

# In Pursuit of Climate Justice

Housing and Land Rights  
Violations in the context of  
Environmental Hazards  
and Climate change



Housing and Land Rights Network  
- Habitat International Coalition

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Environmental Hazards and Climate-change**



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## Abbreviations

A	Asia
AFA	Anglophone Africa
AFF	Francophone Africa
AFL	Lusophone Africa
BC	British Columbia
CAD	Canadian dollar
CGL	Coastal Gaslink
CNOOC	China's National Offshore Oil Corporation
CONAF	Corporación Nacional Forestal de Chile (Chilean National Forestry Corporation)
CoP	Conference of Parties
CPS	Canadian Premium Sand
E	Europe
ECtHR	European Court of Human Rights
EU	European Union
EUTR	European Union Timber Regulation
FEMA	Federal Emergency Management Agency
GAP	Güneydoğu Anadolu Projesi (Southeastern Anatolia Project)
GIDES	A Estratégia Nacional de Fortalecimento da Gestão Integrada de Riscos de Desastres Naturais (The Strengthening National Strategy of Integrated Natural Disaster Risk Management)
GNP	gross national product
HIC	Habitat International Coalition
HLRN	Housing and Land Rights Network
IDP	internally displaced person
ILC	International Law Commission (
INR	Indian rupee
JNF	Jewish National Fund
km	kilometer
KZN	Kwa Zulu Natal
LAC	Latin American and Caribbean
m	meter
MENA	Middle East/North Africa
mm	millimeter
NA	North America
NUA	New Urban Agenda
ORR	Outer Ring Road
PALU	Pan-African Lawyers Union
PDM	Pakistan Democratic Movement
PTI	Pakistan Tehreek-e-Insaf Party
REPSA	Reforestadora de Palma del Petén SA
RSCN	Royal Society for the Conservation of Nature
RUB	Russian ruble
SDG	Sustainable Development Goal
UN	United Nations

UNAMID	United Nations–African Union Mission in Darfur
UNDP	United National Development Programme
UNEP	United Nations Environment Programme
UNESCO	The United Nations Educational, Scientific and Cultural Organization
UNRWA	United National Relief and Works Agency for Palestine Refugees in the Middle East
US\$	United States dollar
VDB	Violation Database
ZAR	South African rand

## Introduction

Increasingly, the world's inhabitants face multiple and protracted crises. In the context of the COVID-19, HLRN published its 2020 annual World Habitat Day report from its Violation Database (VDB), *A Pandemic of Violations*, on forced eviction and dispossession in that context, despite numerous commitments and calls for moratoriums on eviction. Last year, HLRN's thematic report World Habitat Day focused on such violations recorded in the VDB against people under *Conflict, Occupation and War*. This year's report considers the patterns of housing and land rights violations in the context of environmental hazards and climate-change events.

From this context, HIC and its Members rely on such facts and analysis to inform actions, including advocating remedies, to bring about needed systemic change through both local initiative and collective responses needed in the global sphere. Those actions already have accompanied commitments of states enshrined in such shared time-bound policy frameworks of the UN Sustainable Development System as the *2030 Agenda* and the *New Urban Agenda* (NUA) for 2016–2036, as well as the prior, permanent and binding obligations in the UN Human Rights System and Treaty Bodies.

The past year has seen important recognition of a human right to a clean, healthy and sustainable environment at the political level, with groundbreaking resolutions of the *UN Human Rights Council* and *General Assembly*. In June 2021, an Independent Expert Panel (IEP) released a *report*, detailing proposed amendments to the Rome Statute, to include a fifth crime: ecocide. This proposal would criminalize at an international level serious harm to the environment for the first time. In the regional sphere, the European Union (EU) Committee on the Environment, Public Health and Food Safety has issued *similar proposals* to the EU Parliament. This year, at the UN Ocean Conference, co-host Kenya announced its recognition of ecocide in the newly revised Environment Management Coordination Act.<sup>1</sup> However, this emerging norm is not new, since it was introduced in 1970 in the context of UN military use of agent orange in the Vietnam War<sup>2</sup> and Swedish Prime Minister Olof Palme formally presented the concept 50 years ago at the first UN Conference on the Human Environment in 1972.<sup>3</sup>

The normative framework to protect the environment is constantly evolving to meet growing demands from the social base, including communities on the frontline of climate change, to remedy the inter-related consequences of economic globalization, rampant urbanization, unprecedented wealth disparities, corporate capture of public policy, degradation of the natural world, related pandemics, global warming, conflict, occupation and war. Aligned with that ongoing struggle, HIC-HLRN seeks to produce tools and techniques to identify, organize and reflect on experience toward learning and capacity building for problem-solving and related advocacy.

This report joins those voices calling for global systemic change. However, identifying housing and land rights *violations* in the context of environmental hazards and climate-change events poses certain conceptual and methodological challenges addressed here. First among these is to specify how to consider instances of loss of, cost from, and damage to habitat in this context that constitute an abuse attributable to an act of commission or omission by a responsible party, a duty holder or other liable legal or natural person. That category of environmental or climate-change incident is distinguished from others that are attributable to “natural” disasters, acts of Mother Nature,<sup>4</sup> or a party that is ambiguous or remote in time or causality.



Displacement from environmental hazards, disasters and climate-change events is burgeoning. Authoritative estimates now predict climate change will displace another 86 million more Africans by 2050, and 216 million globally.<sup>5</sup>

At the same time, the impacts on housing and land in the context of environmental hazards and climate-change events may occur due to a combination of forces against vulnerable inhabitants. The following examples include those, too, but also demonstrate how human and/or corporate acts of commission and omission directly affect the degree of their impacts, even if the main perpetrator were as inanimate as the rain.

Despite the slow pace of multilateral standard-setting, agreements on preventive and remedial actions and their uneven implementation, recent years have seen some hopeful theoretical developments. These include the UN Human Rights Council and General Assembly recognition of a human right to a clean, healthy and sustainable environment, as well as some progress at the Conference of Parties (CoP) to the environment conventions and Paris Agreement on climate change toward addressing related loss and damage through the emerging Warsaw International Mechanism for Loss and Damage.

With the affected households foremost in mind, this report of VDB cases in the context of environmental hazards and climate-change events pursues an indispensable course toward climate justice by identifying the causes of, and remedies to the resulting losses, costs and damage. Further steps, include quantifying those impacts, are needed to ensure the reparations to which victims of gross violations such as forced eviction are entitled.<sup>6</sup> For its part, HLRN pursues the goal of climate justice as grounded in codified human rights and defined in the HIC President’s statement on World Habitat Day 2021.<sup>7</sup>

In these cases of housing, land and property loss in the context of environmental hazards and climate-change events, justice means enabling people to rebuild, in order to shelter their families with dignity. That further task means not only building back better, but also correcting the systems that often have impoverished them and left them behind only to be further punished by the elements. Likewise, the concept of resilience, in the sense of recovery to the same conditions preceding a shock, also falls short of the normative framework upholding sustainable development, buttressed by the state obligations to ensure “progressive realization of human rights”<sup>8</sup> and the “continuous improvement of living conditions.”<sup>9</sup>

Based on the cases entered in the VDB, this report offers a simple typology of categories to organize and encourage critical thinking. This typology of cases is admittedly imperfect, particularly as several of these cases may belong in more than one of these contextual categories at once. Nonetheless, we trust that this exercise seeks understanding of causative factors, in order to capture needed lessons with a view to preventing and remedying such hazards, crises and disasters toward achieving climate justice for all.

A pattern emerges from the instances of violation entered in to the VDB in the context of environmental hazards and climate change. That pattern has produced identifiable contexts in which these cases are clustered for this report. That classification of contexts helps organize the data for purposes of analysis, but also aids thinking toward prevention and remedy. The pattern of instances captured in the VDB lend themselves to classification in the following categories:

1. Conflict Situations
2. Cross-border effects
3. Development-induced displacement
4. Environmental racism/discrimination
5. Extractivism
6. Governance

7. Industrial pollution/contamination
8. Large-scale agriculture/livestock farming
9. Megaprojects
10. Neglect

11. Tourism
12. Urbanization
13. Other human factors

Constructive also toward building climate justice in these contexts also is the assignment of accountability and liability. In certain of these reported cases, justice has been pursued in the form of prosecution or other litigation. However, more frequently we see affected persons standing against the stubborn insistence that these disasters are acts of nature, absolving duty-bearing parties of responsibility, and any aid or remedy as *ex-gratia*, rather than a right.

In the pursuit of climate justice, this report considers each of the unlucky 13 causes/contexts in alphabetical order. That neutral approach gives preference to none, but considers each of the consequences, remedies and lessons to be urgent.

## Causes/contexts:

### Conflict situations

Taking our emerging categories of housing and land rights violations causes in the context of environmental hazards and climate-change events in alphabetical order, the first are conflict induced. Beginning with conflict-related instances continues the theme of HLRN's 2021 World Habitat Day report, *Conflict, Occupation and War*. However, the date of that report preceded the outbreak of Russia's invasion and occupation of the Donbas region and other assaults on Ukraine. So, we begin with an instance from that ongoing context.

### Ukraine

This year, a new military confrontation takes front and center in the form of outright destruction of Ukrainian homes, lands and livelihoods. In addition to the obvious environmental consequences of war, Russian—and certain Ukrainian—attacks and counterattacks have targeted environmental infrastructure for alleged strategic purposes. The Conflict and Environment Observatory reported on how the conflict in Ukraine has variously impacted water supplies and resources.<sup>10</sup> This includes disruption to domestic supplies, and damage to the highly developed energy infrastructure that supplies households, as well as industrial and agricultural users.

Military activity that disrupts and damages water infrastructure can lead to incidents of pollution. Water and water infrastructure have been repeatedly targeted for their tactical value, in addition to suffering collateral damage during the fighting since 2014.

Today, some towns and cities in Donetsk Oblast receive piped water for only a few hours once or twice a week. In Sloviansk, for example, only a single set of pumps operates for those inhabitants who remain. Authorities have had to warn people against drinking the water in mine tailing ponds.

In Mariupol, sewage has contaminated drinking water, and restoration of supply infrastructure and wastewater disposal is now impossible in some districts. In Mykolaiv, people in urban areas have resorted to using river water after water towers, pipelines, sewage pipes and pumping stations have undergone physical damage and destruction.

At least four dams and reservoirs have sustained direct damage. Military activity had destroyed the gates of Oskil Reservoir, on the Siversky Donets River, near Izyum, already at the end of March 2022. The reservoir, the eighth largest in Ukraine, rapidly emptied, dangerously raising downstream river levels.



Figure 1: Houses in Kryvyi Rih flooded after the Russian missile attack on Karachunivske Reservoir Dam. Source: WTZ News.

On the afternoon of 26 February 2022, Ukrainian forces damaged the dam between the Irpin River and the Kyiv Reservoir. Subsequently, floodwater accumulated in the Irpin River Valley, flooding the towns of Demydiv and Kozarovychi, causing civilian damage and hardship. The Ukrainian side claimed that the flooding helped in the defense of Kyiv.

Recorded in the VDB is also the case of Karachunivske Reservoir Dam, which Russian forces targeted in September 2022.<sup>11</sup> The attack on the dam near the city of Kryvyi Rih flooded 112 private homes and their surroundings. As residents of Hdantsivka and Motronivka settlements were evacuated. almost 5,000 people were left without tap water in the Sofiiivka *hromada*.<sup>12</sup> The day before, Russian forces had attacked Kryvyi Rih, a city of over 600,000 inhabitants in Dnipropetrovsk Oblast, damaging hydrotechnical facilities and leaving several neighborhoods without water.

However, these are only vignettes in a continuously unfolding drama of needless destruction.

### Gaza Water Crisis

Palestine's water and water infrastructure have always been the target of Israeli dispossession and colonization of the Palestinian people. In the Gaza Strip, the total water supply for domestic use is 99,058,677 million cubic meters,<sup>13</sup> which is supplied by water wells of either municipalities, or UN Relief

and Works Agency for Palestine Refugees in the Near East (UNRWA)'s, private desalination plants or other private vendors.<sup>14</sup> As much as 95.4% of Gaza's water comes from the ground aquifer, 2.6% from desalinated water, and 2% is purchased from Mekorot, the Israeli "national" water carrier.<sup>15</sup> The main source of groundwater is the coastal basin or aquifer, which extends across Gaza's northeastern border (see Figure 2).

The coastal aquifer is the source of about 86% of all water in the Strip.<sup>16</sup> Already in 2012, a UN study warned that the aquifer could become unusable by 2017, with the damage irreversible by 2020.<sup>17</sup> Indeed, in the absence of a coordination policy between Israel and Gaza's Coastal Municipalities Water Utility, both have extracted an excessively large amount of water from the coastal aquifer. The UN Office for the Coordination of Humanitarian Affairs (UN OCHA) estimated that, in 2018, the annual sustainable rainwater recharge of the aquifer was extracted almost three times over.<sup>18</sup> Overextraction, along with seawater infiltration and sewage contamination, have consistently contributed to the continued deterioration of water quality and quantity in Gaza.

In addition to issues relating to the costal aquifer as the main source of water for the two million Palestinians living in Gaza, the situation of water and the enjoyment of the human rights to water and



sanitation in the Strip are affected by three underlying pressures directly related to the occupation of Palestine:

The first of these is, of course, the consequences arising from the serious crime of population transfer<sup>19</sup> conducted by Israel during and after the first Israeli-Arab War of 1947–48. The ethnic cleansing operations of Zionist Israeli forces<sup>20</sup> led to the expulsion of some 780,000<sup>21</sup> Palestinians (85% of the total population) from 23 towns and 531 villages across Palestine, with 60–80,000 Palestine refugees fleeing into the Gaza Strip, quadrupling Gaza's population within weeks.<sup>22</sup>

The Israeli military's further destruction of 108 villages and village points in the nearby Naqab region, to Gaza's east, and the concentration of the remaining population in a regulated enclosure (*siyaj*) in 1951–53<sup>23</sup> created another wave of internally displaced persons into the Gaza Strip. This added further pressure on the region's water resources and sanitation infrastructure, whereas over 70% of the Gaza Strip's current population is composed of those refugees and displaced persons.

The second causative factor affecting Gaza's water scarcity is Israel's diversion of the natural aquifer flowing toward the Gaza Coast from Jabal al-Khalil in the southern West Bank. This Israel has achieved through a series of deep wells and pumps to prevent the natural replenishment of Gaza's ground water, which is vital for the densified population. (See Figure 2.)

The third and more-recent pressure on Gaza's water resources arises from the methods of colonization of the Gaza Strip that took place from 1972 through 2005. The Jewish Israeli settlers who established agricultural colonies in the Gaza Strip in that period consumed 400 times the land available to the Palestinian refugees, and 20 times the volume of water they used. These highly water-intensive farming enterprises under Israeli occupation were erected atop the three main deep pockets of fresh groundwater, depleting them irrevocably.<sup>24</sup>

These combined factors are directly attributable to Israel's colonization and further occupation of historical Palestine and emphasize how the Gaza Strip's hydrology reflects the military, demographic and resource-management forces that Israel has introduced to the region. In the Gaza Strip, the issues around water for Palestinians became even more dire in 2007, when Israel imposed its land, air, and sea blockade and comprehensive closure, which forms part of the Israeli government's campaign to separate and fragment Palestinian communities within the oPt, and elsewhere, and to deny the Palestinian people their inalienable right to self-determination, including permanent sovereignty over natural wealth and resources. Considered a collective punishment under international law, the blockade-and-closure policy continues as a subject of environmental racism and climate-justice remedies.<sup>25</sup>

#### IDPs Camps-Sudan

Despite thirteen years of UN Peacekeeping and tens of billions of dollars spent in aid, violence and conflict-driven displacement are nearing a ten-year high in Darfur, Sudan. The United Nations–African Union Mission in Darfur (UNAMID) patrol ended on 1 January 2021, leaving behind a security vacuum at a time of intense political stability.

Since UNAMID's mandate termination, humanitarian needs and bloody inter-communal violence across the region escalated, displacing an estimated 260,000 Darfuris, more than four times the number of Darfuris displaced by conflict in all of 2020 and the largest figure reported in Darfur in a single year since 2014.<sup>26</sup>



In Sudan, the heavy rain from May to the end of the September 2022 also brought flooding that affected around 349,000 people, destroyed at least 24,800 homes and damaged another 48,200 homes in 16 out of the 18 states. The most-affected states were South Darfur, al-Qadarif, Central Darfur, White Nile, and Kassala, followed by West Darfur, River Nile, North Kordofan, al-Jazirah, West Kordofan, South Kordofan, Sennar, and East Darfur. Khartoum and North Darfur states were less impacted.

The IDPs camps, the locus of one of the world's most-neglected crises of 2021, were inundated and suffered 146 fatalities and more than 122 people injured since the beginning of the rainy season in June. And all this came amid skyrocketing prices and gaps in humanitarian funding.

The situation in the five Darfur states became tragic. The destruction of farms and farmland is particularly devastating, because Sudan's agricultural season is already under threat and, with the economic crisis, rising inflation and political instability, Sudan's food security is under threat. Already before the floods, 64% of IDP households in Darfur were food insecure.

This situation sheds light on the neglect of this vulnerable population already undergoing human-made disaster of politicized ethnic conflict. Natural resources are being depleted around camps as result of the relief assistance gap. Disputes over land use in Darfur have had serious environmental consequences amid what has been labeled the "first climate change conflict."<sup>27</sup>

Land governance is failed in many parts of the country, but is key to any peace, including durable solutions for IDPs and sustainable development for all. In all states of the Darfur region, only North Darfur has a land-use plan. The duties lie with local and central, as well as formal and traditional authorities, while all have fallen under the long shadow of military rule. Meanwhile, climate change and its destructive consequences wait for no one.<sup>28</sup>

## **Cross-border effects**

International law has developed considerable specificity on state responsibility for cross-border harm.<sup>29</sup> VDB cases of environmental consequences from activities in one country that affect inhabitants of other—especially neighboring—countries clarify the issues involved and values at stake.

### **Desiccating Iraq**

The water sector is a major field of activity with cross-border environmental harm affecting human rights related to habitat. Public works in Iran have long been engaged in diverting water courses, particularly in the country's southwest. These activities have served multiple purposes, including the dispossession and displacement of the Ahwaz region's Indigenous Arab population. The VDB also profiles the Diyala Ahwar region, where Iran has blocked more than 12 major rivers that flow into the Tigris, depriving thousands of farmers of irrigation water and turning their fields into barren lands.<sup>30</sup>



*Figure 3: A desiccated olive grove in the village of Kuri Jami, Sinjar, Iraq. More than 12 million people in Syria and Iraq are losing access to water, food and electricity and urgent action is needed to combat a severe water crisis. Source: Fared Baram/Norwegian Refugee Council.*

This process culminated at the end of November 2021 by completely blocking the flow of water from its territory into the Diyala River in eastern Iraq, resulting in a severe drop in the water level at Lake Hamreen. Prior to that, the Kurdish Regional Government in northern Iraq also reported in October 2022 that the water supply that used to flow from Iran into the Sirwan River was entirely cut off after the Iranian government diverted its course.

Iran has also diverted the courses of the tributaries feeding giant multipurpose structures such as the Dukan Dam, on the Little Zab River, causing water levels to drop.

The disruption of water inflows has had an adverse effect on vital agricultural areas in Diyala province and Badrah, Jassan and Hawr al-Hurriya, as well as the Shatt al-Arab River. The environmental degradation causes the involuntary migration of Iraq's southern inhabitants, especially from the drought-threatened Ahwar region, the famous marsh region and UNESCO World Heritage Site.<sup>31</sup>

Desertification has now claimed 39% of Iraq's land, and 54% of agricultural areas are threatened by salinity, according to a report by the Planetary Security Initiative in May. A fall of 20% in Iraq's water supply

and the related declining crop yields that accompanies climate change, could reduce real GDP in Iraq by up to 4%, or €6.8 billion.<sup>32</sup>

From the west, Turkey's Ilisu Dam is a key component of the Southeastern Anatolia Project (Güneydoğu Anadolu Projesi), or GAP. The huge water infrastructure complex is drying up rivers in Iraq. As a consequence, Iraq, with its own history of water mismanagement,<sup>33</sup> will have to cope with less water flowing from upstream Turkey.<sup>34</sup>

Estimates vary as to the numbers of persons affected, but across Iraq and Syria some 12 million people are directly affected in a crisis that imperils the food system and livelihoods for the entire region.<sup>35</sup>

## Development-induced displacement

Eviction and displacement in the context of development have been subjects of global concern that have led to inadequate safeguard policies at the World Bank.<sup>36</sup> From the human rights perspective, the UN Special Rapporteur on adequate housing also rallied experts to draft Basic Principles and Guidelines on Development-induced Evictions and Displacements.<sup>37</sup> The present review takes special note of development activities that degrade the environment, with consequences for housing and land rights of those in their path.

### EACOP

An ongoing VDB case involves the construction of an oil pipeline that transverses Uganda and Tanzania, demolishing hundreds of houses, degrading forests and displacing inhabitants from their agricultural lands.<sup>38</sup> The current project started 15 years ago, when a UK company, Tullow Oils, began drilling in western Uganda, discovering the country's previously untapped oil reserves. Today, two other oil giants, The French oil corporation Total and China's National Offshore Oil Corporation (CNOOC), are collaborating with East African governments in a gradual land grab to exploit them and construct the 1,440-km-long East African Crude Oil Pipeline (EACOP), from Uganda's Lake Albert to Tanzania's port city, Tanga.<sup>39</sup>

The EACOP construction implies the complete relocation of over 200 households in Uganda and 391 in Tanzania. However, these numbers do not count the inevitable thousands of households to be forcibly displaced when they lose smaller portions of land and the subsistence agriculture and other land-based livelihood activities on which they depend.<sup>40</sup>

## Environmental racism/discrimination

Spatial injustice and deliberate discrimination are factors to force impoverished and marginalized communities into environmentally precarious living conditions. This age-old practice has its remnants in the treatment of Dalits in South Asia, where caste and spatial segregation produce hazardous living conditions prone to disaster.

### Bainsiria, Odisha

Bainsiria village is situated in Bari Block of Jajpur District, at a distance of 100 km from Bhubaneswar, the capital of the east Indian state of Odisha. There lived 4,500 lower-caste citizens, including some 575 (115 families) belonging to the Kandara scheduled caste.<sup>41</sup>



The Kandara scheduled-caste families and other impoverished inhabitants of Bainsiria village have been the subject of institutionalized discrimination and spatial segregation for centuries, due to their caste and class, relegated to make their habitat in the low-lying and flood-prone basin in the village. In September 2011, a massive flood inundated the village, displacing and dispossessing 4,500 inhabitants.

In an impact assessment of a sampling of 25 of the 115 Kandara families, HLRN-India was able to determine the flood victims' costs, losses and damage from the flood. Those data served as a baseline for critical analysis of the compensation on offer to them, and the analysis produced several recommendations for improving Odisha State measures at prevention and remedy.<sup>42</sup>

### Durban Adrift

Earlier this year, changing climate patterns brought severe flooding and landslides caused by heavy rainfall, affecting southern and southeastern South Africa, particularly the provinces of KwaZulu-Natal and Eastern Cape. According to national authorities, 443 people died in KwaZulu-Natal and over 40,000 were missing. More than 40,000 people have been displaced, while nearly 4,000 houses were destroyed and more than 8,000 others were damaged, mostly across Durban City and its surrounding areas. In response, President Cyril Ramaphosa declared a National State of Disaster, activating the [International Disaster Charter 755](#), and rescue teams were deployed to provide humanitarian assistance to those most affected.<sup>43</sup>

The KwaZulu-Natal Provincial Government set up 4,396 temporary accommodation sites within a week to accommodate families who sought emergency shelter in community halls, churches and schools. Although government has prioritized R1 billion toward disaster relief interventions, the province needed more than INR1.9 billion to complete the work.<sup>44</sup>

Durban's 351 mm downpour and floods in April 2022 far exceeded the one claiming 64 deaths in April 2019, when a "rain bomb" unleashed 168 mm of rain in 24 hours, causing INR1.1 billion (€62,436,000) in damage. The previous rainfall record was in October 2017, when 108 mm fell, killing 11 people in one day and doing extensive damage, especially around the harbor. Critical reactions noted how ill-equipped the local authorities, infrastructure and services were to meet the needs, despite the warning patterns. That was especially true in the District of Durban, where the climate-action plan lacked urgency, and the state remains wedded to fossil fuels, mining, high-energy refining and smelting.<sup>45</sup>

In Durban's eThekweni community, state housing provision and construction standards for thousands of the city's residential structures were again shown to be inadequate and, of the city's 550 informal settlements, at least 164 are in floodplains. Activists have called for the application of a "polluter pays" principle to raise funds for not only loss-and-damage reparations, but also for necessary climate-proofing investments in poor areas. They argue that, had funding been available beyond R90 million (€ 5.11 million) provided in May–June 2019 for emergency relief (covering just 9% of April's damage), the necessary climate adaptation work could have taken place to help eThekweni cope with the April 2022 torrential rain and flooding.<sup>46</sup> Such criticism has put the ruling African National Congress and its local-sphere affiliates on the political back foot.<sup>47</sup>

### Sunbelt Apartheid

As in so many US cities, the historical geographical construction of Phoenix, Arizona is the story of a contaminated community in the heart of one of the largest and fastest growing Sunbelt cities in North America. Racial categories and attendant social relations were constructed by European immigrants and

their descendants in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries to produce a stigmatized zone of racial exclusion and economic marginality in South Phoenix, a district adjacent to the city center.<sup>48</sup>

Racialized identities were historically deployed to segregate people of color, both residentially and economically in the early city, founded in 1881. By the 1920s race and place were conceptually and materially conflated in a mutually reinforcing process of social stigmatization and environmental degradation in South Phoenix. This process created mixed-minority residential and industrial land uses that survive to the present. The process and its outcome have been referred to as “Sunbelt apartheid,” whereby undesirable land uses and minorities have been segregated from “White” Phoenix. A wide range of planning and investment decisions and patterns continue to shape the human ecology of the city today.<sup>49</sup>

The material effects of racial discrimination, spatial control, and unregulated land uses in South Phoenix were pronounced already within the first 40 years of the city’s development. Living conditions for the poorest Latinos (occupied and annexed in 1848) and African Americans in South Phoenix were dire, for which the White population generally blamed the victims. Housing consisted of a mix of tents with cardboard and scrap-wood shacks, with no water or sewage, clustered between factories, warehouses and stockyards. The unregulated emissions from factories, stockyards and trains produced contaminated air and water in those neighborhoods. Heat-related deaths and high infant mortality were commonplace in summers, when daytime temperatures often exceeded 40°C. Overcrowded housing, severe poverty, and malnutrition were prevalent across the District, as were epidemics of typhoid and tuberculosis in the 1920s and 1930s. Infant mortality data from the Depression era clearly shows death rates for Blacks, Latinos, and Indigenous People two to three times the rate for Whites.<sup>50</sup>

The cumulative effects of environmental consequences in South Phoenix remain apparent, despite major changes in federal regulations, scientific knowledge of toxic hazards, and the environmental justice movement. These conditions reflect city officials’ ongoing disregard to the affected South Phoenix neighborhoods and their residents. Environmental activists have been quick to label this discrimination and neglect as racism.

The pervasive discrimination and spatial segregation that shaped the city’s early urban landscape and economy set in place processes of industrialization and residential patterns that are changing slowly in the current period of rapid urban expansion. However, environmental and social indicators attest that inferior living conditions remain the norm in South Phoenix.<sup>51</sup>



Figure 4: Winter air in South Phoenix creates a hazard for asthma sufferers. Source: Arizona Republic.

## Gaza Revisited

Reflecting back on the previous category of conflict, occupation and war, environmental racism also plays a big part of the above-cited water crisis in Gaza. The Israeli system of racialized and institutionalized material discrimination (apartheid) in the water sector has operated since the 20<sup>th</sup> Century colonization of Palestine through the Mekorot organization (Hebrew: מקורות, lit. “Sources”), established in 1937. Three parastatal Zionist organizations chartered to serve only persons of “Jewish race or descent”—the Jewish Agency, Jewish National Fund and Histadrut—combined forces to extend corresponding Jewish-only privilege over the country’s water resources by setting up Mekorot.

In their continued operations today, these parastatals are what are called “national” institutions, coordinating the tasks of controlling the resources of historic Palestine within their areas of specialization: Jewish Agency (with its sister World Zionist Organization), for development planning; Jewish National Fund, for funding acquisition of, and managing land; and Histadrut, organizing labor resources of and for the same racialized religious group.

Israeli parastatal institutions—primarily Mekorot—also retain control over the waters of the Mountain Aquifer, diverting 89% of this resource away from Indigenous Palestinians and toward colonial Israeli settlers. This is despite 80% of the water recharging the aquifer originates in the Palestinian West Bank.<sup>52</sup>

While the Gaza Strip has been systematically denied its natural source of water, combined with the consequences of past and ongoing population transfer, Israel currently desalinates so much seawater that its municipalities are unwilling to accept it. Excess desalinated water is being used to irrigate crops, and the country’s water authority has even used it to refill Lake Tiberias itself,<sup>53</sup> which is ironic considering that the lake water continues to be pumped to Israeli populations in the arid south. There is now so much treated water that some Israeli engineers assert that “today, no one in Israel experiences water scarcity”<sup>54</sup> at the present time in which the damage to the coastal aquifer is projected to be irreparable.<sup>55</sup>

But the same cannot be said for Palestinians, especially not those in Gaza. People there have resorted to various ingenious filters, boilers, under-the-sink or neighborhood-level desalination units to treat their water. However, these sources are unregulated and of dubious quality, often germ laden and another reason for prescribing antibiotics to Gaza's children. This chain of environmental damage, thus, perpetuates a pattern of harm upon historic injury. Meanwhile, doctors, nurses and water maintenance crews attempt the impossible with the minimal medical equipment at their disposal, exacerbated by Israel's protracted blockade. The result is a combined water and health sector situation that, even without the global pandemic, some have called "toxic ecology" or a "biosphere of war."<sup>56</sup>

## Extractivism

In general, extractivism is the practice and process of removing natural resources from the Earth to sell on the world market. It is most-closely related to mining and mineral extraction, but could be considered more broadly to include any large-scale harvesting or removal of primary goods for further sale.

### Keystone Spills

This category of activity finds extraction above and below ground with multiple consequences for the environment and the associated effects of human rights to adequate housing and land. Examples include the destruction of lands and water resources when, in 2019, the Keystone Pipeline leaked 383,000 gallons (2,214,465 liters) of shale oil extracted from Alberta, Canada onto 19,426 m<sup>2</sup> of the plains in northeastern North Dakota, USA.<sup>57</sup> (The pipeline owners originally had estimated the spill at about 795,000 liters).



Figure 5: (L) The controversial Keystone XL oil pipeline crossing North Dakota. Source: oilprice.com; (R): Map of Keystone XL Pipeline, a project to move heavy crude oil from the tar sands region of Canada to Nebraska, where it will then move on to refineries in Illinois and along the Gulf Coast. Source: TC Energy

The responsible parties are Keystone Pipeline System, commissioned in 2010 and owned by TC Energy and, as of 31 March 2020, the Government of Alberta. Because of its real and potential harm to the environment and Indigenous People, the Barack Obama Administration rejected the pipeline project in 2015,<sup>58</sup> but President Donald Trump issued a federal permit for the project's expansion in 2017.<sup>59</sup>

In that very year, the pipeline leaked an estimated 1.5 million liters of oil onto northeastern South Dakota farmland. That leak was the seventh-largest onshore oil or petroleum product spill since 2010.

North Dakota's biggest spill, and one of the largest onshore spills in U.S. history, came in 2013, when the Tesoro Pipeline dumped 3.1 million liters in the northwestern part of the state. In that case, the company spent five years and nearly US\$100 million cleaning it up.

## Frackers' Forest Grab

In other incidents, federal and some state governments in the US (e.g., West Virginia, Utah, Washington, North Carolina, Pennsylvania, and Texas) have revised laws to allow corporations to use “eminent domain” as a pretext to install hydraulic fracturing (fracking) infrastructure on private property, with or without landowner consent.<sup>60</sup>

The oil and gas industry has spent at least US\$29 million in Pennsylvania on campaign contributions to politicians and other lobbying efforts, including \$1.8 million to Governor Tom Corbett, who signed a bill into law on Valentine’s Day, 14 February 2012, allowing corporations to take private property for “injection, storage and removal from storage of natural gas.”

In 2005, Texas Governor Rick Perry had signed a bill into law, limiting certain uses of eminent domain.<sup>61</sup> However, he and fellow lawmakers explicitly absolved oil and gas pipelines, exempting them as “common carriers,” in order to enjoy the privilege of confiscating private land with impunity.

A 2012 federal decision in the “public interest” allowed Tennessee Gas Pipeline Co. to use eminent domain to take forested property from an 87-year-old New Jersey man and his wife for construction of a natural-gas pipeline. Before construction permits were approved and before any compensation, the company began cutting down trees directly behind the couple’s home.

Formerly, landowners had been paid just compensation under a fair negotiation between the two parties. However, since governments have granted oil and gas companies eminent-domain power, landowners now typically receive far less compensation than they would without eminent domain.

## Deforesting Iryan Jaya

Also belonging to the category of conflict, occupation and war is the environmental harm caused by deforestation in Indonesian-occupied Iryan Jaya (West Papua). In the VDB, these violations take the form of demolition/destruction, dispossession/confiscation, and privatization of public goods and services, as well as environmental destruction contributing to climate change.

After extensive logging on Cyclop Mountain in Jayapura Regency, a flash flood on 17 March 2019 affected nine subdistricts of that Regency, and four sub-districts in Jayapura city. Around 11,725 households were affected, where at least 112 people died, 90 went missing, 74 people injured, and 11,000 people displaced.<sup>62</sup>

The displaced persons were scattered around various sites and evacuated to 28 sites. The flood water also inundated six areas, including 1,450 houses in Gajah Mada, 1,000 in Jayapura, Kemiri dan Sentani, 200 district offices, and 200 homes in Doyo. The water resource on which the inhabitants depend became contaminated by mud and logs from the landslide.

The convergence of Indonesian military occupation, deforestation, development, and consequent environmental disaster leading to habitat-related human rights violations also has its longer history in Iryan Jaya. These have merged also with local criticisms over slow relief effort, where relations between the Indigenous Papuans and the occupying Indonesian state have long been difficult. A failure to address the humanitarian crisis after similar flooding and landslides in 2010 only added to tensions over the recent Indonesian security force killings of Indigenous Papuan protesters in the towns of Wamena and Manokwari, leaving 91 people dead and more than 800 others injured.<sup>63</sup>



The annual deforestation rate has reached 254,460 hectares in West Papua province, where exploitation by forest concession holders (HPH), mining and illegal logging has increased over the past decade. In 2010, Indonesian occupation authorities had awarded licenses to 20 HPH holders with total concession areas of 3.5 million hectares, 16 permits to mineral and coal mining companies covering 2.7 million hectares, 13 licenses to oil and gas companies over 7.1 million hectares, and 219,021 hectares for plantation firms.<sup>64</sup>

These activities in West Papua are reportedly responsible for 25% of the deforestation over the whole of Indonesian-held territory. Meanwhile, Indonesia has suffered numerous deadly flash floods, especially since 2000, including one in 2003 that killed at least 157 people Bahorok District, North Sumatra.<sup>65</sup>

### Romanian Forests

Illegal logging amounts to a variously estimated 10–50% of the total logging worldwide with an increasing involvement of organized crime.<sup>66</sup> These enterprises form an international network of quasi-legitimate businesses and corporate structures, and collude with senior government officials to hide their illegal activities and launder illegal timber.<sup>67</sup>

The Danube-Carpathian Region and Romania host Europe’s last primeval forests. There state authorities, academic research and NGOs reports have revealed the extent of illegal logging and forestry crime. In Romania, forest degradation through logging has even been declared a threat to national security.

However, despite the European Union Timber Regulation (EUTR) coming into force in 2013 to stop illegal wood and paper products being on the European market, the EUTR and national laws in Romania against forestry crime have not been sufficiently implemented, largely due to lacking inter-agency cooperation, capacity and resource gaps, as well as corruption and conflict of interest.<sup>68</sup>



Figure 6 Map showing the relative vulnerability of European countries to landslides. Source: Ancuța Rotaru, “Landslides in Romania,” conference paper: International Conference on Geotechnical Engineering, Lahore, Pakistan, November 2010.



Figure 7: Landslide in Maramures County, Romania, June to July 2010. Source: Rotaru, op. cit

The immediate consequences of illegal and illicit deforestation include diminishing the beneficial functions of forests for environmental protection and imbalances in nature, causing draught, soil erosion, floods, landslides, loss of biodiversity, extinction of species and CO<sub>2</sub> emissions.<sup>69</sup>

In this context, the Swedish furniture giant IKEA owns around 50,000 hectares of Romanian forests, mostly in the center and northeast of the country (Prahova, Buzau, Vrancea and Botosani counties) and a smaller area in the northwest (Bihar County). These holdings make IKEA the single largest private forest-owning company, therefore



Figure 8: Thousands of Romanians march in Bucharest on the evening of 3 November 2019 to protest the depletion of their forests and ecosystem. Source: Catalin Georgescu/ Greenpeace Romania Facebook Page.

with a commensurately large social responsibility. Despite its claim to be “a responsible forest manager,” IKEA has been found to waive this requirement for its employees and subcontractors operating on their properties to the detriment of the environment, communities and natural protected areas. Some of the destruction is being perpetrated inside or in the vicinity of EU designated Natura 2000 sites that are meant to be protected under EU directives.<sup>70</sup>

Numerous studies have linked Romania’s greatest floods and landslide vulnerability among European countries to its galloping deforestation.<sup>71</sup> In 2008, flash floods and storms in northern Romania killed five people, forced 15,000 people to flee their homes, destroyed 20,000 hectares of farmland and destroyed thousands of houses and small bridges.<sup>72</sup> Heavy rains in June and July 2010 left over 800 homes completely destroyed, more than 7,000 damaged, and over 15,000 people displaced.<sup>73</sup> Many of those most affected by the floods were from low-income households, mainly old people or families with young children in rural communities. (Two-thirds of Romania’s poor live in rural areas.<sup>74</sup>)

In the early summer season of 2018, floods swirled through Romania, damaging as many as 60 towns in 14 counties. The flood also inundated more than 300 farms in the region of Slănic-Moldova, in Romania’s southwest.<sup>75</sup> The cause and consequences of these housing, land, property and national endowment losses have compelled thousands of Romanians to hit the streets in protest in 2019.<sup>76</sup>

## O, Canada

Back in North America, resource extraction has been the practice underlying a long and bloody history of colonization, depleting the environment, while denying Indigenous Peoples’ habitat in it. We are reminded of the protracted struggle to recover a portion of unceded lands when, in 2021, a court found the British Columbia (BC) provincial government in breach of the Treaty Rights of the Blueberry River First



Nations. That ruling could have broad and sweeping implications for oil, gas, forestry and hydroelectric development in the northeastern part of BC.

Consistent with so many cases retained in the VDB involving gross violations that entitle affected communities to reparation, a BC Supreme Court judge found that the “mechanisms for assessing and taking into account cumulative effects are lacking and have contributed to the breach of [BC’s] obligations” under an 1899 treaty. In the case of the Dane-zaa people of Blueberry River First Nations, the judge recognized that the Indigenous People “can no longer meaningfully exercise their Treaty Rights... Blueberry’s knowledge and [their] ability to successfully hunt, trap, fish and gather depends on the health and relative stability of the environment. If forests are cut, or critical habitat destroyed, it is not as simple as finding another place to hunt.” Among the cumulative effects of extractive industries, fully 73% of the Dane-zaa’s 40,000 km<sup>2</sup> of traditional territory is within 250 meters of some kind of industrial disturbance.<sup>77</sup>



Figure 9: Blueberry River First Nation members Connie Apsassin, Clarence Apsassin, Norm Apsassin, and Arthur Chipesia leads march in Fort St. John, BC, 29 July 2020. Source: Tom Summer/Alaska Highway News

Canada is well known for the overseas operations of its domiciled mining industry. At home also, a history of failed and/or abandoned mines have left their mark on the landscape.

The closed Tulsequah Chief mine in northwest BC has been leaching untreated waste into a salmon-bearing river since the 1950s. It is located near the Tulsequah River a few kilometers from the waterway’s confluence with the Taku River. But sitting amid this pristine landscape, the site has been referred to as an “open, oozing wound.”<sup>78</sup> Bright orange liquid runs down the hill into a huge pond that just overflows into the Taku River. The mine has been leaching untreated waste into the salmon-bearing river for decades, directly affecting some 5,250 people in its course. After years of community and environmental



group actions, the Tulsequah Chief Mine, formerly owned by Chieftain Metals, has come out of receivership and now becomes the subject of an effort by BC to begin the estimated \$48.7 million cleanup job left behind by over six decades of destructive mining practices.<sup>79</sup>

As one case inches toward resolution, new ones emerge. Canadian Premium Sand (CPS), an Alberta-based company whose board of directors is made up of all former oil and gas executives, received an Environment Act Licence from the government of Manitoba in May 2019. The license enables CPS to proceed to the construction phase of its proposed silica sand mine, as well as the construction of a wet and dry plant to process 1.3 million tonnes of silica sand a year for at least 30 years. The material will be used as proppant in the fracking industry.

The processed silica sand from the mine is located adjacent to Hollow Water First Nation, about a two-and-a-half-hour drive north of Winnipeg, along the eastern shores of Lake Winnipeg. It would then be transported via trucks at a rate of 120 loads per day, every day of the year, to an offloading facility in the provincial capital. However, in 2021, CPS made an announcement that it had completely changed its plans, subject to a license-amendment request, and now intends to extract some 7.2 million tonnes of high-grade silica sand that CPS wishes to mine at a rate of 300,000 tonnes a year, over 25 years. This time, CPS plans using the raw material to manufacture patterned solar glass.

Meanwhile, the elected leadership of Hollow Water First Nation forfeited the community's treaty-bound rights by signing a memorandum of understanding with CPS in November 2018, and receiving a \$250,000 payment in exchange. This was done without the free, prior and informed consent of Hollow Waters' community members, allowing CPS to proceed with preliminary clearing of the silica sand mine site, situated on a community-designated trapline. That directly undermined the community's constitutionally protected rights to hunt, trap, gather medicines and pick berries. This led some in the community to set up Camp Morningstar, in February 2019, blocking the access road to the proposed mine. Camp Morningstar has now been operating for over three-and-a-half years.

The proposed CPS open-pit mining process will likely create acid mine drainage into the local water system, threatening multiple harm to human health. This sand acts as a natural filter for all the water in the region, from the rain, the rivers, the lakes and underground streams. The mine's adverse environmental impacts are already visible at an abandoned silica-sand mine that operated on neighboring Black Island from the 1920s to the 1990s.<sup>80</sup>

Like the struggle over the damage done by the Tulsequah Chief mine, the local people's pursuit of climate justice continues toward an outcome yet to be seen.

## **Governance**

Governance of the commons and rural areas, as well as cities and urban areas, is increasingly recognized as strategic arenas for climate-change action. Processes of climate-change and environmental governance reflect the conditions of specific local contexts. Cities and sub-national spheres of government have variously developed along with international climate policy and require ever-greater coordination across organs of the state, as well as across national borders. The pattern is checkered, often with devastating consequences.

## Pakistan's Superfloods

As much as foreseeability is a factor in the assignment of responsibility to the state and its organs, the devastating 2010 monsoon floods in Pakistan, affecting some 20 million people, left 1,985 dead and another 2,964 injured. Those floods have been considered an augury of what was surely to come again.

That doomsday prediction came true in 2022. The mega-floods of 2010 would be enough to challenge any government, and the emergency response then led by Pakistani authorities to save thousands of lives. However, the slow pace of recovery and reconstruction left millions of people unnecessarily exposed to another disaster. Despite ample warnings and disaster-management advice from the UN, World Bank, Asia Development Bank and scientists, Pakistan's institutions were caught off guard this year.<sup>81</sup>



*Figure 10: Residents of Dera Allah Yar District Jafferabad, Balochistan, retrieve bamboos from a damaged house following the monsoon-season floods, 25 August 2022. Source: Reuters.*

The weather events from mid-June till late August causing the super floods in Pakistan have been exacerbated due to climate change-induced factors. The country received a four-fold increase in rainfall during this period over the average monsoon rainfall over the decades. However, any ambiguity about liability for the losses does not preclude the inventory of lessons to be learnt.<sup>82</sup>

Most flood-preparedness advice primarily focuses on riverine floods. However, in Pakistan's case, the origins included glacial melting and riverine flooding, first in Khyber Pakhtunkhwa, that flowed to the Arabian Sea via the Indus River. However, the severe flooding in Baluchistan, Sindh and southern Punjab were due to the excess of climate-change-induced rainfall. The National Disaster Management Authority (NDMA) seemed under-prepared for this perfect storm.

The political instability in Pakistan did not help: After a successful no-confidence vote passed in Parliament against former Prime Minister Imran Khan and ousted the Pakistan Tehreek-e-Insaf (PTI) Party, the newly ruling Pakistan Democratic Movement (PDM) came into office only two months before the monsoon hit.

It was only at the end of August that the central government responded. One-third of the country was already under water, affecting 33 million citizens, washing away 45% of cultivated lands, and leaving more than 1,300 people dead. The flooding destroyed some 560,000 houses, damaged another 1.2 million houses and 5,700 kms of roads, as well as killed 750,000 livestock, among the other untold losses. Initial cost estimates put the cost of reconstruction and rehabilitation at a range of €20–40 billion.<sup>83</sup>

Government critics blame officials for economic mismanagement, naked cronyism and other entrenched corruption, inadequate policies and wrongheaded priorities. The floods have only abetted these endemic shortcomings, but also exposed them to further domestic and international scrutiny. In the local sphere, some governments and authorities performed their preventive and mitigation roles better than others.<sup>84</sup>

The rate of deforestation in Pakistan is the second highest in Asia. Pakistan had 33% forest cover at the time of Partition, in 1947. But deforestation has left only about 4% of the land covered in trees now.<sup>85</sup>

Beyond the related commitments of the 2030 Agenda,<sup>86</sup> Pakistan's various spheres of government have been sufficiently advised of the need to stop illegal construction of buildings over a watercourse, riverbed, or ravine (*nullah*) and to regulate the elite settlements of the Defence Housing Authority (DHA) in accordance with the relevant laws, and to prevent real estate development on natural drainage channels. Officials still grant building permits for structures that violate these tenets.<sup>87</sup>

Before the 2010 floods, housing authorities and slums have taken over storm drains and anti-encroachment operations were initiated in some cities.<sup>88</sup> As always, the proliferation of slums and informal settlements indicates the level of the housing crisis in a country, as lower-income residents are left with no other choice but to build randomly. The consequent blocking of storm drains cannot be ignored, yet this comes while governance systems remain exclusionary and estranged from the citizen.<sup>89</sup>

### The Petrópolis Example

Almost 3,000 feet above sea level, Brazil's historic capital city Petrópolis now has a population of around 300,000. It is an important tourist destination in the region, never having recovered its industrial status lost in the 1980s economic crisis. In February 2022, a rain-fed flooding disaster echoed what happened 11 years before, when a similar downpour triggered massive landslides, killing almost 1,000 people in the region.

An entire month of expected rain fell in just three hours, and the deluge hit a very specific part of town: The precarious Alto da Serra community. Massive mudslides cascaded down the steep slopes, quickly destroying over 100 homes and overflowing the city's historical center. Many in its path were trapped and could not escape; 300 persons lost their lives.<sup>90</sup>

However, the material and human toll of the disaster could have been smaller, and the people affected by the disaster are among the poorest and most vulnerable populations, which makes their recovery even more difficult.

First of all, the historical formation of the city was problematic. During the colonial period, settlers built on the banks of the rivers, maintaining the European pattern of spanning water courses with bridges. With time, the growing population began to occupy the slopes, and the population tripled from the 1950s to 2010.



More recently, disaster-prevention measures included laws amended to establish proactive—not just reactive—environmental management systems. And Petrópolis was one of the cities chosen to be a model of preventive action against just such tragedies. The Strengthening National Strategy of Integrated Natural Disaster Risk Management (GIDES) project involved intense training of local civil defenses by Japanese technicians specializing in disasters, and even received a UN prize for disaster reduction in 2017.<sup>91</sup>

However, the project was terminated in 2018 due to lack of interest on the part of Brazil's new Jair Bolsonaro government to renew it when coming to office in 2019. Also, the same administration's dismantling of the Ministry of Cities, which centralized prevention actions, had diminished cooperation between and among local governments.



*Figure 11: Landslide in Alto da Serra, Petrópolis, where 300 died. Source: National Geographic.*

Among the main actions of the Brazilian Civil Defense System is to map the risks related to landslides and implement nonstructural measures and early warning systems. However, civil-defense services have deteriorated also during the Bolsonaro era.

Nonetheless, largely because of information from academia, public bodies have had the scientific information to make preventive decisions, such as removing people from risk areas during the rains. We have learned, however, that this information is useless, if not heeded by public managers. Ultimately, firefighters and the state and city Civil Defense performed heroically to help the victims, while administrators blame the rain. As Jefferson Picanço, a member of the Center for Scientific Support in Disasters (CENACID), lamented: “We have regressed a lot in risk management in recent years, and the population ends up being seen as the culprit of their own tragedies.”<sup>92</sup>

## Desert locust outbreak

The recent East Africa locust outbreak has provided an example of how manageable risks spin out of control. Locust infestations are well known since antiquity. However, in the past 120 years, humans have generally become much better at managing locusts, having learned how to contain them before they turn into large infestations. Despite this knowledge and experience, bad management and political instability can still cause locust management to fail. This case relates also to the conduct of war in and by certain states.

Starting in 2018, a series of unfortunate events and missed opportunities unfolded, allowing swarms of desert locusts to form and spread across 23 countries on multiple continents between 2019 and 2021. As locusts are wont to do, they devoured their weight in vegetation every day. A swarm covering 1 km<sup>2</sup> consumes as much food as 35,000 people in one day. One mega-swarm alone, measured in Kenya in 2020, covered an area the size of Luxembourg.<sup>93</sup>

First, political conflict and insecurity in Yemen and, later, in Somalia rendered some breeding areas inaccessible even after they were identified. That was one key opportunity to curb the locust outbreak missed. Then a series of climate change-related cyclones created favorable breeding conditions for locusts in the Arabian Peninsula, boosting the migration of swarms far into Africa and Southeast Asia. There, they not only destroyed crops, but also consumed fodder for farm animals to the point of their starvation. Ultimately, the large-scale vegetation loss directly threatened the livelihoods and nutrition of an estimated 42 million people already at risk from food insecurity.

Missing crucial intervention points due to regional and local barriers to management led to 23 countries facing serious impacts depriving the most vulnerable and impoverished people of their human rights to food and livelihood. Some of the root causes of the recent locust infestations have involved governance at multiple levels. These took the form of:

- Insufficient national/international cooperation: Lack of coherent national/global governance and limited governmental capacity;
- Undervaluing environmental costs: The pursuit of economic growth or developmental interests lacks consideration for impacts on the environment;
- Insufficient risk governance: This occurs where state authorities and civil servants lack an accurate perception or awareness of dangers and hazards, or lack competence in governance relating to risk management and response;
- Human-induced greenhouse gas emissions: This human activity creates the condition for increasing ocean and atmospheric temperatures, driving climate change.<sup>94</sup>

Given their cyclic recurrence, desert locust outbreaks will continue to be a hazard in the future, and may become more frequent and more severe as climatic changes, including ocean warming, foster weather conditions that are favorable for breeding locusts and swarm migration.

## Industrial pollution/contamination

Across regions, a substantial increase of metal concentrations in water is related to local discharges from the metallurgical and mining, textile and chemical industries. These lead to transboundary pollution, as well as indirect leaching of elements by acid precipitation. The effects on housing, land and other components of human habitat are highly destructive in the short term and, cumulatively, over time. Fish are often used as a biological indicator to show the impact of water pollution by metals on the ecosystem.

The causes of fish and human diseases are often related to water pollution and accumulation of metals in water-borne organisms. Here are some examples from the VDB determining the effects on housing and land rights in the fragile Arctic environment.

### Norilsk Dumps

Along the Ambarnaya River outside Norilsk, Russia, a series of environmental disasters struck over May and June 2021. On 29 May, more than 21,000 tons of diesel fuel spilled into the soil, two rivers and a downstream lake after a Norilsk Nickel-operated powerplant storage tank collapsed, or sank, with the thawing of the permafrost soil. Russia's richest man, Vladimir Potanin, owns Norilsk Nickel.

Subsequently, two plant managers and two top engineers were arrested on suspicion of violating environmental-protection rules. The mayor of Norilsk and a government inspector were charged with negligence. President Vladimir Putin declared a state of emergency after the incident, and Norilsk Nickel promised to pay for the estimated at RUB10 billion rubles (€166,165,000) clean-up. Local officials and environmental groups say it could take years for the environment to recover from the fuel spill.

One month later, an industrial-waste landfill near Norilsk caught fire in the third environmental disaster in a month to hit the area around that Arctic Siberian city. Civil defense authorities said the 1,000 m<sup>2</sup> fire at the solid industrial-waste landfill likely contained heavy metals, surfactants, and sulfurous acid. The day before, on 28 June, Norilsk Nickel admitted also that one of its plants pumped wastewater from a reservoir into the fragile Arctic environment and that it has suspended the responsible employees.<sup>95</sup>



Figure 12: Norilsk Nickel aimed to curb pollution in Norilsk by 75% by 2020. It failed. Source: Bellona.



## Kola Peninsula Forests

Forests on the Kola Peninsula in northern Russia grow close to the Arctic tree line and are subject to both natural and anthropogenic stress factors. One such anthropogenic factor is the Severonikel smelter, near Monchegorsk. It is one of the two major sources of sulphur dioxide and heavy-metal emissions, significantly degrading the surrounding vegetation.

Surface water in Arctic regions is characterized by low calcium and salt content, and is vulnerable to airborne contamination or industrial effluent. Consequently, the inhabitants of towns and settlements in the Murmansk region consume drinking water from lakes that the nearby nickel and copper industries have polluted with cadmium, which is associated with acid rain. The existing water treatment systems in this region cannot remove metals from drinking water.

During a period of severe pollution of Lake Imandra, mass incidents of fish diseases emerged.<sup>96</sup> The highest content of metals in water were observed in fish from the water bodies exposed to smoke emissions of copper and nickel smelters. In fish as a precursor, kidney disorders and nervous-system disorder brought on by severe liver disease seem to be the prevalent effects. Based on fish intoxication symptoms, water quality has since improved recently, but far from recovery.

The highest accumulation of metals within the kidney and liver were recorded in inhabitants of Monchegorsk, mostly from cadmium intake. The presence in the kidneys of newborn children, indicated high penetration into the human organism. The results of a 2019 study show that, while concentrations of metals in drinking water are quite low, they still cause high rates of diseases in the human population.<sup>97</sup>

## Landmark Environmental Case

In a legal battle that went all the way to the European Court of Human Rights (ECtHR), an unprecedented judgment on 9 June 2005 found that the Russian state had failed to effectively prevent or regulate pollution from a steel plant, violating the European Convention on Human Rights.<sup>98</sup> The case was brought by a Russian woman, Mrs. Nadezhda Fadeyeva, represented by lawyers from the London-based European Human Rights Advocacy Centre (EHRAC) and Memorial, the Nobel Prize-winning Russian human rights organization.

Mrs. Fadeyeva and her family live in the city of Cherepovets, northeast of Moscow, in a social-housing flat within the “sanitary security zone” around a steel plant run by the Severstal company. In April 1996, a local Russian court ruled that citizens had the right to be resettled, but conditioned this remedy on the availability of funds. On 31 August 1999, the local court dismissed Mrs. Fadeyeva’s petition to enforce the 1996 judgment. So, the plaintiff brought her case to the ECtHR.

The Court found that the Russian government has violated Mrs. Fadeyeva’s rights under Article 8 of the European Convention on Human Rights (the right to respect for private, family life and home), because it failed to prevent or adequately regulate the environmental pollution from the plant. The Severstal dust, carbon disulphide and formaldehyde had adversely affected her and her family’s quality of life and made them more vulnerable to disease. The ECtHR awarded Mrs. Fadeyeva €6,000 compensation and acknowledged that one of the possible solutions to the ongoing problem would be her resettlement in an ecologically safe area.<sup>99</sup>

However, in February 2007, the ECtHR’s Judgment Execution Department found that the Russian government had not provided any evidence to show that the environmental situation around the

Severstal plant had improved and no longer harming the local population. In October 2007, the Russian government informed the ECtHR that it had reconsidered the zone surrounding the Severstal plant and deemed it safe for residential property. Mrs. Fadeyeva's home was now no longer located inside the protected zone; therefore, she was no longer entitled to resettlement.

The owners of the Severstal plant claim they have spent RUB2.2 billion (about €62 million) on environmental measures to reduce plant emissions. However, no evidence of these changes has been provided to the ECtHR. On 1 August 2011, the Russian organization Human Rights Centre "Memorial" sent a petition on behalf of the plaintiffs to the mayor of Cherepovets asking that the ECtHR judgment be fully enforced and that the plaintiffs be resettled. After 17 years and an apparent legal victory, the case remains unresolved. In 2021, the Russian government forced the closure of the human rights group Memorial<sup>100</sup>

## Large-scale agriculture/livestock farming

The corporate take-over of food production and entire food systems has been replacing the small-scale family farmer with the large-scale, factory farm model. This is particularly prevalent in the livestock industry. These operations, along with the resources needed to grow the grain and oil meals (principally soybeans and corn) to feed these animals place intense pressure on the environment. This is affecting some of the world's most vulnerable ecosystems and human communities.

The burdens and controversies created by industrialized animal agriculture span ecological, social, and ethical spheres. Meanwhile, about a third of human-caused methane emissions comes from livestock, mostly from beef and dairy cattle, produced in the digestive process that allows ruminants (hoofed animals including cows, sheep and goats with four-part stomachs) to absorb plants. Methane from their flatulence raises both a huge concern, but also an opportune subject for the reduction of global warming. The apathy of the public and resistance of policy makers to pursue sustainable alternatives, especially under the influence of global corporations, form a major cause of the ecological hazard. Their symptoms are explored in the following cases entered in the VDB.

## Devouring the Rainforest

Habitat conversion, or deforestation, in the Amazon Basin is the principal force affecting the future of the Amazon Biome. As the number one culprit of deforestation in virtually every Amazon country, cattle ranching accounts for 80% of current deforestation.<sup>101</sup> It is responsible also for the release of 340 million tons of carbon to the atmosphere annually, which is equivalent to 3.4% of current global emissions. Beyond forest conversion, cattle pastures increase the risk of fire and are most-commonly created by the slash-and-burn method.

Cattle raising is a significant degrader of riparian and aquatic ecosystems, causing soil erosion, river silting and contamination with organic matter. And trends indicate that livestock production is rapidly expanding in the Amazon Basin. For the past 50 years, 91% of land deforested has been converted to cattle ranching.<sup>102</sup>

Brazil has 88% of the Amazon cattle herd, followed by Peru and Bolivia. While grazing densities vary among livestock production systems and countries, but the dominant mode of cattle ranching in the Amazon is extensive low-productivity systems with less than one animal unit<sup>103</sup> per hectare of pasture.



In the Brazilian Amazon, fires generally spread into forests from adjacent agricultural and grazing lands. Between 2000 and 2002, forest hotspots<sup>104</sup> almost tripled from 16,000 to almost 42,000 per year.<sup>105</sup>

These fires make way for cattle ranching, the most-important cause of direct conversion of rainforests. Soy developers then come in to capitalize on the lands the cattle rancher have cleared, and push cattle ranching—and deforestation—further toward new rainforest frontiers.<sup>106</sup>

In the first half of 2022, Brazilian Space Agency satellite data showed such deforestation covered 3,980 km<sup>2</sup>—an area five times the size of New York City. Despite growing global awareness of the destructive consequences, this rate of destruction is the highest since at least 2016, with related forest fires in June 2022 the highest in 15 years.<sup>107</sup> The value of the land and biodiversity loss is incalculable, but can be estimated to cover 1,672,000 km<sup>2</sup>.<sup>108</sup> The aggressive spread of cattle ranching and its accompanied organized crime also have claimed the lives and threatened the livelihoods of those who stand in the way, ranging from Indigenous communities and journalists to small farmers and public officials.<sup>109</sup>



Figure 13: Rainforest Trust (L) and @mohsinkazmitakespicture (R).

### Palm Oil Monoculture

Palm oil is a vegetable oil drawn from the high-yield fruit and kernel of fast-growing oil palms, primarily the African species, *Elaeis guineensis*. It is an ingredient in over half of all processed food. A highly versatile agricultural product, palm oil is also used in many non-food items, including soap, shampoo, deodorant, cosmetics, massage oil and machine lubricants. Palm oil also faces a growing worldwide demand as a biofuel.

Intense palm oil cultivation began in the early 20<sup>th</sup> century in Indonesia and Malaysia, which have cut down over six million hectares of their tropical rain forests for palm plantations. Today, Indonesia and Malaysia provide over 80% of the world's annual palm oil supply, employing four million people directly or indirectly.

When local farmers pursue local needs, palm farming can be environmentally and socially sustainable interspersing palm oil with traditional subsistence crops and jungle. However, millions of hectares of tropical rainforests have been converted to large-scale palm oil monocultures in Indonesia, destroying vast biomes of biodiversity under pressure from distant, profit-seeking political authorities or national and international agriculture and food companies.

Now, Guatemala produces the highest yield of palm oil per hectare than any country in the world. When palm oil was first introduced there, people hoped to avoid the negative environmental, social, and economic effects of the monocultures that were historically problematic for Malaysia and Indonesia. Since the 1980s, the government has overseen most of the country's plantation-style palm oil cultivation through joint agreements with national and international agriculture and food companies. The government's proposed economic, social and environmental goals were: (1) to increase the country's GNP, (2) improve the lives of rural Guatemalans and (3) protect the land for future generations. After reaching the first goal with a 3% annual GNP growth rate since 2012. However, the second and third goals remain elusive.

The government's promise of improved rural education and health did not materialize, and large-scale palm oil plantations resulted in irreversible damage to the region's environmental biodiversity, water supply, and food resources. Corporate and government "land grabs" pushed Indigenous People off their ancestral territories.

Guatemala's most tragic palm oil disaster took place on 28 April 2015, when heavy rains overflowed Reforestadora de Palma del Petén SA (REPSA) palm oil refinery's oxidation ponds. That sent toxic material into the Pasión River in northern Guatemala's Petén. Within two days, over 100 miles of the river were covered with thousands of dead fish and other aquatic life. In addition to losing their food source, over 12,000 people along the river also lost their source of water.

Government officials and business people loyal to REPSA sought to block legal action. Nevertheless, a courageous judge ruled that the spill was an "ecocide" and ordered REPSA to temporarily cease operations while government authorities conducted an investigation.<sup>110</sup>

Not long after this landmark decision, Rigoberto Lima Cioc, the first Indigenous person to document the social and ecological damage of REPSA operations, was gunned down in broad daylight by unidentified assailants. Then three more community leaders were abducted and killed by people loyal to REPSA. In this violent context, the courageous judge was forced to back down and his ruling was overturned. Today, REPSA remains in business and the killers and assailants who murdered the Guatemalan community leaders remain at large.<sup>111</sup>

Beyond this case, palm oil monocultures have been found to be inherently unsustainable for ecological and biological reasons,<sup>112</sup> in addition to the accompanying violations of human rights related to habitat.

## Megaprojects

This term "megaproject" does not have a strict technical or legal definition. However, the many definitions and explanations of megaprojects concur that a megaproject is a large-scale, high-cost project, involving transportation infrastructure (roads, highways, rail systems, etc.), consumption (hotels, shopping centers, resorts, real estate development), industries (minerals, petroleum/oil, etc.), mechanized agricultural and

monoculture projects, energy and water projects (power plants, dams, etc.), and/or production, among others.

“*Mega*,” derived from the Greek (μέγας), meaning *great*, is a unit prefix in the metric system denoting a factor of one million. The “mega” in megaproject can connote the high cost of the undertaking, with many sources stating that a megaproject is an endeavor with a minimum cost of USD 1 billion. The “mega” also can indicate the high skill level and attention required to undertake, maintain and manage such a project.

However, the “mega” dimension of these projects also reflects the social and environmental impact, as such projects are never built without significant environmental and human effect. Due to the size of a megaproject, it typically results in displacement of persons and communities and the interruption of, and/or separation from their sources of livelihood.<sup>113</sup>

### Coastal GasLink Pipeline

In addition to instances of habitat-related human rights violations from pipeline leaks, the very construction of such pipelines also bears destructive consequences for those living in their path. The case of Canada’s nearly 670 km-long Coastal Gaslink (CGL) violates laws of the Indigenous Wet’suwet’en people, as well as Canadian law.<sup>114</sup>

Despite a Supreme Court ruling, CGL, another TC Energy megaproject, is on track to be built through unceded land. If completed, it would carry 2 billion cubic feet per day of fracked gas from northeastern B.C. to a proposed processing facility on the Pacific coast. The Wet’suwet’en people have staged numerous protests and standoffs with the TC Energy personnel and contractors, operating without Wet’suwet’en consent across the roughly 22,000 km<sup>2</sup> of their traditional land.

The Wet’suwet’en government was recognized in a 1997 ruling by the Supreme Court of Canada, which held that the First Nation had never given up rights or title to their lands. And, like other First Nations in Canada’s westernmost province, the Wet’suwet’en never signed a treaty with the British Crown, nor the Canadian government. That means that their territory is unceded land. The presence of TC Energy and company on Wet’suwet’en land already constitutes a violation of the Indigenous People’s rights to their land and free, prior and informed consent over projects in their territory.<sup>115</sup> So, the protests and stand-offs continue,<sup>116</sup> while the Canadian government fails to uphold its own laws and international commitments, as TC Energy reports that megaproject to be 72% complete.<sup>117</sup>

### Site C Dam

Meanwhile, Canada’s West Moberly First Nations launched another landmark legal case against the Site C Dam in northeastern BC, arguing that the CAD\$16 billion hydro project and two previous dams on the Peace River constitute an unjustifiable infringement of their long-standing treaty rights.<sup>118</sup>

The Site C Dam is a 1,100-megawatt hydro dam that would be the third dam on the Peace River since the 1970s. The cost of the project has ballooned from CAD7.9 billion since 2014, when it was reviewed by a federal-provincial panel, to over \$16 billion, making it both the costliest dam in Canadian history and the most expensive publicly funded infrastructure project in BC history. When completed, Site C will flood 128 km of the Peace River and its tributaries, putting Indigenous burial grounds, traditional hunting and fishing areas, habitat for more than 100 species vulnerable to extinction and some of Canada’s richest farmland under water up to 50 m deep.

After a decades-long fight against the Site C Dam, West Moberly First Nations Chief Roland Willson and the province announced a partial settlement agreement in June 2022. The West Moberly Nation released its claims against the Site C project in exchange for an impact-and-benefits agreement and contracting opportunities. Because the construction had reached a point at which no judge likely would call for its deconstruction, Willson explained that his party had reluctantly agreed to settle that portion of our court case related to Site C. However, he added: “We’re never going to be in agreement with Site C. That’s never going to happen. And every time we drive by that development it’s going to be a constant reminder of what’s been done to us,”<sup>119</sup>

A 2014 federal/provincial review of the Site C Dam found the project would cause “significant adverse effects” to First Nations’ fishing, hunting and trapping. Construction nonetheless began in 2015, with then-premier Christy Clark vowing to get the project past the “point of no return.”

In 2019, the United Nations Committee on the Elimination of Racial Discrimination called for the BC government to suspend construction of the project until it obtained the “free, prior and informed consent” of Indigenous Peoples, but construction continued. After the reluctant release of claims, West Moberly will direct the benefits of the Site C settlement toward reclaiming and restoring land, revitalizing the community’s culture and “protecting the best of what’s left.”<sup>120</sup>

## Neglect

The VDB cases involving negligence are here presented as those in which duty bearers (government personnel or other civil servants) have neglected victims of habitat-related human rights violations. Negligence or dereliction of duty as a cause of such violations are dealt with in other more context-specific categories. The criterion for considering neglect of victims is found also in the methodology found in Annex 2 below. However, the normative standard for determining instances of violation here are found also in the UN reparations framework.<sup>121</sup>

### Neglected Flood Victims, 2010

This VDB case takes us back to Pakistan’s 2010 monsoon floods not because of the victims’ losses, costs and damage from the surprise environmental event, but for their neglect in the aftermath. In that event, more than 1,600 people were killed by the flood waters that swept away over 400,000 houses throughout the country. Around 5,000 villages were inundated and thousands of people were stranded with no hope of relief.<sup>122</sup>

Authorities’ disregard for some 100,00 flood victims in Gilgit Balistan, Aqat Valley, Muzzafar Gargh, Rajan pur and some parts of the Multan districts Pakhtoon Kha province, Indus River plains, Khyber Pakhtunkhwa, Sindh, lower Punjab and parts of Baluchistan subjected them to further peril.

The absence of any legal mechanism to deal with natural and human-made disasters has raised possibilities for the authorities to profit from this latest one. The National Disaster Management Bill has been pending before the national assembly since February 2010, but it is yet to be passed into law. Monitors report that no unified action has yet dealt with the disaster, and that authorities and governments leave the local people to manage for themselves.<sup>123</sup>

The floods started on 23 July 2022 and did not reach Punjab Province until 1 August. That eight-day period would be the time to intervene to minimize the loss of human life. However, the Punjab government is under

criticism for ignoring the warnings as the water rushed toward them. Punjab lost 171,010 houses, 1,480 villages and standing crops of cotton, rice, sugarcane, fodder and different types of grains over two million acres.<sup>124</sup>

Although Pakistan had been undergoing a series of environmental disasters since 2005, the river and drainage embankments were in disrepair and too fragile to resist the flood waters. The first action of chief minister and members of his cabinet reportedly was to mount an aerial reconnaissance mission around the disaster zone and hold photo sessions with the affected people.<sup>125</sup> Similar reports from other provinces corroborated this delinquent behavior of regional government officials.<sup>126</sup>

At the time of the 2010 disaster, the Asian Human Rights Commission ominously observed: “The new phase of devastation is waiting to come.”

### Post-Maria, Puerto Rico

In another combination of occupation, colonization and environmental racism, climate-change effects have conspired also to punish informal residents in a climate crisis. The people of Puerto Rico, under United States occupation since 1898, continue to get the short end of the dependency stick in the context of climate change. The Caribbean island lies in the path of ever-stronger and more-frequent hurricanes.

In 2017, Hurricane María, a Category 4 hurricane with sustained winds of more than 140 miles per hour, devastated the island of Puerto Rico’s housing, infrastructure, agriculture, transportation networks, and communication systems. María was one of the deadliest natural disasters in US history, with an official death toll estimated at close to 3,000 individuals in Puerto Rico alone.<sup>127</sup> With about 1,237,180 million homes in all of Puerto Rico; 1,118,862 were damaged by Hurricane María and about 300,000 were declared a total loss.<sup>128</sup>

After the disaster, the US Federal Emergency Management Agency (FEMA) declared about 60% of all applications ineligible for Individuals and Households Program (IHP) aid. Across FEMA, about 95% of homeowners denied for “Failed Identity Verification” earn less than \$30,000 a year.<sup>129</sup> This meant that many thousands have been rejected for IHP grants because of the lack of registered ownership within the legal framework of Puerto Rico’s Civil Code, as required by federal US policy.<sup>130</sup>

The majority of those affected already had pre-disaster vulnerabilities. They were low-income households, women, or older adults, which demographic raises questions of inequality.<sup>131</sup> Exclusion from the IHP leaves the most vulnerable exposed to further housing insecurity and health and safety issues.

Hurricane María was the tenth-most-intense Atlantic hurricane on record.<sup>132</sup> But María was also the third-costliest storm in US history, at US\$90,000 billion, after Katrina, in 2006, costing US\$160 billion) and Harvey (US\$125 billion).<sup>133</sup> This comparison makes the case of Puerto Rico one of the most-extensive federal efforts in US history.<sup>134</sup> And Maria struck during the Donald Trump Administration when FEMA assistance was notoriously inadequate.<sup>135</sup>

### Tourism

Tourism installations can bring in external revenue for states, governments, private sector and even local communities where they operate. However, these, including those promoted as ecotourism, often involve land loss, contamination of scarce water resources and displacement. Here are examples where these converge with environmental hazards and climate change.



## Dubai Capital Degrades Dibeen

A controversy erupted in Jordan when a newspaper carried an announcement offering to auction land in an evergreen forest in the northern Dibeen region. The sale followed an investment company's failure to meet its fiscal obligations. This sparked resentment among Jordanians, who considered the transaction over primeval forest as a commodity and an act of disregard for "sacred" national wealth. The approximately 2,500,000 m<sup>2</sup> lot contains some 8,000 trees, including Aleppo pine, maple, linden and Greek juniper.

The roots of the issue go back to 2009, when Dubai Capital announced its intention to establish a tourist resort on 500,000 m<sup>2</sup> forest land owned by the Social Security Corporation. The project was touted as "economic development" with promises to provide job opportunities for the local population.

Jordanians learned of the project's failure after Dubai Capital already had divided the forests of two halves, uprooted many indigenous trees and altered the natural ecosystem. They also discovered that the promise to develop the local community and transforming the region into a modern-style tourist destination was nothing but a dream.

In turn, the head of the Union of Environmental Societies Omar al-Shushan announced the launch of the campaign #OurForest\_Not\_For\_Sale, which aims to stop these measures against forests and trees. Al-Shushan indicated that the project witnessed many violations against the people's environment since its inception. Activists emphasized the global importance of the forests of Dibeen, as they form the Earth's southernmost latitudinal extension of naturally occurring Aleppo pine forests. They demanded that the forest lands be restored to their natural state before the project. At present, Dubai Capital has abandoned the land in its damaged state marred with disused concrete foundations of structures never built.<sup>136</sup>



*Figure 14: Participants in the Land Forum "Forest and land management and climate change and their interrelationships," co-organized by HIC-Middle East/North Africa and Dibeen Association for Environmental Development, February 2022, Dibeen Forest, Jordan. Source: HIC-MENA.*

## People of Dana

The relationship between the local community of Dana and Qadisiyah villages, in Jordan, and the Dana Nature Reserve is complex and fraught. The Reserve is managed by the Royal Society for the Conservation of Nature (RSCN). The messaging from RSCN tells that it has created a nurturing and supportive environment for the flora and fauna within the Reserve, and for the members of the local community too. Critics now say that RSCN is seeking to convert the Reserve into an environmental disaster.

The Reserve was created in part of the customary land of the people of Dana, the Ata'ta tribe (العطاطة or العطاطة). The Ata'ta managed the land for centuries using traditional land management methods known as *al-hima* (الحمي). They preserved the flora and fauna, until an imposed reforestation project in the 1950s altered the balance among nature, the land and its people.

The tribe's ability to maintain its balance with land and nature eroded as modern conservation processes, and land use restrictions, progressed across their customary land. There was no attempt by the RSCN (the managers of the Reserve) to combine modern and traditional conservation approaches; even though *al-hima* methods align with the modern conservation concept of an Indigenous and Community Conserved Area (ICCA).

Ironically, the imbalance created by the modern conservation processes justified to the RSCN (and the Jordanian authorities) that the area needed protection *from* the local community. The over-grazing of sheep and goats was one example provided. Omitted, however, was that overgrazing when an afforestation project planted and protected non-native trees on native pastureland.

The local community has reported that they were not properly consulted during the Reserve's establishment in 1989 and 1993, the so-called "consultation period." Nor were they sufficiently compensated for resulting losses. Locals claim that promises made at that time were not honored, especially promises of job opportunities related to the Reserve.

In August 2021, a much-publicized debate arose between the government and the RSCN, when the government began exploring the feasibility of facilitating copper mining in the western part of the Reserve. The RSCN rejected the plan, joining Jordanian conservationists concerned about biodiversity loss. A "Save Dana" media campaign has taken off. However, all parties seeking to determine the fate of Dana Valley have ignored the local community until today. However, after so much damage already done to local habitat and livelihoods, this time, the people of Dana and Qadisiyah villages are determined to be and fully involved in the decision-making process.<sup>137</sup>

## "Royal" Ecotourism

In January 2022, the Tanzanian government renewed efforts to seize 1,500 km<sup>2</sup> of legally registered village land in the Loliondo Division of Ngorongoro District from Maasai pastoralists who have sustainably stewarded the area for untold generations. But government seeks to provide the territory to the UAE for royal ecotourism and hunting safaris.<sup>138</sup>

The plan already has displaced over 70,000 Maasai pastoralists from their ancestral land to create a wildlife corridor that would be used for trophy hunting and tourism by the United Arab Emirates (UAE)-based Otterlo Business Company (OBC), which is to create a luxury game reserve to serve UAE royalty and their guests.

At the same time, resettlement plans for Maasai living in the Ngorongoro Conservation Area (NCA) have been advanced, with the government aiming to begin removing residents by the end of February 2022. On 11 January 2022 the Arusha Regional Commissioner had met with village chairmen and councilors in Loliondo Division of Ngorongoro District to inform them of the government’s decision to designate the 1500 km<sup>2</sup> area of their legally registered village land as a wildlife corridor. If carried out, the creation of a wildlife corridor would result in the Maasai losing ancestral land vital to sustain their pastoral livelihoods.

In June 2022, following a decision announced by Arusha Regional Commissioner to renew dispossession of the Maasai, UN human rights experts have expressed grave concerns about continuous encroachment on traditional Maasai lands and housing, accompanied by a lack of transparency in, and consultation with the Maasai Indigenous Peoples, during decision making and planning. The decision came despite a 2018 injunction by the East African Court of Justice hearing the case. Also in June 2022, eight UN Special Rapporteurs appealed to the Tanzanian government to end the dispossession and eviction, warning of further violence.<sup>139</sup>

Another situation has been unfolding in the adjacent Ngorongoro Conservation Area, where authorities have reportedly been advancing plans to evict an estimated 80,000 Maasai from their ancestral lands. Maasai representatives said that authorities have made no genuine efforts to consult them and that they have learned details of the planned eviction from leaked documents. The government denied plans to forcibly evict the Maasai, but police presence and harassment in Maasai villages has increased, advising locals to “volunteer” for relocation because they would have no choice but to move.

In a surprise decision of the East African Court, judges dismissed the Maasai claim for lack of evidence of harm from their eviction. At the court decision in October 2022, Pan-African Lawyers Union (PALU) said the plaintiffs would appeal against the verdict, which campaigners called “a shocking blow” to Indigenous land rights.



Figure 15: Maasai women and children at a village on the border with Tanzania in Narok, Kenya, after protests against their eviction from ancestral lands turned violent, 23 June 2022. Source: Daniel Irungu/EPA.



## Urbanization

Urbanization, *per se*, does not constitute a violation of human rights, but certain forms of it may lead to violations in the context of environmental hazards and climate change. Urban activities are major contributors to the ever-increasing emissions of greenhouse gases, due to cities intense use of energy. At the same time, the rapidly growing populations in many urban areas are also the most vulnerable to the impact of climate and climate change.<sup>140</sup> Meanwhile, the VDB reveals numerous cases in which reckless urbanization has combined with environmental hazards and climate change events that lead to violation of a bundle of human rights related to human habitat.

### Inevitable Bangaluru Flood

Bangaluru city (formerly, Bangalore) underwent devastating floods at the end of the monsoon season in August 2022.<sup>141</sup> Ramanagara town was partially submerged after Bakshi lake in Maruti Layout breached, unleashing a torrent of water into the Chikkahole, a stream that flows toward Arkavathi River.

Areas near Tittamaranahalli Lake, Kudur Lake and Kanva Dam backwaters were among the most affected. The flooded localities included Tipu Nagar, Kolar, Gandhi Grama, Balageri and Arkeshwara Colony in Ramanagara town, as well as multiple villages in Channapatna and Magadi *taluks*.<sup>142</sup> The Outer Ring Road Companies Associations (ORRCA) estimated that the companies it represents have suffered a loss of €27,859,275 due to the flooding.

However, not all this devastation has been caused by the heavy rain alone, but by inadequate urban planning, according to local experts.<sup>143</sup> It has been attributed to poor infrastructural design, whereas roads are not being defined properly and act as a barrier for water flow. The design of the stormwater network, including the lakes and the drainage channels did not connect the catchment areas to the drainage. Moreover, the lakes are not properly cleaned, weeded and maintained, and construction in the drainage paths also contributed to the severity of the flooding.

A positive finding is that public investment for storm drains in parts of Bangaluru could withstand the rains, for now. However, the southeast part of the city where the flooding was worst is not only low lying and relatively flat, but also has undergone burgeoning growth over recent years. The outlying areas beyond of the Outer Ring Road (ORR) have been incorporated in Greater Bangalore, but investment in infrastructure there has been very low. What this means is that the southeast part of Bangalore, which is already vulnerable due to its geography, is where the infrastructure has been most needed, and the city's Master Plan has not been updated since 2007.

The information technology sector around the ORR generates around €22 billion in revenue per annum, amounting to 32% of Bangaluru's total revenue, and is the highest tax contributor. However, the lack of focus on infrastructure development in that corridor has now impeded the efficiency and productivity of the companies and put employee safety and wellbeing at risk.<sup>144</sup>

Another feature of the disaster causation and response is that the affected informal settlements around the information technology hub were not being monitored or documented. As "illegal" settlements, they did have public works to ensure that inadequate drainage systems were in place. In the aftermath, even the focus of media and officials has been rather on the apartments worth Rs 90,000,000 (€1,114,371), or the opulent villas and luxury cars that became flooded.<sup>145</sup>

## Madeira Inundações

The storm that hit the island of Madeira in 2010 set in motion a sequence of events initiated by heavy precipitation during the dawn of 20 February, followed by a sea-level rise. These were followed by floods and landslides along the slopes of the island, especially in the southern part.

At the origin of the phenomenon was a powerful frontal system associated with an atmospheric depression that moved in from the Azores.<sup>146</sup> The collision of the polar air mass with the tropical one gave rise to a front that, together with the high temperature of the ocean water, accelerated condensation. That, in turn, caused extremely high precipitation in a short time. The island's topography contributed to the catastrophic effects. It is possible that, together with record rainfall, urban planning errors, such as the narrowing of stream beds and legal or illegal construction in, or very close to water courses, as well as the lack of cleaning and accumulation of garbage in the beds of smaller streams made the situation even more serious.<sup>147</sup>

Over the last few decades, the Island of Madeira has become an important offshore tourism and business center with rapid economic and demographic development, which human activity has changed the landscape. Damaging landslide and flood events have accompanied this urbanization process. As a result, the costs of restoration work due to damage caused by landslides and flood events have become a larger and larger component of Madeira's annual budget.<sup>148</sup>

In addition to the 47 dead and 250 injured in the floods, the lower part of the city of Funchal was flooded and road traffic was impeded by stones and tree trunks washed away by the streams of São João, Santa Luzia and João Gomes. In the parish of Monte, the chapel of Nossa Senhora da Conceição, at Largo das Babosas, was washed away by the force of the waters, along with some of the neighboring residences. In total, 600 people were rendered homeless.<sup>149</sup>

## Death in Duwayqa

A deadly rockslide at the informal Dawayqa district, in eastern Cairo, was another unnatural occurrence caused by urbanization.<sup>150</sup> The seepage of sewage and other drainage from the planned settlement atop the Muqattam Hill above Duwayqa resulted in a rockslide from the cliff overhanging the informal settlement. The crumbling boulders fell directly on the neighborhood known as `Izbat Bakhit (meaning "lucky manor"). The rocks crushed at least 97 homes and other structures, with each household having 4–5 members. The official figure of fatalities remained at 119, but the true number of actual victims may never be known.

Duwayqa and `Izbat Bakhit are both located in Manshiyat Nasser, one of Egypt's largest informal settlements, hosting around a million people. Residents are mainly Cairo's urban poor and internal migrants from the southern governorates. Most work in the informal sector as artisans, street vendors, construction workers, rubbish collectors, or as daily wage laborers.

The residents of Manshiyat Nasser are squatting on state-owned desert land not designated for urban settlement. Nonetheless, the governorate also built official shelters and popular housing there. They have been building there and, despite decrees for the Cairo Governorate to install utilities there, residents have introduced water, sewage and electricity in informal ways since the 1960s.

Cracks in the rock face overlooking Duwayqa could be seen as the consequence of the urbanization above became known. According to some survivors, a few days before the rockslide, local authorities threatened

residents in `Izbet Bakhit to move out or face eviction. But they did not offer alternative housing, or even temporary shelters. So, in effect, they had nowhere to go. In the end, no one was evicted. Nor was any attempt made to evacuate the area, even though the nearby and newly constructed Suzanne Mubarak Housing was available (except for some final touches to the flats).<sup>151</sup>

In September 2008, Egypt's Public Prosecutor opened investigations into allegations of negligence and the failure of the authorities to act in time to prevent deaths in Duwayqa. Soon after, the police arrested and investigated the contractor hired by the local authorities to secure the hill, but later released him without charge.

Senior officials from the Cairo Governorate and Manshiyat Nasser Neighbourhood Authority were subject to investigation for possible involuntary homicide. The injured also gave their testimonies while in hospital. In May 2010, eight defendants, including a vice-governor of Cairo, were sentenced to jail terms, but freed on bail, awaiting appeal.<sup>152</sup> An appeals court eventually acquitted the defendants.

Surviving Duwayqa families have since been subject to a series of displacements carried out by Cairo Governorate authorities. Those displaced families are mostly living in poor quality, publicly funded housing at Pyramid City, some 30 km west of the capital, away from their sources of livelihood. Others who refused to stay at Pyramid City have been further displaced to locations along the desert road to al-Fayoum.

## Other human factors

This catch-all category is reserved for actors in the environment, including acts by individuals, that violate adequate housing, land and other habitat-related rights. These deviate from the usual pattern of government and corporate duty bearers for the violations incurred. However, in each case, the territorial state remains the primary duty bearer obliged to respect, protect and fulfill (promote, facilitate and assist) toward realization of those universal human rights. In their own ways, these cases stand as a lone category, or overlap several others above.

### Environmental Demographic Manipulation

A debate over the trend of introducing coniferous trees in ecosystems that cannot support them has emerged recently in the Middle East and globally out of contradictions in the practices of the Jewish National Fund (JNF) across historic Palestine. As that Zionist organization dedicated to land acquisition throughout Israel's 20<sup>th</sup> century colonization of Palestine, JNF is accordingly chartered to discriminate in favor of "Jewish *race* or descent"<sup>153</sup> (also referred to in Israel as "Jewish nationals"). Therefore, whenever and wherever JNF acquires or manages land, it is constitutionally bound to disfavor the Indigenous Palestinian people in all its operations. That order of continuous dispossession is its central apartheid and population-transfer task.

Some still consider JNF to be an environmentalist organization. JNF is ineligible for UN recognition as a nongovernmental organization in consultative status, or otherwise operating consistent with the UN Charter.<sup>154</sup> Nonetheless, JNF has joined the UN Convention to Combat Desertification as a "civil society" partner<sup>155</sup> despite its contrary moral and technical performance and the consistent loss of biodiversity in the territory.<sup>156</sup>

Not only do JNF afforestation projects conceal the evidence of depopulated villages and terrace agriculture of the dispossessed and evicted Indigenous Palestinian people, planting any coniferous trees

triggers the Israeli claim over that land as a “forest reserve.” That pretext is then used to ban Palestinians from using (building on or cultivating) their land. Moreover, the non-native evergreens absorb more of the sun’s heat than the natural landscape, altering the natural microclimate and ecosystem, and are unsustainable as they cannot survive without costly and water-intensive irrigation of seedlings.<sup>157</sup>

Drought like the one that hit the region in 2010 showed that as much as 80% of coniferous plantations could be lost in a single weather event. Beyond the environmental consequences, the link between JNF “reforestation” and the serious crime of population transfer by upholstering over ethnic-cleansing sites, denying national and private land to rightful Palestinian owners, and implanting settler colonies in their place has come to global attention.<sup>158</sup> And the ambitious premise of creating “green walls” in incompatible climates is coming under critical interrogation by environmentalists more generally.<sup>159</sup>



Figure 16: Before and after photos of JNF-planted forest west of Jerusalem that burned on 16–18 August 2021. The remains reveal the agricultural terraces created by the Arab Palestinian villagers who originally cultivated the land and nearby villages ethnically cleansed in Israel’s War of Conquest in 1947–48. Source: Tarek Bakri.

“Agroforestry plantings” are a means of asserting ownership over so-called “national” (i.e., Jewish-only) lands. The Israel Land Authority facilitates plantings in accordance with the Planning and Building Law, as a means of preventing illegal occupancy of state lands, extending over thousands of hectares, with no public oversight. JNF is the planner and executor of those plantings. Examples of JNF’s role continuing its use of tree plantings to dispossess and displace Palestinians are found in the repeated VDB cases of afforestation, dispossession and displacement at `Ayn Zaytun,<sup>160</sup> in the Galilee, and what is now Canada Park,<sup>161</sup> in Central Palestine, and more recently, Khirbat al-Watan,<sup>162</sup> al-`Araqib<sup>163</sup> and Twail Abu Jarwal<sup>164</sup> and other villages<sup>165</sup> in the southern Naqab region.

## Individual Liability

Several VDB cases of environmental destruction are attributed to individuals who, by their acts of commission or omission, have caused losses of land and homes, among other loss of property and common goods and services.

### *Eagle Creek Blaze*

Examples include the 2018 Eagle Creek Blaze, in northern Oregon State, USA. There, a 15-year-old boy defied warnings and prohibition against lighting fires in the tinder-dry national forest and threw fireworks into Eagle Creek Canyon, in Mount Hood National Forest. After a nearly seven-week investigation, the teen faced numerous charges in local Juvenile Court. In February 2019, the teen admitted to eight counts of reckless burning of public and private property, two counts of depositing burning material on forest land, and counts of second-degree criminal mischief and recklessly endangering another hiker.

The Eagle Creek fire burned through 48,831 acres of forest in the Columbia River Gorge, threatening landmarks such as Multnomah Falls and destroying others, including the Oneonta Tunnel on the Historic Columbia River Highway. Hundreds of people were evacuated in cities between Hood River and Portland, and Interstate Highway 84 was closed for 10 days. It threatened 5,000 homes and buildings and destroyed four homes.

State and federal firefighting costs were estimated well above the US\$20 million already spent as the fire still smoldered at the time of the trial. Added to this sum were US\$2–3 million in lost business in the nearby town of Cascade Locks, where evacuations hit at the height of the late summer tourist season.

The judge ordered the teenager to pay US\$36.6 million in restitution, although the judge acknowledges that the boy won’t be able to pay it in full. He was sentenced to 1,920 hours of community service and five years’ probation.

The judge ordered payment to several affected entities, although it is not clear how much any of them will actually receive: US\$21 million to the U.S. Forest Service, US\$12.5 million to the Oregon Department of Transportation, US\$1.6 million to the Oregon State Fire Marshal, and US\$1 million to Union Pacific Railroad, among others. The judgment also includes a US\$5,000 payment to Iris Schenk, who was living in a rental home that burned in the fire.

The youth was ordered also to write apology letters to 152 people who, because of the flames were trapped on the Eagle Creek trail, as well as to the city of Cascade Locks, the Forest Service, Oregon State Parks, the Confederated Tribes of Warm Springs, and the state’s transportation department, among other groups.<sup>166</sup>



### *Torres del Paine*

Two similar environmental tragedies took place in Chile only a few years apart. In 2005, a Czech tourist in Torres del Paine National Park accidentally overturned a gas stove, resulting in a forest fire that burned about 15,000 hectares of nature near EcoCamp Patagonia.

The blaze, which took a month to extinguish, ended by destroying 16,000 of the park's 242,000 hectares. The Chilean State Defence Council filed the suit against the Czech national at the Santiago Court of Appeals seeking reparations and counting on cooperation from Czech courts. No sum was officially mentioned, but sources reported US\$ 5 million in compensation.

The Czech government apologized and sent a delegation of forest experts to Torres del Paine. Experts estimated that more than ten years would be needed to recover from the loss and damage. Chilean authorities described the blaze as the worst disaster of its kind for decades.

The Chilean National Forestry Corporation said that it took fire fighters from the three armed services, as well as teams throughout Chile and Argentina and from private companies to fight the blaze. The use of planes and helicopters was limited because of strong winds in the region that whipped the fire out of control and kept it burning a month later.<sup>167</sup>

Six years later, on the shore of Grey Lake, Torres del Paine National Park was struck again in 2011, when an Israeli tourist lit a prohibited bonfire in the woods. That ignited a forest fire that consumed about 17,000 hectares of the park in the regions of Magallanes, Bio Bio and Maule. The Chilean government deployed four planes and a helicopter to the remote mountainous region, where 300 firefighters, soldiers and forest rangers were engaged in a desperate effort to get the inferno under control. The fire killed thousands of animals and forced the evacuation of 7,000 people—mostly tourists—from the park. The blaze completely destroyed 171 homes and claimed one human life: an elderly man who refused warnings to leave his home.

Protesting his innocence when arrested, the tourist was released Sunday custody to the village of Puerto Natales. Chilean authorities confiscated his passport and forbade him to leave the Patagonia region in southern Chile until his case is heard. But a panel of judges eased the restriction on the suspect's movement.<sup>168</sup>

The case against the Israeli tourist became an international incident that was covered in the Israeli press. Even the Anti-Defamation League director intervened to charge Chilean politicians of anti-Semitism.<sup>169</sup> Eventually, the defendant reached an arrangement with the court by paying US\$10,000 to cover the losses and expenses suffered by the Chilean National Forestry Corporation (CONAF). Additionally, he was compelled to work as a volunteer one-to-two years for the Jewish National Fund in Chile, coordinating a special campaign called "Torres del Paine, from black to green," to gather resources to reproduce forests plant species in CONAF nurseries.

## **Conclusions**

Seen from the perspective of human rights related to habitat and their corresponding obligations, each of the foregoing instances delivers lessons as to the causes, consequences and possible liability for the attended violations. Often, multiple parties are responsible for the harm, but rarely do we find accountability or reparations for victims/affected persons and communities.

Rare also any quantification of the losses, costs and damage incurred by those affected, impeding the material and nonmaterial entitlements of reparation. In the emblematic case of Maasai land in Tanzania taken for royal tourism purposes, the court dismissed plaintiffs' claims of harm for lack of evidence. That sends a clarion message to monitors, especially among civil society, that such detail is indispensable for justice to be done.

Frequently, too, we see affected persons enduring untold losses against the stubborn insistence of duty bearers that their disaster was an act of nature, absolving duty-bearing parties of responsibility, and portraying any aid or remedy as a stroke of benevolence, rather than a right. In certain other cases, victims are blamed as the authors of their own demise, Despite the heroic interventions of first responders, humanitarian actors and long-visioned development agencies, indifference toward victims manifests in every region. Also common is the pattern of officials still granting license for structures and projects that are already known to violate tenets of good governance, urban planning and environmental conservation.

Development projects and even tourism installations can produce revenue for states, governments, private sector and local communities where they operate successfully. However, these often involve land loss and degradation, contamination of scarce water resources and displacement. While concentrations of metals in drinking water may be quite low, they still cause high rates of diseases in the human population and conditioning remedy on the availability of funds becomes unconvincing.

Determining values lost and numbers of affected persons remains a methodological challenge with violations in the context of environmental hazards and climate change. Because of the pervasive and geographically broad nature of environmental and climate events, both cost estimates and numbers of affected persons should be taken as symbolically indicative, but by no means exact.

In numerous cases, governance and the performance of public servants can be decisive factors in preventing, causing and remedying harm. The difference lies in the human mind, but the outcomes are quite material.

In such instances, "resilience"—as an exercise of returning to the *status quo* before a shock—and "building back better" are insufficient to achieve climate justice. Norm-based sustainable development, with its corresponding obligation of progressive realization of human rights and continuous improvement of living conditions, often requires structural reform. Papering over the problem with catchy development terms and phrases become thin alternatives to the global promise to leave no one behind.

With these lessons, we proffer the following recommendations for further action by all spheres of law and policy makers toward climate justice.

## **Recommendations**

The following recommendations derive from the lessons learned in this World Habitat Day report from HLRN's VDB. They are directed to duty bearers in all organs of the state, followed by a note to civil society allies and partners. The following should be implemented without discrimination throughout the territorial state and areas of its effective control:

- Conduct thorough environmental, public health and human rights needs assessments well in advance of all clearing operations, construction and development affecting the land, water resources, sea and air;



- Cancel plans for projects and structures that subject people to environmental hazards directly or indirectly;
- Ensure free, prior and informed consent of communities affected by structures, installations and development projects;
- Quantify and document impacts to ensure the reparations to which victims of gross violations such as forced eviction and displacement are entitled;
- Enable people to build needed housing and habitat within ecological and food sovereignty criteria, especially following a destructive environmental or climate-change event, in order to shelter their families with dignity;
- Build back better by correcting systems that have impoverished inhabitants and made them vulnerable to environmental harm;
- Replace the concept of “resilience” by restoring and building in human rights-based sustainable development in policies, programs, projects and plans;
- Apply the “polluter pays” principle in addition to prosecution for environmental violations to raise funds for not only loss-and-damage reparations, but also for necessary climate-proofing investments in underprivileged areas;
- Review, update and revise laws and policies consistent with these recommendations;
- Prosecute parties responsible for causing environmental harm and accompanying habitat-related human rights violations;
- Ensure governance systems are inclusive and ensure meaningful participation—not only ambiguous “engagement”—to serve all citizens;
- Ensure that all spheres of government and public managers know and apply scientific information in activities, decisions and policies;
- Prioritize risk management in all spheres of government;
- Avoid blaming victims of environmental hazards and climate-change disasters;
- Fortify drainage systems;
- Promote, facilitate and assist the construction of sturdier and greener houses;
- Restore wetlands and rehabilitate riverine systems;
- Coordinate local, regional, national and international environment-protection systems and their management;
- Develop and implement policies sufficient to protect and preserve the human habitat and environment;
- Replace defunct “growth” criteria for determining economic performance with qualitative and distribution criteria with consideration for environmental protection and development;
- Develop environmentally appropriate national and international population policies;
- Reduce human-induced greenhouse gas emissions by ending all new investments in fossil-fuel extraction by entities domiciled in the world’s largest CO<sub>2</sub>-emitting states<sup>170</sup>;
- Develop and improve early warning systems and flood preparedness;
- Publicly and privately support labor-intensive construction of more small dams, seawalls; stronger roads and bridge reinforcements; better-quality pipes and water treatment; back-up generators for pumping stations and much more-effective stormwater drainage;
- Publicly and privately support improvements in housing stability for limited-income residents, structures built on hills and near the seashores;
- Invest more in needed green infrastructure, including better maintenance of forests, floodplains, lakes, rivers and wetlands;

- Train public officials and technocrats in cultural competence to understand and apply the continuum of legitimate tenure when determining disaster relief and climate-resistant or other climate-friendly housing;
- Review development, planning, finance and housing policies with attention to how they impact the most-vulnerable and low-income individuals, women, children, older persons and persons with reduced mobility and other functional capacities;
- Evaluate whether disaster housing recovery frameworks are equitable and nondiscriminatory, and revise them accordingly;
- Prioritize permanent return and resettlement solutions over prolonged temporary and/or pre-fab housing, wherever possible, in response to emergencies caused by environmental hazards and climate change events resulting in housing and habitat destruction and/or displacement;
- Ensure the availability of user-cost-free, timely and appropriate materials and information about environmental risks and corresponding regulations in formats accessible to the inhabitants most-vulnerable to environmental and climate-change hazards;
- Ensure transparent environment-related decision making in all public institutions and spheres of government to ensure public participation, understanding of rationale, buy-in and compliance with codes and regulations;
- Adopt and enforce environmental-protection and climate-change-appropriate regulations for all investment and development by public and private parties, including private-sector (market-based) and socially produced housing and habitat;
- Ensure regular and competent building and environment inspection sufficiently to alert inhabitants and authorities to environmental hazards and risks;
- Support and carry out more and more-thorough environmental and climate-change studies, in order to correct the existing standards for urban development, agroecology, drinking water, etc.;
- Install and maintain more-efficient water purification treatment systems, where appropriate, to reduce the risk of water-borne diseases;
- Prevent, discipline and, if necessary, prosecute officials still granting building permits for structures that violate environmental, public health and/or human-rights tenets;
- Develop and operationalize the Warsaw International Mechanism for Loss and Damage through the CoP processes with the objective of climate justice;
- Support the already-proposed amendment to the Rome Statute of the International Criminal Court to include the grave crime of ecocide.

As for civil society, of which HLRN and Habitat International Coalition are a part, we urge vigilance in monitoring environmental hazards and entering any resulting instances of violation into the VDB. In order to be considered violations of habitat-related human rights, such cases must satisfy the conditions of (1) an identifiable duty bearer and (2) a measure of foreseeability to invoke state responsibility or other third-party liability. Based on this information and argument, a range of remedial strategies are possible to undertake, including **Urgent Actions** and other forms of advocacy with HLRN support. Other strategies range from litigation to direct action,<sup>171</sup> toward our collective goal, as always, the pursuit of climate justice.

## Annex 1: Table of climate change-related cases in the VDB

### Housing and Land Rights Violation Database Search results for Environmental/climate event

Between 3 Oct 1850 and 3 Oct 2022

Title	Date	Region	Country	Victims	Details	Development	Type of violation
<a href="#">al-Araqib #202</a>	12/10/2022	MENA	Palestine/Israel	400			Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Russians Strike Dam</a>	14/09/2022	E	Ukraine	6.000			Demolition/destruction Environmental/climate event
<a href="#">IDP Camps</a>	25/08/2022	MENA	Sudan	349.000	1		Forced eviction Demolition/destruction Environmental/climate event
<a href="#">Inevitable Bangaluru Flood</a>	22/08/2022	A	India	20.000	1, 2, 3		Forced eviction Demolition/destruction Environmental/climate event
<a href="#">Floods, govt. inaction</a>	17/08/2022	A	Pakistan	1.000.000			Demolition/destruction Environmental/climate event
<a href="#">Istanbul Floods</a>	10/07/2022	E	Turkey	977.000	1, 2		Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Durban Floods</a>	11/04/2022	AFA	South Africa	60.000	1, 2		Forced eviction

							Demolition/destruction Environmental/climate event
<a href="#">IDF Attacks Qusra Farmers</a>	26/03/2022	MENA	Palestine	4.500			Forced eviction Dispossession/confiscation Environmental/climate event
<a href="#">Russia Targets Dams</a>	26/02/2022	E	Ukraine	5.700	1		Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Petrópolis Landslide</a>	18/02/2022	LAC	Brazil	300	1		Demolition/destruction Environmental/climate event
<a href="#">12 Rivers Blocked</a>	28/12/2021	MENA	Iraq	212.420			Demolition/destruction Environmental/climate event
<a href="#">Beit Ummar fruit-bearing trees</a>	12/11/2021	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">al-Araqib #186</a>	19/04/2021	MENA	Palestine/Israel	110			Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">TotalEnergies EACOP</a>	01/03/2021	AFA	Uganda	70.000	1	1	Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Flooded Farmlands</a>	18/02/2021	MENA	Palestine	100			Demolition/destruction

							Environmental/climate event
<a href="#">Displacement</a>	03/01/2021	AFA	Somalia	1.000.000			Environmental/climate event
<a href="#">al-Dababseh trees</a>	14/12/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">1mil olive trees</a>	01/10/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">al-Sawiya Groves</a>	18/09/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">al-' Araqib 178th time</a>	18/09/2020	MENA	Palestine/Israel	400	1		Forced eviction Demolition/destruction Environmental/climate event
<a href="#">Kafr al-Labad Olives</a>	17/07/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Yasuf Olives</a>	08/07/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Hawara Fields</a>	04/07/2020	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Talnakh waste dumps</a>	29/05/2020	E	Russia	0	1	1, 2	Demolition/destruction Environmental/climate event
<a href="#">Settlers burn al-Sawiya farms</a>	19/05/2020	MENA	Palestine	0			Demolition/destruction



							Environmental/climate event
<a href="#">Environmental Apartheid</a>	01/05/2020	MENA	Palestine	0			Dispossession/confiscation Environmental/climate event
<a href="#">Naqab villages</a>	01/05/2020	MENA	Palestine/Israel	76.000			Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Bardala Water Network</a>	04/02/2020	MENA	Palestine	1.637			Demolition/destruction Environmental/climate event
<a href="#">Khirbat al-Watan</a>	01/01/2020	MENA	Palestine/Israel	4.500			Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Einnoun Reservoir</a>	01/12/2019	MENA	Palestine	1.200			Demolition/destruction Environmental/climate event
<a href="#">Settlers torch olive groves</a>	26/11/2019	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Keystone Leak</a>	30/10/2019	NA	United States	0			Demolition/destruction Environmental/climate event
<a href="#">Displacement</a>	28/08/2019	AFA	Kenya	80.000			Environmental/climate event
<a href="#">Silica Sand Mine</a>	01/05/2019	NA	Canada	582			Dispossession/confiscation Privatization of public goods and services

							Environmental/climate event
<a href="#">Cyclop Mountain landslide</a>	17/03/2019	A	Indonesia	58.625			Demolition/destruction Environmental/climate event
<a href="#">West Papua: TNI Retaliation</a>	02/03/2019	Oceania	Indonesia	41.851	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Eagle Creek Blaze</a>	01/09/2018	NA	United States	10.000			Forced eviction Environmental/climate event
<a href="#">More flooding</a>	01/06/2018	E	Romania	600			Forced eviction Demolition/destruction Environmental/climate event
<a href="#">Beit Iskariya Olives</a>	01/06/2018	MENA	Palestine	650	1		Demolition/destruction Environmental/climate event
<a href="#">WB Olive Groves</a>	01/05/2018	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Coastal GasLink Pipeline</a>	01/05/2018	NA	Canada	248			Forced eviction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Kenya	100.000.000	1		Demolition/destruction Environmental/climate event

<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Kenya		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Saudi Arabia		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Saudi Arabia		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Somalia		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Somalia		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Yemen		1		Demolition/destruction Environmental/climate event
<a href="#">Desert Locust Infestation</a>	01/01/2018	MENA	Yemen		1		Demolition/destruction Environmental/climate event
<a href="#">Post-Maria aid denied</a>	20/09/2017	NA	Puerto Rico	1.678.740	1		Demolition/destruction Environmental/climate event
<a href="#">Gender-reveal fire</a>	23/04/2017	NA	United States	0		1	Demolition/destruction Environmental/climate event
<a href="#">400 Olive Trees</a>	08/11/2016	MENA	Palestine	0			Demolition/destruction Dispossession/confiscation Environmental/climate event

<a href="#">REPSA Palm</a>	28/04/2015	LAC	Guatemala	0	1, 2	1, 2	Demolition/destruction Privatization of public goods and services Environmental/climate event
<a href="#">FSO Safer</a>	22/03/2015	MENA	Yemen	0			Demolition/destruction Environmental/climate event
<a href="#">Site C Dam</a>	01/12/2014	NA	Canada	366			Demolition/destruction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<a href="#">Olive Trees Uprooted</a>	26/12/2012	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Frackers Grab Forest</a>	14/02/2012	NA	United States	2			Demolition/destruction Environmental/climate event
<a href="#">Fuego de Lago Grey</a>	27/12/2011	LAC	Chile	1.100			Forced eviction Demolition/destruction Environmental/climate event
<a href="#">Settlers Burn Farmland</a>	04/12/2011	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#">Bainsiria, Odisha</a>	01/09/2011	A	India	4.500	1		Demolition/destruction Environmental/climate event
<a href="#">700 Olive Trees</a>	11/07/2011	MENA	Palestine	0			Demolition/destruction

							Environmental/climate event
<a href="#"><u>West Papua Deforestation</u></a>	06/10/2010	A	Indonesia	900			Demolition/destruction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<a href="#"><u>Neglected Flood Victims</u></a>	27/08/2010	A	Pakistan	100.000	1	1, 2, 3	Forced eviction Demolition/destruction Environmental/climate event
<a href="#"><u>Olives &amp; Property Attacked 35x</u></a>	14/04/2010	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<a href="#"><u>"Unrecognized" al-Araqib</u></a>	14/04/2010	MENA	Palestine/Israel	300	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#"><u>Madeira inundações</u></a>	19/02/2010	E	Portugal	600			Demolition/destruction Environmental/climate event
<a href="#"><u>40 Dunums Bulldozed</u></a>	30/06/2009	MENA	Palestine	10.000			Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#"><u>Slănic-Moldova Farms and Homes</u></a>	01/06/2009	E	Romania	500	1, 2, 3		Forced eviction Demolition/destruction Environmental/climate event



<a href="#"><u>Masha Village Land Bulldozed</u></a>	15/01/2009	MENA	Palestine	50	1		Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#"><u>Flooded out</u></a>	07/10/2008	E	Romania	15.000	1, 2		Forced eviction Demolition/destruction Environmental/climate event
<a href="#"><u>Duwayqa Rockslide</u></a>	06/09/2008	MENA	Egypt	485	1	1	Demolition/destruction Environmental/climate event
<a href="#"><u>Twayil Abu-Jarwal 4th time</u></a>	11/12/2007	MENA	Palestine/Israel	300	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#"><u>25 Bedouin Homes in Umm al-Hiran</u></a>	01/06/2007	MENA	Palestine/Israel	300	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#"><u>Israel Erases Entire Naqab Village</u></a>	09/01/2007	MENA	Palestine/Israel	93	1		Forced eviction Demolition/destruction Environmental/climate event
<a href="#"><u>Gibe 3 Hydro Dam</u></a>	01/01/2006	AFA	Ethiopia	500.000			Demolition/destruction Environmental/climate event
<a href="#"><u>Dubai Capital Degrades Dibbeen</u></a>	01/01/2006	MENA	Jordan	0	1, 2	1, 2	Demolition/destruction Privatization of public goods and services

							Environmental/climate event
<a href="#">EcoCamp Patagonia</a>	15/02/2005	LAC	Chile	0			Forced eviction Demolition/destruction Environmental/climate event
<a href="#">52 Homes Destroyed</a>	28/05/2002	MENA	Palestine/Israel	300	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Palm Oil Plantations</a>	01/01/2001	A	Indonesia	2.600.000			Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<a href="#">Landmark Environmental Case</a>	01/01/1995	E	Russia	5	1	1	Demolition/destruction Environmental/climate event
<a href="#">Maasai Land</a>	01/01/1992	AFA	Tanzania	150.000	1	1, 2	Forced eviction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<a href="#">Wadi Dana</a>	01/01/1989	MENA	Jordan	60.000			Demolition/destruction Dispossession/confiscation Environmental/climate event
<a href="#">Livestock, Agriculture in Amazon</a>	01/01/1985	LAC	Brazil	800.000			Demolition/destruction Dispossession/confiscation

							Environmental/climate event
<u>Drying up rivers</u>	01/01/1980	MENA	Iraq	3.000.000	1, 2, 3		Demolition/destruction Environmental/climate event
<u>Amazon loss</u>	01/01/1972	LAC	Brazil	0			Demolition/destruction Privatization of public goods and services Environmental/climate event
<u>Canada Park</u>	06/06/1967	MENA	Palestine	8.000	1		Forced eviction Demolition/destruction Dispossession/confiscation Environmental/climate event
<u>800K Olives</u>	05/06/1967	MENA	Palestine	0			Demolition/destruction Environmental/climate event
<u>Severonikel &amp; Pechenganikel</u>	01/01/1960	E	Russia	300.000	1, 2		Environmental/climate event
<u>Tulsequah Chief Mine</u>	01/01/1951	NA	Canada	5.250			Environmental/climate event
<u>Gaza's Water Crisis</u>	15/05/1948	MENA	Palestine	2.048.000	1		Forced eviction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
<u>Greenwashing Massacres</u>	01/05/1948	AFA	Palestine	800	1, 2		Demolition/destruction Dispossession/confiscation Environmental/climate event

<a href="#">Blueberry River Resource Extraction</a>	21/06/1899	NA	Canada	500	1		Demolition/destruction Dispossession/confiscation Privatization of public goods and services Environmental/climate event
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<a href="#">Sunbelt Apartheid: South Phoenix</a>	25/02/1881	NA	United States	4.711	1	1, 2, 3	Environmental/climate event
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**Affected persons:** 115,272,625

**Record Count: 93**

## **Annex 2: How to enter climate change-related cases in the VDB**

*The purpose of this note is to ensure a consistent and, thereby, rational and justifiable method for entering violations into the VDB that arise from the newly added violation category: Environmental/climate event.*

### **Scope**

Among the increasing drivers of displacement (forced eviction), dispossession and destruction of habitat (housing, land, municipal services, related infrastructure and facilities) are extreme weather events and environmental disasters. Weather events could be a function of climate change, environmental disasters could also include those results of environmental degradation due to human activity such as dumping toxic waste,<sup>172</sup> arson, military action, extractivism, or just sheer negligence. That means that the violation of the relevant human rights may be by either commission or omission on the part of the duty bearer(s). Considering such cases as entries into the VDB would have to involve a measure of predictability that should trigger measures to prevent the harm to the habitat.

At the same time, global consideration has turned to human rights approaches, including extraterritorial-obligation approaches, and the need for action by duty bearers for both prevention and remedy for loss and damage.<sup>173</sup> The instances leading to such consequences arising from housing and land rights violations must be recognized as important for their negative impacts on affected persons, as well as any liability for such harm. However, a dilemma arises in identifying such affected persons as “victims” since the legal definition of a “victim” is someone subject to either a crime (a breach of criminal law), or a violation of human rights or international humanitarian law. The same sources in law are our references for identifying “victimizers” and their accountability/liability.

### **Determining the Victims/affected persons**

Applying human rights methodology, to determine who is a “victim” (affected person). two elements are necessary: (1) at least one of her/his codified and identifiable human rights must be breached (including through abuse of power)<sup>174</sup> and (2) the act or event must have a causative relationship to a duty bearer. In the case of a gross violation of human rights or international humanitarian law, the victim is entitled to reparations,<sup>175</sup> regardless of whether or not the duty bearer(s)/responsible party(ies) be identified, pursued, apprehended, prosecuted or convicted. The human rights approach in such situations prioritizes the recognition of, and remedy for victims, especially if restorative justice is sought (as distinct from retributive justice).<sup>176</sup>

Human-caused environmental degradation may already be considered a violation (of the human right to a safe, clean, healthy and sustainable environment, as the UN Human Rights Council recognized in October 2021),<sup>177</sup> and which the UN General Assembly affirmed in July 2022.<sup>178</sup> However, no corresponding state obligations have yet been codified. While this category of event/instance relates to the theoretical treatment of the environment, or Mother Earth, as a bearer of rights, those are not “human” rights.

Such harm to the environment would likely affect human rights bearers (i.e., humans) as *potentially* affected persons. Those would not yet be eligible for entry into the VDB, as the violation remains only a threat. Affected future generations would be even more difficult to determine and quantify. However, in the rare case that a report identify such potential victims/affected persons, their number and description should be recorded in the “• Other” field under the already-existing “Affected persons” section of the



VDB entry form for a case already entered as an actual violation (having already happened). For potential cases, see discussion of Urgent Actions below.)

### **Determining the Duty Bearer**

The obligations of a state under international human rights law may effectively be triggered when its responsible authorities know, or should have known that the conduct of the state would bring about substantial human rights consequences. Because this element of foreseeability must be present, a state or any of its constituent organs would not necessarily be held liable for all the consequences that result from its conduct, or where the proximity between that conduct and the consequences is remote.<sup>179</sup> This state responsibility arises from situations wherein a state and its constituent organs are required to take measures, in order to respect, protect and fulfill (i.e., promote, facilitate and assist) the realization of a human right, in particular, the human rights related to habitat (the human rights to adequate housing and land, water and sanitation, a clean and healthy environment, etc.).

The obligation to protect requires the state and relevant organs to ensure that third parties do not violate habitat-related human rights. The strict responsibility (liability) may lie with non-state actors; however, the nature of the state's human rights obligations ensures that, whether directly or indirectly, the concerned state is always the primary duty bearer in respecting, protecting and fulfilling a human right. As noted above, the failure to meet such obligation may violate the relevant human rights by either commission or omission on the part of the duty bearer(s).

In international law, a state takes on its responsibility where an impairment of human rights is a "foreseeable" result of that state's conduct or other failure to respect, protect and fulfill them. The condition of foreseeability introduces a standard of liability that is distinct from strict liability, but constitutes a strong incentive for states to assess in advance the impact of their choices on the enjoyment of economic, social, and cultural rights, both domestically and abroad, because their responsibility will be assessed on the basis of what their authorities knew, or should have known. Foreseeability serves an important limiting function by ensuring that a state shall not be surprised with claims of responsibility (liability) for unforeseeable risks that are only remotely connected to its conduct.

The International Law Commission (ILC) has addressed the concept of foreseeability in the general subject of state responsibility: "To have been 'unforeseen,' the event must have been neither foreseen, nor of an easily foreseeable kind."<sup>180</sup> The ILC's commentary, thus, points to two dimensions of foreseeability; that is (1) whether the result was actually foreseen and (2) whether the result should have been foreseen. The second strand of foreseeability involves a normative dimension, as it requires assessing whether, at the time of conduct, state parties took steps to obtain the scientific and other knowledge necessary to undertake a determination of risk. This normative dimension underscores the importance of foreseeability as a limiting element of the fault-based standard in contrast with a strict-liability standard.

The ILC has also addressed the issues of foreseeability and causality in the context of environmental cross-border harm.<sup>181</sup> For example, the ILC comments:

"the extent to which civil liability makes the polluter pay for environmental damage depends on a variety of factors. If liability is based on negligence, not only does this have to be proved, but harm [that] is neither reasonably foreseeable nor reasonably avoidable will not be compensated, and the victim or the taxpayer, not the polluter, will bear the loss. Strict liability is a better approximation of the 'polluter-pays' principle, but not if limited in amount, as in internationally agreed schemes involving oil tankers or nuclear installations. Moreover, a narrow definition of damage may exclude environmental losses [that] cannot be easily quantified

in monetary terms, such as wildlife, or which affect the quality of the environment without causing actual physical damage.”<sup>182</sup>

Thus, in applying the polluter-pays principle, the ILC acknowledges that “a ‘great deal of flexibility will be inevitable, taking full account of differences in the nature of the risk and the economic feasibility of full internalization of environmental costs in industries whose capacity to bear them will vary.”<sup>183</sup> Some commentators doubt whether the ‘polluter-pays’ principle has achieved the status of generally applicable rule of customary international law, except perhaps in relation to states in the European Community (EC), the UNECE, and the Organization for Economic Cooperation and Development (OECD).<sup>184</sup> However, for VDB purposes, the level of established practice or jurisprudential development in a particular country should not be a factor in determining whether or not the responsibility exists. The very loss, costs and damage should determine. And where gross violations of human rights are involved, the reparation framework should apply.<sup>185</sup>

**Each Environmental/climate-even entry should contain an argument**, either in the Brief Narrative or an attached Detail, **identifying the responsible party(ies)**, whether their causative act(s) be by commission or omission. Those could be state or nonstate actors, but the permanent tick on the state as **Duty holder:** will remain constant in the VDB entry form.

In some cases of environmental disaster, duty bearers other than the state and its organs may be known and identifiable. Wildfires that consume assets of nature such as forests and wildlife, lands, property, homes and livelihoods are increasingly common. However, beyond these events seeming to result from lightning strikes, or other anonymous accidents are cases where individual **Duty holders** are liable. If this is the case, the instance should be entered with the available information about the liable party, the affected persons and the consequences.<sup>186</sup>

In the event of human-induced environmental degradation and, like threatened evictions or demolitions, potentially affected persons victims would not be eligible for entry into the VDB. Rather, such instances would be cases for Urgent Action appeals, which also require identification of duty bearers with responsibility to prevent and/or protect potentially affected persons. However, once the threatened or impending violation takes place, the case would be eligible for entry into the VDB.

### **Types of Instances**

Much of the concept of foreseeability relates to event and instances yet to take place. However, entries to the VDB must be actual—not potential—violations. The person making the entry should determine the foreseeability of the hazard resulting in the violation. In determining eligibility, the inputter first will have to distinguish between “disasters” and “hazards,” as follows:

**Disaster** (actual and kinetic): a sudden accident or a natural catastrophe that causes great damage or loss of life, wealth, habitat and/or wellbeing.

**Hazard** (potential): put (something) at risk of being lost or damaged, the risk of disaster, or a destructive event waiting/likely to happen.

Only cases entered into the VDB under the category of “Environmental/climate event” will be actual deprivation of human rights to housing and land arising from disasters that already having taken place and where identifiable natural or legal persons bears responsibility, by act of commission or omission, either directly, or arising from foreseeability.

## Types of Losses and Damages

The types of losses and/or damages to be recorded for an Environment/climate event in the VDB would be precisely the same quantifiable and material goods and assets recorded for other types of violations. (The valuation is always expressed in € in numerals without period or comma.) Environmental losses that cannot be easily quantified in monetary terms, such as wildlife, or which affect the quality of the environment without causing damage to housing or land<sup>187</sup> are not to be entered into the form fields, but may be included in the **Brief Narrative**, or annexed in the form of a **Detail** or **Development**, if known. However, if the geographical scope of the event and its impacts were known, then that should be similarly noted.

## Numbers of Affected Persons

As typical in monitoring instances of housing and land rights violations globally, many available reports omit vital information about numbers and description of affected persons and any quantification of their losses. (For methods of quantifying affected values—potential and real costs, losses and damages—see the HLRN [Violation Impact-assessment Tool](#).) In the case of disasters, most reporting does identify various types of affected persons, however, often because civil defense and/or humanitarian agencies prioritize and have both capacity and responsibility to report these data.

In the case of environmental disasters, the consequences may cover a wide area, with differing degrees of impacts on directly and peripherally/collaterally affected persons. To overcome dilemmas in filling out the VDB entry form, the following guidelines will apply:

- When recording the number of affected persons, do not count deaths or injuries unrelated to the incident of habitat-related human rights violations, except perhaps with a description in the “Affected persons” field “Other.” The reason for this discrimination is to maintain the specialized focus on the housing and land rights violations and the subjects of those specific violations. Other casualties are beyond the scope of the VDB and its embedded system of enumerating affected persons.
- **Forced eviction** includes displacement, so the corresponding numbers of houses and forcibly evicted and/or displaced persons should follow the usual practice of counting each house/household as 5 individuals, unless a more-precise number is available.
- **Demolition/damage/destruction** covers all degrees of damage and destruction, so that it is not practical to distinguish between partial or total destruction, for example, in the VDB’s simplified methodology. However, a dilemma may arise as to the scope of differentiated impacts and corresponding numbers of persons affected. The number entered for affected houses, land area (square meters, in numerals without a decimal point or comma) and infrastructure should reflect the composite of all forms and degrees of damage and destruction, if known. Any distinguishing details could be included in the Brief Narrative or attached as a **Detail** or later **Development**.
- **Dispossession/confiscation**: Most likely, the most-common type of loss in the context of an environmental disaster would be understood as dispossession, rather than confiscation. That is, confiscation is usually a punitive or other aggressive and forceful act carried out by a more-powerful human protagonist or entity. In the context of environmental events, the ostensible force is a natural element (water, wind, fire, or earth), but the loss is still a form of dispossession. However, if causation is an act of commission or omission, and responsibility/liability/accountability could be inferred, then the loss is treated as any other loss, which relates to the victims’ entitlement to remedy and reparation for gross violations, thereby a subject for application of the reparation framework. This follows the











logic above about prioritizing the affected persons, whether or not a duty bearer (state organ or non-state actor) has been identified, pursued, apprehended, prosecuted or convicted.

- **Privatization:** It is conceivable that a climatic or environmental event causing displacement, damage and/or dispossession could accompany a privatization process. This may be a case of land grabbing by private interests, or privatization of water infrastructure leading to a flood or exacerbating a drought that compels displacement. The same logic that applies to privatization in other instances prevails here. However, the additional violation category of Environmental/climate event creates a new possibility for classifying and analyzing cases searched under both VDB criteria.

### Changes to the VDB Entry Form

The new addition would not create the need for major changes to the VDB entry form. Each Environmental/climate-event entry should contain an argument, either in the Brief Narrative or an attached Detail, identifying the responsible party(ies). Those could be state or nonstate actors, but the permanent tick on the state as **Duty holder** will remain constant.

Below is an illustration of how the Environmental/climate-event category of searchable values might look.

Environmental/climate event		<input checked="" type="checkbox"/>	
<b>Type of loss/damage:</b>			<b>Value (if possible)</b>
<input type="checkbox"/> Biodiversity	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Crop/food store	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Forest	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Housing	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Infrastructure/services	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Land	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Water source	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Waterfront	<input type="checkbox"/>	€	0 
<input type="checkbox"/> Other	<input type="checkbox"/>	€	0 

## Endnotes:

- <sup>1</sup> See Kenyan Ministry of Environment and Forestry post on facebook, 28 June 2022, <https://www.facebook.com/EnvironmentKe/posts/pfbid027kVGykCoosxqGzNRbMVvoXpC4SLspFPsBvEuE6tx1c54DbZxnXUrH4cQs6JnGWHil>. Watch announcement at the 2<sup>nd</sup> Plenary of the 2022 UN Ocean Conference on Web TV, <https://media.un.org/en/asset/k1o/k1oxnfwdqo>.
- <sup>2</sup> Professor Arthur W. Galston director of the Division of Biological Sciences at Yale University, made the suggestion at a conference in Washington on “War and National Responsibility” in the context of the environmental damage and other harms caused by the use of Agent Orange during the Vietnam War. “...and a plea to ban ecocide,” *The New York Times* (26 February 1970), <https://www.nytimes.com/1970/02/26/archives/and-a-plea-to-ban-ecocide.html>. See David Zierler, *The Invention of Ecocide: Agent Orange, Vietnam, and the Scientists Who Changed the Way We Think about the Environment* (Athens GA: University of Georgia Press, 2011), <https://www.amazon.com/Invention-Ecocide-Vietnam-Scientists-Environment/dp/0820338273?asin=0820338273&revisionId=&format=4&depth=1>.
- <sup>3</sup> Gladwin Hill, “U.S., at U.N. Parley on Environment, Rebukes Sweden for ‘Politicizing’ Talks,” *The New York Times* (8 June 1972), <https://www.nytimes.com/1972/06/08/archives/us-at-un-parley-on-environment-rebukes-sweden-for-politicizing.html>.
- <sup>4</sup> Also found to be a holder of rights and, therefore, subject to violation.
- <sup>5</sup> Viviane Clement, Kanta Kumari Rigaud; Alex de Sherbinin, Bryan Jones, Bryan; Susana Adamo, Jacob Schewe, Nian Sadiq, Elham Shabahat, Groundswell Part 2 : Acting on Internal Climate Migration (Washington: World Bank, 2021), <https://openknowledge.worldbank.org/handle/10986/36248>.
- <sup>6</sup> Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law [also referred to as the reparation framework], A/RES/60/147, 21 March 2006, [http://www.hlrn.org/img/documents/A\\_RES\\_60\\_147\\_remedy\\_reparation\\_en.pdf.;](http://www.hlrn.org/img/documents/A_RES_60_147_remedy_reparation_en.pdf.;)
- <sup>7</sup> “Climate Justice is a human right,” HIC President Declaration for World Habitat Day, <https://www.hic-net.org/urban-october-2021/#Statement->.
- <sup>8</sup> International Covenant and Economic Social and Cultural Rights (1966), Article 2.1, <https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>.
- <sup>9</sup> *Ibid.*, Article 11.
- <sup>10</sup> “Russia targets dams,” *VDB*, 26 February 2022, [http://www.hlrn.org/admin/violations/article\\_edit.php?id=56059&back=YXJ0aWNsZV9kaXNwbGF5LnBocA==#](http://www.hlrn.org/admin/violations/article_edit.php?id=56059&back=YXJ0aWNsZV9kaXNwbGF5LnBocA==#).
- <sup>11</sup> Olena Roshchina, “Kryvyi Rih fights consequences of Russian missile strike on reservoir dam overnight, water level falls,” *Ukrainska Pravda* (15 September 2022), <https://www.pravda.com.ua/eng/news/2022/09/15/7367521/>.
- <sup>12</sup> A hromada is an administrative unit designating a town, village or several villages and their adjacent territories.
- <sup>13</sup> According to the United Nations Environmental Program (UNEP), domestic water use includes bathing, cooking, drinking, washing clothes and other household functions. See UNEP, “State of Environment and Outlook Report for the occupied Palestinian territory 2020”, p. 68.
- <sup>14</sup> Palestinian Water Authority, *Water Status Report June 2019*.
- <sup>15</sup> UNEP, “State of Environment and Outlook Report for the occupied Palestinian territory 2020”, p. 66.
- <sup>16</sup> Report of the Special Rapporteur on the situation of human rights in the Palestinian territories occupied since 1967\*, A/HRC/40/73, 15 March 2019, para. 53, <https://daccess-ods.un.org/tmp/2482667.71435738.html>.
- <sup>17</sup> UNICEF, “UNICEF seawater desalination plant helps head off Gaza water crisis,” 6 April 2017, <https://www.unicef.org/stories/unicef-seawater-desalination-plant-helps-head-gaza-water-crisis>.
- <sup>18</sup> UN OCHA, “Humanitarian Needs Overview,” 2018, [https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/hno\\_20\\_12\\_2017\\_final.pdf](https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/hno_20_12_2017_final.pdf).
- <sup>19</sup> See “The human rights dimensions of population transfer, including the implantation of settlers,” E/CN.4/Sub.2/1993/17, 6 July 1993, at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G93/142/08/PDF/G9314208.pdf?OpenElement>.
- <sup>20</sup> Ilan Pappé, *The Ethnic Cleansing of Palestine* (Oxford: One World, 2006).
- <sup>21</sup> Janet L. Abu Lughod, “The Demographic Transformation of Palestine,” in Ibrahim Abu Lughod, ed., *The Transformation of Palestine* (Evanston: Northwestern University Press, 2971).
- <sup>22</sup> Beryl Cheal, “Refugees in the Gaza Strip, December 1948–May 1950,” *Journal of Palestine Studies*, Vol. 18, No. 1, Special Issue: Palestine 1948 (autumn, 1988), pp. 138–57, at: <https://www.jstor.org/stable/2537600?seq=1>.
- <sup>23</sup> Anthony Coon et al., *The Goldberg Opportunity: A Chance for Human Rights-based Statecraft in Israel* (Cairo: HIC-HLRN, 2010), <http://www.hlrn.org/img/publications/Naqab%20FFM%20report%202010.zip/>.
- <sup>24</sup> Anders Jägerskog and David Phillips, “Managing trans-boundary waters for human development,” World Bank, January 2006, [https://www.researchgate.net/publication/43244516\\_Managing\\_trans-boundary\\_waters\\_for\\_human\\_development](https://www.researchgate.net/publication/43244516_Managing_trans-boundary_waters_for_human_development).
- <sup>25</sup> “Gaza’s Water Crisis,” *VDB*, 15 May 1948, <http://hlrn.org/violation.php?id=p25kZ6w=>.
- <sup>26</sup> UNOCHA, “Sudan: West Darfur Emergency Situation Report No. 02,” 4 May 2021, <https://reliefweb.int/report/sudan/sudan-2022-flood-response-update-25-september-2022>.

- <sup>27</sup> Sydney Kamen, “World’s First Climate Change Conflict Continues,” *Think Global Health* (10 December 2021), <https://www.thinkglobalhealth.org/article/worlds-first-climate-change-conflict-continues/>.
- <sup>28</sup> “IDP Camps,” *VDB*, 25 August 2022, <http://www.hlrn.org/violation.php?id=p25kZ6c=>.
- <sup>29</sup> United Nations, International Law Commission (ILC), “Responsibility of States for internationally wrongful acts,” A/RES/56/83, 28 January 2002, <https://www.ilsa.org/Jessup/Jessup11/basicmats/StateResponsibility.pdf>; ILC, “Responsibility of States for internationally wrongful acts,” A/56/589, 26 November 2001, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N01/658/81/PDF/N0165881.pdf?OpenElement>; ILC, “Draft articles on Prevention of Transboundary Harm from Hazardous Activities, with commentaries,” 2001, [https://legal.un.org/ilc/texts/instruments/english/commentaries/9\\_7\\_2001.pdf](https://legal.un.org/ilc/texts/instruments/english/commentaries/9_7_2001.pdf).
- <sup>30</sup> “Drying up rivers,” *VDB*, 1 January 1980, <http://www.hlrn.org/violation.php?id=p25kZ6g=>.
- <sup>31</sup> “Drought threatens disaster as Iraqi farmers forced to leave land,” *Daily Sabah* (14 November 2021), <https://www.dailysabah.com/business/economy/drought-threatens-disaster-as-iraqi-farmers-forced-to-leave-land>.
- <sup>32</sup> “Iran’s Diversion of Water Resources,” *VDB*, 28 December 2021, <http://www.hlrn.org/violation.php?id=p25kZ6k=#.YyxDuaBBwdU>.
- <sup>33</sup> “Water Management and Water Challenges in Iraq” *Fanack Water* (15 November 2016), <https://water.fanack.com/iraq/water-management-and-water-challenges-in-iraq/>.
- <sup>34</sup> “Drying up Rivers,” *VDB*, 1 January 1980, <http://www.hlrn.org/violation.php?id=p25kZ6g=#.YzxsTXZBy71>.
- <sup>35</sup> Norwegian Refugee Council, *Iraq’s drought crisis and the damaging effects on communities* (2022) <https://www.nrc.no/globalassets/pdf/reports/iraqs-drought-crisis/iraqs-drought-crisis-and-the-damaging-effects-on-communities.pdf>; Durrie Bouscaren, “Drought in Iraq and Syria could totally collapse food system for millions, aid groups warn Unprecedented drought — driven by climate change and exacerbated by upstream irrigation — is wreaking havoc on some of the world’s oldest river-fed farmlands in Iraq and Syria,” *The World* (10 September 2021), <https://theworld.org/stories/2021-09-10/drought-iraq-and-syria-could-totally-collapse-food-system-millions-aid-groups>; “Water crisis and drought threaten more than 12 million in Syria and Iraq” *ReliefWeb* (23 August 2021), <https://reliefweb.int/report/syrian-arab-republic/water-crisis-and-drought-threaten-more-12-million-syria-and-iraq>.
- <sup>36</sup> Kieran Guilbert, “Millions of poor uprooted by World Bank-funded projects – journalists,” *Thomson Reuters Foundation* (16 April 2015), <https://www.reuters.com/article/worldbank-displacement-investigation-idINKBNON720320150416>; “World Bank Acknowledges Shortcomings in Resettlement Projects, Announces Action Plan to Fix Problems,” *The World Bank* (4 March 2015), <https://www.worldbank.org/en/news/press-release/2015/03/04/world-bank-shortcomings-resettlement-projects-plan-fix-problems>.
- <sup>37</sup> UN Basic Principles and Guidelines on Development-induced Evictions and Displacements, Annex 1 of the report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, A/HRC/4/18, [https://www.ohchr.org/sites/default/files/Guidelines\\_en.pdf](https://www.ohchr.org/sites/default/files/Guidelines_en.pdf).
- <sup>38</sup> “TotalEnergies EACOP,” *VDB*, 1 March 2021, <http://www.hlrn.org/violation.php?id=p25kaak=#.Yzx6z3ZBy70>
- <sup>39</sup> “Uganda: Land Grabbing Worsens Climate Change,” *HLRN News*, 10 January 2019, <http://www.hlrn.org/activitydetails.php?title=Land-Grabbing-Worsens-Climate-Change&id=pmtkaQ==#.YzRLL3ZBxyw>.
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- <sup>187</sup> A/HRC/RES/48/13, *op. cit.*



**Housing and Land Rights Network  
- Habitat International Coalition**