Climate change, climate justice and the Western Sahara Conflict

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This briefing note is based on the first Sahrawi Indicative Nationally Determined Contribution (iNDC), prepared by a team of Sahrawi and international contributors on behalf of the government of Sahrawi Arab Democratic Republic (SADR), and launched in Glasgow in November 2021 to coincide with COP26. For further details on the issues covered below, and for supporting data and references, please refer to the iNDC, which can be downloaded here.[2] A commentary on the iNDC is available here.[3]

Background

The protracted conflict in Western Sahara, between Morocco and the Frente Polisario national liberation movement, has resulted in the displacement of over 173,000 Sahrawis to refugee camps in neighbouring Algeria, and a smaller number to the resource-poor Liberated Territories controlled by the Polisario, in the eastern areas of Western Sahara. A large number of Sahrawis also live under Moroccan occupation west of the Berm, the Moroccan wall that partitions Western Sahara. While the injustices of the occupation have been widely discussed, the interactions of the conflict with the impacts of climate change, and the implications of the conflict for climate justice, have received barely any attention.

Climate justice addresses the unequal contributions of different populations to climate change, the highly differentiated vulnerability to the impacts of climate change across different groups, and the fact that it is often the poorest, and those who have contributed least to climate change, who experience the worst impacts.

The Western Sahara conflict is not only an issue of occupation, colonialism and disregard for international law and UN conventions and resolutions; it also increases the vulnerability of the Sahrawi people to the losses and damages caused by climate change, while limiting their ability to respond and adapt. The conflict is therefore also an issue of climate justice.

Climate justice in Western Sahara is linked with risks that result from the interaction of the following elements:

1. climate hazards, which are the physical manifestations of climate variability and change such as droughts, extreme rainfall, heat extremes, storms, desertification, etc.;
2. exposure to these hazards, based largely on the physical location of people and infrastructure;
3. vulnerability, or the extent to which people and systems are likely to harmed when exposed to hazards, based on their characteristics, capacities, access to resources, and ability to act.

Climate change is worsening the climate hazards experienced by the displaced Sahrawis, while the conflict in Western Sahara is increasing their exposure and vulnerability to these hazards. Climate change and conflict in Western Sahara and the camps are therefore combining to increase climate risks resulting in avoidable losses and damages. This is happening through a number of mechanisms, summarised below.

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[2] https://www.spsrasd.info/news/sites/default/files/documents/sadr_ndc_draft_final_09nov21.pdf
[3] https://nickbrooks.wordpress.com/2021/11/15/challenging-climate-colonialism-in-north-africa-a-new-indicative-ndc-for-western-sahara/

1. Displacement increases exposure & vulnerability to worsening heat extremes

The Sahrawi-controlled areas of Western Sahara (Liberated Territories) and the Sahrawi refugee camps experience higher temperatures and temperature extremes than the areas nearer to the Atlantic coast. Increases in average and extreme temperatures are projected to be greater in these inland areas than in the areas of Western Sahara occupied by Morocco.[4] The camps and the Liberated Territories are at the edge of a zone of extreme risk from projected increases in wet-bulb temperature, a combined measure of heat and humidity. In the coming decades, wet-bulb temperatures in this zone of extreme risk are projected to approach and possibly exceed 35°C, the limit of human survivability (Figure 1).[i] People living in the Liberated Territories and the camps would be exposed to these potentially fatal conditions, while people living in the Occupied Territories would not. The conflict is thus exposing the Sahrawis living in the camps and the Liberated Territories to potentially fatal conditions resulting from climate change, through the mechanisms of displacement and forced sedentarisation. Their vulnerability to these climate change impacts in increased by limited access to health infrastructure and services resulting from their refugee status. The Sahrawis' vulnerability is also increased as a result of reduced mobility associated with which the loss of their previously nomadic livelihoods, which limits their ability to move out of high-risk areas.

2. Displacement increases exposure & vulnerability to floods

The Sahrawi refugee camps are subject to severe and devastating floods. Reliable data on rainfall intensity are not available for Western Sahara or the area around the camps. However, climate change is increasing the amount of moisture in the atmosphere and resulting in more severe rainfall extremes, both globally and in the Sahel region immediately south of Western Sahara.[ii] These trends increase flood risk, and it is reasonable to assume they apply to Western Sahara and the camps. Periodic flooding in the camps destroys homes, schools, food stocks, health facilities and other infrastructure, resulting in loss of life, injury, poor physical and mental health, food insecurity, and disruption to children's education.[iii] The Sahrawi refugees experience increased exposure and vulnerability to flooding as a result of their forced sedentarisation in what are effectively large urban centres, with fragile infrastructure due to a lack of financial and other resources.

3. Displacement increases food insecurity, made worse by climate change

The Sahrawi refugees are almost entirely dependent on food aid. Malnutrition and related conditions are common in the camps. The harsh desert environment in the camps makes food production much more difficult than in the more productive environments in Western Sahara. Water is scarce. The Sahrawis' traditional way of life as nomadic pastoralists is not possible in the camps, meaning they cannot rely on traditional sources of food security based on livestock and wild plant resources. Some food production occurs in the camps, based on small-scale gardens and hydroponics. However, this is limited by water scarcity and extreme temperatures, both of which are increasing due to climate change. Higher extreme temperatures reduce crop productivity, and also reduce surface runoff and groundwater recharge, lowering water levels in the aquifers on which the camps depend. Food insecurity also occurs following floods, which destroy food stocks. Flood risk is increasing in the region due to the increased intensity of extreme rainfall events as a result of climate change.

In contrast, food is produced for export in the Occupied Territories, using unsustainable fossil groundwater.

[4] https://interactive-atlas.ipcc.ch/

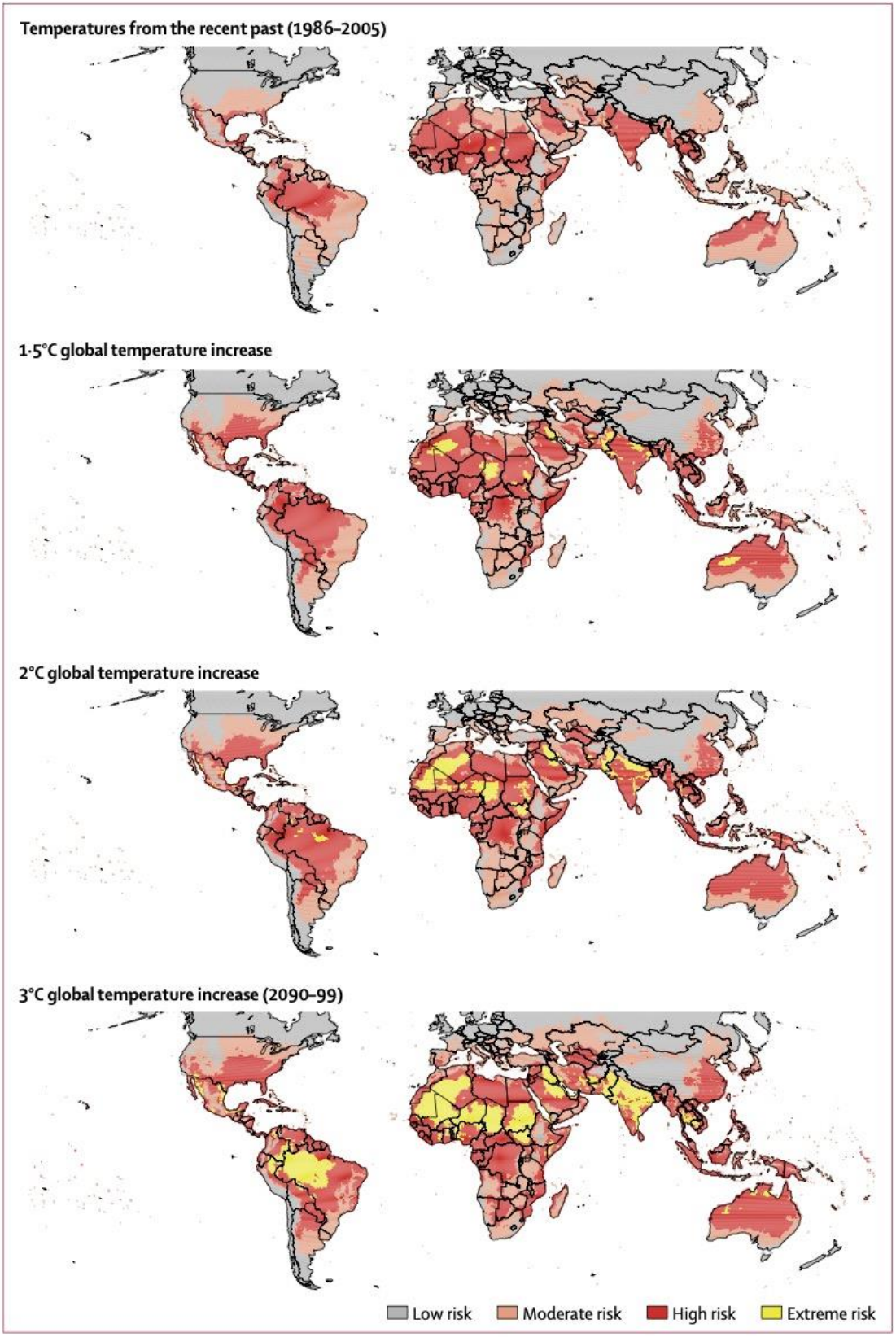

Figure 1. Temperature-humidity risks based on projected maximum wet-bulb temperatures under different increases in global mean surface temperature (global warming). High risk is associated with wet-bulb temperatures of 31-33°C, extreme risk with wet-bulb temperatures above 34°C (extreme). Figure reproduced from Andrews et al. 2018.[i] A wet-bulb temperature of 35°C is widely considered to represent the limit of human survivability, above which the human body is unable to regulate its temperature through evaporative cooling.

4. Forced sedentarisation erodes indigenous knowledge & adaptive capacity

Traditionally, the Sahrawis practiced mobile pastoralism based on camel and goat herding. Mobile pastoralism is based on the flexibility that is needed to exploit shifting patterns of rainfall and pasture in marginal, unpredictable and highly variable environments. African pastoralism emerged in the Sahara during the last period of global climatic reorganisation as a direct adaptation to climate change, allowing herders to cope with shifting resource patterns.[iv] Pastoral livelihoods such as those practiced by the Sahrawis therefore confer a significant amount of 'adaptive capacity' on those who practice them, and have a key role to play in adaptation to climate change.[v] Pastoralism is also associated with a deep knowledge of local environments, which enables pastoralists to track changes in those environments, helping us to monitor, understand and respond the impacts of climate change.

While a small number of Sahrawis still practice pastoralism in the Liberated Territories, most Sahrawis live in the camps, where mobile pastoralism is not possible, or in the Occupied Territories, where it is restricted. Forced displacement and sedentarisation has resulted in a loss of traditional skills and knowledge, particularly among younger Sahrawis.[vi] This represents a loss of cultural heritage, pastoralist identify, and adaptive capacity that might otherwise be deployed to help the Sahrawi people and state respond to climate change. This adaptive capacity would be critical in the event of the UN-mandated self-determination process being completed, and the Sahrawi refugees returning to a unitary, independent Western Sahara. The loss of adaptive capacity inherent in pastoralist systems represents a form of cultural violence and also serves to make the Sahrawis more vulnerable to climate change in a future independent Western Sahara.

5. Partition undermines remaining pastoralists' ability to cope with worsening drought

A small number of Sahrawis practice pastoralism in the Liberated Territories. However, their mobility is restricted by the Moroccan wall or 'Berm' that divides the territory, which prevents them accessing more productive areas to the west. Within the Liberated Territories, their mobility is constrained by land mines and other munitions, which regularly kill and injure both herders and livestock. The physical manifestations of the conflict therefore constrain pastoralists' access to the resources on which they have traditionally depended, while increasing risks associated with mobility. This in turn constrains their ability to cope with increased climatic and environmental variability, and with increasingly severe droughts, all of which are consequences of climate change. This has been demonstrated by the impacts of protracted dry conditions since 2017, consistent with projections that this part of northwest Africa (including Western Sahara and Mauritania) is likely to experience reduced rainfall as a consequence of climate change, even as risks from extreme rainfall intensify and rainfall increases in the central and eastern Sahel regions.

The resumption of physical hostilities in November 2020 has made pastoralism even more dangerous, with the targeting of individuals, vehicles and locations by Moroccan forces through conventional bombardment and drone strikes. The combination of drought and the resumption of fighting has resulted in many people fleeing the Liberated Territories for the camps or northern Mauritania, illustrating how conflict and hazards linked with climate change can drive displacement and migration to areas that themselves have limited resources.

6. Conflict amplifies climate change impacts on health and wellbeing

Like many countries, Western Sahara will experience climate change impacts that will have adverse consequences for health and wellbeing. Higher temperatures and reduced water availability impact food production and thus food security, exacerbating malnutrition and associated conditions. Heat extremes are associated with direct health impacts and exacerbate respiratory conditions. They also increase the risk of power outages, compromising the function of health facilities and the storage of medical supplies. Floods result directly in death and injury, and cause food insecurity by destroying food stocks. They also destroy medical facilities, worsening health outcomes, as well as homes and schools, with further physical and mental health impacts. Flooding is associated with an increase in water-borne diseases and the contamination of soils, water supplies and homes with pollutants. Dust

storms, whose evolution under climate change is uncertain, are associated with respiratory conditions.

All the above impacts are made worse by the conflict, through the mechanism of displacement. As indicated above, this displacement has increase people's exposure to climate hazards, because of the camps' location in areas subject to worse heat extremes, the concentration of the displaced Sahrawis in dense urban centres, and their displacement to a more arid environment where airborne dust pollution is more prevalent. The fragile infrastructure in the camps, and the lack of financial and other resources available to the Sahrawis, constrains their ability to address public health issues and the health impacts of climate change. All these impacts are in addition to the physical and mental health consequences of living as refugees.

7. Conflict increases environmental vulnerability to drought and climate change

Many locations are visible on satellite imagery where the Berm cuts across drainage channels, starving downstream sections of these channels moisture and resulting in a decline in vegetation cover and habitat.[iii] These downstream impacts tend to occur in the Liberated Territories, due to the nature of the topography associated with the Berm. These locations thus experience the double impact of physical diversion of surface runoff coupled with increased evapotranspiration resulting from higher temperatures. In this way, the physical manifestations of the conflict combine with climate change to amplify aridity, posing risks to ecology and biodiversity. The Berm and the minefields that run along its length also pose a direct risk to wild fauna. With temperatures projected to rise further and rainfall projected to decline in Western Sahara, the conflict is increasing environmental vulnerability, and the vulnerability of desert species and ecosystems, to the impacts of climate change and periodic drought, by reducing the baseline moisture availability in these parts of the Liberated Territories.

8. Conflict excludes the Sahrawis from global climate governance

Faced with extreme vulnerability exacerbated by the conflict, the Sahrawi Arab Democratic Republic (SADR) of Western Sahara, a founding member of the African Union enjoying diplomatic recognition by dozens of countries, has developed its own national adaptation plan and indicative Nationally Determined Contribution (NDC).[iii] NDCs are national documents setting out what countries intend to do to address climate change through mitigation (reducing greenhouse gas emissions) and adaptation (reducing the risks and impacts of climate change) NDCs are prepared by signatories to the Paris Agreement and are submitted to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC).[5]

However, because of the conflict and the failure of the UN-mandated self-determination process in Western Sahara, the SADR is not a UN member state. Consequently, it cannot be a party to the UNFCCC or sign the Paris Agreement. The SADR is thus excluded from UN-dominated global climate governance mechanisms, including global climate negotiations. Consequently, the Sahrawi people and nation have no voice in the critical arena of international climate action, despite having made a negligible contribution to the problem, and despite being highly vulnerable. The exclusion of the Sahrawis from global climate governance in this context represents an extreme example of climate injustice.

9. Exclusion from climate finance mechanisms constrains climate action

The exclusion of the SADR from global climate governance also extends to global climate finance mechanisms associated with global climate funds such as the Green Climate Fund, the Climate Investment Funds, the Adaptation Fund, and the Global Environment Facility. Access to grants or loans from these funds requires the existence of an Accredited Entity in the recipient country. Accredited Entities include National Designated Authorities (NDAs), which are "government institutions that serve as the interface between each country and the

[5] https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs/nationally-determined-contributions-ndcs

Fund."[6] They may also include non-governmental and multilateral organisations that meet standards set by the funds, and that have offices in the recipient country. The process of establishing an Accredited Entity is notoriously difficult, particularly for poor developing countries. Where climate finance is channelled through multilateral development banks, these banks require loan agreements with the recipient country before climate finance can be agreed.

The conflict in Western Sahara means that the SADR has not been able to establish an Accredited Entity and cannot establish an internationally recognised NDA (unlike Morocco, which has two NDAs). Multilateral Development Banks do not operate in the SADR, meaning no loan agreements can be arranged with these bodies. This limits potential Accredited Entities to the limited set of international NGOs operating in the refugee camps, which are focused on humanitarian needs. The conflict, and Western Sahara's status as a non-self-governing territory rather than a UN member state, would pose further obstacles to accreditation, even if a body could be identified to act as an Accredited Entity.

The above factors mean that it is very difficult, if not impossible, for the SADR to access climate finance and associated technical support for adaptation and mitigation actions, severely constraining its ability to respond to the climate crisis.

10. Conflict makes the international system of climate governance complicit in colonialism

While the SADR is excluded from global climate finance and governance mechanisms, Morocco enjoys good access to these mechanisms, using them to bolster its position through climate diplomacy, and presenting NDCs whose target of sourcing 52% of its energy from renewable sources[7] is dependent on the development of renewable energy infrastructure in occupied Western Sahara (WSRW 2021). The achievement of Morocco's climate targets, endorsed by the UNFCCC through its acceptance of Morocco's NDCs, is thus directly dependent on its occupation of Western Sahara.

Despite the parity of the Polisario and Morocco as equal parties to the conflict under the 1991 ceasefire agreement and multiple UN resolutions (SADR, 2021), global climate governance supports and privileges Morocco's climate actions while excluding the SADR, exacerbating the vulnerability of the latter and creating obstacles to its adaptation actions. These climate governance and finance mechanisms serve to legitimise and strengthen a military occupation while excluding those displaced by the occupation and constraining their adaptation. This, coupled with the UNFCCC's acceptance of Moroccan NDCs that are predicated on the exploitation of the Occupied Territories, means that the UNFCCC is in effect endorsing Moroccan colonialism in the non-self-governing territory of Western Sahara, in contradiction of UN resolutions and international law.

11. Climate change mitigation actions entrench the occupation

Renewable energy infrastructure in the Occupied Territories directly supports Morocco's occupation and its ruling elite. Wind and solar plants power Moroccan economic and industrial activity in the Occupied Territories, including the CIMAR cement factory and the Bou Craa phosphate mine. Morocco's stated intention is to use renewables in the Occupied Territories to provide power to users that include PhosBoucraa factory, the Office National de l'Electricité et de l'Eau Potable (ONEE), the Moroccan Airports Authority (ONDA), and blockchain computing facilities. Desalination powered by renewables will support agriculture in the regional around Dajla. The 200 MW Aftissat wind farm is operational and will soon be connected to the ONEE substation in the area of El Aaiún via the city of Bojador, contributing to the connection of occupied Dajla to the Moroccan national grid. Off-takers of the wind farm will be LafargeHolcim Maroc, OCP, Sonasid, Ciment du Maroc and Air Liquide Maroc.

[6] https://www.greenclimate.fund/about/partners/nda
[7] https://unfccc.int/NDCREG

For a more detailed discussion of these developments, see the indicative NDCiii and the report *Greenwashing the Occupation*, by Western Sahara Resource Watch.[vii]

The development of renewables in the Occupied Territories is supported by foreign private interests, including direct investment, contracts for supplying infrastructure such as wind turbines, and voluntary carbon offsetting schemes. All operational wind farms except the privately owned CIMAR farm belong to the portfolio of the Moroccan King's energy company NAREVA, as do the planned farms under the Integrated Wind Energy Programme. The Noor PV II solar farm will be built adjacent to industrial greenhouses owned by the King, members of the Moroccan ruling elite, and French conglomerates. The development of renewable energy in the Occupied Territory thus supports the personal financial interests of the Moroccan ruling elite, facilitates unsustainable and potentially maladaptive water intensive agriculture, and provides financial returns and potentially energy resources to foreign interests at the expense of the Sahrawi people, and without their consent, contrary to international law. Morocco's engagement of foreign interests in Occupied Western Sahara, and its integration of renewable energy generation in the Occupied Territories into its national energy grid and regional energy systems result in wider complicity in and dependency on the occupation, consolidating Morocco's position.

12. Conflict directly increases greenhouse gas emissions and prevents accurate accounting

Morocco maintains its occupation of Western Sahara through a large military presence, which is concentrated along the 2700km Berm or 'wall' that partitions Western Sahara. Forts or blockhouses capable of housing hundreds of troops are located at approximately 10km intervals along the Berm, and previous estimates of total troop numbers (prior to the recent resumption of violent conflict) are as high as 200,000.[viii] An unknown number of Sahrawi troops are stationed in the Liberated territories, concentrated around military basis located throughout the areas east of the Berm.

The maintenance of large numbers of military personnel and associated military infrastructure on both sides of the berm is associated with direct greenhouse gas emissions, including from military vehicles. These emissions are not included in national greenhouse gas emissions inventories. The conflict therefore directly drives emissions from military activities that are not accounted for in NDCs or other reporting mechanisms. The resumption of hostilities in November 2020 will have resulted in a considerable increase in these emissions.

The conflict also prevents accurate estimates of non-military emissions. Independent emissions estimates do exist for Western Sahara, but these cover only the Occupied Territories, excluding the Liberated Territories and the camps. Lack of finance, technical support and technical capacity linked to the conflict have prevented the SADR from establishing systems for monitoring, reporting and verifying its own emissions, further excluding the SADR from international efforts to address climate change.

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