

# Climate Imperialism in the Twenty-First Century

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## Introduction

Imperialism can be defined broadly as the struggle of large, monopolistic capital over economic territory, actively aided and assisted by states. However, imperialism cannot be comprehensively addressed simply on a nation-by-nation basis but requires the recognition of the existence of an imperialist world system dominated by a hegemonic power. This was broadly the approach developed by V. I. Lenin more than a century ago. Though it has not changed in essence, it has morphed significantly in form, structure, and reliance on particular legal and

institutional architectures.<sup>1</sup>

The economic territory is the subject of contestation and control, and it can take many

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forms: land; resources extracted from nature; labor (both paid and unpaid); markets; newly commodified 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 such as knowledge or intellectual property; even cyberspace.

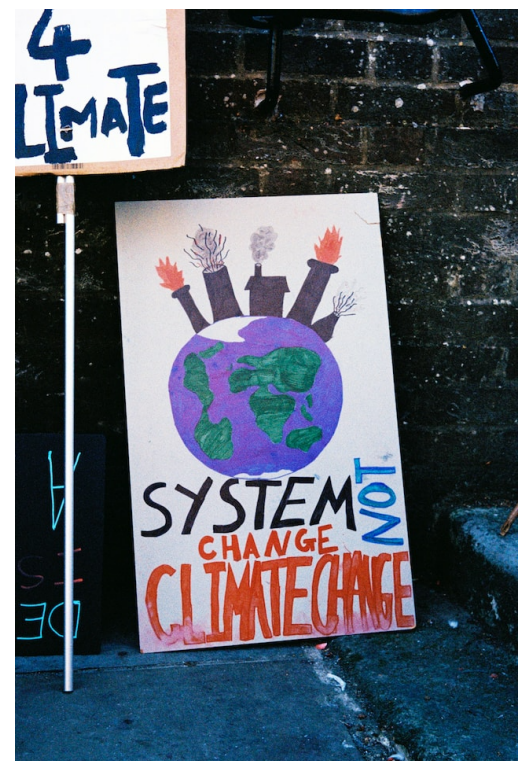


Photo by [Scott Evans](#) on [Unsplash](#)

<sup>1</sup> ↪ See, for example, Jayati Ghosh, “[The Creation of the Next Imperialism: The Institutional Architecture](#),” *Monthly Review* 67, no. 3 (July–August 2015): 146–58.

Among the many new forms of economic territory that have proliferated in the neoliberal globalising phase of capitalism, those associated with direct human environmental interaction with the planet remain in many ways the most crucial and the most strongly associated also with coercion, conflict, and war. The nineteenth century saw many such conflicts in the colonial expansion to other lands, in the attempt to establish control over physical territory with its attendant advantages. Wars in the late twentieth century were closely related to control over energy sources like oil. The twenty-first century may see growing water wars. Increasingly, the change resulting from anthropogenic rifts in the Earth System metabolism has come to define a sphere of struggle over influence, control, and appropriation that is now a major aspect of contemporary imperialism.

This particular feature of global capitalism today and its association with not just capitalism but with imperialism is becoming more and more evident in: (1) how core countries and elites are able to produce and consume based on an imperialist mode of living, generating increasing global carbon emissions with rising ecological footprints; (2) the deceptive and debilitating ways that climate change is addressed in international negotiations; (3) the operations of global finance that increase carbon emissions while failing to make available the required finance for effective mitigation strategies; (4) the privatised knowledge monopolies that prevent most of humanity from being able to access critical technologies required to confront the climate challenge; and (5) the changing technological requirements for both mitigation and adaptation, which give rise to further natural resource grabs aimed

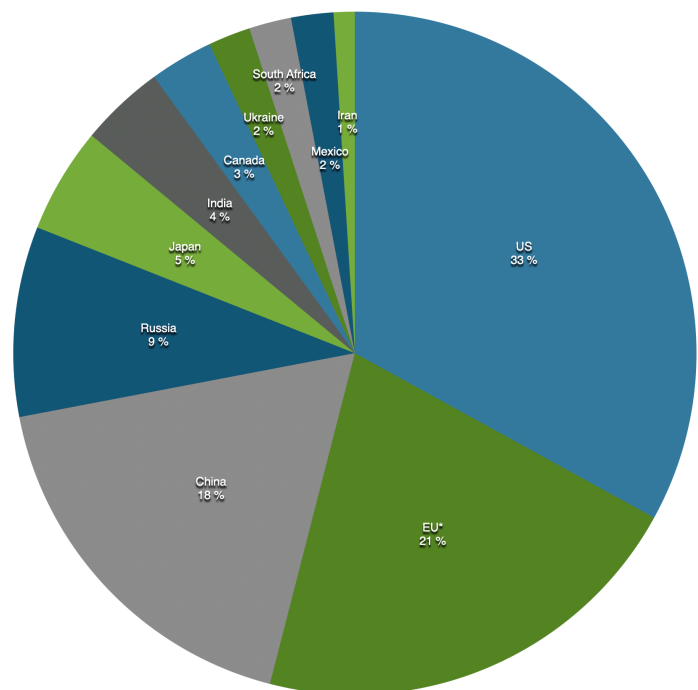
*So-called developed countries are responsible for nearly 80 percent of cumulative global carbon emissions from 1850 to 2011 [and] account for around 14 percent of the global population.*

particularly at strategic minerals, along with new forms of extractivist competition among the leading powers.

## The Carbon Debt in History and Today

Historically, today's so-called developed countries are responsible for nearly 80 percent of cumulative global carbon emissions from 1850 to 2011. This historical process of the concentration of greenhouse gas emissions is the major contributor to the climate change impacts that the world is facing today. They are fundamentally a result of overexploitation and abuse of the planet by a small group of now-rich countries, which today account for around 14 percent of the global population. Meanwhile, the effects of those climate change impacts are being felt disproportionately by developing countries, which are less able to deal with the consequences because of lower per capita incomes, less fiscal space, and reduced access to international capital markets.

Chart 1. Cumulative Carbon Dioxide Emissions from Fossil Fuel Combustion Worldwide from 1750 to 2020



\*EU is composed of France, Germany, Italy, Poland, and the United Kingdom. Source: Our World in Data; Climate Watch Data; Global Carbon Project; Statista. Source: Our World in Data; Climate Watch Data; Global Carbon Project; Statista.

This means that there is a major concern about existing climate debt, which needs to be addressed in any conception of a just transition. The net zero commitments for the future currently being made by rich countries do not make any explicit mention of the truly vast negative impact of their own past growth trajectories. If this climate debt were to be taken into account, it would mean a major revamp of existing proposals made by these countries. For example, it has been estimated that “the US fair share of the global mitigation effort in 2030 is equivalent to a reduction of 195% below its 2005 emissions levels, reflecting a fair share range of 173–229%.”<sup>2</sup>

In international negotiations on addressing climate change, the advanced economies have succeeded in shifting the terms away from any notions of historical responsibility and climate debt, instead focusing only on current emissions

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levels. There is also no recognition of the need to compensate those countries most impacted by climate change already (predominantly low- and middle-income countries), which have suffered extensive loss and damage due to rising sea levels, more extreme climate events, and worsening possibilities for cultivation. This is not just about ethics; it is counterproductive, because it reduces or even

destroys the minimal international solidarity and cooperation that is essential to ensure that humanity can cope with the climate crisis. There can be no transition to a sustainable economy in a healthy planet—“just” or otherwise—if these legitimate concerns of developing countries are not taken into account.

The current pattern of commitments to reduce carbon emissions also means that the climate debt of this small group of rich countries to the rest of the world will continue to grow. The projections and commitments made by rich countries in effect mean that they will continue to appropriate the vast bulk (around 60 percent) of the estimated global “carbon budget” for the next three decades if the additional 1.5°C limit of global warming is maintained. If, as seems increasingly likely, the 1.5°C barrier is breached quickly (in the most optimistic Intergovernmental Panel on Climate Change [IPCC] scenario, this will occur by 2040), with potentially unspeakable consequences, these few rich countries will still be predominantly responsible.

## Estimating National Responsibility for Carbon Emissions

It should be obvious that natural processes—and the Anthropocene effects on them—do not observe national boundaries. The atmosphere and the oceans do not rely on visas to cross borders, and the impact of climate change and degradation of nature spread across locations. Despite this, strategies to address climate change remain fundamentally national, even on international platforms. The “climate responsibility” of different countries forms the basis of climate negotiations and national commitments to control greenhouse gas emissions, as most recently evidenced in November 2021 at the UN Climate Change Conference in Scotland.

How is such climate responsibility determined? The standard method (also used by the UN Framework Convention on Climate Change) is based on carbon dioxide-equivalent emissions generated by productive activity within national boundaries. This makes China, the United States, and India the three largest emitters of carbon dioxide today, accounting for more than half the global total. China and India have dramatically increased emissions, especially since the turn of

<sup>2</sup> ↪ “The US Fair Share—Backgrounder,” U.S. Climate Fair Share, accessed May 26, 2022.



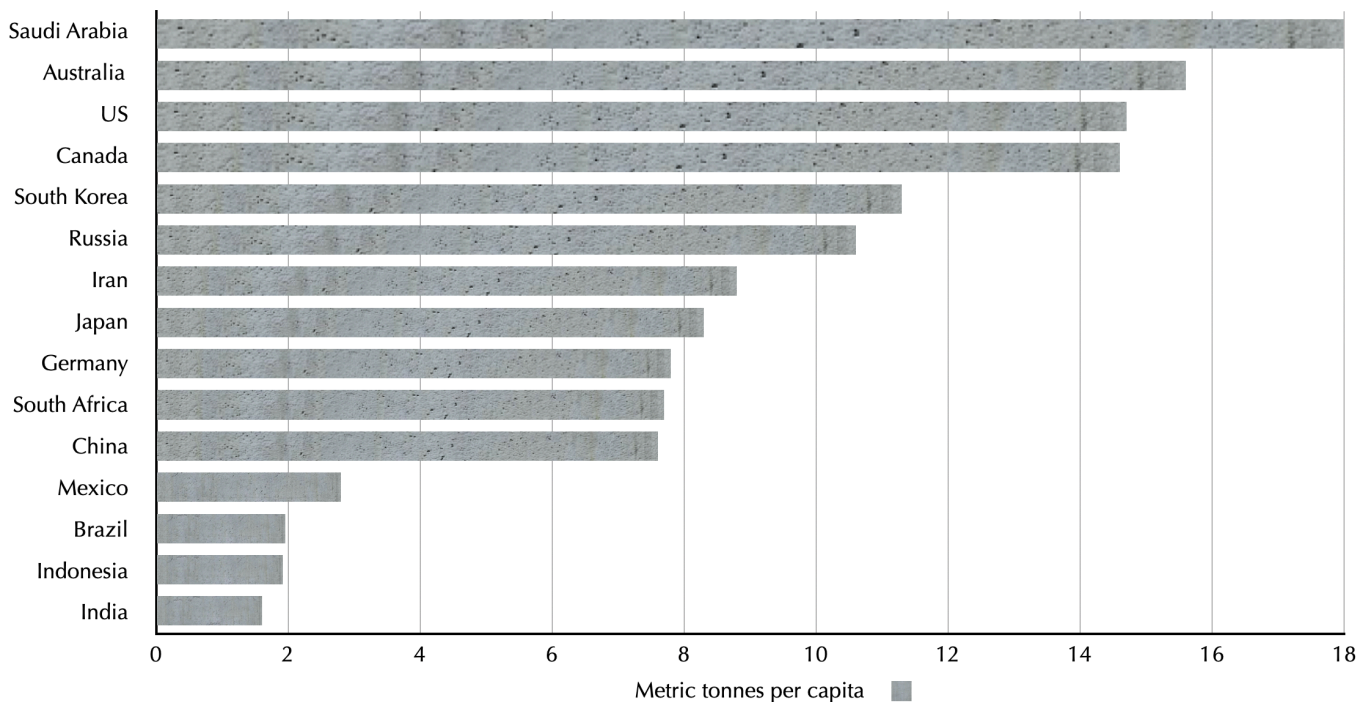
the century, while most advanced economies have shown lower increases and, in some cases, slight declines. Indeed, this allowed much finger pointing at China and India at the Glasgow UN Climate Change Conference.

In general, developing countries have shown much faster rates of increase of carbon emissions since 2000: by 2019, they had gone up in China by more than 3 times, in India by 2.7 times, in Indonesia by 4.7 times, and in Saudi Arabia they nearly doubled. Meanwhile, in the United States and Japan, total national production-based emissions actually declined by around 12 percent over these two decades. In Germany, the decline was nearly 22 percent.<sup>3</sup> These declines

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reflect a combination of forces: changes in trade patterns that enabled these countries to shift the more carbon-intensive production to other (mostly developing) countries and thereby effectively “export” their carbon emissions; changes in economic structure toward services that rely less on energy use; changes in the composition of energy away from the most polluting sources (like coal) to less carbon-polluting sources like natural gas, as well as nuclear and renewable energy.

Chart 2. Per Capita CO2 Emissions in 2020



Source: Global Carbon Project, November 2021; Global Carbon Atlas; Statista.

The way most climate change discussions are couched in terms of absolute total emissions or in terms of gross domestic product, rather than per person, obscures the deeper inequalities that pervade the current patterns. Despite recent

<sup>3</sup> ↪ Graham Mott, Carlos Razo, and Robert Hamwey, “Carbon Emissions Anywhere Threaten Development Everywhere,” UNCTAD, June 2, 2021.

*By sourcing high-carbon products and services from other countries, nations can effectively “export” their emissions... The leaked IPCC scientific-consensus “Summary for Policymakers” of Working Group III on Mitigation, over 40 percent of developing country emissions were due to export production for developed countries. This was removed by governments in the final published version of the report.*

absolute reductions, the advanced economies still remain by far the greatest emitters in per capita terms. In per capita terms, the United States and Australia produce eight times more carbon emissions than developing countries like India, Indonesia, and Brazil, who are nevertheless being castigated for allowing emissions to increase. Even China, despite recent increases, still shows less than half the level of per capita carbon emissions of the United States.

However, even per capita carbon emission comparisons based on national production do not reveal the full extent of the inequalities that currently exist. By sourcing high-carbon products and services from other countries, nations can effectively “export” their emissions. Since the turn of the century, advanced economies followed the now infamous strategy proposed by Larry Summers of exporting polluting industries to the developing world—and adding carbon-emitting industries and production processes to this list. Shifting from direct emissions to “indirect” emissions through cross-border trade means that the full emissions embodied in the consumption and investment of the rich countries are not counted.

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Annual Assessment explained that over 40 percent of developing country emissions were due to export production for developed countries. This was removed by governments in the final published version of the report.<sup>4</sup> The exported emissions by the Organisation for Economic Co-operation and Development (OECD) countries increased rapidly from 2002

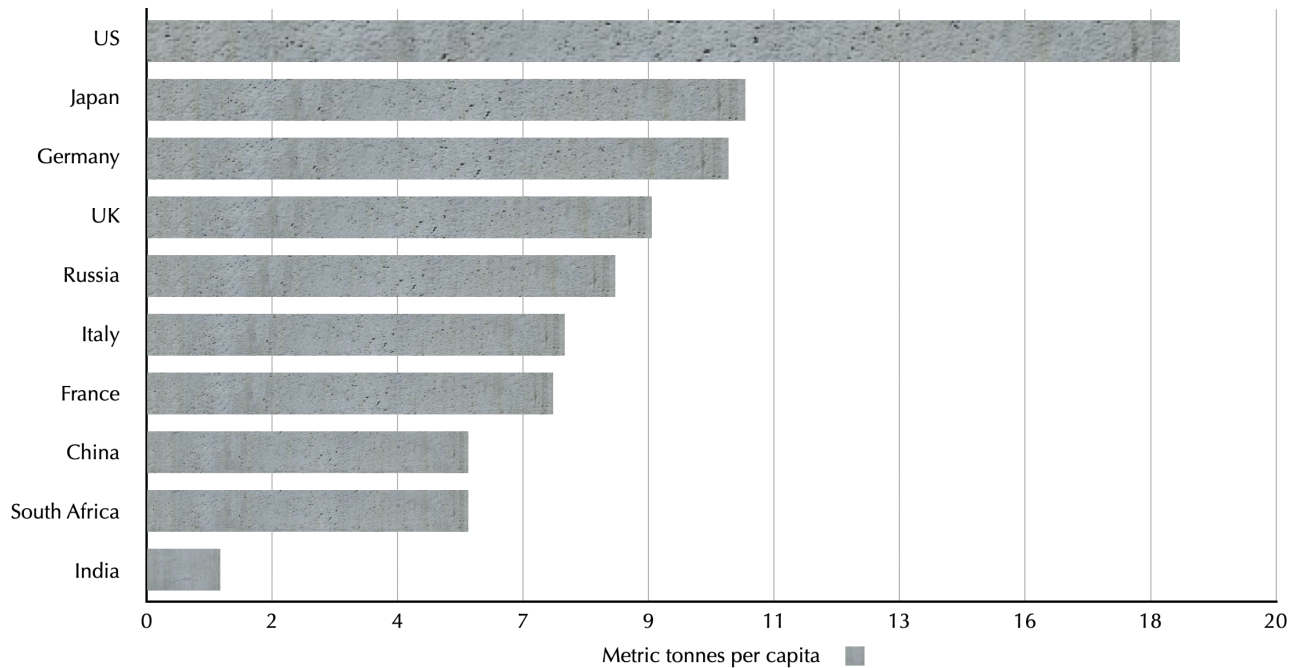
(notably, after China joined the World Trade Organization) and peaked in 2006 at a negative carbon balance of 2,278 million metric tons, which was 17 percent of the group of countries’ production-based emissions. They have been declining thereafter, but still remain at around 1,577 million metric tons.<sup>5</sup>

Once final demand emissions are taken into account, the per capita differences across countries are even greater, and the advanced economies still remain by far the greatest emitters. While the United States showed eight times the per capita carbon emissions of India in production terms in 2019, the U.S. emissions were more than twelve times that of India when final demand emissions are calculated for 2015. U.S. per capita emissions based on final demand were more than three times those of China, although in aggregate production-based terms China is seen as today’s largest emitter.

<sup>4</sup> ↪ [“Advance Release! The Leaked IPCC Reports,”](#) MR Online, September 8, 2021.

<sup>5</sup> ↪ OECD calculations of this process are based on the construction of Global Multi-Regional Input Output tables with environmental extensions. These calculations provide assessments of carbon emissions based on final demand (consumption plus investment) and the carbon balance achieved through trade, which includes carbon emissions during production (including export production) minus those in the imports.

Chart 3. Per Capita CO2 Emissions by Final Demand in 2015



Source: Global Carbon Project; Global Carbon Atlas; Statista; OECD Data.

## Inequality as a Driver of Carbon Emissions

National averages can be misleading, disguising significant inequality within a country, determined by levels of income,

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location, and occupation, among other factors.

According to the 2022 World Inequality Report, global carbon inequalities are now mainly due to inequalities within countries, which now account for nearly two thirds of global carbon inequality, having nearly doubled in share from slightly more than one third in 1990. In fact, the poorest half of the population in rich countries is already at (or near) the 2030 climate targets

set by rich countries, when these targets are expressed on a per capita basis.

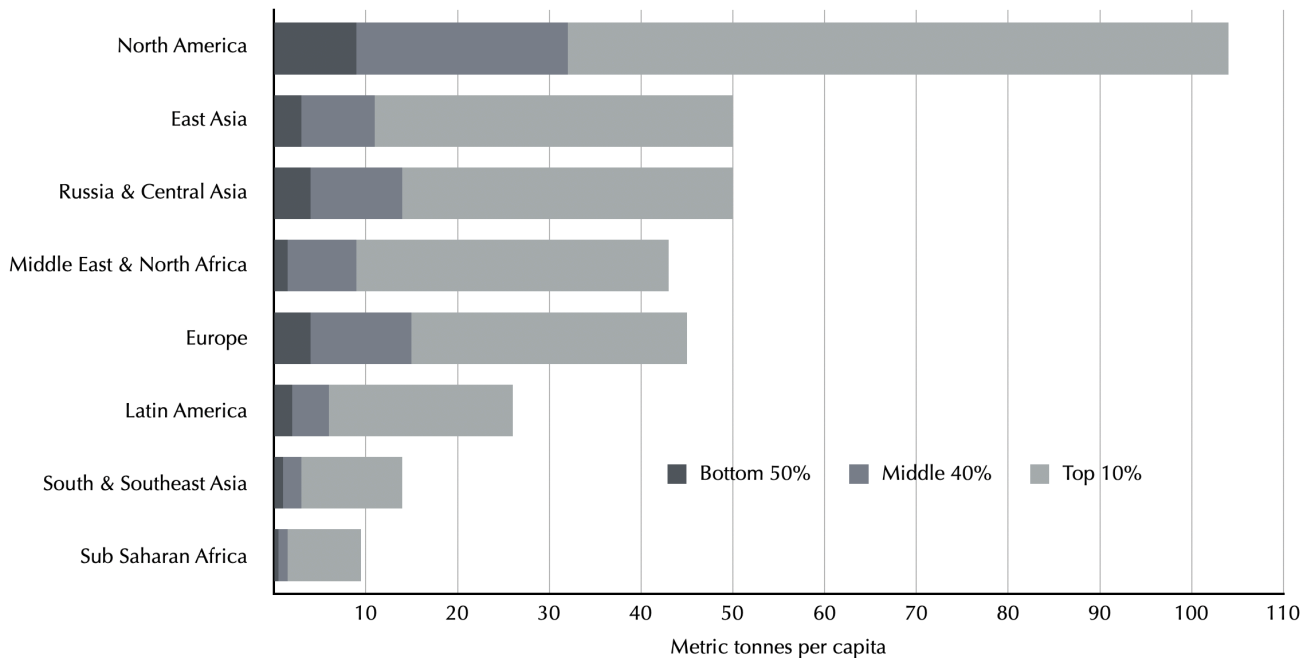
Interestingly, there are globally high emitters in low- and middle-income countries and globally low emitters in rich countries. Predictably, the richest decile in North America is made up of the most extravagant carbon emitters in the world, with an average of seventy-three tons of carbon emissions per capita each year, which is seventy-three times the per capita emissions of the poorest half of the population of South and Southeast Asia. The rich in East Asia also emit very high levels, though still significantly less than in North America.

The surprise, however, is in the relatively low emissions of the bottom half of the population in the rich regions. In Europe, the lowest emitting 50 percent of the population emits around five tons per year per person, the bottom 50 percent in North America around ten tons, and the bottom 50 percent in East Asia around three tons. These relatively small carbon footprints contrast sharply with those of the top 10 percent of emitters in their own countries, but also with

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emissions by the richest in relatively poor regions. The top decile in South and Southeast Asia, for example, emits more than double the amount of carbon than the bottom half of the population in Europe, and even the top decile in sub-Saharan Africa emits more than the poorest in Europe.

Chart 4. Per Capita CO2 Emissions by Region & Income Category



Source: World Inequality Report 2021 and Lucas Chancel, Climate Change and the Global Inequality of Carbon Emissions 1990–2020 (Paris: World Inequality Lab, 2021).

What is more, growing inequality also seems to drive carbon emissions overall. While the bottom half of income groups in the United States and Europe reduced per capita emissions by 15 to 20 percent between 1990 and 2019, the richest 1 percent increased their emissions quite significantly everywhere. Today, the richest 10 percent of people on the planet are responsible for nearly half of all carbon emissions. This may come as no surprise to those who have been watching the super-rich take extraterrestrial joyrides, at a cost of \$55 million per ticket, in just one of the many ways in which their conspicuous consumption affects the ecosystem.

As the rich in different countries have become even richer (and more politically powerful), they are even more blatant and uncaring about their environmental impact—or happy to render lip service rather than pursue real change in their patterns of investing and living. This conforms to the pattern that would be predicted by a recognition of imperialism. The elites in rich and poor countries alike are able to benefit from an economic system in which they grab more and more of available resources, including extraction from nature and exploitation of the planet.

This suggests that climate policies should target wealthy polluters more. Instead, carbon taxes fall more heavily on low- and middle-income groups and have relatively little impact on the consumption patterns of the wealthiest groups, both



in rich and in poor regions. Clearly, the strategies to reduce carbon emissions need to start focusing on containing the consumption of the rich, both within individual countries and globally. This requires a major shift in how climate alleviation policies are conceived and implemented.

## The Role of Finance in Brown and Green Investments

Rich nations have been primarily responsible for creating the present climate crisis, but poorer nations face disproportionate burdens of the impact and are more financially constrained in implementing green policies. To address

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this imbalance, at the 2009 UN Climate Change Conference in Copenhagen, developed nations pledged to provide climate finance to the developing nations of \$100 billion annually. This amount was certainly far short of the actual need, as a recent IPCC report notes: estimations of adaptation costs alone (not including

mitigation) range between \$15 and \$411 billion per year for climate change impacts to 2030, with most of these estimates exceeding \$100 billion. Even this does not take into account new estimates of the financial impact of loss and damage resulting from climate change that is already impacting much of the world.<sup>6</sup>

However, even this relatively paltry amount was not actually provided. Since 2013, total estimates of this finance come, on average, only to \$60 billion, with a fraction of this as bilateral aid.<sup>7</sup> The latest estimate for 2020 suggests that around \$80 billion was mobilised—but a significant part, around one third, through multilateral institutions and another significant portion through private finance, neither of which strictly speaking should be seen as part of the climate

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finance commitments of the rich countries. Bilateral public finance, which is really what was promised, has amounted to between a quarter to one third of the amount, coming to the pitiful average of less than \$18 billion per year from 2013 to 2019. Contrast this with the massive amounts of money, literally several trillions of dollars, that the rich countries' governments

were able to produce “out of a hat” as additional fiscal spending to deal with the COVID-19 pandemic and its impact within their own economies over 2020 and 2021.

The extraordinary stinginess of rich nations in terms of addressing the climate finance needs of the rest of the world is even more striking when it is evident that such finance could also be provided almost for free, for example by recycling the new special drawing rights (supplementary foreign exchange reserve assets) recently issued by the International Monetary Fund (IMF)—of which the rich countries received around \$400 billion. Yet even commitments made as of April 2022 by rich nations to the IMF's Resilience and Sustainability Trust, set up to provide climate finance (admittedly to a very limited group of countries and under possibly problematic conditions), have thus far come to only around \$40 billion.

The paucity of climate finance is even more striking when compared to the fossil fuel subsidies being provided by rich nations. These governments have been heavily subsidising their own fossil fuel industries even as they exhorted much

<sup>6</sup> ↪ Intergovernmental Panel on Climate Change, *Climate Change 2022: Impacts, Adaptation and Vulnerability* (Geneva: Working Group II, IPCC, 2022), 17–62.

<sup>7</sup> ↪ *Climate Finance Provided and Mobilised by Developed Countries: Aggregate Trends Updated with 2019 Data*



poorer countries to do more to reduce greenhouse gas emissions. But the full extent of these subsidies has been hidden by the methods used to measure them. The standard way to measure government support for fossil fuel production or consumption is to look at direct budgetary transfers and subsidies, as well as tax breaks for the sector. Using this method, the OECD and the International Energy Agency (IEA) have estimated that governments across fifty-two advanced and emerging economies—accounting for about 90 percent of global fossil fuel energy supply—provided fossil fuel subsidies worth an average of \$555 billion per year from 2017 to 2019.<sup>8</sup>

However, this massively understates the actual fossil fuel subsidies that governments provide. A more comprehensive

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measure used by IMF researchers that includes both explicit subsidies, or undercharging for supply costs, and implicit subsidies, or undercharging for environmental costs and foregone consumption taxes, provides a much more significant total for fossil fuel subsidies.<sup>9</sup> According to this, global fossil fuel subsidies in 2020 totalled \$5.9 trillion, more than ten times the OECD-IEA estimate.

This is not surprising: implicit subsidies accounted for 92 percent of the total.

China was the largest provider of fuel subsidies in absolute terms followed by the United States, Russia, India, and the European Union. The total subsidy provided just by the United States to the fossil fuel industry was \$662 billion in 2020, mostly in the form of implicit subsidies. In contrast, the Joe Biden administration's commitments to climate finance were just \$5.7 billion (and are only supposed to be increased to \$11.4 billion by 2024). Indeed, the IPCC estimates that global climate finance from both public and private sources totalled only about \$640 billion that year. This highlights the extent to which government intervention is skewing prices, and therefore market incentives, in favor of fossil fuels, rather than against them.

In such a context of skewed incentives driven by public subsidies to fossil fuel industries, it is not surprising that private finance remains heavily oriented toward these "brown" energy investments, despite all the talk of public-private partnerships and "blended finance" to enable "green" energy investments. Effective analysis of private financial flows is hampered by the lack of reliable, systematic, and transparent data related to cross-border financial flows particularly in fossil fuel industries. Better data disclosure on fuel finance by source, destination, and their corresponding power generation capacity is essential for policy coordination. But the available data suggests that the majority of the overseas finance for coal industries comes from private entities, particularly commercial banks and institutional investors primarily from the advanced economies. Out of the top fifteen lenders to new coal investment globally, fourteen were based in advanced economies. Similarly, the dominant institutional investors in bonds or stocks of fossil fuel companies are also from these Western economies, the top three being BlackRock, Vanguard, and Capital Group—all from the United States. A study has found that the carbon emissions indirectly generated by the cash and investments (including marketable securities) of major multinational corporations, including supposedly more green "digital" companies, is huge because of the fossil fuel investments of the banks in which they invest. It found that for Alphabet, Meta, and

<sup>8</sup> ↪ Jocelyn Timperley, "Why Fossil Fuel Subsidies Are So Hard to Kill," *Nature*, October 20, 2021.

<sup>9</sup> ↪ Ian Parry, Simon Black, and Nate Vernon, "Still Not Getting Energy Prices Right: A Global and Country Update of Fossil Fuel Subsidies" (International Monetary Fund Working Paper No. 2021/236, Septem

PayPal, for example, the emissions generated by their cash and investments (financed emissions) exceed all their other emissions combined.<sup>10</sup>

It seems obvious that any serious policies aimed toward mitigation and adaptation should redress this imbalance

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between climate finance (for both mitigation and adaptation) and the subsidies and finance that continue to be provided to traditional fossil fuel industries. Unfortunately, the Ukraine War has led many governments—especially Global North governments that can afford to take a more medium-term view—to quickly renege on even the relatively meagre and obviously inadequate climate pledges they made only a few months previously at the UN Climate Change Conference in

Glasgow. Instead of seeing the oil price spike as an opportunity to hasten the shift away from fossil fuels, governments in the core capitalist economies as well as low- and middle-income countries have tried to reduce the pain by keeping domestic energy prices low, for short-term political reasons.

## The New Scramble for Resources

The development of new technologies has never provided a route out of imperialism as defined here, but it can and does change the nature of the resources that are sought to be controlled by the major powers. This is just as true of the required energy transition, which necessarily requires a significant increase in the use of some critical minerals. These have already experienced significant surges in both demand and supply in recent years, and the IEA projections show that mining of critical minerals will grow at least thirty times in the next two decades.

Consider, as an example, the specific case of lithium, which is particularly crucial to the decarbonisation of the global economy, required to support electric vehicles, smart gadgets, and appliances at homes and offices, digital cameras, mobiles, laptops, and tablets. Rechargeable lithium-ion batteries are essential for electric vehicles, portable electronic devices, electric tools, as well as grid storage applications. Apart from its use in batteries (estimated to be around three-quarters of the end use of this mineral), lithium is required for ceramics, glass, lubricating greases, continuous casting mould flux powders, polymer production, air treatment, and other uses. In the IEA Sustainable Development Scenario, lithium demand is projected to increase by forty-two times by 2040.<sup>11</sup>

*There are major concerns about the environmental impact of lithium mining. The lithium triangle in Latin America holds the largest known lithium reserves in the world. Lithium extraction has already adversely impacted the ecosystem and Indigenous communities resulting in depletion and reduced accessibility of fresh water, and contamination of local streams used by humans and livestock, as well as for irrigation.*

Currently, lithium is produced and exported mainly by nations in the Global South, with the exception of Australia, which is currently the largest producer of commercial lithium. Pure elemental lithium is highly reactive and hence cannot be found in nature. Instead, it is found in the form of concentrations in salt brines or in mineral ores. In Australia, it is extracted directly from hard rock deposits, while it is extracted from brine

<sup>10</sup> ↪ Xinyue Ma and Kevin P. Gallagher, *Who Funds Overseas Coal Plants? The Need for Transparency and Accountability* (Boston: Boston University Global Development Policy Center, 2021); “Groundbreaking Research Reveals the Financiers of the Coal Industry,” *Urgewald*, February 25, 2021; *The Carbon Bankroll: The Climate Impact and Untapped Power of Corporate Cash* (Carbon Bankroll, 2022).

<sup>11</sup> ↪ *Mineral Commodity Summaries 2022* (Reston, VA: U.S. Geological Survey, 2022); *World Energy Outlook 2021* (Paris International Energy Agency, 2021), 8.

pools in certain Latin American economies (the salares of Bolivia, Chile, and Argentina), and each has different extraction and processing techniques. Identified lithium resources are much larger than current production, having increased substantially to almost eighty-nine million tons in 2021 due to continued exploration.<sup>12</sup> Most of the identified lithium resources are in Bolivia, Argentina, and Chile. Though China is an important player in this game, particularly in controlling supply chains, its imports currently exceed its exports, making it a net importer of lithium carbonate used to make lithium-ion batteries.

There are major concerns about the environmental impact of lithium mining, especially in developing countries. The lithium triangle in Latin America, comprised of Chile's Salar de Atacama, Bolivia's Salar de Uyuni, and Argentina's Salar de Arizaro, holds the largest known lithium reserves in the world, under the salt flats (salares). The lithium must be pumped from underground and then concentrated by evaporation. Lithium extraction has already adversely impacted the ecosystem and Indigenous communities in these Latin American nations, resulting in depletion and reduced accessibility of fresh water, and contamination of local streams used by humans and livestock, as well as for irrigation in Argentina's Salar de Hombre Muerto. The region is a home to several Indigenous Atacameño communities who have traditionally relied on the land and natural resources for their livelihoods—livestock keeping, small-scale mining, textiles, and handicrafts. In the absence of formal negotiations, the interests of the mining companies are

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overrepresented at the expense of the local communities who are left pauperised. Mining operations have also been associated with human rights abuse, respiratory ailments, labor exploitation, and finally displacement of the traditional owners of these lands. There are additional concerns regarding the quality, accessibility, and

framing of information needed to obtain consent from these communities. Compared to these externalities, the economic benefits to these regions have been minuscule.<sup>13</sup>

Extraction techniques in the lithium triangle include brine pumping and solar evaporation, using almost around 500,000 gallons of water to produce one ton of lithium. Overexploitation of water alters the natural hydrodynamics of these regions and reduces availability of water for local communities.<sup>14</sup> Industrial extraction and the resulting commodification of water by the mining industry form the basis of Indigenous people's contestation over water resources. National and multinational companies often use their power and money to acquire and appropriate water sources from Indigenous communities in perpetuity.<sup>15</sup> Disputes over water management have also manifested in the form of disparity in access to groundwater between large and peasant farmers in Chile. Lithium mining also poses water pollution threats: for instance,

<sup>12</sup> ↪ Resources are defined as concentration of naturally occurring solid, liquid, or gaseous material in or on Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible. Reserve base is the part of an identified resource that meets specified minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth. Reserves are the part of the reserve base that could be economically extracted or produced at the time of determination. *Mineral Commodity Summaries 2022*, Appendix C.

<sup>13</sup> ↪ Thea N. Riofrancos, "Scaling Democracy: Participation and Resource Extraction in Latin America," *Perspectives on Politics* 15, no. 3 (2017); Pia Marchegiani, Elisa Morgera, and Louisa Parks, "Indigenous Peoples' Rights to Natural Resources in Argentina: The Challenges of Impact Assessment, Consent and Fair and Equitable Benefit-Sharing in Cases of Lithium Mining," *International Journal of Human Rights* 24, no. 2–3 (2020).

<sup>14</sup> ↪ Exploitation of lithium and other chemical elements executed through brine pumping results in reduced evaporation rate and damping capacity of salt flats.

<sup>15</sup> ↪ For instance, in the Antofagasta region of Chile, mining companies own almost 100 percent of water rights where water usage is as high as 1,000 liters per second. Sara Larrain and Colombina Schaeffer, eds., *Conflicts Over Water in Chile: Between Human Rights and Market Rules* (Santiago: Chile Sustentable, 2010). For a detailed discussion on how water use rights were dramatically changed in Chile as a part of the 1981 Water Code, designed by the "Chicago boys," see Jessica Budds, "Contested H2O: Science, Policy and Politics in Water Resources Management in Chile," *Geoforum* 40, no. 3 (2009): 418–30.

in China, emissions of toxic chemicals like hydrochloric acid from lithium mines and the associated deaths of yaks and fish in the Liqi River have resulted in disputes and protests from local villagers.<sup>16</sup>

Mining operations and related activities associated with these strategic minerals also adversely impact the local flora and fauna. Significant environmental degradation over the past two decades includes vegetation decline, elevated daytime temperature, decreasing soil moisture, and increasing drought conditions in national reserve areas. There are also concerns related to potential threats to the existing biodiversity.<sup>17</sup>

Disputes arising from land claims associated with mining have manifested in conflicts in Argentina (between organised

*There is evidence of displacement of Indigenous communities... the rural population in the northern communes of the Tarapacá region in Chile decreased from almost 46% to 6% between 1940 and 2002... It is possible to do things differently... it has been found that retaining at least 51 percent rights in the shares of extracting and processing companies can reduce dependence and power-meddling by superpowers.*

movements at municipal levels and provincial governments over mining rents), Guatemala (involving collective action by Indigenous communities), Peru (with peasant movements holding popular consultations on mining projects), Venezuela (protests against mining activities in the Orinoco Mining Arc), and other regions. In Chile, tension between the Mapuche and local authorities continues to remain high.<sup>18</sup>

There is evidence of displacement of Indigenous communities. For instance, the rural population in the northern communes of the Tarapacá region in Chile decreased from almost 46 percent to 6 percent between 1940 and 2002. There are other forms of disputes originating from lack of proper compensation to the Indigenous communities, or failure to keep the promised compensation. Minera Exar, a joint Canadian-Chilean venture, had arrangements with six local communities to extract lithium in Argentina. With the expected sales to be around \$250 million per year, each of these Indigenous communities were promised compensation in the range of \$9,000 to \$60,000 a year. However, testimonies from locals suggest otherwise, as pointed out by Luisa Jorge, a resident and leader in Susques: "lithium companies are taking millions of dollars from our lands...they ought to give something back. But they aren't."<sup>19</sup>

It is possible to do things differently. Extraction of lithium need not be necessarily costly for local communities, with the right institutional and regulatory framework. For example, state-led resource extraction in institutionally strong states can effectively collect resource rents and channel them to the benefit of the domestic economy. Governments can raise additional revenue, through progressive corporate profit taxation and resource rent taxes, along with levying royalties to secure a stream of revenue upfront. However, royalty rates on strategic minerals were lowered drastically during the

<sup>16</sup> ↪ Sophie Bauer, "Explainer: The Opportunities and Challenges of the Lithium Industry," *Diálogo Chino*, December 2, 2020; M. A. Marazuela, E. Vázquez-Suñé, C. Ayora, A. García-Gil, and T. Palma, "The Effect of Brine Pumping on the Natural Hydrodynamics of the Salar de Atacama: The Damping Capacity of Salt Flats," *Science of the Total Environment* 654 (2019); Sally Babidge, "Contested Value and an Ethics of Resources: Water, Mining and Indigenous People in the Atacama Desert, Chile," *Australian Journal of Anthropology* 27, no. 1 (2016); Jessica Budds, "Power, Nature and Neoliberalism: The Political Ecology of Water in Chile," *Singapore Journal of Tropical Geography* 25, no. 3 (2004); Budds, "Contested H<sub>2</sub>O"; John D. Graham, John A. Rupp, and Eva Brungard, "Lithium in the Green Energy Transition: The Quest for Both Sustainability and Security," *Sustainability* 13, no. 20 (2021).

<sup>17</sup> ↪ Some of these include threats to the rare desert flower Tiehm's buckwheat, potential harm to the sage grouse (a rare bird) due to invasive plants and energy development projects (Graham et al., 2021), compromising lagoon structure, and reduced reproductive success for Andean flamingos due to pumping activities. Graham, Rupp, and Brungard, "Lithium in the Green Energy Transition"; Gonzalo Gajardo and Stella Redón, "Andean Hypersaline Lakes in the Atacama Desert, Northern Chile: Between Lithium Exploitation and Unique Biodiversity Conservation," *Conservation Science and Practice* 1, no. 9 (2019).

<sup>18</sup> ↪ Riofrancos, "Scaling Democracy"; Centre on Housing Rights and Evictions, *Global Forced Evictions Survey: 2007–2008* (Geneva: COHRE, 2009).

<sup>19</sup> ↪ Hugo Romero, Manuel Méndez, and Pamela Smith, "Mining Development and Environmental Injustice in the Atacama Desert of Northern Chile," *Environmental Justice* 5, no. 2 (2012); Samar Ahmad, "The Lithium Triangle: Where Chile, Argentina, and Bolivia Meet," *Harvard International Review*, January 15, 2020.



peak of the Washington Consensus under the garb of lowering corporate taxes to incentivise foreign direct investment. Today, for most economies, royalties are assessed on an ad valorem basis, the range varying between 2 and 30 percent. This necessarily requires the involvement of the state in the entire process, especially to ensure that rights of local communities are not compromised. (In this context, it has been found that retaining at least 51 percent rights in the shares of extracting and processing companies can reduce dependence and power-meddling by superpowers like the United States and China.)<sup>20</sup>

Obviously, though, all this also requires the transparency and accountability of governments involved to prevent a top-down approach that often ends up in the further concentration of rent in the hands of the elite.

*Lithium is only one of the minerals over which control is going to be hotly contested over the next decade. Rare-earth elements are a group of seventeen metals that will play a critical role in the future.*

Transparency through independent audits of profits, costs, revenues, and sharing of proceeds can prevent and reduce such exploitation.<sup>21</sup>

Lithium is only one of the minerals over which control is going to be hotly contested over the next decade. Rare-earth elements (which are not actually scarce but are difficult and costly to extract because they are found as constituents of other minerals) are a group of seventeen metals that will play a critical role in the future, because they are required for everything from LED displays to weapons systems. The current forms of extraction require them to undergo many stages of complex and expensive processing that can also be environmentally damaging.<sup>22</sup> They are mined from deposits around the world. The different elements are separated chemically to become processed metals.

Currently, China is the leading player at all stages of rare-earth production. It holds the world's largest rare-earth reserves, at around 37 percent. Its dominance is even greater downstream in the processed rare-earth minerals: Chinese firms are estimated to control more than 85 percent of the costly processing stage of the supply chain. However, other players have entered the market in recent years. Australia and the United States, the second- and third-largest suppliers last year, produced around 12 percent and 9 percent of global rare-earth elements, respectively. As global demand for these grows along with the requirements for investment, military, and consumption goods, as well as for frontline equipment for a green transition, new frontiers and strategies of control are likely to emerge. In addition, China dominates solar photovoltaic manufacturing and is home to more than 90 percent of the world's silicon wafer manufacturing capacity.

*All these are reasons why the core capitalist countries view China as such a threat, and why the imperialist wars of the twenty-first century are likely to be more complex and play out in different ways.*<sup>23</sup>

Indeed, there are new frontiers opening up constantly, especially as newer forms of technological change create possibilities for mining and extraction from parts of the earth that were previously not so amenable to exploitation, for

<sup>20</sup> ↪ Remco Perotti and Manlio F. Coviello, *Governance of Strategic Minerals in Latin America: The Case of Lithium* (Santiago: United Nations, 2015); Thomas Baunsgaard, "A Primer on Mineral Taxation" (International Monetary Fund Working Paper No. 01/139, 2001).

<sup>21</sup> ↪ Perotti and Coviello, *Governance of Strategic Minerals in Latin America*.

<sup>22</sup> ↪ See, for example, Alice Su, "The Hidden Cost of China's Rare-Earth Trade," *Los Angeles Times*, July 29, 2019.

<sup>23</sup> ↪ Jevans Nyabiage, "China's Dominance of Rare Earths Supply Is a Growing Concern in the West," *South China Morning Post*, April 25, 2021; "U.S. Dependence on China's Rare Earth: Trade War Vulnerability," *Reuters*, June 27, 2019; Grace Hearty and Mayaz Alam, "Rare Earths: Next Element in the Trade War?," *Center for Strategic and International Studies*, August 20, 2019.

*This discussion has shown that climate imperialism has emerged as a new—and potentially even the most lethal—form of imperialism in the world economy today.... We are now in the thrall of a really deadly form of imperialism, one that will not just destroy nature and human lives, but all of the planet.*

example the Arctic and Antarctic poles that are already being destroyed and simultaneously made more accessible because of melting. Similarly, there is already interest in seabed mining and private attempts to scour deep oceans for minerals, notwithstanding potentially disastrous ecological consequences like mass extinctions of marine life.<sup>24</sup>

## Conclusion

This discussion has shown that climate imperialism has emerged as a new—and potentially even the most lethal—form of imperialism in the world economy today. Confronting it requires recognising and dealing with all its different aspects. But it also requires addressing the monopolies of knowledge created by the global regime of intellectual property rights that has been instituted and cemented by the Agreement on Trade-Related Aspects of Intellectual Property Rights between World Trade Organization countries. This has already proved to be deadly during the COVID-19 pandemic, as it enabled Big Pharma (which has benefited from massive public subsidies for vaccine development) to profiteer from the disease, deny vaccine access to billions of people across the world, and prevent other companies in other locations from producing vaccines and life-saving therapeutics. But it will be even more deadly when it comes to the necessary technologies to enable humanity to mitigate and cope with climate change and future pandemics, already wreaking havoc around the world. We are now in the thrall of a really deadly form of imperialism, one that will not just destroy nature and human lives, but all of the planet.

None of this is necessary, of course—different economic, legal, and institutional arrangements could alter all of this in a more just and equitable direction and be in harmony with nature and the planet. Obviously, this requires a complete transformation of the global capitalist system that has brought us to the brink of disaster. If we do believe that humanity can step back from this brink, this is both necessary and urgent.

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<sup>24</sup> ↪ Olive Heffernan, “Seabed Mining Is Coming—Bringing Mineral Riches and Fears of Epic Extinctions,” *Nature*, July 24, 2019.

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