



DEVELOPING COUNTRIES' CLIMATE STRATEGY AND THE GLOBAL CARBON BUDGET

FINDINGS FROM CLIMATE SCIENCE

(IPCC AR6 WORKING GROUP I CONTRIBUTION)



Increase in global temperatures since the pre-industrial era, is **proportional to the global cumulative emissions** in this period

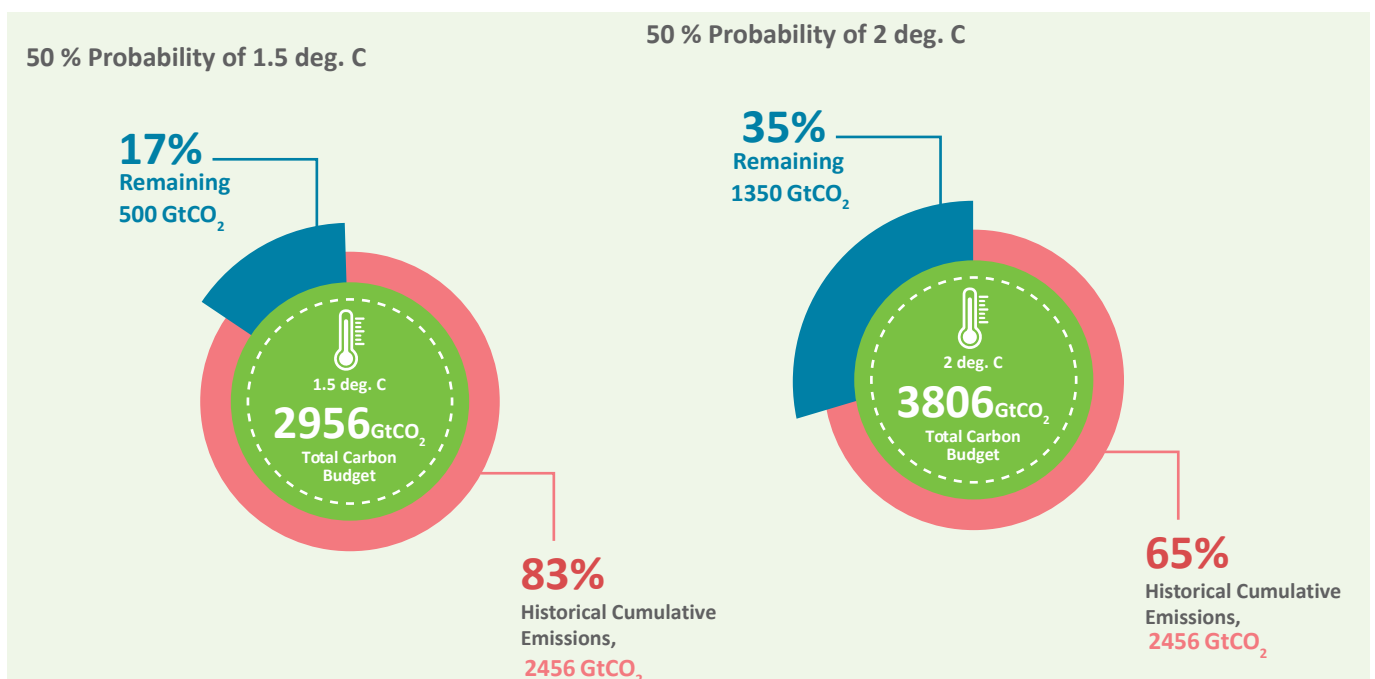


To limit increase in global temperatures to a particular target, the global cumulative emissions must stay within a **Global Carbon Budget**



Global cumulative emissions determine the global temperature that will be reached – not the achievement or timing of net-zero alone

- The global carbon budget for a given temperature limit is a global resource, common to the entire world. It is also exhaustible and limited.
- As a common resource of humanity, this global carbon budget should be equitably shared by all nations.
- The most straightforward method for assigning a fair share of the Global Carbon Budget across countries is based on their population in a contemporary base year. It has the advantages of simplicity in capturing the notion of an equitable share of a global resource.*
- Much of the global carbon space is already exhausted.
- This makes it very challenging for developing countries to fulfill their needs and aspirations.



Source: Calculations based on PRIMAP-hist national historical emissions time series v2.3 and IPCC (2021)

*Some of the more complicated methods destroy the connection with physical cumulative emissions that is the scientific basis of the budget. In other cases, they artificially boost the size of the carbon budget by the addition of other weighting factors. Some other instances introduce artificial baselines extended into the future as the baseline from which fair share is to be measured, thus introducing speculative considerations.



DEVELOPED COUNTRIES DOMINATE PAST EMISSIONS

	Past Emissions: Cumulative Emissions 1850-1990		Present Emissions: Cumulative Emissions 1991-2018		Share of Global Population
	[GtCO ₂ eq]	Share of global Emissions (%)	[GtCO ₂ eq]	Share of global Emissions (%)	(2018)
All Annex-1	976	71%	500	46%	18%
All Non-Annex-1	395	29%	584	54%	82%

Source: Calculations based on the PRIMAP-hist national historical emissions time series v2.3

- Past or historical cumulative emissions disproportionately from developed countries.
- Climate justice for a sustainable world must bridge this historical gap.
- This needs to be done by first, ensuring a fair share of the remaining carbon budget.
- Since so little of the global carbon budget remains, such a just solution must also address the disproportionately high emissions of the past.

NET-ZERO TARGETS ARE INADEQUATE

- The Annex-I economies must ensure that their cumulative emissions till net-zero stay below their fair share of the carbon budget.
- Their current net zero commitments will still keep the world well above the Paris temperature goals.
- To preserve the temperature targets, they must reach net zero far earlier.

	Current Declared/Proposed year of reaching net zero	Year of reaching net zero for staying within their fair share of the remaining carbon budget (linear reduction)	
		1.5 deg. C (50% Probability)	2 deg. C (67% Probability)
USA	2050	2025	2032
Canada	2050	2025	2033
Australia	None	2024	2031
Japan	2050	2031	2046
Germany	2045	2030	2045
UK	2050	2035	2057
EU (28)	2050	2031	2047
Russia	None	2026	2036
China	2060	2031	2047
World	Second half of century	2037	2062

India is one major example of a country whose contribution to the climate crisis is very low as compared to its population.

India's contribution to the current global temperature rise of 1.07 deg C – very low



18%

of Global Population



4%

of Global cumulative emissions between 1850-1990

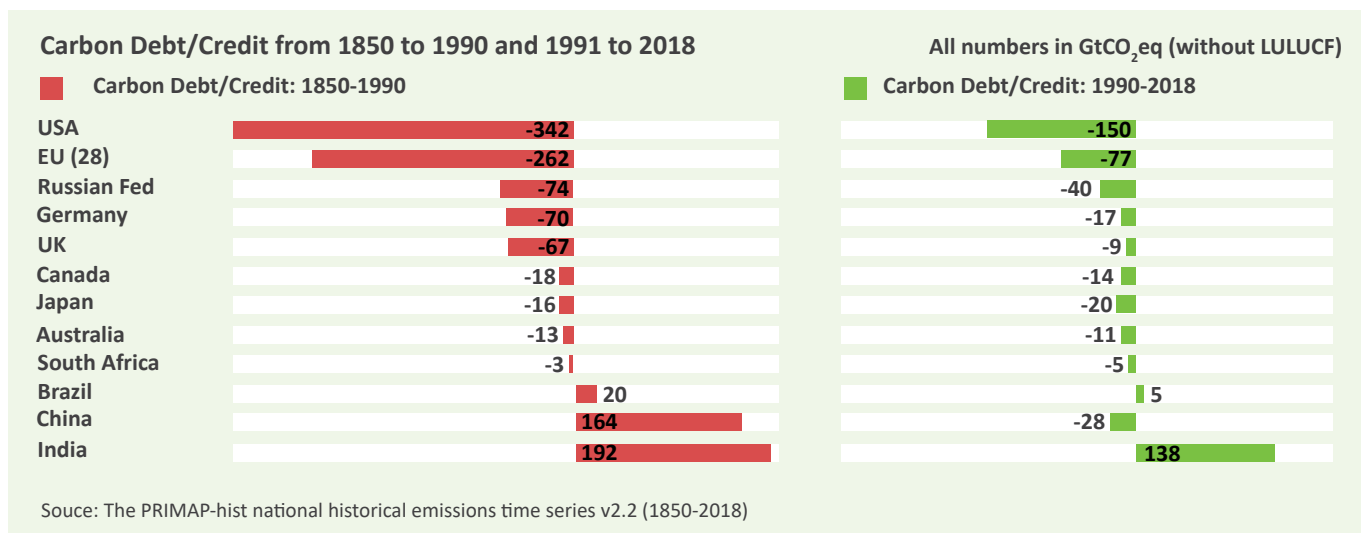


5%

of Global cumulative emissions between 1991-2018

CARBON DEBT/CREDIT FOR PAST EMISSIONS BASED ON PER CAPITA FAIR SHARE (2018 BASIS)

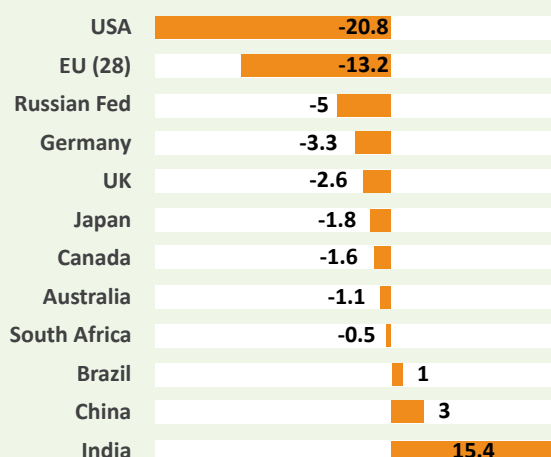
- All developed countries have exceeded their fair share of the global carbon budget, both before and after 1990.
- Recognition of this, and aligning climate action in line with the principles of equity and CBDR&RC of the UNFCCC should be the foundation.



The monetary value of the carbon debt/credit due to the disproportionate emissions of the developed countries shows the enormous economic burden they have put on the developing world. What the developed countries have committed as climate finance so far is therefore not very much at all.

Carbon Debt/Credit (trillion US\$) for Past Emissions @ \$30 per tonne (1850 - 1990) and @ \$70 per tonne (1991 - 2018)

(-ve values denote debt and positive values denote credit)



The Carbon debt/credit is calculated at a price of \$30 for every ton of carbon di-oxide (eq) emitted between 1850 and 1990 and a price of \$70 for every ton of carbon di-oxide (eq) emitted between 1991 and 2018, above/below fair share

Source: The PRIMAP-hist national historical emissions time series v2.2 (1850-2018)

THE IMPORTANCE OF A FAIR SHARE OF THE GLOBAL CARBON BUDGET

Why is the fair share of the global carbon budget important to developing nations?

- The importance of the carbon budget approach for developing countries is not diminished, even if what remains of the global carbon budget is considerably limited compared to historical cumulative emissions. Only from the viewpoint of unsustainable and irresponsible use is the developing countries' fair share of the remaining carbon budget insignificant.
- Many varieties of industrial products and processes and economic activities continue to depend heavily on fossil fuels. Even the developed countries have not been able to replace them with non-fossil-fuel dependent alternatives. Developed countries have the financial power and resources to bear the additional costs of greening the economy. Developing countries however need the cheaper fossil fuel alternatives to rapidly push their growth, while deploying the new green technology wherever it is available and affordable.
- In developing countries, in the informal sector, the lives and livelihoods and well-being of millions depend on older technologies and their economic advantages. It requires resources and time for their modernization and so the freedom to use fossil fuel-based options till their requirements are satisfied.
- The development of the agriculture sector in developing countries requires continued development of its input structure and downstream value chain. Carbon space is essential to this growth.
- Even if large developing countries such as India or the entire continent of Africa sacrifice their entire future emissions, putting their population through enormous hardship, this will still not save the world. In a world where the current scale of climate action will take us well above the temperature limits of the Paris Agreement, no such unilateral sacrifice is meaningful. The humongous efforts of many developing countries in the LULUCF sector is yet another instance of a free gift to the free riders of the developed world. For, all the sacrifices, the developed world will use the forests of developing countries as dustbins for their continued emissions.
- Tackling the challenges of adaptation and building climate resilience, also depend a great deal on new infrastructure and a modern economy. Adaptation and climate resilience too require adequate carbon space.



CARBON BUDGETS AND CLIMATE POLICY FOR DEVELOPING COUNTRIES

- Several large developing countries have been making every effort to decouple growth from emissions by improving their emissions intensity of GDP. For instance, India's emissions intensity efforts reduce its already low emissions, even further below the global average, for every unit of growth. However, the corresponding savings in cumulative emissions is lost in sustaining the high emissions of others.
- Climate finance from developed to developing countries have at best entered as loans (grants being highly limited), for which developing countries pay interest, and also required substantial domestic co-financing.
- Many developing countries have been utilizing their own resources to fund climate action. For example, in India, leapfrog in transport emission standards, the electric vehicles push, the LED streetlighting scheme and most such efforts, have been undertaken by the utilisation of India's own resources.
- All essential developmental activities, whether it is in water, sanitation, agriculture or education, which are the sectors at the foundations of adaptation and resilience, are also undertaken overwhelmingly from India's own resources.
- The argument that developing countries should at least join the developed countries in stopping further use of coal is also not meaningful. The developed countries themselves are taking considerable time in exiting coal, and several of them are not even committed as yet to a definite date. They are also fully dependent on oil and gas, with no serious consideration of when they will exit their use. For energy security and overall industrial growth of a large number of developing countries, fossil fuels remains a necessity for several decades to come.
- That said, developing countries approach, will certainly be far more sustainable with a greater commitment to climate justice.

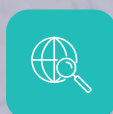
What can developing countries do?



Developing countries must stake a claim to their fair share of the global carbon budget.



Developed countries must stay within the fair share of the remaining carbon budget and undertake "negative emission" in keeping with their carbon debt. Monetizing their carbon debt should be the basis for climate finance and technology transfer.



The considerations noted above should be modified in the case of Parties listed under Article 4.8* of the Convention and the consideration of carbon budget may be modified for such Parties. Such considerations can be promoted also through mutual cooperation between developing countries.

* Art 4.8. In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the 15 specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on: (a) Small island countries; (b) Countries with low-lying coastal areas; (c) Countries with arid and semi-arid areas, forested areas and areas liable to forest decay; (d) Countries with areas prone to natural disasters; (e) Countries with areas liable to drought and desertification; (f) Countries with areas of high urban atmospheric pollution; (g) Countries with areas with fragile ecosystems, including mountainous ecosystems; (h) Countries whose economies are highly dependent on income generated from the production, process



TAKING FORWARD THE CARBON BUDGET APPROACH

- Carbon budgets provide a framework for domestic climate policy in both mitigation and adaptation. Such a framework is essential to direct and guide future innovative transition of the economy towards long-term sustainability
- Carbon budgets give the private sector in developing countries, especially the micro, small and medium industrial enterprises, a clear picture of the scale and pace of the transformation they are required to undertake. It also provides the necessary flexibility and time for entrepreneurs to build self-reliance in green technologies without being rushed to the global market to acquire such technologies injudiciously.
- With a fair share of the global carbon budget, the developing countries can utilise their current fossil fuel assets effectively, so that their green transition can be a just transition over time, creating jobs and livelihoods in a sustainable way.
- The carbon budget approach is essential to safeguard and build the industrial sector of developing countries. In India, for example, the micro, small and medium enterprises (MSMEs) are the backbone of the national industrial sector, with around 63.4 million units (of which 51% are based in rural areas), contributing to more than 30% of GDP, as well as about 33% of the country's manufacturing output. They also contribute to the employment of more than 110 million people and 45% of our exports. Within this sector, heavy mitigation obligations would be most detrimental to the micro industries which account for more than 97% of the total employment in the sector. Enterprises need flexibility and time to orient their activities towards gradual decarbonization of their production, while continuously ensuring that their financial and competitive foundations are sound.
- Agricultural sector (including livestock and fisheries) in developing countries also require a considerable carbon budget to double productivity and double farmers' income. Sustainable agriculture, with optimal and minimal input use and consequent emissions, will take significant effort. Till such time all indirect emissions, along with direct emissions, associated to agriculture must be considered essential.