

Genocide and Mass Violence in World Politics – Term Paper

Climate Change and Genocide

**Climate Change & Sudan: Unravelling the Ecological Complexities of the
Darfur Conflict**

Arjun Grover

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Prof. Kasturi Chatterjee

FLAME University

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Introduction

The Darfur Conflict

After a complicated web of grievances had been building up, the crisis in Darfur began when armed groups from Darfur rebelled against the government of Sudan. By the start of the current decade, the conflict had grown increasingly violent and ethnically driven. A prolonged period of severe drought had a significant negative influence on daily living in northern Darfur throughout the 1980s, and as a result, a large number of people fled the hardships and despair it brought about. However, the majority of experts and journalists in western media have solely seen the Darfur conflict as an ethnic/racial one. 'Arabs' and 'Africans', or settlers and locals, were quickly divided. In fact, Darfur was portrayed in the international mainstream media as a region devoid of history and politics, where wicked outsiders are called "Arabs" and indigenous victims are called "Africans." It didn't take long for the dispute to be reduced to a fundamental struggle between good and bad. It was claimed that Sudanese Arab tribes originated in the Middle East and settled in Africa in a repeat of ancient colonial demarcation of tribal homelands in Sudan and elsewhere in Africa. Historical evidence that 'Arabs' are as native to Sudan and Africa as the majority of its inhabitants was successfully evacuated by the binary 'Arab' and 'African' identities. Thus, the dispute was viewed from a single, oversimplified perspective.

Even while the ethnic component of the fight is significant, it cannot be said that it started the crisis; rather, it has gradually become more of a result of the drawn-out battle than a cause. The outbreak of violence was caused by a number of issues, including social and economic injustice, poverty, a lack of effective government, and regional elements like the unsteady situation in the neighbouring country of Chad and the covert interference by Gaddafi's Libyan Arab Jamahiriya. The ecological degradation, or the effects of climate change and environmental degradation on people living in the western regions of Sudan, is another issue that existed before even the commencement of the hostilities but is generally not mentioned in accounts of what happened in Darfur. While the conflict has been interpreted in terms of its racial and ethnic manifestations, the effects of environmental occurrences have been consigned to the economic and social spheres.

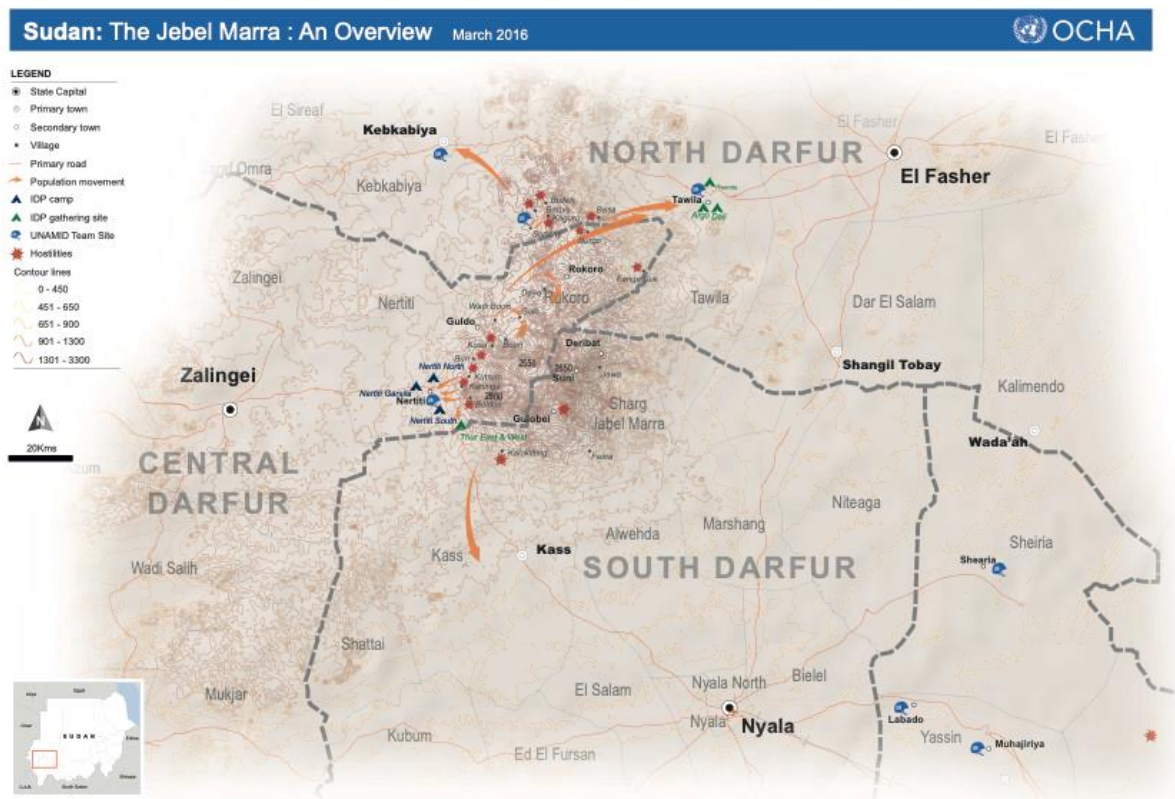
Though the Darfur conflict is overly predetermined, this paper argues that the conflict that has been raging in the Jebel Marra region of north Darfur since the early 1980s is actually an ecological conflict, wherein racial and ethnic issues have been exploited as rallying points by the warring parties and, regrettably, the western media. Due to severe desertification over many years, Darfur's northern region in particular has experienced severe soil erosion and decreased productivity, which has caused a large-scale ecological migration to southern Darfur in pursuit of better pasture and farming

prospects. The province's already precarious social cohesion and peaceful coexistence of various communities were under threat from the growing demand for, or rather competition over, its limited natural resources. The current conflict is exacerbated by desertification, deforestation, water scarcity and poor water resource management, inequality of power (social, economic, and political), and resource sharing.

An Ecological Snapshot of Darfur, Sudan

The province of Darfur is located in the northwest of Sudan and spans an area of about 500,000 square kilometres. Three-quarters of northern Darfur and one-fourth of southern Darfur have 'qoz' soils, which make up the majority of the topography there. The western region and a few areas in the north are covered in clay soils. The region's centre is made up of mountains and hills, with the Jebel Marra plateau, which serves as SLA/Abdelwahid's stronghold, and the Meidob hills in the north as its most notable topographic features. With an average elevation of 1,500 metres, the Jebel Marra Plateau is a rough volcanic mountain that spans 80,000 square km in central Darfur (UNEP, 2007). In comparison to the nearby desert regions, the plateau's elevated southern regions offer a wetter environment. The plateau once featured considerable woods, but they have been gradually cleared away to make way for agricultural expansion.

Figure 1: Topological Map of the Jebel Marra Plateau in Darfur, Sudan



Source: UN Office for the Coordination of Humanitarian Affairs (2016)

Darfur can be divided into four main climatic zones: a rich savannah in the south (400 to 800 mm per year), with rainy seasons lasting four to five months; a poor savannah in the middle (200 to 400 mm per year), with rainy seasons lasting three to four months; an arid zone in the middle of north Darfur, with a limited annual precipitations (100 to 300 mm); and a desert area with high summer temperatures and little rainfall. The Darfurians' ability to obtain food and a means of subsistence depends in large part on the autumn rains, floods, and shallow wells. The main economic activities are agriculture and pastoralism, both of which rely largely on the availability of water and land—two important resources that could lead to competition and rivalry among social players.

We will now turn our attention to a few factors and phenomena, both man-made and natural, and their intersection, such as deforestation brought on by drought, unsustainable economic practises, farming practises, livestock and grazing habits, a lack of water supply, and growing population, in order to better understand the connections between the ecological dimensions and the conflict.

Table 2: Tribal groups involved in conflicts between 1932 - 2000

Tribal Groups	Year	Conflict Cause
Kababish, Kawahla, Berti, Medoub	1932	Grazing and water rights
Kababish, Medoub, Zyadiya	1957	Grazing and water rights
Rezeigat, Baggara, Maalia	1968	Local politics of administration
Rezeigat, Baggara, Dinka	1975	Grazing and water rights
Beni Helba, Zyadiya, Mahriya	1976	Grazing and water rights
Northern Rezeigat, Dago	1976	Grazing and water rights
Northern Rezeigat, Bargo	1978	Grazing and water rights
Northern Rezeigat, Gimir	1978	Grazing and water rights
Northern Rezeigat, Fur	1980	Grazing and water rights
Northern Rezeigat, Bargo	1980	Grazing and water rights
Taaisha, Salamat	1980	Local politics of administration
Kababish, Berti, Ziyadiya	1981	Grazing and water rights
Rezeigat, Baggara, Dinka	1981	Grazing and water rights
Northern Rezeigat, Beni Helba	1982	Grazing and water rights
Kababish, Kawahla, Berti, Medoub	1982	Grazing and water rights
Rezeigat, Mysseriya	1983	Grazing and water rights
Kababish, Berti, Medoub	1984	Grazing and water rights
Rezeigat, Mysseriya	1984	Grazing and water rights
Gimir, Fallata (Fulani)	1987	Administrative boundaries
Kababish, Kawahla, Berti, Medoub	1987	Grazing and water rights
Fur, Bidayat	1989	Armed robberies
Arab, Fur	1989	Grazing, cross-boundary politics
Zaghawa, Gimir	1990	Administrative boundaries
Zaghawa, Gimir	1990	Administrative boundaries
Taaisha, Gimir	1990	Land
Bargo, Rezeigat	1990	Grazing and water rights
Zaghawa, Maalia	1991	Land
Zaghawa, Marareit	1991	Grazing and water rights

Zaghawa, Beni Hussein	1991	Grazing and water rights
Zaghawa, Mima, Birgid	1991	Grazing and water rights
Zaghawa, Birgid	1991	Grazing and water rights
Fur, Turgum	1994	Land
Zaghawa, Arab	1994	Grazing and water rights
Zaghawa Sudan, Zaghawa Chad	1994	Power and politics
Masalit, Arab	1996	Grazing, administration
Zaghawa, Rezeigat	1997	Local politics
Kababish Arabs, Midoub	1997	Grazing and water rights
Masalit, Arab	1996	Grazing, administration
Zaghawa, Gimir	1999	Grazing, administration
Fur, Arab	2000	Grazing, politics, armed robberies

Source: Rottenburg, R (2008) *Nomadic-sedentary Relations and Failing State Institutions in Darfur and Kordofan (Sudan)*

The Forgotten Culprits of Darfur: Climate Change and Ecological Degradation

Deforestation

The continual reduction in the area covered by trees is a financial problem for Sudan's forestry industry. Wide-ranging negative effects of deforestation include severe degradation of land and water resources, loss of livelihoods from forest ecosystem services, and frequent conflict over the exploitation of finite resources and the scarcity of economic possibilities. The United Nations Food and Agricultural Organisation (FAO) estimates that the forest industry accounts for roughly 13% of global GDP. People rely on forests for their livelihood in both rural and urban areas of Sudan since wood is utilised for building and roofing as well as being a valuable and in-demand source of electricity. In rural areas, forests are used for non-wood products like honey and gum Arabic as well as for grazing, shade, and therapeutic uses of tree bark.

Deforestation is steadily posing a threat to this valuable but fragile economic resource because of the effects of climate change, the desire for electricity, and agricultural clearing. Between 1990 and 2000, Sudan lost 589,000 hectares of forest annually on average. Between 2000 and 2005, this loss increased more rapidly (0.84% yearly). Between 1990 and 2005, Sudan's forest cover decreased by a total of 11.6%. In western and southern Darfur, closed forests have transformed during the 1970s into open forestland, burnt areas, pastures, or rain-fed farmland, according to UNEP and FAO assessments. This loss amounts to 29.4% to 30.3% during a thirty-year period (UNEP, 2007).

Even though the specific factors that contribute to deforestation vary by region, they can all be summed up in the following events or activities: fires, shifting agriculture, mechanised agriculture, fuelwood and charcoal extraction, shifting agriculture, drought, traditional construction, and brickmaking. Regarding climate change, numerous studies have shown that the persistent drought

conditions in the 1970s and 1980s caused a significant number of trees in the Sahel region to go extinct permanently. Climate scientists generally agree that, since the start of the 19th century, each 50-year period has been drier than the 50-year period before it (Grove, 1973). The potential for seed dispersal, germination, and new development has been significantly hampered by climate change, which has led to drier conditions and increasing land pressure. Furthermore, according to scientific research, desertification is a result of soil loss, erosion, and sand invasion, all of which are caused by deforestation (UNEP, 2007).

Furthermore, in order to provide camel fodder on the one hand and discourage farmers from returning to cultivated land on the other, both the Sudanese armed forces and armed nomadic groups have participated in extensive tree cutting. Due to the considerable deforestation that has occurred in the biggest camps in the most arid regions of the country, the ongoing conflict's displacement of vast populations has also had a substantial negative impact on the environment (UNEP, 2007).

Lastly, despite the fact that the average amount of precipitation may still be sufficient to support semi-desert vegetation, over-exploitation of semi-arid environments through deforestation, overgrazing, and agricultural activity has resulted in the conversion of land types from semi-desert to desert. Additionally, it should be emphasised that the soil in north and west Darfur is less resilient than that found in other sections of the region. Due to its sandy makeup, it is vulnerable to wind and water erosion.

Drought and Water Shortage

Freshwater is in scarce supply across Sudan. The annual rainfall rates in the majority of Sudanese regions are insufficient and wildly inconsistent, which has come to define the climate in this country. This problem has a negative influence on food security and agricultural productivity, and it also contributes to conflict and population relocation. Over the past century, Sudan has experienced a number of protracted and deadly droughts. According to a study (Clift-Hill, 1986) done in Darfur that examined data from rainfall stations in this region throughout the 1980s, local communities have been dealing with the following for decades: Darfur is becoming increasingly arid. Four years (1980–1984) of the worst and most devastating drought that Darfurians had to endure led to eviction and starvation.

According to UNEP, these periodic droughts, which took place in the second half of the 20th century, "have had a major influence on the vegetation profile and soil conditions seen in 2006" (UNEP, 2007), and they most likely resulted from ocean temperature changes rather than human activity like overgrazing. In other words, there is a strong likelihood that these droughts will happen again given the ongoing effects of climate change on the entire planet. The long-term decline in rainfall that

Darfur has seen since 1946 is depicted in Table 2 below (UNEP, 2007).

Table 2: Long-term rainfall decrease in Darfur

Location	Average Annual Rainfall (1946-1975)	Average Annual Rainfall in mm (1976-2005)	Reduction	Percentage
El Fasher, North Darfur	272.36 mm	178.90 mm	-93.46	-34%
Nyala, Southern Darfur	448.71 mm	376.50 mm	-72.21	-16%
El Geneina, Western Darfur	564.20 mm	427.70 mm	-136.50	-24%

Source: Authors' Own Calculations based on UNEP, 2007

As Table 2 demonstrates, Darfur has experienced a consistent pattern of declining precipitation. The severity of the condition brought on by climate change has caused a serious trend of desertification in Darfur, which is unparalleled. A vast desert now covers millions of hectares of semi-arid grazing area. The impact of climate change is considered to be directly related to the conflict in the region (Darfur), as desertification has added significantly to the stress on the livelihoods of pastoralist societies, forcing them to move south to find pasture, according to UNEP's post-conflict assessment report from 2007 (UNEP, 2007).

There is broad consensus among academics and foreign agencies operating in Sudan that the traditional nomadic way of life has changed as a result of droughts and subsequent water limitations imposed on many Darfurian tribes. Long droughts that kept happening in Darfur caused more nomads to go there in quest of grass and water. Finally, these pastoralists are gradually compelled to look for long-term settlements on lands that are traditionally seen as belonging exclusively to other tribes (Hakura, Dar). The next parts will go into great detail on this issue of land tenure.

Population

Darfur is thought to have a population of 7.5 million people, according to the fifth Population and Housing Census, which was performed in April-May 2008 and released in 2009. The population of Darfur is likely underestimated because this census was performed during a military war that is still ongoing, making it impossible for census officials to travel to many areas of Darfur for apparent security concerns. These numbers show a significant increase of at least 7 times the population when compared to the size of the population in 1956, the year Sudan gained independence (see Table 3).

Table 3: Demographic increase since Darfurian Independence

Year	Population
1956	1,080,000
1973	1,340,000
1983	3,500,000

1993	5,600,000
2003	6,480,000
2008	7,500,000

Source: Fifth Population and Housing (2009). Sudan: Department of Statistics

Additionally, the number of people living per square kilometre has significantly increased. The rate was 3 people per km² in 1956 compared to 10 people per km² in 1983 and 18 people per km² in 2003 (Sudan: Department of Statistics, n.d). Arid regions have been abandoned in favour of more habitable countries, and this rate has undoubtedly continued to rise since the conflict in Darfur began. Given the demands on the limited natural resources available, it is not surprising that the demographic component of the conflict plays a significant role. The demand for agricultural products increased at the same time as the population grew, although the average amount of land owned by each household shrank. Rain fed agriculture's productivity decreased both quantitatively and equitably as a result of falling precipitation. Farmers utilised a horizontal expansion as a response, encroaching on pasturelands used by both farmers and nomads.

In conclusion, the expansion of farming during the past few decades has undergone significant changes as a result of the population growth. In five decades, millet production in north Darfur expanded by 150 percent, while agricultural usage of clay soils and wadi beds increased by 300 percent. So it makes sense that there was intense rivalry for land in this situation. Thus, it appears that Darfur is caught in a vicious cycle. Unsustainable and excessive exploitation of natural resources accelerates the already occurring ecological deterioration and feeds rivalry for resources and access to land, which leads to an increase in violence. Due to the class gap between those who possess property and those who don't, the topic of land has emerged as a major source of tension.

The Class Divide between the Land Owners and The Landless

As was already mentioned, herders were forced to infringe on farmers' property as a result of climate change, the cyclical droughts that followed in the 1970s, 1980s, and 1990s, and the ensuing ecological deterioration. Additionally, these nomadic groups have progressively come to understand the potential advantages of sedentarization, such as improved living conditions and educational opportunities for their kids. The availability of small arms and light weapons, left over from the Chad-Libyan war, further fostered a lengthy struggle between the two factions as a result of frequent but minor acts of violence.

When Sudan ultimately acquired Darfur in 1916, the colonial authorities made only minor adjustments to the existing administrative structure. They confirmed tribal chiefs as members of a native administration system and guardians of territory that belonged to their tribes under their

indirect control policy. Because they made it easier for the government to effectively control the rural populace, tribal homelands – Dars – came to be recognised by the state. Following independence, Jaafar Nimeiri's administration issued the Unregistered Land Act in 1970 (Abouyoub, 2012), which declared that all unregistered land belonged to the state. This meant that all lands distributed and possessed in accordance with Sudan's general customary land tenure law, as well as in this particular case, the law governing Darfur, were no longer the property of their "traditional owners."

Nevertheless, the new statutory land tenure law's provisions were not successfully implemented by the Sudanese government. There was a legal muddle as a result. Theoretically, the legislative framework that landless groups seek has existed for forty years and ensures their access to land. The Darfurian rebels' representation of the traditional system, which is valued by land-holding communities, has no legal standing but continues to be in use today (Abouyoub, 2012). As a result, Darfurian tribes can be categorised into land-holding and landless groups. (Akasha, 2014).

The fact that land disputes first gained attention in 2005 is mostly due to the fact that when nomadic people began seeking for land to farm and chose to adopt a sedentary lifestyle, they discovered that the best areas had already been claimed. Thus, in order to gain access to property, the landless communities turned to two different strategies: either establishing legal claims or physically occupying the desired land, which required expelling the occupants and partially resulted in large numbers of internally displaced people and refugees.

The elite of the latter are the dominant exploiters of peripheral resources and labour for the exclusive enjoyment of the centre (Mohamed, 2007), it should be noted that there is a wide disparity and uneven distribution of resources between the centre and the periphery on the national level. Darfur has suffered from social and economic neglect, much like the eastern and southern provinces. In a sense, one could say that the majority of people in Darfur are "victims" of marginalisation and unequal distribution of resources at the local level. The war can be seen as pitting two oppositional classes—the landowners and the landless communities—against one another on the Darfur micro-level because of this same unequal allocation of capital. As a result, the conflict is a continuation of the primary capitalization in this instance, which is land. Those who have gained riches have a stake in sustaining the extraction of wealth and the enjoyment of inherited privileges, provided by the conventional land tenure system functioning in their favour, at the expense of those who lack access to property.

All facets of Darfurian society are impacted, though to varied degrees, by this disparity in access to social, economic, and symbolic capitals, particularly the marginalised and disadvantaged groups that paid a heavy price in this lengthy battle. While having an effect on Darfur's entire population, the worsening ecological situation also had a negative influence on women's circumstances. As levels of vulnerability to climate hazards and ecological degradation are not equal globally between countries

or locally between different social groups, studies have shown that the effects of climate change at the global level exacerbate already-existing inequalities when it comes to access to resources (Masika, 2002). If climate change is going to widen the divide between the rich and the poor, women in marginalised periphery regions of developing nations like Sudan must pay the same price, if not more.

The Gender Dimension of the Darfur Crisis – Women as Agents and Victims

Understanding the distribution patterns of vulnerability in the face of climate change and the consequent conflict requires taking into account the differentiating power relations and levels of access to resources. In sub-Saharan Africa, women and men frequently do not have equal access to land, water, and other types of natural capital because they are assigned different societal responsibilities. Women are responsible of cultivating food crops in the plots and providing the household with water and firewood if men control the land, manage cash crops, and manage other high-income producing natural resources (Akasha, 2014).

Traditionally, women in Darfur have been given the responsibility of providing water in an area where there are few water sources. They now have to walk farther to bring water due to the escalating desertification and subsequent drought seasons. But the work of fetching water, has grown not just more difficult but also more dangerous. Moreover, since the violence has erupted, women who leave their villages and travel great distances in search of water run the risk of suffering both physical and sexual abuse. Conflict zones or areas close to them increase the danger because those areas frequently result in the degradation of regional natural resources. Because men cannot leave the camps for fear of being killed, women living in the refugee camps, which are situated on the outskirts of big cities, are forced to go in search of water and firewood (Akasha, 2014).

Last but not least, one of the effects of climate change is the tendency for nomadic tribes to become more settled, which entails a near-total reliance on agricultural operations, which have historically been the domain of women. Since sedentarization of nomads was typically prompted by a loss of animal wealth, it frequently had a negative social and economic impact. Due to the customary division of labour, this capital depletion caused male unemployment and put the load on female shoulders. As a result, Darfurian women experience significantly greater hardship from the decline in land productivity than do men. Ironically, women and men have both participated in unsustainable land use practises that have accelerated the process of ecological degradation already in progress in their frantic attempts to provide for their families (Abouyoub, 2012).

Conclusion

Overall, it is tenable to conclude that competition over progressively depleting natural resources had a

significant role in the current situation in Darfur. Therefore, it stands to reason that any genuine effort to end the conflict in a way that is both socially and politically sustainable should take into account, in addition to the problems of inequality in terms of economic capital, good governance deficit, social justice, etc., other dimensions such as the scarcity of resources, and most importantly, the role of climate change and ecological degradation in setting different social actors against one another's. However, public discussions overlook significant ecological implications of climate change in vulnerable regions, such as sub-Saharan Africa, by concentrating only on politics. The truth is that social and economic systems are more closely linked to climate factors globally than we previously believed, and the ecological effects of climate change on weak societies and polities in many developing countries, which are already racked by persistent economic, financial, and political fragility, may be incalculable.

The Intergovernmental Panel on Climate Change has issued a number of papers warning that many parts of the world may soon become economically and environmentally unstable. There will be winners and losers in the global economy of the international system as well as locally at the national level, just like in any historical or social shift. In the first scenario, the wealth disparity between industrialised and developing nations will increase even further. In the second scenario, rising temperatures would undoubtedly extend the growing season for farmers in high-altitude farming zones, but environmental factors will force other socioeconomic groups, such as Darfurian pastoralists, to shift. A key factor in this relocation process will be water. Therefore, "climate migration" and "climate refugees" are additional aspects of this issue that merit significant scholarly investigation as well as the attention of policymakers.

Climate change and ecological changes must be taken into consideration in order to fully comprehend the social, economic, and political issues facing Sudan. Despite being overdetermined, conflicts like those in Darfur are greatly influenced by ecological causes. These crises also aid in our understanding of the fast urbanisation and rural-urban migration that has resulted from the large exodus of over six million people from areas plagued by conflict and drought. The current discussion about climate change centred on the advantages and disadvantages of reducing greenhouse gas emissions. It is past time for the scientific community to acknowledge and address the pressing issue of mitigation, adaptation, and most importantly support for the most vulnerable people in the climate-affected areas.

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