THE SUSTAINABLE DEVELOPMENT GOAL OF ZERO HUNGER CANNOT BE ACHIEVED WITHOUT ADDRESSING COLONIALISM, RACISM, AND CLIMATE CHANGE

EL OBJETIVO DE DESARROLLO SOSTENIBLE DE HAMBRE CERO NO PUEDE ALCANZARSE SIN ABORDAR EL COLONIALISMO, EL RACISMO Y EL CAMBIO CLIMÁTICO

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ABSTRACT

This article explores the historic and contemporary connections between colonialism, racism, and climate change and their effects on hunger and malnutrition. The inquiry is oriented around two case studies. First, how following independence in 1804 Haiti was forced to pay French slaveholders today's equivalent of 21 billion USD to secure their national sovereignty. Second, how due to climate change driven floods in 2022, Pakistan incurred an estimated 40 billion USD in damages while contributing just 0.3% of global carbon dioxide emissions since the industrial era. Ultimately, the industrial rise of rich nations depended on the invention of race and extraction from the Global South during the colonial era. In turn, the Industrial Revolution launched climate change and contributed to the creation of today's climate crisis. The ongoing effects of colonialism, racism, and climate change will need to be addressed if the world is to decrease malnutrition and achieve the Sustainable Development Goal of Zero Hunger.

Keywords: Colonialism, Racism, Climate change, Malnutrition, Hunger, Humanitarian

RESUMEN

Este artículo explora las conexiones históricas y contemporáneas entre colonización, racismo y cambio climático y sus efectos sobre el hambre y la malnutrición. La indagación se orienta en torno a dos estudios de caso. En primer lugar, cómo tras su independencia en 1804, Haití se vio obligado a pagar a los esclavistas franceses el equivalente actual de 21.000 millones de dólares estadounidenses para garantizar su soberanía nacional. En segundo lugar, las inundaciones provocadas por el cambio climático en 2022 causaron a Pakistán unos daños estimados en 40.000 millones de dólares, mientras que su contribución a las emisiones mundiales de dióxido de carbono desde la era industrial fue de tan sólo el 0,3%. En última instancia, el ascenso industrial de las naciones ricas dependió de la invención de la raza y la extracción del Sur Global durante la era colonial. A su vez, la Revolución Industrial puso en marcha el cambio climático y contribuyó a crear la crisis climática actual. Será necesario abordar los efectos actuales de la colonización, el racismo y el cambio climático si el mundo quiere reducir la malnutrición y alcanzar el Objetivo de Desarrollo Sostenible de Hambre Cero.

Palabras clave: Colonialismo, Racismo, Cambio climático, Malnutrición, Hambre, Humanitario

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Statement by the authors: We are approaching this article through the lens of humanitarian practitioners who are uniquely positioned to at once engage with some of the world's largest global institutions as well as witness some of the most extreme examples of hunger and abject poverty. The opinions expressed in this article are our own and do not necessarily represent those of our employers.

1. INTRODUCTION: THE HISTORIC CONNECTIONS BETWEEN EUROPEAN COLONIZATION, RACISM, AND CLIMATE CHANGE

This article aims to explore how colonialism, racism, and climate change are not separate phenomena but have complex interactions and intertwined histories. Too often the history of colonization and the invention of racism aren't adequately acknowledged or addressed, particularly by colonial powers, while climate change is framed as an inevitable global reality. This article investigates how they are connected while urging that colonialism, racism, and climate change must be addressed if the world is to decrease malnutrition and achieve the Sustainable Development Goal of Zero Hunger.

1.1 EUROPEAN COLONIZATION

Colonialism can be defined as systems and practices that "seek to impose the will of one people on another and to use the resources of the imposed people for the benefit of the imposer" (Assante, 2006). European colonization was a vast imperial project of acquiring full or partial control over other societies and territories that lasted from the 1400s to the late 1900s. The United Kingdom, France, Spain, Portugal, Netherlands, Germany, Belgium, Italy, Russia, Denmark, Norway, and Sweden all established colonies outside of Europe within this period (Murrey, 2020).

Historians generally differentiate between two main kinds of colonialism that were carried out by European colonials: *settler colonialism* in which "settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain" (Tuck & Yang, 2019, p. 5) and *exploitation colonialism* in which an "extractive state" is established to transfer maximum resources from the colony to the colonizer with the minimum investment possible (Acemoglu et al., 2001). Both forms serve the same end, to exploit new territory for the economic benefit of the colonizer.

Vast wealth was generated by the colonial project at the expense of the colonized. Sociologist Hamza Alavi estimates that the resource flow from India to Britain between 1793 and 1803 was around 2 million GBP a year, the equivalent of many billions today (Alavi, 1982). Economist Utsa Patnaik concluded that over roughly 200 years, the British siphoned at least 45 trillion in USD today from India (Sreevatsan, 2018). Academic theologian Robert Beckford estimated that the United Kingdom owes African countries 7.5 trillion GBP for its role in the transatlantic slave trade and slavery (Beckford, 2005). Jamaica, Burundi, and Namibia individually have estimated a colonial economic toll in the billions of USD (Fisher, 2022).

It has been argued that during the European colonial era only five countries were never colonized by Europe, namely: Japan, Korea, Thailand, Liberia, and Ethiopia (Fisher, 2015). Nearly every country in the world was under European colonial control at some stage. In addition, the United States (Immerwahr, 2019), Japan (Taylor, 2013), and Israel (Uma, 2021, Avelar & Ferrari, 2018) are considered to have practiced or be practicing colonialization although they are not generally considered to have been part of the European colonial project.

Further, the history of colonialism cannot be separated from the history of humanitarianism. King Leopold the II of Belgium carried out a brutal plundering of the territory surrounding the Congo River in what is today the Democratic Republic of the Congo. Initially naming it the "Congo Free State", to garner international support Leopold framed his exploits as a humanitarian effort by claiming it would be in the best interests of the Congolese people and prohibit slave trading (Hochschild, 1998). The government of the United States was the first to recognize Leopold's claim to the Congo, referring to it as having "humane and benevolent purposes" in their official statement (Hochschild, 1998). The reality was the Congolese people were subject

to forced labor, mutilation, and colonial murder. Between 1885 and the end of Belgian rule in 1920, as much as half of the population, or approximately 10 million Congolese, had been killed, in part due to mass murders by Belgian officers (Hochschild, 1998).

To acknowledge this connection between colonialism and humanitarianism is to acknowledge that medicine, public health, and humanitarian activities were used as tools of colonial control. Scholar and psychiatrist Franz Fanon, born on the island of Martinique under French colonial rule, asks us to reflect on the reality that "the doctor always appears as a link in the colonialist network, as a spokesman for the occupying power" (Fanon, 1965, p. 131).

Stanford historian Daughton who has researched how modern humanitarianism arose from European colonialism asserts that "The history of humanitarianism is inextricably linked with western imperialism and the use of liberal capitalism as the only route to modernity" (Huneke, 2015, para. 13).

Neocolonialism is the continued economic and cultural control of countries that have been decolonized. The former president of Ghana, Kwame Nkrumah, coined the term in the 1963 and further expanded upon the term in his 1965 book *Neo-colonialism: The Last Stage of Imperialism* (Nkrumah, 1965). When this book was published, it "caused such an uproar in the US State Department that a sharp note of protest was sent to Nkrumah and the 25 million USD of American "aid" to Ghana was promptly cancelled" (Udegbunam, 2020, p. 73). This likely reinforced Nkrumah's belief that while traditional forms of colonialism ended, many African states continued to be subject to external political and economic control post-independence.

1.2 THE INVENTION OF RACE

"Racialization" is the complex and contradictory process through which groups are designated as being part of a particular "race" and thereby subjected to different treatment. Historically, it has been white people who hold the social, political, and economic power to name and categorize people of color and Indigenous peoples due to colonial history (ACLRC, 2021).

Prior to the 1400s, there was no naturally occurring concept of race. The first racial category to be constructed was that of "black" people by a Portuguese man named Gomes de Zurara. King Afonso V of Portugal commissioned Zurara, a royal chronicler, to compose a biography of the African adventures of his uncle Prince Henry the Navigator (Kendi, 2019).

Prince Henry sponsored Atlantic voyages to West Africa by the Portuguese, to avoid relying on Islamic slave traders as middlemen, and in doing so created a different sort of slavery than had existed before. Premodern Islamic slave traders, like their Christian counterparts in premodern Italy, were not pursuing policies of slavery based on race—they were enslaving what are today considered to be Africans, Arabs, and Europeans alike. It was the Portuguese who began to exclusively trade African bodies (Kendi, 2019).

Zurara finished *The Chronicle of the Discovery and Conquest of Guinea* in 1453, the first European book on Africa. One of Zurara's stories told of Prince Henry's first major slave auction in Lagos, Portugal, in 1444. He described the range of appearances of the captives from the African continent with some "white enough, fair to look upon, and well proportioned," while others were "like mulattoes" or "as black as Ethiops, and so ugly." Despite their different skin colors, languages, and ethnic groups, Zurara blended them into one single group of people, worthy of enslavement (Kendi, 2019). Otherwise said, slave traders commissioned the invention of the racist idea of a group of people who could justifiably be bought and sold (Kendi, 2017).

Once Spanish and Portuguese colonizers arrived in the Americas in the 15th century, they racialized different Indigenous peoples, calling them one people, or "Indians". In 1510 Spanish lawyer Alonso de Zuazo contrasted the race of Blacks as "strong for work, the opposite of the natives, so weak who can work only in undemanding tasks." These racial tropes normalized and rationalized the increased importation of the "strong" enslaved Africans and the ongoing genocide of the "weak" Indians in the Americas (Kendi, 2019). Colonialism is a relationship of domination and difference, and race was constructed to serve as the primary marker of difference (Mahmud, 1999).

Eric Williams, the first Prime Minister of Trinidad and Tobago and economics scholar summarized this phenomenon of the invention of race by saying that "a racial twist was given to what is basically an economic phenomenon. Slavery was not born from racism, rather racism was the consequence of slavery" (Williams, 1944).

1.3 CLIMATE CHANGE

Author and Journalist Naomi Klein argues that "the story [of climate change] begins with people stolen from Africa and lands stolen from Indigenous peoples; two practices of brutal expropriation so dizzyingly profitable that they generated the excess capital and power to launch the age of fossil fuel led industrial revolution and with it the beginning of human-driven climate change" (Klein, 2019, p. 19). In other words, the industrial rise of rich countries depended on the extraction and accumulation of vast wealth during the colonial era.

Klein's poignant words echo those of Eric Williams, who in 1944 charged that Black slavery was the engine that propelled Europe's rise to global economic dominance and that their conquest and settlement of the New World depended on the enslavement of millions of Black peoples who helped amass the capital to finance the Industrial Revolution (Williams, 1944). To his point, growth in Europe increased during the peak of European colonial slave trading and holding, and research has demonstrated that wealth from both accelerated Britain's Industrial Revolution (Heblich et al., 2023, Stallard, 2023).

Since the start of the Industrial Revolution, in about 1750, human activities have rapidly increased greenhouse gas concentrations in our atmosphere. Carbon dioxide (CO2) is among the most harmful greenhouse gases on earth, along with nitrous oxide (N2O) and methane gas (CH4). Greenhouse gases (GHGs) are primarily released into our atmosphere by burning fossil fuels, such as coal, oil, and natural gas for electricity, heat, and transportation. Climate change, characterized by increasing global surface temperatures and alterations in rainfall, first began warming tropical oceans and the Arctic in the 1830s, with Australasia and South America being the last regions to register its effects in the early 1900s (McGregor, 2016).

Global leaders have known about the danger of climate change for decades. In the late 1960s various climatic, meteorological, and geological publications warned that global climate change would cause agricultural failures around the world in the 1970s (We are Water Foundation, 2021). The authors of a 1968 report for the American Petroleum Institute cautioned from their findings that "if the earth's temperature increases significantly, a number of events might be expected to occur, including the melting of the Antarctic ice cap, a rise in sea levels, warming of the oceans, and an increase in photosynthesis" (Robinson & Robbins, 1968, p. 108). The 1974 secret US Central Intelligence Agency report concluded that "Leaders in climatology and economics agree that climate change is occurring and that it has already caused major economic problems all around the world" (CIA, 1974, p. 29). ExxonMobil, the world's largest oil company, knew about the effects of climate change as early as 1977 and invested millions of dollars to spread misinformation and promote

climate denial (Hall, 2015). The first Intergovernmental Panel on Climate Change (IPCC) report, aimed at assessing scientific, technical, and socio-economic information concerning climate change, concluded in 1990 that "Change in drought risk represents potentially the most serious impact of climate change on agriculture at both regional and global levels" (IPCC, 1990, p. 55).

2. CASE STUDIES

To better conceptualize the complex interactions between colonialism, racism, climate change, and their effects on hunger and malnutrition the authors put forth two case studies. First of Haiti, located in the Caribbean and formerly colonized by Spain (1494-1697) and France (1697-1804). Second of Pakistan, located in Southern Asia and formerly colonized by the United Kingdom (1757-1947).

2.1 CASE STUDY 1: HAITI

The original inhabitants of the island of Hispaniola (present day Haiti and the Dominican Republic) were the Indigenous Taíno, an Arawak-speaking people who began arriving from the Yucatan peninsula as early as 4000 BCE (UNHCR, 2007). The Taíno lived in self-sufficient communities, with some scholars estimating that their population reached more than three million on Hispaniola alone by the end of the 15th century. They were innovators; developing techniques to strain cyanide from yuca, creating pepper gas for warfare, utilizing an extensive pharmacopeia from nature, and building oceangoing canoes for more than 100 paddlers (Poole, 2011).

In 1494 Christopher Columbus established the first colony in Hispaniola. Following a brief period of coexistence, relations between the Spaniards and the Taíno deteriorated. Taíno men were forced to work in gold mines and colonial plantations while Taíno families were prevented from planting traditional crops. They fell victim to starvation and European-introduced smallpox and measles (Poole, 2011). After the French arrived in the seventeenth century the Taíno population was largely exterminated (University of Kansas, n.d.).

Without native populations for forced labor, Africans (primarily from West Africa) were imported as slave labor to produce raw goods for international commerce. France's richest colony in the eighteenth century, Haiti was known as "the pearl of the Antilles", due to its large-scale production of coffee and sugar. Resisting their exploitation and racialized colonial rule, the enslaved peoples revolted against the French from 1791-1804. When Haitians took their independence in 1804, ending more than 300 years of colonization by the Spanish and French, they rejected the colonially imposed name of Saint Domingue and restored the Taíno name of Haiti (University of Kansas, n.d.).

As the first independent nation with Black leadership born from the most successful slave rebellion in the Western Hemisphere, Haiti was a source of inspiration for African Americans in the United States during the nineteenth century. However, as with France, the United States did not recognize Haiti's independence until 1862, because white Americans worried that Haiti's existence challenged their slave-driven economy (University of Kansas, n.d.).

In 1825, barely two decades after winning its independence against all odds, Haiti was forced to begin paying enormous "reparations" to the French slaveholders it had overthrown. Complying with this ultimatum provided Haiti with immunity from French military invasion but saddled the young nation with a crippling debt, with interest, that took 122 years to pay off (Sperling, 2017). Writer Dan Sperling shares: "My father-in-law still recalls the patriotic song he was taught as a Haitian schoolboy, its poignant lyrics urging all Haitians to reach into their own pockets to help their government raise the amount that was still "owed" to France" (Sperling, 2017, para. 3). In total, Haiti paid France 112 million francs to secure its national sovereignty, about 560 million USD today. A debt "so large and so lasting, that it would help cement Haiti's path to poverty and underdevelopment" (Gamio et al, 2022, para. 5). This debt both undermined attempts for Haiti to invest in the well-being of its people and prompted the United States to stage a 19-year military occupation of the country (1915-1934) for further exploitation under the guise of ensuring payments were made to France. If that money had remained in Haiti, rather than being sent to enrich France, conservative estimates suggest it would have added 21 billion USD to Haiti's economy over the last two centuries (Gamio et al, 2022). This price for freedom was enduring, depleting Haiti of the resources it needed to build a nation.

Despite the seemingly insurmountable setbacks, Haiti was largely food self-sufficient until the mid-1980s. Then, reeling from political turmoil after the François and Jean-Claude Duvalier dictatorships and pressured by US government and international finance institutions, Haiti began to liberalize trade. In 1995, a coalition of USAID, the Inter-American Development Bank, FAO, US agribusiness consultants, Chemonics International, and President Bill Clinton forced Haiti to cut import tariffs on rice from 50 percent to 3 percent (Koski-Karell & Dortilus, 2023). This devastated local food producers, who could not and still cannot compete with lower-priced imports pouring into the country. Today, about 90 percent of rice, all cooking oil, and nearly half of all the food consumed in Haiti is imported (Koski-Karell & Dortilus, 2023). Scholars argue that such efforts intensified environmental injustice and advanced US imperialism in Haiti which persists today (Moore & Koski-Karell, 2022).

Today Haiti continues to be hindered by political instability, insecurity, and fragility. It remains the poorest country in Latin America and the Caribbean and among the poorest countries in the world. In 2023 Haiti ranked 163 out of 191 countries per the UN's Human Development Index (UNDP, 2023). Haiti's population of 11.5 million people are hostage to brutality and gang violence. The deteriorating security and economic situation are major barriers to accessing basic health services. Cholera, introduced by UN peacekeepers in 2011, continues to spread with 22,000 suspected cases in 2022 alone (UNOCHA, 2023).

Due to its geography Haiti remains one the most vulnerable countries to natural hazards globally in the form of hurricanes, floods, and earthquakes. These weather events are worsening with climate change. More than 96 percent of the population of Haiti is exposed to such shocks (World Bank, 2023). The island faces the compounding threats of rising sea levels, failed rainy seasons, and intensifying heat. Haiti was considered one of the ten most vulnerable countries to climate-related losses from 2000-2019, both in terms of lives and economy, by the 2021 Global Climate Risk Index (Eckstein et al., 2021).

The ongoing effects of colonialism, racism, and climate change have contributed to widespread hunger and malnutrition in Haiti today. The March-June 2023 estimates from the Integrated Food Security Phase Classification demonstrate that nearly 5 million people in Haiti (nearly half the population) are experiencing high levels of acute food insecurity (IPC, *2023*). Modeled estimates suggest that in 2022, nearly 1 in 5 Haitian children under five years of age was chronically malnourished (UNICEF-WHO-WB, 2023).

2.2 CASE STUDY 2: PAKISTAN

The Indus Valley Civilization began to form in what is today Pakistan around 3,000 BCE. By 1,500 BCE the blending of these cultures with Indo-Aryan tribes gave rise to the Vedic Civilization; a tribal, pastoral society centered in the Indus Valley. Between 500 BCE and mid-1800s areas within the region shifted under the control of various kingdoms and empires: the Persian Achaemenid Empire, Alexander the Great's Empire, the Maurya Empire, the Delhi Sultanate, the Durrani Empire, The Mughal Empire, the Mongol Empire, and the Sikh Empire (*A Brief History of Pakistan*, 2023).

Prior to British colonization, the Indian subcontinent was a collage of more than 500 regional kingdoms known as princely states populated by Hindus, Muslims, Sikhs, Jains, Buddhists, Christians, Parsis, and Jews. Muslims and Hindus in Pakistan shared their sacred shrines and welcomed each other into their religious spaces (Khalid, 2021). Each princely state had its own traditions, languages, relationship with caste, and leadership. Starting in the 1500s. A series of European powers colonized the coast of the subcontinent with trading settlements. By the mid-1700s the English East India Company was the dominant colonial power and ruled directly and indirectly through the princely states (Roy, 2021).

In the 1800s, the colonial administrators began categorizing Indians by religious identity and skin color to segregate and clearly define groups (Roy, 2021, Christopher, 1988). They counted Hindus as the majority and all other religious groups as distinct minorities. The colonial census reports, for example, forced people to choose just one religion instead of reflecting the pre-colonial fluidity of their religious identities (Khalid, 2021). In elections, people could only vote for candidates of the same religion. These practices exaggerated differences and bred distrust between previously coexisting communities (Roy, 2021).

Due to the enormous financial strain of World War II, Britain relented to calls for Indian independence. Expedited due to riots, the British planned for the nation's independence behind closed doors. In 1947, The British Viceroy announced that India would gain its independence and be partitioned into Hindu India and Muslim Pakistan after nearly 200 years of British colonization. Lines were hastily drawn, and princely states were forced to choose which country to join, forfeiting their sovereignty in the process. While the British relied on outdated maps and census information to divide the subcontinent, Hindus and Muslims fled to the areas where they thought they would be safest. This triggered one of the largest and bloodiest forced migrations in human history during which more than 14 million were displaced and nearly 2 million died or went missing (Kumar, 2019). In the power vacuum left behind by the British, radicalized militias and armed groups massacred migrants. Women bore the brunt of this, suffering rape and mutilation (Roy, 2021, Kumar, 2019).

Two-hundred years of anti-colonial hatred were channeled into the Indo-Pakistani War of 1947–1948 (Kumar, 2019). In the more than 75 years since the Partition of India, territorial disputes have led to the creation of Bangladesh as a nation state while tension between Pakistan and India have erupted into four wars and ongoing cross-border conflict.

Today Pakistan is facing long-standing structural weaknesses and economic challenges; under severe stress from low foreign reserves, a depreciating currency, and high inflation. These challenges were compounded by catastrophic 2022 flooding, increasing world commodity prices, and domestic political uncertainty (World Bank, 2023). In 2023 Pakistan ranked 161 out of 191 countries per the UN's Human Development Index (World Bank, 2023). Pakistan was considered one of the ten most vulnerable countries to climate-related losses from 2000-2019, both in terms of lives and economy, by the 2021 Global Climate Risk Index (Eckstein et al., 2021).

From June to October 2022, catastrophic floods in Pakistan killed 1,739 people, and caused damage exceeding 40 billion USD (Mangi, 2022). The floods are clearly linked to human-driven climate change as warmer air holds more moisture; higher temperatures generate heavier monsoons as well as accelerate the melting of the Himalayan glaciers. While the strength of monsoons generally varies from year to year, the probability is shifting towards heavier rainfall (Sachs, 2022).

The ongoing effects of colonialism, racism, and climate change have contributed to widespread hunger in Pakistan today. The April-October 2023 estimates from the Integrated Food Security Phase Classification demonstrate that nearly 10.5 million people in Pakistan (29 percent of the population) are experiencing high levels of acute food insecurity (IPC, 2023). Modeled estimates suggest that in 2022, more than 40 percent of Pakistani children under five years of age were chronically malnourished while more than 1 in 14 were acutely malnourished (UNICEF-WHO-WB, 2023).

As Indian Physician Dr. Raman Kumar writes: "The malnourished children of South Asia are carrying forward the legacy of their colonized ancestors who suffered extreme hunger, poverty, and disease burden" (Kumar, 2019).

3. THE EFFECTS OF COLONIALISM, RACISM, AND CLIMATE CHANGE ON HUNGER AND NUTRITION TODAY

3.1 COLONIALISM TODAY

Colonization was not merely an uncomfortable chapter in history; colonial activities imposed both short and long-term negative effects on the colonized and wealth extraction from formerly colonized nations continues today.

Research by Engerman and Sokoloff concluded that substantial differences in levels of economic development between countries across North and South America today have their roots in the disparities in the respective colonies. Of particular significance for generating extreme inequality was the suitability of the climate and soils for the cultivation of sugar or other high value commodities and the use of slave labor (Engerman & Sokoloff, 2002).

Research by Hickel et al. estimated 242 trillion USD was drained from the Global South[1] between 1990-2015, largely due to unequal exchange. The authors concluded that this is "enough to end extreme poverty 70 times over" (Hickel et al., 2022, p. 1).

Annually, more wealth leaves the Africa continent than enters it, according to the 2017 *Honest Accounts* report. Estimating that African countries received 161.6 billion USD in 2015 (in loans, personal remittances, aid, and grants) while that same year 203 billion USD was taken from Africa, either directly (by corporations repatriating profits or by illegal money movement out of the continent) or indirectly by costs imposed by the rest of the world through climate change. In other words, 41 billion USD more left the continent than entered

[1] The authors acknowledge that the term "Global South" is an imperfect term that is top-down in nature and will likely be replaced in the future.

it in a single year (Mark & Jones, 2017). A 2020 United Nations Conference on Trade and Development (UNCTAD) report concluded that the African continent loses about 88.6 billion USD annually in illicit financial flows (the illegal movement of money between countries), equivalent to about 3.7 percent of the continent's gross domestic product (UNCTAD, 2020). Mukhisa Kituyi Secretary-General of the UNCTAD has stated that "illicit financial flows and corruption are inhibiting African development by draining foreign exchange, reducing domestic resources, stifling trade and macroeconomic stability, and worsening poverty and inequality" (Charlier, 2021, para. 7).

The colonial disruption of local food systems is still felt today. In their analysis of colonialism and its impact on Africa, Ocheni and Nwankwo write that "colonialism distorted the satisfaction of local needs in terms of food production and other requirements in preference to production and satisfaction of foreign needs" resulting in food shortages and escalating food prices. They further reinforce that "The present-day situation where Africans now import their food is a carry-over from colonialism" (Ocheni & Nwankwo, 2012, p. 51).

The impact on food systems can be seen in the large swaths of fertile land in the Global South that are devoted to producing monoculture cash crops for export to meet the needs of consumers in the Global North (Rehman, 2023, Bjornlund, 2022). Examples of these cash crops include coffee, tea, cacao, cotton, tobacco, palm oil, and out-of-season fruit and vegetables. Meanwhile, countries in the Global South are dependent on northern-grown cereals such as wheat and corn (Rehman, 2023). For example, despite Sub-Saharan Africa being a net agricultural exporter, food insecurity has increased largely due to the legacy of the export-oriented colonial agricultural production systems that neglected critical research and investment (Bjornlund, 2022). It is currently the only region in the world where increased export production has decreased per capita food production (Bjornlund, 2022). Prior to colonization, farmers grew a diverse range of local food crops while local leaders and communities collectively managed food scarcity. The heavily export-oriented monoculture agricultural system has been implemented at the expense of people and ecosystems, especially forests (World Rainforest Movement, n.d.).

The current global food system has colonial origins but is maintained by the global neoliberal trade regime. The Post-Colonialisms Today research and advocacy project explains that "by primarily exporting low value, unprocessed agricultural products with volatile prices in the global market, countries often fall short on the foreign exchange necessary for purchasing essential food stuff, and they are forced to turn to predatory conditional World Bank/International Monetary Fund (WB/IMF) loans that further undermine agricultural diversification and modernization by pushing for reductions of agricultural subsidies and price support policies for small farmers" (Chandoul, 2021, p. 4).

Journalists Kilman and Thurow provide examples of how modern-day global policies and predatory trade practices have worked together to keep the African continent hungry and unable to feed itself. The authors describe, for example, how in 2003 Ethiopia was flooded with 1 million tons of humanitarian "aid" in the form of heavily subsidized wheat, corn, beans, peas, and lentils from the United States while warehouses filled with Ethiopia-grown surplus stock languished (Kilman, 2009).

States use foreign aid as a means of pursuing their strategic domestic and foreign policy objectives, as aid can be withdrawn to create economic hardship or provided to reward a friendly or compliant regime (Apodaca, 2017). Further, the strategic and commercial interests of donor countries are the driving force behind most development and aid programs (Apodaca, 2017).

Colonialism continues to have effects on malnutrition and health. Dell documented the long-term damaging effects of the extensive colonial forced mining labor system, the *mita*, in Peru and Bolivia between 1573 and 1812. Her results demonstrated significant differences in child stunting and road access between communities that were historically subjected to the *mita* system and those that were not (Dell, 2010).

Today, it can be argued that the humanitarian aid and international development systems are a continuation of the colonial project as many of the structures and power dynamics that underpinned European colonization are embedded within these sectors (Jayawickrama, 2018). They remain predominantly shaped by the philosophical and value systems of Europe, which are largely Christian and majority white. White people in global health hold enormous power and privilege and are often leaders of global health agencies and projects—a feature which has remained consistent since colonial times (Pai, 2022). Research suggests that "embedded under the contemporary professional structure of the liberal humanitarian space is a covert power hierarchy fueled by perceptions of expertise and competency along racial lines—particularly around one's whiteness" (Bian, 2022, p. 1).

3.2 RACISM TODAY

Due to the awe-inspiring scale at which racial constructs were adopted and internalized during European colonialism (Mahmud, 1999), the concept of "race" persists today. Although the variable of race is not a biological construct based in innate differences, it is a social construct that reflects the impacts of racism (Jones, 2000).

Dr. Camara Phyllis Jones is known for her theoretic framework for understanding racism as a systemic reality on three levels: institutionalized, personally mediated, and internalized. Institutionalized racism results in differential access to goods, services, and opportunities as determined by race. It is structural and is maintained by institutions with colonial and white supremacist ideological roots. Personally mediated racism manifests as discrimination and prejudice towards individuals dependent on their race and is what most people imagine when they think of racism. Internalized racism is the acceptance of members of the stigmatized races about their own lack of ability or intrinsic worth based on their race. This framework has practical application for understanding race-associated determinants in health outcomes (Jones, 2000).

The landmark 2022 *Lancet* Series on racism, xenophobia, discrimination, and health asserts that "racism, xenophobia, and discrimination exist in every modern society causing avoidable disease and premature death". The authors go on to clarify that discrimination affects health via biological pathways—including neuroendocrine and stress responses—throughout the life cycle (Devakumar et al., 2022).

Research has demonstrated that experiencing multiple forms of discrimination is an important contributor to postpartum depression (Daoud et al., 2019), that racial discrimination is a significant risk factor for adverse birth outcomes (Alhusen et al., 2016), and that that racism, segregation, and inequality drive health disparities for newborn infants (Beck et al., 2019). Breastfeeding inequities by race have been linked to employment opportunities and working conditions (Whitley, 2022).

Studies examining differences in child stunting in South Africa and Brazil concluded that racial inequality in the distribution of socioeconomic resources across households and communities explained much of the racial difference in stunting (Burgard, 2002). Both direct and persistent vicarious racial discrimination were found to be detrimental to the physical and mental health of Indigenous children aged 5-10 years in Australia (Shepherd et al., 2017).

Chronic absenteeism from school, a strong predictor of educational achievement, disproportionately affects children of color, children living in poverty, children with disabilities, and children with chronic diseases (Trent et al., 2019). A study in Barbados found a correlation between internalized racism and increased obesity and insulin resistance among Caribbean adolescents (Chambers, 2004). Self-reported racism against urban Aboriginal young people in Australia was found to be associated with poor mental health, poor general health, and increased depression (Priest et al., 2011).

Throughout the lifecycle racialized individuals encounter institutions that expose them to racial bias, increasing health inequities (Gee et al., 2012). There can also be intergenerational consequences via changes in maternal mental health, parenting, and epigenetic changes as exposure to discrimination in one generation can cause adverse health effects in the next generation (Devakumar et al., 2022, Selvarajah et al., 2022).

In the United States and Canada, racism is a fundamental cause of food insecurity (Bowen et al., 2021, Dhunna & Tarasuk, 2021). In the US, minority communities have fewer options to access healthy foods and must drive a significantly greater amount of time to reach stores with healthy foods than white populations (Sansom, 2021). Research examining global food insecurity in North America, Africa, and low-income country contexts concluded that the COVID-19 pandemic exacerbated food insecurity and other health disparities among African, Caribbean, and Black populations due to systemic anti-Black racism that manifested as inadequate representation in decision-making, issues of cultural appropriateness, and incompetency of health services (Dabone et al., 2021).

3.3 CLIMATE CHANGE TODAY

Today the world is witnessing an increase in the frequency and severity of natural disasters and catastrophes globally, including droughts, floods, and storms. The year 2021 was the third costliest year on record for climate-related events, with economic losses from natural disasters estimated at 343 billion USD (AON, 2021). These adverse weather events are contributing to widespread food insecurity, crippling agricultural production, devastating livelihoods, and forcing people from their homes.

And yet, the impacts of climate change are not experienced evenly across nations. According to the World Food Programme, over 40 percent of the global population already lives in places that are highly vulnerable to climate impacts (WFP, 2022). These are largely the communities that contribute the least to global emissions and subsequent atmospheric and oceanic warming yet carry the overwhelming burden of the climate crisis (Islamic Relief, 2021, AON, 2021). Populations in low-income countries, particularly those in Africa, Latin America, Asia, and the Middle East, are more likely to be affected in the future (AON, 2021). It is estimated that developing and emerging countries (excluding China) will require investments well beyond 2 trillion USD annually by 2030 to cope with the climate crisis (Elton, 2023).

The effects of climate change on global food systems, food security, nutrition, and hunger are multifaceted. Climate variability and extremes curtail food availability affecting crop yields and stocks, causing food price spikes and disrupting trade, otherwise hindering the access of populations to food and leading to poorer quality and diversity of diets (WFP, 2021). Despite important agricultural advancements over the past 60 years, a 2021 Cornell-led study shows that global farming productivity was 21 percent lower than it could have been without climate change (Friedlander, 2021).

The combination of increasing atmospheric CO2 and rising temperature is predicted to reduce the overall yield and micronutrient concentrations of staple plant and animal foods, increasing the risk of micronutrient deficiencies most acutely among vulnerable populations (Semba et al., 2022). Research on the impact of climate change on plant pollinators has linked extreme weather events and the reduction of biodiversity to the collapse of pollinator communities (Vasiliev & Greenwood, 2021). Rising sea levels contribute to erosion, flooding, and increased salinity in low-lying coastal areas leading to the disruption of rice production (Genua-Olmedo et al., 2016). Rice cultivation in Bangladesh, Japan, Taiwan, Egypt, Myanmar, and Vietnam is especially vulnerable to sea-level rise (Vu et al., 2018). Ocean warming and declining oxygen levels are altering marine ecosystems and adversely impacting global fisheries (Deutsch et al., 2015).

Climate change is also increasing the frequency of drought and therefore water scarcity. Small-scale and subsistence farmers who depend on rain-fed agriculture through seasonal rainfall patterns instead of irrigation are especially vulnerable to food insecurity, seasonal hunger, and undernutrition. A recent UN early warning report highlights that a likely El Niño climatic phenomenon in 2023 could trigger climate extremes in vulnerable countries around the globe (WFP, 2023). The UN is also warning that extreme heat, wildfires, and greater food insecurity caused by El Niño may lead to an increase in acute malnutrition (*AFP*, 2023).

4. DISCUSSION: WHY ZERO HUNGER CANNOT BE ACHIEVED WITHOUT ADDRESSING COLONIALISM, RACISM, AND CLIMATE CHANGE

The United Nations 2030 Agenda for Sustainable Development aims to address global challenges and promote sustainable development worldwide. Sustainable Development Goal 2 (SDG 2) specifically focuses on "Zero Hunger" by ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture (United Nations General Assembly, 2015). The authors of this article urge that the SDG 2 cannot be realized without substantial efforts in addressing the interlinked and ongoing effects of colonialism, racism, and climate change.

The acting High Commissioner for Human Rights, Nada Al-Nashif, has stated that "addressing the legacies of colonialism can contribute to overcoming inequalities within and among states and sustainable development challenges of the twenty-first century" (OHCHR 2022, p. 1). In the words of E. Tendayi Achiume, Special Rapporteur on contemporary forms of racism, racial discrimination and related intolerance, there can "be no climate justice without racial justice and without accounting for entrenched colonial legacies" (OHCHR 2022, p. 7).

The sixth and most recent IPCC assessment report acknowledged for the first time that "present development challenges causing high vulnerability are influenced by historical and ongoing patterns of inequity such as colonialism, especially for many Indigenous Peoples and local communities" (IPCC, 2023, p. 101, The Frontline, 2022).

This article explored the case of Haiti and how not only was wealth generated from slave trading and the production of sugar and coffee for Europe, but it also described how the nation was required to pay French slaveholders to secure its national sovereignty. The estimated 21 billion USD taken from Haiti alone is more than 29 times the 2023 Humanitarian Response appeal for Haiti of 719 million USD (UNOCHA, 2023).

Economist Utsa Patnaik has stated that "colonial drain helped to create the modern capitalist world, from North American to Australia—all regions where European populations had settled" and calls for the West to set aside a portion of its gross domestic product for unqualified annual transfers to developing countries (Sreevatsan, 2018). Addressing the ongoing effects of colonialism will mean addressing it in its various forms and manifestations; including but not limited to neocolonialism, economic imperialism, and geopolitics that benefit the most powerful. It will mean restructuring humanitarian and development systems, shifting them from donor-oriented to people-oriented, and reframing reparations as philanthropy (Iweala, 2022). Achieving the SDG 2 will require a massive shift in resources, restorative practices, and guidance by and co-creation with the communities most affected by colonialism.

Systemic racism as a persisting tool of colonialism will also need to be dismantled globally to achieve the SDG 2. Dismantling such an entrenched system will demand collective effort and a commitment to equity, social justice, and shifting power. When truly shifting power, this includes shifting wealth. In the words of Treva Lindsey, a scholar of the Black Lives Matter movement in Ohio, "financial compensation is a very important and integral part of reparative structures, but we also have to talk about the systems that remain in place that are part of the legacy of slavery, colonialism, and other forms of global white supremacy" (Aljazeera, 2021, p. 11). Diversity and inclusion alone will be insufficient to address entrenched and racialized power imbalances if they merely invite Black, Indigenous, and People of Color (BIPOC) into the fold of racist systems (Bruce-Raeburn, 2021). Dismantling systematic racism will require recognizing the historical legacy and contemporary impact of systemic racism at all levels and across countries. Critically, it cannot be led by the current beneficiaries of white supremacy[2] (although white people will arguably have the most internal and external work to do), it must instead be under the leadership and guidance of those with lived experience of racism.

Today, the biggest single source of human-induced climate change is the atmospheric concentration of CO2 emissions resulting from the combustion of fossil fuels. Between the beginning of the Industrial Revolution in 1750 and 2021, the world emitted 1.7 trillion tons of CO2, as presented in Table 1 below. At the root of the problem, the world's richest countries pollute far beyond what is sustainable or even proportional to their population size.

The world's high-income countries have been responsible for more than half of global CO2 emissions (56.3%) since the beginning of the Industrial Revolution despite being just 15.2% of the world's population today. There is a similarly disproportionate relationship between cumulative CO2 emissions and population size among colonial powers. When considering European colonial powers, they are responsible for nearly a quarter (23.4%) of cumulative CO2 emissions while they currently constitute just 6.7% of the world's population. All colonial powers discussed in this article (including the United States, the highest CO2 emitting country due in part to having the world's largest military) demonstrate the larger discrepancy as they are responsible for more than half (51.7%) of cumulative global CO2 emissions while accounting for just 12.6% of the world's population.

Considering the case study countries of Haiti and Pakistan, their share of historical responsibility for CO2 emissions are less than 1%, comparable to or below their share of the world's population. Otherwise stated, high-income countries and colonial powers can be considered "net exporters of climate damages" while Haiti, Pakistan, and most other low- and lower-middle-income countries are unwilling net importers (Sachs, 2022).

[2] White supremacy can be defined as the institutionalization of whiteness and white privilege and the historical, social, political and economic systems and structures that contribute to its continued dominance and subordination (Giroux & McLaren, 1994) https://www.yorku.ca/edu/unleading/systems-of-oppression/white-supremacy/

Table 1. Cumulative CO_2 emissions between 1750 and 2021

Entity	Cumulative CO_2 emissions (tonnes)	% of World Cumulative CO_2 emissions	2022 Population	% of 2022 World population
World	1.7 trillion	100.0%	7.9 billion	100.0%
Income groups				
High-income countries	980 billion	56.3%	1.2 billion	15.2%
Upper-middle-income countries	524 billion	30.1%	2.5 billion	31.6%
Lower-middle-income countries	171 billion	9.8%	3.4 billion	43.0%
Low-income countries	10 billion	<0.1%	0.7 billion	8.9%
Colonial powers				
European colonial powers*	408 billion	23.4%	529 million	6.7%
All colonial powers**	899 billion	51.7%	997 million	12.6%
Highest CO_2 emission countries				
United States	421 billion	24.2%	333 million	4.2%
China	249 billion	14.3%	1400 million	17.7%
Russia	117 billion	6.7%	143 million	1.8%
Germany	93 billion	5.3%	83 million	1.1%
United Kingdom	78 billion	4.5%	67 million	0.8%
Case study countries				
Haiti	<1 billion	<0.1%	1.1 million	<0.1%
Pakistan	5 billion	0.3%	235 million	3.0%

Source: CO_2 emission estimates, Our World in Data, 2021. World population estimates, World Bank, 2022. *United Kingdom, France, Spain, Portugal, Netherlands, Germany, Belgium, Italy, Russia, Denmark, Norway, and Sweden. **European colonial powers plus the United States, Japan, and Israel

The latest IPCC assessment report highlighted that the world risks surpassing 1.5°C degrees of warming in the next two decades which would result in irreversible impacts (IPCC, 2023, The Frontline, 2022). The World Food Programme warns that if emissions are not reduced, the risk of food-supply shocks will greatly increase, with harvests failing simultaneously in multiple major food producing countries leading to global shortages and price spikes (WFP, 2022).

To reach the climate goal of limiting average temperature rise to 2°C, the world needs to urgently reduce GHG emissions. One important argument is that the countries that have contributed the most emissions into our atmosphere should take on the greatest responsibility for addressing climate change.

The cost Pakistan's devastating 2022 flooding (40 billion USD) contrasted with Pakistan's meager contribution of 0.3% of the world's cumulative CO2 emissions to date raises the question of accountability for clearly climate change driven costs. Although the United States committed around 50 million USD in aid to Pakistan, this is well below 1% of the attributable losses in this scenario (Sachs, 2022). Even more so, the 40 billion USD in damages are more than 70 times the entire 543.9 million USD humanitarian appeal for the Pakistan floods in 2022 (UN OCHA, 2022).

Mexican American sociocultural anthropologist Victoria Koski-Karell has called out the irony of the use of the term "resilience" in the reality of the countries who contribute least to climate change while being most affected by saying that "often, they're described as the least resilient—while also, ironically, praised by the West for their psychosocial resilience in the face of unthinkable stressors. This dearth of climate resiliency, however, derives from the legacy of colonialism and imperialism" going on to share that "real resilience derives from locally situated systems of collective care; from repair and strengthening of ecological relationships that nourish both land and people" (Koski-Karell & Dortilus, 2023, p.10).

5. CONCLUSION

The industrial rise of rich nations depended on extraction from the Global South during the colonial era. This was accomplished using the tools of racial hierarchy and white supremacy and led directly to the creation of today's climate crisis. Climate change in turn will continue to deepen vulnerabilities and increase hunger and malnutrition if not addressed.

The legacy of colonization and foreign intervention have left specific populations with fewer resources and decision-making power, compromised national and food sovereignty, and exploited environments. This has deprived the most climate change affected nations of the long-term climatic conditions in which to build their communities, ecosystems, economies, and infrastructure.

The body of evidence is increasingly expanding to demonstrate that race, despite being a social construct, has actualized health implications at every age throughout the life cycle, across generations, and around the world. Therefore, dismantling racism at all levels will be required to eliminate food insecurity and hunger globally. Limiting efforts to diversifying staff and including racialized individuals into systems with embedded racism will be sorely insufficient.

As climate change is being perpetuated by the most economically powerful nations at the expense of the nations that have contributed the least to global emissions, drastic changes will need to be made by the world's largest polluters. Asking the world's poorest nations to "adapt" or lauding their "resilience" is not the solution in the face of increasing severity and magnitude of climate-driven disasters. We must instead prioritize the safety and well-being of populations most vulnerable to their effects. Climate change is exacerbating food insecurity, negatively affecting agricultural production, and contributing to a deteriorating humanitarian crisis overall. Ultimately, climate change is and will increasingly thwart efforts to improve nutrition and reduce hunger globally.

In the case of Haiti, Pakistan, and other similarly exploited countries, any plans to mitigate present and future food insecurity will require not only addressing climate change, but also the historic and ongoing effects of foreign intervention.

Humanitarianism as a system is often separated and elevated as a noble effort to address the needs of the world's most vulnerable, however, we have discussed that there are enduring connections between colonialism and humanitarianism. Due to this, humanitarian and development systems will require restructuring, shifting them from donor-oriented to people-oriented, and revisiting transfers of resources and wealth through a lens of restorative justice instead of charity or aid tied to foreign political agendas. The current imbalance of power between international and local and national actors will also need to shift to being locally-envisioned, locally-driven, locally-led and locally-owned, to ensure that humanitarian and development efforts are contextualized, appropriate, and sustainable. There is need for deliberate efforts from international actors to learn, relearn, and unlearn both the conscious and unconscious biases towards local and national actor capacities. The leadership, knowledge, and expertise of those with lived experience of the effects of colonialism, racism, and climate change will be required. Their guidance and insights on how to address these must be recognized, honored, financed, and protected if the world is to make meaningful progress toward reducing malnutrition and achieving the goal of Zero Hunger.

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