



CLIMATE NEGOTIATIONS AND GREEN INDUSTRIALISATION: CHALLENGES AND OPTIONS FOR DEVELOPING COUNTRIES

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- Climate change has already caused substantial damage and loss in terrestrial, freshwater and coastal and open ocean marine ecosystems.
- Extent and magnitude of these impacts are **significantly** larger than estimated in previous IPCC reports.
- Widespread deterioration of ecosystem structure and function, resilience and natural adaptive capacity, as well as shifts in seasonal timing.
- Some losses are already irreversible (species extinctions driven by climate change); other impacts are close to irreversible (impacts of hydrological changes because of retreat of glaciers, changes in some mountain and Arctic ecosystems driven by permafrost thaw).
- Adverse social and economic consequences and impacts on physical and mental health, especially in LMICs. Humanitarian crises occurring where climate hazards interact with high vulnerability.
- Despite some adaptation measures, there are large adaptation gaps across countries, regions, areas, categories of people. Increased evidence of *maladaptation* that adds to inequality and makes the problem worse, e.g. fire suppression in naturally fire-adapted ecosystems; seawalls and hard defences against flooding; more air conditioning in warmer contexts.

THIS IS OCCURRING IN A CONTEXT OF CLIMATE IMPERIALISM

- Imperialism: the struggle of large, monopolistic capital over economic territory, actively aided and assisted by states.
- The economic territory subject to contestation and control can take many forms:
 - land;
 - resources extracted from nature;
 - labour, both paid and unpaid;
 - markets;
 - newly commoditized services that were formerly seen to be more in the domain of public provision, ranging from electricity to education to security;
 - newly created forms of property like knowledge, or intellectual property;
 - cyberspace.
- In neoliberal phase of capitalism, environmental interaction with the planet has become one of the most crucial, and the most strongly associated also with coercion, conflict and wars—as well as with legal and economic architecture that appears less coercive.

HOW IS CLIMATE IMPERIALISM EXPRESSED?

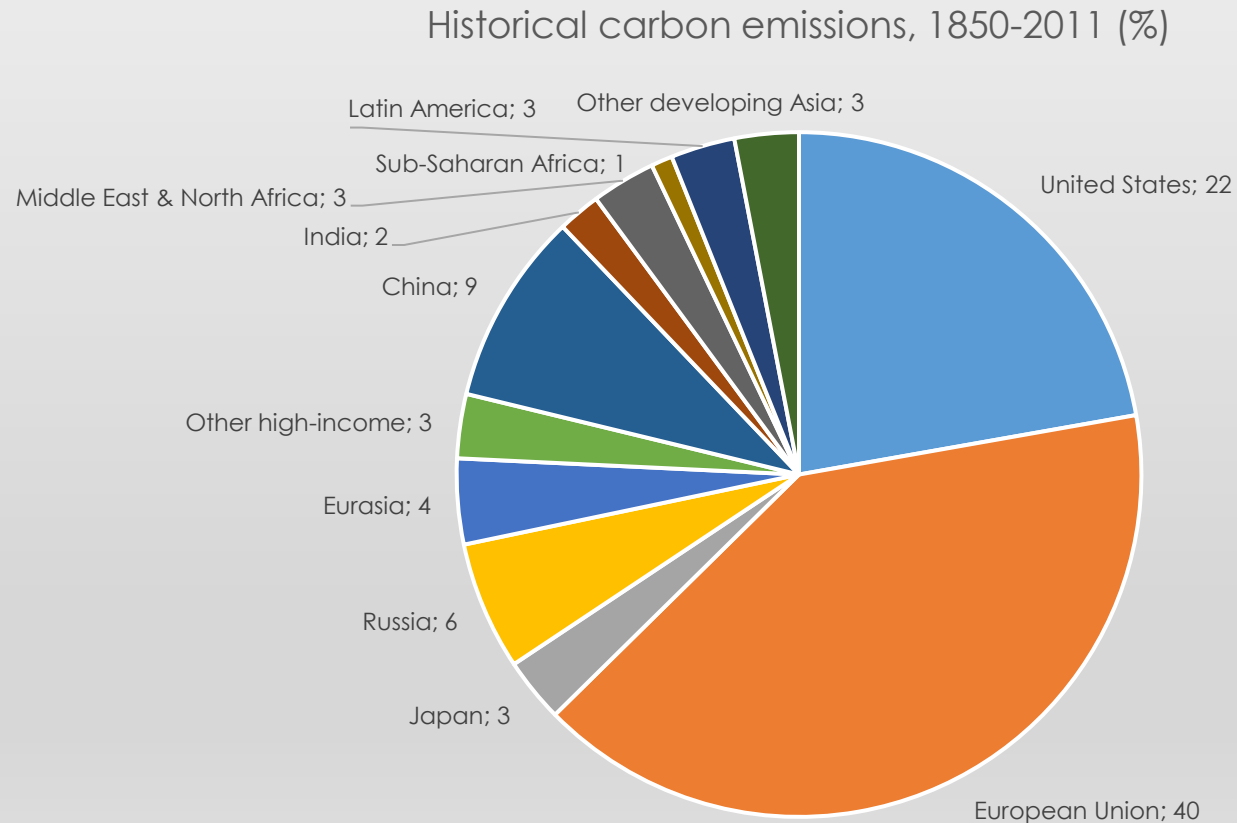
- Core countries and elites globally are able to produce and consume based on an imperialist mode of living, generating increasing global carbon emissions with rising ecological footprints.
- International negotiations address climate change in unequal, deceptive and debilitating ways.
- The operations of global finance and fiscal strategies of major countries increase carbon emissions while failing to make available the required finance for effective mitigation strategies.
- Privatized knowledge monopolies prevent most of humanity from being able to access critical technologies required to confront the climate challenge.
- Changing technological requirements for both mitigation and adaptation give rise to further natural resource grabs aimed particularly at strategic minerals, along with new forms of extractivist competition among the leading powers.

CLIMATE CHANGE IS A GLOBAL PROBLEM, BUT IT IS SOUGHT TO BE ADDRESSED AT NATIONAL LEVELS

- Countries are assigned “climate responsibility” based on current national carbon emissions.
- These form the basis of climate negotiations and national commitments to control carbon emissions, mostly recently in COP26 at Glasgow.
- This ignores historic responsibility (carbon debt) and so understates responsibility of richer countries.
- Typically relies on PPP measures of GDP for comparing across countries, which overstate incomes of poorer countries.
- Measures of carbon emissions are production-based rather than consumptions-based, underplaying continued significance of consumption in the North.
- Recent increases in carbon emissions are used to blame certain countries, especially China and India.

TODAY'S DEVELOPED COUNTRIES ARE RESPONSIBLE FOR NEARLY 80 PER CENT OF GLOBAL CUMULATIVE CARBON EMISSIONS OVER 1850 TO 2011

MORE THAN 50 PERCENT OF THESE HISTORICAL EMISSIONS OCCURRED IN THE LAST 30 YEARS, WHEN MORE COULD HAVE BEEN DONE IN TERMS OF CLIMATE MITIGATION

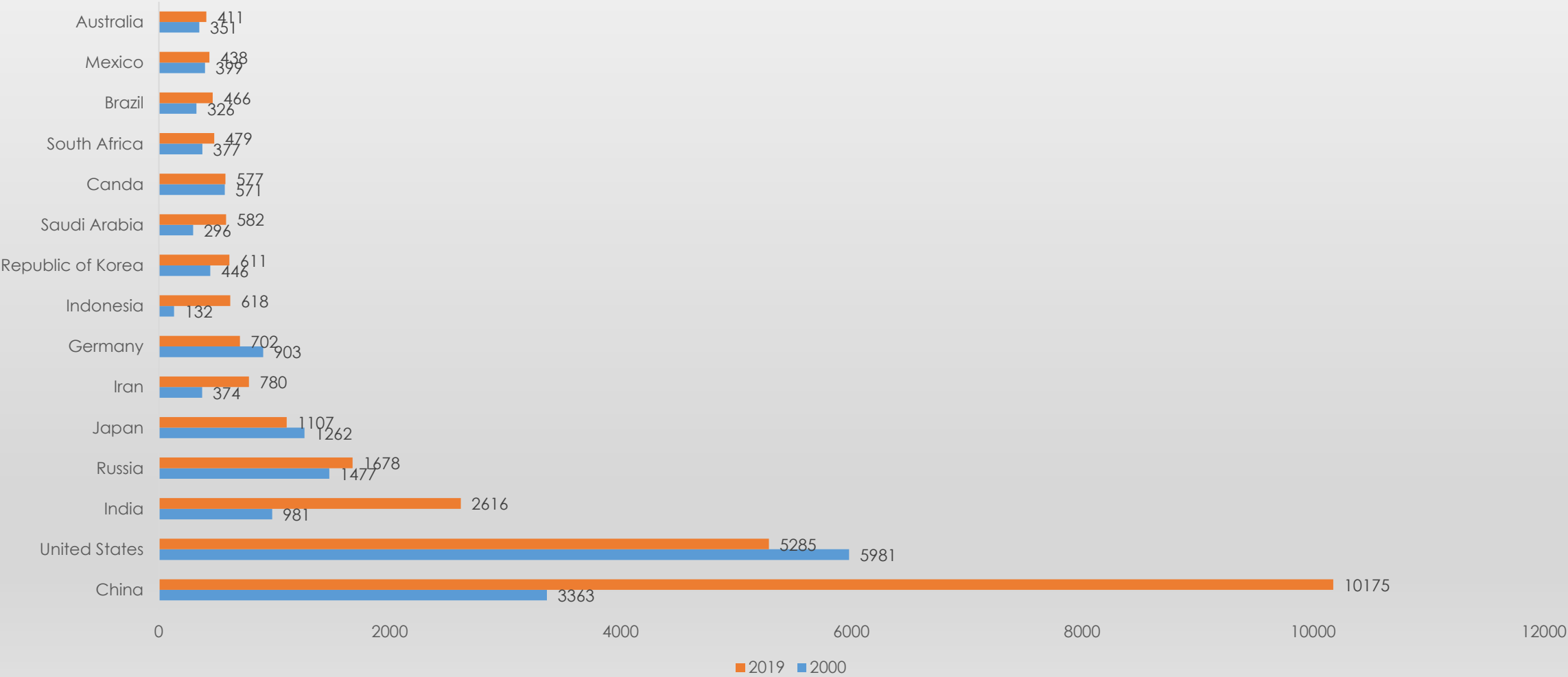


METHODS OF DETERMINING CARBON EMISSIONS

- Production based: Responsibility for carbon emissions is fully placed on producers of goods and services within the specified location (area, nation or region). It covers all production, at whatever point in the value chain of any product or service. (UNFCCC)
- This does not consider the impact of cross-border trade
- Extraction-based: Consider the full life cycle of extracted natural resources—typically fossil fuels—with responsibility allocated to those who extract the resource, by considering downstream emissions enabled by the sale of that resource/fuel.
- Value-added emissions: allocated according to the share of value added over the life cycle of the product, in each step of the value chain.
- Consumption-based emissions: those resulting from satisfying domestic demand (both consumption and investment), with responsibility for life cycle emissions allocated to the final consumers of goods and services.

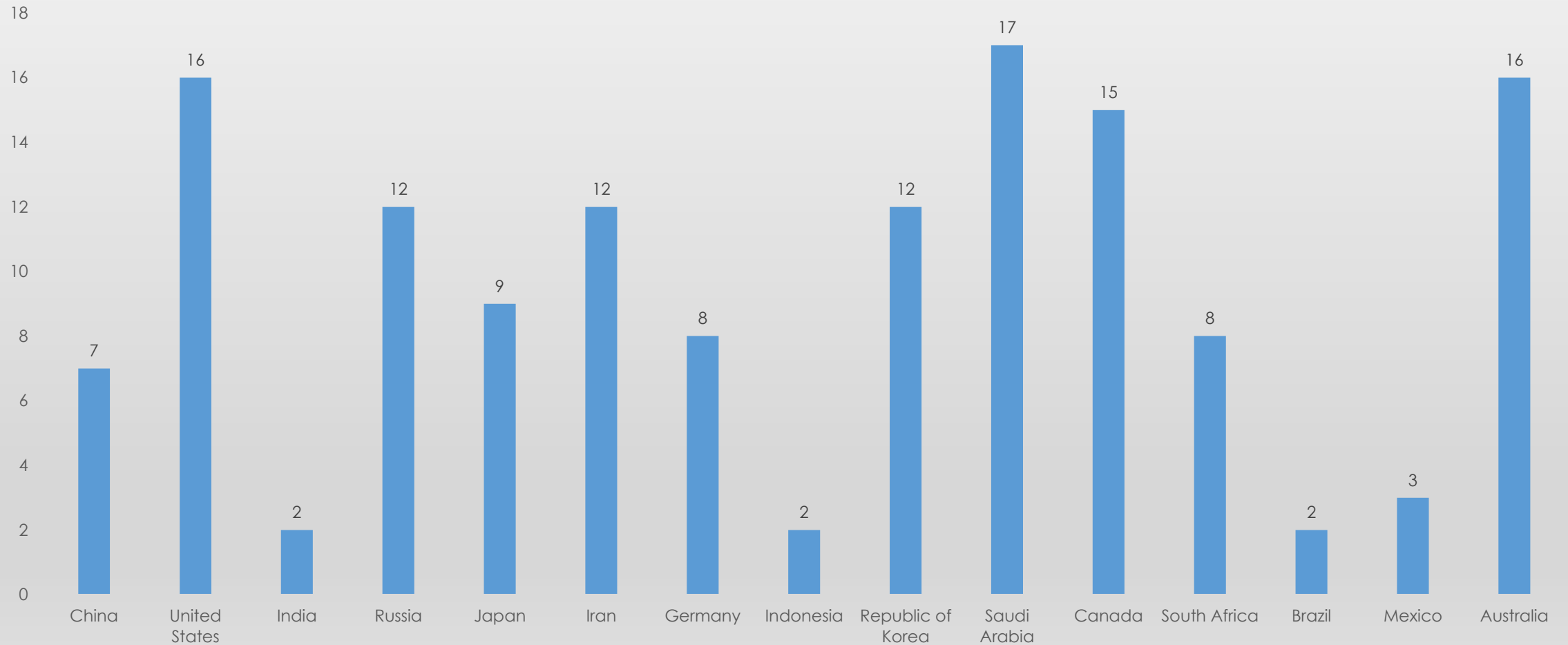
PRODUCTION-BASED EMISSIONS AMONG LARGEST EMITTERS

Total CO2 emissions
(million metric tonnes)



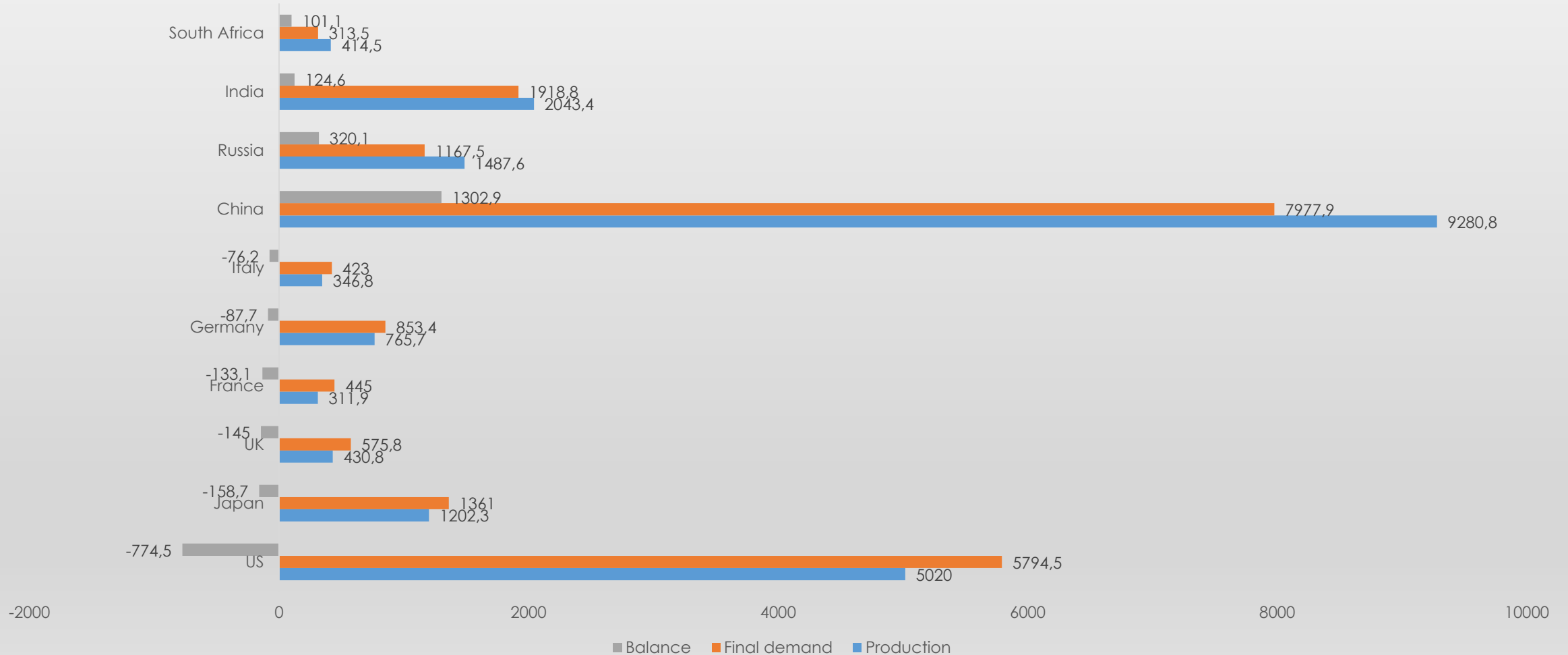
PER CAPITA EMISSIONS TELL A DIFFERENT STORY

Per capita CO2 emissions in 2019
(metric tonnes per capita)



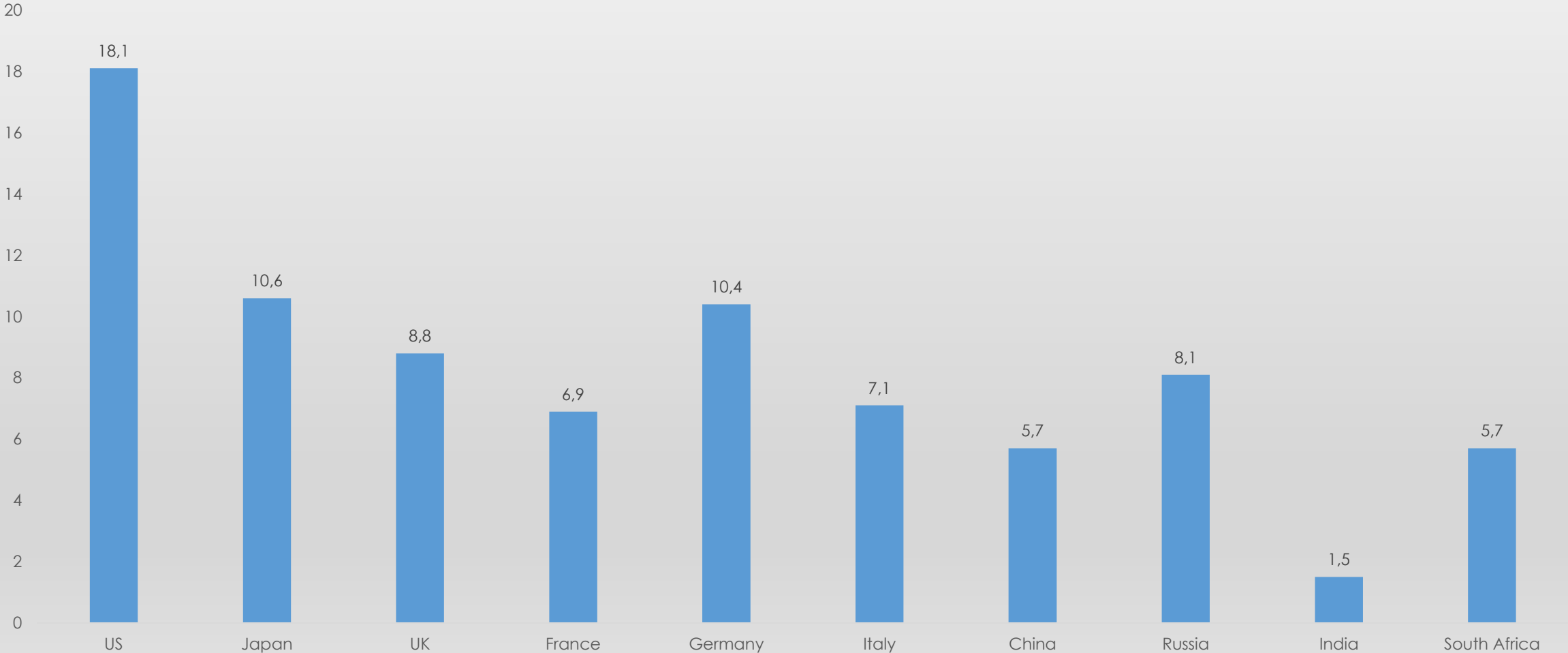
INTERNATIONAL TRADE CONTINUES TO PLAY A BIG ROLE IN DRIVING EMISSIONS

Carbon balance by production and final demand, mmt 2015



PER CAPITA EMISSIONS BY FINAL DEMAND SHOW THE REAL DIFFERENCE

Per capita emissions by final demand in 2015
(metric tonnes)



EMISSIONS INEQUALITY WITHIN COUNTRIES IS SIGNIFICANT AND HAS GOT WORSE

	Bottom 50%	Middle 40%	Top 10%
East Asia	3.1	7.9	38.9
Europe	5.1	10.6	29.2
North America	9.7	21.7	73.0
South & Southeast Asia	1.2	2.5	10.6
Russia & Central Asia	4.6	10.2	35.1
Middle East & North Africa	2.3	7.3	33.6
Latin America	2.0	4.7	19.2
Sub Saharan Africa	0.5	1.7	7.3

COMPONENTS OF CARBON EMISSION REDUCTION: INTERNAL

- Reduction in energy use per unit of GDP, usually through changes in sectoral composition of the economy).
- Within sectors, technological changes that reduce energy consumption per unit of output.
- Within sectors and in the economy as a whole, changes in the type of energy used, from more to less carbon-emitting sources.
- Renewable energy (solar/wind) is most desirable option, then natural gas, then petroleum, then coal as the most polluting and carbon-emitting.

COMPONENTS OF PER CAPITA CARBON EMISSIONS

Region/Country	CO2 emissions/population (metric tonnes per capita)	GDP/population (constant 2015 US\$)	Energy Intensity ratio: (QBTUs/trillion \$ GDP)	Emissions/CO2 BTU (MMT CO2/quad of energy)
World	4.5	10,829	7.3	61.6
China	7.4	9,619	10.9	72.9
USA	15.2	59,822	5.2	52.1
France	4.6	38,276	4.0	36.3
Germany	8.6	42,956	3.9	62.4
Italy	5.4	31,586	3.6	56.2
Japan	8.7	36,189	4.2	70.6
Russia	11.1	9,899	23.3	54.7
United Kingdom	5.4	46,242	2.7	52.0
India	1.8	1,915	12.1	74.3
South Africa	7.5	5,640	16.9	82.8

CHANGE IN CARBON INTENSITY BY COMPONENTS, 2000-2018

Region/Country	CO2 emissions/population (metric tonnes per capita)	GDP/population (constant 2015 US\$)	Energy Intensity ratio: (QBTUs/trillion \$ GDP)	Emissions/Q-BTU (MMTCO2/quad of energy)
World	18.0%	37.8%	-12.9%	-1.5%
China	184.8%	338.5%	-28.9%	-11.1%
USA	-25.9%	22.9%	-27.6%	-12.4%
France	-24.9%	14.0%	-24.9%	-15.9%
Germany	-14.8%	24.6%	-23.4%	-9.8%
Italy	-29.5%	-2.3%	-13.2%	-13.7%
Japan	-6.7%	15.1%	-25.7%	6.4%
Russia	9.2%	85.9%	-32.1%	-5.0%
United Kingdom	-40.0%	20.3%	-38.4%	-14.6%
India	100.0%	152.8%	-20.6%	2.4%
South Africa	19.0%	25.2%	-25.6%	-3.0%

WIDE VARIATION IN MITIGATION STRATEGIES – PER CAPITA INCOME IS ONLY ONE FACTOR

- Most countries showed substantial declines in energy intensity of GDP both structural changes and technological changes
- Poorer countries (India, South Africa, China) have higher absolute levels of emission intensity, along with those relying heavily on hydrocarbon exports (Russia)
- India had and has lowest absolute levels of both per capita emissions and per capita income.
- Decline varied from only 13 per cent in Italy to nearly 40 per cent in the UK.
- France, Italy, the UK and the USA reduced share of more carbon-emitting energy sources; but Japan and India increased their reliance on “brown” energy sources.
- Changes constrained by insufficient access to the frontline technologies for energy-saving and emission-reducing production, because of global IPR regime and resistance to technology transfer from rich countries.

COMPONENTS OF CARBON EMISSION REDUCTION: EXTERNAL (CROSS-BORDER TRADE)

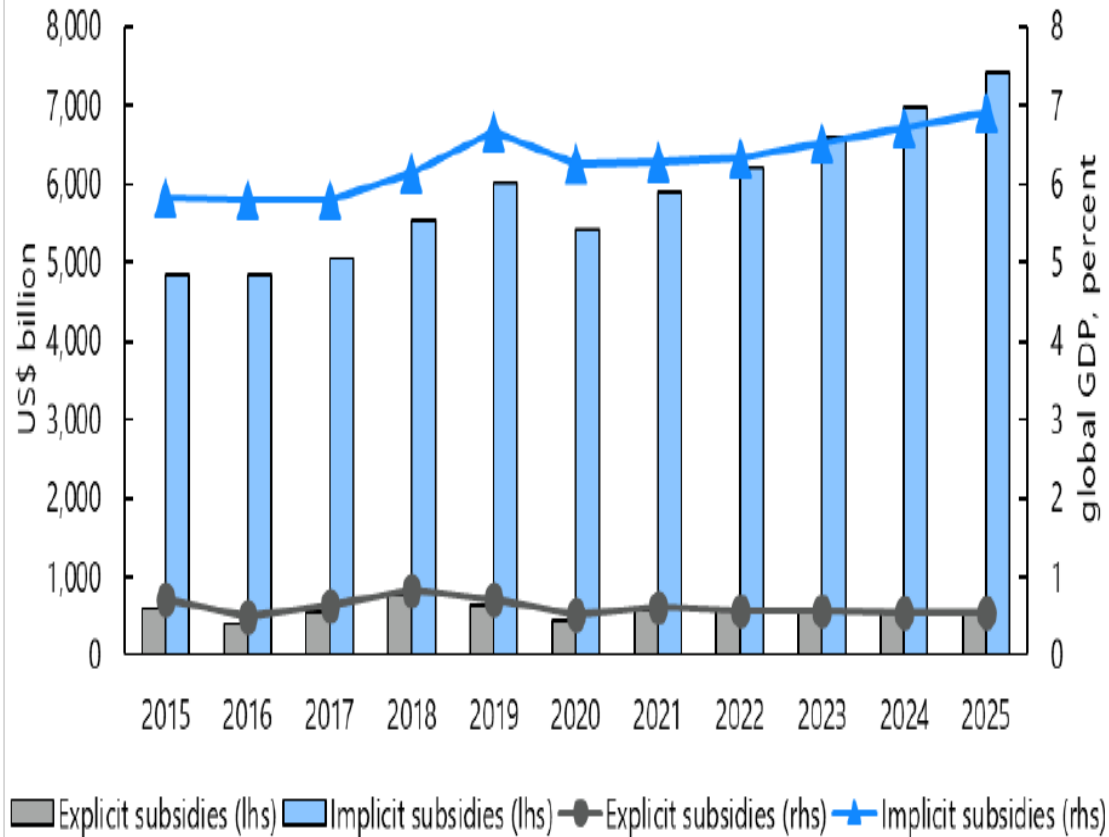
- Emergence of China as a major manufacturing exporter to developed world.
- 2000-19: huge increase in manufacturing exports of China (>10 times by value and even more in volumes)
- Significant share of imports requiring more carbon-intensive production.
- US imports of non-electrical machinery and transport equipment increased by 7-8 times .
- By 2015, imports from China alone were >50% of the carbon emission balance (final demand minus domestic production) of the USA; 63% for Japan, 49% for Germany, 38% for the UK, etc.
- This process was driven by advanced economies and their multinational companies – took off after 2002 (China's WTO entry) and declined in last decade.
- China's trade with developing countries and Russia shows opposite balance.

CLIMATE FINANCE HAS BEEN COMPLETELY INADEQUATE: LESS THAN \$67 BN PER YEAR COMPARED TO PROMISED \$100 BN – AND MOST OF THIS IS FROM MULTILATERAL SOURCES (OECD)

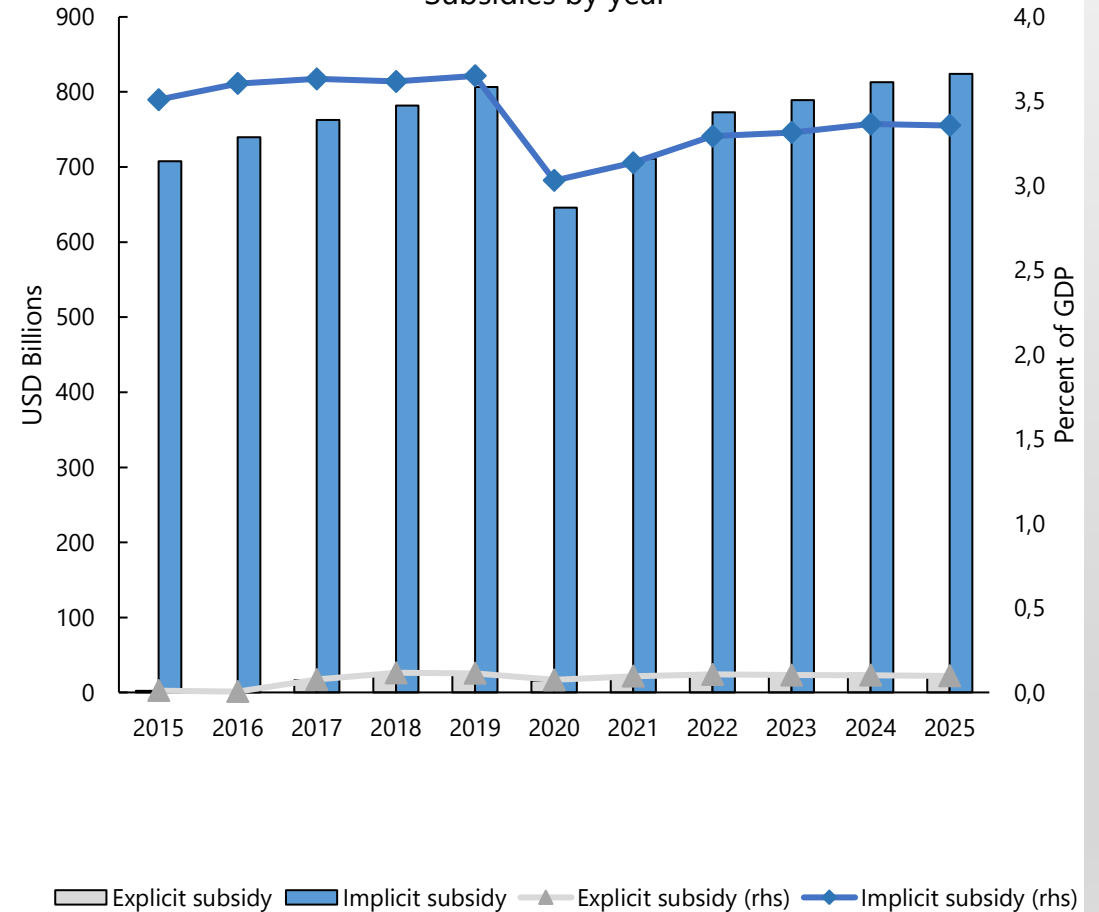
	2013	2014	2015	2016	2017	2018	2019
Bilateral public climate finance (1)	22.5	23.1	25.9	28.0	27.0	32.0	28.8
Multilateral public climate finance attributable to developed countries (2)	15.5	20.4	16.2	18.9	27.5	29.6	34.1
<i>Multilateral development banks</i>	13.0	18.0	14.4	15.7	24.1	25.8	30.0
<i>Multilateral climate funds</i>	2.2	2.0	1.4	2.6	2.9	3.5	3.8
<i>Inflows to multilateral institutions (where outflows unavailable)</i>	0.3	0.4	0.4	0.6	0.5	0.3	0.3
Subtotal (1+2)	37.9	43.5	42.1	46.9	54.5	61.6	62.9
Climate-related officially-supported export credits (3)	1.6	1.6	2.5	1.5	2.1	2.1	2.6
Subtotal (1+2+3)	39.5	45.1	44.6	48.5	56.7	63.7	65.5
Private climate finance mobilised (4)	12.8	16.7	N/A	10.1	14.5	14.6	14.0
<i>By bilateral public climate finance</i>	6.5	8.1	N/A	5.0	3.7	3.8	5.6
<i>By multilateral public climate finance attributable to developed countries</i>	6.2	8.6	N/A	5.1	10.8	10.8	8.4
Grand Total (1+2+3+4)	52.2	61.8	N/A	58.6	71.2	78.3	79.6

MEANWHILE TOTAL GLOBAL FOSSIL FUELS SUBSIDIES ARE NEARLY \$6 TRILLION, WITH US AT \$700 BN (IMF)

Figure ES2. Global Fossil Fuel Subsidies Over Time



Subsidies by year



POSING THE PROBLEM AS DEVELOPMENT AND POVERTY REDUCTION VS CLIMATE MITIGATION IS A FALSE DILEMMA

- Countries can choose a development/industrialization pattern that
 - improves the level of energy efficiency of the economy;
 - change patterns of investment and consumption towards activities requiring less energy;
 - within energy sources, reduces the share of the most carbon-emitting sources, from coal and petroleum-based to natural gas and to clean renewables like solar, wind and possibly hydro sources.
- Urbanization patterns must change to conform with these.
- Need to control carbon emissions of the very rich, through regulations and taxation (moon trips, private jets, etc.)
- This is compatible with increasing employment.
- This is **better** for developing economies and societies, and for the poor within them, than the current trajectory.

THERE IS MASSIVE POTENTIAL FOR GREEN INDUSTRIALIZATION

- Coping and adaptation strategies for climate change are now as important as mitigation strategies.
- There are also concerns about pollution and over-extraction that require an industrial policy approach.
- Great potential for employment generation, which is a crucial problem in most LMICs.
- Essential for minimal sustainability even in other sectors like agriculture and services, because of significant spillover effects and backward and forward linkages.
- Markets cannot and will not deliver this: it requires a medium term planning framework for investment, and substantial engagement of states.
- State and their policies and actions in turn need to be more accountable to people and different stakeholders.
- Private engagement must come with conditions imposed on them.
- A holistic approach is required that takes into account input-output relationships and linkages.

INTERNATIONAL ECONOMIC ARCHITECTURE PREVENTS CHANGE. SOME CHANGES REQUIRED:

- Use Market Exchange Rates, not Purchasing Power Parity exchange rates, to determine GDP and therefore climate obligations. Bring in role of historical carbon debt and consider shares of future carbon budget accordingly as well as on per capita basis
- Massively increased climate finance based on Global Public Investment principles, NOT as foreign aid. SDRs expansion is one possible route.
- Regulation and control of private finance that continues to fund brown projects.
- Border carbon taxes are NOT a solution. They would just be device for trade protectionism, if principles of compensation and sharing of revenues are not clear and just. A global tax-and-dividend policy requires trust and international cooperation, neither of which currently exists.
- Forget cap-and-trade, which is not effective in reducing emissions, just transfers the location.
- Share new green technologies and making them accessible to all is essential, so IPR regime has to change and TRIPS has to be renegotiated

CONCERNS WITH CURRENT ENERGY TRANSITION STRATEGIES

- Massive fossil fuel subsidies persist and are growing, reflecting short-termism and political lobby power of Big Oil.
- Private financial markets are still incentivised to fund “brown” investments, with no regulation or other disincentives.
- ESG (Environmental, Social, Governance) indicators for private investors just enable greenwashing.
- The need for new minerals: resource grab, resource curse and environmental problems of mining (e.g. lithium required for batteries, rare earths)
- Recycling waste: Most waste from rich countries is exported to the developing world to be recycled, in often hazardous conditions, with adverse environmental implications in receiving countries. But recent experience shows that regulations can work.

THE ROAD AHEAD

- Need to revive progressive multilateralism, while abandoning unjust and counterproductive features of existing processes and legal architecture
- National/regional strategies are also possible.
- This requires a big investment push, but can be done with 1.5-2% of GDP of large economies annually (Chomsky and Pollin 2020).
- Both finance and access to technologies are critical.
- Public investment is critical, along Global Public Investment lines, ideally through increased global liquidity.
- Incentives for and derisking of private investment MUST be accompanied by regulations and conditionalities in accordance with social goals.
- Green transition must be just, not only for workers but for those impacted by new resource grabs.
- There are challenges posed by domestic inequalities, the power of elites, the rise of authoritarianism and its intertwining with new technologies
- Urgency means that national/regional strategies should also be promoted.

THANKS FOR YOUR ATTENTION