

# A Perfect Storm of War, Pandemic, Climate Crises and Global Dis-Governance: Unfolding Implications for Population Dynamics and Policies\*

## Una tormenta perfecta de guerra, pandemia, crisis climáticas y desgobierno global: implicaciones iniciales para la dinámica y las políticas de población

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### Abstract

The concurrence of powerful negative and unpredictable features in today's world - war, pandemic and climate crises – coupled with a severe decline in the capacity of multilateralism to deal effectively with such issues, can be qualified as a “perfect storm”. These ongoing global crises constitute the most devastating scenario for humankind since World War II (WWII) and are sure to have enormous short and long-term consequences on population trends. This paper reviews the main aspects of this quandary and offers a preliminary reflection on their broader linkages with population dynamics and policies. The Russian invasion of the Ukraine added to the total of conflict casualties in the world, spiked a drastic increase in food prices that will most affect the world's poor, and provoked a reshuffling of the geopolitical alignments that further destabilizes multilateralism on several fronts. The COVID-19 pandemic not only increased the number of deaths but also affected fertility. The timely discovery of effective vaccines curtailed the overall disaster, but also revealed and fortified nationalistic politics. The threat of planetary climate crises to existing life is widespread and incontestable. Analysis of its origins exposes

### Keywords

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dramatic inequalities among social groups, but also reveals the effects of a global economic model that morphed into ultraliberalism. The limitations of multilateralism to deal with these global issues is exemplified in respect to the issue of the climate crises. Ideologically-corrupted pathways to solution suggest that the current global storm may intensify before humankind moves effectively towards a more sustainable and equitable future. The relevance of recurrent population policy alternatives is reviewed in the concluding section.

## Resumen

La concurrencia de características poderosas, negativas e impredecibles—guerra, pandemia y crisis climática—sumada a un severo declive en la capacidad del multilateralismo para enfrentar de manera efectiva tales cuestiones, puede calificarse como una “tormenta perfecta”. Estas crisis mundiales en curso constituyen el escenario más devastador para la humanidad desde la Segunda Guerra Mundial y seguramente tendrán enormes consecuencias a corto y largo plazo en las tendencias demográficas. Este documento revisa los principales aspectos de este dilema y ofrece una reflexión preliminar sobre sus vínculos más amplios con las políticas y dinámicas demográficas. La invasión rusa en Ucrania amplió el total de víctimas del conflicto en el mundo, provocó aumentos drásticos en los precios de los alimentos que afectarán más a los pobres del mundo e incitó una reorganización de los alineamientos geopolíticos que desestabiliza aún más el multilateralismo en varios frentes. La pandemia de COVID-19 no solo incrementó el número de muertes, sino que también tuvo un impacto en la fecundidad.

El descubrimiento oportuno de vacunas efectivas redujo el desastre general, pero también reveló y fortaleció las políticas nacionalistas. La amenaza de las crisis climáticas planetarias para la vida existente es generalizada e indiscutible. El análisis de sus orígenes expone desigualdades dramáticas entre los grupos sociales, pero también revela los efectos de un modelo económico global que se transformó en ultraliberalismo. Las limitaciones del multilateralismo para hacer frente a estos problemas globales se ejemplifican aquí con respecto al tema de las crisis climáticas. Las discusiones ideológicamente corrompidas sobre los caminos a seguir sugieren que la tormenta global actual puede intensificarse antes de que la humanidad avance efectivamente hacia un futuro más sostenible y equitativo. La relevancia de las alternativas recurrentes sobre políticas de población se revisa en la sección final.

### *Palabras clave*

Guerra en Ucrania  
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## Introduction

This paper brings together preliminary observations and reflections from an ongoing set of events that can be expected to have an enormous impact on global society while also affecting population trends in coming years. It does not purport to apply the habitual proven research methods that characterize the field of demography. In the absence of major disruptions, changes in the size and structure of population generally tend to occur over longer periods of time. Population studies rest on a bed of indicators extracted from relatively solid data covering trends in population growth, distribution and composition that reflect societal changes over some relatively substantial period. This essay, in contrast, deals with events that are currently occurring over a brief period of time, with unpredictable consequences, using inadequate data sources. Nevertheless, it is important to begin reviewing the impacts that this amalgamation of ongoing events will have on the global stage and to confer how they might affect population trends, both in the near future and in the longer term.

Whereas the first two decades of the 21<sup>st</sup> century bestowed many important advances on humankind, the last few years have highlighted the frailty of this progress. Between the years 2000-2017, global poverty dipped from 27.8 to 9.3%. Demographic indicators also showed great improvements in that period: maternal mortality declined from 342 to 211/100,00; life expectancy increased from 67.5 to 73.1; literacy levels for adult females rose from 75 to 83.3%; infant mortality rates declined from 52.8 to 27.4 per 1000 live births, and immunization rates grew from 72.9 to 85.7 %<sup>1</sup>. Meanwhile, the availability of goods and services for the globe's inhabitants received an enormous boost. Technological advances in communication revolutionized people's access to information and to each other. Scientific data was disseminated at warp speed as the internet, and just about everything else in human lives, was speeded up.

Yet, in the last two years, the multiplication and the gravity of global issues that threaten to tear apart our civilization are at their highest point since World War II (WWII). Marked by a series of disastrous occurrences, the year 2022 may become proclaimed in history as the "Year of the Perfect Storm"<sup>2</sup>. Thus, we are simultaneously witnessing:

- 1 World Bank. Retrieved from <https://data.worldbank.org/indicator>.
- 2 A perfect storm is defined in the Oxford dictionary as "a particularly violent storm arising from a rare combination of adverse meteorological factors" Figuratively, it depicts a particularly critical or disastrous state of affairs, arising from the concurrence of a number of powerful negative and unpredictable factors.

- a highly perilous *war*, carried out at the whim of an autocrat, which threatens to destroy an entire nation, add millions more refugees to the multitudes previously created by other senseless conflicts, destabilizes global geopolitics and threatens a world-wide conflagration;
- an enduring *global pandemic* that keeps reinventing itself in the form of new variants, claiming millions of lives and contributing to de-globalization;
- an intensification of the risks associated with *climate and other environmental crises* that reflect how economic success has been achieved at the cost of environmental destruction, depleting both the availability of natural resources and the planet's sink capacity;
- an *escalation of multilateralism's inadequacies* in dealing with the current situation. As de-globalization accelerates, these compound crises – which, *inter alia*, threaten food security, the rule of law, world peace, the environment, and the very notion of “human progress” itself – have both highlighted and enhanced the growing ineffectiveness of national and multilateral entities to deal with planetary issues.

Although the eventual toll of these cumulative experiences cannot be divined at the writing of this paper, they can already be characterized as the most devastating scenario for humankind since WWII. This paper will review some of the main aspects of this “Perfect Storm” and offer a few elements for a preliminary reflection on their broader linkages with population dynamics and policies<sup>3</sup>.

## The Ravages of Another and More Dangerous War

At the time of this writing, some three months since the beginning of Russia's invasion of the Ukraine, it is difficult to predict how extreme the consequences will be for the two countries involved, nor for the rest of the world. Whether or not a truce is defined in the near future (an unlikely probability, as it appears at this time), Russia's offensive is already the most significant world event since WWII, and the consequences of this conflict are already

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<sup>3</sup> Another major risk that confronts humankind at this historical juncture is the control of information in a world already dominated by fake news. The command of major news outlets by latter-day billionaires (such as Fox News by the Murdochs and The Washington Post by Jeff Bezos) was already worrisome, but the purchase of a major social platform (Twitter) by the unpredictable Elon Musk opens up a whole new dimension of concern. The drug trade is unquestionably another huge chunk of existing threats to global security, as are cybersecurity initiatives that facilitate state or private control over people's lives. Unfortunately, discussion of these additional major threats here would take us too far afield.

tragic and long-lasting. As was the case of the ill-fated invasion of Iraq by the USA in 2003, this aggression seriously undermines the international rule of law.

After only two months of warfare, various news sources quoted information that more than five million Ukrainians were being reported as international refugees and another estimated 8 million had been displaced internally. Although the number of deaths resulting directly from this war are, so far, less significant than those of recent and ongoing clashes in other countries, the repercussions of this particular incursion will inevitably be world-wide and lasting. This is the first major land war in Europe in decades, and it has already triggered international realignments and spurred the buildup of armaments. A small error in strategy, or even in the direction of a missile, could ignite a much broader conflagration. As Russia threatens to invade other countries beyond the Ukraine, and other nations in the region react to Russian aggression by seeking to join the North Atlantic Treaty Organization, a much wider military conflict could ensue.

All countries throughout the world are being impacted in compound ways by the consequences of this clash and, much to their chagrin, all are having to somehow align themselves on the international stage. Germany, for instance, has shifted from its generally neutral stance since WWII to becoming, once more, a strong military force in Western Europe (The Guardian, 2022). The postures displayed by key countries such as China, India, and several African nations – ranging from neutrality to political and material support for Putin’s invasion – reflect a rapidly-changing global order, one that challenges the very foundation of the framework that has prevailed since WWII. The dust has not yet settled completely on how China will balance its trade and geopolitical interests, but the aftermath of this particular decision is daunting. Most other countries are trying not to alienate themselves from friend or foe in this growing disorder.

The economic consequences of the conflict are already being intensely felt world-wide and will have long-lasting effects, given Russia’s enormous share of the energy market and the world role of both contending countries in food production. According to the International Monetary Fund (IMF) (Bogmans, Kearns, Pescatori, & Prifti, 2022), Russia and the Ukraine account for nearly 30 percent of world wheat exports and 18 percent of corn, most of which is shipped through Black Sea ports that are now closed.

As is wont to happen in disasters of all makes, the world's poor – already suffering from the combined consequences of climate change and the pandemic – will be the most seriously affected, because food makes up a higher share of expenses in poor households (see Figure 1). Blockage of Ukrainian ports could lead to long-term food insecurity. Disruption may be even greater for countries with close trade links to Russia and Ukraine, while reduced fertilizer supplies and higher oil prices will increase costs for harvesting, transporting and processing food (Bogmans, Kearns, Pescatori, & Prifti, 2022). In view of COVID-19's impacts, plus the impact of the climate crises on climate and water availability, the war has hiked food prices to their highest level in the past 100 years, as shown in Figure 1. Revealing is the fact that even in the USA, food insecurity recently stirred Biden to convene the first American food security conference in 50 years.

Figure 1. Evolution of the FAO Food Price Index in Normal and Real Terms.



Source: FAO. The FAO Food Price Index makes a giant leap to another all-time high in March. Retrieved from <https://www.fao.org/worldfoodsituation/foodpricesindex/en/> (08 April, 2022).

On a broader scale, the security and economic vulnerabilities triggered by this war will inevitably reduce world capacity to achieve its unabated pursuit of today's version of a global Holy Grail – high and continued economic growth. In recent decades, all countries, as well as the enormous majority of multilateral agencies, have focused primary attention on increasing economic growth through constant increases in production and consumption. The insecurities generated by the war threaten the very functioning and dimensions of international markets, causing countries to invest significantly in their own security and self-sufficiency, prodding the IMF and World Bank to repeatedly downgrade estimates of world and country Gross Domestic Product growth for 2022. In political terms, it seems inevitable that these factors will heighten the trends to de-globalization that

have been notoriously promoted by Trump, Brexit, and a growing number of right-wing politicians from different countries in their push towards extreme nationalism, thus generating further negative impacts on multilateralism, poverty and the environment.

The attention drawn to the Russia-Ukraine war has made the world prone to forget that this is only one of many festering conflicts around the world. In 2020, active armed conflicts were ongoing in at least 39 states: 2 in the Americas, 7 in Asia and Oceania, 3 in Europe, 7 in the Middle East and North Africa (MENA) and 20 in sub-Saharan Africa (SIPRI, 2021). Some of these other conflicts have caused much greater direct human suffering. According to the Watson Institute:

At least 929,000 people have been killed by direct war violence in Iraq, Afghanistan, Syria, Yemen, and Pakistan. The number of people who have been wounded or have fallen ill as a result of the conflicts is far higher, as is the number of civilians who have died indirectly as a result of the destruction of hospitals and infrastructure and environmental contamination, among other war-related problems (Watson Institute for International and Public Affairs, 2021, n.p.).

The same source reports that the aftermath of the USA's involvement in the Middle East has also had lasting consequences:

The U.S. post-9/11 wars have forcibly displaced at least 38 million people in and from Afghanistan, Iraq, Pakistan, Yemen, Somalia, the Philippines, Libya, and Syria. This number exceeds the total displaced by every war since 1900, except World War II (Watson Institute for International and Public Affairs, 2021 n.p.).

The number of deaths related directly or indirectly to the war in Yemen, which has already lasted more than a decade, is estimated by the United Nations Development Programme (UNDP) to reach 377,000 by the end of 2021; some 70 percent of those killed would be children under the age of five (Hanna, Bohl, & Moyer, 2021). The Syrian civilian population has now endured more than 11 years of crisis and conflict following peaceful protests against the Syrian president that turned into an all-out war. Estimates of casualties range from 350 to over 600 thousand combatants and civilians; more than half the country's prewar population have been forced to leave their homes (BBC, 2022). A brutal war between the central government and a political party in Ethiopia that began in November 2020 has ostensibly caused many more casualties than that in Ukraine. According to a Ghent University study, as many as 500 thousand people may have died as a result

of that conflict, with more than half of those due to starvation and/or lack of medical attention (Chosh, 2022). Violent and unsupported military takeovers in Myanmar, the sequel to an assassination of the elected President in Haiti, and the takeover of Afghanistan by the Taliban are some of the other major sources of humanitarian concern that persist while all eyes are on Ukraine's plight. In 2020, before the Ukrainian crisis, and in spite of COVID-19, the number of forcibly displaced persons in the world already amounted to 82.4 million people (UNHCR, 2021).

The mutual interactions between such conflicts and population dynamics have not, to our knowledge, been thoroughly studied. Population growth itself does not cause wars, although it definitely intensifies disputes over limited or coveted resources. Moreover, the longer-term effects of conflicts on population size and composition are important at the local or regional level, although few actually have major impacts on global growth rates. On the other hand, although population size itself may not be correlated with political or military power, other population dynamics, such as composition and migration selectivity, can have an impact on the origins of war. For instance, Russia is currently in the throes of a process of depopulation and, thus, actively promoting fertility increases and the incorporation of other territories. Recent geopolitical discussions have ventured the idea that Putin presides over a nation that is facing shrinkage and aging, as well a major brain drain (Cocco & Ivanova, 2022).

The most immediate consequences of ongoing conflicts evidently relate to the mortality of military personnel and civilians in conflict areas, as noted above. Precise information on the total number of such deaths is difficult to find but this figure is sure to be high. However, over the medium and long term, the displacement of people may have more long-lasting economic and social impacts. In this sense, the Ukrainian war is provoking what has been, to this point, the largest displacement of people over such a brief period in known history. Given the geopolitical context of the adjacent European community which receives the majority of these migrants, and the fact that the region is already under considerable stress on migration and refugee issues due to prior or ongoing conflicts – notably the war in Syria – it is inevitable that such tensions will intensify.

## **The Great Pandemic**

The origins of the SARS-CoV-2 virus that causes COVID-19 have been, and continue to be, subjected to considerable scientific scrutiny (WHO, 2021), as



well as to acrimonious political maneuvering, especially during the Trump administration in the USA. What is not under discussion is the terrific toll it has taken, directly and indirectly, on the world's population. According to the information reported to the World Health Organization (WHO) – “Globally, as of 6:43 pm CEST, 24 May 2022, there have been 523.786.368 confirmed cases of COVID-19, including 6.279.667 deaths” (WHO, 2022). These numbers, based on officially-reported information, reflect not only the number of cases but, indirectly, the quality of data gathering in each country, with under-reporting being inevitably larger in the developing world. Moreover, the data obviously do not include health issues and additional deaths that resulted from the longer-term effects of COVID-19 in other individuals stricken by COVID-19.

In an attempt to provide a more comprehensive picture of COVID-19's actual effects, WHO issued a statement in early May of 2022 to the effect that some 15 million “excess deaths” (i.e. – deaths that would not have occurred in the absence of COVID-19) could be attributed to the virus. However, even these figures are not definitive, given complicated situations which have arisen after the pandemic dwindled elsewhere, such as in Shanghai, the continued absence of vaccines in countries such as North Korea and Eritrea, the post-peak reoccurrence of COVID-19, and the probable manifestation of additional new variants having unknown degrees of virulence.

The unprecedentedly rapid discovery of effective vaccines for COVID-19 has prevented an even worse calamity – despite the inequalities in their availability and distribution worldwide. As of 23 May 2022, a total of 11.752.954.673 vaccine doses have been administered (WHO, 2022).<sup>4</sup> As the problems related to the Omicron variant of the virus seem to wane, people the world over are celebrating the supposed passage from a pandemic to an endemic. However, it would now appear that there is no perfect shield against infection. As warned by Katzourakis:

The word “endemic” has become one of the most misused of the pandemic. And many of the errant assumptions made encourage a misplaced complacency. It doesn't mean that COVID-19 will come to a natural end. To an epidemiologist, an endemic infection is one in which overall rates are static – not rising, not falling [...] Endemic certainly does not mean that evolution has somehow tamed a pathogen so that life simply returns to “normal” (Katzourakis, 2022, p. 485).

4 According to a news release by The Lancet on June 23, vaccines prevented an estimated 20 million deaths in the first year of the vaccine program. [https://twitter.com/TheLancet/status/1540100389256790017?ref\\_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Etweet](https://twitter.com/TheLancet/status/1540100389256790017?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Etweet)

Moreover, the adverse demographic impacts of the pandemic, during and after the dominant period of its major strains, are not limited to illness and deaths of individuals. Exact numbers on additional consequences are still forthcoming. As of this writing, the literature abounds with articles assessing a wide variety of demographic factors associated with the risk of contracting COVID-19, but provides less information on its specific demographic outcomes. Nevertheless, such consequences are predicted to be significant, at least at specific local and national levels, as the average numbers of deaths swelled and birth rates declined to a greater or lesser extent in many areas.

One study found that life expectancy has effectively decreased due to COVID-19 in most High-Income Countries, with the biggest declines occurring in Russia and the USA. However, smaller countries with higher levels on the Human Development Index scale and/or early lockdowns, such as New Zealand, Taiwan, and Norway, actually showed a gain in life expectancy in 2020, while in others – Denmark, Iceland, and South Korea – no evidence was found of a change in life expectancy (Islam, Jdanov, Shkolnikov, Khunti, Kawachi, & White et al., 2021). Another study showed that, from 2019 to 2020, period life expectancy fell in 27 of the 29 countries studied in Europe and the Americas. Overall, period life expectancy for men fell by more than one year in 11 of the 27 countries studied while, for women, it fell by more than one year in 8 countries (Aburto, Schöley, Kashnitsky, Zhang, Rahal, & Missov et al., 2021). A study in Germany analyzed the composition of COVID-19 Case Fatality Rates (CFRs), discovering that differences in that country's CFRs depend mainly on the age structure of both the population and the confirmed infection rates (Morwinsky, Acosta, & Nitsche, 2021).

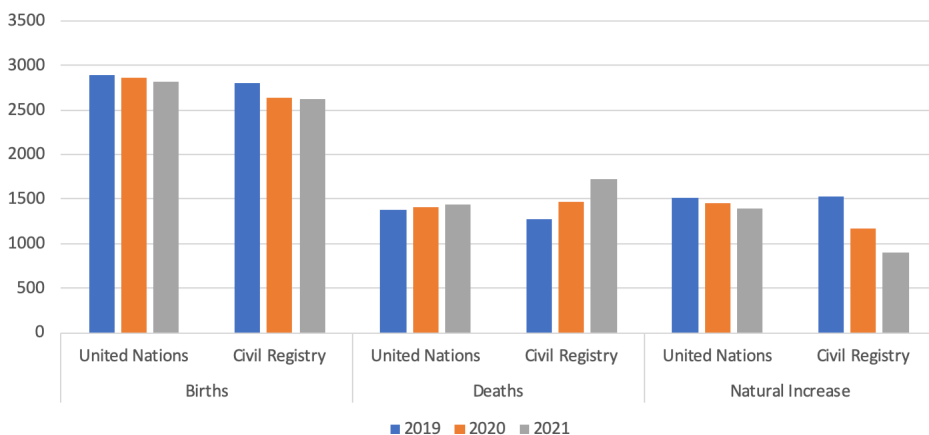
Research carried out by the Brazilian Census Bureau (IBGE) confirmed an expected spike in the country's mortality, as well as a reduction in the number of births, as a result of the pandemic. Thus:

- The number of deaths went from 1,314,103 in 2019 to 1,510,068 in 2020, an increase of 14.9%, which represents the largest variation on this score since 1984. Every region in the country registered a large increase in the number of deaths.
- The increase in deaths was larger among men (16.7%) than among women (12.7%). Age groups over 60 were most affected, while deaths also increased noticeably in age groups under 15. Increases were almost exclusively related to "natural deaths", a category that includes COVID-19 victims.

- Concomitantly, the number of births was reduced by 4.7% between 2019-20, as women postponed pregnancies and registered marriages dropped by 26.1%. In 2020, for the first time, births registered to women in the 20-29 age group made up less than half of all births (48.7%) (IBGE, 2021).

In another study, Alves (2022) compared projections from the United Nations' Population Division for births, deaths and natural increase during the period 2019-2021 with actual data from Brazil's Civil Registry for the same period, in order to estimate the impacts of COVID-19 on each of these indicators. (Cf. Graph 1) According to the United Nations' projection, the number of births each year was expected to decline slightly while the number of deaths and the rate of natural increase would show a comparably slow decline between 2019-2021. However, data from the Civil Registry for the same period show a notably larger decline in the number of births, a greater increase in the number of deaths and a considerably larger decline in the natural increase of Brazil's population.

Graph 1. Births, Deaths and Natural Increase According to United Nations' Projections and Civil Registry Data, Brazil 2019-2021 (in 000s).



Source: Alves (2022).

In short, comparisons of birth and death rates between the expected (UN projection) and the reality (Civil Registry) reveal a significant increase in death rates, while birth rates and natural increase declined faster than predicted. These changes also have important impacts on age composition, and thus on the country's development perspectives. As noted by Alves, COVID-19 arrived at a time when Brazil was passing through a demographic process that favorably affected changes in the structure and the combination

of various age groups and yielded an advantageous dependency ratio. Unfortunately, the necessary imposition of social isolation measures and the restrictions on mobility during the pandemic tended to diminish the benefits of this demographic window of opportunity created by favorable low dependency ratios during this time period.

On a world scale, the final tally of COVID-19's effects will be to cause a noticeable but temporary blip in world population growth which had been inching past an annual increase of some 80 million people in recent years. If probable under-enumerated deaths, excess deaths and future deaths are added together, their total number would be equivalent to approximately 20% of a year's growth at recent levels of world population growth. However, the overall impact will be spread out over some years and not significantly alter the overall long-term trend towards continued and significant global population growth.

More detailed information concerning the pandemic's effects on birth rates and life expectancy at the global and national levels will only become accessible with projections from the United Nations' Population Division, which are due in July of this year. Over the longer term, the more harrowing thought, however, comes from the probability that COVID-19-style pandemics are likely to occur again. The following statement is typical of recent statistical investigations on the topic:

Based on the increasing rate at which novel pathogens such as SARS-CoV-2 have broken loose in human populations in the past 50 years, the study estimates that the probability of novel disease outbreaks will likely grow three-fold in the next few decades (Penn, 2021, n.p.).

The results of a recent study in Italy (Bontempi & Coccia, 2021) – which showed that international trade was a more important factor in the spread of COVID-19 than any other of the main variables analyzed – would suggest that the expansion of international travel and trade in the course of coming decades could amplify the frequency and virulence of future pandemics.

## The Intensified Climate Crises<sup>5</sup>

As established by the scientific literature with ever-increasing clarity and conviction, the threat of planetary climate crises to existing life is ubiquitous and incontestable. The most recent report by the Intergovernmental Panel

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5 This section builds on previous work by Martine and Alves (2019).

on Climate Change (IPCC) warns of widespread and pervasive impacts, some of which have already passed the point of no-return. It also advises us that the window of opportunity for action is “brief and rapidly closing.” It is worth noting that, within the context of growing frustration with the fading contributions of multilateralism, the efforts of the IPCC – a UN body responsible for advancing knowledge on human-induced climate change – stands out as a paragon of efficacy, providing trustworthy science-based assessments. Given that it systematically tends towards conservative estimates of climate change threats, the world needs to pay much greater attention to the IPCC’s latest and more incisive warnings (IPCC, 2022).

There have been numerous commentaries, both in the scientific literature and in the press, concerning the origins, pathways and consequences of climate change based on this latest IPCC report. The World Resources Institute provides a useful summary of the six most important implications of this analysis:

- 1) Climate impacts are already more widespread and severe than expected.
- 2) We are locked into even worse impacts from climate change in the near-term.
- 3) Risks will escalate quickly with higher temperatures, often causing irreversible impacts of climate change.
- 4) Inequity, conflict and development challenges heighten vulnerability to climate risks.
- 5) Adaptation is crucial. Feasible solutions already exist, but more support must reach vulnerable communities.
- 6) But some impacts of climate change are already too severe to adapt to. The world needs urgent action now to address losses and damages. (Levin, Boehm, & Carter, 2022, n. p.).

Punctuating the multiple warnings on the probable consequences of the climate crises are the scorching heat waves that are affecting South East Asia at the time of this writing. High temperature records are being set in both Pakistan and India, with heat waves causing thousands of deaths, blackouts, wildfires and threats to future agricultural yields. This type of increasingly disturbing evidence concerning the reality and the consequences of the climate crises inevitably prompts the question – “who’s to blame for this quandary?”

Studies carried out at Oxfam provide a stark picture of the inequalities that define and characterize the source of global emissions. A 2020 analysis suggested that the richest 1 percent of the people on Earth contributed twice as much the carbon emissions of the poorest 50 percent during the 1990 to 2015 period (Core, 2020). A more recent report further emphasizes the strong correlation between inequality and emission levels. It finds that the carbon footprints of the richest 1 and 10 percent of people on Earth is set to exceed the 1.5°C degree goal of the Paris Agreement in 2030 by 30 times and 9 times, respectively (Oxfam International, 2021).

Such findings dramatically underscore the need to tackle the climate and inequality crises together. Yet, the emphasis of Oxfam studies on the overwhelming responsibility of the richest should not detract attention from the ideological framework and the economic system that have fostered the creation of this class of very rich consumers and allowed them to lead the progressive extermination of our planet's resources with full official support. The Washington Consensus<sup>6</sup> sanctified the definition of development as economic growth, a process that is dependent on constantly increasing levels of production and consumption based on the transformation of natural resources into wastes using fossil fuels. This paradigm has since been aggressively promoted by national governments and international development agencies as well as by business concerns everywhere. Unfortunately, this unlimited production and consumption of goods and services reinforces metabolic throughput flows, increasing resource use as well emissions. As noted in a previous publication:

Economic growth in a globalized market framework was achieved at the cost of infringing planetary limits, aggravating conflict, expanding inequality within countries and creating a global plutocracy with unprecedented wealth and power [...] The nature of global environmental problems stems from a deeply entrenched worldwide quest for economic growth based on a system of production that feeds on a pervasively ingrained culture of consumption (Martine & Alves, 2019, p. 1).

The consequences of persisting in the current definition and practice of development are sure to be catastrophic. Scientists overwhelmingly and emphatically continue to document the gravity of the climate crises and the loss of biodiversity. The media provides dramatic daily reports concerning the origins and dimensions of threats that are costing thousands of lives and

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6 Refers loosely to a set of principles for economic reform promoted by Washington-based institutions in the late 1980s and later widely associated with neo-liberalism.

billions of dollars. In 2019, pollution alone was responsible for approximately 9 million premature deaths – most of these in low and middle-income countries (Fuller, Landrigan, Balakrishnan, Bathan, Bose-O'Reilly, & Brauer et al., 2022). The World Health Organization identifies climate change as the single biggest health threat facing humanity:

Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year from malnutrition, malaria, diarrhea and heat stress alone. The direct damage costs to health are estimated to be between US\$ 2–4 billion per year by 2030. Areas with weak health infrastructure —mostly in developing countries— will be the least able to cope without assistance to prepare and respond (WHO, n.d.).

Climate change is also causing, directly and indirectly, enormous forced displacements of population – a topic which has become highly politicized and has also received considerable attention in the specialized literature (Maretti, Tondodimamma & Biermann, 2019; Piguet, 2021), despite the paucity and unevenness of data. A recent World Bank report reflects a commonly cited order of magnitude, when it warns that climate change could force 216 million people across six world regions to move within their countries by 2050 (World Bank, 2021).

On the one hand, floods, wildfires, droughts, landslides and extreme weather events cause the direct destruction of lives and homes, displacing an estimated 283 million people between 2008 and 2020, as shown in Table 1. Perhaps even more important are the “slow-onset hazards” such as the rise in sea levels that result in loss of coastal and agricultural land, changes in mean temperature and precipitation, desertification, and loss of biodiversity, all of which force further displacements due to loss of livelihoods, food, water and other essentials (IDMC, 2022). The people who are most at risk from both the direct and indirect consequences of climate change are those who are already vulnerable due to poverty and/or conflict situations:

The effects of climate change are felt disproportionately by segments of the population that are already marginalized or in vulnerable situations owing to geography, gender, sexual orientation, age, indigenous or minority status, disability, or living in situations of conflict, violence, or displacement [...] Highly climate vulnerable countries host 40% of refugees and are home to 70% of people internally displaced by conflict or violence (UNHCR, 2022, p. 1).

On a world scale, climate-related migrations mobilize huge movements of people, most of whom encounter serious hardships and enormous difficulties in being accepted elsewhere (see Table 1). In national frameworks, environmental factors are often an important component of the context of its overall population distribution. In Brazil, for instance, large-scale migrations have historically been provoked by periodic droughts in the arid Northeast region. Such mobility plays a crucial role in adaptation to climate change. Improving policies would evidently require better information, but they would also require more effective proactive policies in the regions that are being affected through approaches that are based on human-rights. As noted by UNHCR – “human mobility can protect people and their human rights [...] The freedom and capacity to move is part of upholding human rights and can contribute to climate change adaptation” (UNHCR, 2022, p. 1).

Table 1. Number of People displaced Worldwide, by Type of Hazard.

Type of Hazards	No. of Millions Displaced	% of Total
Floods	156.0	49.0
Storms	119.0	37.4
Others*	8.4	8.2
Geophysical Events	35.3	11.6
Total	318.7	100

Source: IDMC, 2021 p. 88

\*Includes wildfires, droughts, extreme weather events and landslides.

In practice, however, the translation and implementation of this policy approach in support of mobility face the barriers of increasing unilateralism, xenophobia and racism that characterize responses to migration, especially of the cross-border variety. Even movements from rural areas to cities within countries encounter increasing resistance across the developing world (United Nations, 2013). Focusing on livelihood opportunities and income diversification to support adaptation to climate change rather than mobility itself has been widely suggested as a better starting point for action (cf. Tacoli, 2013). The problems in dealing with this issue are complex, beyond the question of data availability, and are also reflected in academic research that attempts to breach the gap between knowledge and practice, as recently stated by Piguet (2021).

Most of the literature on climate migration refers primarily to international movements where the definition and implementation of appropriate policies face greater ethnocentric and governance problems. However, one



practical domain in which policy could effectively prosper in reducing the toll of natural disasters is that of urban growth. Movements of population within borders face lesser obstacles and most of these movements end up increasingly in urban areas, despite the prevalence of anti-urban policies. However, the way urban growth is occurring in developing countries greatly heightens the probability that extreme weather events will result in ever-larger impacts of natural disasters. Urbanization is critical for overall poverty alleviation and offers the best chances for sustainability. Yet, the worse physical impacts of global climate change are felt by poor people in relatively poor countries that are experiencing the fastest rates of urban growth. Despite being called “natural disasters”, many of these calamities could be effectively prevented with better governance at the national and local level. Proactive policies that anticipate urban growth and plan ahead for the needs of the poor in a context of inevitable urban growth are essential for climate mitigation and adaptation (Martine, 2011; UNFPA, 2007).

## The Decline of Multilateralism and the Perfect Storm

Even the most cursory look at the global perfect storm suggests the need for urgent measures to calm the geopolitical waters, prevent further damage to the environment, reduce growing inequities and improve the response to global health threats. The implications of these ongoing crises for population dynamics are manifold, as noted in preceding sections. The key question is – *who can right the ship?* Given space limitations and also the complexity of this discussion, the following will deal with pathways and limits to the resolution of the most critical element in the global storm: the climate crises. Indeed, wars and pandemics are recurring problems in human history and their life cycles are relatively brief since – outside of nuclear war – recovery is possible in the course of a few generations. In contrast, some of the consequences of the climate crises are simply not reversible. The pandemic, and then the Ukraine war, have taken attention away from the global climate agenda; nevertheless, the key question at this point time remains – who can deal effectively with the climate crises?

The standard response that continues to hold sway in public opinion seems to be that the markets and their production of new technologies will somehow take care of everything, someday. This fallacy has been dealt with in another publication and will not be addressed here (Martine & Alves, 2019, p. 18). Suffice it to say that, although technological advances will be essential to any effort to avoid ecological chaos, the nature of the planetary threats

may soon surpass human capacity; moreover, a mere glance at some of the public and private figures who have been in control of key technologies in recent times brings little tranquility from reliance on such an approach.

If markets are inherently incapable of dealing with such major issues, and since there is currently no consensual international “sheriff” with the disposition and the capacity to impose better rules on the global system, then it is inevitable that the responsibility will fall back on the discredited and dilapidated system of multilateralism. Local, national and bi-lateral governance evidently matter also, but they ultimately depend on a supportive global framework.

To comprehend the strengths and limitations of this option, it is necessary to reflect briefly on the modern trajectory of multilateralism. Of particular significance for subsequent geopolitical events are the measures instituted to deal with the complexities of a global economic order. The International Monetary Fund and The World Bank were created in 1944, and the General Agreement on Tariffs and Trade in 1948, with the object of establishing a framework and basic rules for stable economic development. A number of initiatives and agencies (United Nations Conference on Trade and Development, and UNDP being among the most important) were created in the 1960s, which was defined by the UN as “The First Development Decade”. The proposal common to these different initiatives was the reorganization of the world economy around basic economic principles that, hopefully, would not only guarantee prosperity but also lead to the adoption of democratic modes of government.

Although the work of the UN has always been debilitated by structural defects – chief among which is the veto faculty of the five main powers that perennially prevent effective action on any conflictive issue – it is interesting to observe that the decline of multilateralism followed immediately upon one of the brightest phases of the United Nations system.

Indeed, shortly after the fall of the Berlin Wall, the UN organized a series of major global conferences aimed at achieving international consensus and purpose on a variety of critical social issues. These included Conferences on Children, Education, Environment, Human Rights, Population, Women, and Human Settlements. They were followed up by a Millennium Summit, which was designed to set up the United Nations as the leading light in the global fight against the world’s major social ills - poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. The results of this latter initiative, which should have marked a defining enterprise

for the UN system, turned out to be less than awe-inspiring, revealing the structural fissures that were already undermining the UN's noble proposals.

While UN attention was focused on the social sector during the 1990s, the framework for the global economy – which had been progressively implemented in the world community since the 1960s, and consolidated in what eventually came to be known as the Washington Consensus – climaxed in a period of intense social, political and economic globalization. Therein, the promise was that economic growth and, eventually, the adoption of more democratic systems of government, would be available for all who acceded to its guiding principles regarding free trade and market-led development strategies. Ensuing periods were indeed marked by an unparalleled increase in economic growth – in large part due to China's performance – as well as by an increase in the availability of goods and services, and by marked improvements of living standards at the global level.

However, it is obvious, in retrospect, that this success was achieved at the cost of depleting both global resources and sink capacity, while also decimating the power of both national governments and multilateralism in dealing with planetary issues of sustainability and equality. Such negative consequences – on the environment, on inequality and on global governance – can ultimately be traced to the consequences of an ideology that encouraged markets to promote an unlimited and unregulated pursuit of economic growth. Within this context, the mechanics of global governance were inevitably changed, as the willingness of countries to cede part of their already-depleted sovereignty to multilateral organizations was eroded under the ideology of the new power elites that sprang up.

The premises and promises of liberalism under the Washington Consensus have in fact evolved into a no-holds-barred form of ultraliberalism that has effectively dispensed the guardrails of sustainability and destroyed the foundations of multilateral global governance. By decentering regulation and governance – and by further legitimizing the promotion of economic growth through constantly-increasing levels of unfettered production and consumption – it eventually paved the way for both the accelerated depletion of the Planet's resource base, as well as the accumulation of senseless riches in the hands of a small minority. The relevant literature on this point is aptly summarized by Abramovay (2022, n. p.):

The science of economics, such as it has been consolidated since the end of the 19th century, has shunned from its intellectual and cultural horizon any discussion of the ethical-normative values

that govern the way human societies use the material, energetic and biotic resources on which they depend. [...] This departure was radicalized with the dominance of what a growing number of economists have been denouncing as the ultraliberalism that has increasingly marked the discipline, especially from the mid-1970s onwards.

The central idea of this strand was an assumption that the markets' intelligence was necessarily superior to that of any planner. This assumption referred not only to the State, but to the private sector itself. [...]

In this view, business decisions would be permanently subjected to decentralized scrutiny, not by an administrative bureaucracy with its own interests, but by an instance over which no one has control. [...].

This fiction, which has imposed itself globally since the mid-1970s, began to collapse with the 2008 crisis, but survived with impressive arrogance until the beginning of the pandemic. The invasion of Ukraine has definitively driven the final nails into its coffin. The idea – that the interests of individuals and companies could be expressed in a sort of global community, where innovation and efficiency would constitute the necessary and sufficient conditions to increase wealth, thus promoting convergence between countries and the abolition of regional geopolitical interests – this idea has collapsed. And with it came the collapse of another naive belief – that democracy results from the ability of societies to respect markets and prosper from this respect<sup>7</sup>.

Despite the great potential dangers of ultraliberalism in geopolitics, it has found sustenance throughout the world in the form of extreme right politicians in a growing number of countries, wherein the reaction to perceived losses of control, unfulfilled promises of globalization and increasing inequalities have sustained nationalism and sown the roots of de-globalization. It can be observed that even the pandemic served to heighten unilateralism and national sovereignty, as efforts to secure vaccines, masks and equipment superseded any preoccupation with global humanitarian needs. Moreover, in the sequel to the pandemic, many countries are striving to produce these materials autonomously. Today, efforts to attain self-sufficiency on all matters are perhaps best represented in China's "dual circulation" strategy - which aims to greatly expand domestic consumption while still remaining open to international trade – and which is sure to have enormous impacts on international trade and development.

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7 Text translated from the original in Portuguese by the author of this paper.

As concerns the climate crises specifically, the upshot is that there are many important initiatives that could and should be taken to redirect the global society towards a more peaceful, egalitarian and sustainable future<sup>8</sup>. At the present time, however, even the resolve, the institutional leadership, the resources and the political viability of such partial solutions are hard to visualize. The pandemic brought a brief and illusory respite in the trend to ever-increasing emissions, but longer-term trajectories were soon reinstated. Effective action to deal with the major structural issue that underlies planetary environmental threats – namely, the global pursuit of throughput growth stimulated by consumption – would seem inaccessible and the current multilateral efforts to minimize the climate crises are apparently destined to fall well short.

A recent statement by the United Nations Office for Disaster and Risk Reduction offers a cogent statement of the problem, but falls back on the inept initiatives that currently concentrate hope for effective global action in this domain:

Despite commitments to build resilience, tackle climate change and create sustainable development pathways, current societal, political and economic choices are doing the reverse... To change course, new approaches are needed. This will require transformations in what governance systems value and how systemic risk is understood and addressed (UNODRR, 2022, n. p.).

Unfortunately, it is already eminently clear that “transforming the values underlying governance systems” will not be achieved through the two main ongoing initiatives being carried out under the aegis of the United Nations – the SDGs and the Paris Agreement. Neither undertaking can realistically be expected to have the clout and the urgency to cut through the barriers to sustainability created by the overwhelming nationalistic pursuit of ‘development’ and the current morass of global and national dis-governance. As observed elsewhere:

The design, pursuit, identification, measurement, financing or feasibility of proposed initiatives are problematic, but the SDGs’ fundamental error is to propose, in Goal Number Eight, the very engine that created our environmental quandary, that is, the

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8 For instance, a neat list of ten initiatives that would certainly help was recently put out by The Rolling Stone. (The Climate Fight Isn’t Lost. Here Are 10 Ways to Win; The clock is running on the climate crisis, but we have the tools and knowledge – and the crickets – that we need.) Retrieved from <https://www.rollingstone.com/politics/political-commentary/climate-change-earth-day-solutions-solar-coal-1323853/>

promotion of *generalized economic growth*. This Goal states that economic growth will be “sustained and sustainable”<sup>9</sup> which is both a contradiction in terms and an unattainable objective. It not only ignores the limits to growth that ecological economists have long established, but also the very cause of unsustainability (Martine & Alves, 2019, p. 8).

Meanwhile the prospects for resolution of the climate crises through the decisions of the 2015 Paris COP are similarly unfounded. The flexible commitments signed therein made it easier to reach an agreement, but it also facilitated both the adoption of insufficient targets and the non-fulfilment of such promises. As shown in Table 2, pledges among the ten countries currently having the highest levels of emissions, even if honored, would attain only 52.5% of their required contribution to the 1.5°C goal.

Table 2. Comparison of Pledged and Required Reductions of Emissions for Reaching Paris Agreement of 1.5°C in Ten Highest Emission Countries (in megatons CO<sub>2</sub>e).

Country	Required for 1.5°C	Pledged
China	13,625	7,711
USA	3,967	3,329
India	5,346	1,863
European Union	2,246	1,833
Russia	2,407	1,112
Indonesia	1,817	559
Iran	1,937	446
Brazil	1,307	714
Japan	813	536
Saudi Arabia	983	395
Total	34,448	18,098

Source: Climate Tracker. Retrieved from <https://climateactiontracker.org/>.

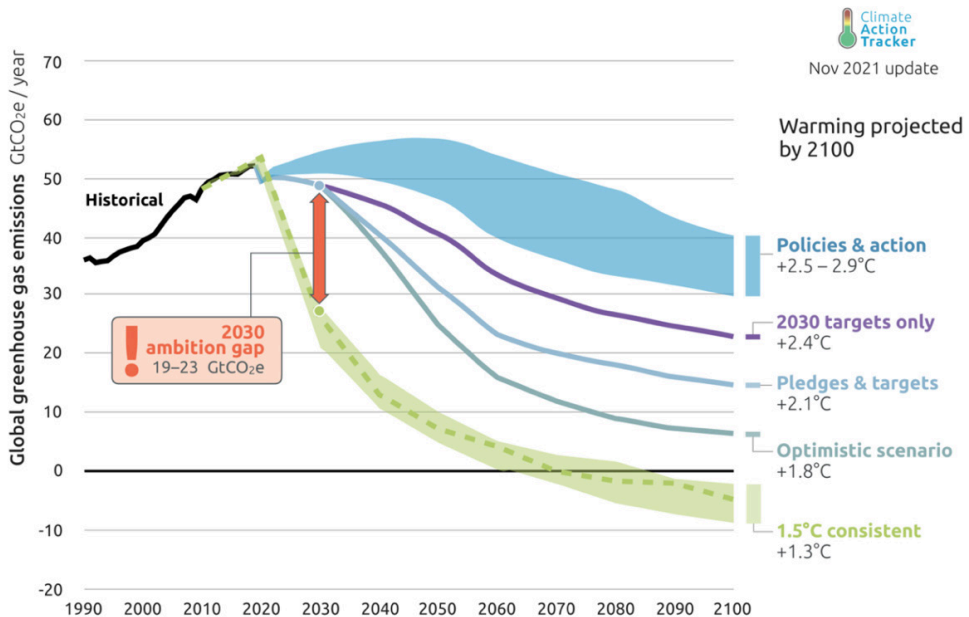
Moreover, the analysis of national climate pledges shows that, in fact, the policies of most countries are inconsistent with their public pledges to cut greenhouse gases. Finally, scientists recognize that even if all countries honored their promises, the sum of their anthropic activities would still raise average global temperatures well beyond the temperature rises that were agreed upon. As stated in a thought-provoking essay by Vaclav Smil:

9 Though the goal is formulated in broader terms as “Promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all,” the central objective is “sustained economic growth,” which is unfortunately not sustainable under the current paradigm.

It seems highly likely that any chance of holding warming to 1.5 degrees is already gone. Even so, many institutions, organizations, and governments are still theorizing about keeping it at that level (Smil, 2022, n. p.).

Figure 2, prepared by the Climate Tracker organization, provides a brilliant illustration of how alternative policies and practices will generate specific levels of global climate change. In short, current voluntary pledges for the reduction of emissions are insufficient and will not be fulfilled. Following the present course of 'business as usual' will result in a probable level of global warming that will create enormous and possibly insurmountable damages to the Planet and to much of the human population.

Figure 2. 2100 Warming Projections. Emissions and expected warming based on pledges and current policies.



Source: Climate Tracker.

The reality is that there is no legal or institutional framework to compel countries to cut their emissions in support of global sustainability. On the contrary, numerous countries are brazenly adopting policies and measures that have devastating impacts on global warming. Brazil is a primary instance of such flagrant denial. Although the country's current President promised, during COP26 in Glasgow, to halt and reverse deforestation by the end of this decade, his government has not only systematically weakened

legal protections since he took office in 2019, but it has also actively promoted encroachment by land grabbing ranchers and farmers, formal and informal mining activities and loggers. As a result, deforestation has increased by 76% since the inauguration of the Bolsonaro government, and accounted for 41% of planetary deforestation in 2021 (Global Forest Watch, 2022). On the other side of the world, Australia has one of the highest per-capita emission levels as the world's prime coal exporter, but has persistently avoided effective commitments to more ambitious emission cuts – despite experiencing sea level rise and extreme weather events at home. However, a recent election appears to presage a much-needed reset of the country's climate policies.

What would it take to revert the current negative scenario? Nothing less than a massive turnaround in terms of humanity's primary values and goals that lead to effective political action. The situation in this decade is already critical, but there is still hope that the worse penalties of the climate crises can be averted (Goodell, 2022). There are indeed any number of feasible initiatives that would have an immediate impact on the climate change trajectory, such as eliminating the consumption of beef and the reliance on coal, ending deforestation and massifying reforestation, drastically reducing military spending, massifying local solar energy, etc. The potential value of such initiatives has been known for decades, yet they have not made significant headway, in part because of powerful negationist and nationalistic lobbies. In turn, the dominance and effectiveness of such lobbies rests on their perpetuation of a perception that needed changes in economic and human behavior would be inconvenient for a population steeped since birth in a consumerist ideology.

Moving forward would thus require massive campaigns to “tell the truth about climate change” as suggested by Rolling Stone in its Action # 5. These truths are not likely to win people over until the immense power of the negationist camp is downgraded and blatant nationalism cedes to a pervasive concern with sustainability and equality. Without public support for decisions that transcend the pursuit of throughput growth under nationalistic frameworks, the delimitation of effective measures and the application of sanctions for non-compliance in a cohesive multilateral setting cannot succeed. Consequently, the current trajectory towards the grave environmental consequences that have been laid out in the recent IPCC Report if the world cedes to “business as usual” tends to persist.



## The Perfect Storm and the Future of Multilateralism

The foregoing discussion on the vagaries of multilateral efforts in relation to climate change relate to only one, albeit the most decisive component, of a much broader set of social, economic, political and institutional challenges facing humankind in the 21st century. In the current framework, most multilateral agencies have lost prestige and influence, as dramatically illustrated during the pandemic, when even the World Health Organization – which should have represented the ultimate source of guidance and resources for dealing with COVID-19 – was questioned and vilified.

Not only is the slate of current problems increasingly disturbing, but the intellectual setting in which their effective discussion should take place is being muddled by politics, fake news and ideologically loaded perceptions. As described by one pundit:

Even a coarse look at the world shows a growing rejection of science in favor of ideology on issues from climate change to vaccinations to dental health to whether the Earth is flat or humans have landed on the Moon. We are rolling back environmental protections and seeing a rise in bigotry, isolationism, and authoritarianism (Siegel, 2019, n. p.).

The global threats cited in this paper, in addition to a number of other ongoing critical issues – such as cyber-security, financial crises, drug trade and the maleficent public and private manipulation of information – can only be effectively addressed through multilateral initiatives and agreements. There are a number of sources that are currently discussing possible avenues for a more effective multilateralism in the current context. Following up on that discussion here would take us too far afield. Nevertheless, such discussion is urgent and the current world scenario does prompt a hard question – will it take further intensification of the current perfect storm and its disastrous after-effects to finally mobilize humankind in the direction of a more sustainable and equitable future?

Eventually, the discussion will inevitably have to be framed in terms of – what can be done to effectively move the global society towards adopting effective measures that will go beyond the comfortable and easy small steps that are currently being taken in order to avoid the grave planetary consequences that scientists have been warning us will occur? A recent comment by Sachs suggests moving from the “sustained economic growth” goal proposed in Goal 8 of the SDGs to “economic progress”.

True economic progress aims to raise the wellbeing of humanity, by ending poverty, achieving a fairer and more just economy, ensuring the quality education for all children, preventing new disease outbreaks, and increasing living standards through sustainable technologies and business practices. True economic progress aims to transform our societies and technologies to raise human wellbeing (Sachs, 2022, n. p.).

Moving the goalposts from growth to progress is an excellent suggestion, but it is not clear how this can be achieved under our civilization's current geopolitical structure and value framework. Moving in this direction will be anything but easy since it will require a redefinition of the basic values instilled in people from birth about how consumerism generates happiness, as well as a greater focus on the type of effective political action that will effectively redefine society's major objectives and their implementation. It will also require reversing the impact of the huge negationist and disinformation mechanisms that use every opportunity to redirect people's angst and frustrations from the detritus of globalization towards the direction of right-wing politics, rather than taking a stand that effectively addresses critical issues. Unfortunately, given the form, content and rate at which action is being taken, this ideological gestalt may unfortunately only occur after some critical turning points in the system have already been surpassed.

## Population Dynamics and Policies in the Perfect Storm

The after-effects of the current scenario - marked by war, pandemic, climate change and global dis-governance - on our civilization will inevitably be significant, and have their largest impacts on the poorer segments of all societies. Many millions of people will perish from the direct and indirect consequences of these tragedies, while many millions more will be displaced and become refugees. In addition, the transformation of the broader geopolitical context from globalization into radical nationalism has not only nurtured ultraliberalism, destabilized the prospects for "sustained economic growth" and dimmed the prospects for sustainability, but also favored a breeding ground for enhanced inequality, sexism, racism and violence. Much more information on these consequences has to be collated, analyzed and inserted into the mainstream political discourse so that the dimensions of their costs to human beings can effectively serve to influence and reorient major economic and social policies.

In terms of the specific consequences of this perfect storm on population policies, the most visible and direct impacts concern the displacement of

people, within and between countries, rather than on overall population growth trends. The foregoing analysis indicated that the perfect storm has undoubtedly multiplied the volume and gravity of forced displacement. As noted, exact figures on the total number of people being displaced by poverty, health, conflict and climate change are impossible to obtain, but they are nevertheless sure to be enormous.

Despite the valiant efforts of the UNHCR and many local organizations worldwide, it is obvious that there remains a huge gap between problem and response capacity in relation to displaced persons and refugees at the global level. This situation pre-existed the current perfect storm, in part because globalization had promoted the movement of funds, resources and products across national borders, but had continued to bar the free flow of people across the same boundaries. Recent calamities and conflicts have accentuated the issue as well as the ineptitude of policy responses. Promoting mobility as a fundamental human right is a sound theoretical principle but often insufficient in a context of local, national and global governance that strongly opposes the passage of people across or within boundaries. The implementation of durable solutions involving protection, resettlement, reintegration or repatriation is effectively hampered by a geopolitical framework marked by growing ethnocentrism and nationalism. Pursuing a better understanding of the complex factors underlying vulnerability, mobility and the diversity of migration in the context of wider changes is critical, but implementation of effective policies would also require a framework of improved governance at the local, national and international level. Recognition of the intellectual and practical limitations of ongoing approaches in this setting is depicted in a recent review by Piguet (2021, p. 10):

Perhaps the most striking weakness of the current research on environmental migration regardless of method: it remains difficult to contextualize empirical results within larger sets of power relations and governance (Boas et al., 2018; Geddes et al., 2012; McCarney & Kent, 2020). It also remains a challenge —beyond overall policies to limit climate change— to frame appropriate mobility policies that do not simply force people to either stay in place or migrate. This is perhaps one of the central works in progress over the next 10 years.

As concerns the dynamics of population growth, it is apparent that higher mortality and decreasing fertility will affect many countries to a greater or lesser extent as a result of the perfect storm. Yet, in the near future, the overall trajectory of *global* population growth will, surprisingly, not be significantly affected, in statistical terms.

Pandemics, war and the displacement of people generally have a negative effect on fertility rates as marital unions and pregnancies are postponed and/or prevented. On the other hand, the number of deaths attributable to the different components of the perfect storm is undoubtedly high, by any human standard. Poorer countries, those with highest growth rates, are also the most affected by conflicts, pandemics and climate change and will thus experience a somewhat slower rate of growth. However, the impacts of these dynamics on *global* population growth trends will be surprisingly reduced in the short term, due simply to the overall order of magnitude of current global population growth.

Indeed, the latest-available UN population forecast estimated a global average of some 140 million births and 56 million deaths during the 2015-2020 period. The total impact of the perfect storm thus has to be viewed within a structural framework that is generating an annual increase of some 80 million people. As noted earlier, the number of deaths attributable directly or indirectly to COVID-19 might be more than 15 million people over a few years, and this will cause a temporary blip in global growth. However, by comparison to war (which primarily affects mortality in reproductive age groups) and climate change (which affects all age groups), the pandemic has its greatest impact on older populations, and thus has relatively lesser impact on future growth patterns. On the other hand, the impacts of current conflicts, climate change and pollution are, to a large extent, already accounted for in current tallies of total population growth. In this context, it seems unlikely that the expected growth of world population will be reduced by more than 5% annually, in the immediate future. Prior overall growth trends are likely to be resumed thereafter, depending on the expansion of conflicts and future pandemics, but especially, on the aggravation of climate change consequences. Conflicts and pandemics come and go, and their consequences can be overcome over generations, but some impacts of climate change are irreversible and defining.

The point is that, even with large increments in mortality, the world will continue to add more than 80 million people a year in the medium term. Consequently, issues of population size and growth are likely to continue dominating discussions of population policy in both public and academic debates. That is, reducing population size quickly will continue to be propounded, in many instances, as a key solution to, at the very least, the world's environmental problems. It is imperative that the parameters of this argument be defined correctly for purposes of policy formulation.

To be sure, population size and growth have a huge impact on how human societies function. The fact that world population has more than doubled again in the last 50 years, that it now includes almost 8 billion people, and that it is likely to continue adding on at least 80 million people yearly for some decades, is a primary factor to be considered in any discussion of human development, but it is especially vital in relation to the environmental domain. Outlier opinions that population growth is not a problem, or even that it represents a solution of some sort, because it increases the size of markets, or promotes “technological innovation”, or some such ideologically-driven fantasy are at best, short-sighted and dangerous.

Nevertheless, even when the critical environmental advantages of a smaller global population are recognized, the long-standing debates between optimists and pessimists on this question are oversimplified and the policy implications continue to be surprisingly restricted<sup>10</sup>. To begin with, these discussions generally continue to assume that “population” is composed of homogeneous and interchangeable socio-economic units imposing similar burdens on the environment. This ignores huge disparities in environmental impacts according to the per capita impact of growing populations in different levels of ‘development’. Recognition of this importance is dramatized, for instance, when looking at the ecological footprints of different countries (Martine, 2018). Failure to explicitly recognize diversities within “population” fosters misleading policy conclusions.

On the other hand, despite the hopes that are often pinned by policymakers and the public on a ‘quick fix’ through population control, there is actually very little – outside of Malthusian-type calamities – that will rapidly reduce world population size. Lowering population size in a civilized manner depends on the provision of family planning services which have, at best, *long-term* consequences. Undoubtedly, much more needs to be done to provide the hundreds of thousands of women who are currently underserved in this domain with high-quality reproductive health services. Moreover, the issue of reproduction has to be framed within a broader framework of human rights, gender equality and social progress. Incredibly, even such humanitarian issues appear to be questioned and regressed by recent right-wing racist politics.

However, it must be recognized that, even under the best of circumstances, reproductive health services do not have retroactive impacts, nor do they guarantee rapid population decline, because of demographic inertia. Thus,

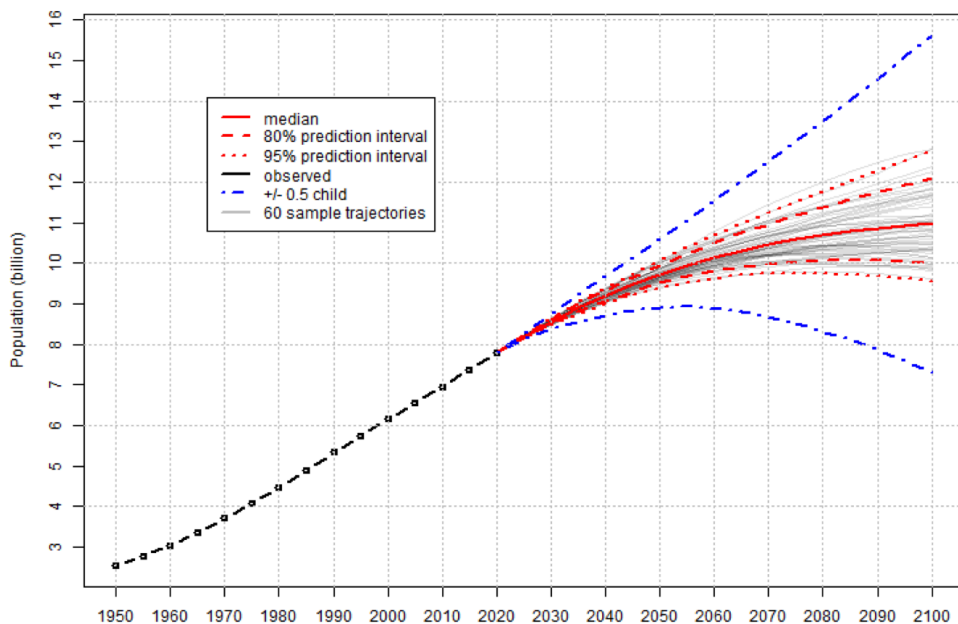
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<sup>10</sup> For further discussion, cf., for instance Martine (2018, 2009 & 1996).

for instance, India's population has grown by almost a billion people since implementing its first family planning policies in 1952. China's population has grown by more than half a billion since the implementation of its extreme one-child policy.

The main point which is often overlooked here is that – barring draconian measures, outright extermination policies or a combination of Malthusian scourges – the Planet will have to deal with a population of more than 8 billion people for the next 50-60 years. As seen in Figure 3, the 2019 United Nations Low Estimate projection – which is based on the most optimistic fertility and mortality trends that would most favorably impact the reduction of growth – world population will continue to increase in coming decades and only return to its current 2022 size in the 2080s. Undoubtedly, the next United Nations projections will alter this pattern somewhat as a result of recent and ongoing events, but the point is that world population is extremely unlikely to diminish below current levels in many decades, except through the multiplication of major calamities.

Figure 3. 2019 Projection of Total Population, World.



Source: United Nations, DESA, Population Division. *World Population Prospects 2019*. <http://population.un.org/wpp/>

In short, efforts to promote reproductive health while achieving below-replacement fertility levels are essential to empower women, to improve peoples' lives and to facilitate adaptation to climate change in a longer time

frame. However, they have little impact during the shorter term on the type of action that needs to be taken *right now* in the geopolitical, economic and sociocultural domains to redirect geopolitics, reduce the number and toll of conflicts and pandemics, while also deflecting the course of the climate crises. As clearly stated by the latest IPCC, the window of opportunity for effective action on climate is brief and rapidly-closing. The same may be true in relation to other issues of global governance.

Given the obvious impact of population size on all global governance outcomes, it is understandable that “overpopulation” is perceived as something that could be addressed immediately, with huge consequences. However, the commonly assumed ideas that the reduction of population growth can be attained over the short term, and consequently, that efforts in this area should be considered on a par with those in the domain of political economy, are misleading. Moreover, within the sphere of population dynamics, greater attention needs to be focused on spatial distribution and its relation to environmental change. Almost all future growth will occur in cities, and urbanization itself is a major factor in fertility reduction (Martine, Cavenaghi, & Alves, 2013). In addition, issues related to where and how this growing urban population will live, in what geographic location, what type of land it will occupy, will inevitably have – along with its patterns of production and consumption – an enormous impact on long-term sustainability (UNFPA, 2007; Martine, 2011).

In brief, population-centered debates are fraught with oversimplifications and confusion between the short and long term impacts of different policies. Providing quality reproductive health services to millions in need is an obligation from the standpoint of individual rights. It is also essential for the long-term relationship between population and sustainability, but it will *not* relieve pressures on the environment in the decisive short-term. To do that, other types of initiatives need to be supported by newer and stronger forms of multilateral actions concerning consumption, economic growth, inequality and the very pursuit of happiness within a much improved context of global governance.

The topic of Malthusian checks has inevitably come up again in popular discussions, given the context of war, pandemics, environmental crises, and even Malthus' favorite, i.e. - the growing food shortages! Dispelling these phantoms will urgently ultimately depend on a redefinition of society's broader goals as well as a refurbished and rehabilitated multilateralism.

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