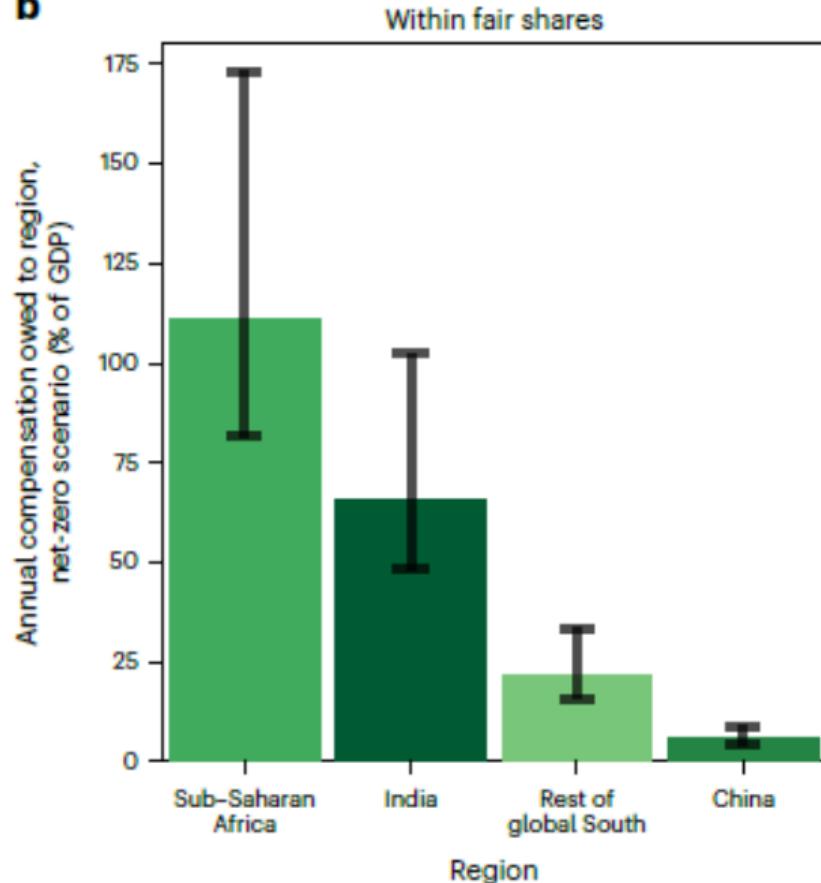


Fig. 4 | Cumulative compensation due from overshooting country groups to undershooting country groups (relative to 1.5 °C fair shares) based on the historical period from 1960 to 2019 and net-zero scenario from 2020 to 2050.
Cumulative compensation is expressed in constant 2010 prices. See Extended Data Fig. 5 for results with cumulative financial compensation by country group starting from 1850 and 1992 and Supplementary Data 1 for results for all countries.

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My view: alternative conventions make more sense BUT the North owes to the South for many other reasons.

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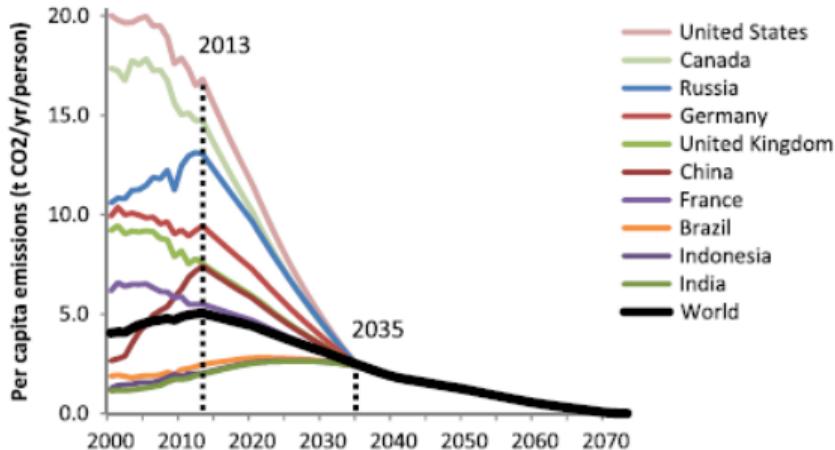
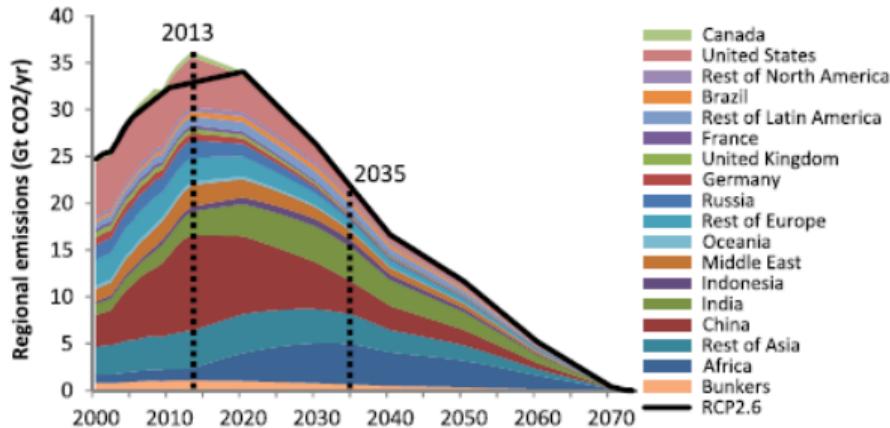
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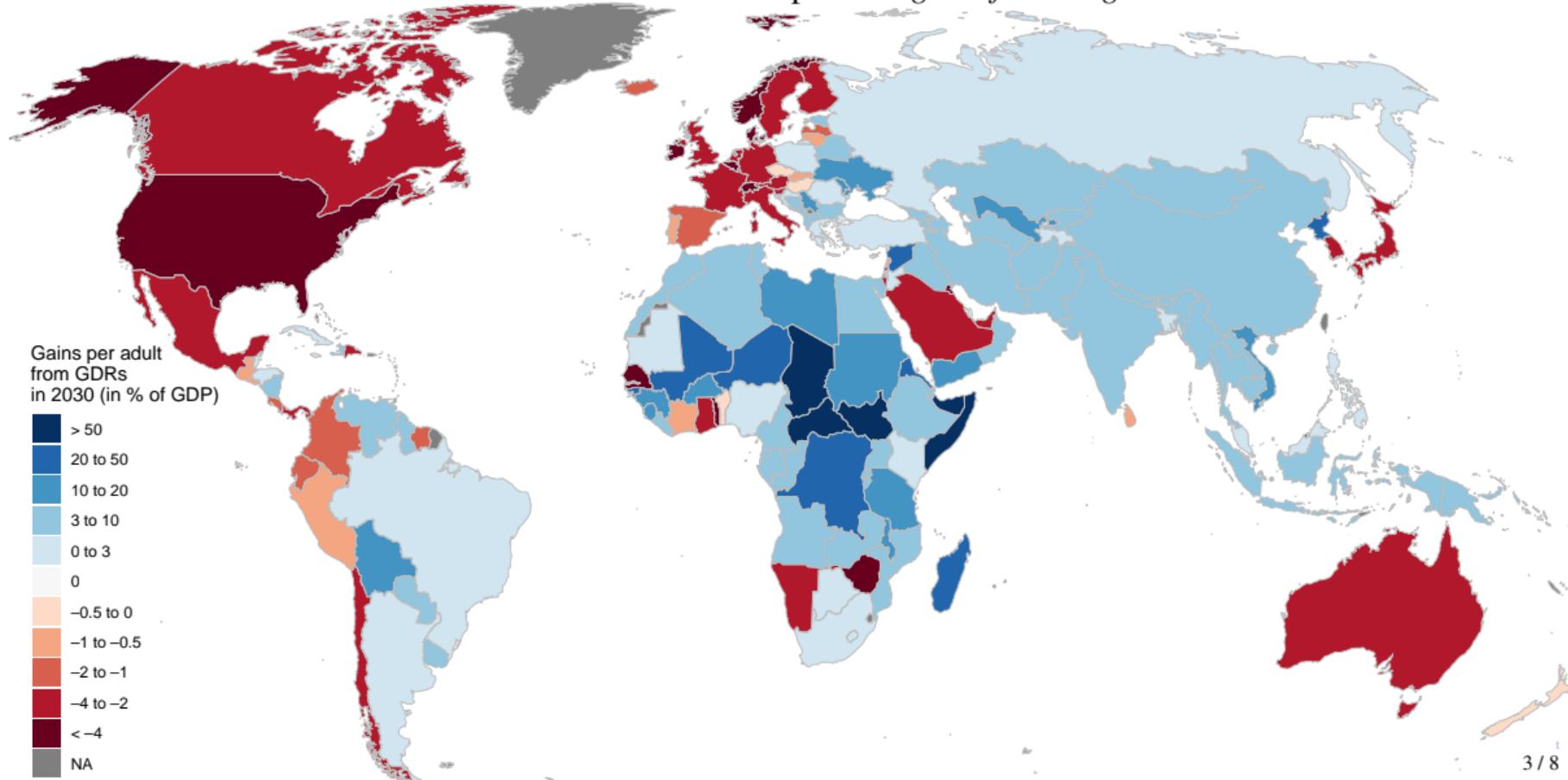
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Climate Equity Reference Framework (CERF, or *Greenhouse Development Rights*): blend of grandfathering, historical responsibility, and ability to pay.

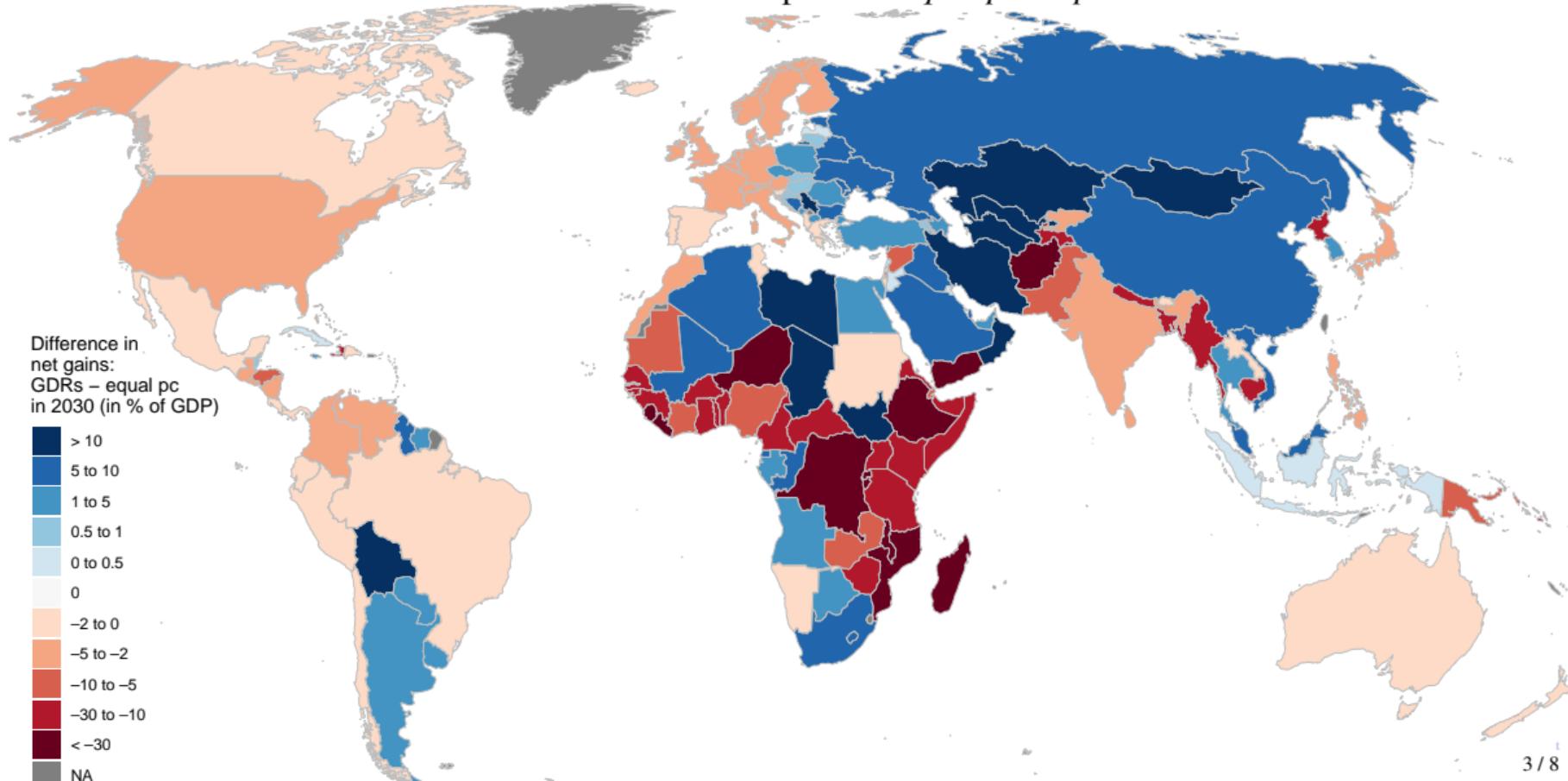
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Distributive effects of *CERF* compared to *grandfathering* in 2030.



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Three approaches on how to allocate the burden of climate mitigation between countries:

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“equity”: equal per capita?

“developed country”: binary and static notion. What about Saudi Arabia? South Korea? Slovenia? Greece?

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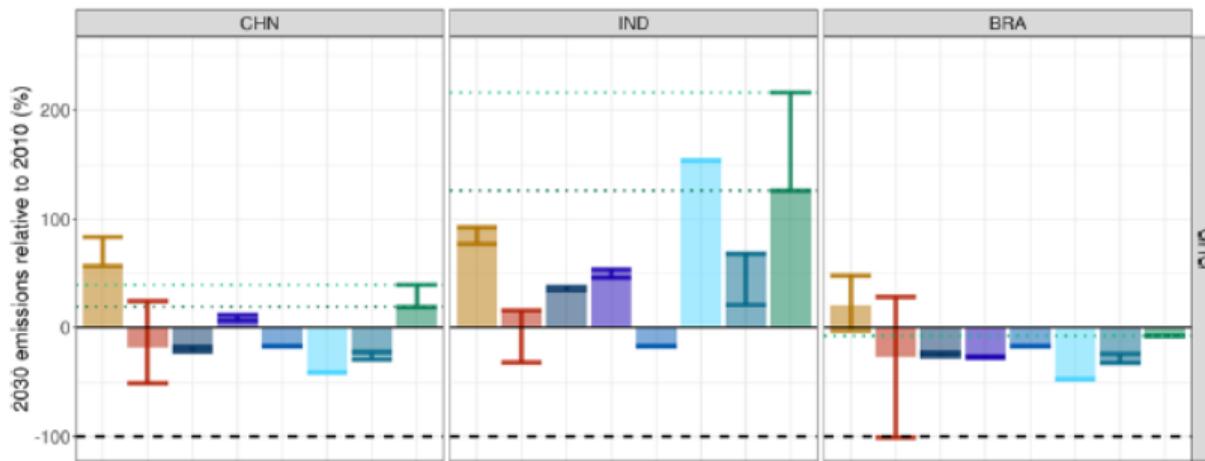
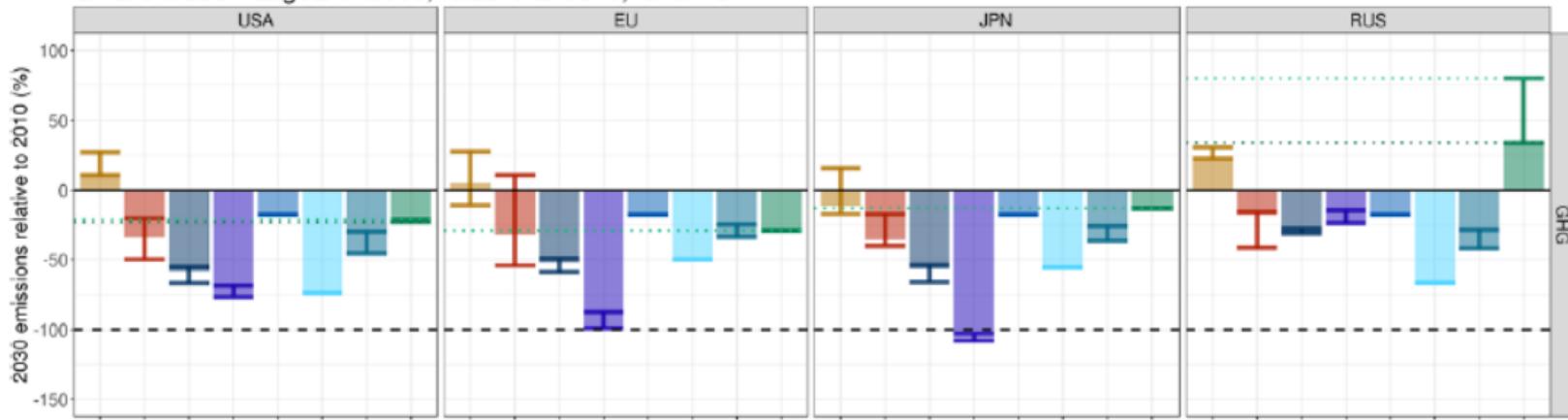
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How do Nationally Determined Contributions (NDCs) fare according to the different principles?

Climate mitigation burden-sharing approaches: NDCs assessment

GHG emission targets in 2030, relative to 2010, for 2 °C



- Approach
- BAU
 - CO
 - AP
 - GDR-1970/1850/1990
 - GF
 - IEPC
 - PCC
 - NDC

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⇒ Only lower income countries like India meet fairness criteria like IEPC (equal p.c.).

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Climate negotiations are stuck with a vague and inconsistent compromise since 92: CBDR-RC.

How do Nationally Determined Contributions (NDCs) fare according to the different principles?

⇒ Only lower income countries like India meet fairness criteria like IEPC (equal p.c.).

In the Cost-Optimal approach, less emissions in lower income countries and more in HICs.

The future of international climate policy

Enhanced NDCs; New Collective Quantified Goal: more **climate finance** for the Global South.

The future of international climate policy

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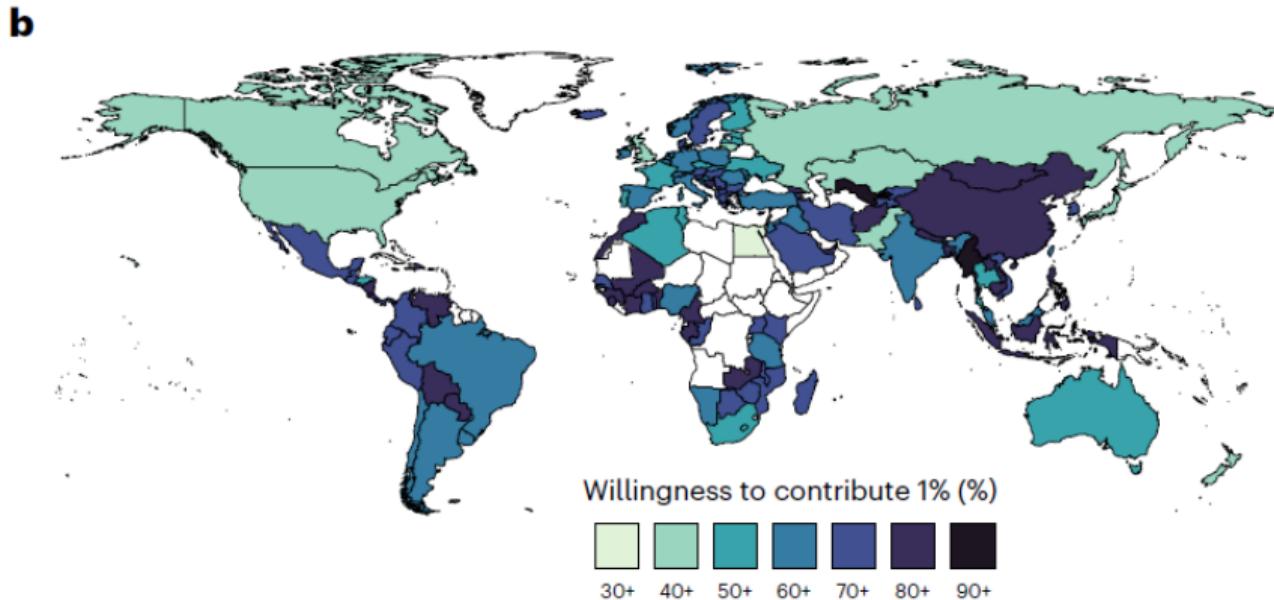
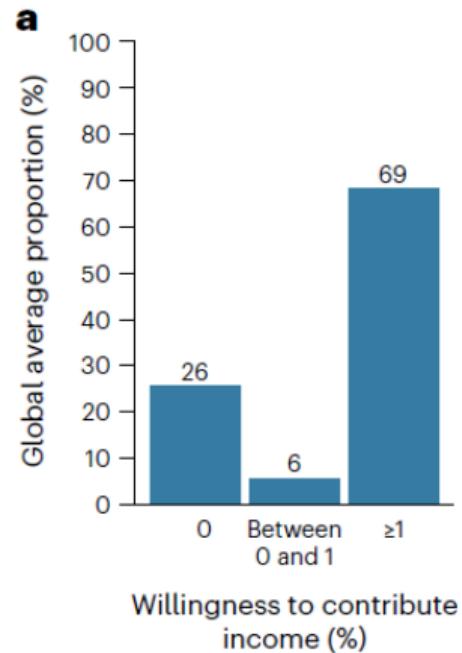
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The first best: a global emissions trading scheme financing equal per capita transfers?

Population attitudes on climate action

“Would you be [willing to contribute 1% of your income to fight global warming?](#)”

Population attitudes on climate action



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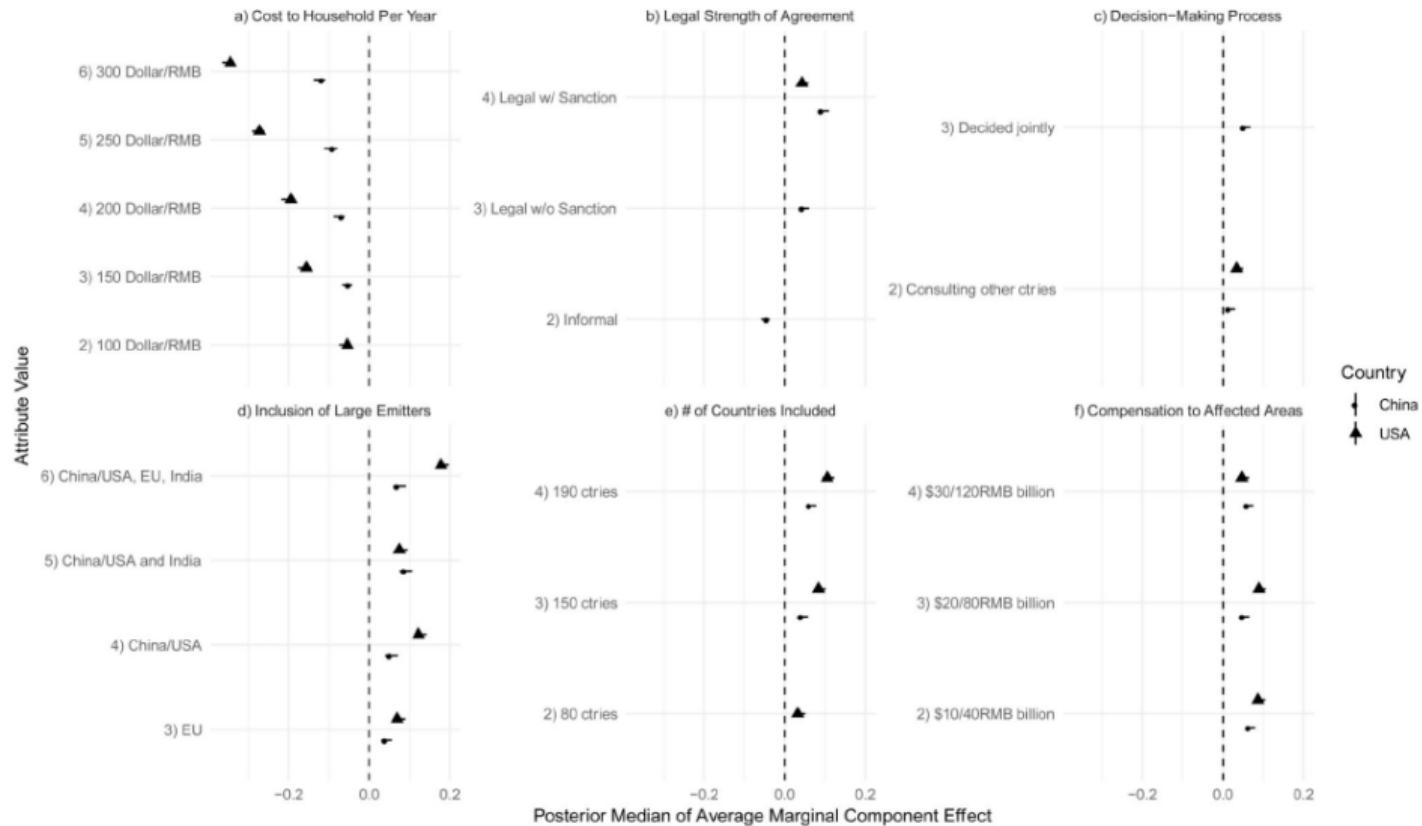
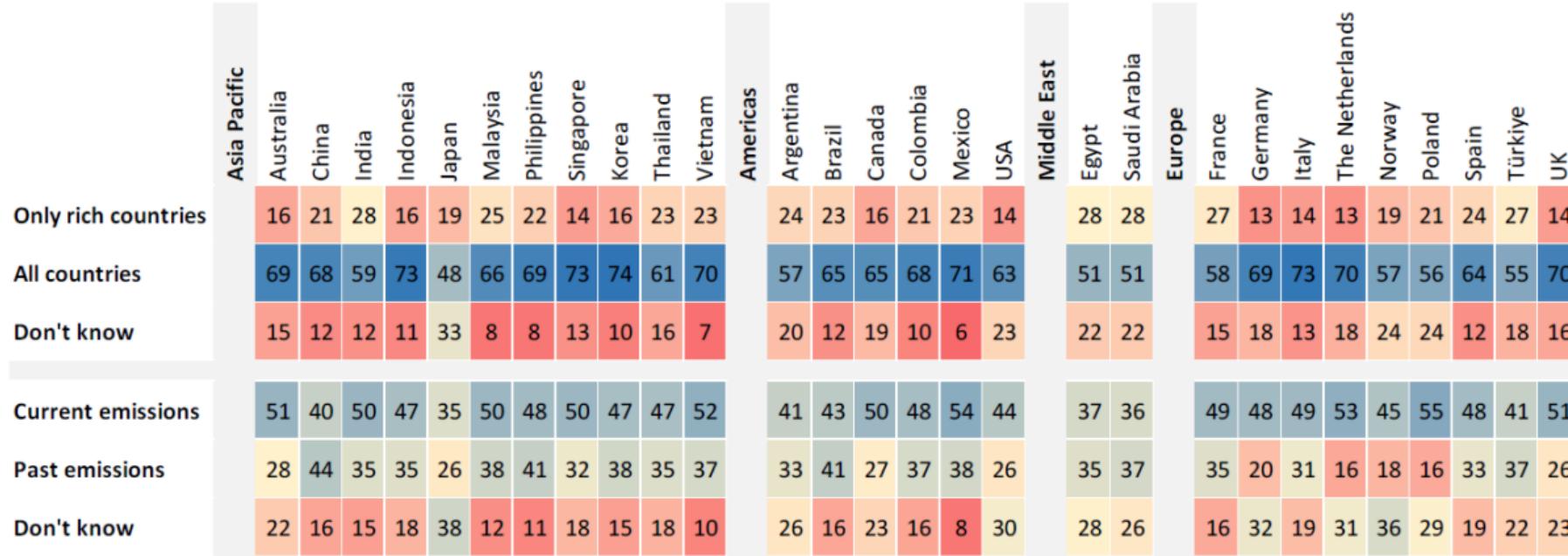


Figure 1. Public support for features of international climate agreements.

Population attitudes on climate action

Figure 20. International Burden Sharing: Who Should Pay?
 (Percent of responses)



Source: IMF staff calculations based on IMF-YouGov survey.

Note: This figure shows the share of responses (in percentage points) to the questions "Which countries do you think should be paying to reduce carbon emissions?" (top panel) and "Should countries be paying to reduce carbon emissions based on their current or accumulated historic levels of emissions?" (bottom panel).

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Population attitudes on climate action

Q.9 To what extent do you agree with the statement that countries which emitted a lot of carbon in the past have a right to continue emitting more than others in the future?

- I strongly agree
- I rather agree
- I rather disagree
- I strongly disagree

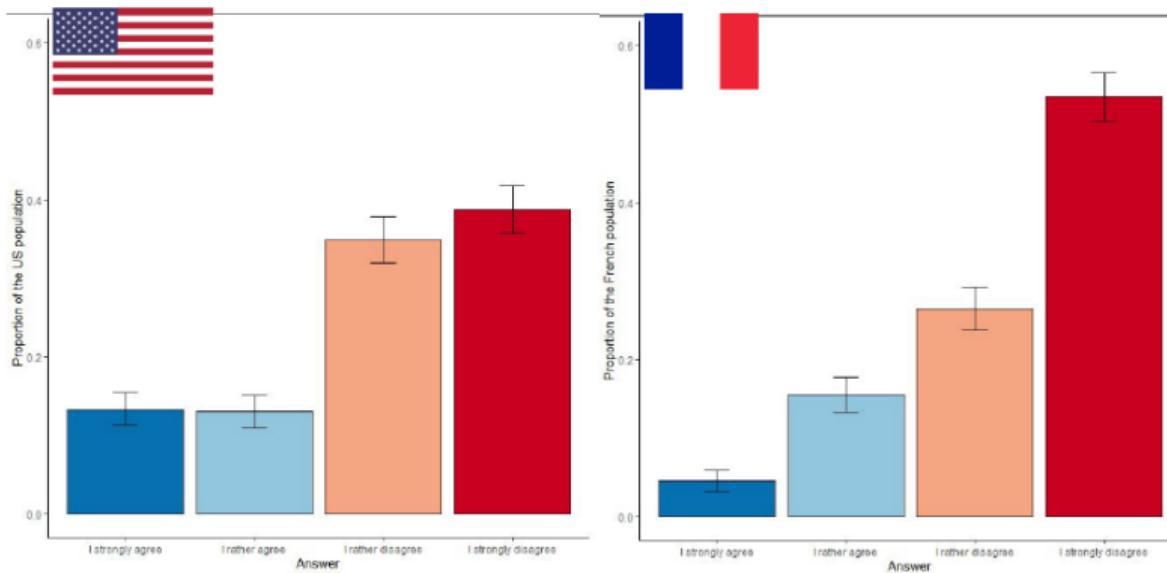


Figure 13 : Distribution of answers to question 9 among the US (left) and French (right) populations

Population attitudes on climate action

Q.14 Which of the following statements do you most agree with? *

- Countries should only be held accountable for their current emissions [label: Current emissions]
- Countries should be held accountable for their historical emissions since 1990, when it was scientifically established that climate change was real and caused by human activities [label: Since 1990]
- Countries should be held for their historical emissions since 1850, when humans started emitting large quantities of carbon in the atmosphere [label: Since 1850]

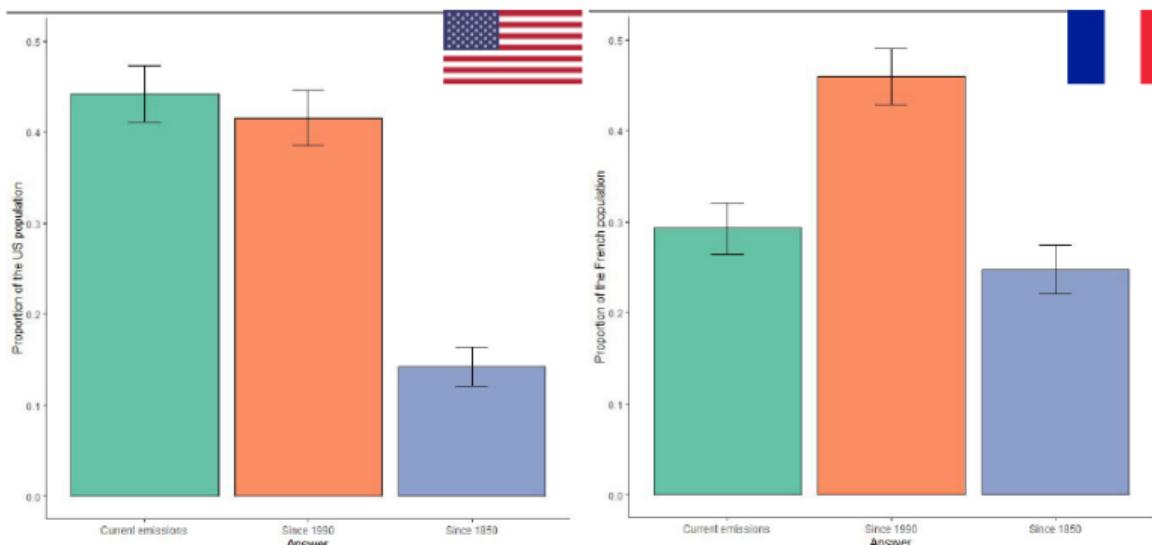


Figure 22 : Distribution of answers to question 14 among the US (left) and French (right) populations

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Factors for supporting a climate policy: perceiving it as 1. **effective**, 2. **fair**, 3. **in one's interest**.

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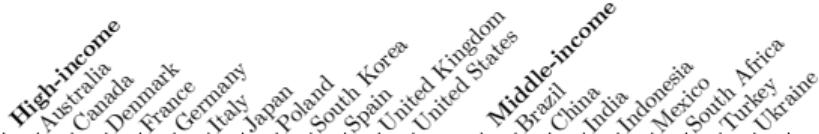
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Majorities support green infrastructure program, but oppose a national carbon tax.

Population attitudes on climate action



Support for Main Climate Policies

- Green infrastructure program
- Ban on combustion-engine cars
- Carbon tax with cash transfers

79	68	77	76	77	58	94	78	82	95	86	78	71	93	90	98	91	97	94	89	92	87
56	50	61	49	39	40	74	59	56	73	62	60	55	81	77	95	86	88	76	70	83	70
56	50	60	45	45	39	72	60	55	79	59	55	52	79	70	96	85	89	71	73	73	63

Support for Other Climate Policies

- Subsidies to low-carbon technologies
- Mandatory and subsidized insulation of buildings
- Ban on polluting cars in city centers
- Funding clean energy in low-income countries
- Ban on combustion-engine cars w. alternatives available
- Tax on flying (+20%)
- Tax on fossil fuels (\$45/tCO2)

87	82	86	89	76	84	96	91	91	93	87	90	78	90	86	94	84	94	87	93	90	90
84	86	83	84	81	77	90	83	88	95	86	89	71	90	98	98	98	98	98	91	87	83
75	70	76	78	69	67	89	85	78	71	73	80	65	85	78	93	87	96	85	82	72	78

Support for Carbon Tax With:

- Subsidies to low-carbon tech.
- Funding environmental infrastructures
- Reduction in personal income taxes
- Reduction in the public deficit
- Cash transfers to the poorest households
- Tax rebates for the most affected firms
- Cash transfers to constrained households
- Reduction in corporate income taxes
- Equal cash transfers to all households

85	80	67	84	83	88	94	92	89	97	86	87	75	92	93	98	87	97	91	92	88	89
85	80	68	83	88	83	92	90	87	94	88	85	77	92	92	96	89	96	92	94	89	90
79	73	66	60	80	80	92	88	87	88	83	76	69	87	86	95	84	91	86	85	85	87

Support for Cattle-Related Policies

- Subsidies on organic and local vegetables
- Ban of intensive cattle farming
- Removal of subsidies for cattle farming
- A high tax on cattle products, doubling beef prices

75	59	69	72	73	74	90	72	89	84	78	70	64	82	77	96	90	72	72	91	69
57	44	56	40	69	66	81	31	60	66	54	66	51	51	49	80	61	59	36	42	31
49	44	51	43	41	61	65	26	50	52	52	54	55	54	60	78	71	65	38	36	31

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Factors for supporting a climate policy: perceiving it as 1. **effective**, 2. **fair**, 3. **in one's interest**.

Majorities support green infrastructure program, but oppose a national carbon tax.

Majorities support a global emissions trading system with equal p.c. allocation.

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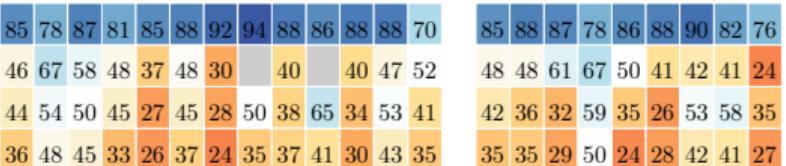
Level at which climate policies are needed

Global



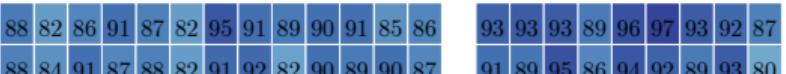
Dependence on what other countries do

If other do less, [country] should do more

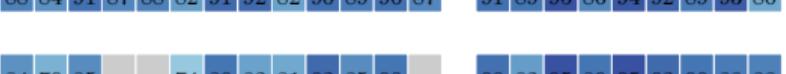


Global climate policies

Global carbon budget (+2°C) divided in tradable country shares



Global tax on millionaires to finance low-income countries

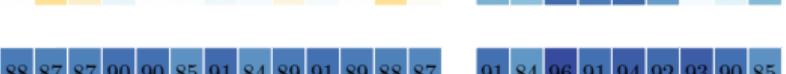


Global democratic assembly on climate change

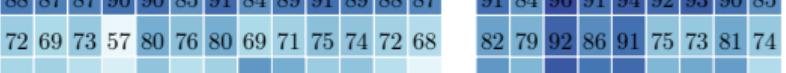
Global tax on GHG financing a global basic income

Burden sharing preferences for the global carbon budget

Emission share should be in proportion to population*



Countries that have emitted more since 1990 should receive a lower share*



Countries that will be hurt more by CC should receive a higher share*

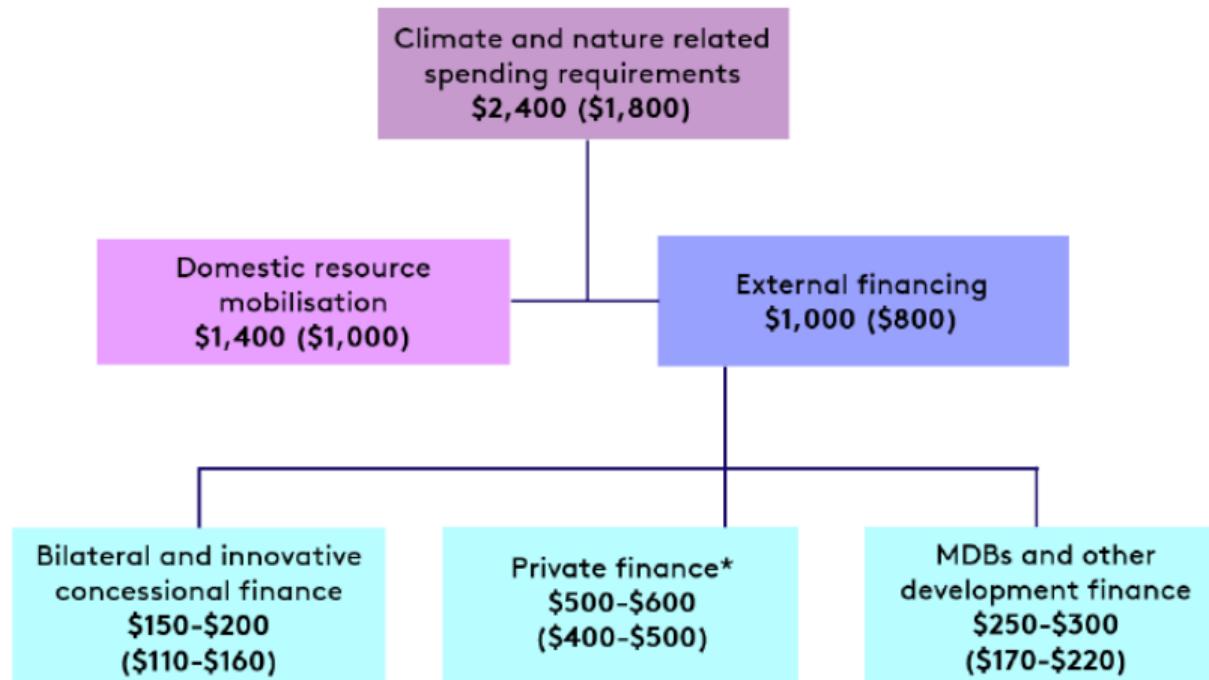
Emission share should be in proportion to current emissions

Climate Finance

\$2.4T/yr of additional climate finance needed in 2030 (Songwe et al., 2022, 2023).

Climate Finance

Figure 2. Mobilising the necessary financing for the green transition (\$ billion per year by 2030)



Notes: Incremental investment from current levels is indicated in parentheses. *More than half of this private finance would be directly and indirectly catalysed by MDBs, other development finance institutions, and bilateral finance.

Climate Finance

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\$4T to achieve SDGs, incl. \$400-700G in LICs & LMICs.

Developed countries promise \$100G/yr for mitigation & adaptation + Loss & Damage Fund (L&D).

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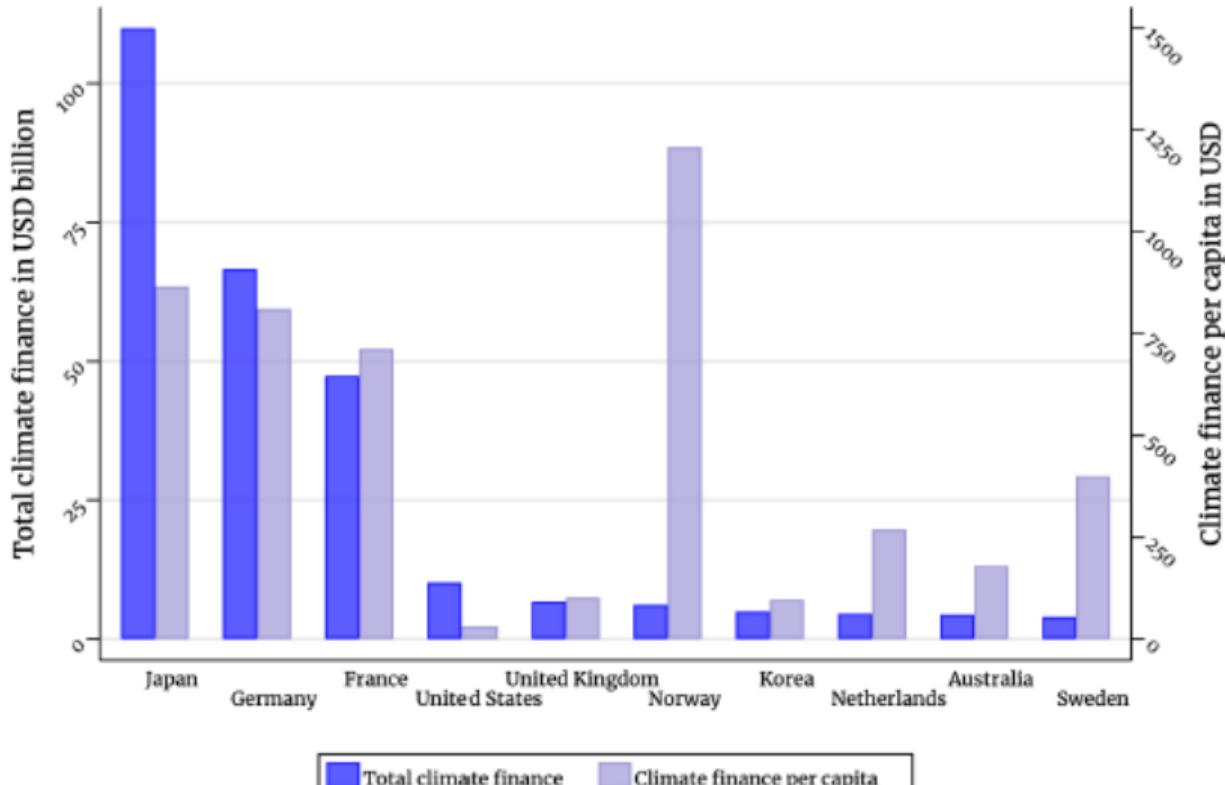
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U.S. are responsible for almost all shortfall of the pledge.

Climate Finance

Top 10 donor countries

(2000–2021)



Climate Finance

Table 3 Scorecard of progress towards a fair share of international climate finance (2017–2018)

Country	Fair share based on a composite index (\$ billions)	Climate finance contributions (2017–2018 average, \$ billions)	Progress towards providing a fair share of climate finance (%)
Norway	0.576	1.082	188
Sweden	0.906	1.372	151
Germany	8.274	9.236	112
France	5.402	4.854	90
Japan	11.740	9.372	80
Denmark	0.615	0.452	74
Netherlands	1.779	1.230	69
Switzerland	0.968	0.601	62
Belgium	1.125	0.611	54
Finland	0.560	0.281	50
Luxembourg	0.106	0.051	48
United Kingdom	5.873	2.812	48
Austria	0.826	0.388	47
Iceland	0.038	0.013	36
Ireland	0.597	0.199	33
Italy	4.737	1.195	25
Spain	3.445	0.787	23
Canada	4.153	0.697	17
New Zealand	0.430	0.071	17
Australia	2.948	0.477	16
Portugal	0.696	0.091	13
Greece	0.790	0.072	9
United States	43.416	1.856	4

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Cancel (or restructure) LICs' public debt.

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U.S. are responsible for almost all shortfall of the pledge.

UNSG support Bridgetown Initiative and SDG stimulus:

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V20's Accra-Marrakech Agenda also demands NDCs based on equal cumulative p.c. carbon budget.

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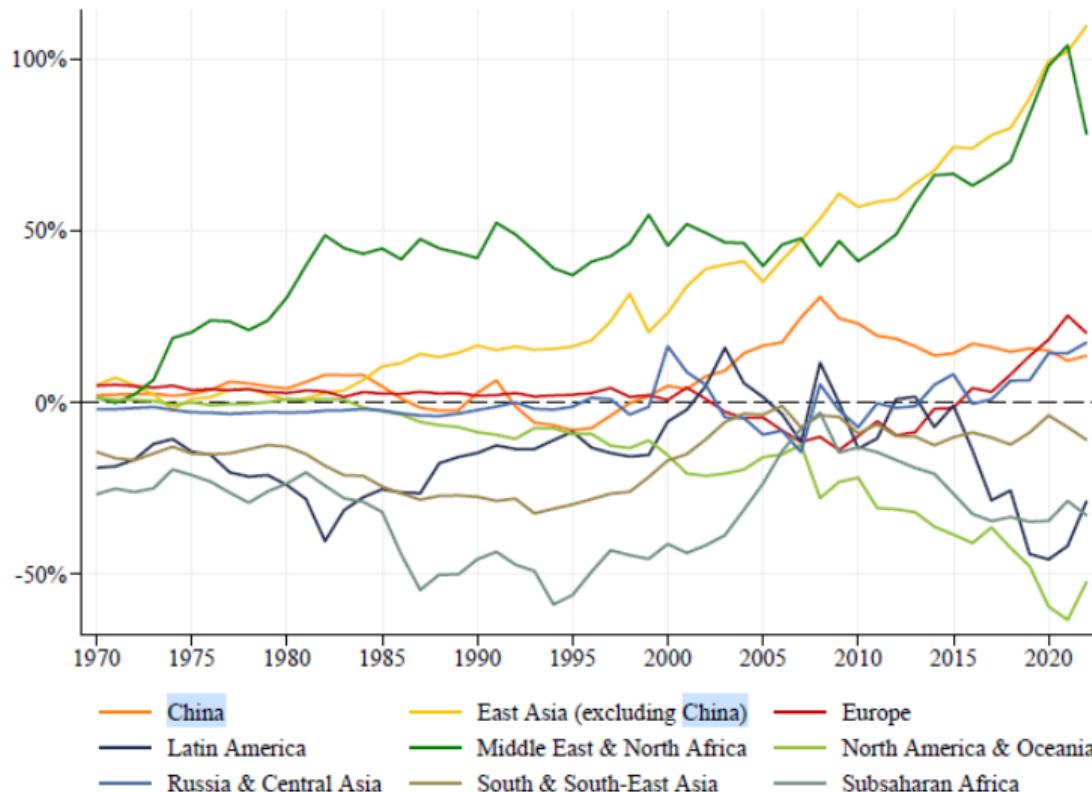
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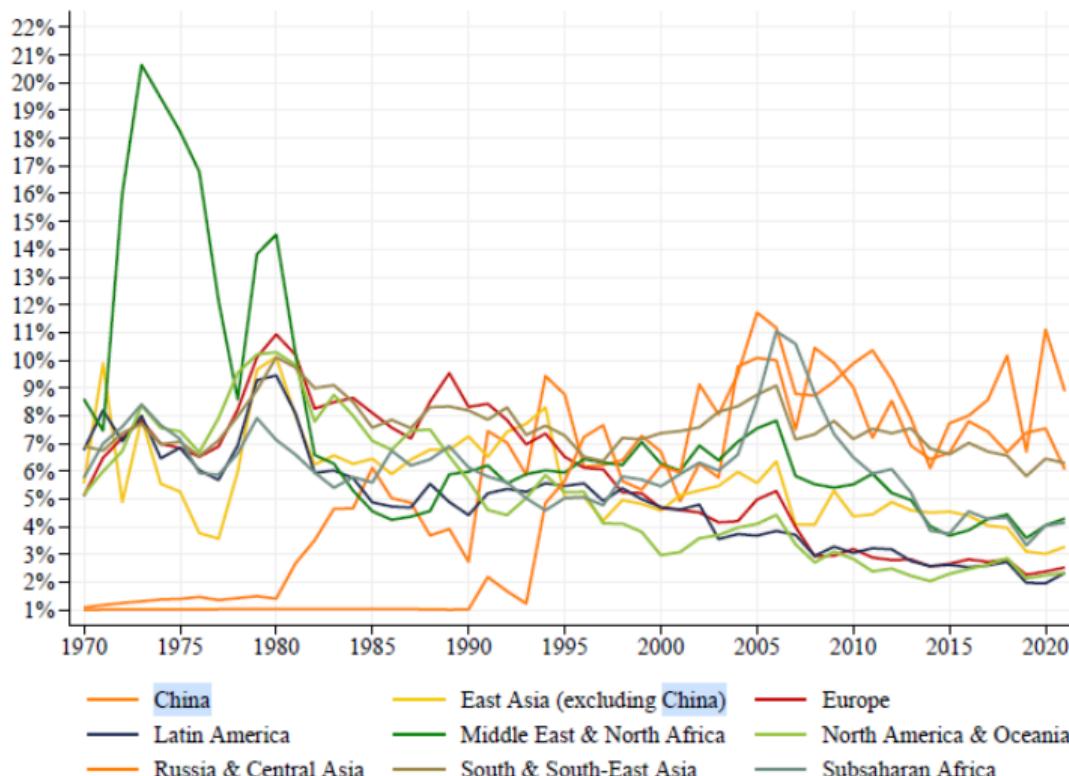
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Net foreign assets as a share of regional GDP



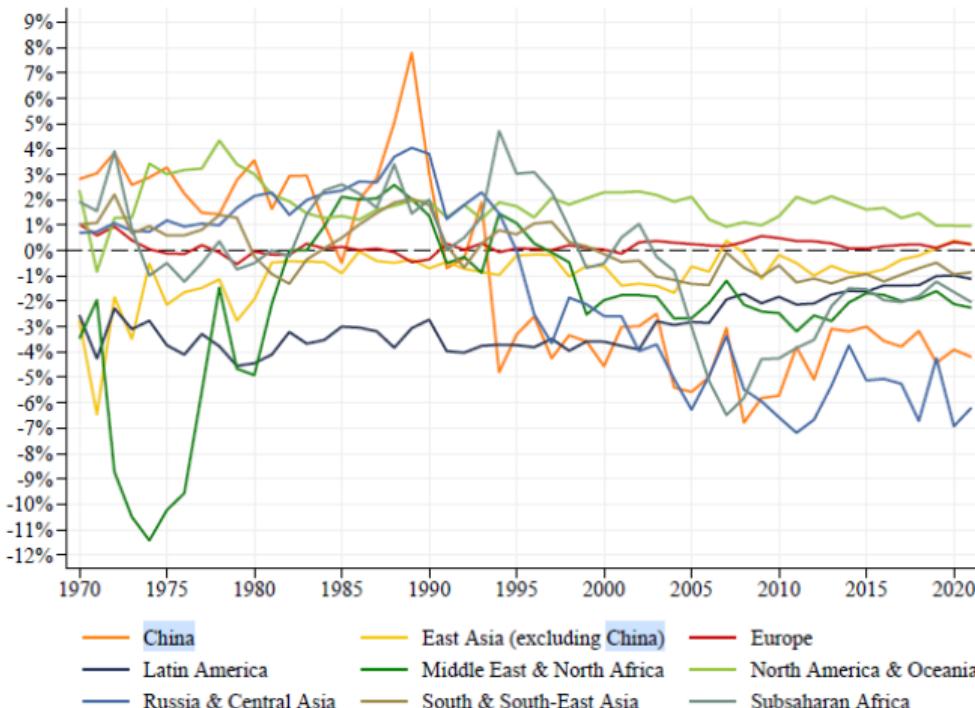
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Returns on foreign liabilities per region



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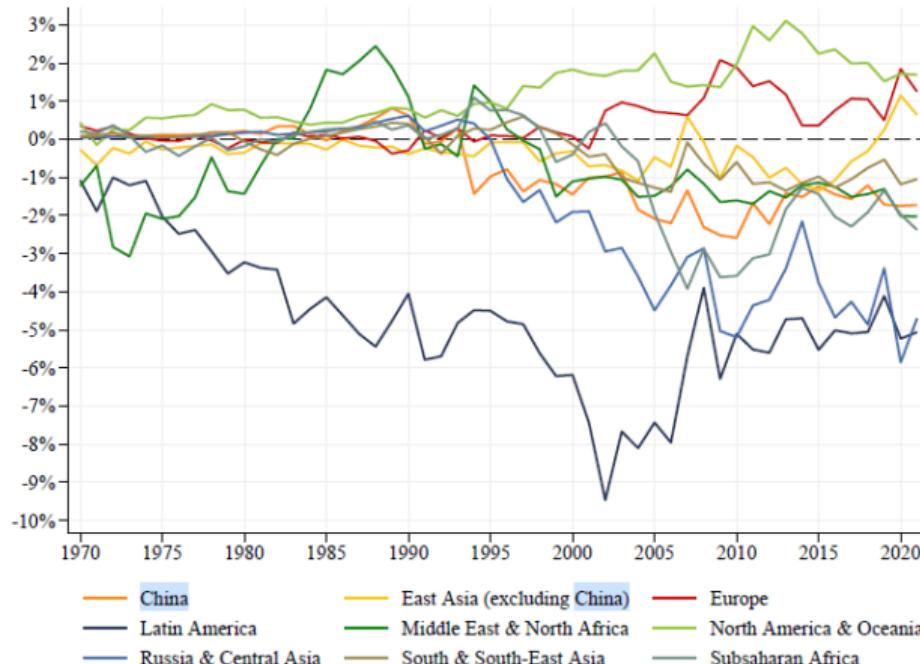
Excess yields per region



Excess yield calculated as rate of return on foreign assets - rate of return on foreign liabilities

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Excess yield as a share of GDP



Graph shows the foreign capital income received (paid) related to the positive (negative) excess yield, as a share of group GDP. Excess yield income calculated as GFA (GFL) multiplied by excess yield if positive (negative).

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Keynes (1944) proposed to replace the dollar by the bancor: a system of fixed exchange rates with regular reevaluations to limit trade imbalances.