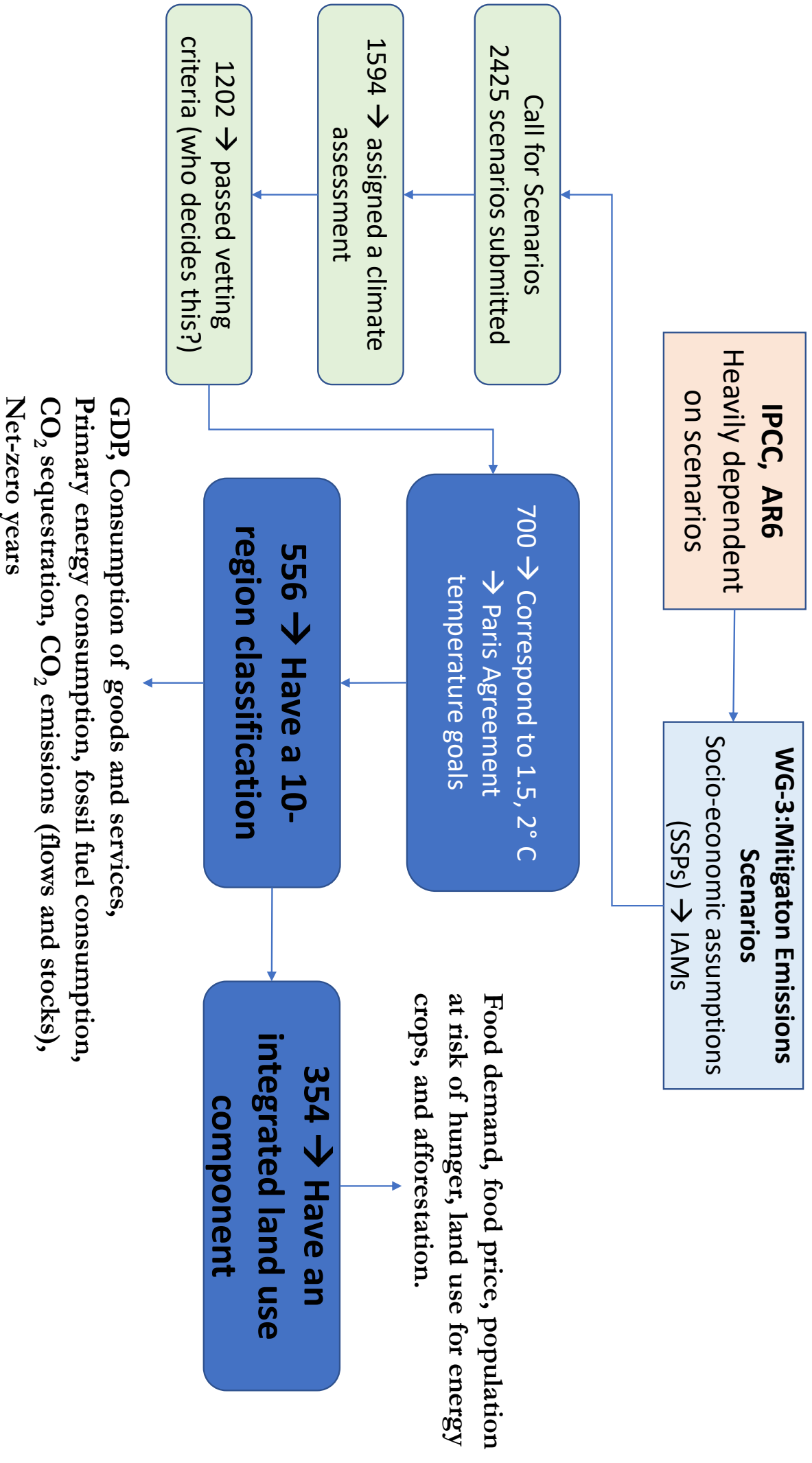


The Future We Want: A Critical Evaluation of IPCC Scenarios



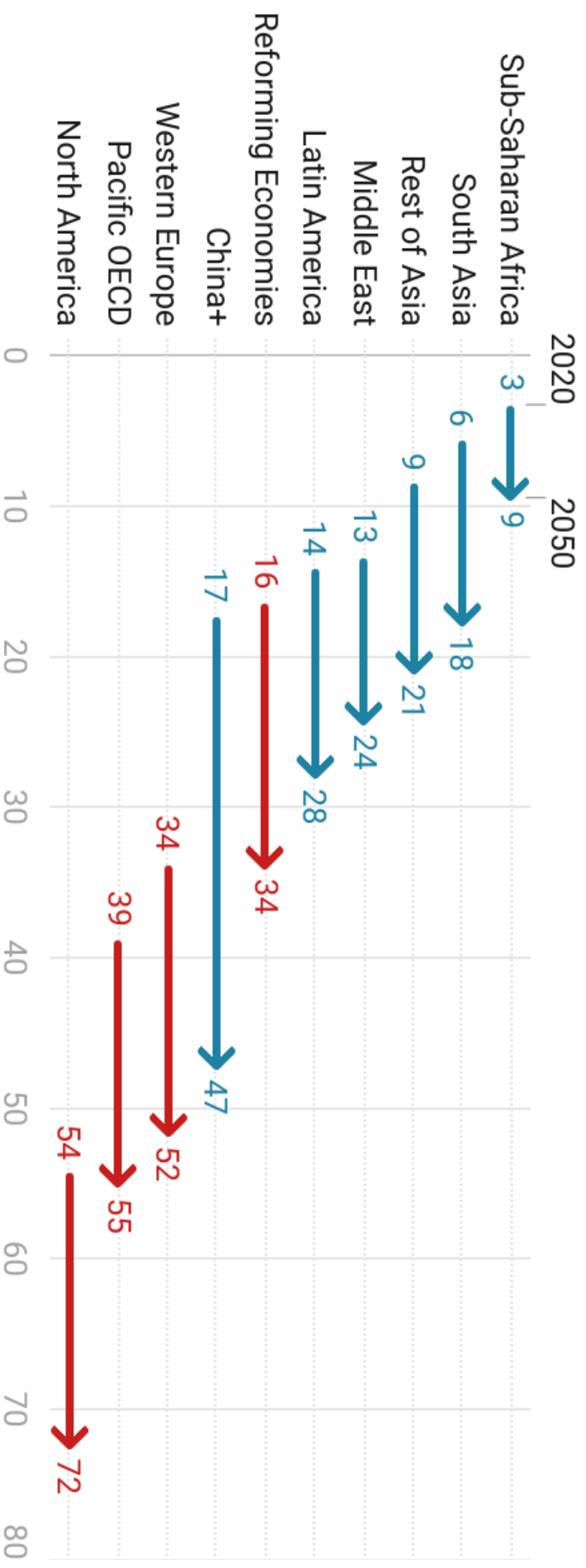
Kanitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osf.io/p46ty](https://doi.org/10.31219/osf.io/p46ty)

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The suppression of incomes and consumption in developing regions

Per Capita GDP in C1 Scenarios [‘000\$-PPP]



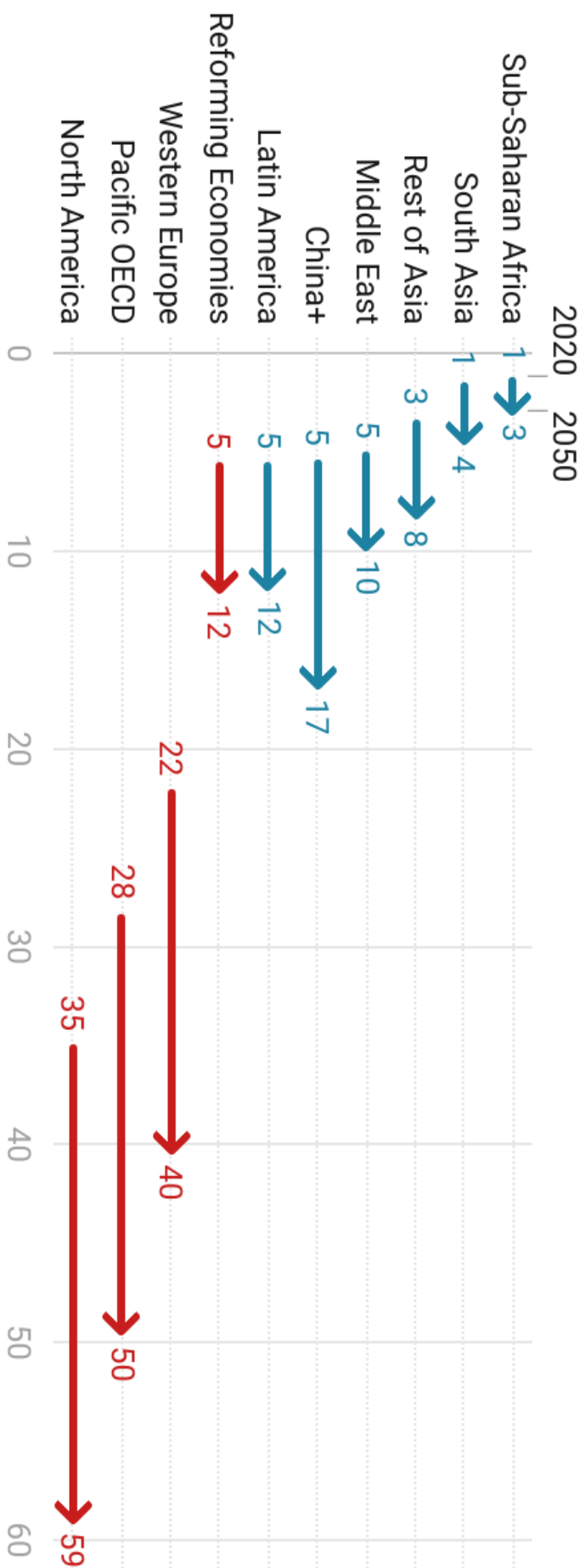
Kanitkar, T., Myrthri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osf.io/p46ty](https://doi.org/10.31219/osf.io/p46ty)

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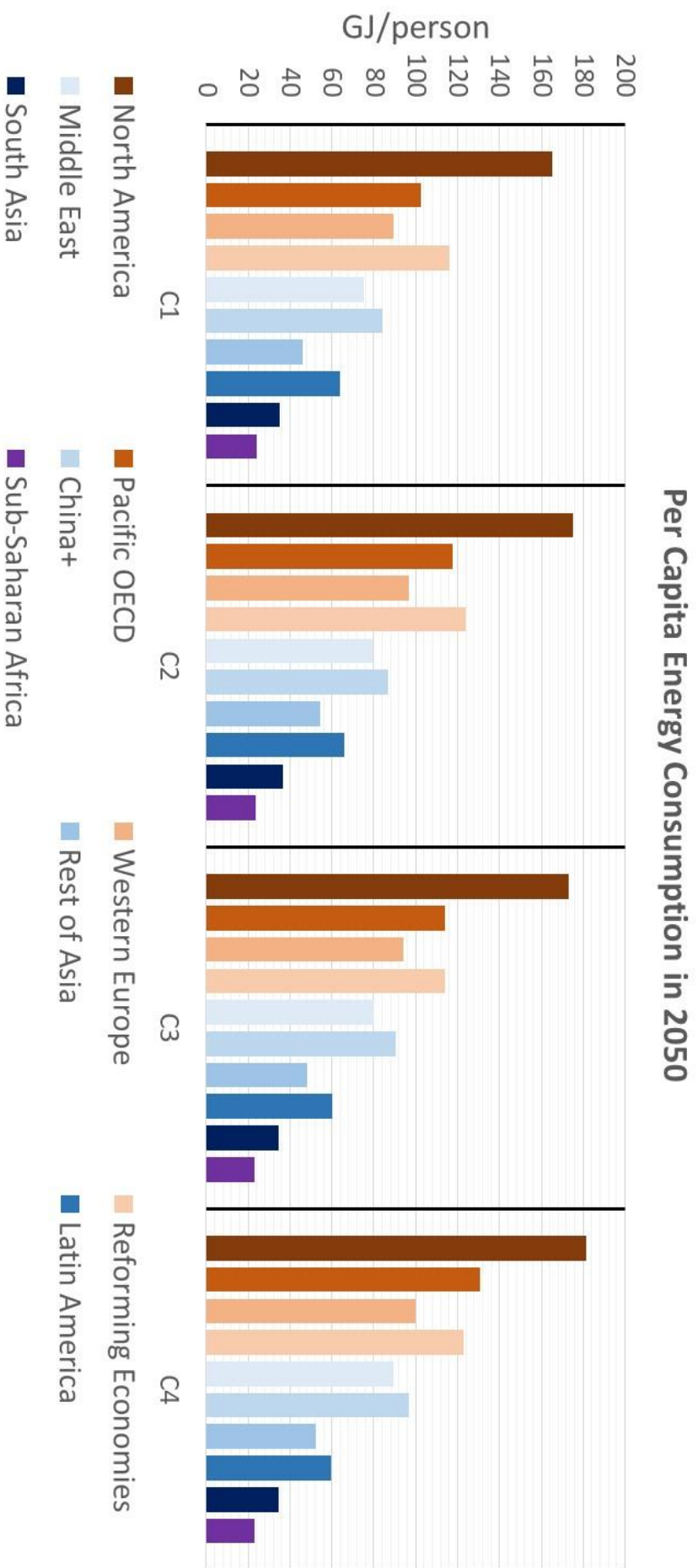
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The suppression of incomes and consumption in developing regions

Per Capita Consumption of Goods and Services - C1 Scenarios



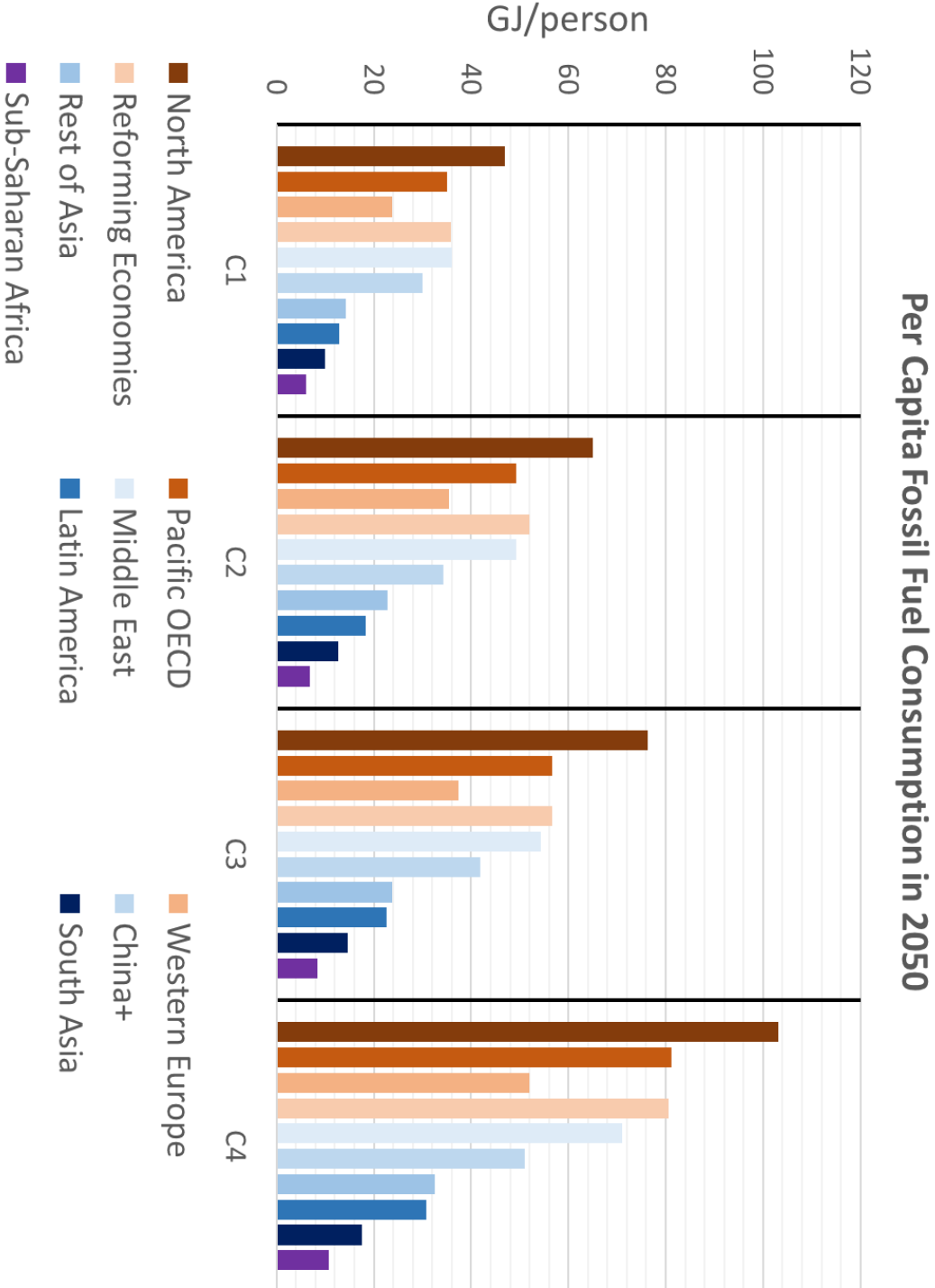
Kanitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osti.handle/11566/70461](https://www.osti.gov/servlets/handle/11566/70461)



Primary energy consumption (not just fossil fuel) restricted in developing Countries

Kanitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osti/p461y](https://www.osti.gov/p461y)

Higher PC fossil fuel use in developed countries even till 2050

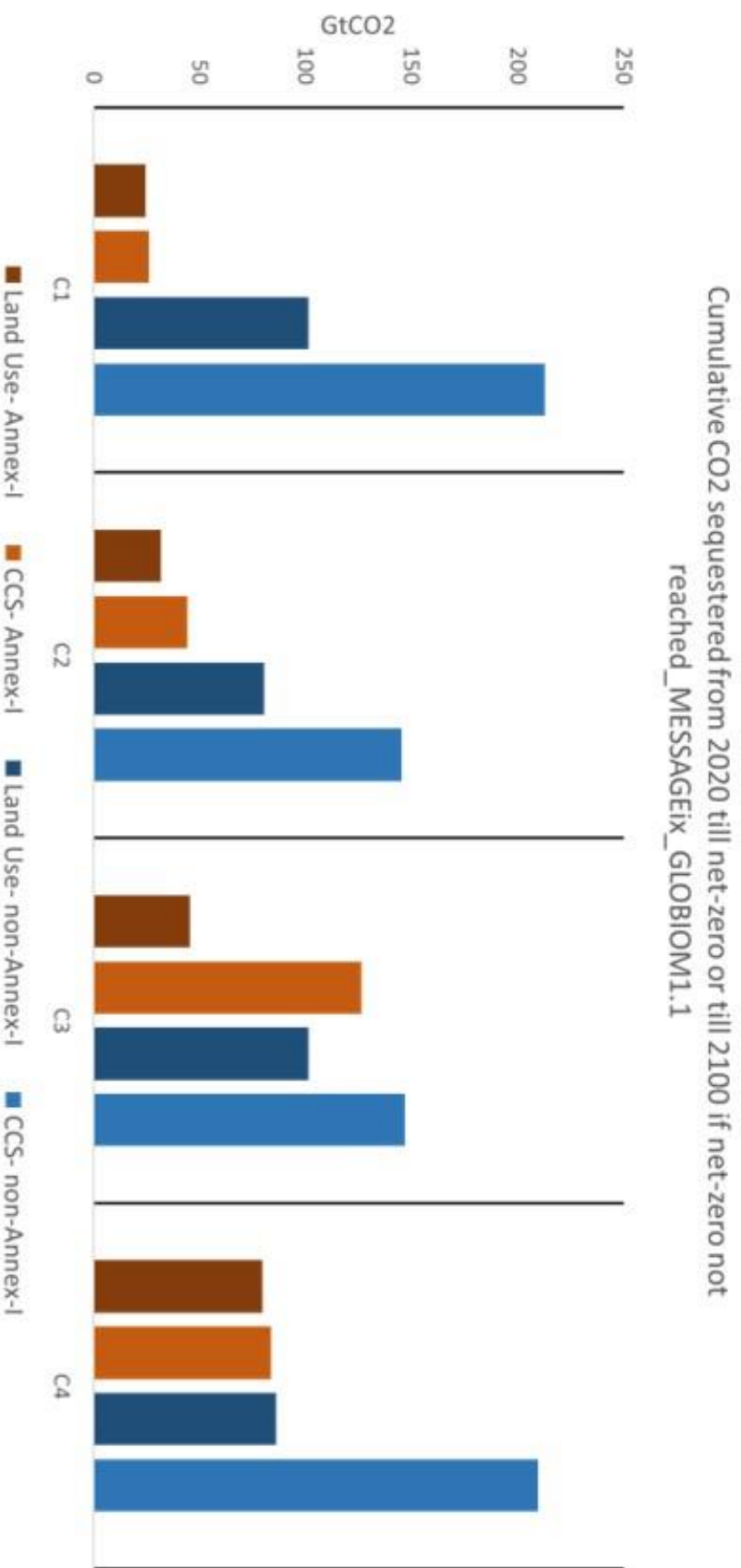


Kanitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osti/p46ty](https://www.osti.gov/p46ty/10.31219/osti/p46ty)

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Compensated by CDR in Developing Regions



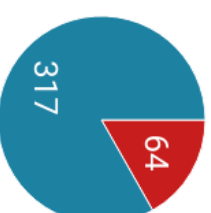
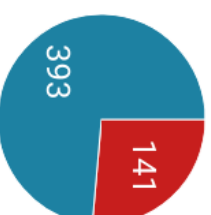
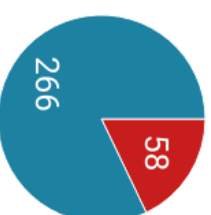
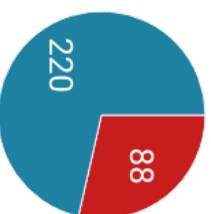
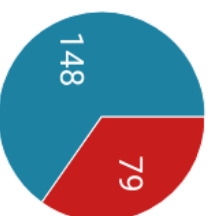
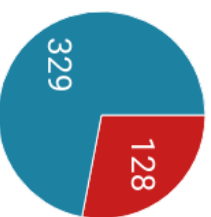
Kanitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report. [10.31219/osf.io/p46ty](https://www.ipcc.ch/publications-and-reports/sixth-assessment-report-working-group-iii)

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■ Annex-I ■ Non-Annex-I

Results the same across models



AIM/CGE 2.2
Total: 457

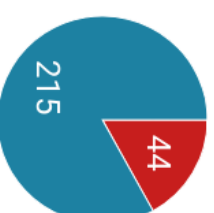
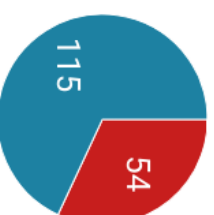
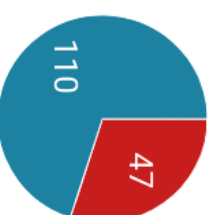
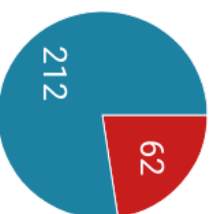
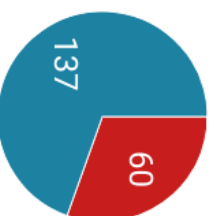
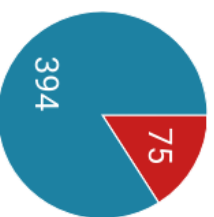
COFFEE 1.1
Total: 227

GCAM 5.3
Total: 308

GEM-E3_V2021
Total: 324

IMAGE 3.2
Total: 534

MESSAGEix-GLOBIOM_1.1
Total: 381



MESSAGEix-GLOBIOM_1.1
Total: 469

REMIND 2.1
Total: 197

REMIND-MAGPIE 1.7-3.0
Total: 274

REMIND-MAGPIE 2.1-4.2
Total: 157

REMIND-MAGPIE 2.1-4.3
Total: 169

WITCH 5.0
Total: 259

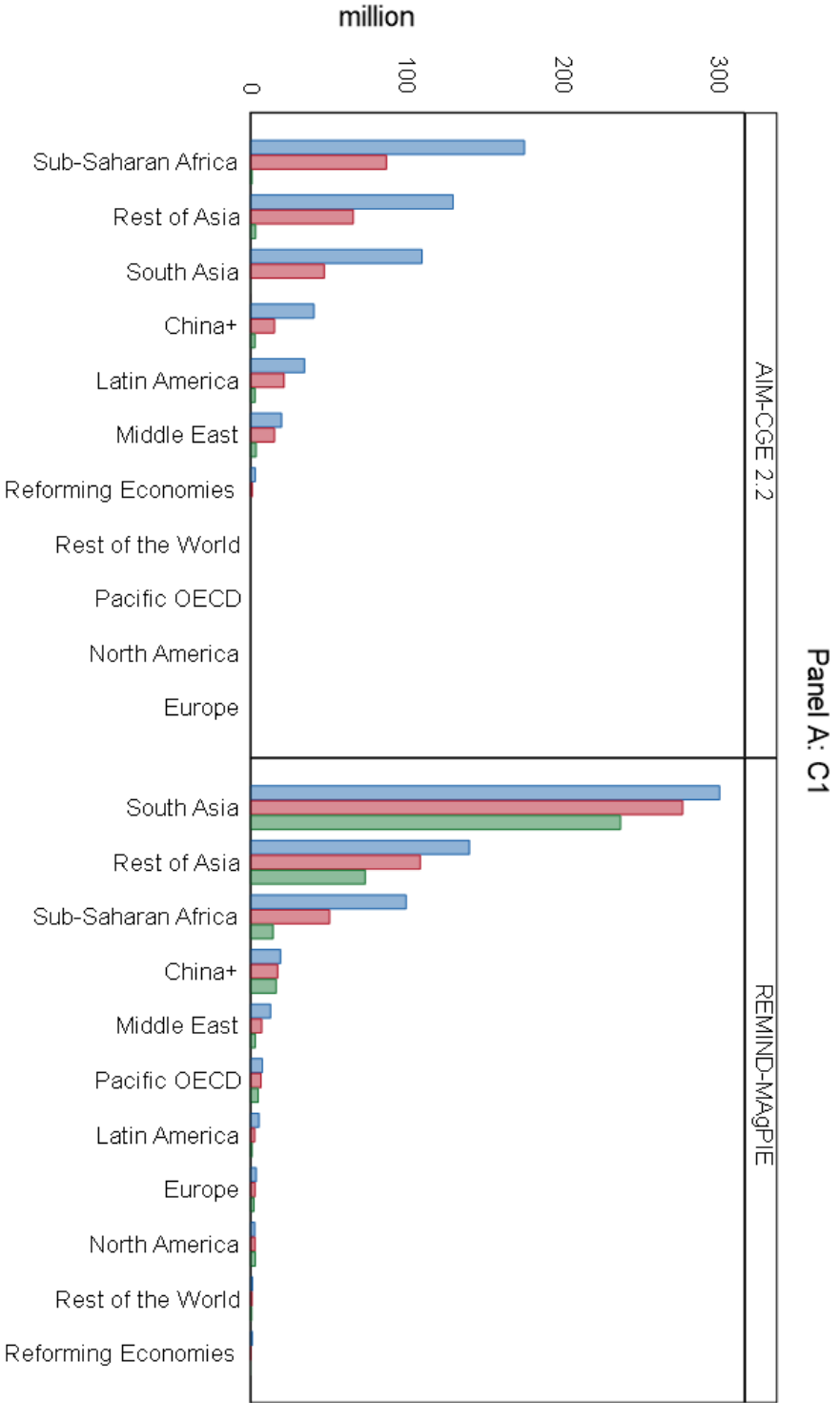
Kamitkar, T., Mythri, A., & Jayaraman, T. (2022). Equity Assessment of Global Mitigation Pathways in the IPCC Sixth Assessment Report.

[10.31219/osf.io/p46ty](https://www.10.31219/osf.io/p46ty)

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Land-Based Mitigation Impacts Food Security Directly



Increasingly stringent mitigation action in the scenarios radically reverses these current global trends of the population at risk of hunger.

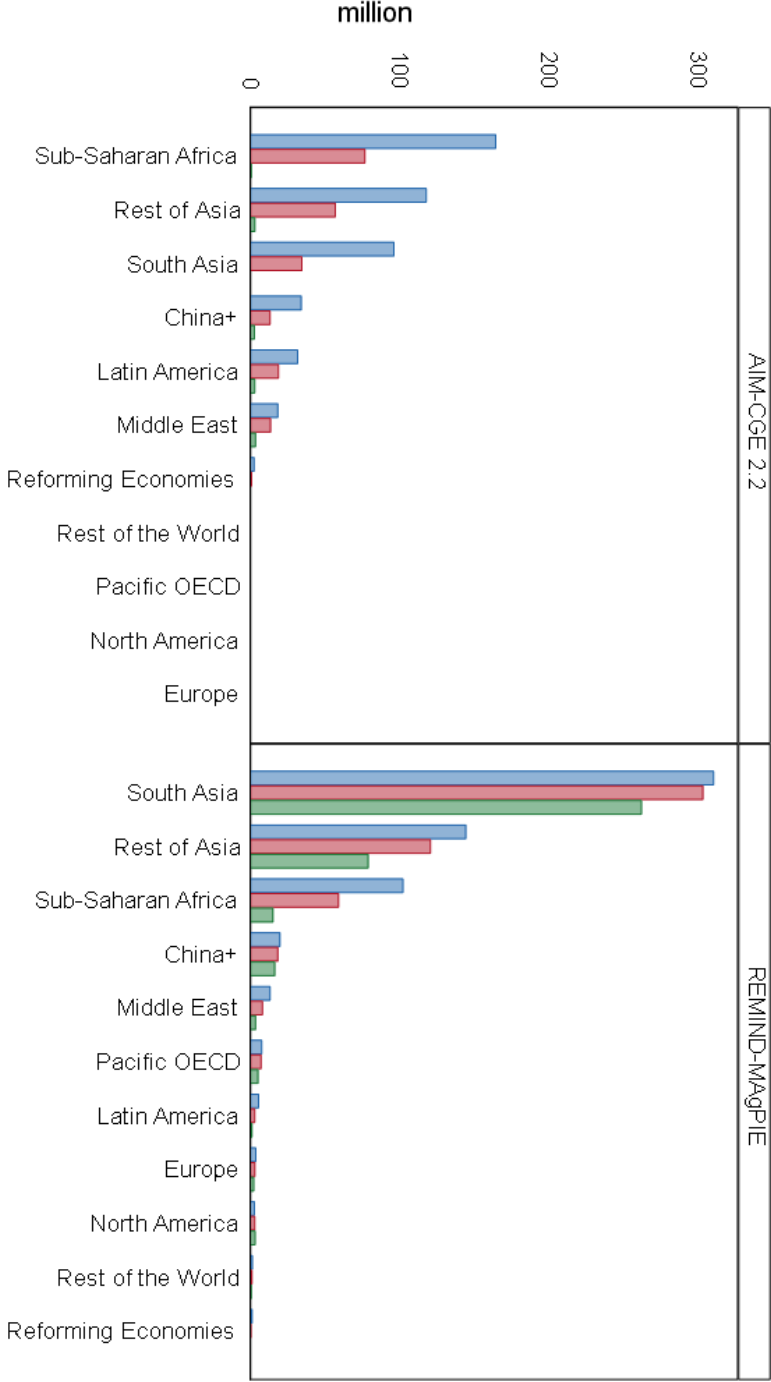
Jaiswal, S., Nagaraian, A., & Mythri, A. (2023). Projecting a food insecure world: Equity implications of land-based mitigation in IPCC mitigation pathways. <https://doi.org/10.31219/osf.io/mshby>

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Land-Based Mitigation Impacts Food Security Directly

Panel C: C3



**None meet the
SDG goal of Zero
Hunger in 2030**

Jaiswal, S., Nagaraian, A., & Mythri, A. (2023). Projecting a food insecure world: Equity implications of land-based mitigation in IPCC mitigation pathways. <https://doi.org/10.31219/osf.io/mshby>

- AFOLU sector estimated to provide 20-30% of the global mitigation by 2050
 - 80 percent of this “global mitigation” in developing regions
- Diversion of land for production of energy crops
- Rapid increase in land under afforestation and reforestation
- Suppressed/reduced demand in per capita food consumption from livestock products and food crops
 - Diversion of land for energy crops → competition for land → increase in food prices → suppression of demand

Jaiswal, S., Nagaratnam, A., & Myrthi, A. (2023). Projecting a food insecure world: Equity implications of land-based mitigation in IPCC mitigation pathways. <https://doi.org/10.31219/osf.io/mshby>

6/5/2023

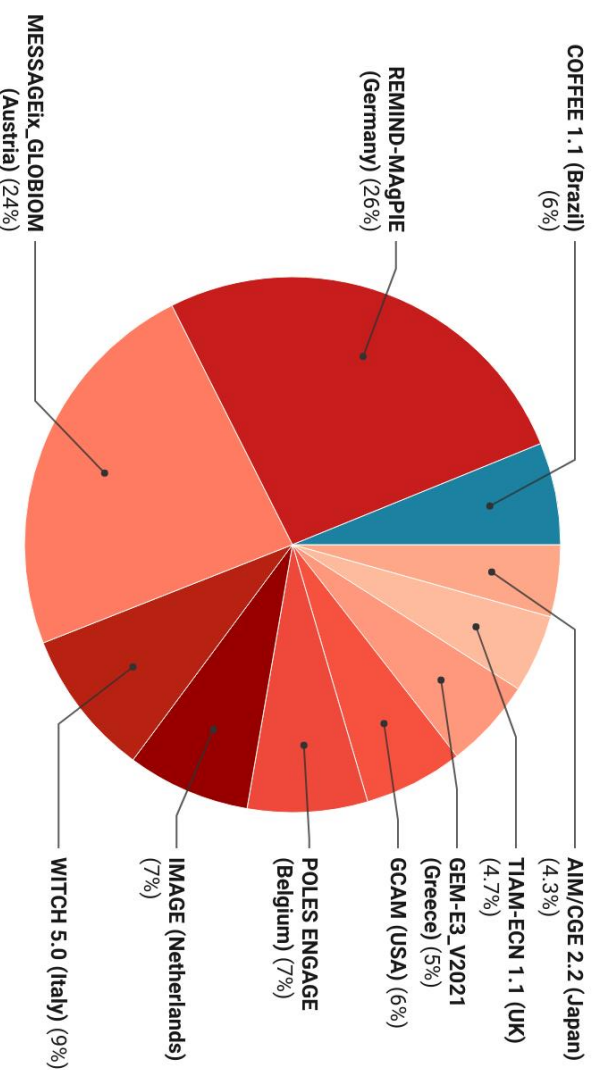
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Summary... IPCC Scenarios DO NOT deliver the future we want!

- Projected future in 2050 is an unequal world with enduring poverty and deprivation
- Inequalities are pervasive with respect to ALL variables
- Developed country fossil fuel use to be counterbalanced by developing country sinks
- Scenarios, devoid of equity and CBD&RC

Model Distribution - 556 Scenarios

Red - Models from Annex-I regions; Blue - Models from non-Annex-I regions



Need for alternative scenarios and frameworks

Why do IAMs project these unequal outcomes?

- Attributable to model assumptions
 - Unprecedented and drastic decoupling between energy and emissions - feasible? (*Semieniuk et al., 2021, Muttrill et al, 2023*)
 - Arbitrary assumptions or normative choices (*Pindyck, 2017; Ellenbeck and Liljestam, 2019*)
- Attributable to model structure/framework
 - Pareto optimality
(*Sen, 1987; Anand and Sen, 2000*)
 - Negishi weights
(*Stanton 2011*)
- Is general equilibrium theory adequate, especially with climate change? (*Decario, 2003*)



Are Scenarios -Devoid of Equity - Policy Relevant?

Not only “no explicit assumption” of equity and CBDR&C, but contravention of these principles

- Higher short-term reductions in developing countries
- Enduring poverty and increasing food insecurity till 2050 and beyond

Non-transparent assumptions underlie the aggregate global targets currently being sought to be imposed in global climate policymaking

- Global emissions reductions by 2030, Mid-century net-zero years, or peaking years

Average and/or singular values taken out of context from the AR6 for inclusion in COP decisions, especially immediately in the context of the GST, are untenable.

- Violate both → “best available science” as well as “equity”.