



UNESCO Freedom of Information to stop social-economic collapse

The UNESCO “Freedom of Information” science data that follows is information which IPCC, UNFCCC, UNEP and others do not report. “UNESCO Open Solutions to global challenges - Only one Earth science” is all from UN sources, and has been reviewed and is supported for public communication by 5 IPCC and 4 IRP CoChairs among other eminent UN scientists (below).

The purpose is to freely inform citizens of the responsible national reductions of greenhouse gas emissions and natural resource consumption that are required to stop trends to global social-economic collapse.


There is no global government. Emission-consumption action must be by nations - and by the agreed UN principle of responsibility for “contribution to environmental degradation”. These national data must be made known to electorates, so that they can demand adequate government action now – to secure their children’s future.

- High per capita emitting-consuming nations may say, “Withhold the information, it’s too late for responsibility”. Less emitting-consuming nations likely respond “To attain your living standards we will increase our emissions and consumption to your level”. And so trends to collapse will continue.
- It is fundamentally not acceptable to conceal information which can cause children to die. This certainly applies to national responsibility data - on an epic, existential scale.

Why is humanity on trends to hundreds of millions dead, billions displaced from lands rendered uninhabitable?

Who is responsible? How can it be stopped?

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UNESCO  PEN SOLUTIONS

1. Why is humanity on trends to hundreds of millions dead, billions forced from lands rendered uninhabitable?

For 50 years environmental science warnings have been totally ignored:

The cause of climate change is greenhouse gas emissions, which in 1970 had caused only a harmless 0.2°C global warming; on current policy trends the IPCC carbon budget for dangerous 1.5°C will be emitted in just 4 years, and disastrous 2°C emitted in only 17 years – that is 10 times more global warming, at twice the annual rate – and it won't stop there.

The cause of nature destruction including 90% of biodiversity loss is natural resource consumption, which in 1970 was a safe 40% of the IRP sustainable natural resource limit; today it is an alarming 150% of the limit, and on current policy trends by 2050 it will be a catastrophic 300% – 8 times more consumption, at triple the annual rate – and it won't stop there.

It is young people, our own children who will pay the ultimate price - rampant, unabated climate change and nature destruction leaves them on relentlessly accelerating drought, flood, fire, heat, storm, disease, privation, starvation trends to imminent global social-economic collapse with potentially hundreds of millions dead and billions forced from lands rendered uninhabitable.


2. Who is responsible?

28 UN Ultra High developed nations (**red in map**), proclaimed “*climate leaders*”, are the best educated, healthiest and wealthiest who set the standards for all nations.

Ultra High are just 12% of global population with an astonishing **64%** of global wealth.

Ultra High are responsible for 50% of climate changing emissions and 37% of nature destroying consumption cumulatively. In the 50 years of science warnings Ultra High have not meaningfully reduced emissions and have increased consumption.

Unknown to nearly all is that in sharp contrast to statements and pledges, the “*climate leaders*” have not reduced CO2 emissions over the last 3 years, and are currently increasing emissions (see table below).

	Emissions tCO2/cap consumption 2019 ²	Emissions tCO2/cap territorial 2019 ³	Emissions tCO2/cap territorial 2022 estimate ³	Actual reduction territorial emissions 2019-2022 per year	Pledged reduction territorial emissions 2021-2030 per year ⁴	1.5°C Responsible reduction 2021-2030 per year by current CO2 consumption emissions	2°C Responsible reduction 2021-2030 per year by current CO2 consumption emissions
Ultra High developed ¹	12.6	10.9	10.9 ↗	0.0%	- 4.0%	- 77.8%	- 15.3%
#9 Germany	10.3	8.3	8.3 ↗	+ 0.3%	- 4.6%	- 52.7%	- 11.7%
#18 UK	8.3	5.7	5.5 ↗	- 1.0%	- 5.1%	- 36.6%	- 8.8%
#19 Japan	10.6	8.8	8.8 ↗	- 0.2%	- 4.1%	- 56.0%	- 12.2%
#21 USA	17.4	15.3	15.3 ↗	+ 0.1%	- 4.4%	Overlimit**	- 21.6%
#27 Spain	6.4	5.7	5.6 ↗	- 0.7%	- 2.2%	- 25.2%	- 6.5%
#28 France	7.0	4.8	4.8 ↗	+ 0.1%	- 3.2%	- 29.7%	- 7.5%
European Union ⁵	8.3	6.5	6.5 ↗	+ 0.2%	- 3.3%	- 44.9%	- 10.4%

Ultra High governments conclude that electorates basically want

“NOWISM, everything for the present, nothing for the future, maintain and increase living standards for us now”.

And so Ultra High lead humanity in ever accelerating trends to collapse, this is the social-economic-environmental evidence of 50 years and now.

3. How can this be stopped?

Securing the future requires that the existential UN Climate & Biodiversity Treaty objectives of 197 nation Parties must be realized: “Limit global warming to well below 2°C preferably 1.5°C” and “Humans live in harmony with nature by 2050”.

Action must be now and by national responsibility, not global. One-size-fits-all global “Reduce emissions 45% by 2030” has not and will never succeed because of extreme variation in national responsibility. Nor will the popular global “Protect 30% of the planet by 2030” which will not reduce natural resource consumption. That is why required national actions starting now (2023) must be made known to all electorates, young people, media:

DEVELOPMENT level by Education, Health, Income, UNDP *	LIVING STANDARD, Wealth, Credit Suisse ^b	BIODIVERSITY LOSS, 90% caused by consumption of extracted natural resources, IRP ^c	BIODIVERSITY TREATY, 7 tonnes consumption per year per capita by 2050, "1 Earth" science limit, IRP ^d	CLIMATE CHANGE, emissions CO2 from consumption, GCP ^e	CLIMATE TREATY pledges Climate Resource ^f	CLIMATE TREATY for 1.5°C / 2°C, CO2 reductions required, 29 / 96 tonnes per capita 2022 - 2100, science limit, IPCC ^g
2022/10/20	Wealth \$ / capita	Consumption Tonnes / year / capita 15 years trend % / yr	Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita 15 years trend % / yr	Pledge as average % per year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C
Ultra High Developed	\$ 309,300	26.4 +0.5%	-4.4%	13.0 -0.9%	-4.0%	-77.8% -15.3%
Very High Developed	\$ 45,600	15.8 +1.7%	-2.8%	7.9 +1.3%	+0.4%	-36.3% -8.8%
High Developed	\$ 39,300	16.5 +4.5%	-2.7%	5.2 +4.5%	+1.0%	-20.8% -5.5%
Medium Developed	\$ 8,400	5.3 +3.7%	+2.0%	1.6 +5.2%	+3.2%	-5.4% -1.0%
Low Developed	\$ 2,200	3.1 +4.4%	+5.3%	0.6 +4.2%	+1.2%	-0.9% +1.5%
Humanity	\$ 58,600	12.5 +2.6%	-1.2%	4.7 +1.7%	+0.3%	-19.0% -5.1%
European Union	\$ 178,300	18.9 +0.0%	-3.7%	9.2 -1.7%	-3.3%	-44.9% -10.4%
1 Switzerland	\$ 561,200	31.1 +0.5%	-4.7%	14.0 +0.3%	-4.5%	-87.7% -16.5%
2 Norway	\$ 261,500	38.8 +1.9%	-5.2%	9.3 +0.6%	-8.8%	-45.7% -10.5%
3 Iceland	\$ 318,600	59.6 +0.6%	-7.0%	10.2 * +0.9%	-9.1%	-39.9% -9.4%
4 Hong Kong	\$ 465,900	112.6 -0.2%	-9.2%	14.9 +1.4%	na	overlimit ** -18.0%
5 Australia	\$ 410,800	46.8 +2.4%	-5.7%	15.3 +0.5%	-2.4%	overlimit ** -18.2%
6 Denmark	\$ 330,500	25.9 +1.3%	-4.3%	8.5 -2.5%	-2.0%	-39.5% -9.4%
7 Sweden	\$ 285,657	26.7 +2.5%	-4.2%	6.8 -1.7%	-2.1%	-29.3% -7.4%
8 Ireland	\$ 184,500	49.3 +2.6%	-6.2%	8.7 -3.2%	-3.1%	-40.7% -9.6%
9 Germany	\$ 209,700	19.4 -1.2%	-3.7%	10.3 -1.7%	-4.6%	-52.7% -11.7%

Data for all 197 nation Parties to UN Climate & Biodiversity Treaties are attached

Climate Treaty. The Ultra High above, have pledged to reduce emissions 4.0% per year – but Ultra High increased CO2 over the last 3 years and are increasing emissions now.

At the 83% likelihood logically favoured by all young people, IPCC's per capita limit for 1.5°C / 2°C is 29 / 96 tonnes CO2 from 2021 onward. Ultra High developed current CO2 consumption emissions are 13 tonnes per capita, to responsibly not exceed the limit Ultra High should reduce CO2 77.8% / 15.3% per year for 1.5°C / 2°C. Note that by responsibility for 1.5 C, Low developed should reduce 80 times less than Ultra High.

These reductions are only by current not historic responsibility. Ultra High nations are just 12% of humanity with 64% of wealth. If they won't make required responsible reductions, then less healthy, wealthy, educated nations, 88% of humanity with only 36% of wealth surely will not, and trends to collapse won't be stopped.

Biodiversity Treaty. For decades, Ultra High have increased consumption and have no intention of reduction. For sustainable development, “humans live in harmony with nature by 2050” the UN International Resource Panel (IRP) limit is 7 tonnes natural resource extraction per capita per year by 2050. Ultra High developed current consumption is 26.4 tonnes per capita: to be responsibly on-limit by 2050, Ultra High should reduce consumption 4.4% per year by law now.

Responsibility Apps. Covid demonstrates that the technology exists to know citizens' per capita emissions, consumption, income and wealth within any nation. Equitable government action can be taken by law so that proportionally rich pay to stop collapse, poor do not.

Communicating this UNESCO “Freedom of Information” science data is essential because **“If electorates don't demand it governments won't do it”**. Ultra High electorates must be informed of their national facts above and attached so they can demand responsible government action to secure their children's future now.

UNESCO Open Solutions OnlyOneEarth.Science, Coordinators, Birgit van Munster (chief scientist). Michael Wadleigh (scientist, Oscar-winning director-writer) +44 7538 416407

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UN Ultra High developed nations 2022: 1 Switzerland, 2 Norway, 3 Iceland, 4 Hong Kong, 5, Australia, 6 Denmark, 7 Sweden, 8 Ireland, 9 Germany, 10 Netherlands, 11 Finland, 12 Singapore, 13 Belgium, 13 New Zealand, 15 Canada, 16 Liechtenstein, 17 Luxembourg, 18 United Kingdom, 19 Japan, 19 Korea (Republic), 21 United States, 22 Israel, 23 Slovenia, 23 Malta, 25 Austria, 26 United Arab Emirates, 27 Spain, 28 France.

References table 1

¹ Global Carbon Budget (2021), Consumption emissions, bunkers allocated proportionally

² Carbon Monitor, data retrieved 30 Sept 2022. UNDP Ultra High nations #9 Germany, #18 UK, #19 Japan, #21 USA, #27 Spain, #28 France, together 75% of the total population of Ultra High nations;

³ 2022 year emission estimate based on the average proportion that January – August emissions are of total annual emissions (2019 – 2021).

⁴ Climate Resource, data retrieved November 2021

⁵ European Union is about 60% Ultra High developed (red) and 40% Very High developed (purple) by population

** Overlimit: the nation's emission limit of 29 / 96 tonnes CO₂ per capita for 1.5C / 2 C has been exceeded. To be on limit the nation now has to remove its emissions from the atmosphere.

References table 2

^a United Nations Development Programme, Human Development Index, 2021-2022

^b Credit Suisse Research Institute, Global Wealth Databook (2022)

^c United Nations Environment Programme, International Resource Panel (IRP), Global Material Flows Database, 2022

^d UNEP International Resource Panel (IRP), Managing and conserving the natural resource base for sustained economic and social development, 2014

^e Global Carbon Budget 2021, Consumption emissions, * when consumption emissions are not known, territorial emissions are used (76 nations, 3.0% of total emissions, 8.6% of population)

^f Meinshausen M J et al, (2021) NDC factsheets, <https://www.climate-resource.com/tools/hdcs>

^g Intergovernmental Panel on Climate Change, AR6, WG1, Climate Change (2021) The Physical Science Basis. Table 5.8: Assessed remaining carbon budget - 83% probability is used. The remaining Carbon Budget to limit global warming to 1.5°C / 2°C (compared to 1850-1900) is 300 / 900 GtCO₂ by 1/1/2020, or 260 / 860 GtCO₂ by 2021, for a 83% probability, with no overshoot and no negative emissions. - 90% of budget allocated to fossil fuel emissions and cement equals 230 / 760 GtCO₂ from 2021 onwards.

- United Nations World Population Prospects – 2022 revision. Human population in 2021 is 7.9 billion. 230 / 760 billion tonnes of CO₂ divided over 7.9 billion people is 29 / 96 tonnes CO₂ / capita.

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UN TREATIES



LIVING STANDARD



1 Earth LIMIT



7

1.5°C
2°C
LIMIT



29
96

DEVELOPMENT level by Education, Health, Income, UNDP ¹¹ <small>2022/10/30</small>	LIVING STANDARD, Wealth, Credit Suisse ¹³	BIODIVERSITY LOSS, 90% caused by consumption of extracted natural resources, IRP ¹⁵		BIODIVERSITY TREATY, 7 tonnes consumption per year per capita by 2050, "1 Earth" science limit, IRP ³¹	CLIMATE CHANGE, emissions CO2 from consumption, GCP ¹⁶		CLIMATE TREATY pledges Climate Resource ¹⁷	CLIMATE TREATY for 1.5°C / 2°C, CO2 reductions required, 29 / 96 tonnes per capita 2022 - 2100, science limit, IPCC ³⁰	
Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$/ capita	Consumption Tonnes / year / capita	15 years trend % / yr	Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita	15 years trend % / yr	Pledge as average % per year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C	for 2°C
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High Developed	\$ 39,300	16.5	+4.5%	-2.7%	5.2	+4.5%	+1.0%	-20.8%	-5.5%
Medium Developed	\$ 8,400	5.3	+3.7%	+2.0%	1.6	+5.2%	+3.2%	-5.4%	-1.0%
Low Developed	\$ 2,200	3.1	+4.4%	+5.3%	0.6	+4.2%	+1.2%	-0.9%	+1.5%
Humanity	\$ 58,600	12.5	+2.6%	-1.2%	4.7	+1.7%	+0.3%	-19.0%	-5.1%
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4 Hong Kong	\$ 465,900	112.6	-0.2%	-9.2%	14.9	+1.4%	<i>na</i>	overlimit **	-18.0%
5 Australia	\$ 410,800	46.8	+2.4%	-5.7%	15.3	+0.5%	-2.4%	overlimit **	-18.2%
6 Denmark	\$ 330,500	25.9	+1.3%	-4.3%	8.5	-2.5%	-2.0%	-39.5%	-9.4%
7 Sweden	\$ 285,657	26.7	+2.5%	-4.2%	6.8	-1.7%	-2.1%	-29.3%	-7.4%
8 Ireland	\$ 184,500	49.3	+2.6%	-6.2%	8.7	-3.2%	-3.1%	-40.7%	-9.6%
9 Germany	\$ 209,700	19.4	-1.2%	-3.7%	10.3	-1.7%	-4.6%	-52.7%	-11.7%
10 Netherlands	\$ 309,800	32.3	+0.7%	-5.3%	8.8	-1.6%	-4.7%	-42.0%	-9.9%
11 Finland	\$ 147,600	36.7	+1.6%	-5.8%	11.7	-2.4%	-3.1%	-65.0%	-13.5%
12 Singapore	\$ 297,300	50.4	+1.6%	-6.5%	19.6	-0.1%	+1.3%	overlimit **	-24.6%
13 Belgium	\$ 296,300	33.5	+1.1%	-5.2%	15.4	-1.6%	-5.0%	overlimit **	-18.7%
13 New Zealand	\$ 334,500	30.7	+1.7%	-4.6%	8.4	+0.1%	-1.8%	-38.2%	-9.2%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$ / capita	Consumption Tonnes / year / capita 15 years trend % / yr		Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita 15 years trend % / yr		Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C	
15 Canada	\$ 324,000	35.0	+1.2%	-4.9%	15.9	+0.2%	-4.5%	overlimit **	-19.1%
16 Liechtenstein	na	na	na	na	4.0 *	-2.8%	-2.5%	-15.0%	-4.1%
17 Luxembourg	\$ 519,300	45.5	+2.3%	-5.6%	37.5	+3.6%	-2.9%	overlimit **	-59.8%
18 United Kingdom	\$ 241,700	17.9	+0.0%	-3.0%	8.1	-2.3%	-5.1%	-36.6%	-8.8%
19 Japan	\$ 206,200	18.2	-1.1%	-4.0%	10.6	-1.0%	-4.1%	-56.0%	-12.2%
19 Korea (Rep.)	\$ 195,800	22.0	+1.4%	-4.3%	13.9	+1.8%	-2.8%	-90.7%	-16.9%
21 United States	\$ 432,600	29.7	+0.8%	-4.5%	17.4	-1.0%	-4.4%	overlimit **	-21.6%
22 Israel	\$ 175,700	30.8	+3.2%	-3.8%	9.6	+0.6%	-3.3%	-46.2%	-10.6%
23 Slovenia	\$ 84,500	25.4	+1.5%	-4.7%	9.1	+0.0%	-1.7%	-44.8%	-10.4%
23 Malta	\$ 110,100	40.7	-0.3%	-6.2%	10.8	+2.6%	-6.2%	-53.8%	-11.9%
25 Austria	\$ 204,500	24.6	+0.3%	-4.3%	10.7	-0.8%	-4.1%	-56.8%	-12.4%
26 UAE	\$ 106,100	68.9	+7.4%	-7.6%	22.7	+2.2%	-0.5%	overlimit **	-29.2%
27 Spain	\$ 177,500	13.5	-0.3%	-2.6%	6.0	-2.4%	-2.2%	-25.2%	-6.5%
28 France	\$ 250,400	17.1	+0.4%	-3.0%	6.8	-1.7%	-3.2%	-29.7%	-7.5%
29 Cyprus	\$ 82,800	36.6	+0.2%	-5.3%	6.6	-1.1%	-5.3%	-28.2%	-7.2%
30 Italy	\$ 194,300	11.9	-1.7%	-2.2%	7.8	-2.0%	-2.3%	-36.3%	-8.8%
31 Estonia	\$ 60,200	37.5	-2.2%	-6.3%	11.6	-1.4%	-6.6%	-63.1%	-13.2%
32 Czechia	\$ 66,700	21.3	+1.1%	-3.9%	10.2	-0.7%	-3.4%	-53.3%	-11.8%
33 Greece	\$ 87,500	15.2	-0.6%	-3.2%	5.3	-3.8%	-2.2%	-21.3%	-5.6%
34 Poland	\$ 39,800	17.8	+1.2%	-3.7%	7.6	-0.1%	-3.6%	-35.0%	-8.5%
35 Lithuania	\$ 48,800	40.1	+0.9%	-6.9%	7.9	+0.7%	-2.8%	-39.7%	-9.6%
35 Saudi Arabia	\$ 57,700	30.0	+3.8%	-4.2%	18.7	+4.1%	+1.9%	overlimit **	-23.9%
35 Bahrain	\$ 90,200	23.8	+3.2%	-3.1%	13.1	+3.7%	+3.2%	-84.6%	-16.2%
38 Portugal	\$ 125,100	12.2	-1.2%	-2.4%	5.3	-2.8%	-1.1%	-22.1%	-5.8%
39 Latvia	\$ 67,800	31.0	+0.8%	-6.0%	6.8	-0.8%	-0.2%	-31.2%	-7.8%
40 Andorra	na	na	na	na	6.8 *	-0.7%	-3.4%	-27.8%	-7.1%
40 Croatia	\$ 55,200	17.1	+2.3%	-3.8%	5.4	-1.6%	-0.9%	-22.9%	-6.0%
42 Chile	\$ 40,300	13.5	+3.3%	-2.1%	5.1	+3.2%	-2.3%	-20.7%	-5.5%
42 Qatar	\$ 165,500	33.7	+8.6%	-4.4%	28.3	+8.6%	-0.1%	overlimit **	-48.2%
44 San Marino	na	na	na	na	na	na	+1.4%	na	na
45 Slovakia	\$ 50,700	19.1	-0.1%	-3.8%	8.7	+0.3%	-3.3%	-42.4%	-10.0%
46 Hungary	\$ 56,300	15.3	+0.0%	-3.2%	6.9	-1.1%	-1.6%	-31.5%	-7.9%
47 Argentina	\$ 7,200	15.8	+1.7%	-2.2%	3.9	+1.9%	-0.3%	-14.5%	-4.0%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$/ capita	Consumption Tonnes / year / capita		Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita		Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C	
		15 years trend % / yr			15 years trend % / yr				
48 Turkey	\$ 13,500	17.5	+4.2%	-2.7%	4.9	+2.5%	+5.2%	-19.8%	-5.3%
49 Montenegro	\$ 57,300	na	na	na	4.3 *	+1.8%	-0.6%	-15.8%	-4.3%
50 Kuwait	\$ 128,200	65.3	+3.0%	-6.8%	20.9	+3.5%	+1.7%	overlimit **	-30.8%
51 Brunei Darussalam	\$ 40,400	85.7	+3.0%	-8.1%	23.6	+5.9%	+2.0%	overlimit **	-32.1%
52 Russian Federation	\$ 26,100	9.5	+0.8%	-1.3%	10.2	+1.1%	+0.6%	-53.5%	-11.8%
53 Romania	\$ 33,100	16.0	+1.1%	-3.5%	4.1	-1.4%	-0.9%	-16.3%	-4.4%
54 Oman	\$ 34,500	8.9	+1.0%	+0.3%	13.5	+6.3%	+1.6%	-87.0%	-16.4%
55 Bahamas	\$ 41,700	37.8	+0.8%	-5.3%	6.8 *	+1.7%	-0.3%	-27.3%	-7.0%
56 Kazakhstan	\$ 27,200	34.4	+4.0%	-4.7%	12.6	+3.4%	-2.1%	-73.5%	-14.9%
57 Trinidad & Tobago	\$ 33,400	na	na	na	20.6	+3.2%	+3.2%	overlimit **	-27.5%
58 Uruguay	\$ 33,200	17.5	+0.5%	-3.0%	3.5	+2.8%	-0.9%	-9.9%	-2.7%
58 Costa Rica	\$ 42,900	14.4	+1.8%	-2.1%	2.7	+0.6%	-2.7%	-13.4%	-3.7%
60 Belarus	\$ 20,200	5.6	-1.4%	+0.5%	6.8	+0.0%	-1.3%	-30.2%	-7.6%
61 Panama	\$ 33,300	13.5	+3.3%	-1.2%	6.0	+25.4%	+4.7%	-24.6%	-6.4%
62 Malaysia	\$ 18,300	19.6	+3.4%	-2.8%	8.4	+4.3%	-0.4%	-39.4%	-9.4%
63 Georgia	\$ 12,200	10.3	+0.4%	-1.8%	2.9	+3.1%	-3.7%	-10.9%	-3.0%
63 Serbia	\$ 24,500	15.6	+6.1%	-3.6%	6.9 *	-1.2%	-2.2%	-27.8%	-7.1%
63 Mauritius	\$ 48,500	na	na	na	4.5	+1.0%	-0.7%	-18.1%	-4.9%
66 Thailand	\$ 18,700	11.7	+2.0%	-2.0%	4.1	+2.1%	+0.5%	-16.0%	-4.4%
67 Albania	\$ 27,300	13.0	+3.1%	-2.8%	2.1	+0.8%	+1.6%	-7.6%	-1.9%
68 Bulgaria	\$ 35,000	15.0	+1.0%	-3.6%	5.6	-1.1%	-3.9%	-24.3%	-6.3%
68 Grenada	\$ 32,100	na	na	na	2.8 *	+3.3%	-2.4%	-9.8%	-2.6%
70 Barbados	\$ 56,900	na	na	na	4.5 *	-0.3%	-5.1%	-16.2%	-4.4%
71 Antigua & Barbuda	\$ 10,700	na	na	na	5.5 *	+1.9%	+1.8%	-20.1%	-5.4%
72 Seychelles	\$ 37,600	na	na	na	5.8 *	+3.1%	+7.1%	-20.6%	-5.5%
73 Sri Lanka	\$ 18,400	4.4	+2.4%	+1.8%	1.5	+4.0%	+1.7%	-5.7%	-1.1%
74 Bosnia & Herzegovina	\$ 26,600	14.4	+3.3%	-3.3%	7.7 *	+3.2%	-3.6%	-32.8%	-8.2%
75 Saint Kitts & Nevis	na	na	na	na	5.2 *	+0.8%	+5.5%	-19.3%	-5.2%
76 Iran (Islamic Rep)	\$ 26,100	13.2	+3.9%	-1.5%	8.7	+3.6%	+1.1%	-42.6%	-10.1%
77 Ukraine	\$ 15,600	11.9	+0.8%	-2.7%	5.0	+0.0%	+1.0%	-20.8%	-5.5%
78 North Macedonia	na	12.3	-0.3%	-2.4%	3.9 *	-2.2%	-5.2%	-14.4%	-3.9%
79 China	\$ 59,700	22.0	+5.7%	-4.1%	6.9	+5.4%	+0.8%	-30.9%	-7.8%
80 Palau	na	na	na	na	12.7 *	+0.1%	-3.0%	-83.0%	-16.0%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$ / capita	Consumption Tonnes / year / capita 15 years trend % / yr		Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita 15 years trend % / yr		Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C	
80 Dominican Rep.	na	9.5	3.3%	-0.5%	2.7	+3.3%	+0.2%	-9.8%	-2.6%
80 Moldova (Rep. of)	\$ 19,300	3.4	-6.2%	+1.9%	1.7 *	+0.8%	-1.3%	-6.7%	-1.6%
83 Cuba	na	9.2	-0.9%	-1.4%	2.1 *	-0.7%	+2.3%	-6.6%	-1.5%
84 Peru	\$ 14,100	9.4	+3.4%	-0.3%	2.0	+4.4%	-0.4%	-7.1%	-1.7%
85 Armenia	\$ 16,800	6.0	+1.6%	+0.4%	2.0	+1.6%	+3.8%	-7.2%	-1.8%
86 Mexico	\$ 32,900	10.9	+1.6%	-0.9%	3.8	-0.1%	+0.5%	-14.1%	-3.8%
87 Brazil	\$ 15,500	18.9	+3.2%	-3.2%	2.5	+2.7%	+1.3%	-8.7%	-2.3%
88 Colombia	\$ 12,000	9.1	+1.4%	-0.6%	2.1	+3.8%	-3.3%	-7.4%	-1.8%
89 St Vincent & Grenadines	\$ 9,600	na	na	na	2.3 *	+0.5%	+1.3%	-7.8%	-2.0%
90 Maldives	\$ 17,300	na	na	na	3.7 *	+6.8%	-14.3%	-15.5%	-4.3%
91 Azerbaijan	\$ 11,200	10.6	+3.7%	-1.1%	4.1	+0.8%	-2.7%	-16.1%	-4.4%
91 Algeria	\$ 6,400	11.2	+4.8%	-0.4%	4.0 *	+4.4%	+1.2%	-15.0%	-4.1%
910 Tonga	\$ 28,300	na	na	na	1.4 *	+1.8%	-7.1%	-5.4%	-1.0%
91 Turkmenistan	\$ 12,300	13.1	+3.4%	-1.2%	12.8 *	+3.4%	-0.8%	-80.9%	-15.9%
95 Ecuador	\$ 13,400	7.7	+2.2%	+0.7%	2.6	+2.3%	-1.5%	-9.4%	-2.5%
96 Mongolia	\$ 4,500	10.6	+0.0%	-0.3%	23.5	+15.6%	-4.6%	-97.6%	-37.0%
97 Tunisia	\$ 12,900	9.2	+1.8%	-0.4%	2.4	+1.9%	+2.3%	-8.8%	-2.3%
97 Egypt	\$ 14,200	8.2	+4.0%	+1.1%	2.2	+3.8%	+4.7%	-8.0%	-2.0%
99 Fiji	\$ 13,000	na	na	na	1.6 *	+0.3%	-3.3%	-6.0%	-1.3%
99 Suriname	\$ 4,900	na	na	na	4.3 *	+3.3%	+4.4%	-14.9%	-4.1%
101 Uzbekistan	na	6.1	+1.3%	+1.4%	3.6 *	-0.6%	+4.1%	-14.2%	-3.9%
102 Dominica	\$ 27,600	na	na	na	2.3 *	+0.7%	-13.0%	-7.3%	-1.8%
102 Jordan	\$ 16,500	7.0	+1.3%	+0.9%	3.3	+2.2%	+2.4%	-12.0%	-3.3%
104 Libya	\$ 6,500	16.1	+2.9%	-2.1%	8.6 *	+0.5%	+3.6%	-37.5%	-9.0%
105 Paraguay	\$ 8,200	18.9	+1.0%	-2.6%	1.9	+5.2%	+4.5%	-7.0%	-1.7%
106 Saint Lucia	\$ 22,300	na	na	na	2.9 *	+1.4%	+1.5%	-9.8%	-2.6%
106 Palestine, State of	na	5.9	+4.2%	+2.7%	0.6 *	+2.1%	+3.0%	-1.8%	0.9%
108 Guyana	\$ 8,700	na	na	na	3.2 *	+1.7%	+0.4%	-11.5%	-3.2%
109 South Africa	\$ 15,800	7.6	-0.8%	+0.6%	6.0	+0.3%	-0.2%	-25.0%	-6.5%
110 Jamaica	\$ 15,900	9.9	+1.0%	-1.2%	3.1	-2.0%	-2.5%	-11.3%	-3.1%
111 Samoa	\$ 9,100	na	na	na	1.2 *	+2.7%	-2.9%	-4.4%	-0.6%
112 Lebanon	\$ 61,700	12.4	+0.5%	-2.2%	4.8 *	+3.0%	+1.2%	-20.7%	-5.5%
112 Gabon	\$ 9,800	9.1	+2.7%	+1.1%	2.1 *	-0.2%	+8.7%	-7.0%	-1.7%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$/ capita	Consumption Tonnes / year / capita		Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita		Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C	
			15 years trend % / yr			15 years trend % / yr			
114 Indonesia	\$ 12,400	6.8	+3.5%	+0.8%	2.6	+5.2%	-0.5%	-10.0%	-2.7%
115 Viet Nam	\$ 10,100	8.5	+6.0%	-0.2%	2.5	+6.2%	+4.9%	-9.5%	-2.5%
116 Philippines	\$ 8,700	8.8	+5.3%	+0.2%	1.5	+4.1%	-28.9%	-5.6%	-1.1%
117 Botswana	\$ 10,400	14.2	+1.4%	-1.0%	7.6	+4.9%	+4.5%	-33.8%	-8.3%
118 Bolivia	\$ 8,400	11.3	+3.3%	-0.6%	2.1	+6.6%	+3.7%	-7.7%	-1.9%
118 Kyrgyzstan	\$ 3,800	7.8	+3.5%	+0.9%	2.7	+6.3%	+1.4%	-10.0%	-2.7%
120 Venezuela	\$ 18,800	9.6	+1.2%	-0.2%	4.3	+0.6%	+7.0%	-16.3%	-4.4%
121 Iraq	\$ 8,500	11.9	+6.3%	+0.2%	5.6 *	+4.6%	-3.9%	-22.8%	-6.0%
122 Tajikistan	\$ 2,600	5.7	+4.8%	+2.7%	1.0 *	+8.5%	+3.6%	-4.1%	-0.4%
123 Belize	\$ 7,500	12.2	+0.0%	-0.6%	1.8 *	+3.5%	+3.5%	-5.6%	-1.1%
123 Morocco	\$ 10,100	7.0	+3.5%	+0.9%	2.0	+2.6%	-1.9%	-7.1%	-1.7%
125 El Salvador	\$ 26,000	5.9	+0.5%	+0.9%	1.4	-0.3%	+2.5%	-5.1%	-0.9%
126 Nicaragua	\$ 8,300	5.4	+2.1%	+1.9%	1.0	+1.1%	+17.6%	-3.5%	-0.1%
127 Bhutan	na	32.4	+6.6%	-4.8%	2.6 *	+13.5%	+2.5%	-11.6%	-3.2%
128 Cabo Verde	na	na	na	na	1.1 *	+4.1%	-1.5%	-3.6%	-0.1%
129 Bangladesh	\$ 6,100	2.9	+4.3%	+3.8%	0.7	+6.1%	+3.8%	-2.4%	0.5%
130 Tuvalu	na	na	na	na	0.7 *	-2.5%	-6.7%	-2.4%	0.6%
131 Marshall Islands	na	na	na	na	3.5 *	+1.7%	-6.1%	-15.5%	-4.2%
132 India	\$ 10,100	5.2	+3.7%	+1.7%	1.8	+5.7%	+3.8%	-6.7%	-1.6%
133 Ghana	\$ 4,000	3.9	+4.7%	+4.1%	0.7	+3.7%	+2.3%	-2.0%	0.8%
134 Micronesia	na	na	na	na	1.4 *	+0.2%	-10.6%	-5.0%	-0.9%
135 Guatemala	na	7.2	+5.5%	+1.4%	1.6	+4.0%	+1.3%	-5.9%	-1.2%
136 Kiribati	na	na	na	na	0.6 *	+2.4%	-2.4%	-1.7%	1.0%
137 Honduras	na	6.1	+4.8%	+1.8%	1.3	+2.3%	+0.8%	-4.7%	-0.7%
138 Sao Tome & Principe	\$ 2,200	na	na	na	0.6 *	+3.7%	+5.6%	-1.5%	1.2%
139 Namibia	\$ 12,300	11.9	+2.3%	-0.2%	3.8	+3.6%	-2.5%	-14.5%	-4.0%
140 Lao PDR	\$ 4,700	9.6	+4.7%	-0.1%	4.3	+20.3%	-2.2%	-21.7%	-5.9%
140 Vanuatu	\$ 9,400	na	na	na	0.6 *	+7.8%	-4.7%	-2.0%	0.8%
140 Timor-Leste	\$ 3,000	na	na	na	0.4 *	+7.6%	-12.0%	-0.8%	1.6%
143 Nepal	\$ 2,600	5.6	+7.5%	+1.6%	0.8	+11.6%	+2.1%	-2.8%	0.3%
144 Eswatini	na	na	na	na	0.9 *	+0.1%	+5.0%	-3.0%	0.2%
145 Equatorial Guinea	\$ 12,200	15.9	+7.1%	-0.3%	6.8 *	+0.2%	-1.7%	-29.9%	-7.5%
146 Cambodia	\$ 3,900	5.7	+4.4%	+1.8%	1.3	+9.9%	+3.2%	-4.8%	-0.7%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$ / capita	Consumption Tonnes / year / capita 15 years trend % / yr		Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita 15 years trend % / yr		Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C for 2°C	
146 Zimbabwe	\$ 4,400	1.2	-3.4%	+8.4%	0.8	+1.7%	+2.9%	-2.6%	+0.4%
148 Angola	\$ 1,600	2.2	+2.1%	+7.6%	0.8 *	+1.5%	-1.4%	-2.0%	+0.8%
149 Myanmar	\$ 4,800	2.1	+1.2%	+5.0%	0.7 *	+7.4%	-3.9%	-2.7%	+0.4%
150 Syrian Arab Rep.	\$ 800	1.9	-3.0%	+7.2%	1.6 *	-3.2%	+4.6%	-5.7%	-1.1%
151 Cameroon	\$ 1,700	2.1	+4.6%	+6.9%	0.4	+4.9%	+7.7%	-0.7%	+1.7%
152 Kenya	\$ 7,000	4.6	+4.6%	+3.5%	0.6	+6.7%	+3.0%	-1.6%	+1.1%
153 Congo	\$ 900	1.9	-1.8%	+7.4%	0.6 *	+8.7%	-0.2%	-1.6%	+1.1%
154 Zambia	\$ 1,400	2.4	+1.5%	+6.9%	0.6	+6.9%	+6.2%	-1.5%	+1.1%
155 Solomon Islands	\$ 8,500	na	na	na	0.5 *	+0.6%	-5.3%	-1.0%	+1.5%
156 Papua New Guinea	\$ 4,300	5.2	+2.4%	+2.8%	0.7 *	+2.6%	-2.6%	-2.4%	+0.6%
156 Comoros	\$ 3,700	na	na	na	0.4 *	+5.0%	-6.8%	-0.5%	+1.9%
158 Mauritania	\$ 1,500	7.7	+3.3%	+2.1%	0.9 *	+6.8%	-5.4%	-2.7%	+0.3%
159 Cote d'Ivoire	na	3.3	+3.3%	+5.3%	0.6	+5.0%	-1.3%	-1.6%	+1.0%
160 Tanzania	\$ 1,900	1.6	+3.0%	+8.5%	0.4	+7.7%	+3.3%	-0.3%	+2.0%
161 Pakistan	\$ 3,400	3.5	+3.5%	+4.2%	1.1	+3.9%	+1.2%	-4.0%	-0.4%
162 Togo	\$ 700	4.1	+3.0%	+4.3%	0.9	+6.9%	-0.1%	-2.9%	+0.2%
163 Haiti	\$800	2.4	+1.3%	+4.9%	0.3 *	+4.7%	+1.4%	+0.1%	+2.3%
163 Nigeria	\$ 3,500	3.6	+5.6%	+5.0%	0.7	+3.0%	-1.1%	-1.9%	+0.8%
165 Rwanda	\$ 2,100	2.0	+1.4%	+6.8%	0.1	+5.7%	+1.5%	2.1%	+4.0%
166 Benin	\$ 1,400	3.4	+2.7%	+5.3%	0.8	+6.5%	+5.1%	-2.5%	+0.5%
166 Uganda	\$ 1,100	1.9	+2.7%	+7.4%	0.2	+6.8%	+3.8%	+0.9%	+3.0%
168 Lesotho	\$ 900	na	na	na	1.1 *	+1.1%	+1.5%	-3.6%	-0.1%
169 Malawi	\$ 1,100	1.7	+3.0%	+7.9%	0.2	+4.0%	+3.2%	+1.0%	+3.1%
170 Senegal	\$ 2,400	4.1	+3.1%	+4.6%	0.7	+3.8%	+2.4%	-2.2%	+0.7%
171 Djibouti	\$ 1,800	15.9	+2.2%	-1.9%	0.4 *	-0.1%	+3.1%	-0.3%	+2.1%
172 Sudan	na	11.3		+0.6%	0.5 *	+5.1%	-1.4%	-1.0%	+1.5%
173 Madagascar	\$ 1,000	1.5	+0.6%	+8.3%	0.2	+5.3%	-0.9%	+0.8%	+2.9%
174 Gambia	\$ 1,100	3.8	-0.2%	+4.9%	0.2 *	+3.6%	+4.4%	+0.7%	+2.9%
175 Ethiopia	\$ 1,900	0.5	+3.5%	+12.5%	0.2	+7.9%	+3.1%	+0.9%	+3.0%
176 Eritrea	\$ 1,400	3.5	+0.4%	+4.5%	0.2 *	+0.6%	+4.1%	+0.6%	+2.7%
177 Guinea-Bissau	\$ 1,000	na	na	na	0.2 *	+3.0%	+9.6%	+1.3%	+3.3%
178 Liberia	\$ 2,700	2.7	+4.2%	+5.8%	0.2 *	+4.8%	+4.9%	+0.7%	+2.9%
179 Congo D.R.	\$ 600	2.8	+3.4%	+6.4%	0.0 *	+5.8%	+6.3%	+4.2%	+6.0%

Development UH Ultra High, VH Very High, H High, M Medium, L Low	Wealth \$ / capita	Consumption Tonnes / year / capita	15 years trend % / yr	Consumption - CUT or + ADD % per year now	Emission CO2 Tonnes / year / capita	15 years trend % / yr	Pledge average % / year 2021 - 2030	Emission CO2 - CUT or + ADD % per year now, for 1.5°C	+ CUT or + ADD % per year now, for 2°C
180 Afghanistan	\$ 1,000	1.4	+2.1%	+8.0%	0.3 *	+19.1%	-0.1%	-0.4%	+1.9%
181 Sierra Leone	\$ 500	2.1	+2.4%	+6.3%	0.1 *	+4.2%	+6.5%	+1.8%	+3.8%
182 Guinea	\$ 1,800	4.8	+3.7%	+4.0%	0.3	+5.1%	+4.4%	-0.2%	+2.1%
183 Yemen	\$ 3,700	2.9	+2.6%	+5.1%	0.3 *	-4.0%	+1.7%	-0.1%	+2.2%
184 Burkina Faso	\$ 700	3.0	+3.1%	+6.0%	0.3	+5.8%	+7.8%	+0.2%	+2.4%
185 Mozambique	\$ 500	2.2	+3.1%	+7.1%	0.6	+9.8%	+6.0%	-1.4%	+1.2%
186 Mali	\$ 1,000	4.6	+6.5%	+4.5%	0.2 *	+6.7%	+5.7%	+1.1%	+3.2%
187 Burundi	\$ 300	1.7	+1.0%	+8.2%	0.1 *	+8.9%	+1.2%	+3.0%	+4.9%
188 Central African Rep	\$ 400	1.6	+0.2%	+7.7%	0.0 *	-0.3%	+2.0%	+3.7%	+5.5%
189 Niger	\$ 600	4.2	+3.9%	+5.7%	0.1 *	+5.7%	+6.1%	+2.7%	+4.6%
190 Chad	\$ 600	8.3	+5.2%	+2.1%	0.1 *	+2.0%	-1.8%	+2.9%	+4.8%
191 South Sudan	na	4.8	+31.9%	+3.5%	0.1 *	+2.6%	+7.2%	+1.9%	+3.9%
-- Nauru	na	na	na	na	4.83 *	-1.0%	+1.2%	-20.2%	-5.4%
-- Korea (DPR)	na	0.7	-3.5%	+8.4%	1.16 *	-5.9%	+8.0%	-4.4%	-0.6%
-- Somalia	na	3.5	+0.5%	+5.5%	0.04 *	+0.8%	+9.6%	+3.8%	+5.7%

¹¹ United Nations Development Programme, Human Development Index, 2021-2022

¹³ Credit Suisse Research Institute, Global Wealth Databook (2022)

¹⁵ United Nations Environment Programme, International Resource Panel (IRP), Global Material Flows Database, 2022

³¹ UNEP International Resource Panel (IRP), Managing and conserving the natural resource base for sustained economic and social development, 2014

¹⁶ Global Carbon Budget 2021, Consumption emissions,

* when consumption emissions are not known, territorial emissions are used (76 nations, 3.0% of total emissions, 8.6% of population)

¹⁷ Meinshausen M J et al, (2021) NDC factsheets, <https://www.climate-resource.com/tools/ndcs>

³⁰ Intergovernmental Panel on Climate Change, AR6, WG1, Climate Change (2021) The Physical Science Basis. Table 5.8: Assessed remaining carbon budget - 83% probability is used.

The remaining Carbon Budget to limit global warming to 1.5°C / 2°C (compared to 1850-1900) is 300 / 900 GtCO₂ by 1/1/2020, or 260 / 860 GtCO₂ by 2021, for a 83% probability, with no overshoot and no negative emissions. 90% of budget allocated to fossil fuel emissions and cement equals 230 / 760 GtCO₂ from 2021 onwards.

United Nations World Population Prospects – 2019 revision. Human population in 2021 is 7.9 billion. 230 / 760 billion tonnes of CO₂ divided over 7.9 billion people is 29 / 96 tonnes CO₂ / capita.

** Overlimit: the nation's emission limit of 29 / 96 tonnes CO₂ per capita for 1.5C / 2 C has been exceeded. To be on limit the nation has to remove all its emissions from the atmosphere.

UNESCO Open solutions to global challenges - Only One Earth Science
Michael Wadleigh, Birgit van Munster

Website: [OnlyOneEarth.Science](https://www.OnlyOneEarth.Science)

Further explanation, references and data birgitvmunster@gmail.com, +44 7538 416407